National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

SPECIAL AWARDS ISSUE

January 9, 1981

Special Awards Presented

Langley Employees Recognized for Accomplishments

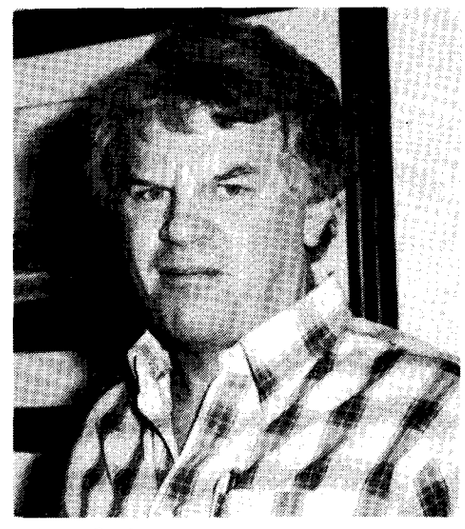
Certificates of Recognition

A Certificate of Recognition is awarded for the creative development of a scientific contribution which has been determined to be of significant value in the advancement of the aerospace technology program of NASA.

Invention awards have been presented to **Harold G. Bush**, Structural Mechanics Division; **Reid A. Hull** and **Stephen C. Irick**, Systems Engineering Division; **E. Thomas Freeman, Charles W. Stump, Thomas A. Shull, Harry F. Benz** and **Arthur L. Newcomb, Jr.**, Flight Electronics Division; **Anne K. St. Clair** and **Terry L. St. Clair**, Materials Division; **Nelson J. Groom** and **Willard W. Anderson**, Flight Dynamics and Control Division;

Mickey R. Gardner, Operations Support Division; **Wilmer H. Reed, III** and **Lana M. Couch**, Loads and Aeroelasticity Division; **David S. Shaw** and **Charlie M. Jackson, Jr.**, High-Speed Aerodynamics Division; **Samuel M. Dollyhigh**, Aeronautical Systems Division; **Gerald C. Purgold**, Marine and Applications Technology Division; **John H. Cantrell, Jr., Joseph S. Heyman** and **William E. Miller**, Instrument Research Division; **E. Eugene Hall**, Scout Project Office; and **Morriss L. Holliday** and **Ashby G. Lawson**, Fabrication Division.

Morriss L. Holliday



Ashby G. Lawson

Special Achievement Awards

A Special Achievement Award is granted for performance exceeding job requirements. The award may be either for sustained superior performance or for a one-time special act or service in the public interest, connected with, or related to official employment.

Awards have been presented to **Robert P. Rhinehart, Edwin J. Prior, Richard N. Green, Nancy S. Holt, Alberta W. Reid, Vivian P. Parrous, Lee M. Avis, Arlen F. Carter, T. Dale Bess, James F. Kibler, Joel S. Levine, Robert E. Boughner, Gerald M. Keating** and **William L. Grose**, Atmospheric Environmental Sciences Division;

Jacqueline P. Miller, Bruce D. Fisher, Bruce J. Holmes, H. Paul Stough, Robert T. Fults, Jr., Barbara H. McPherson and **Theresa F. Elliott**, Flight Mechanics Division;

Fereidoun Farassat, Richard DeLoach, Conrad M. Willis, Shirley B. Crockett, Linda W. Sutherland, Robert A. Golub and **Robert A. Grandle**, Acoustics and Noise Reduction Division;

Anne C. Terry, Beryl A. Mayeaux and **Carolyn D. Avent**, Personnel Division;

C. Wayne Williams, James H. Daus, Jeanne P. Huffman, Betty E. Walker, Harris B. Pate, Thomas H. Brinkley, Beulah R. Garel, Taylor C. Fraser, Betty B. Hughes, William C. Salyer and **William E. Frazier**, Scientific and Technical Information Programs Division;

Alice C. Massey, Doris W. Bryan and **Janis C. Yates**, Program and Resources Division;

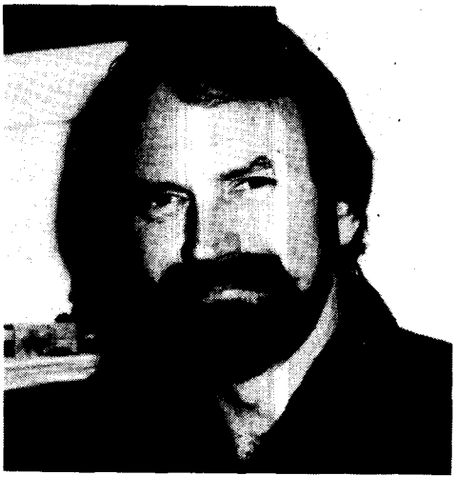
Richard W. Powell, Bernard Spencer, Jr., Wilford E. Sivertson, Jr., and **Donald H. Humes**, Space Systems Division;

Earl H. Arrowood and **Joseph T. Guy**, Projects Management Systems Division;

John T. Bush, III, Deloris J. Hart, Linda P. Fitzgerald, Rosemary C.

Continued on page 2.

Edward J. Ray

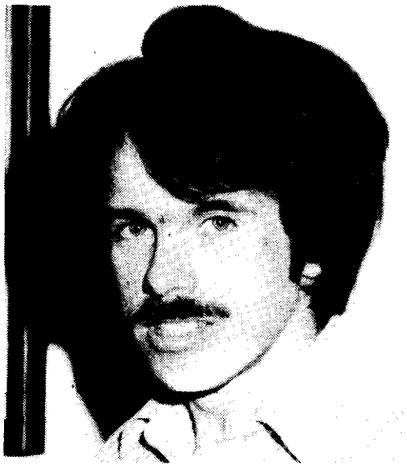


Gerald E. Miller

Betty E. Walker

Belton T. McAlexander

Barry N. Hogge



Gary R. Beasley

Awards

Continued from page 1.

Froehlich, Leon A. Blount, Beulah C. Baccus, James A. Dorst and **Frank E. Godfrey**, Acquisition Division;

Stephen K. Park, Anthony R. Fecondo and **James B. Hall**, Analysis and Computation Division;

Clayton James, Erby C. Harris, Jr., Charles H. Hudgins, Benjamin R. Freeman, William S. Small, Michael D. Vaccarelli, Troy A. Wilson, Mickey R. Gardner, John D. Scholz, Roderick D. Harvey, Walter C. Whitt, John W. Quinn, Robert L. Fixx, Jr., David D. Allen, Earl F. Stahl, James S. Jarrell, Barry N. Hogge, Kenneth L. Wallace, William O. Moore, III and **Robert D. Lindeman**, Operations Support Division;

Jerry M. Allen, Sharon H. Stack, Richard G. Wilmoth and **Jerry N. Hefner**, High-Speed Aerodynamics Division;

W. Barry Lisagor, Jo Ann H. Woodcock, Robert M. Baucom, Dr. Norman J. Johnston, Dr. James C. Newman, Jr., Wayne S. Slemp, Donald R. Rummler, Dick M. Royster and **George F. Sykes**, Materials Division;

Charles S. Bryant, Thomas C. Moore, Ronald F. Hoyt and **John P. Stack**, Instrument Research Division;

John E. Lamar, Dr. Richard W. Barnwell, Clyde L. W. Edwards, John B. Peterson, Jr., Frances E. Sabo, Catherine B. Worth, Judy B. Lanham, Dr. Perry A. Newman and **Edward J. Ray**, Subsonic-Transonic Aerodynamics Division;

Herbert F. Thornton, Phyllis E. Jones, Aaron J. Ostroff, William R. Motley, III, Gordon F. Bullock, Charles W. Meissner, Jr. and **Richard R. Nelms**, Flight Electronics Division;

David A. Wineman, John E. Knemeyer, Thomas G. Popernack and **John T. Taylor**, Research Facilities Engineering Division;

Harry H. Heyson and **Domenic J. Maglieri**, Aeronautical Systems Division;

William L. Weaver, Lamont R. Poole, Edwin F. Harrison, David S. McDougal and **Doris M. Forrest**, Marine and Applications Technology Division;

James R. Dinkins, Office of Director for Systems Engineering and Operations;

Walter W. Hankins, III, Joseph C. Moorman, Nelson J. Groom, Katherine G. Johnson and **Hugh P. Bergeron**, Flight Dynamics and Control Division;

Continued on page 3.

Langley Research Center NASA

Langley Researcher

The *Langley Researcher* is an official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665.

Editor ..... Jean Drummond
Staff Photographers .. Bob Nye and Don Ward

Awards

Continued from page 2.

Phillip J. Klich, Systems Engineering Division;

Boyd Perry, III and **James E. Gardner**, Loads and Aeroelasticity Division;

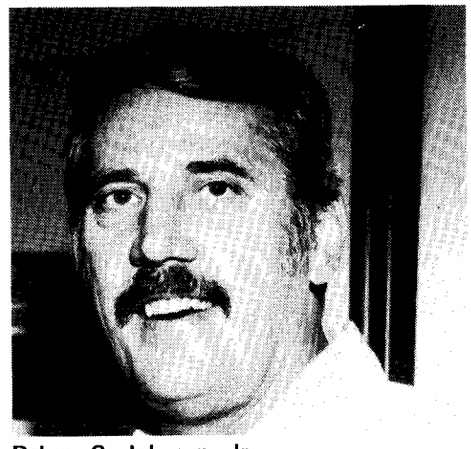
Helen I. Mason and **Kathi D. Porter**, Management Support Division;

F. Wayne Loer, Aircraft Energy Efficiency Project Office;

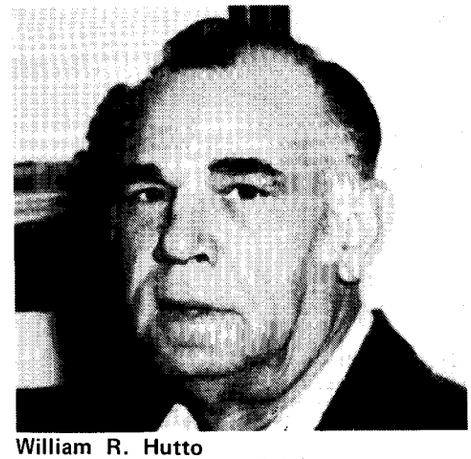
Cassandra G. Favor, Louis P. Buldain, Deborah F. Hearl, Renee Wallace and **Robert K. Langhorne, Jr.**, Financial Management Division;

Bruce M. Adderholdt, Roy L. Farmer, Gary R. Beasley, William R. Hutto, Gerald E. Miller, Marvin D. Scruggs, William E. Robbins, Belton T. McAlexander, George J. Link, Ellwood L. Peele, Jr., William R. Page, Dalma C. Johnson, Jr., Morriss L. Holliday, Douglas F. Auvil and **W. Albert Shearin**, Fabrication Division.

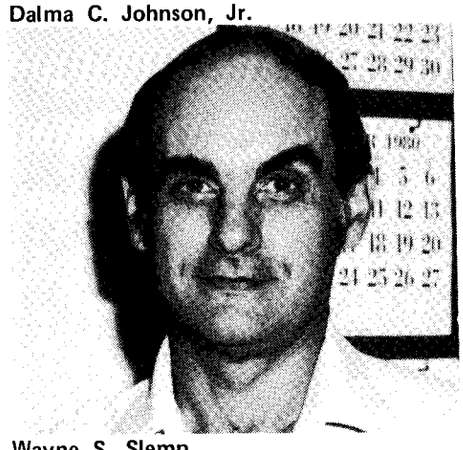
Langley Special Achievement awards for Group Accomplishments were presented to the SILTS Engineering Team -- **O. Vernon Marshall, Rufus K. Dail, Briscoe B. Brown** and **Obie H. Bradley**, Systems Engineering Division.



Dalma C. Johnson, Jr.



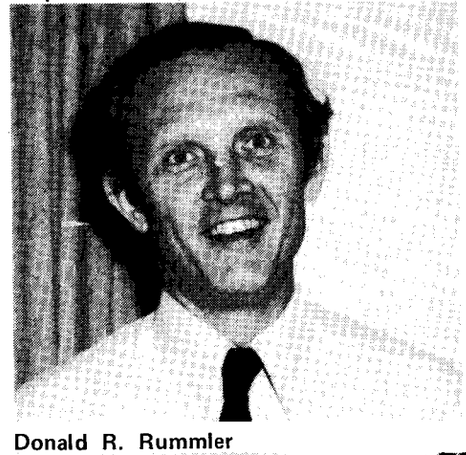
William R. Hutto



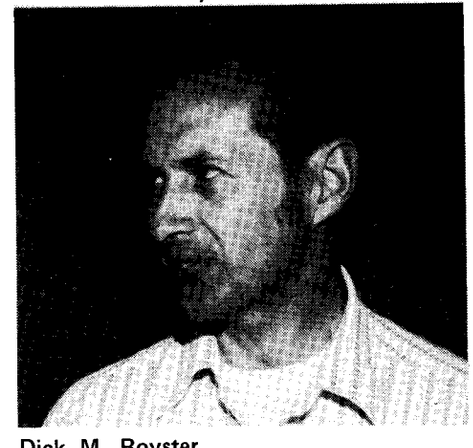
Wayne S. Slemp

Ellwood L. Peele, Jr.

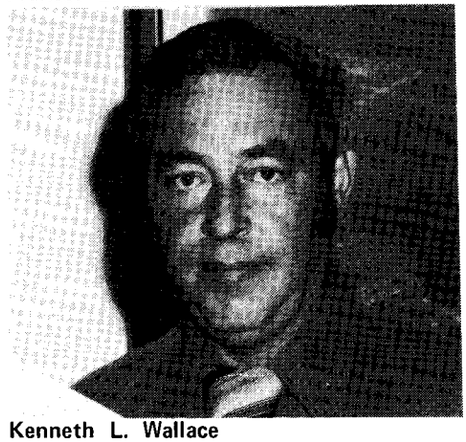
Frances E. Sabo



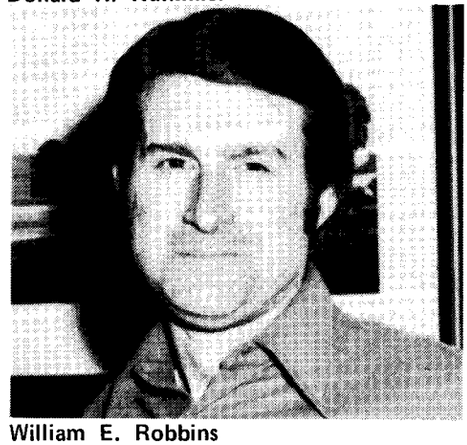
Donald R. Rummler



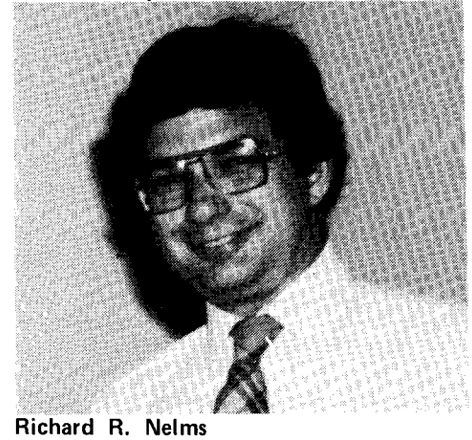
Dick M. Royster



Kenneth L. Wallace

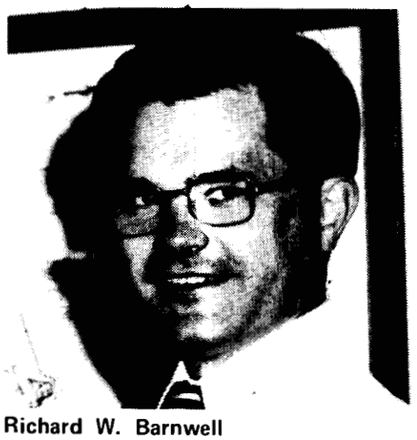


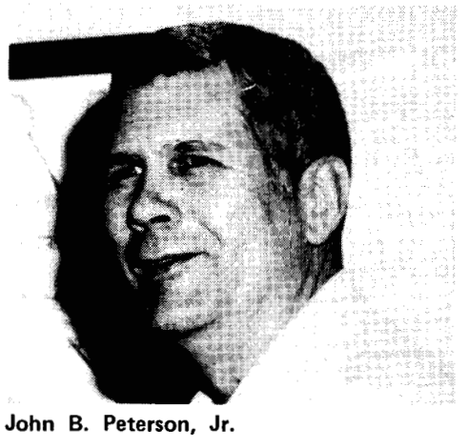
William E. Robbins



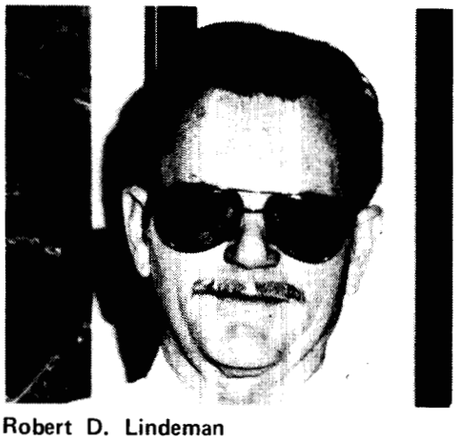
Richard R. Nelms

Catherine B. Worth


Richard W. Barnwell


John B. Peterson, Jr.

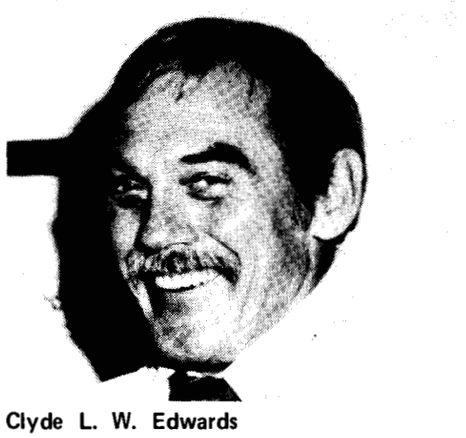
Perry A. Newman

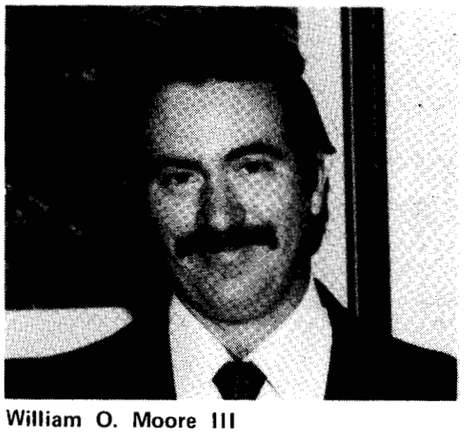

Robert D. Lindeman

William L. Weaver

William R. Page

Douglas F. Auvil


Clyde L. W. Edwards


William O. Moore III

Roy L. Farmer

Judy B. Lanham

Marvin D. Scruggs

George J. Link

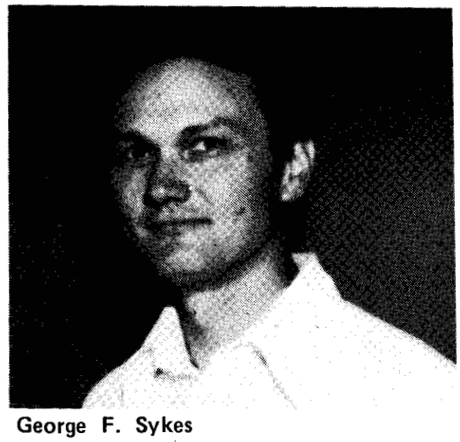
Suggestion Awards

The Langley Suggestion System was established to increase productivity, efficiency, economy and other improvements in center operations. Employees are recognized and rewarded, either individually or collectively, for idea-type contributions which are adopted.

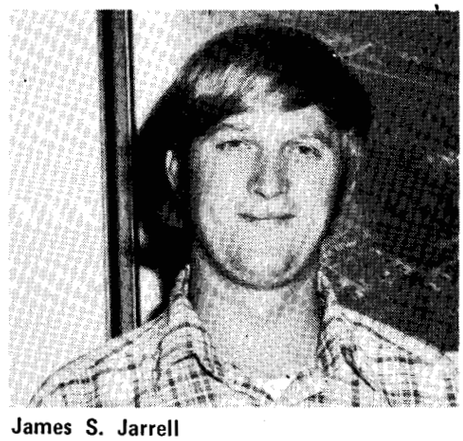
Suggestion awards have been presented to **Virginia P. Gibson**, Flight Electronics Division; **Charles Haynes, Jr., Mark S. Lindsey, Alton W. Grimes** and **John S. Powell**, Fabrication Division; **James S. Jarrell, David D. Allen, William F. Adkins** and **Phillip L. Brown**, Operations Support Division.

Energy Suggestion awards have been presented to **Carl R. Pearson**, Loads and Aeroelasticity Division; and **Walter Illg** Materials Division.

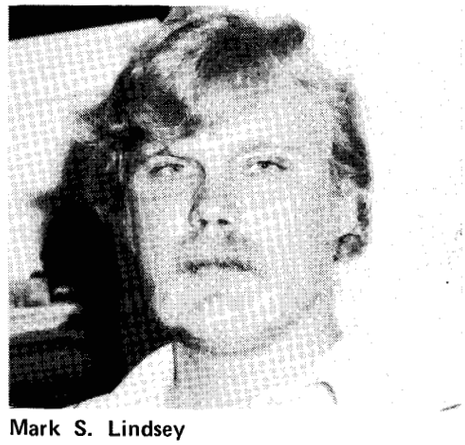
Charles W. Meissner, Jr.



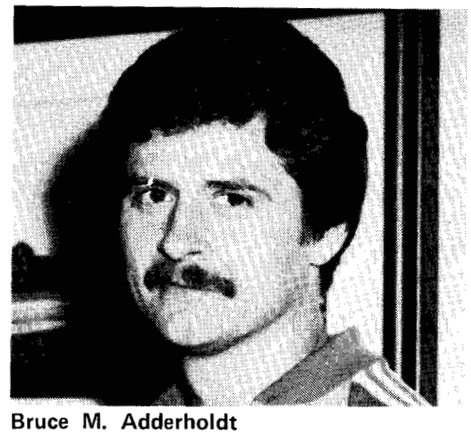
George F. Sykes



James S. Jarrell

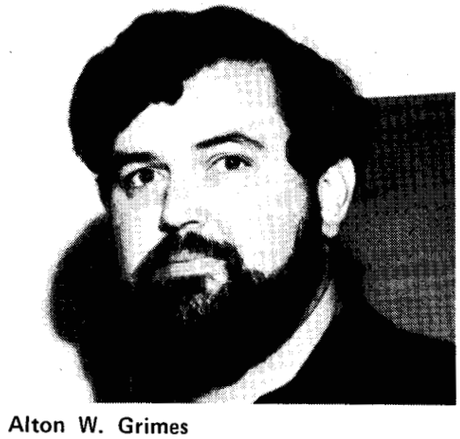


Mark S. Lindsey

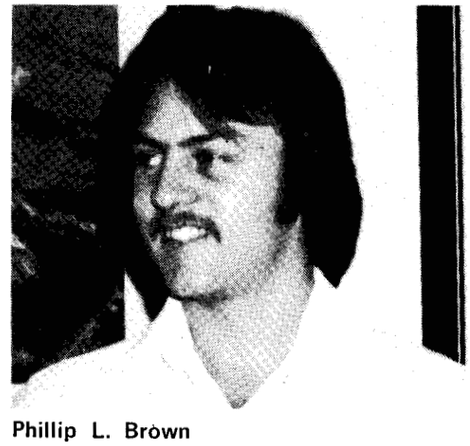


Bruce M. Adderholdt

W. Albert Shearin

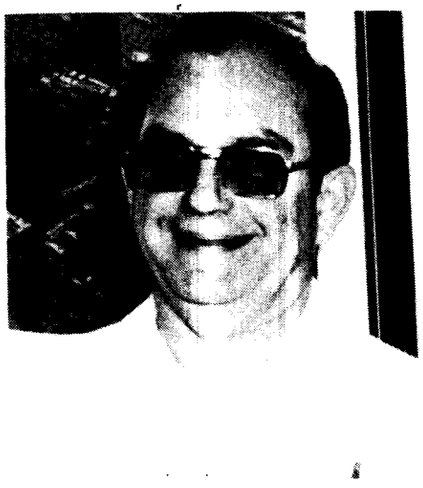


Alton W. Grimes

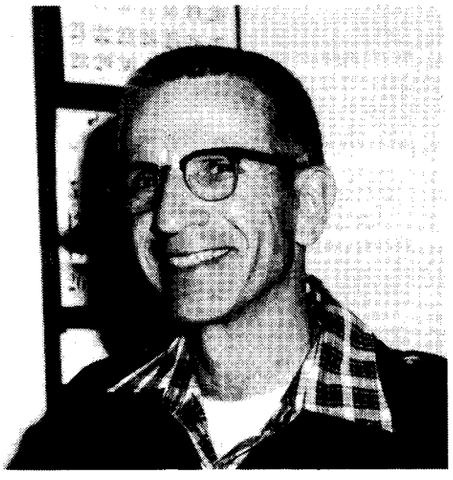


Phillip L. Brown

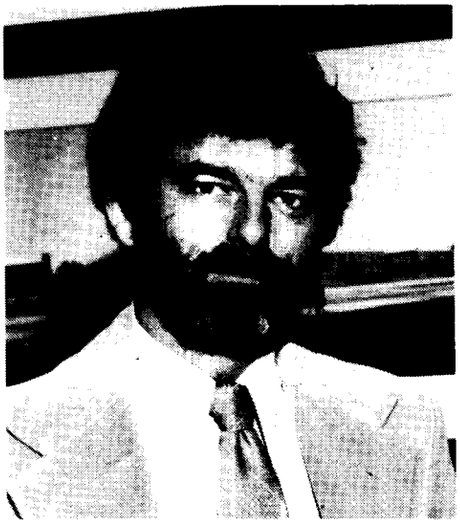
Virginia P. Gibson



William F. Adkins



Walter Illg



John S. Powell

Charles Haynes, Jr.

Tech Brief Awards

The quarterly "NASA Tech Briefs" journal, distributed nationwide, stimulates technology transfer by disseminating information on new developments stemming from aerospace research.

Receiving cash awards and certificates for recent contributions to the Tech Briefs journal were **Ronald N. Jensen**, Plant Engineering Division; **Robert J. Swaim, Clifton M. McMillian, Robert L. Fox, John D. Buckley, Donald E. Pizzeck** and **Robert F. Berry**, Fabrication Division; **Frank Hohl**, Office of Director; **Judd R. Wilkins**, Marine and Applications Technology Division;

Continued on page 7.

Frank Hohl

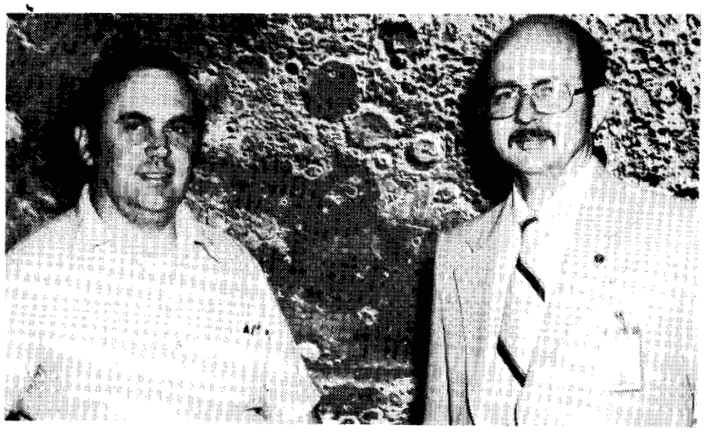
Joseph S. Heyman; John H. Cantrell, Jr.; John R. Davidson; Courtney E. Russ, Jr.; Darrel R. Tenney; John M. Franke; David B. Rhodes; and Langley Deputy Director Richard H. Petersen, who presented the awards.

Awards

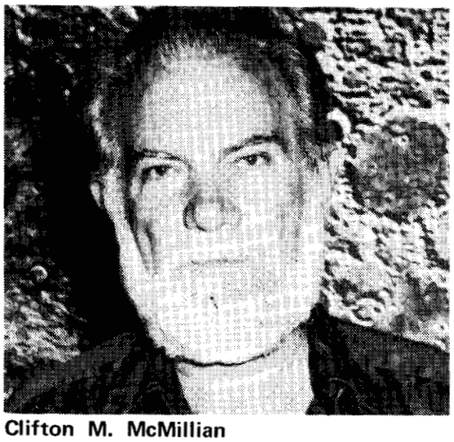
Continued from page 6.

Arthur L. Newcomb, Jr., Richard H. Couch, Chase P. Hearn, James B. Williams and **H. Douglas Garner**, Flight Electronics Division; **Philip C. Kassell, Jr., Andronicos G. Kantsios, James I. Clemmons, Jr., E. Conrad Compton, Charles W. Knight, Joseph S. Heyman, John H. Cantrell, Jr., Courtney E. Russ, Jr., John M. Franke, David B. Rhodes** and **Thaddeus Basta, Jr.**, Instrument Research Division;

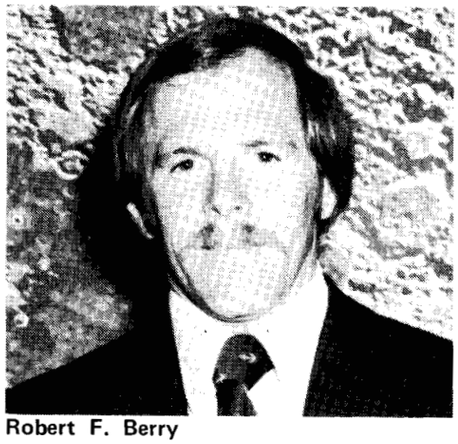
James D. Keller, Jerry C. South, Jr. and **Renaldo V. Jenkins**, Subsonic-Transonic Aerodynamics Division; **Lawrence E. Putnam, Michael J. Walsh, Robert J. Mack** and **Harry W. Carlson**, High-Speed Aerodynamics Division; **Ronald K. Clark, Terry L. St. Clair, W. Barry Lisagor, John R. Davidson** and **Darrel R. Tenney**, Materials Division; **Lucio Maestrello**, Acoustics and Noise Reduction Division; and **Francis D. Stone**, Operations Support Division.



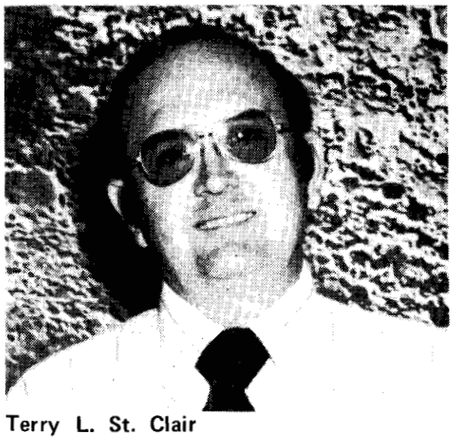
W. Barry Lisagor and Ronald K. Clark



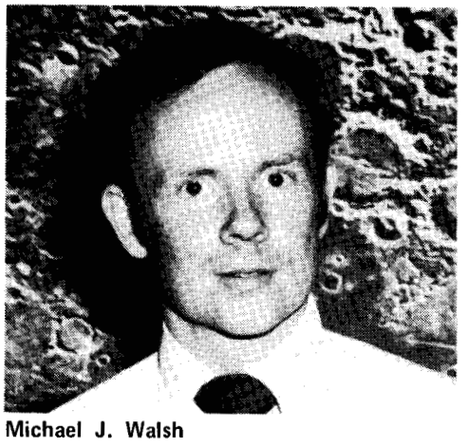
Clifton M. McMillian



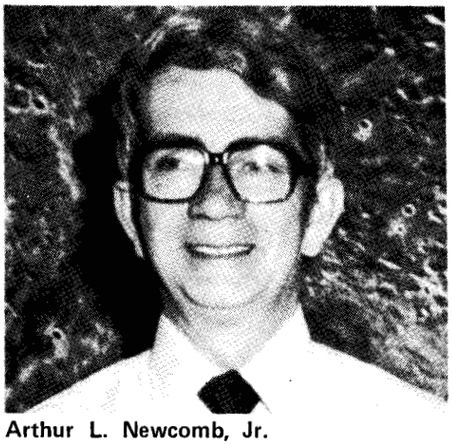
Robert F. Berry



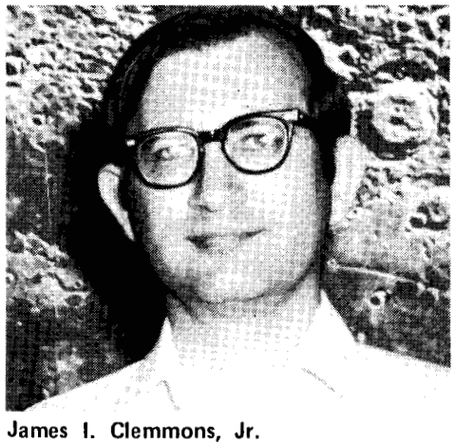
Terry L. St. Clair



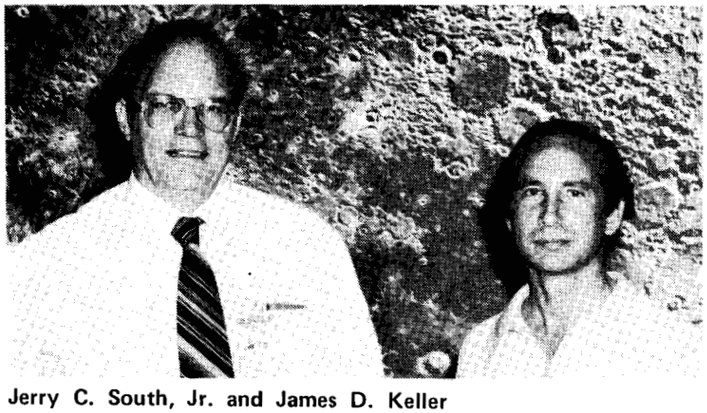
Michael J. Walsh



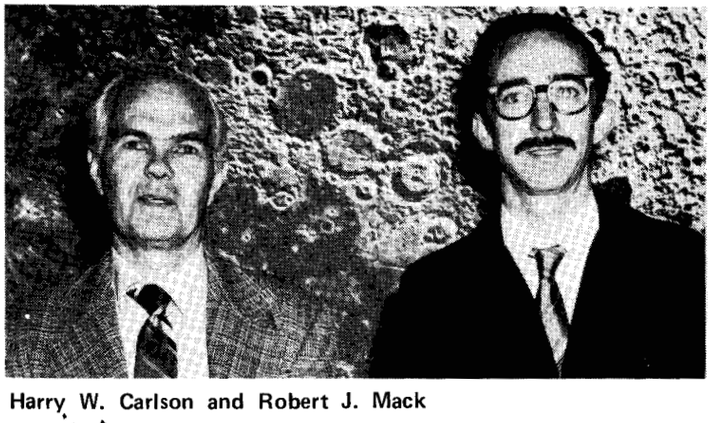
Arthur L. Newcomb, Jr.



James I. Clemmons, Jr.



Jerry C. South, Jr. and James D. Keller



Harry W. Carlson and Robert J. Mack

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Space Administration

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Hampton, Virginia
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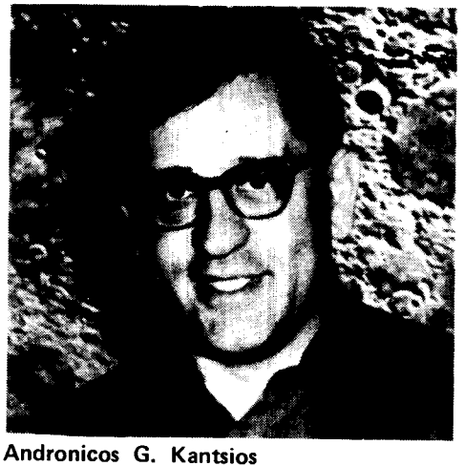
WASHINGTON DC 20546

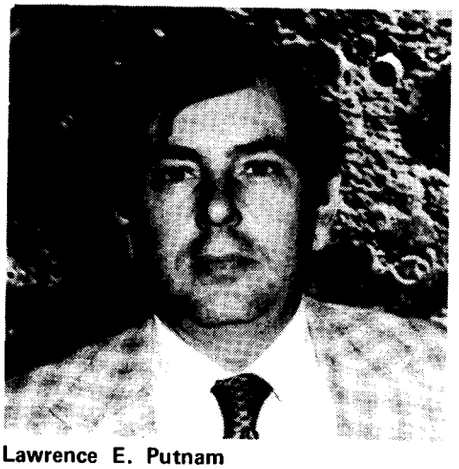
James B. Williams, Chase P. Hearn and Richard H. Couch

Renaldo V. Jenkins

Lucio Maestrello



Andronicos G. Kantsios



Lawrence E. Putnam

Donald E. Pizzeck

Philip C. Kassell, Jr., Charles W. Knight and E. Conrad Compton

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

Volume 20 Issue 1 January 16, 1981

Frosch Bids Farewell to Langley

Dr. Robert A. Frosch made his last official visit to Langley as NASA Administrator Thursday, Jan. 8. He will leave NASA Jan. 20 to become President of the American Association of Engineering Societies.

During his visit Frosch spoke to approximately 325 employees in the Activities Center. He discussed his role at NASA and NASA's role in developing new technology.

Concerning NASA, Frosch said, "We continually suffer from our own capabilities in the sense that we generate more important, useful and sensible things to do than we can ever get agreed to in the political and budget process. Our problem is really not a problem that we failed at things but that we succeed at more things than we can convert into continuing programs. That, in fact, gives every Administrator the annoying problem of deciding what really good things are not going to get done. . .One of the key cultural characteristics which is important in this regard--and I urge you to hold on to this characteristic--is the 'ability to regard difficulties as problems to be solved and to regard failures as events on the way to success.'"

Frosch said that he has the terrible feeling that he came in during the middle of the movie and is leaving in the middle of the movie. "Nothing that got completed while I was here had anything to do with my starting it and nothing that I started had anything to do with my being around when it is completed. . .I feel I have helped to keep the wheels spinning. We have been able to make some improvements. We have had some great successes to which I feel I have contributed something.

"As Don Hearth has suggested, during this period we have carried the Shuttle from an uncertain period early in its development to a pretty certain period toward the end of its development and just before its first flight. I think we are in good shape on that program. Since July we have been very close to the schedule that I feel will lead us to first launch."

Following Frosch's talk, Ross Phillips, President of the Langley Activities Association, presented Frosch with a set of bookends made by Langley employees. Phillips thanked Frosch for the four years of leadership and contributions and extended to him best wishes in his new endeavor.

Accepting Langley's gift, Frosch said, "I very much appreciate this memento as symbolizing that the organization is the people and not the structure only in which they work. It is the people at NASA who make the organization and I thank you for this memento reminding me of that."

– photo by Don Ward

Dr. Robert A. Frosch (left), NASA Administrator, accepts the bookends presented to him during his last official visit to Langley, Thursday, Jan. 8. Listening to his closing remarks are Ross Phillips (center), President of the Langley Activities Association, who presented the gift to Frosch, and Langley Director, Donald P. Hearth.

Lovelace Accepts NASA Appointment

Dr. Alan M. Lovelace resigned as Deputy Administrator of NASA Dec. 29 and has accepted an appointment as NASA Associate Administrator/General Manager.

As Associate Administrator/General Manager, Lovelace will perform the basic management duties that he has been performing as Deputy Administrator and will serve as Acting Administrator until a new Administrator has been named by the President and confirmed by the Senate.

The resignation and appointment as Associate Administrator/General Manager have been discussed with both President Carter's and President-elect Reagan's staffs and they have agreed to the arrangement to provide maximum continuity of management of NASA.

Twenty Employees Leave Government Service

Howe Retires as Chief of FMD

Twenty Langley employees retired from government service during December, including **Edward A. Howe**, Chief of the Financial Management Division.

Howe, who began his career in 1943 with NASA's predecessor agency, the National Advisory Committee for Aeronautics, will serve as a reemployed annuitant for three months until his replacement is selected.

Chief of the Financial Management Division since 1958, Howe has been responsible for all areas of finance and accounting except budget preparation and control. He previously served as Fiscal Officer, Head of the Accounting Section, a fiscal accountant and an administrative assistant.

Before coming to Langley, Howe worked for the Carrier Corporation in Syracuse, N.Y., and was in the Army Air Corps Reserve.

Howe earned a bachelor of science degree in administrative (industrial) engineering from L. C. Smith College of Applied Science, Syracuse University, in 1943.

Others retiring in December include **William S. Haywood Jr.**, **Warren A. Walls**, **Harry W. Compton** and **Carl L. Munday**, Flight Electronics Division;

Walter L. Gregory and **Alfred C. Watkins**, Research Facilities Engineering Division; **Rupert R. Monahan**, Plant Engineering Division; **Kermit M. E. Miller**, Flight Mechanics Division;

Frederick T. Carmine and **David H. Wallace**, Operations Support Division; **Theodore R. Perry Jr.**, **Daryl P. Crandlemire** and **John R. Cook**, Fabrication Division; **Sumner A. Leadbetter**, Structural Mechanics Division;

David Adamson, Atmospheric Environmental Sciences Division; **Ballard E. Quass**, High-Speed Aerodynamics Division; **David P. Hayes** and **Henry Elksnin**, Systems Engineering Division; and **Matthew L. Emory**, Instrument Research Division.

Bay Study Symposium Set

A symposium on the results of the 1980 Chesapeake Bay Plume Study, conducted by Langley and the Northeast Fisheries Center of the National Marine Fisheries Service of NOAA, will be held Jan. 21 through 23 at the Hospitality House in Williamsburg.

The study was initiated in 1980 to outline the role of remote sensing in Federal programs concerned with monitoring and assessing the effects of pollution on marine sources.

The study, called "Superflux," concentrated on the use of airborne remote sensors in a series of prototype experiments to study the impact of estuarine outflows on continental shelf ecology systems.

Superflux included three interactive aircraft-boat experiments focused on techniques to characterize the spatial extent, variability and bio-chemical properties of the Chesapeake Bay plume during periods of high, moderate and low runoff.

The symposium will feature paper presentations on the results of the experiments conducted during the study. An introduction and overview of the study and papers in the area of physical dynamics will be presented Jan. 21.

On Jan. 22, papers in the areas of geochemistry and biology will be presented, and a synthesis of results will be conducted Jan. 23.

Emergency Number Still in Force

The blizzard of '80 will be remembered for many years by residents of the Peninsula. Hopefully in 1981 we will be blessed with a little less of the white precipitation.

However, just in case, Langley employees are reminded of the telephone number 827-2111, which is part of the Langley emergency announcement system.

The number is reserved for special announcements concerning emergency conditions -- such as heavy snowfall, hurricane warnings or flooding -- that might cause Director Donald Hearth to close the Center.

During regular duty hours, normal channels of communication should be adequate to alert employees to emergencies. If an emergency occurs outside regular work shift hours, employees can learn if, or when, to report for work by calling 827-2111.

Similar information will also be announced over area radio and television stations, as in past years.

Offices Move

Two offices under the Office of External Affairs have moved.

The Office of Public Affairs has moved to Building 1153, Room 201. The Mail Stop is 154 and the telephone number is 2934.

The Office of Public Services has moved to Building 1219, third floor. The Mail Stop is 115 and the telephone number is 3341.

Thanks

Linell Quinn would like to thank all her friends who were responsible for the lovely retirement party and the ones who were unable to attend, but contributed to the gift. "It was a night I shall always remember. Thanks again and best wishes to all of you."

The *Langley Researcher*, as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond
Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

Mutch Has Memorial on Mars

Dr. Thomas "Tim" A. Mutch, who was NASA Associate Administrator for Space Science before he died in a mountain climbing accident Oct. 7, has received a memorial on the planet Mars.

Dr. Robert A. Frosch, NASA Administrator, said the Viking I lander craft on Mars will now be known as the Thomas "Tim" A. Mutch Memorial Station.

"It is extremely proper and fitting that the Viking 1 lander be dedicated after Tim," Frosch said. "He was the Viking lander imaging team leader . . . He was a superb photo geologist whose talents included two books on the geology of the Moon and on Mars."

On Wednesday, Jan. 7, Frosch unveiled an 8-inch by 10-inch stainless steel plate inscribed to Mutch and charged a future administrator of NASA with the responsibility of assuring the plaque is subsequently placed on the lander craft.

The plaque will be passed on until there is an appropriate Mars mission for it to fly on, Frosch added.

Revised Forms Available From Stock

The following forms have been revised and are now available from Stock:

Langley Form 8	"Telephone Service Request"	Rev. Oct. 1980
Langley Form 40	"Property Storage/Disposition Request"	Rev. Aug. 1980
Langley Form 83	"Supplemental Application & Appraisal Form" (New form added to stock)	October 1980
Standard Form 1012A	"Travel Voucher Memorandum"	Rev. Oct. 1980

Langley Supports Recent Bloodmobile

Three hundred twenty-seven pints of blood were donated by Langley employees, retirees and contractors at the Nov. 26 visit of the Red Cross Bloodmobile.

Achieving gallon status were:

10 gallons — John A. Moore and Joseph Siefring.

9 gallons — Richard B. Holt and Shirley S. Grice.

8 gallons — Carroll A. Williams.

7 gallons — Herbert J. Cunningham and William W. Fernald.

6 gallons — Marion G. Tuck.

5 gallons — J. Wayne Sawyer, Ray D. Lowe and Gale A. Harvey.

4 gallons — Mary S. Saylor, Dalma C. Johnson, Vincent J. Fleck, Jr., Barry L. Price and Richard Hargason.

3 gallons — Russell E. Christe, John W. Simpson, Wayne E. Silver, Linda A. Hunt, William B. Igoe, Elvin L. Ahl, Jr., John H. Haines and Jack C. Spears.

2 gallons — Jack Paden, J. Richard Rawls, Kenneth Young, Shirley D. Adams, H. Keith Henry, Bob Boulter and Roger Butler.

1 gallon — Philip L. Brown, Debra R. Shinek, Frank L. Boyer, Catherine Bigelow and Jerry W. Wright.

Donating blood for the first time were Michael Brown, Karl Jepsen, Harold Neal, James Geiger, Floyd Backley, Lonnie Hammonds, Bobby Hunt, Archie Dimery, Troy Middleton, Luis Gutierrez, Scott Larson, Winston Hunt, Ray Clark, John C. Lin, Fernandus Rattcliff, Edward Scott, Jr., Pearl Loyd, Cardwell R. Gage, Richard Wiseman, Benjamin B. James, Mark Lord, George Brown, Samuel Mauney, Joan D. Oster, Nettie D. Faulcon, Madell B. Reynolds, Philip Lavrick, Carolyn Avent and Patricia Redwood.

NASA Coordinator for the Bloodmobile was Virginia Jones. Red Cross Coordinator was Fran Williams. Refreshments were donated by the Langley Federal Credit Union.

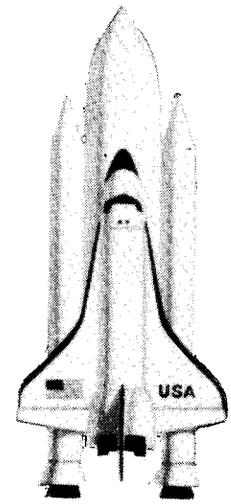
Levine Addresses ACS

The origin and chemical evolution of the atmosphere, the composition of the early atmosphere and its transition to the present atmosphere, and the relationship between atmospheric evolution and the evolution of life on our planet will be discussed at the Jan. 22 meeting of the Hampton Roads Section of the American Chemical Society.

Dr. Joel S. Levine, Atmospheric Environmental Sciences Division, will speak on "The Evolution of the Earth's Atmosphere" at 8 p.m. at the Campus Center Theater, Christopher Newport College.

The lecture is free and open to the public.

Shuttle Update



NASA's Space Shuttle Columbia is on the launch pad at the Kennedy Space Center undergoing pad validation tests and application of gap filler between the Shuttle's protective thermal tiles.

The Columbia is scheduled to be launched March 17 and undergo test firing of its main engines Feb. 10. It was moved Dec. 29 to the launch pad from the Vehicle Assembly Building.

Kanoy Wins $20

Virginia M. Kanoy, Space Systems Division, is the December winner of $20 given by the Langley Exchange Council to a registered car pool participant.

Monthly drawings will continue through 1981 because of the increase in car pool registration.

For car pool matching, change in car pool membership or car pool registration, call Kathi Porter, ext. 3511.

LAA Travel

All Carnival Cruise Line cruises sailing from Norfolk during 1981 will offer a special 10 percent discount per person (based on double occupancy). The destinations and dates are: Bermuda, May 12 through 19; Nassau (with optional 2–day stay-over), May 27 through June 1; Cruise to nowhere, September 5 through 8; and Bermuda, September 8 through 15.

For brochure and reservation form, call the LAA Office, extension 3139, or Ernie Greene, extension 2312 or 838-0567.

Watch for details soon on other trips for this year: Freeport (by air), March 5 through 9; Las Vegas, May 15 through 18; and South Pacific, Fall.

Guastaferro Looks at his Life with NASA

(Angelo Guastaferro, Langley manager from 1963 to 1979, talked to the editor during a recent visit to Langley. Guastaferro, now Director of the Planetary Division in the Office of Space Science at NASA Headquarters, will become Deputy Director of Ames this spring. Here are his thoughts about NASA and its programs and his career.)

Q. You have been at NASA Headquarters since April 1979. How does your job there compare to the job you had at Langley?

A. First of all, it is a much larger responsibility in terms of money. I have a program area that is $225 million a year. Planetary exploration is an extremely exciting area. I feel that the people engaged in that type of activity at JPL, Ames, Langley and across the agency are just outstanding and have a very aggressive approach to solving tough problems. They carry the explorers' attitude in being able to go to the unknown, to take on the challenging and more difficult jobs in the agency and to do them in a very effective manner. I looked at the opportunity to have that job and I have not been disappointed. I have had a chance to work with some of the better people at NASA.

Now (in contrast), Langley's a better place to live and a nicer environment to work in. Relative to my own career development and the skills that I had, I needed the Headquarters experience. My reasons for leaving Langley were to really get involved in the programmatic issues--and the Planetary Division was the most favored one as far as I was concerned--and to get a broader view of what it takes to carry out that particular part of the NASA mission. Whereas, at Langley, I had a lot of fun; I had a nice small area of responsibility and a good group of people to work with, but the area of responsibility was fairly narrow.

Q. How is Headquarters different from Langley?

A. Headquarters is different in a sense that there are a lot of external forces working on you in your job every day. I always felt at Langley you had a responsibility, and whether it was on Viking, RSRA or LSST . . . , you were left pretty much to your own devices to carry out your responsibility. You were somewhat isolated from the external world in terms of your own performance.

At Headquarters, it is just the opposite. You have a fairly broad responsibility and you perform in a fishbowl with a lot of people looking at you. You are dealing with the management team at Headquarters and the Congressional Office of Management and Budget who utilize their staffs and people in a very effective way to constantly ask you about what you are doing, why you did it, what you are going to do next and why you are doing it that way.

You are also a representative of an advocacy community; in my case, planetary scientists look at me as their representative in federal government and they are very free to offer advice and counsel on what direction their program should take.

On top of that, the national press is far more interested in what you are doing on an everyday basis and one has to learn the delicate, tightrope walking of what you say against what you know and what you feel is the direction of the program you are working on. You have to be extremely sensitive to your becoming a public figure, not in an admiring sense, but in a sense that you must be accountable for what you say.

At Langley, I could pretty much operate as a free thinker and say what I think. I guess my reputation is that I have done that for a good part of my career. I had to learn at Headquarters that there is a lot more sensitivity because what you think often appears in print. You are answering for a number of people and an agency. You get quoted as "a senior NASA spokesman said" and that sharpens your sensitivity and matures you in a way that, I believe, is healthy. It probably changes the personality somewhat. I hope not.

Q. Were you surprised when you were selected as the Ames Deputy Director?

A. Quite frankly I was . . . I was one of many people in the agency who competed for the job . . . I had to compete in the merit promotion system and was very surprised that I was the winner. In fact, just the idea of being the Deputy Director of one of the NASA centers is just now setting in, while trying to understand the magnitude of the job and praying to God that I am capable and competent enough to carry it out.

Q. Aren't you following similar paths to Tom Young, Don Hearth and Ed Cortright?

A. As you might know, Washington has a new subway system called Metro. It has a series of blue, yellow and green lines that mark the places that you can go in the Metro system to change trains at Metro Center. They are thinking of calling the Planetary Division at Headquarters Metro Center because it is where you go to go elsewhere. People don't last there too long.

But there is a rich history that the Langley people might be interested in knowing. Cortright, Hearth, Tom Young, Oran Nicks, and now Guastaferro, all occupied the Planetary Division Director's chair over the past 12 years. Each of us moved to a senior center position after that. It speaks well of Langley employees and it speaks well of that position. As I said earlier in the discussion, it is a field that fascinates people--exploring the unknown.

Of all the things in NASA, you have a lot of charging, creative people working and I think we sensed that during what I call the "Viking spirit" that took place during the Viking days. By the way, I found that my chauvinistic view changed, that there are other things besides Viking. That view now consists of Voyager, Pioneer and other programs that are planetary. I think it is a unique group of people who have a very fascinating job, and they are charges.

I think that all the people I have talked about who have been successful, have been successful because they have had the opportunity to manage one of the better areas with a good group of people. Well, it's like becoming the coach of the Pittsburgh Steelers. It is easy to look good if you have a good team.

Q. When you transferred to NASA Headquarters, did you feel you would go on to a Deputy Director position shortly thereafter?

A. I would be less than honest to say that I have never aspired to a position higher than a division director at NASA Headquarters. There is no question in my mind that I still believe I am young enough and aggressive enough to reach beyond my grasps. So, every step I take, I constantly ask myself the question . . . "What do I want to be when I grow up?" I don't think I am there yet; so when I raise the question, I might not have been bold enough to answer myself to say something like deputy director or center director.

My moving out of Langley had a lot to do with the fact that, (a) I was going to one of the better programs, the Planetary Programs at NASA Headquarters, and (b) my aspirations were higher than that, without any specific location or position in mind, I knew that that exposure, if done well and successfully, would provide greater opportunities. I did not believe that it would happen in 18 months. I thought it would take three to four years for an opportunity to take place. I'm pleased and frankly surprised.

Q. Why is your transfer to Ames delayed for approximately six months?

A. The target date is April 5. The reason for the delay was that within the Office of Space Science . . . we had the unfortunate situation of losing our leader, Dr. Thomas Mutch, who died in an accident. Because we expect the position of Associate Administrator for Space Science to be vacant for a period of time, it was felt that my particular position should not be changed until April.

Q. What do you miss most about Langley?

A. I miss the people. I have a lot of friends here. I was here a long time and one of the difficulties of Washington that we haven't talked about is that Washington is a metropolitan area. People live within a 25-mile radius of where they work. Your group is a lot smaller; people are busy with different cultural things; the cohesiveness of your organization is not the same. It is a fun place to be eight hours a day, but the drive, the transportation and the car pools give you very little opportunity to become socially mixed with your peers. I find Headquarters people rather kind but distant. At Langley you are close to people and together at social engagements. You have the opportunity to belong to some part of a whole, rather than your own little world. I miss that part of it and I guess I miss the freedom to operate in my area by myself. At Headquarters, I have far more power and far more responsibility, but I get a lot more help in my job. There is more external pressure in terms of how you do your job, but more visibility.

Q. Do you expect to find Ames similar to Langley?

A. I'll be very disappointed if Ames isn't a lot like Langley in terms of temperament, motivation of the people, friendliness and social encounters.

Q. What was your impression of the recent Voyager encounter with Saturn?

A. Well, it was actually . . . . "mind boggling" . . . It is very, very significant in terms of man and I just believe that I am one of the luckiest guys in the world to be born at the time I was, to be educated the way I have been and to be fortunate enough to work for NASA--and have enough travel money to be there to witness it.

Q. Were the Jupiter/Saturn encounters as exciting to you as the Viking missions to Mars were to us at Langley?

A. I think the involvement is a little different. You have to keep in mind that Voyager started in 1972 when I was in the middle of Viking. So when I witnessed the Viking landing, the lump in the throat was a lot bigger and the tears in the eyes were stronger. When I say part of me went with Voyager, it was part of me in terms of the people that I love and respect. With Viking,

Continued on page 6.

Guastaferro

Continued from page 5.

eight years of my life were up there and you really feel that.

I guess if you are a football player, Viking landing was like winning the Super Bowl if that was your whole life. When you go to the Super Bowl and watch your team win, that's the kind of pride I had of Voyager, as the pride of Viking was as a player.

Q. What do scientists expect to find at Uranus?

A. They are expecting to be surprised. That I can guarantee. They are expecting to find a ring. A ring, by the way, was identified by ground telescopes very recently. We haven't been disappointed so far in any planetary adventure and we don't expect to be disappointed in our findings at Uranus.

Q. Speaking of disappointments, have you found at any time that you have been disappointed in your work or have you regretted being involved in any area?

A. I feel very fortunate that I have had a rewarding career. It really didn't start at NASA. My career in the Air Force was probably the singular event that provided me the greatest opportunity. I had the unique experience of being a 22-year-old second lieutenant in 1955 to get more responsibilities than I think are given 22-year-olds today. It halped me age very quickly and put me in all these positions of management and responsibility, probably ahead of my ability. In every position I've had, I had to work at being capable of doing the job. It put significant pressure on me in terms of believing sincerely that I was going to have to work hard to overcome my own personal deficiencies. I have felt that about every job I have gone into. Therefore, I think I got a lot of satisfaction out of being able to overcome either the real or apparent obstacles or deficiencies that were in my own mind.

Therefore, I think I got a lot of satisfaction out of being able to overcome either the real or apparent obstacles or deficiencies that were in my own mind.

The other thing that I maintained during my whole career, to the regret of my wife and family, is that I have never refused to go anywhere at any time. I have no roots. I move where the opportunities are; I follow the fruit crop. If I was a migrant worker, I'd be where the work was. In a sense, my first five years at Langley were not spent at Langley. I was at Dallas and the Vandenberg AFB (as resident engineer and Scout Project Manager at the Vought Corp. in Dallas and Langley Mission Support Office Manager at Vandenberg AFB in Lompoc, Calif.). These were very rich opportunities. Many people would not take them because the job would be compromising to the wife and family. I have just felt that that type of sacrifice was necessary for my own development. All of them have been very rich experiences and I don't regret any one of them.

That's the way I feel about going to Ames. Many people say, "With the real estate market, why go to California?" I just don't look at it that way. I don't know how I would answer myself 10 years from now to say that I had the opportunity and didn't take it . . .

Whatever advice I can offer people, if they understand what they want to be when they grow up, they shouldn't let what appears to be little things stand in the way of their own development and opportunities. You get very few of those. In each case, I haven't been disappointed. I can't think of a single job I've had where the job didn't give me more than I gave it.

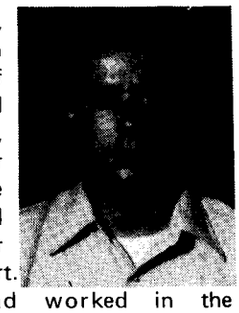
Q. What are your aspirations for the future?

A. I would say that my aspirations would be to remain flexible and to continue paths I have had before. I feel I have a decade of work ahead of me with NASA. I would like to be thought of as one of the people viable in the future of NASA. I would like to participate in its management in whatever way management feels is proper. I have no limits and I am very happy to stay as Deputy Director of Ames for the next six or seven years. But I am sure that within the next three or four years I will be doing something else.

Key Position

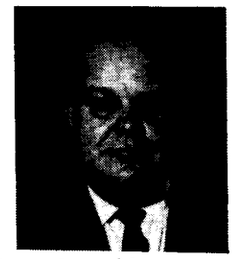
Charles R. Lewis has been selected Supervisory Engineering Technician, Models Coating Unit, Models and Materials Technology Branch, Fabrication Division, under Competitive Placement Plan 80-67.

In Memoriam



David L. Lyons, Instrument Research Division, was one of four people killed Sunday, Dec. 14, when a Piper Comanche airplane crashed in Harwood Mills Reservoir near Patrick Henry Airport.

Lyons, 35, had worked in the Instrumentation Coordination Section as an electronic technician since 1975. He came to Langley in 1964 and graduated from the Apprentice School in 1968. He worked in the Instrument Application Section (now the Optical and Pressure Measurement Section) from 1969 to 1975.

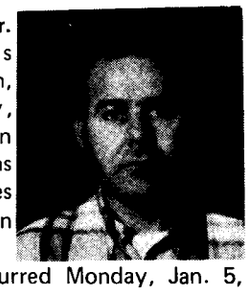


Herbert E. Boulter, Instrument Research Division, died Sunday, Dec. 28, at his home in Hampton. He was 58.

Employed at Langley as an engineering technician for 36 years, Boulter graduated from the NACA-Langley Apprentice School in 1952.

He was president of the Langley Activities Association, a member of the Hampton Recreation League and a World War II Navy veteran.

Employees wishing to contribute to the Hampton paramedics or the American Diabetes Association may do so at the Activities Office throughout January.



Dale W. Dalin, Sr. 53, Operations Support Division, died Wednesday, Jan. 7, in Hampton General Hospital, as a result of injuries received in an accident.

The accident occurred Monday, Jan. 5, during installation of a model support system in the test section of the Vertical/Short Take-Off and Landing (V/STOL) Wind Tunnel. During the routine test set-up, a large A-frame device toppled over, striking Dalin.

Dalin, a supervisory engineering technician, had worked at Langley since 1951. He was a Navy veteran of World War II.

'Langley - The Early Years - 1938-1958'

Langley Visitor Center January 19 - February 13, 1981

The Langley Visitor Center continues its journey into the past with the program, "Langley — The Early Years, 1938 to 1958." From Jan. 19 through Feb. 14, exhibits, films and speakers will tell the story of Langley's people, aircraft and research efforts during this historic period.

More than 100 photographs of such memorable aircraft as the F-82 Twin Mustang, the Grumman Goose, the F-4U Corsair and the Curtiss P-40 and such distinguished pilots as Orville Wright, "Wrong Way" Corrigan and NASA Test Pilot Jack Reeder will be featured. A video display will show highlights of Langley aeronautical efforts in the 1940s and 1950s. Exhibits on loan from the War Memorial Museum of Virginia will display World War II flight uniforms and recruitment posters.

Noontime programs on weekdays include special presentations and films on topics ranging from the development of propeller-driven aircraft during World War II to the evolution of jet aircraft and the X-15 journeys to the fringes of space. Aviation films relating to this time period will be featured on weekends.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
January 18	PROGRAM: 19 "Development Of Rocket Propelled Research Aircraft" Hartley Soule' 12:00 — 12:30 pm	FILM: 20 "X-15" Noon	PROGRAM: 21 "Flying As Test Pilot For NACA" Jack Reeder 12:00 — 12:30 pm	PROGRAM: 22 "Free Flying Radio Controlled Model Aircraft for Research" Donald Hewes 12:00 — 12:30 pm	FILM: 23 "Stalling For Safety" Noon	24 AVIATION FILMS HOURLY
25 AVIATION FILMS HOURLY	FILMS: 26 "Flight Decision" & "Hypoxia" Noon	FILM: 27 "Density Altitude" Noon	PROGRAM: 28 "WW-II and the Propeller-driven Aircraft" Lawrence Loftin 12:00 — 12:30 pm	PROGRAM: 29 "Simplified Presentation on the Special Theory of Relativity" Charles Zimmerman 12:00 — 12:30 pm	FILM: 30 "History of Aviation — PT I" Noon	31 AVIATION FILMS HOURLY
February 1 AVIATION FILMS HOURLY	PROGRAM: 2 "Flying at Supersonic and at Mach 0.0026" Robert Champine 12:00 — 12:30 pm	FILM: 3 "History of Aviation - PT II" Noon	PROGRAM: 4 "The Development of Jet Aircraft" Lawrence Loftin 12:00 — 12:30 pm	PROGRAM: 5 "Development of Free Flying Model Techniques at Langley" John Campbell 12:00 — 12:30 pm	FILM: 6 "History of Aviation - PT III" Noon	7 AVIATION FILMS HOURLY
8 AVIATION FILMS HOURLY	FILM: 9 "Medical Facts for Pilots" Noon	FILMS: 10 "Wake Turbulence" & "Disorientation" Noon	PROGRAM: 11 "The Quest for Laminar Flow: Low Drag Airfoils" Lawrence Loftin 12:00 — 12:30 pm	FILM: 12 "Aeroelastic Phenomena" Noon	FILM: 13 "History of Aviation - PT III" Noon	14 AVIATION FILMS HOURLY

Happenings

HAPPY HOUR will be held today from 4 to 6:30 p.m. in the Activities Center.

WILLIAM AND MARY BASKETBALL. The College of William and Mary is sponsoring a NASA Employees Night Saturday, Jan. 31, for the William and Mary/Navy game. Five dollar tickets will be half price at the gate when a NASA badge is presented.

DOG TRAINING CLASSES. The James-York Dog Training Association is registering new classes in kindergarten puppy training, basic and advanced obedience. For further information call 874-5706 or Garl Gentry, extension 3611.

SUPER BOWL SUNDAY. The Langley Activities Association will show the Super Bowl on the big screen in the Activities Center Jan. 25. An area will be provided at the Activities Center for family members who want to do handcrafts, read or play cards rather than watch the football game. The center will open at 12 p.m. The bar will be open and food will be sold.

SKI TRIP to Gore Mountain in New York. Gore Mountain is in the beautiful Adirondacks and has 8 lifts serving 25 ski slopes up to 2 miles long and an excellent ski school and equipment rental program for beginning skiers. This trip, Jan. 22—25, includes transportation, lodging, meals and lift tickets for a total cost of $155. The bus leaves Thursday night (Jan. 22) from mid-Newport News and returns late Sunday night. Contact Joe Drewry at 722-4443 or extension 2977.

BLOODMOBILE. The Red Cross Bloodmobile will be held Wednesday, Jan. 28, from 9:30 a.m. to 3:30 p.m. in the Activities Center, Building 1222. For more information or an appointment, call the Dispensary, extension 3976.

CALLIGRAPHY CLASSES. An introductory Calligraphy Course will begin at Thomas Nelson Community College Feb. 9. An advanced course will begin Feb. 12. Each course runs for eight weeks. Call the Office of Continuing Education at 825-2936 to enroll. Wesley Berryman is the instructor.

BINGO is played every Thursday at 7:30 p.m. in the Activities Center.

DOG TRAINING. The NASA Dog Training School will hold registration Feb. 7 for its upcoming dog obedience classes. Puppy, basic and advance classes will be offered. All dogs must have the necessary shots (distemper, hepatitis, leptospirosis, tracheobronchitis, rabies) plus the new parvo virous innoculation and be free of worms before enrolling. For time and place of the registration and further information on the classes contact Doris Bryan at 898-6273.

National Aeronautics and
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Retirement Parties

Frank E. Mershon, Research Facilities Engineering Division, will be honored with a retirement party Wednesday, Feb. 4, at the Ft. Monroe Officers' Club. A cash bar social will begin at 6:30 p.m. with dinner at 7:30 p.m. The cost, including gift, will be $9 per person. Contributions of $1 for gift only are welcome. Please make checks payable to Mary D. Henderson, Mail Stop 436, by Friday, Jan. 30.

Donald L. Loving, Flight Mechanics Division, will be honored at a retirement dinner at the Activities Center on Feb. 6. A cash bar will be held at 6:30 p.m. with dinner and program following at 7:30 p.m. The cost will be $8 per person and $15 per couple. Contribution to the gift only will be $1.50. For reservations, please call Pat West, ext. 2037 by Feb. 2.

A retirement party honoring **Stewart Burgess, Quinton C. Davis, Roy Farmer, Ted Marshall, Bill Ritosa and Kent Smith** of the Fabrication Division will be held Saturday, Jan. 24, at the Activities Center. A cash bar social will begin at 6 p.m., and a prime rib dinner will be served at 7 p.m. The cost will be $7.25 per person. Make checks payable to Earl Knight and send to Mail Stop 222B by Jan. 19.

Thanks

The Occupational Medical Center Staff, wishes to thank each of our patients who were so thoughtful to us during the Holiday Season. We wish all of you a happy and safe New Year.

Recent Retiree

George J. Magnus of the Fabrication Division retired Nov. 24.

Llewellyn Receives Shuttle Award

Charles P. Llewellyn, detailed to the Office of Director for Space since September 1979, has been presented a Johnson Space Center Shuttle Award as a member of the Space Shuttle Program Management Team.

The citation read, "With sincere appreciation for personal contributions to the development of the nation's Space Transportation System."

Llewellyn serves as the JSC/LRC liaison to help determine Shuttle support activities. He was assigned to Johnson from October 1979 to November 1980.

swap and shop

FOR SALE

Articles

Firewood: Three-quarter ton pickup load, mostly hard wood, split and delivered, $50. Call Hall, ext. 3937 or 827-2674 after 5 p.m.

Vehicles

1978 Alfa Romeo Spyder, black w/burg. int., roll bar, new top, rust proof, many extras, EC, $7,950. Call 599-4321.

FOR RENT

House in Beechwood: Three BR, DR, LR w/FP, kit. w/all appl., fenced back yard, deadend street, available Feb. 1, $350/mo. Call Northam, ext. 2803 or 238-3123 in Carrollton, Va.

LOST

One brown leather glove in vicinity of Building 1268A on Jan. 2. Call Schy, ext. 3917.

WANTED

Old data books 1970-79; National, T.I., Signetics, Linear, CMOS, TTL, Opto., Data Aq. Call Hefner, ext. 3581 or send to Mail Stop 488.

To join or form car pool from Norfolk to West Area on 7:30 a.m. shift. Call Hudgins, ext. 3072 or 587-9023, Norfolk.

Energetic, innovative persons for rewarding committee work on the Federal Women's Program Advisory Committee. Interested persons may apply at Office of Equal Opportunity Programs, ext. 3487.

Business cards to send to a 12-year-old girl who is recouperating from an operation to remove a tumor from her spine. Her mobility during this recovery period is very limited and she is collecting business cards as a hobby during this time. Cards may be sent to Bob Mayer, Mail Stop 432.

Person(s) interested in joining a car pool from the Bayside area of Virginia Beach for the 8 a.m. shift. Call Melvin Lucy, ext. 4621 or 464-5685 after 5:30 p.m.

Bingo callers for Thursdays from 6 to 10 p.m. Call Eugene Hicks, ext. 3737, for further information.

cafeteria menu

WEEK OF JANUARY 19

MONDAY: Old Fashioned Bean Soup; Spaghetti Dinner; Chicken Pot Pie; Polish Sausage. Snack Bar: Hot Italian Sausage Sub; Steak & Onion Sub; Egg Salad; Bacon, Lettuce & Tomato.

TUESDAY: Manhattan Clam Chowder; Roast Beef; Meat Loaf; Spanish Mackerel Almondine. Snack Bar: Hot Reuben; BBQ; NASA Sub; Roast Beef & American Cheese.

WEDNESDAY: Beef Noodle Soup; Roast Turkey Dinner; Braised Beef & Vegetables; Monte Cristo Sandwich. Snack Bar: Chicken Cutlet; Ham & Turkey Sub; Steak, Onion & Cheese Sub; Bacon, Lettuce & Tomato.

THURSDAY: Chicken Gumbo Soup; Sweet & Sour Pork; Broiled Beef Liver; Crab Cutlets. Snack Bar: Submariner; Ham & Cheese Club; BBQ; Roast Beef & American Cheese.

FRIDAY: Worcestered Beef & Vegetable Soup; Fish Dinner; Chicken & Dumplings; Ham Steak. Snack Bar: Deluxe Sub; Hot Roast Beef; Tuna Salad; Turkey & Bacon Club.

WEEK OF JANUARY 26

MONDAY: Ham & Lima Bean Soup; Baked Lasagna; Chicken Chow Mein; Stuffed Fresh Bell Peppers. Snack Bar: Pizza; Steak, Onion & Cheese Sub; Hot Reuben.

TUESDAY: Bull Island Clam Chowder; Hot Roast Beef Sandwich; Beef Enchiladas; Fried Filet of Fish. Snack Bar: NASA Sub; Hot Italian Sausage Sub; BBQ; Roast Beef & American Cheese.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; Veal Parmesan; Ham & Cheese Omelette. Snack Bar: Tuna Salad; Chicken Cutlet; Teriyaki Steak & Onion Sub; Bacon, Lettuce & Tomato.

THURSDAY: French Onion Soup; Braised Chicken Livers; Beef Balls Stroganoff; Knockwurst. Snack Bar: BBQ; Ham & Cheese Club; Submariner; Hot Roast Beef.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Chicken & Spanish Rice; Chopped Steak. Snack Bar: Hot Reuben; Egg Salad; Deluxe Sub; Hot Ham & Cheese.

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

Volume 20 Issue 2

January 30, 1981

Management Operations Directorate

Moore Selected Chief of the Acquisition Division

Robert R. Moore has been selected to head the Acquisition Division at Langley. He is former Associate Chief of that organization.

As Chief of the Acquisition Division, Moore is responsible for managing the center's procurement program, which totals nearly $200 million annually, and advising center management on acquisition-related matters.

Moore joined the Langley staff in January 1962 as a procurement agent. He was named Assistant Head of the Research and Development Contracting Branch in October 1973, Assistant Chief of the Procurement Division, now known as the Acquisition Division, in November 1975 and Associate Chief in November 1978.

He received a bachelor of science degree in business from Virginia Commonwealth University in 1959. He completed the program for Management Development at Harvard's Graduate School of Business Administration in 1973.

A charter member of the Hampton Roads Chapter of the National Contract Management Association, Moore was designated a certified professional contracts manager by the association in 1975. He has taught procurement and contract management courses for the University of Virginia's School of Continuing Education.

Moore and his wife, Sally, and their three sons live in Newport News.

Langley to Observe Black History Month in February

Black History Month is observed nationally during February to recognize the contributions of black Americans and to remind everyone of the nation's commitment to creating an environment wherein people of all races and colors can share the riches of this country.

Langley will observe Black History Month by hosting a special program and science exhibit in the Langley Activities Center.

The science exhibit, featuring science projects of juniors and seniors in Pure and Applied Sciences at Hampton Institute, will be on display in the lobby of the Activities Center from Feb. 9 to 13.

The Office of Equal Opportunity Programs will sponsor a program, "Minorities in Science and Technology," Thursday, Feb. 12, at 9 a.m.

Langley Deputy Director Richard H. Petersen will welcome employees and guests, and Rabbi Aryeh Weil of Adath Jeshurun Synagogue in Newport News will give the invocation.

Dr. Eugene M. Deloatch, Chairman of the Department of Electrical Engineering at Howard University, will be the guest speaker.

During his 20 years with Howard, Deloatch has had several special

Continued on page 2.

NASA Decides to Continue Voyager 2 on Path to Uranus

NASA has officially approved the continuation of Voyager 2 on a trajectory which would take it to Uranus in 1986 after flying past Saturn this summer.

Under the approved plan, the spacecraft will encounter Uranus at a distance of 107,000 kilometers (66,000 miles) Jan. 24, 1986, making measurements and taking pictures as it speeds past and heads for a possible encounter with Neptune.

The Uranus encounter will provide the world with its first close-up look at that planet. Uranus is the seventh planet outward from the Sun, twice as far from the Sun as Saturn; it rotates on its axis at a tilt of 98 degrees. It is a grim, frozen world.

The decision to fly past Uranus is, in effect, a decision to retain the present trajectory. If agency officials had decided against a Uranus encounter, then a retargeting of the Voyager 2 would have been required.

Voyager 2, launched Aug. 20, 1977, is a sister ship to Voyager 1, which recently provided a historical close-up encounter with the ringed planet Saturn. Voyager 2 flew by Jupiter in July 1979 and will encounter Saturn Aug. 25, 1981.

Voyager 1's trajectory through the solar system was selected to optimize the scientific objectives at Jupiter, Saturn

Continued on page 2.

Voyager 2

Continued from page 1.

and Titan. The path of Voyager 2 was chosen to provide a course to Jupiter, Saturn and Uranus, and perhaps Neptune. This path does not provide a close-up approach to Titan or a Saturn ring occultation which were among the goals of the Voyager 1 mission. The final decision to remain on this trajectory had to await the successful outcome of Voyager 1's close encounter with Saturn and Titan in November 1980.

Voyager 1 has achieved all of the prescribed Saturn/Titan scientific objectives. The assessment of the health of the Voyager 2 spacecraft and instruments indicates that there is a reasonable probability that the five-year journey to Uranus can be endured and a scientifically productive flyby can be achieved.

"On this basis, therefore, the decision has been made to retain the present Uranus trajectory for Voyager 2," said Andrew J. Stofan, Acting Associate Administrator for Space Science. He pointed out that retargeting of the spacecraft to provide another close Titan flyby could have been made as late as early 1981.

Credit Union Pays More Dividends

Effective January 1, 1981, the Langley Federal Credit Union changed its method of computing dividends on share draft accounts (interest checking accounts) from 7 percent quarterly to 6 percent day-in/day-out. This means in 1981 LFCU will pay over $100,000 in additional dividends to members with share draft accounts. Another plus is--members who open a share draft account before March 31 will receive 200 free drafts.

Most members with share draft accounts will receive more money using the day-in/day-out method. Members who leave surplus funds in their draft account may want to transfer those funds back to their regular share account.

Not only is LFCU's rate better than those offered by other financial institutions on interest checking or NOW accounts, but all amounts in share draft accounts receive a true 6 percent rate each day. There are no monthly service charges on share draft accounts, regardless of the number of drafts written or the balance in the account.

For more information visit one of LFCU's three branches.

– photo by Don Ward

A workshop to develop a proposal for the design, implementation and operation of a Career Development and Counseling Center was held at Langley Jan. 15 and 16. Participants in the workshop include (from left) Dr. Don G. Creamer, College of Education, Virginia Polytechnic Institute; Miriam Graddick, Bell Laboratories in Murray Hill, N.J.; Dr. Zandra Leibowitz, Career Development Center at Goddard Space Flight Center; and David W. Winefordner, Director of the Career Guidance Department, Appalachia Educational Laboratory in Charleston, W. Va. The Career Development and Counseling Center, which is scheduled to be in operation in July, will provide employees services in areas such as self-assessment, career planning, supervisory involvement in career development, mid-life transitions, career and educational options and professional counseling. Dr. Samuel E. Massenberg of the Training and Educational Services Branch is conducting a feasibility study of the Career Development Center concept.

Black History Month

Continued from page 1.

assignments in industry and has been principal investigator of numerous research grants. He has been Chairman of the Electrical Engineering Department since 1975.

Before joining the faculty of Howard University, Deloatch was a systems engineer with New York State Electric and Gas Corporation.

Deloatch received bachelor of science degrees in mathematics from Tougaloo College in Mississippi and in electrical engineering from Lafayette College of Easton in Philadelphia. He earned a master of science degree in electrical engineering and a doctorate in bio-engineering from Polytechnic Institute in Brooklyn.

Employees attending the program are to charge their time to Job Order A1599.

Earl Wins Drawing

Henry S. Earl Jr., Flight Electronics Division, won the January drawing for $20 given to a registered car pool participant by the Langley Exchange Council.

The *Langley Researcher*, as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond
Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

Ames Manager Transfers to Langley

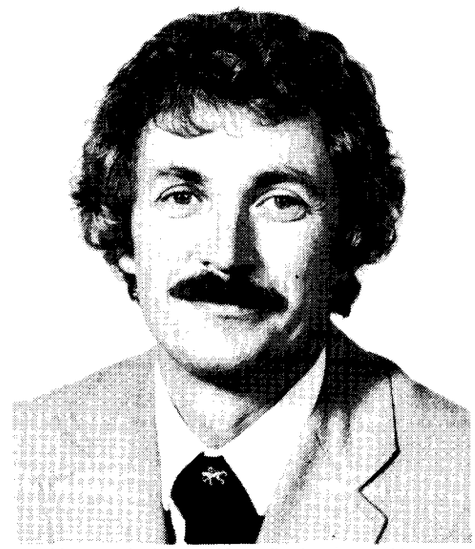
Williams Heads General Aviation Technology Office

The new head of the General Aviation Technology Program Office arrived at Langley this month. Louis (Lou) J. Williams comes from Ames Research Center, where he was chief of the V/STOL Systems Technology Branch from 1979 to 1980 and was responsible for high performance V/STOL research aircraft investigations and small transport aircraft research.

In his new position, he is responsible for overall program planning, conducting system studies to identify technology benefits and requirements, and serving as a Langley focal point for general aviation research.

The General Aviation Technology Office is one of four vehicle systems offices within the Aeronautical Systems Division, representing Langley's role as lead center for vehicles (the other offices are Advanced Military Technology, Subsonic Long-Haul Technology and Advanced Supersonic Technology).

Williams joined NASA in 1965 after working at the University of Washington Aeronautical Laboratory and Boeing while obtaining bachelor's and master's degrees in aeronautics and astronautics there in 1963 and 1964. From 1965 to 1971 he worked at Ames conducting aerodynamics, thermodynamics, and conceptual computer design studies of transonic and hypersonic transport aircraft and launch vehicles. During 1972 he worked in the NASA/DOT Joint Office of Noise Abatement in Washington, D.C., performing systems analysis of alternative aircraft noise abatement options. Following this assignment, he returned to Ames to conduct research into aircraft noise, energy efficiency, and advanced turboprop aircraft. During 1975 he served on the NASA Fuel Conservation Task Force that led to the Aircraft Energy Efficiency (ACEE) Program.



He and his wife, Catherine (Katey), have three children: a son, Daniel, 7 years old, and twin daughters, Rachel and Rebecca, 1-1/2 years old.

Saturn Encounter, Computer Graphics

Topics of Two Langley Colloquiums

An up-to-date report on the Voyager I encounter with Saturn and a discussion of the use of computer-aided graphics for engineering design and analysis are the topics of two Langley colloquiums to be held in February at the Activities Center.

On Monday, Feb. 2, Dr. Geoffrey A. Briggs, Deputy Director of NASA's Solar System Exploration Division at NASA Headquarters, will discuss "Results from the Voyager I Encounter with Saturn." On Monday, Feb. 9, Dr. Joel N. Orr, President of Orr Associates, Inc., Danbury, Conn., will speak on "Computer Graphics and Facility Design."

Both colloquium talks, illustrated by slides, will begin at 2 p.m. and will include time for questions and informal discussion.

Last November's Voyager I encounter with Saturn has transformed the state of scientists' understanding of the Saturian system in the same way that earlier encounters with Jupiter changed their thinking about that planet and its moons.

Close-up photographs reveal that Saturn's brilliant ring system consists not of a few broad rings but of innumerable individual rings whose complex structure is not yet understood. Other baffling characteristics of the rings have been discovered, including dark radial "spokes" that are rotating about Saturn in an entirely different fashion from the individual orbiting particles that make up the rings themselves.

The moons of Saturn belong to a different class of objects from the Galilean satellites of Jupiter: they possess a range of characteristics whose diversity is presenting challenges to planetary geologists.

Briggs will discuss the data received from preliminary analysis of the dozen Voyager investigations. Briggs, who was a member of the Mariner 9, Viking Orbiter and Voyager imaging teams working on the scientific staff at the Jet Propulsion Laboratory, thinks the results that have become available immediately demonstrate that the Voyager encounter with Saturn will command a significant place in the history of science and exploration.

Orr's presentation will show how computer-aided graphics can be used as a tool for architects, engineers, planners and managers.

Orr has worked for private industry, metropolitan government and as a free-lance consultant. In 1976 he formed Jerusalem Systems, now known as Orr Associates, Inc., a firm which specializes in advisory and consulting services in computer graphics.

He is the author of "The Computer Graphics Extravaganza," a videotape series and workbook on business graphics and, soon to be published, "A Manager's Guide to CAD/CAM" and "A Manager's Guide to Business Graphics." He is on the Seminar Staff of Harvard University's Laboratory for Computer Graphics and Spatial Analysis and is editor and a member of the board of directors for the National Computer Graphics Association.

Key Position

Kenneth H. Crumbly has been appointed Acting Head of the Project Planning and Control Office, Projects Management Systems Division. This appointment will be in effect until a selection has been made through the Competitive Placement Plan to fill the vacancy.

Personnel Profiles

Life in the Fast Lane

– by Allan C. Hanrahan

A. WAYNE RICHARDSON is a runner. He is many other things as well: husband, father, center employee--just as are many of his co-workers. But like everyone else he has those qualities or characteristics or interests that set him apart--his job for one thing.

Richardson is a Security Specialist in the Security Office of the Personnel Division and is known primarily as the resident locksmith here at the center where he began in February 1962 as a clerk in the Property Control Branch. One of his duties was making keys and from that grew his interest in locksmithing, helped along later by correspondence courses on the subject, taken at his own initiative, to the point where NASA sent him to a school in Indianapolis. But Wayne was quick to give credit to those fellow employees, some retired, who helped and encouraged him along the way.

Of course, that is in character for this Virginia product from Deltaville, up in Middlesex County, who grew up in Hampton and graduated from the high school of that name in 1959. A polite and well-mannered gentleman, he is prompt to pass credit on to others.

Take running for example; Wayne very soon pointed out he is certainly not the best of the many serious runners among the workforce at the center. But he is a long way from being the slowest--or the least enduring--when you learn he has run the marathon in three hours and thirty-three minutes, only twenty-three minutes longer than the time he needs to qualify as an "official" runner in the famous Boston Marathon--his goal of next April.

"I'm confident I can make the time," stated Wayne when talking of his plans. "I'm running in the Shamrock Marathon in Virginia Beach in March and that time in the Shamrock will qualify me for Boston."

What is remarkable about Wayne's running, at least to this writer, is the fact that the first time I saw him he was walking with a cane. It was learned that was a result of his feet being frozen while he was serving in the Navy after graduation from high school. Operations enabled him to walk, but painfully, and for six years with the help of a cane. Time and determination helped him put the cane away some years ago. When I saw him last he was running. Wayne has a training schedule set for himself:

"I run five or six miles a day," he related, "and in all run about fifty miles a week. I am going to do more twenty-mile runs," he added, ". . . and I'm going to run several races to get ready for the Shamrock."

(As we learned, and as any serious runner hereabouts already knows, a number of races or running events are held in the area each year.)

The marathon, a twenty-six mile, three-hundred-and-eighty-five-yard foot race, had its beginning when a man named Pheidippides ran from Marathon to Athens to carry news of the Greek victory over the Persians in 490 B.C.

Supposedly it is a grueling experience and very painful toward the end, so we asked Wayne how it felt--and later, why he does it.

"Last year, in the Shamrock, at eighteen miles it was a piece of cake but later, well, it's painful, it really is. It bothers me most at twenty-two miles and there is pain the last four miles."

Why does he run?

"I do it now because it is fun and I enjoy it," he answered. "And I can eat anything I want," he laughed. "But seriously, I do it for my health--and

because I enjoy it too."

He agreed that marathons themselves are not exactly pleasant but stated, "You do have a feeling of accomplishment when you finish."

As for day-to-day workouts he echoed the sentiments of other runners when he reported "You get the 'blahs' when you don't run for three or four days. And you know, you meet so many nice people running--really neat people. There is a good fellowship among them."

Life is not all running for this well-liked individual, however. As stated early in this piece he is a husband and father. His wife, Pat, is a native of Phoebus and is Secretary for the Bethel Baptist Church in Tabb where Wayne and Pat are members, as are their daughters, Sally, a thirteen-year-old eighth grader at Tabb Intermediate, and Jane, an eighteen-year-old who is much missed since she left in September for her freshman year at Bluefield College.

Wayne has served as a Deacon at Bethel Baptist as well as a leader of the Royal Ambassadors, an activity in the Baptist Church for boys. Some of their activities included back-packing and canoe trips to such locales as the Shenandoah River, which Wayne described as "a beautiful trip."

In addition to the camping and outdoor activities Wayne enjoys sedentary pursuits such as woodcarving. "I like to do that," Wayne admitted.

But he added that running now occupies much of his spare time. After all, come this March the "Shamrock" waits at Virginia Beach. If he succeeds there, Boston is waiting in April, along with the butterflies in his stomach as he

Continued on page 5.

Fries to Teach Financial Planning Course

"Personal Financial Planning" will be offered again at Langley after working hours and at the employee's expense, beginning Feb. 26.

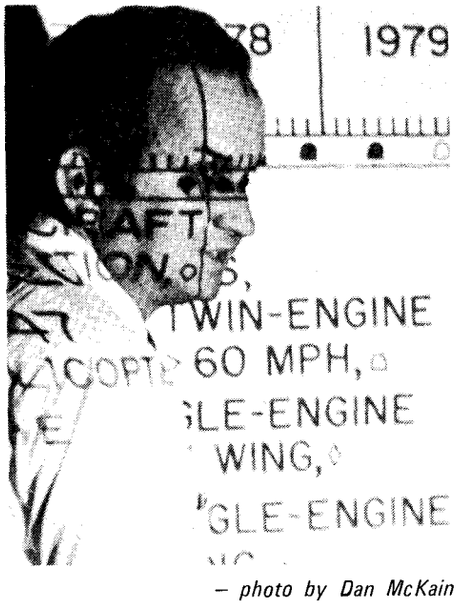
The class will meet in Building 1194-A, Room 203/4, on Thursdays for eight weeks, from 4:45 to 7:15 p.m. Tuition will be $40 and students will be expected to purchase their textbook, "The New Money Dynamics," by Venita Van Caspel. Textbooks will be available the first night of class.

Instructor for the class will be Malcolm G. Fries, a certified financial planner. He has a bachelor of arts degree in political science and a master of science degree in business management. In addition to this course, Fries has taught "Principles of Insurance," "Estate Planning," "Tax Shelters" and "Real Estate as an Investment." He was one of the speakers at the Pre-Retirement Seminar held here in September 1980.

The following topics will be covered during the eight-week course:

- Session 1 - Introduction to Financial Planning: confidential data sheet, monthly cash flow, document checklist.
- Session 2 - Setting Goals--where are you, where are you going and how do you get there? Review and analyze cash flow, summarize data sheet, relation of income to inflation and taxes.
- Session 3 - Investing Versus Savings: An infallible way to invest?
- Session 4 - Investing in Real Estate and Energy and Income Versus Taxation--Changes in TRA 76 and 78.
- Session 5 - Risk Management and Life Insurance.
- Session 6 - Casualty Protection and Planning for Retirement.
- Session 7 - Estate Planning.
- Session 8 - Developing a Financial Plan.

Employees interested in enrolling in this course should call Eloise McGehee, Training and Educational Services Branch, ext. 2611.



– photo by Dan McKain

He's either covered up by his work or illuminated by it or both, but in any event, Dr. Robert G. Thomson, head of the Impact Dynamic Research Facility, is captured here in the act of explaining what is going on beneath the towering crash gantry. The IDRF recently took delivery of some 90-foot-long beams, which in about four months will be erected for use as a drop tower, where sections of large transports can be crashed for safety studies.

CNC Courses Offered

The following courses will be offered by Christopher Newport College in the Spring Semester 1981:

PHYS 122 Intro to Engineering Design (2)
W 5–6:30 p.m.
PHYS 302 Mechanics of Solids (4)
TR 5–6:15 p.m.
PHYS 395A Solar Heaters (2)
M 5–7 p.m.
PHYS 395C Thermodynamics (3)
MW 7–8:15 p.m.
PHYS 362 Materials Science (3)
MW 2–3:15 p.m.

For additional information on these courses, contact Dr. George Webb at 599-7082.

Life in the Fast Lane

Continued from page 4.

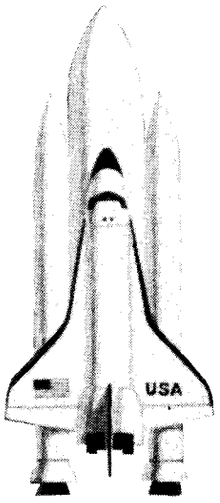
begins that marathon from a place called Hopkinton Green. At almost seven miles into the run he will pass the train station at Framingham, followed by Natick and the Wellesly check point at nearly fourteen miles. Next will come the Woodland check point at seventeen-and-a-quarter miles followed by "Heartbreak Hill," Cleveland Circle, and Kenmore Square before he swings down Commonwealth Avenue where he may be akin to the last lines of a poem by David Jeddie Smith:

> *"... as you strain sensing the end just trying to get one foot in front of the other and go on sing for air, for more air."*

And then, entering the garage at the Prudential Center, he will have prevailed. He will have run the Boston Marathon.

You can do it, Wayne.

Space Shuttle Update



NASA's Space Shuttle Columbia is on the launch pad at the Kennedy Space Center undergoing tests before its scheduled March 17 launch.

Several tests were recently conducted in preparation for the launch. On Jan. 17, the final firing of the test engines took place at the National Space Technology Laboratory, Bay St. Louis, Miss. A full-scale simulation of the Shuttle's first flight was conducted Jan. 20 through 22 at the Johnson Space Center with astronauts John W. Young and Robert L. Crippen.

"Tanking" tests were conducted at KSC on the Shuttle's fuel tanks. The tests included loading liquid hydrogen and oxygen into the fuel tanks as engineers checked for leaks in the tanks and other fuel lines on Columbia.

The Shuttle is scheduled to undergo a flight readiness firing of its engines on the launch pad Feb. 10.

Key Position

Kenneth N. Cole has been selected Assistant Chief of the Operations Support Division, under Competitive Placement Plan 80-42.

Langley Activities Association

Executive Board and General Assembly Elected

The Langley Activities Association Executive Board and General Assembly have been elected for 1981.

Members of the Executive Board are:

President	J. Ross Phillips
Secretary	Frances E. Sabo
Treasurer	William E. Sanders
Chairman of Building & Grounds	Thomas J. Yager
Chairman of Social Committee	D. Eugene Hicks
Chairman of Activities Committee	Ernest L. Greene
Chairman of Arts & Crafts Committee	Beverly J. Anderson
Chairman of Children's Committee	Dana J. Morris

The following delegates will represent their divisions:

Debbie W. Ridley, Office of the Director; **Pamala J. Hucks**, Office of the Director for Systems Engineering and Operations; **Velma R. Martin**, Aeronautical Systems Division; **Frank Thames**, Subsonic-Transonic Aerodynamics Division; **Noel A. Talcott**, High-Speed Aerodynamics Division; **Betty Farmer**, Analysis and Computation Division; **Rudy Segura**, Flight Electronics Division;

Michael Mitchell, Instrument Research Division; **Kevin Barnes**, Flight Dynamics and Control Division; **Donna Speller**, Space Systems Division; **William G. Witte, Jr.**, Marine and Applications Technology Division; **James H. Siviter**, Atmospheric Environmental Sciences Division; **Barbara Fryer**, Acoustics and Noise Reduction Division;

Catherine Bigelow, Materials Division; **John Cline**, Loads and Aeroelasticity Division; **Wendell K. Belvin**, Structural Mechanics Division; **Patricia Cooke**, Projects Directorate; **William Alexander, Jr.**, Systems Engineering Division; **Betsy Burton**, Research Facilities Engineering Division; **Donna Thibodeau**, Plant Engineering Division;

Bruce D. Little and **Mark S. Lindsey**, Fabrication Division; **James S. Post, Jr.** and **Robert H. Huffman, Jr.**, Operations Support Division; **Fred Jones**, Scientific and Technical Information Programs Division; **Suzanne Scarborough**, Personnel Division; **Ruth E. Young**, Acquisition Division; **Claude R. Watts, Jr.**, Management Support Division; **Mary Ann Morris**, Financial Management Division; and **Pat West**, Flight Mechanics Division.

Aerospace Penpoints
by Wesley Berryman

Some people come up with half-baked ideas and call them theories. Whitcomb comes up with a brilliant idea and calls it a rule of thumb.

Adolf Busemann

If you have a favorite famous quotation, or one of your own, that you would like to see in Aerospace Penpoints, send it to Wesley Berryman, M.S. 426.

Dogs Suffer from Cold Weather

While many people are bundling up for the cold weather, dog owners should not forget their canine companions.

The following helpful hints for protecting your dog from the cold are offered by the NASA Dog Training School.

- For dogs that live outside, the dog's house should not face the north. The house should be elevated, dry, draft-free and have straw bedding.
- Frequently check the dog's water for freezing. Lack of water due to ice can create kidney problems.
- The dog's food serving should be increased 1/3 to 1/4 and have a greater than normal fat content.
- Be sure to moderately exercise the dog. However, extremely cold air may cause hemorrhaging in the dog's lungs.
- Ice should be kept from between the dog's foot pads and watch for cut pads from ice or frozen, broken weeds.
- For dogs that live inside, owners should avoid exposing the animal to cold temperatures for an extended period of time.
- If a dog is extremely cold or frostbitten, the dog should be taken inside and warmed as quickly as possible. Give the dog small amounts of water, be sure the kidneys are functioning and keep dry, free of draft and quiet for a few days.

Langley Finishes Third in Intercenter Meet

Langley had its best intercenter meet finish in years in the 10th Intercenter Meet held in November.

Langley finished third behind Johnson Space Center and Ames Research Center, respectively, in the 10,000-meter event and fourth behind Johnson Space Center, Ames Research Center, and Goddard Space Flight Center, respectively, in the 2-mile event.

The 2-mile distance was either run or walked by 11 women and 94 men, while four women and 49 men covered the 10,000 meters. This was the largest participation ever for Langley and came despite the fact that total NASA-wide participation (728 in 2-mile; 349 in 10,000 m) decreased due to the late date.

Not only did quantity improve, but so did quality for many runners who set personal records during this meet. It was the combination of these two factors that moved Langley up since both participation and speed are counted in the scoring. Although all participants cannot be listed, we have included below the names of those who finished in the top 11 in their age groups.

If a runner placed in both events, the numbers in parentheses are his position for the 2 mile and 10 Km, respectively.

Rich Booth (10,4), Bob Foulkes (3,1), Earl Dunham (6,5), John Hoppe (8,6), Larry Spencer (9 in 10 Km), Jim Fields (10 in 10 Km), Don Humes, (3,2), Al Graham (6,3), Ed Williams (6 in 10 Km), Ray Haynes (10 in 10 Km), Jim Robinson (6,5), Joe Kubalak (1,2), Frank Mershon (4 in 10 Km), Harry Carlson (2,5), Hal Crane (11 in 10 Km), Bill Scallion (8 in 2 mile), Stephanie Vay (6 in 2 mile), Dianne Stewart (10,9), MaryAnn Smith (11 in 10 Km), Pay Rarig (4,9), Karen Sage (7 in 2 mile), Dana Morris (11 in 2 mile), Nancy Hess (2 in 10 Km).

Obeck Named Visitor Center Director

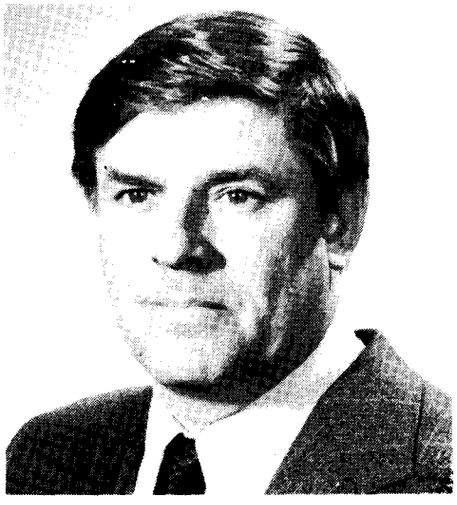
Gary F. Obeck has been named Director of the Langley Visitor Center.

Obeck comes to the Visitor Center after a 20-year Air Force career in management, program development, administration and training. He said he sees his new position as "a challenge to orchestrate and implement the already planned significant changes to exhibits and programs," and is enthusiastic about the facility's ability to tell the NASA story to the public.

"What NASA is doing at Langley and elsewhere is trememdously exciting," he said, "to both scientists and the general public. The problem is that many lay people don't know about Langley and other NASA research."

Obeck received a bachelor's degree in business management from St. Joseph's College and a master's degree in management from Central Michigan University. Active in community affairs, he serves on the Board of Directors for the Hampton Girls' Club and is a member of the Hampton Kiwanis Club.

Obeck and his wife, Johanna, live in Hampton with their four children. Mrs. Obeck is a professional artist who is noted for her oil paintings of waterfowl.



Happenings

SKI TRIPS are planned for Thursdays, Feb. 5 to Homestead; Feb. 12 to Wintergreen; Feb. 19 to Bryce Mountain; and Feb. 26 to Massanutten. The cost of each trip is $31 ($5 less with own equipment). A bus will depart Newmarket South (in front of Hechingers) at 5 a.m. and return there by 9:30 p.m. A check should be made payable to Richard Bennett and sent to him at Mail Stop 397 or 11 Bosch Lane, Newport News, VA 23606. Please specify the date you wish to ski. For further information, call 599-6293.

HAPPY HOUR will be held today from 4 to 6:30 p.m. in the Activities Center.

NASA EMPLOYEES NIGHT will be held tomorrow at William and Mary Hall for the basketball game between W&M and Navy. Tickets will be $2.50 upon presentation of a NASA badge. Doors open at 6 p.m. and the game begins at 7:30 p.m.

THE WALT DISNEY FILM, "20,000 Leagues Under the Sea," will be shown in the Activities Center Sunday, Feb. 8, at 3 p.m. Admission is 75 cents. Sandwiches and snacks will be sold.

VALENTINE DANCE. The LAA will sponsor a Valentine Dance Saturday, Feb. 14, from 9 p.m. to 1 a.m. in the Activities Center. Music will be provided by "Harvest." The cost will be $10 per couple, setups included; BYOB. Tickets are on sale at the Activities Office.

SPECIAL PROGRAMS are offered throughout the year by the College of William and Mary. Among the programs offered include auto tune-up and repair, career development, managing stress, writing, photography, celestial navigation, parent effectiveness, historic studies, psychology and labor and technology. Most courses are tuition free to citizens over 60. For registration, free lecture tickets or spring catalogues, call 877-9231, ext. 64 or 60.

BINGO is played every Thursday at 7:30 p.m. in the Activities Center.

In Memoriam

William R. Harris Jr. of the Operations Support Division died of a heart attack Tuesday, Jan. 13. He was 44.

A native of Hampton and a lifelong Peninsula resident, Harris had worked as an engineering technician at Langley since January 1961. He served in the U.S. Coast Guard from 1955 to 1959.

Thanks

James M. Michael writes, "I wish to take this opportunity to express my deepest appreciation to my many friends, coworkers and especially those who worked so hard to make my recent retirement party an occasion that I cherish and will always remember. I was deeply moved by all who attended and by the many salutations, mementos and gifts that were bestowed upon me. Thank you all and God bless you."

Carl A. Raiford thanks the NASA employees who gave blood in his name during the November 26 visit of the Bloodmobile.

Wiliiam H. Lane would like to thank all the employees who so generously donated blood in his name during the Bloodmobile Nov. 26.

Science Academy Calls for Papers

The 1981 annual meeting of the Virginia Academy of Science will be held on May 12–15, at Old Dominion University in Norfolk.

The presentation of papers in the Aeronautical and Aerospace Sciences Section is scheduled for Thursday, May 14. A special lecture on "Snapshots from Voyager" will be delivered by Cary R. Spitzer, Flight Electronics Division.

Papers in all areas of Aeronautics and Space Science and Technology are invited. Brief abstracts including author(s), affiliations and mailing addresses should be sent to Dr. D. M. Rao, Mail Stop 287, before March 6. For additional information call Dr. Rao, ext. 3711.

Tennis Club Elects Board

The Langley Tennis Club has elected the following members to serve on the Board of Directors for 1981:

Burnell McKissick, President; Bob Schmitz, Vice-President; Jay Lambiotte, Secretary; M. Charley Bryant, Treasurer; and Evelyn Myers and George Lawrence, Board members.

National Aeronautics and
Space Administration

Langley Research Center
Hampton, Virginia
23665

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Retirement Parties

Betty C. Quigley, Research Facilities Engineering Division, will be honored with a retirement buffet luncheon on Wednesday, Feb. 11, at 11:30 a.m. at the Langley Activities Center. The cost, including gift, will be $5.50 per person. Contributions of $1 for gift only are welcome. Please make checks payable to Mary D. Henderson, Mail Stop 436, by Friday, Feb. 6.

A retirement party honoring **William Haywood** of the Flight Electronics Division will be held on Friday, Feb. 20, at the Activities Center. A cash bar social will begin at 6:30 p.m. and a prime rib dinner will be served at 7:30 p.m. The cost will be $8.25 per person and $15.50 per couple. Contributions to the gift only will be $1. Make checks payable to Frank Hill and send to Mail Stop 477 by Feb. 10.

A retirement party honoring **Robert R. Howell**, National Transonic Facility Project Office, will be held Tuesday, March 3, at the Fort Monroe Officers' Club. A cash bar social will begin at 6 p.m. with a dinner at 7:30 p.m. The cost, including gratuity and gift contribution, will be $10 per person. Contributions for gift only are welcome. Make checks payable to Blanche H. Fout and send to Mail Stop 267 by Feb. 17.

Thanks

George O. Brooks wishes to express his gratitude for the retirement dinner held in his honor on October 24. The well wishers in attendance made this event a very special one which will long be remembered. Special thanks go to Gary Evans, Coefield Silver and Otis Artis of the Plant Engineering Division and all those connected with planning the program.

swap and shop

FOR SALE

Articles

Firewood: Three-quarter ton pickup load, mostly hard wood, split and delivered, $50. Call M. Hall, ext. 3937 or 826-2674 after 5 p.m.

Honey: Local extracted, light or dark, $3 per qt. Call Harvey, ext. 2576.

Hamilton auto-shift drafting board w/ref. desk; six spline weights; draftsman pencil sharpener; misc. drawing equipment; chair. Call Githens, 723-5324.

Frigidaire washing machine, works fine, ideal for cottage or summer place, $50. Two Oldsmobile wire wheel covers for 15-inch wheel, $40 each OBRO. Call ext. 4659 or 838-6923.

Vehicles

1978 Alfa Romeo Italian conv. sports car, balck w/burg. int., rust proof, roll bar, many extras, EC, $7,450. Call 599-4321.

Boat: Neopreme-coated cloth, one four-man boat, $50; one six-man boat, $80, never used. Contact Kent, ext. 3095 or 420-8391.

1979 Chrysler Newport, 4 dr., maroon, AM/FM stereo, rear defrost, cruise control, full power, all options, AC, less than 4,000 miles, thermo-guard windows, one owner, plush interior, must sell, $6,500 OBO. Call Jackson, 723-0977.

1978 Mustang Mach I, V-8, T-top, many extras, $200 and take over payments. Call ext. 3139 before 4:30 p.m.

FOR RENT

Sandbridge: cottage, 4 BR, AC, phone, liv.-kit.-din., one-half block from ocean, $400/wk. Call Kent, ext. 3095 or 420-8391.

FOUND

Brown reading glasses in black leather case in parking lot of Building 1267; black leather gloves near Library, Building 1194. Call Security, ext. 2452.

Bracelet in Building 1219. Call Mary Mesic, ext. 3395, to identify.

One Key (hotel type). Only identification #10. Found in Visitor Center parking lot adjacent to Building 1299. Call Phillips, ext. 2198.

WANTED

Ride to West area from Denbigh (Colony Road) on 8 a.m., shift; will pay. Call Gail Dawkins, 874-5379 after 5 p.m.

Old data books 1980-79: National, T.I., Signetics, Linear, CMOS, TTL, Opto., Data Aq. Call Hefner, ext. 3581 or send to Mail Stop 488.

cafeteria menu

WEEK OF FEBRUARY 2

MONDAY: Old Fashioned Bean Soup; Spaghetti Dinner; Chicken Pot Pie; Beans and Franks. Snack Bar: Hot Italian Sausage Sub; Steak & Onion Sub; Egg Salad.

TUESDAY: Manhattan Clam Chowder; Roast Beef AuJus; Polish Sausage; Spanish Mackerel Almondine. Snack Bar: Hot Reuben; BBQ; NASA Sub.

WEDNESDAY: Beef Noodle Soup; Roast Turkey Dinner; Braised Beef & Vegetables; Monte Cristo Sandwich. Snack Bar: Chicken Cutlet; Steak, Onion & Cheese Sub; Bacon, Lettuce & Tomato.

THURSDAY: Chicken Gumbo Soup; Meatloaf; Fish Kabob; Sausage Pizza. Snack Bar: Ham & Cheese Club; BBQ; Teriyaki Steak & Onion Sub.

FRIDAY: Worcestered Beef & Vegetable Soup; Fish Dinner; Chicken & Dumplings; Beef Tips over Rice. Snack Bar: Deluxe Sub; Hot Roast Beef; Tuna Salad.

WEEK OF FEBRUARY 9

MONDAY: Ham & Lima Soup; Baked Lasagna; Chicken Chow Mein; Salisbury Steak. Snack Bar: Hot Italian Sausage Sub; Steak & Onion Sub; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Hot Roast Beef Sandwich; Ham & Cheese Omelette; Fried Filet of Fish. Snack Bar: Hot Reuben; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; Fresh Eggplant Parmesan; Beef Enchiladas. Snack Bar: Chicken Cutlet; Steak, Onion & Cheese Sub; Bacon, Lettuce & Tomato.

THURSDAY: French Onion Soup; Braised Chicken Livers; Beef Balls Stroganoff; Knochwurst Reuben. Snack Bar: Ham & Cheese Club; BBQ; Teriyaki Steak & Onion Sub.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Ham Steak; Chopped Steak. Snack Bar: Deluxe Sub; Hot Roast Beef; Tuna Salad.

Suggested topics for Langley Colloquium Series. Send them to Spitzer, Mail Stop 472.

4-cylinder Willys engine in good condition. Call Costen, 826-0938.

Copies of "Software Practice and Experience" magazine. Due to improper identification on the mailing labels, the Programing Techniques Branch, ACD, is missing two volumes (May and October 1980) of the magazine. If anyone has received these by accident, please send them to Mail Stop 125A.

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

Volume 20 Issue 3

February 13, 1981

Electronics Directorate

Johnson New Instrument Research Division Chief

David R. Johnson, Technical Assistant to the Director for Electronics, has been selected as Chief of the Instrument Research Division.

Pending formal approval from the Office of Personnel Management, Johnson will be responsible for planning and implementing a broad instrument research, development and application program to support Langley's present and future measurement requirements.

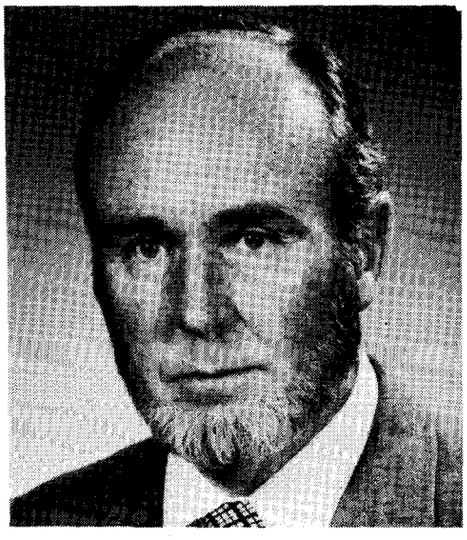
Johnson joined the Langley staff in 1953 as an engineer in IRD, where he conducted research in aeronautical instrumentation. He became Head of the division's General Mechanical Instrumentation Section in 1959 and Head of the Electro-Mechanical Instrumentation Branch in 1963.

In 1974 he became Technical Assistant to the Director for Electronics, helping manage a wide variety of activities in electronics for aeronautical and space applications, computation and simulation, and research facility instrumentation.

Before joining NASA, Johnson served in the U.S. Air Force from 1951 to 1953 and in the U.S. Navy from 1944 to 1947.

A native of Hampton, Johnson graduated from Hampton High School in 1943. He received a bachelor of science degree in mechanical engineering from North Carolina State University in 1951.

Johnson and his wife, Nancy, live in Newport News. They have two children.



Raper Chosen for Senior Executive Fellowship

Harvard University will have a Langley manager on campus for the next several months as NASA's representative in the Program for Senior Executive Fellows.

James L. Raper, Assistant Head of the Experiment Analysis Branch,

Atmospheric Environmental Sciences Division, won NASA's endorsement to participate in the executive education program of the John F. Kennedy School of Government, following an agency-wide competition. He began the 13-week public management course Feb. 7.

The Program for Senior Executive Fellows, developed by Harvard after the passage of the Civil Service Reform Act of 1978 and its creation of the Senior Executive Service, is an intensive course for those in the federal government who are preparing for, or have recently assumed, positions of significant managerial responsibility. It was first offered in September 1980.

The program is offered to help meet the federal government's need for a corps of top career managers, highly trained and motivated, with broad experience in the implementation of government policies and programs. It is especially designed to build management skills among members of the career service, which is responsible for programs extending through successive generations of agency and national leadership.

Raper joined the Langley staff in 1959 as an engineer conducting research in configuration aerodynamics. He was a member of the Project Mercury Beach Abort Team from 1959 to 1960, Manager of Project RAM Vehicle from 1964 to 1966 and worked on the Apollo heat shield from 1964 to 1966. He was named Assistant Manager of the Reentry F Project in 1966 and Manager of the Viking Deceleration Project in 1969, responsible for testing and qualifying the Lander parachute system. He was appointed Manager of Advanced Mission Studies in 1973.

He served a one-year special assignment at NASA Headquarters as Assistant Chief of Environmental Quality Programs from 1977 to 1978.

In 1978 Raper returned to Langley as Assistant Head of the Experiment Analysis Branch, where he assists in directing and managing the Earth

Continued on page 2.

– photo by Bob Nye

Edward C. Durham (center), Operations Support Division, receives a certificate of merit and congratulations from Earl F. Stahl, Chief of OSD. Durham received recognition for two awards earned while he was attending a Dale Carnegie course on personal development: a personal progress award and the highest award for achievement, both of which were voted to Durham by his fellow class members. Shown on the right is O. Earl Shortt, Head of Technical Support Section D, OSD.

Peninsula Engineers Week Activities Set

To acquaint Peninsula residents with the work of engineers and honor a local outstanding member in the engineering field, the Peninsula Engineers Week Committee has scheduled several activities in association with National Engineers Week, Feb. 22 through 28.

During the week, Peninsula engineers will give demonstrations and talks Feb. 23 through 27 to area junior high and high school students on engineering, including how to prepare for an engineering career.

On Feb. 24, area high school seniors who have shown an interest in engineering will take part in "Career Day" from 9 a.m. to 2 p.m. at Langley. Career Day, which is designed to expose students to different engineering fields, will include talks by cooperative education students, a tour of Langley's facilities and discussions with engineers in various disciplines.

Engineering Week will conclude with a dinner/dance beginning at 6 p.m., Feb. 28, at the Langley Air Force Base NCO Club. The night's activities include the presentation of the Peninsula Engineer of the Year Award. The guest speaker for the evening is Dr. Paul Torgersen, Dean of Engineering, Virginia Polytechnic Institute, Blacksburg, Va.

Raper

Continued from page 1.

Radiation Budget Experiment, which will be on three satellites from late 1983 through early 1987, and he directs the Langley Climate Research Program.

Raper received a bachelor of science degree in mechanical engineering from North carolina State University, graduating with honors in 1959, and a master of science degree in administration from George Washington University in 1970.

He and his wife, Betsy, live in Newport News. They have a son and a daughter.

Thanks

Harry W. Compton writes, "I consider working with the people of both NACA and NASA a rare and memorable experience. Also, I want to thank you for tolerating me during recovery from my little scare."

Career Day Scheduled at Langley

Peninsula high school seniors will converge on Langley Feb. 24 to take part in the seventh annual "Career Day," held in association with National Engineers Week.

The purpose of the week is to acquaint the public with the work of engineers and to honor outstanding members of the profession.

Approximately 480 seniors who are interested in engineering will take part in the 9 a.m. to 2 p.m. program designed to expose students to different engineering fields.

The program will open with comments by Langley Director Donald P. Hearth, followed by a panel discussion on cooperative education by engineering co-op students from Langley and the Newport News Shipbuilding and Dry Dock Co.; a tour of several research facilities at Langley; and individual meetings with representatives from area engineering societies.

Speakers Bureau

Jim Arrington spoke about the Space Shuttle Jan. 22 at the Norfolk Naval Air Station.

Roger Hathaway talked to kindergarten students at Booker T. Washington School about air and space travel Jan. 27.

Ira Abbott spoke to members of the American Meteorological Society Jan. 15 and to the Fox Hill United Methodist Men's Club Jan. 19 on the Tech House.

Cary Spitzer discussed planetary exploration Jan. 20 at the Middle Peninsula Plantation Club meeting and Jan. 21 at Hines Intermediate School.

Herb Hendricks addressed members of the Institute of Electrical and Electronic Engineers Jan. 20 on fibre optics.

The *Langley Researcher*, as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond
Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

Revised Forms Available from Stock

The following forms have been added or revised and are now available from Stock:

Langley Form 2	"Forms Supplies Requisition"	Rev. January 1981
Langley Form 60	"Material Certification" (New Form)	January 1981
Langley Form 109	"Report of Visit of Foreign Nationals or Registered Aliens to Langley Research Center"	Rev. January 1981
Langley Form 165	"Work Order & Shipping Memorandum"	Rev. October 1980
Langley Form 180	"Purchase Request/Purchase Order Cancellation Form" (New Form)	October 1980
Standard Form 1012	"Travel Voucher"	Rev. November 1980

Previous editions are obsolete. If you have any questions regarding forms, please contact the Forms Management Office, ext. 3511.

Attention

NASA Employees Formerly Employed by Aerospace Contractors

The Personnel Division has been advised by NASA Headquarters that NASA employees formerly employed by certain aerospace contractors are required to submit a report containing information specified under existing law. Personnel who were formerly employed by certain aerospace companies are required to file such a report with Personnel Records, Mail Stop 174A by February 15, 1981, if they also meet the following criteria:

- Employment with the aerospace contractor terminated on or after October 1, 1976;
- Salary rate during employment with the aerospace contractor was $15,000 per annum or more; and
- NASA salary rate at any time during the period October 1, 1979 through September 30, 1980 was equal to or greater than GS-13.

A list of the aerospace contractors meeting the requirements of the law is posted on bulletin boards. Additional information and the required forms can be obtained from Personnel Records or Norma B. Schultz, ext. 2624.

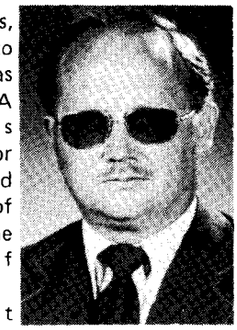
The logo design by James H. Daus, Scientific and Technical Information Programs Division, has been selected by the Board of Oversight for the Refuse-Fired Steam Generating Facility and the City of Hampton as the official logo for the facility. The design will be used for shoulder patches, on safety hats and will appear on the refuse trucks in the near future.

Weekend Lectures Featured at Visitor Center

The Langley Visitor Center will present several special slide-lecture programs at 2 p.m. on Saturdays and Sundays during the last half of February.

The topic, "Manned Spaceflight," will be presented Feb. 14 and 15, and "NASA and Energy Research" will be featured Feb. 21 and 22. The program, "Voyager," slated for Feb. 28 and March 1, will present the latest information and images from the Voyager planetary encounters with Jupiter and Saturn. Films related to each topic will be shown immediately following the lectures.

Pauls Receives Headquarters Award



Sidney F. Pauls, Staff Assistant to the Director, has received a NASA Headquarters Sustained Superior Performance Award "in recognition of excellence in the performance of assigned duties."

Last August Pauls completed a six-month career development assignment in the Office of Aeronautics and Space Technology at NASA Headquarters, where he worked in the OAST Administration and Program Support Division.

In a letter accompanying the award, Walter B. Olstad, Acting Associate Administrator for Aeronautics and Space Technology, said, "You contributed substantially to the OAST programs and the impact of your efforts is still very much evident. The entire OAST staff appreciated the problem-solving way in which you did your job. You are a credit to Langley and to the Agency as well."

Recent Retirees

Kenneth D. Albert, Acquisition Division, and **Carroll A. Williams**, Office of Director for Systems Engineering and Operations, retired Jan. 9.

George W. Jones Jr., Structures and Dynamics Division; **Betty C. Quigley**, Research Facilities Engineering Division; **Sherwood Hoffman** and **Robert T. Taylor**, Aeronautical Systems Division; **Howard J. Curfman Jr.**, Marine and Applications Technology Division; **John A. Locke**, Operations Support Division; **William C. Sleeman Jr.**, Subsonic-Transonic Aerodynamics Division; and **Windsor L. Sherman**, Flight Dynamics and Control Division, retired Jan. 16.

Marvin V. Owens, Operations Support Division, retired Jan. 25.

Thanks

Charles W. Hopkins wishes to thank his many friends who recently donated blood in his behalf. He underwent open-heart surgery on Dec. 9 and is recovering nicely at home.

Shuttle to Encounter Major Hurdle

The Space Shuttle is scheduled next week to undergo a Wet (fueled) Countdown Demonstration Test and a Flight Readiness Firing and Mission Verification Test.

With the successful completion of these tests, the Shuttle will pass a major hurdle in the long trip toward its first launch.

The test series is a detailed practice run for the Shuttle launch and is aimed at identifying any failures or weaknesses in spacecraft and ground systems before launch day.

Conditions and timelines for the test and firing duplicate as closely as practicable those planned for the launch, and include tanking and detanking of the Orbiter Columbia and the external tank and a complete checkout of the launch pad.

The Mission Verification Test, which includes a series of four coordinated tests and simulations, will follow the countdown test and firing.

This test includes a return-to-launch-site abort simulation at the Kennedy Space Center's Shuttle Landing Facility; an abort-once-around-landing simulation at the White Sands Missile Range; a 56-hour-long mission simulation at the Johnson Space Center of the flight phase of the mission from solid rocket booster ignition to a routine landing at the end of the flight; and an end-of-mission landing exercise at the Dryden Flight Research Center.

During the countdown Test and FRF, Columbia's cabin will be unmanned when propellant loading begins, and Orbiter systems will be remotely operated during the test.

The six-day demonstration test will culminate in a 20-second firing of Columbia's three main engines at throttle settings ranging from 94 to 100 percent of rated thrust while the engine nozzles are titled in their gimbals as they will be in flight to control the direction of thrust.

A successful test will provide confidence that the Space Shuttle is ready for flight.

Among the purposes of the test and firing are:

- To test all elements of the Space Transportation System in a real time launch countdown which will culminate in the firing of the Orbiter's three main engines and a simulated launch to insure their proper integration prior to the Shuttle flight.

- To verify the capability of the launch facility to provide propellants to the Shuttle under launch conditions. The external tank and Orbiter systems will be exposed to the same thermal environment they will experience during Shuttle launch preprarations.

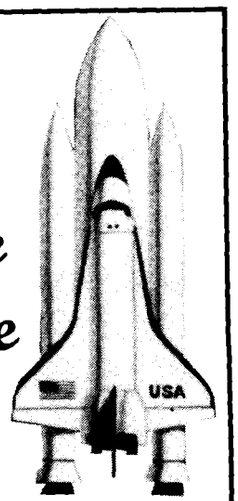
  The main propulsion system control elements also will be required to maintain pressure in the external tank and in the main engines during the test firing as they would during an actual launch.

- To verify the ability of the Orbiter's auxiliary power units and hydraulic system, and the flight control system to throttle and gimbal the main engines.

- To evaluate the performance of avionics and computer programs in controlling and monitoring the interaction of the external tank and main engines under the vibration and sound conditions they will experience during ignition and pre-liftoff phase.

- To access the "twang" effects of the Orbiter's three main engines. At main engine ignition, a bending movement is created causing the upper extremeties of the entire Space Shuttle's "stack" to bend toward the external tank side of the stack and to twang back as the spring action of the hold down mechanisms react against the main propulsion system bending forces. The twang effect occurs over a period of a few seconds (approximately 5 seconds) at the end of which the solid rocket boosters would be fired for liftoff. This test will certify time phasing of the Orbiter's main engines and solid rocket booster ignition.

Space Shuttle Update



NASA is undergoing a dress rehearsal of all segments of the first Space Shuttle mission (STS-1)--including countdown and launch, ascent and orbital operations, and reentry and landing under normal and abort conditions.

The scheduled Feb. 16 Flight Readiness Firing (FRF) of the Space Shuttle's main engines on the launch pad at NASA's Kennedy Space Center is part of the 11-day rehearsal.

The rehearsal will involve operations at NASA's Kennedy, Johnson, Dryden and Marshall Centers and the Army's White Sands Missile Range.

It will be divided into two major sections: the Wet Countdown Demonstration Test/Flight Readiness Firing, which will include a 20-second test firing of the Orbiter's three main engines, and a Mission Verification Test, which will center on flight and landing operations.

The first Space Shuttle Flight is now scheduled for launch no earlier than the week of Apr. 5. The new launch date was set when two sections of insulation on the external fuel tank became unbonded during recent propellant tanking tests.

The unbonded insulation will not affect the FRF, but will be rebonded before launch.

Aviation Pioneer Douglas Dies

Aviation pioneer Donald W. Douglas, honorary chairman of the board of directors of the St. Louis-based McDonnell Douglas Corp., died Feb. 1 in California. He was 88.

Douglas was the creator of the DC-3 and the Douglas Corporation developed such aircraft as the SBD-5 "Dauntless," the A-26 "Invader," and the AD-1 "Skyraider."

Douglas Corp. later designed the B-19 bomber. It also built the later series of commercial aircraft, the DC-4, DC-6, DC-7, DC-8 and DC-9.

Employees Recognized for Student Symposium

Fifty-five Langley employees were presented certificates of appreciation in a special ceremony Jan. 30, in the Activities Center.

Certificates were presented by Richard H. Petersen, Langley Deputy Director, assisted by James R. Dinkins, Office of Director for Systems Engineering and Operations, in recognition of the employees' participation in the March 1980 Minority Students in Technology Symposium.

The symposium, sponsored by the National Technical Association, Hampton Institute and NASA, was developed to allow minority and women students majoring in technical disciplines the opportunity to share experiences seldom acquired during earlier academic training. The agenda included talks by professionals in the technological field, student presentations, films, interactive sessions, government and industrial interviews and recruitment sessions. The activities gave NASA the opportunity to interact with over 200 students from 30 colleges.

For its direction of the symposium, the Hampton Roads Chapter of NTA was recognized as Outstanding Chapter by the national organization at its annual meeting. The Old Dominion Student Chapter was recognized as Outstanding Student Chapter for its support role.

NTA members receiving certificates were Daisy W. Alston, Horace E. C. Bellamy, John T. Bowen, Gordon F. Bullock, Marvin C. Clemmons, Christine M. Darden, James R. Davis, Nettie D. Faulcon, Carolyn E. Floyd, James L. Harris, Gilbert A. Haynes, Mary W. Jackson, Katherine G. Johnson, Robert B. Lee, III, Burnell T. McKissick, Vivian B. Merritt, Michael Mitchell, Burnett W. Peters, Jr., Vincent R. Roland, Marshall Rouse, Samuel J. Scott, Alphonso C. Smith, Eunice G. Smith, Williana Smith (Ret), Weldon L. Staton, Willie R. Watson, James L. Williams and David C. Woods.

Non NTA members who significantly supported the symposium were Belinda H. Adams, Alvin F. Anderson, Wesley T. Berryman, Jr., Guy W. Boswick, Jr., Jean W. Drummond, Connie O. Featherston, Janice D. Felton, William E. Frazier, Andrew J. Hansbrough, Nita W. Langford, Janet M. McKenzie, Harold E. Mehrens, Lillie M. Montanez, Robert R. Moore, Evelyn D. Myers, Robert E. Nye, Robert L. Phelps, Alberta W. Reid, Freda L. Richardson, Debbie W. Ridley, R. Thayer Sheets, Coefield Silver, Benjamin O. Smith, Ann H. Suit, Rosa C. Webster and C. Wayne Williams. Also receiving certificates were James Bell and Lois Cofield of Hampton Instutute, The Old Dominion Student Chapter; Wyllona Harris of the Hampton School System; and Carolyn Stewart of Thomas Nelson Community College.

– photo by Don Ward

Gilbert A. Haynes (left), Chairman of the Minority Students in Technology Symposium held at Langley in March 1980, receives a Certificate of Appreciation from Langley Deputy Director Richard H. Petersen. Awards were recently presented to 55 Langley employees in recognition of extensive volunteer effort and for outstanding participation in the symposium.

Electronics Wins Championship

The third annual Interdirectorate Cross-Country Championship was held on Dec. 6 on the 5,000 meter course near the Activities Center.

Twenty-three runners took advantage of the beautiful, cool day (and post-race food and drink) to run for their directorate.

In the final tally, only Space and Electronics fielded the minimum five-man team, but still the race was a heart-stopper. Electronics squeaked by with 30 points to 32 for Space (low score wins), but Space must be considered as a potential future dynasty of Langley cross-country because nine of the 23 runners were wearing the blue racing shirt of the Space-men and women.

The next Runners' Club event will be the Handicap 10-Miler to be held Feb. 21 at 9 a.m. This will begin at the Activities Center and consists of two loops around the West area.

The race is open to all NASA and contractor employees and their families. For those who have a previously-recorded race time of two miles or longer and who wish to participate in the handicap race, the start times will be staggered based on their last performance. All others will start with whichever group they feel appropriate.

For further information, call Larry Spencer, ext. 3681.

Thanks

James Mueller writes, "I'd like to thank my former associates at NASA who planned, contributed to and attended my retirement dinner Dec. 2. The gifts and mementos will long be treasured as will my association with so many wonderful people through the years at NACA/NASA. Best wishes to all of you."

– photo by Fred Jones

Members of the Hampton Roads Chapter of the Ninety-nines, an organization of women pilots founded by Amelia Earhart, are shown during a recent visit to the Langley Visitor Center.

Women Pilots Visit Langley

The Hampton Roads Chapter of the Ninety-nines, an international organization of women pilots, recently visited Langley.

The group received an overview of current aeronautical research, toured the Visitor Center exhibits which trace the evolution of flight and visited other Langley facilities.

The organization, which promotes safe flying among members and aeronautical science in the community, was founded by Amelia Earhart in the early 1930s. The famous aviatrix invited women pilots nationwide to form an organization. Ninety-nine women attended the first meeting, and the club was dubbed, "The Ninety-nines."

The local Hampton Roads chapter has about 30 members, all licensed pilots, whose backgrounds vary from commercial or military pilots to private pilots. The chapter sponsors a number of educational programs including its Flying Companion seminars which help nonflying family members learn about the general aspects of flying and basic emergency procedures. The group also offers general aviation safety seminars and participates in such activities as airport marking -- the painting of numbers and names on runways.

There are social aspects to the club as well. The group often sponsors fly-ins to special aeronautical events like the Flying Circus held each summer at Bealton, Va., or to quaint Tangier Island for exploring and lunch. They are currently planning a trip to the Garber Facility in Silver Hill, Md., where many Smithsonian air and space artifacts are stored.

Club members are currently working with the Visitor Center staff to coordinate the special program, "Women in Flight," which will be featured at the Visitor Center from March 1 to 15.

The nonprofit Ninety-nines meet the first Tuesday of every month at alternate locations throughout Tidewater. Licensed women pilots who would like to learn more about the group should contact Chairperson Sue Stewart in Norfolk at 464-2741 or Sharon Paulson on the Peninsula at 596-2362.

Key Positions

Donald H. Ward has been selected Construction Manager, National Transonic Facility Project Office, under Competitive Placement Plan 80-55B.

Frederick L. Moore has been selected Project Planning and Control Manager in the Projects Management Systems Division, under Competitive Placement Plan 80-70.

Tech Brief Monetary Award Increased

The minimum award for a contribution on which a NASA Tech Brief is approved for publication has been increased to $100 for each innovator listed on the brief.

The increase, granted at the Oct. 30, 1980 meeting of the Inventions and Contributions Board in accordance with the NMI 5700.3B and Section 306 of the Space Act, was approved to help provide additional individual motivation and recognition.

"NASA Tech Briefs," NASA's principal technology utilization publication, is issued quarterly and provides current awareness or problem-solving tools for its more than 70,000 industrial subscribers.

Bloodmobile Supported at Langley

Langley employees, retirees and contractors donated 272 pints of blood at the Jan. 28 visit of the Red Cross Bloodmobile.

Achieving gallon status were:

11 gallons - Billy B. Dancy.

10 gallons - Sue E. Wilder.

7 gallons - Brickey J. Hughes, William A. Tuck and Hal T. Baber Jr.

5 gallons - David A. Wineman and Stephen Devan.

4 gallons - Clifton H. McMillian and Roger K. Crouch.

3 gallons - Alexander J. Witkowski, Virgil S. Laney, John H. Shoosmith and Richard L. Herndon.

2 gallons - John Barclay, Raymond C. Scholz, Patricia Cross, Ronald Logioco and Lewis G. Burney.

1 gallon - Tyrone O. Ellis, Linda S. Little, Delores L. Russell, Thomas A. Jordan and Rita C. Gurley.

Donating blood for the first time were James Ward, Keith W. Daivs, Patricia Jones, Dominic Maglieri, Charles McCormick, Floyd Shipman, Michael Beavers, Gaylen A. Thurston, Nona Sperance, David Krivsky, John D. Barrett and William Belliveau.

NASA Coordinator for the Bloodmobile was Virginia Jones; Red Cross Coordinator was Fran Williams. Refreshments were donated by the Langley Federal Credit Union.

The next opportunity to give blood will be March 25 in the Activities Center.

Happenings

HAPPY HOUR will be held today from 4 to 6:30 p.m. in the Activities Center.

VALENTINE DANCE. The LAA will sponsor a Valentine Dance tomorrow from 9 p.m. to 1 a.m. in the Activities Center. Music will be provided by "Harvest." The cost will be $10 per couple, setups included. Tickets will be on sale at the door.

HONEY BUNCH. The NASA-Langley Apicultural Club will meet on Monday, Feb. 16, from 7 to 9 p.m. in Room 180 of Building 1209. After a brief business meeting Frank Fulgham, Eastern Region State Bee Inspector, will speak on "Beekeeping."

CAMP NIMROD. Consider Camp Nimrod for your son or daughter this summer! The separate, private, brother-sister camps in the Virginia mountains near Hot Springs have been in operation for over 40 years. Camp sessions offer two to six weeks of summer fun and recreation for children 6 to 16 years old. The camp director will be at St. Andrew's Episcopal Church, 45 Main St., Newport News, Feb. 21, at 2 p.m. for a "get acquainted" party and slide presentation. For further information, applications and camp brochures, call Ann Jobson, 596-9540.

NAGS. In lieu of the February dinner meeting, arrangements have been made for the Hampton Roads Branch of the National Association of Government Secretaries to visit the Virginia General Assembly and tour the Capitol and Governor's mansion in Richmond Feb. 17. There is no charge for the guided tours. Members interested in going should contact Reachie Hall, ext. 2150 or 826-7495; or Betty Joyner, ext. 3285 or 826-4684, by Feb. 13.

BARBERSHOP HARMONY. Langley employees and their families will be entertained in barbershop harmony style when they "ride the Harmony Express" at Norfolk's Chrysler Hall on Saturday, Feb. 28. This concert of barbershop music is produced by the Norfolk Chapter of SPEBSQSA, Inc. (the Barbershop Harmony Society) and features their Commodore Chorus, the Old Dominion Line Quartet, and SPEBSQSA's 1979 International Quartet Champions, Grandma's Boys. Curtain time is 8 p.m. Reserved seat tickets at $6, $5, and $3 are available from Commodore Chorus members Jim Youngblood (877-1224) and Leroy Albang (596-7736).

DOG TRAINING CLASSES. The James-York Dog Training Assoc. will register new basic obedience class on Feb. 19, at the Hampton Armory, North King Street, at 7 p.m. The 12-week course includes the five basics in dog obedience: heeling, come, stand, sit and downstays for control and teaches you to train your dog to become a good companion. Please bring dog's shot record. Dogs must have been vaccinated against Parvo. For further information call Garl Gentry, ext. 3611 or 874-5706.

BLACKS IN GOVERNMENT. The Tidewater Chapter of BIG will sponsor two activities in observance of Black History Month. A dramatization of "Reflection of People" by Hampton Institute students will be held Feb. 24 in Veterans Hall, Building B-83 of the Veterans Administration at Kecoughtan at 11:30 a.m. Dr. J. Arthur Jahannes, poet, dramatist and educator at Hampton Institute, will address "Our Heritage" Feb. 26 at the Bethel A.M.E. Church, 94 Lincoln Street, Hampton at 8 p.m. The public is invited.

GOLF ASSOCIATION. The 1981 membership drive for the NASA Golf Association is now open to all Langley employees and retirees. The annual organization meeting will be held at the Activities Center, Wednesday, Feb. 25, at 7 p.m. Refreshments will be served. Old and new members are welcome. For additional information, call Tom Bonner or Frank Ballentine, ext. 4666.

NASA GARDEN CLUB. Reservations are being accepted for 1981 garden plots until Feb. 20. There will be a general membership meeting on Thursday, Feb. 26 at 12 p.m. in the Activities Center. Persons interested in a garden plot are invited. Requests for additional information or plot reservations should be directed to Jack Neubauer, ext. 3838.

Thanks

Anne F. Bristow writes, "I thank each of you who had a share in my retirement remembrances. The gold chain is lovely. I do enjoy having it to wear. I treasure memories of many of you whom I have known during the past 25 years."

Aerospace Penpoints
by
Wesley Berryman

It is easy to invent a flying-machine; more difficult to build one; to make it fly is everything.

Otto Lilienthal

Thanks to Marie Tuttle for sending in this quotation.

Dogs Earn Obedience Titles

The NASA Dog Training School has some prize-winning dogs in its midst.

One golden retriever, bred, trained and handled by Doris Bryan of the Program and Resources Division, earned his tracking title last November at the Durham Kennel Club in Durham, N.C. Bryan's golden, Champion Mandingo Spectre V Kirkham, previously has been awarded companion dog excellence, working certificate in field and tracking dog titles.

Spectre's daughter, Tupps, bred by Morris Phillips of the Fabrication Division, has been certified for tracking and is already entered in the Golden Retriever Specialty tracking test to be held in April near Dulles Airport.

Bryan, who instructs owners to train dogs, said the Golden Specialty is a competitive test in breed, obedience, tracking and field. She said some owners and dogs will be working toward companion dog and working certificate titles.

Other handlers and dogs earning obedience titles last fall were Donna Dochterman and Labrador retriever, Jesse, with a companion dog title and Judy Kemmerling and German shepherd, Lobo, with a companion dog excellence title.

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Happy Valentine's Day

swap and shop

FOR SALE

Articles

Diamond, 3/4 carat, brilliant cut, clarity: I-2, appraised at $2,000, will accept $1,000 OBRO. Call 838-0770 after 5 p.m.

Log storage crib, like new, black steel tubing, 40-inch diameter, $7. Call Mathis, 722-7629.

Hamilton Auto-Shift Drafting Board: Size 60 x 37-1/2 inches, height adjustable up and down, tilts at an angle; Reference Table: size 60 x 30-1/2 inches, center drawer and three drawers on left side, $995. Chair for drafting board/reference table, $10. Miscellaneous drawing equipment: draftsman pencil sharpener, books and charts, $10. Six Spline/Duck weights: 3-1/2 pounds each, 5-3/8 inches long, $85. Call Githens, 723-5324.

Franklin stove, complete with two solid brass knobs, screen and folding door; 4'8" pipe and one elbow; 18 sticks hickory wood and five bags coal (33 lbs each), $125. Call 595-0184 between 4—9 p.m.

Vehicles

Lincoln Cont., 1967, 4 DR, white w/black VT, all power, GC, $350 OBRO. Call 838-0770 after 5 p.m.

Honda Motorcycle, MT 125, Elsinore, GC, $250. Call 838-4227.

Boat: Neopreme coated cloth, one four-man, $50; one six-man, $80; never used. Call Kent, ext. 3095 or 420-8391.

1977 Datsun 2802, EC, 4-speed trans., Red, AM/FM-8 track, $500 under Blue Book. Call Mehrens, ext. 3966 or 722-4660.

1978 Alfa Romeo Italian conv. sports car, black w/burg. int., rust proof, roll bar, many extras, EC, $7,450. Call 599-4321.

Real Estate

House in Beechmont, located on Warwick River: 3 BR, 2-1/2 BA, Large kit., den, dble, garage, deck facing river; $110,000. Call 877-5229.

FOR RENT

Sandbridge: cottage w/liv.-kit.-din. area, 4 BR, washer, dryer, dishwasher, FP, AC, phone, six-car parking, 1/2 block from beach. Summer rates $425/wk. Call Kent, ext. 3095 or 420-8391.

WANTED

Ride to West area from Denbigh (Colony Road) on 8 a.m. shift, will pay. Call Gail Dawkins, ext. 3741 or 874-5370 after 5 p.m.

Full size violin in good condition. Call Pao, ext. 2645 or 599-6793.

Riding combination from Village Green-Oyster Point area to East area on 8 a.m. shift. Call Lansing, ext. 2661.

Retirement Parties

Windsor L. Sherman of the Flight Dynamics and Control Division will be honored with a retirement party Wednesday, Feb. 25, at the Fort Monroe Officers' Club. A cash bar social will begin at 6 p.m., followed by Beef and Burgundy dinner at 7 p.m. The cost will be $10 per person or $17.75 per couple. Contributions for gift only are welcome. For reservations call Kimball Miller, ext. 4591, by Feb. 18.

A retirement party honoring **Robert L. Trimpi**, High-Speed Aerodynamics Division, will be held on Friday, Feb. 27, at the Ramada Inn, Rt. 17 and I-64. A cash bar social with heavy hors d'oeuvres will be from 6:30 p.m. to 8 p.m., followed by a program. The cost, including gratuity and gift contribution, will be $8 per person and $15 per couple. Contributions for gift only are welcome. Make checks payable to Elizabeth F. Buchan and send to Mail Stop 407 by Feb. 20.

Carl L. Munday, Flight Electronics Division, will be honored with a retirement party at the Activities Center Friday, March 6. A cash bar will begin at 6:30 p.m. with dinner at 7:30 p.m. The cost, including gift will be $8 per person and $15 per couple. Contributions to the gift only are welcome. Please make checks payable to Samuel Sokol, Mail Stop 488, by Feb. 27.

cafeteria menu

WEEK OF FEBRUARY 16

MONDAY:

HAPPY BIRTHDAY,
GEORGE WASHINGTON

☆★☆★

TUESDAY: Manhattan Clam Chowder; Roast Beef; Polish Sausage; Monte Cristo Sandwich. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Beef Noodle Soup; Roast Turkey Dinner; Crab Cutlets; Beef, Macaroni & Tomatoes. Snack Bar: Sausage Pizza; Steak, Onion & Cheese Sub; Bacon, Lettuce & Tomato.

THURSDAY: Chicken Gumbo Soup; Meatloaf; Fish Kabobs over Rice; Chicken & Dumplings. Snack Bar: Ham & Cheese Club; BBQ; Teriyaki Steak & Onion Sub.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Beef Tips over Rice; Ham & Swiss Quiche. Snack Bar: Deluxe Sub; Hot Roast Beef; Tuna Salad.

WEEK OF FEBRUARY 23

MONDAY: Ham & Lima Bean Soup; Baked Lasagna; Chicken Chow Mein; Salisbury Steak. Snack Bar: Hot Italian Sausage Sub; Steak & Onion Sub; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Hot Roast Beef Sandwich; Fried Oysters; Knockwurst Reuben. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; Ham & Cheese Omelette; Boston Blue Fish. Snack Bar: Sausage Pizza; Steak, Onion & Cheese Sub; Bacon, Lettuce & Tomato.

THURSDAY: Chicken Noodle Soup; Braised Chicken Livers; Shrimp Creole over Rice; Beef Balls Stroganoff. Snack Bar: Ham & Cheese Club; BBQ; Teriyaki Steak & Onion Sub.

FRIDAY: Fish Chowder; Fish Dinner; Sweet & Sour Ham-Pineapple Kabobs; Chopped Steak. Snack Bar: Deluxe Sub; Hot Roast Beef; Tuna Salad.

Flotilla Presents Sailing Course

"Sailing and Seamanship," a course designed to introduce beginner sailor to the principles of sailboat operation and to provide them with a sound understanding of basic principles of boating safety, will be presented by the Williamsburg Flotilla of the U.S. Coast Guard Auxiliary.

The course will be held at Lafayette High School each Monday and Thursday night from 7 to 9 p.m. beginning Monday, Feb. 23, and ending Thursday, April 16. There is no fee for the course; however, it is recommended that students purchase a text book that is available from the Auxiliary for $9.

For further information, call Andy Swanson, 229-8024.

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Langley Researcher

Volume 20 Issue 4

February 27, 1981

Space Shuttle Engines Pass Critical Test

"7 . . . 6 . . . 5 . . . 4 . . . We have a go for main engine start . . . We have main engine start . . . All three engines are up and running . . . Beautiful engines going here . . . We have gimbaling of the engines . . . We gimbal them sequentially with one, two, and three . . . And we have shutdown . . . We have had shutdown of all three engines . . . A full, full 20-second burn . . . A full 20-second burn as expected . . . From our vantage point, here in the launch control center, it looked like we had a successful burn of all three engines . . ."

The Space Shuttle Columbia passed another major milestone leading to its first launch when all three main engines on the Orbiter successfully burned during the Flight Readiness Firing on Feb. 20.

The excitement of the successful test was partially dimmed, however, when approximately 1,000 Boeing Aerospace Co. support workers walked off their jobs during the middle of the FRF. The employees' contract with Boeing had expired in January.

Richard Smith, Kennedy Space Center Director, said he was shocked that the walkout occured when it did. NASA officials did not learn that the union was going to walk out until two hours before launch time in the FRF countdown.

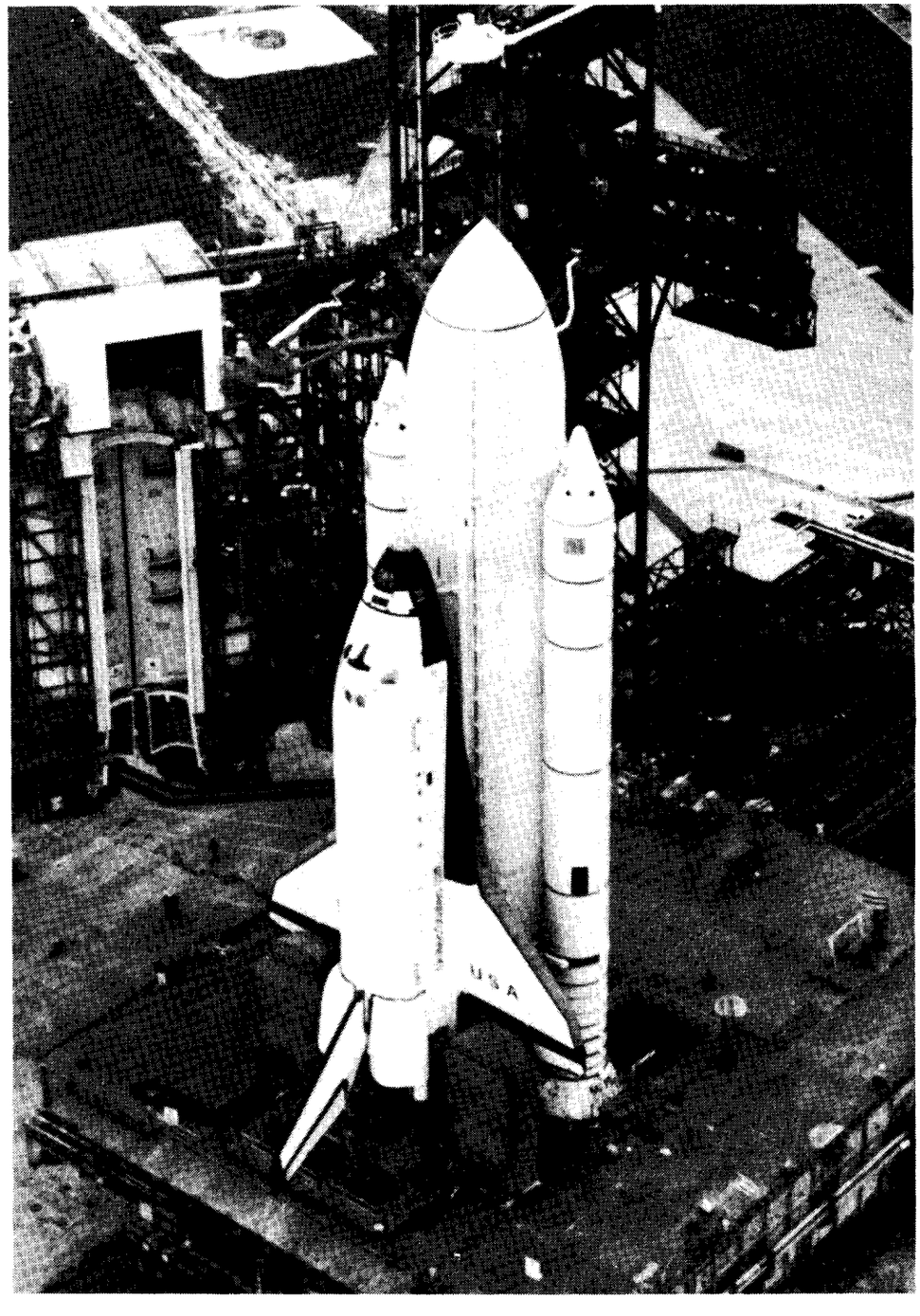
Boeing is using supervisory personnel to fill the void, Smith said. The Boeing workers support various operations at KSC involving the Space Shuttle.

Despite the walkout, NASA officials expressed pleasure over the FRF results.

Smith said, "We struggled desperately to get through these first tests. This time we got through on the first try, one hour late, and I think that's fantastic. I'm still a little amazed at it."

George Page, Shuttle Operations Director, said that, as the countdown milestones were passed, he kept saying, "I can't believe it."

Continued on page 3.



– photo by Don Ward

A meeting on "Productivity Improvement and Human Resource Management," sponsored by the 1980 Southeastern Presidential Management Interns, was held Feb. 19–21 at Langley. Participating in the three-day session are (front row, from left) Mary Fulford, Presidential Management Intern, Small Business Administration, Atlanta, Ga.; Ann Thomas, PMI, Dept. of the Army, Huntsville, Ala.; Muriel Castillo, PMI, General Accounting Office, Pensacola, Fla.; Kristy Wetzel, PMI, Kennedy Space Center; Sally Bethea, PMI, Environmental Protection Agency, Atlanta; (second row from left) James Demer, Cluster Leader, Social Security Administration, Atlanta; Tobe Johnson, Resource Leader, Morehouse College, Atlanta; Fabiola Martin, PMI, and Richard Miante, PMI, from Langley. The Presidential Management Intern Program is designed to attract to federal service men and women of exceptional management potential who have received special training in planning and managing public programs and policies. All interns must acquire a working familiarity in at least three of the following areas during the two-year internship: personnel management, budget and financial management, information systems, procurement or grants, and management or program analysis. The meeting was at Langley coordinated by Martin and Miante.

Ribner Presents Paper at Dryden Lectureship

Herbert S. Ribner, a Distinguished Research Associate at Langley and a professor at the University of Toronto, presented a paper at the American Institute of Aeronautics and Astronautics 19th Aerospace Sciences Meeting in St. Louis, Jan. 12.

Ribner's paper, "Perspectives on Jet Noise," was invited for presentation at the Dryden Lectureship in Research. The lectureship, named in honor of the renowned leader in aerospace research programs, Dr. Hugh L. Dryden, is "intended to emphasize the great importance of basic research to programs in aeronautics and astronautics and to be a salute to research scientists and engineers."

Ribner worked at Langley from 1940 to 1949 and from 1975 to 1976. He returned to Langley in 1978 as a DRA.

He joined the University of Toronto Institute for Aerospace Studies in 1955 and became a professor in 1959. He divides his time between the university and Langley's Acoustics and Noise Reduction Division.

Ribner is a Fellow of the AIAA and received the AIAA Aeroacoustics Award in 1976.

Taylor Resigns as NASA IG

Eldon Taylor has resigned as Inspector General of NASA.

Taylor's Deputy, J. Brian Hyland, will serve as Acting Inspector General until the post is filled by President Reagan.

Taylor was appointed as NASA IG, July 30, 1979, and was the first person to fill the position created by the Inspector General Act of 1978.

Jensen Elected ASHRAE Fellow

Ronald N. Jensen, Solar Applications Manager in the Plant Engineering Division, has been elevated to the grade of Fellow in the American Society of Heating, Refrigerating and Air Conditioning Engineers.

To be eligible for consideration for this award, a person must have been a member for 10 years and must have attained distincton in one or more of the following fields: teaching, research, invention, and the design and supervision of large projects.

Jensen was selected for receiving distinction in the society while serving as Project Manager for the development of NASA's Energy Cost Analysis Program.

Harris to Address AHS

Roy V. Harris, Jr., Chief of the High-Speed Aerodynamics Division, will discuss the NASA Aeronautics Delegation visit to China at the March 3 meeting of the American Helicopter Society, Hampton Roads Chapter.

The dinner meeting will be held at the Langley Officers' Club, beginning with a social at 6:30 p.m. Dinner will be served at 7:30 p.m. The cost will be $6.50 for members, $7 for nonmembers.

For reservations call Phyllis Straub, 878-4101, today.

Spouses' Breakfast has been changed to March 19

The *Langley Researcher*, as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond
Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

Deputy Director's Report

Six Months of Challenge and Opportunity

Last August I arrived at Langley to assume the very challenging job of Deputy Director. I expected that the first few months would be difficult because there was so much to learn, so I decided to allow six months to get the feel of things without evaluating the job. Now that the six months are over, I want to share my reactions with you.

It has been a very busy time. I have met a great number of you and I am working hard to remember names and positions. All of you have made it easier for me by being warm and friendly and by understanding if I misplace a name or face. I look forward to getting to know all of you better as we continue working together.

While I still have much to learn, I am now reasonably aware of the ongoing programs at Langley and of how the Center works. My thanks go to all of you who have explained Center procedures, given me tours and discussed your technical programs. As you know, many NASA activities run on a yearly cycle and there are many complex issues and programs. I am looking forward to next August, when I can start doing things for the second time. I will feel more competent, and you won't have to spend so much time explaining.

Many of you know that, early in October, Deputy Administrator Dr. Alan Lovelace asked our Director, Don Hearth, to lead a special study of project management. Don's words to me were, "Well, you have been here for two-and-a-half months now, go ahead and run the Center." Although I had some doubts, it turned out to be a great experience. With the help of many of you, who supplied expert advice and counsel, we kept the Center going in the right direction. It really was a special opportunity for me, because I got involved in things that would not have come up in the Deputy Director's job and my learning process was accelerated. Don has now completed the special study, and I am settling back into a more normal routine.

Special remembrances from the first six months? First, the tremendous breadth and competence of the Langley staff, as demonstrated in many meetings and technical presentations. Second, the concern and dedication of so many people at Langley who are supporting the Space Shuttle. Third, my first tour of the Kennedy Space Center, which gave me a detailed insight into the real problems of installing the Orbiter thermal protection system.

It has been a great six months. Again, I thank all of you for the help you have given me. Special thanks are due my secretary, Frances Arnn, who keeps me organized and sees that I get to the right meetings. I am beginning to realize that, with all the good people here at Langley, it is easier to be a Deputy Director than I had anticipated. I am looking forward to the next six months and many more thereafter.

Richard H. Petersen

Shuttle Test

Continued from page 1.

He said he was concerned about everyone going into the firing room for the first time, but praised the launch team following the firing.

"I think they just operated like pros, and we were very proud of the whole group," Page said.

James Thompson Jr., Space Shuttle Main Engine Project Manager, said that, from an engine standpoint, he thought the FRF was a great test. He said the engines fired for the expected length of time, and they gimbaled and throttled as planned.

During the test some of the ceramic heat shield tiles on the Orbiter were slightly damaged, but repair work is not expected to delay the planned early April launch.

The damage, consisting of minor nicks and chips to the tiles, will be repaired by recoating the tiles with silicon. Most of the damaged tiles are located at the aft end of the Orbiter, near the engines.

All of the tiles remained glued to the ship during the engine test.

Calio Aids Lovelace

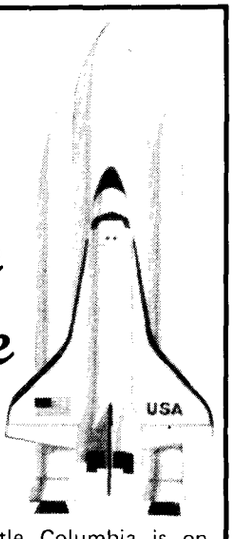
Dr. Anthony J. Calio, NASA Associate Administrator for Space and Terrestrial Applications, has been assigned to assist Dr. Alan M. Lovelace, Acting Administrator.

The announcement was made Jan. 23 by Lovelace, who stated: "NASA is now approaching one of its most important and critical periods with the first Shuttle launch only two months away."

With the resignation of Dr. Robert A. Frosch, former Administrator, it is necessary to maintain adequate management capability, Lovelace said. Therefore, in this new role, Lovelace said, Calio will concern himself with NASA general management and will have decision authority, both program and functional, leaving the Acting Administrator free to concentrate on major NASA policy decisions and the Space Transportation System.

Calio, who has been with NASA since 1963, was named NASA's Associate Administrator for Applications, later the Office of Space and Terrestrial Applications, on Oct. 1, 1977.

Space Shuttle Update



The Space Shuttle Columbia is on the launch pad at the Kennedy Space Center undergoing repairs to the external fuel tank. Two sections of insulation on the tank became unbonded during propellant tanking tests in late January.

The launch date for the first Space Shuttle flight, as of Tuesday, is no earlier than the week of Apr. 5.

Personnel Profiles

Employee Uses Time Wisely And Well - For Others

– by Allan C. Hanrahan

Contribution is a much-used word nowadays, frequently a one-word plea: its final destination our respective mailboxes.

For **FREDERICK R. MORRELL**, contribution is a way of life, whether it be the contribution of time, talent, thought or financial resources. For innumerable persons, his endeavors have enhanced the quality of their lives. Because of these endeavors, Morrell was one of two selected for the Outstanding Volunteer Service Award for 1980 for "providing leadership in the local communities through religious, social and youth activities," and "for long and distinguished service to the community wherever and whenever the need arises."

An aerospace technologist in the Avionics Technology Research Branch of the Flight Electronics Division, 48-year-old Morrell has been at the center since June 1961, moving here from his native Connecticut. Born and reared in Greenwich, he volunteered for the draft upon finishing high school and spent two years in the army. Private employment and college followed; his B.S. degree in electrical engineering was earned mostly through evening classes at the University of Connecticut. Since moving south he has earned a M.S. degree in electrical engineering from the University of Virginia.

Fred and his wife, Judith (also a Connecticut native) have four children: Gayle, 15; Michael, 13; Kathy, 10; and Mark, 9. Both daughters are active in the Girl Scouts and their mother, not surprisingly, is a leader in that organization. Both boys are also active in scouting and Fred himself, in accordance with his philosophy of being involved as much as possible with each stage or phase of his children's growth, is or has been active as a Cub Scout Pack Leader, Cub Scout Den Father, and Boy Scout Committee Member. Fred, characteristically, downplayed his contribution, explaining that "everything (in scouting) is so well-thought and well-planned, if you follow what has been organized, be willing to make phone calls, its not difficult . . . Not too much for what comes out of it. The dividends are life-long . . . it's a super program for these young lads. So practical."

Of scouting in particular and parenthood in general, Fred put it thusly: "If you want your child to have virtue, moral excellence, you have to guide the child."

Although members of the New Covenant Church at present, the Morrells were members of a Methodist Church for many years and as chairman of a "social concerns" committee of that church as well as a member of the local Joint Action and Community Service, Fred rendered service and aid to such less fortunate individuals as Vietnam refugees by helping them find sponsors within the community as well as obtain the necessities of life. He also provided a source of local counseling, friendship and hospitality for those people as well as the American family in our midst in need of the basic necessities of life such as food, clothing and shelter. In like manner he helped people coming out of the Job Corp program. His help sometimes took the form of direct assistance and sometimes simply bringing the plight of these people to the attention of standard welfare organizations, church groups and concerned individuals.

Fred is a member of Gideon International that most of us know is dedicated to distributing Holy Bibles. What is not too well known is that its secondary mission is providing ministry in penal institutions. As local Chairman of the Gideon Prison Ministry, Fred is active in providing chaplain service for Prison Camp 16 (a felony camp) in New Kent County and the Newport News City Farm.

In addition to the religious services, Fred offers the inmates personal social services, such as checking on the health and welfare of their families. Through his other contacts he helps them obtain any other necessary services.

Of the people incarcerated he reflected, "It's a heart-grabbing experience. I don't ask what they are in

for," he later stated, but their return--recidivism--he hopes, in some small way, to prevent.

"Jesus modifies behavior," he believes, and observed that "Prisons are fertile ground," (for recruiting new Believers).

We have not related all the service Fred has rendered to the lives of others--space does not permit; besides, he would rather we eschewed a litany of his contributions. As he put it matter-of-factly: "You ought to be out there doing it, (when you believe what the Bible teaches). When you have a zeal for anything, it's easy." As a Langley colleague said of him: "He's a totally committed individual, just totally committed to the world." And while Fred appreciates being one of the two honored with the Volunteer of the Year award, recognition by man he neither covets nor seeks; his goal is sensed to be the pleasing of a higher authority.

Raney Wins Car Pool Drawing

Dr. John P. Raney, Acoustics and Noise Reduction Division, won the February drawing for $20 given to car pool participants by the Langley Exchange Council.

In Memoriam

Neihouse, Spin Research Expert, Dies

Anshal I. Neihouse, who retired from Langley in 1972 as Technical Assistant in the Office of the Director, died Feb. 17 in Boca Raton, Fla. He was 72.

Neihouse joined the National Advisory Committee for Aeronautics, NASA's predecessor agency, in 1935. He became Head of the Spin Tunnel Section in 1944 and Head of the Recovery Systems Branch in 1959. He was assigned to the Office of the Director in 1963 and worked for a short time in the Public Affairs Office.

He was a NACA representative in 1954 at a meeting of the Advisory Group for Aeronautical Research and Development of NATO in Paris, presenting a paper on "Design and Operating Techniques of Vertical Spin Tunnels."

In 1957 Neihouse received a NACA Exceptional Service Medal for his outstanding leadership in the development of spin research techniques and the art of predicting spin and recovery characteristics of airplanes. He was internationally recognized as an authority on the subject of large motion problems of flight vehicles.

He received bachelor's and master's degrees from Virginia Polytechnic Institute, was an Associate Fellow of the Institute of Aeronautical Sciences and served as President of the Engineers' Club of the Virginia Peninsula.

Roche, Inventor of Aeronca Plane, Dies

Jean A. Roche, 86, inventor of the Aeronca plane and a retiree of Langley, died Feb. 19 at his home in Hampton.

The Aeronca plane, basically a powered glider with gentle landing speeds, could be operated by novices after only five hours of training. It was designed by Roche and built in a garage at Roche's New York home in 1929 with the assistance of a friend.

Roche's plane is now on display in the National Air and Space Museum of the Smithsonian Institute.

The rights for manufacturing the plane were later sold to Aeronautical Corporation of America, which made a few changes in the original design. Roche was president of the company for a short time before coming to work for Langley in 1939 as a development engineer. He retired from federal service in 1960.

The internationally known aircraft design engineer and inventor was born in France and graduated from Columbia University with a bachelor's degree in mechanical engineering.

He was a member of the Early Birds and had been elected to the Virginia Aviation Hall of Fame.

Army Structures Lab Names New Director

Richard L. Long has been named Director of the Army Structures Laboratory at Langley, succeeding Thomas L. Coleman, who retired last July after nearly 38 years of federal service.

The laboratory is one of four which make up the U.S. Army Research and Technology Laboratories, headquartered at the Ames Research Center.

Long was formerly Deputy Director for Systems Engineering and Development of the Army Aviation Research and Development Command in St. Louis, Mo. He is a charter member of the Senior Executive Service of the federal civil service system.

A native of South Bend, Ind., Long received bachelor's and master's degrees in aeronautical engineering from Purdue University and Princeton University, respectively, and a master's degree in international affairs from George Washington University. He also attended the Command and General Staff College, Army War College, Army Management School, Sloan Institute and the Federal Executive Institute.

A retired Army colonel, Long recently received the Commander's Award for Civilian Service in St. Louis. He also holds the Meritorious Civilian Service Award, the Army's second highest award.

Long entered the Army as a second lieutenant in the Artillery Branch in 1942. Later he was chosen by the late Gen. George S. Patton, Jr., as his armored division's observation pilot.

He is a master Army aviator and is rated as a commercial pilot for both fixed and rotary wing aircraft. He is a member of the American Helicopter Society and in 1969–70 was national president of the Army Aviation Association of America.

Thanks

Garland J. Morris writes, "I would like to thank all those who arranged and participated in the retirement dinner and express my appreciation for the kind words, gifts and mementos. I have enjoyed my association and friendship with the people at Langley and hope to continue seeing you from time to time."

Recent Retiree

Albert C. Robinson, Operations Support Division, retired Feb. 20.

Speakers Bureau

Cary Spitzer discussed planetary exploration at the Suffolk Kiwanis Club meeting Feb. 9, St. Andrews Episcopal School Feb. 13, Lynchburg College Feb. 16 and Waynesboro Professional Engineers Society meeting Feb. 26.

John Samos gave a talk on the Tech House at Old Dominion University Feb. 15.

Joel S. Levine spoke on "The Evolution of the Earth's Atmosphere" Feb. 17 at VIMS, Gloucester Point.

Karen Credeur spoke at George Washington University in Washington, D.C., Feb. 18 on "Comparisons of Super Computers 1964 – 1986."

Robert Bower gave a presentation on advanced technology for future air transports at Western Electric in Newark, N.J., Feb. 26.

George Ashby discussed the Space Shuttle at the Father-Son PTA Banquet at Chris Kraft Elementary School Feb. 9 and the National Society of Professional Engineers meeting in Philadelphia Feb. 24.

Les Rose addressed members of the Denbigh Exchange Club Feb. 12 on spinoffs.

Robert Fox and **Stuart Harris** spoke on electronics and **Roger Hathaway** spoke on aeronautics at the Churchland Junior High School Career Day Feb. 18.

Langley Makes Award to Small Business Firm

A. A. Builders of Virginia, Inc., of Hampton, has been awarded a contract for the rehabilitation of two Langley facilities.

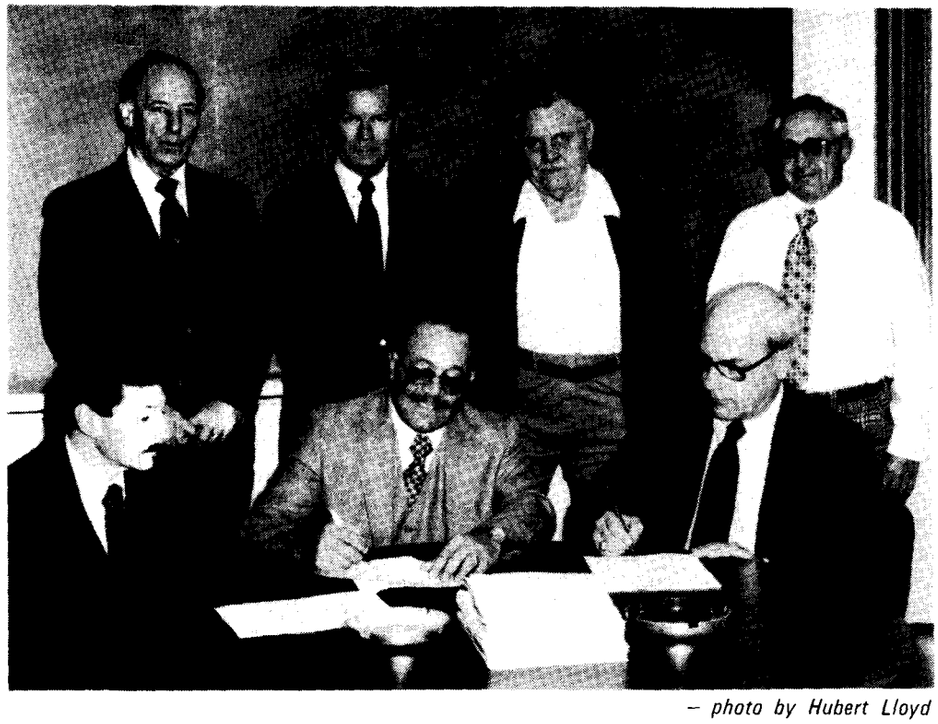
The $365,000 contract was awarded under Section 8(a) of the Small Business Act of 1953 to renovate the Data Reduction Center, Building 1268, and the Flight Control Research Laboratory, Building 1268A.

Section 8(a) authorizes the Small Business Administration (SBA) to enter procurement contracts with federal agencies and, in turn, to subcontract the work to small businesses. The program emphasizes providing subcontracts to businesses owned by socially or economically disadvantaged persons.

Langley pioneered the Section 8(a) program within NASA by being the first NASA center to enter an agreement with SBA, which was signed in June 1970.

Since award of the first small business contract, NASA has awarded contracts in excess of $237 million under the program. Of this amount, Langley awards total in excess more than $21 million.

The cooperative government program was established in response to a request by the President that federal agencies assist qualified minority firms in achieving productive and economic stability in a competitive business environment.



– photo by Hubert Lloyd

A. A. Builders of Virginia Inc. of Hampton, has been awarded a small business contract for the rehabilitation of the Data Reduction Center, Building 1268, and the Flight Control Research Laboratory, Building 1268A. Attending the contract signing are (seated from left) Joseph T. Foglia, Small Business Administration Procurement Center Representative; Victor Hundley, President of A. A. Builders; Carl A. Knollmann, Assistant Head of the Contracts Branch, Acquisition Division; (standing from left) Joseph F. Braig, Small/Minority Business Staff Specialist, Acquisition Division; Robert R. Moore, Chief of the Acquisition Division; James M. Hughes, Contract Specialist, Acquisition Division; and Frank E. Strehle, Project Engineer, Plant Engineering Division.

Thanks

Delores Dalin thanks everyone for their concerns, kindnesses, cards, visits and blood donations following the recent accident and death of her husband, Dale. Dalin died Jan. 7 as a result of injuries sustained while working in the V/STOL Wind Tunnel.

W. Kent Smith writes, "My family and I would like to say "thank you" to all who planned, prepared and attended my retirement party. The gifts and mementos will be treasured as well as my association with a great group. Best wishes to you all."

Betty Quigley would like to thank all of her friends who were at her retirement luncheon and the ones who were unable to attend, but contributed to the gift. "Your kindness made my day. Thank you very much and my best to all of you."

Bob Schade writes, "Thanks for the memories of almost 38 years associated with the finest fellow workers and friends one could know; of the goals reached through the accomplishments of many; of the enjoyable times that we had along the way; of sharing with me the delightful evening of my retirement party; and gifts, scrapbook and mementos which will be a constant reminder of those days."

Jack Reeder writes, "I thank all of you who took part in my retirement party on November 14 and made it a very pleasant and memorable evening. I appreciate the fine gifts and mementos that will brighten my retirement for a long time. Most rewarding was to have so many of my old friends and co-workers there to see me off and wish me well. I thank you all very much. I hope we can keep in touch."

Donald Loving writes, "I want to thank everyone who had a part in making my retirement party on Feb. 6 an outstanding occasion that will be remembered for a long time. It was a joy to see and talk with everyone who attended. The words, mementoes and gifts were greatly appreciated and will always be treasured. I have had the privilege of working with the finest people in the world."

Leo J. Johnson, Jr. writes, "I wish to express my thanks to all my friends and fellow workers who made my retirement party such a success. I appreciate the gifts and mementos that were presented to me and above all I enjoyed meeting with my firends and associates once again. Thanks again for a very delightful evening."

Happenings

WALT DISNEY MOVIE. The LAA will show "The Apple Dumpling Gang" Sunday, March 8, at 3 p.m. in the Activities Center. The comedy stars Tim Conway, Don Knotts, Bill Bixby and Susan Clark. Admission is 75 cents and food will be sold.

SKI TRIPS are planned for Thursdays, March 5, to Wintergreen and March 12 to Bryce Mountain. The cost of each trip is $31 ($5 less with own equipment). A bus will leave Newmarket South at 5 a.m. and return there by 9:30 p.m. A check should be made payable to Richard Bennett and sent to him at Mail Stop 397 or 11 Bosch Lane, Newport News, Va., 23606. Please specify the date you wish to ski. For further information, call 599-6293.

HI CONCERT. Langley employees and their families are invited to attend a Sunday evening concert by the Hampton Institute Choir at the First United Methodist Church of Fox Hill, 2 Beach Road, Hampton, at 7:30 p.m. March 1. Reception follows.

SOFTBALL. There will be an organizational meeting of the NASA Softball Association March 11 at 4:30 p.m. in the Activities Center (Hampton Room). A representative from each prospective team should attend.

TIDEWATER DINNER THEATER. Neil Simon's semi-autographical comedy, "Chapter Two," is playing at the Tidewater Dinner Theater in Norfolk through March 29. Tickets are on sale at the Activities Office for $13 per person.

Aerospace Penpoints
by Wesley Berryman

You love a lot of things if you live around them. But there isn't any woman and there isn't any horse, not any before nor any after, that is as lovely as a great airplane. And men who love them are faithful to them even though they leave them for others. Man has one virginity to lose in fighters, and if it is a lovely airplane he loses it to, there is where his heart will forever be.

ERNEST HEMINGWAY

ARTS AND CRAFTS. The LAA Arts and Crafts Show will be held May 2 and 3 from 12 to 5 p.n. in the Activities Center. All persons interested in displyaing their crafts should contact Beverly Anderson, ext. 2592.

HAPPY HOUR will be held today from 4 to 6:30 p.m. in the Activities Center.

Retirement Parties

Edward A. Howe, Financial Management Division, will be honored with a retirement dinner, Thursday, March 26, at the Fort Monroe Officers' Club. A cash bar will begin at 6:30 p.m., with dinner at 7:30 p.m. The cost, including gift, will be $8.75 per person. Contribution to the gift only will be $1. Please make checks payable to Blanche M. Johnson, Mail Stop 136, by Friday, March 20.

A retirement luncheon honoring **Paul G. Fournier** will be held Thursday, March 26, at 11:30 a.m. in the Activities Center. The cost of the luncheon and contribution to the gift is $7 per person. Contributions to the gift only are welcome. Please send money to Ann Bell or Nettie Orie, Mail Stop 286, by March 20.

Howard J. Curfman, Jr. of the Marine and Applications Technology Division will be honored with a retirement party Wednesday, March 18, at the Fort Monroe Officers. Club. A cash bar social will begin at 6 p.m. followed by Beef and Burgundy dinner at 7 p.m. The cost will be $10 per person or $17.75 per couple. Contributions for gift only are welcome. For reservations, send check or call John McFall, Mail Stop 270, ext. 2977 by March 12.

LAA Travel

Take advantage of the 10 percent discount per person (based on double occupancy) now being offered on all Carnival Cruise Line cruises sailing from Norfolk this year:

Bermuda – May 12-19

Nassau – May 27-30, with 2-day optional stayover on Paradise Island for only $79 additional

Party Cruise to Nowhere – Sept. 5-8

Bermuda – Sept. 8-15

Las Vegas and Hawaii charter packages are available at **group rates** from Norfolk.

Ask for brochure of your choice by calling the Activities Office, ext. 3139, or Ernie Greene, ext. 2312 or 838-0567.

The New Zealand, Australian, South Pacific Tour is scheduled for Oct. 9-26, with an optional stayover in Honolulu or San Francisco. Watch for complete itinerary soon.

Compare Before Financing

A wise shopper always compares before buying. Shopping for credit should be no different. Compare contracts on an auto loan at a local dealer and at the Langley Federal Credit Union.

	Dealer	LFCU
Amount Financed	$ 8,748.30	$ 8.748.30
Finance Charge	$ 3,848.82	$ 2,468.34
APR	19.2%	12.75%
Total Payments	$12,597.12	$11,216.64
Monthly Payments (48 mons)	$ 262.44	$ 233.68

As you can see, there is a savings of $1,380.48 over 4 years, not to mention the extras LFCU offers such as free credit life insurance and no prepayment penalties. All of these factors lead up to one important point--money in your pocket.

Be a wise consumer. Do not be fooled by fast rates and so called "convenience." Compare rates and contracts before buying. Langley Federal Credit Union has three offices to serve you and is more than willing to give you comparisons.

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swap and shop

FOR SALE

Articles

Mahogany antique mirror, 17½"x39¼", $125. Call 244-8528.

Royal Ultronic Electric typewriter, EC, $75. Call 596-0980.

Golf Clubs: Full set of Jerry Barber "Golden Touch," with new grips, $100. Call 898-5003 after 5 p.m.

English saddle (Argentine), blanket and bridle, like new, $250 OBO. Call Estes, 595-4909.

Vehicles

1973 Plymouth Fury II, four-door, red, AT/PS/radio, good transportation, driven daily, $425. Call Nelson, ext. 3725 or 851-1667.

1972 Cutlass Supreme, green with white vinyl interior and top, AC/AT/PS/PB/AM-FM stereo, many components recently replaced, $1,295. Call 596-8319 after 5 p.m.

Boat: Neopreme-coated cloth, one four man, $50; one six-man, $80, never used. Call Kent, ext. 3095 or 420-8391.

Animals

Labrador puppies, 2 months old, black, females, shots and wormed, $50. Call Everhart, ext. 2621 or 838-0040.

FOR RENT

Sandbridge: cottage with liv.-kit.-din. area, four BR, washer, dryer, dishwasher, fireplace, AC, phone, six-car parking 1/2 block from beach and Back Bay. Summer rates $425/wk. Call Kent, ext. 3095 or 420-8391.

Beach cottage on white sand dune beach, sleeps 12, small sailboat included in rental price. Summer, $200/wk; available spring weekends. Call Martin, ext. 3911 or 693-4241.

Visitor Center Featuring Programs

The Space Shuttle and women in aviation will be featured at the Langley Visitor Center during March.

A 16-minute video presentation on the Space Shuttle will be continuously featured from Feb. 28 through March 31. The film shows certification and testing of the Orbiter at NASA facilities throughout the United States, including thermal tests on the Shuttle tiles at Langley.

The Visitor Center will salute women and their contributions to aviation with a special program titled, "Women in Flight."

A slide presentation, "History of Women in Aviation," will be given at 11 a.m. and 2 and 3:30 p.m. on March 7, 8, 14 and 15. Local members of The Ninety-Nines, an international women pilots association, will be on hand to informally discuss their organization and the history of women in aviation.

The Hampton Roads Chapter of The Ninety-Nines will provide a display from March 1 through March 15 on their group's activities.

cafeteria menu

WEEK OF MARCH 2

MONDAY: Old Fashioned Bean Soup; Spaghetti Dinner; Chicken Pot Pie; Beans & Franks. Snack Bar: Hot Italian Sausage Sub; Steak & Onion Sub; Egg Salad.

TUESDAY: Manhattan Clam Chowder; Roast Beef Au Jus; Polish Sausage; Tamale Pie. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Beef Noodle Soup; Roast Turkey Dinner; Crab Cutlets; Beef, Macaroni & Tomatoes. Snack Bar: Sausage Pizza; Steak, Onion & Cheese Sub; Bacon, Lettuce & Tomato.

THURSDAY: Chicken Gumbo Soup; Meat Loaf; Fried Fish Nuggets; Chicken & Dumplings. Snack Bar: Ham & Cheese Club; BBQ; Teriyaki Steak & Onion Sub.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Beef Tips over Rice; Green Chili Beef & Bean Burritos. Snack Bar: Deluxe Sub; Hot Roast Beef; Tuna Salad.

WEEK OF MARCH 9

MONDAY: Ham & Lima Bean Soup; Baked Lasagna; Chicken Chow Mein; Salisbury Steak. Snack Bar: Hot Italian Sausage Sub; Steak & Onion Sub; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Hot Roast Beef Sandwich; Stuffed Fish Filet; Knockwurst Reuben. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; Ham & Cheese Omelette; Boston Blue Fish. Snack Bar: Sausage Pizza; Steak, Onion & Cheese Sub; Bacon, Lettuce & Tomato.

THURSDAY: Chicken Noodle Soup; Braised Chicken Livers; Shrimp Creole; Chopped Steak. Snack Bar: Ham & Cheese Club; BBQ; Teriyaki Steak & Onion Sub.

FRIDAY: Fish Chowder; Fish Dinner; Sweet & Sour Ham-Pineapple Kabobs; Beef Balls Stroganoff. Snack Bar: Deluxe Sub; Hot Roast Beef; Tuna Salad.

Competitive Placement Announcements

The following Competitive Placement Announcements are currently open:

81-9 – Supervisory Aerospace Engineer; AST, Propulsion Systems; GS-0861-14 or 15; Office of Director for Aeronautics; High-Speed Aerodynamics Division; Hypersonic Propulsion Branch; Closes March 2, 1981.

81-13 – Accounting Officer; GS-0510-15; Office of Director for Management Operations; Financial Management Division; Office of the Chief; Closes March 2, 1981.

81-14 – Occupational Health Nurse; GS-0610-11 or 12; Office of Director for Management Operations; Office of Occupational Health Services; Closes March 2, 1981.

Thanks

George J. Hurt, Jr. writes, "I would like to express my deep appreciation to my many friends who planned, contributed to and attended my retirement dinner. Many thanks for past and future friendship."

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

Volume 20 Issue 5 March 13, 1981

Office of the Director

Lee Heads Equal Opportunity Programs Office

Robert B. Lee III has been selected to head the Office of Equal Opportunity Programs at Langley. He replaces Andrew J. Hansbrough, who will head the Management Systems and Analysis Office, a new office under the Director for Management Operations.

Lee is former manager of the Limb Infrared Monitor of the Stratosphere/Nimbus 7 Satellite Correlative Measurements Program, responsible for conducting studies to assess the performance of air pollution measurement instruments, proposed for use by the Environmental Protection Agency, National Oceanic and Atmospheric Administration and state environmental quality regulator agencies. Since last October he has also been involved in the development of the Correlative Measurements Program for the HALOE Space Shuttle experiment.

As head of the Office of Equal Opportunity Programs, Lee is responsible for monitoring and coordinating the center's Equal Opportunity Programs, including the Affirmative Action Plan, Hispanic Employment Program and Federal Women's Program, and administering the Discrimination Complaints System.

Lee began his NASA career in 1964 as cooperative training student. In 1966 he joined Langley's professional staff, conducting research in material science and space optics. From 1971 to 1974 he was project manager for a stratospheric ozone determination program using photometry of eclipsing satellites. In 1974 he was named data acquisition manager for the Dual Air Density Explorer Satellites Project and was an analyst for the West German ESRO IV Satellite Program.

From 1976 to 1977, Lee was in the NASA Career Development Program, assigned to NASA Headquarters as the technical administrative assistant to the Director for Weather, Climate and Environmental Quality Programs in the Office of Applications.

Born in Norfolk, Va., Lee graduated from Booker T. Washington High School, where he received numerous awards in math and was a member of the National Honor Society. He received a bachelor of

science degree in physics from Norfolk State College in 1966 and a master of science degree in engineering physics from the University of Virginia in 1972. He attended George Washington University and Old Dominion University for advanced studies in atmospheric science and physics.

He has been a visiting professor in physics at Hampton Institute, Hampton, Va.; Claflin University, Orangeburg, S.C.; and Lincoln University, Langston, Okla.

He is a member of the National Technical Association, Toastmasters International, Beta Kappa Chi scientific honor society, Norfolk State University Alumni Association, Omega Psi Phi and NAACP.

The author or co-author of 13 technical papers, Lee was selected as an Outstanding Young Man of America in 1972 and 1974 and was named to Personalities of the South in 1974. He is listed in the 1966 edition of Who's Who in American Colleges and Universities. He has received the National Urban League Achievement Award under the Black Executive Exchange Program and a Langley Special Achievement Award.

Lee, his wife, Margaret, and their four children, live in Hampton.

Hearth Gives State of Center Talk

Langley Director Dr. Donald P. Hearth will deliver a State of the Center message to Langley employees Tuesday, March 17.

Hearth's talk, "Outlook for Langley," will be held in the Activities Center. To allow all employees an opportunity to attend, the following four sessions are planned:

8:30 – 9:30 a.m.	Systems Engineering and Operations Directorate (except for the Fabrication Division)
10:00 – 11:00 a.m.	Fabrication Division Aeronautics Directorate
1:30 – 2:30 p.m.	Electronics Directorate Space Directorate
3:00 – 4:00 p.m.	Director's Office Structures Directorate Management Operations Directorate Projects Directorate

– *photo by Don Ward*

LANGLEY PRESENTS HIGHEST "NON-GOVERNMENT" AWARD. Langley Director Dr. Donald P. Hearth, left, presents the NASA Public Service Award to Frank D. Martell, Vice President of Operations for Chicago Bridge and Iron (CBI) Industries for the company's work on the National Transonic Facility (NTF) wind tunnel. The award is one of the few ever given by Langley for successful completion of a construction contract. It is the highest award the government can give a non-government entity. The inscription on the plaque lauds the company for "excellence in management leading to the completion and testing of the NTF pressure shell ahead of schedule; thereby, substantially increasing the probability of completing the project on time within cost." The $24 million contract, the largest single contract for the $85 million project, was primarily for fabricating, erecting and testing the tunnel pressure shell for the unique research facility. The CBI contract began in August, 1977 and is scheduled to be completed March 14, 1981. The facility is expected to be operational in mid-1982.

'Principles of Supervision II' to start in March

The third course in the Pre-Supervisory/Management Training Program, BUAD 115, "Principles of Supervision II" will begin March 31. Class will meet in Building 1194-A, Room 203/4, from 4:40 to 7:30 p.m. for 10 weeks. Prerequisite for this course is BUAD 114, "Principles of Supervision I." Course will carry three quarter hours of Thomas Nelson Community College credit.

BUAD 115 will cover supervisory functions, such as job management, work improvement, training and orientation of employees, evaluation of employee performance, communications, and the handling of various relationships among and between employees and management.

Tuition for this course will be paid by Langley. There is no guarantee of promotion to a supervisory position for anyone who attends this course or any of the other five courses in the Pre-Supervisory/Management Training Program.

For more information or registration forms, call Eloise McGehee, Training and Educational Services Branch, 2611.

Thought for the Day

The best way to forget your own problems is to help someone else solve theirs.

Spouses to Hear Hearth at Breakfast

Langley's programs and future, including an update on the Space Shuttle, will be discussed by Director Donald P. Hearth next week at a special breakfast for spouses of Langley employees.

The breakfast will be held Thursday, March 19, in the Activities Center at 8:30 a.m.

Credit Union Meeting Approaches

The Langley Federal Credit Union will hold its 45th annual membership meeting on March 23 at Kecoughtan High School. The event will begin at 6:30 p.m. with entertainment for the earlybirds. The business meeting will begin at 7 p.m.

This year's highlights include a multi-media review of last year's activities, elections, prizes, refreshments and a gift for each member. Members (over age 16) may vote at any LFCU office, March 16–20, from 10 a.m. to 3 p.m. and also at the meeting.

Remember, the key word is MEMBERS--only they can participate in voting, winning prizes and receiving gifts. Make sure you have an account in your own name and you're not simply a joint owner. Sign up today at any of LFCU's three offices.

Training Notice

Employees who might be requesting full-time graduate study during the 1981–82 academic year should contact the Training Office, ext. 2611, prior to April 15.

The *Langley Researcher*, as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond
Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

Langley Colloquium

Watson Discusses Recombinant-DNA

Recombinant-DNA is the creation of new forms of life by the genetic engineering cloning process. The impact of this technology may lead to serums, vaccines and hormones to successfully fight diseases ranging from cancer and hepatitis to the common cold, according to the Nobel Prize-winning biologist, Dr. James D. Watson.

Watson, Director of the Cold Spring Harbor Laboratory in New York, will discuss "Recombinant-DNA, The Insurance for Man's Future," at a Langley colloquium Monday, March 16, in the Activities Center. The lecture will begin at 2 p.m., followed by a question and answer session. The speaker will move to the Langley Room at 3 p.m. for an informal discussion.

Watson will give the same lecture at 8 p.m. that evening in the Hampton Coliseum as part of the "Our Future in the Cosmos" public lecture series, sponsored by Langley and the College of William and Mary. Free tickets are available at the Coliseum box office.

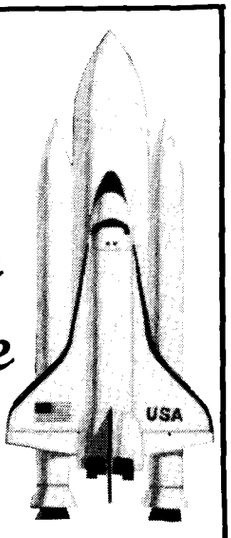
In his lecture, Watson will emphasize the development of vaccines and the potential for curing inherited diseases, such as sickle-cell anemia and hemophilia.

Watson thinks the Recombinant-DNA techniques will help identify all of the 100,000 human genes. He said the techniques may also be used to develop protein to help alleviate food shortages and increase the yield of alcohol from corn to energy, and bacteria for

consumption of oil spills and extraction of scarce, valuable minerals from the soil.

Watson and two other scientists won the 1962 Nobel Prize in medicine for their work in understanding DNA, the substance of genes. He has held positions at the University of Copenhagen, the University of Cambridge, the California Institute of Technology and Harvard University. He is the author of the book, "The Double Helix," which led to his discovery of the double helix structure of the DNA molecule.

Space Shuttle Update



The Space Shuttle Columbia is on the launch pad at Kennedy Space Center undergoing repairs to its external tank. Personnel at Kennedy are working to rebond the tank's insulation, which became unbonded during fuel loading tests earlier this year. The repairs began March 9 and are expected to take about 13 days.

A "dry" launch simulation with the external tank unloaded and the prime astronaut crew on board will be conducted next week. During this test, the space vehicle will be processed through the final five hours of the countdown to a simulated ignition and liftoff. The test is primarily a checkout of flight and ground support systems.

The launch date for the Shuttle is no earlier than the week of Apr. 5.

Achievement Awards Presented to Employees

The following Langley employees have been presented Special Achievement awards for one-time special acts or services exceeding job requirements:

Raymond T. Moore, "in recognition of outstanding achievement and accomplishment in the establishment of written procedures and guidelines for activities outside the Acquisition Division."

Everette S. Ketchum, "in recognition of outstanding achievement in the successful negotiation and administration of large complex research and development contracts in support of the HALOE and SAGE II Programs."

Thelma F. Jones, "for exceptional dedication and interest in performing job functions."

Cheryl A. Balderston, "for superior performance in maintenance of newly developed travel report during a very critical period."

Elizabeth W. Bierie, "for outstanding efforts, deligence and excellent manner in handling arrangements for the NASA/USAF/USN Tactical Aircraft Research and Technology Conference."

Richard G. Culpepper, "for excellent performance in planning and conducting the NASA/USAF/USN Tactical Aircraft Research and Technology Conference."

R. Raymond Parker, "for exceptional performance in perfecting a repeatable process for growing metal thiohypophospate crystals thus assuring the needed samples for the Photoelectrochemical Research Program."

Econyes L. Harvey, "for outstanding performance in carrying out duties that go beyond normal job requirements."

Allen H. Whitehead Jr., "for outstanding performance in the overall management of directorate operations under his jurisdiction."

Elsie P. Eason, "for outstanding performance in training new Instrument Control Office personnel in PACER equipment management procedures."

Antionette W. Watkins, "for contributions to the smooth and efficient operations of the Flight Electronics Division."

Paula E. Smith, "for contributions to the smooth and efficient operations of the Spaceflight Instrumentation Branch."

TELELECTURE:

A Way to Tell Others About NASA

Volunteers Needed to Expand Program

Langley offers a service to students, museums, and professional and civic organizations in which many Langley employees can participate--right from their own work sites. The service is called telelecture--a lecture, via telephone, that provides the next best thing to face-to-face communication.

Langley's Telelecture Program is designed to inform the public in other cities, states and countries about current NASA research.

The program is expanding because of increased travel costs, and more speakers are needed to meet the demand for telelectures. Seven lectures, which include slides and scripts, have been prepared on these topics: NASA and Energy, Flying Machines, Exploration of the Solar System, Space Shuttle, Manned Space Flight, Satellites at Work, and Voyager: Mission to the Outer Planets.

"Speakers are needed who would feel comfortable with these topics and be able to answer questions from the audience following the presentations," said Renee Benton, head of the program in the Office of External Affairs. "The existing lectures can be changed, however, to meet the needs of the speaker."

Telelectures on other topics are being developed and Benton is looking for people who are interested in developing their own lectures in the areas of general aviation, stall/spin research, ACEE, cockpit guidance and control, remote sensing, water quality monitoring, pollution, wind tunnels and lasers.

Benton explained how a telelecture works: "A carousel of slides, a script and instructions are mailed, on loan, to an organization prior to the scheduled program. At an agreed upon time and date, a Langley speaker will call the organization to give a live presentation. The lectures are usually 30 minutes in length, followed by discussion and questions from the audience."

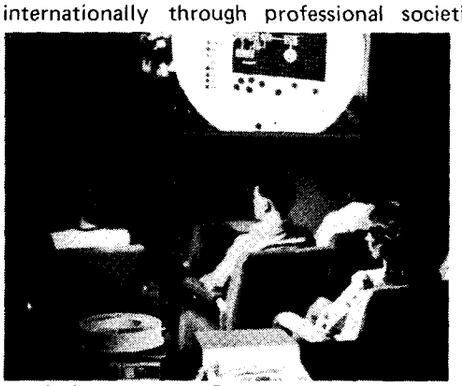
Benton said she is planning to publicize the program internationally through professional societies, academic journals and newsletters as soon as more speakers and lectures are available.

A telelecture program is now being planned for the New Zealand Spaceflight Association in Wellington, and community involvement program is going on now in Charleston, S.C. An average of two telelectures are given each workday, and will continue for the next five weeks.

Benton explained that the conference telephones used for telelectures are rented by the organization from the local telephone company. "Because of the community effort in Charleston, the Bell Telephone Company of South Carolina has provided Charleston extra phones at no cost to help promote the program. The company is very enthusiastic about teleconferencing and is planning a wide publicity program," she said.

Material on telelectures is now sent to teachers who request information on NASA programs. Future telelectures are planned at the Charlotte Nature Museum in North Carolina, Goshen College in Indiana, Shoreham, N.Y., and many other locations.

Telelectures are proving to be a good way of telling NASA's story. Employees interested in participating in Langley's Telelecture program should contact Benton at extension 3341 or 2932.



Langley's Telelecture Program allows individual members of the audience to learn more about NASA programs, view slides and talk directly to the speaker. Telelectures help organizations achieve substantial savings in time and travel.

Competitive Placement Announcements

The following Competitive Placement Announcements are currently open:

81-16 -- Head, Mechanical Support and Utilities Operations Branch; GS-1601-12 or 13; Office of Director for Systems Engineering and Operations; Operations Support Division; Mechanical Support and Utilities Operations Branch; Closes today.

81-17 -- Supervisory Aerospace Engineer; AST, Flight Vehicles Acoustics; GS-0861-14 or 15; Office of Director for Structures; Acoustics and Noise Reduction Division; Aeroacoustics Branch; Closes March 20, 1981.

81-18 -- Secretary (Typing); GS-0318-4 or 5; Office of Director for Structures; Acoustics and Noise Reduction Division; Noise Control Branch; Closes today.

81-19 -- Engineering Technician; GS-0802-9 or 10; Fabrication Division; Models and Materials Technology Branch; Materials Processing and Development Section; Closes today.

Shipley Transfers to Fort Eustis

John L. Shipley is the new Deputy Director of the Applied Technology Laboratory at Fort Eustis, effective March 8.

The Applied Technology Laboratory is one of four U.S. Army Research and Technology Laboratories (RTL) within the Aviation Research and Development Command.

Shipley was formerly Deputy Director of the Army Structures Laboratory, another RTL, at Langley, with technical responsibility for the Army's independent research program, as well as those conducted in joint participation with Langley, and also headed the Army Aeronautical Research Group.

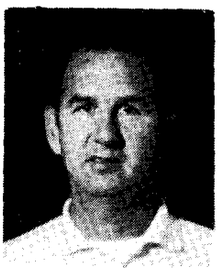
Born in Hyden, Ky., Shipley spent his childhood in North Carolina. After serving two years in the Army, he earned a bachelor's degree in mechanical engineering with an aeromechanics option at North Carolina State University in 1960. He also received a master's degree from North Carolina State while attending school under a DOD scholarship in 1966.

Shipley was a flight test engineer at the Naval Air Test Center, Flight Test Division, Patuxent River, Md., from 1960 to 1967. He transferred to ATL in 1967 and to the Army Structures Laboratory in 1970, where he was instrumental in the development and formulation of the joint NASA/Army research program.

The author or co-author of more than 20 publications, Shipley is a member of the American Helicopter Society and Sigma Xi, a national honorary society. He was presented the Commander's Award in 1970 for exceptional service and has received five outstanding performance awards. In 1980 he was presented the Meritorious Civilian Service Award, the Army's second highest civilian award, for his contributions to Army aviation research.

Shipley lives in Newport News with his wife and three sons.

In Memoriam



Robert L. Belbin, an electrical engineering technician in the Research Facilities Engineering Division, died March 8 in Hampton General Hospital. He was 53.

Belbin began his Langley career in June 1953 and graduated from the Apprentice School in February 1959.

He served in the U.S. Army from April 1946 to February 1949 and from March 1950 to March 1953.

Thanks

Warren Walls writes, "Thanks to all for the wonderful retirement luncheon and gifts."

Energy Saving Tips

Buy the smallest, least powerful air conditioner needed to cool the space you have.

Now is a good time to make sure that the ducts in your air conditioning system are properly insulated, especially those that pass through the attic or other uncooled spaces. This precautionary step could save cooling costs for you this summer.

Use small, portable appliances, like electric skillets or toaster ovens, when cooking small quantities of food. They use less energy and cost less to operate than a full size oven.

Do you realize that you can increase your energy bills by using too much detergent in your washing machine? Oversudsing makes the machine work harder and use more energy than is really needed. Follow detergent instructions carefully.

NASA News

Ames: Clarence A. Syvertson, Director of the Ames Research Center, has been elected to the National Academy of Engineering. Syvertson was cited for "outstanding contributions in aerospace engineering, sound guidance of research and technology programs and innovative institutional guidance."

Dryden: The HIMAT (high maneuverability aircraft technology) flight test vehicle has completed eight flights and is now undergoing control system modifications prior to additional testing in the neutral and negative longitudinal static stability regime. During its eight flights, the aircraft reached a maximum speed of Mach 0.93 and a maximum load factor of 8 Gs.

Goddard: NASA's Landsat-3 multispectral scanner has been removed from service because of a malfunction. Designed with a one-year lifetime, the spacecraft has been in orbit since March 1978, scanning Earth's surface to obtain resources data useful in agriculture, geology, water management and other disciplines. Where possible, Landsat-2, launched in January 1975, will meet user needs.

Marshall: The back-up twin of the Apollo Telescope Mount--identical to the payload flown as a part of Skylab that served as the nation's first manned astronomical observatory in space--has been declared surplus and is available for other uses. Some of the components may be flown aboard Spacelab (the orbiting laboratory scheduled for its first mission in the Space Shuttle in 1983) and other parts of the observatory may be put to other uses, given to other NASA centers or sold to the public through government auction.

Lewis: The nation's first "wind farm," featuring three of the largest government-built advanced wind turbine systems, is nearing completion. The machines, the most powerful wind turbines ever built and the first clustering of this type of system, have been designed to bring the cost of wind-generated electricity very close to the cost of power generated through the burning of fossil fuels. They are being built under the portion of the federal wind energy program managed by Lewis for DOE.

Langley to Host Shuttle Competition

Twenty high school students from Virginia and surrounding states will meet March 17 through 19 at Langley to learn who will have the opportunity to have their experiments fly aboard the Space Shuttle.

The competition is part of the national Space Shuttle Student Involvement Project, a joint effort of NASA and the National Science Teachers Association.

The objective of the project is to stimulate the study of science and technology in grades 9 through 12 by engaging students in a competition to develop payload experiments suitable for flight aboard the Space Shuttle.

The students, from Virginia, North Carolina, South Carolina, West Virginia, Maryland and Washington, D.C., are among 200 semifinalists from across the country competing to have their experiments placed on the Shuttle. The experiments encompass a wide range of disciplines, including biology, chemistry, astronomy and physics.

About 1,500 entries for the competition were received by the Association. These proposals were grouped into 10 geographic areas or regions determined by the Association. The students who will meet at Langley are from region three.

Interdisciplinary teams of teachers, scientists and engineers, selected by the Association, reviewed the proposals at the 10 regional levels and selected 20 entries from each region for the semifinal competition.

According to Hal Mehrens, head of Langley's Office of Education and Community Services, each student during the semifinals will be required to present his experiment proposal to a panel of judges.

The judges will evaluate the proposals and consult with the students on each proposal. The students may then refine their proposals and resubmit them. The judges will then, based on the resubmitted proposals, select the winners.

The winning projects will be chosen on the basis of scientific or engineering merit. The winners and their teachers will attend a special educational conference at NASA's Kennedy Space Center in Florida late this summer.

Winning student experiments will be assigned to specific Shuttle flights as the experiments are ready, as Shuttle payload space is available and as future Shuttle flights are confirmed.

A second Space Shuttle Student-Involvement Project contest will open in September, with a series of regional conferences planned for March 1982. Selection of new groups of student winners will be made in May 1982.

– photo by Bob Nye

It was a day of looking to the future for about 325 local high school students, with an interest in engineering, who attended "Career Day," Feb. 24, at Langley. The day's activities included opening comments by Langley Director Donald P. Hearth; a panel discussion on cooperative education by engineering co-op students from Langley and Newport News Shipbuilding and Dry Dock Co.; a tour of several of Langley's research facilities; and individual meetings with representatives from area engineering societies.

Langley Holds NEBA Membership Drive

The NASA Employee Benefits Association (NEBA) is conducting its annual membership drive during March by offering all full-time permanent employees the opportunity to sign up for group life insurance protection at excellent rates.

Basic life insurance is offered at 65 cents per $1,000 of coverage, payable quarterly. A 25 percent free bonus dividend was declared effective October 1, 1980, for one year (this may be continued beyond October 1, 1981.) This bonus, when added to the basic coverage, makes the effective cost of NEBA protection 52 cents per thousand, per quarter of 8 cents per thousand, per bi-weekly period.

One of the best features of the NEBA plan is that the premium rate is not based on the age of the individual with subsequent premium increases as is the case of most group term policies. The employee is also covered for double indemnity for accidental death, along with dismemberment provisions.

The employee's spouse and dependent children may also be covered under the policy for a reasonable additional premium. Depending upon the employee's salary, the spouse may be covered for $5,000, $10,000, or $15,000. All dependent children from 6 months to 19 years of age are covered for $2,000 each. If you are not a NEBA member, you can obtain additional information and enrollment forms from the Employee Relations Office, Mrs. Lahoma Hart, ext. 2523. Payment by payroll allotment through the Langley Federal Credit Union may also be arranged.

Happenings

SOCCER PLAYERS: Have you played soccer in high school, college or club teams? A team is forming to compete in area leagues. If interested, send name to C. E. Byvik, Mail Stop 160.

BLOODMOBILE. The Red Cross Bloodmobile will be held Wednesday, March 25, from 9:30 a.m. to 3:30 p.m. in the Activities Center. For more information or an appointment, call the Dispensary, ext. 3976.

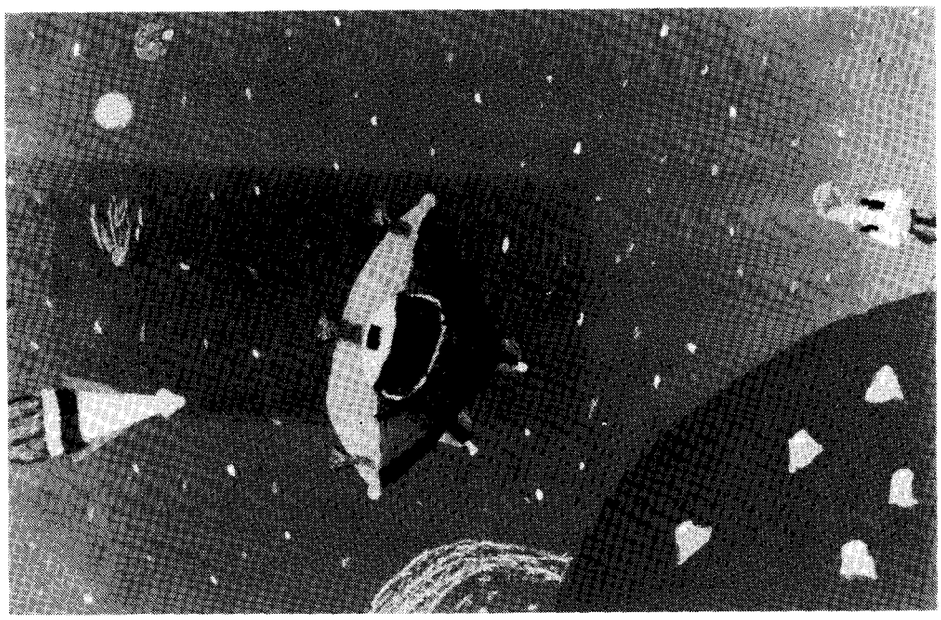
HAPPY HOUR will be held today from 4 to 6:30 p.m. in the Activities Center.

TIDEWATER DINNER THEATER. "Chapter Two," Neil Simon's semi-autographical comedy, is playing at the Tidewater Dinner Theater in Norfolk through March 29. Tickets are on sale at the Activities Office for $13 per person.

GOLF ASSOCIATION. The 1981 membership drive for the NASA Golf Association is now open to all NASA employees and retirees. The annual membership dues are $7.50. Make checks payable to the NASA Golf Association and send to Frank Ballentine, Mail Stop 432, by March 18, to be eligible for the first tournament later this month. Nine tournaments are planned, including two-man and four-man best ball, individual and alternate shot. Each tournament, scheduled three to four weeks apart, will be played at a different golf course. For additional information, call Tom Bonner, ext. 4666, Forrest Dickinson, ext. 4534, or Frank Ballentine, ext. 4666.

TO YOUR HEALTH. A new service is offered to Langley employees who participate in the annual health maintenance program. The clinic is holding "Weigh In" Clinics each afternoon and patients are weighed and counseled once a week. A confidential record of weight loss will be kept for each participant and a total of all NASA pounds shed will be published monthly in the *Langley Researcher*. Summer is coming; it's time to shape up. Call Pam Gebhart, ext. 2246, or stop by the clinic.

HONEY BUNCH. The NASA-Langley Apicultural Club will meet Monday, March 16, from 7 to 9:30 p.m. in Room 180 of Building 1209. After a brief business meeting, films from Virginia Polytechnic Institute on beekeeping will be shown.



– photo by Alton Moore

Artworks depicting a child's view of space travel will be on display at the Langley Visitor Center March 18 – 31. Twenty paintings and drawings by Landrum, S.C. elementary students done as part of a town-sponsored Community Aerospace Education program will be featured. This photograph shows an oil painting by fifth grader, James Hughes.

Youth Activities Open to NASA Children

Did you know that your dependents, ages six through 18, are eligible to participate in the Youth Activities Program at Langley Air Force Base?

Langley Youth Activities (LYA), a section of the Base Morale, Welfare and Recreation Division, strives to create interest in a wide range of recreational activities. LYA classes offered include gymnastics, archery, ballet, baton, air rifle safety, guitar, piano, karate and tap. Sports programs include football, baseball, basketball, soccer, golf and AAU Swim Team. Classes meet at either the Shellbank Youth Center, Building 253, or the Bethel Manor Youth Center, Building 1421.

Wayne Williamson, Director of Youth activities, believes LYA is one of the finest in the Air Force. "Children are a very prominent part of the Langley community," Williamson said. "We in Youth Activities are making every effort to develop their minds and bodies, encourage fair play, promote good sportsmanship and offer good wholesome leisure-time activities."

Williamson said both centers are open during the week for children to participate in organized activities, such as arts and crafts, ping pong, pocket billiards, German football, computer games, bumper pool and hockey. In addition, pre-teen and teen dances are held on the weekends.

For more information about LYA or a brochure explaining the program, call 764-2300 or 838-5061.

TENNIS CLUB. The Langley Tennis Club will meet Tuesday, March 31, at 4:45 p.m. at the Activities Center tennis courts to discuss activities for the 1981 season. All prospective members are invited; free beer will be available. To encourage more female participation in the club, free group tennis lessons will begin the week of April 13. For more information concerning the meeting or lessons, call Burnell McKissick, ext. 3874 or 3085.

Retirement Party

Albert C. "Roby" Robinson will be honored with a retirement luncheon Friday, March 20, at 11 a.m. in Building 1221 Pipe Shop. The cost, including gift is $3 per person. Contributions to the gift only are welcome. Please send your remittance to Beverly Anderson, Mail Stop 166A, by March 18.

National Aeronautics and
Space Administration

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Hampton, Virginia
23665

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10-Mile Race Held

Bad weather was the mark of the day, but nine hardy runners showed for the 10-mile, staggered-start race held Saturday, Feb. 21.

Runners made two five-mile trips around the NASA West Area in drizzling 40-degree weather and all runners finished and with good times. The runners in order of finish were Dick Harrington, Mel Anderson, Victor Carreno, John Hoppe, Richard Shearer, Joe Kubalak, Bill Witte, Al Graham and Gale Harvey.

Hopefully, milder weather will prevail when the 11th Intercenter Meet is held during the first two full weeks in April.

Thanks

Bob Schwartz wishes to thank all of his friends at Langley for their donations of blood during the illness of his wife "Sam" and for the kind expressions of sympathy after her passing.

William S. Haywood, Jr. writes, "I wish to thank all the people who planned, contributed and worked so hard to make my once-in-a-lifetime retirement party a memorable event. My family and I will always remember that special evening and the wonderful friends I have been associated with at NACA/NASA. My grateful thanks to all of you."

Bob Mayer writes, "To all who sent business cards to me for forwarding to the young girl hobbyist convalescing in New Hampshire, I thank you. I received in excess of 1,600 cards. While I haven't heard from the 12 year old, I'm certain your concern has helped alleviate the boredom associated with her confinement."

cafeteria menu

WEEK OF MARCH 23

MONDAY: Ham & Lima Bean Soup; 5 oz. Strip Steak; Baked Tuna & Noodle Casserole; Knockwurst Reuben. Snack Bar: Hot Italian Sausage Sub; Steak & Onion Sub; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Hot Roast Pork Sandwich; Chicken Chow Mein; Salisbury Steak. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; Ham & Cheese Omelette; Broiled Fish Filet. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Tomato & Rice Soup; Braised Chicken Livers; Shrimp Creole; Chopped Steak. Snack Bar: Ham & Cheese Club; BBQ; Teriyaki Steak & Onion Sub.

FRIDAY: Minestrone Soup; Fish Dinner; Ham Steak; Beef Balls Stroganoff. Snack Bar: Deluze Sub; Hot Roast Beef; Tuna Salad.

WEEK OF MARCH 16

MONDAY: Old Fashioned Bean Soup; Spaghetti Dinner; Chicken Pot Pie; Beans & Franks. Snack Bar: Hot Italian Sausage Sub; Steak & Onion Sub; Egg Salad.

TUESDAY: Manhattan Clam Chowder; Corned Steamship Round of Beef; Polish Sausage; Fried Fish Filet. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Beef Noodle Soup; Roast Turkey Dinner; Crab Cutlet; Macaroni, Franks & Cheese. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Gumbo Soup; Meat Loaf; Fried Fish Nuggets; Chicken & Dumplings. Snack Bar: Ham & Cheese Club; BBQ; Teriyaki Steak & Onion Sub.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Beef Tips over Rice; Stuffed Pork Chops. Snack Bar: Deluxe Sub; Hot Roast Beef; Tuna Salad.

Key Positions

William L. Derby has been selected Head of the Composites and Models Development Section and **Charles E. Johnson** has been selected Head of the Materials Processing and Development Section in the Models and Materials Technology Branch, Fabrication Division.

Joseph P. DeGinder Jr. has been selected Head of the Metals Technology Development Section, Metals Applications Technology Branch, Fabrication Division.

swap and shop

FOR SALE

Articles

Home bakeries (cakes, tarts, specials), next day delivery at reasonable prices. Call Chandra, 874-5916.

Piano, Wurlitzer Spinet, $700. Call Reeder, 596-0628.

Children's wheel chair "Rolls," $250. Call Poslik, ext. 4535 or 851-0496.

Vehicles

1966 Chevrolet Belair, V-8, AT, PS and AC, $300 OBRO. Call Scholz, ext. 2001 or 693-5918.

1978 Alfa Romeo Italian convertible sports car, black w/burgundy int., rust proof, roll bar, many extras, EC, $7,450. Call 599-4321.

1971 Lincoln, two-door, inspected recently, all power, EC, best offer. Call 245-1231, after 5 p.m.

FOR RENT

York County: 4 BR, 2½ BA, LR, DR, Fam. Rm, w/fp., recreation room or fifth BR, 3/4-acre lot, heat pump, avail. March 21, $550/mo. Call 898-4132.

Sandbridge: Cottage with liv.-kit.-din. area, 4 BR, washer, dryer, dishwasher, fireplace, AC, phone, 6-car parking, 1/2 block from Backbay, summer rates $425/wk. Call Kent, ext. 3095 or 420-8391.

Seaford: Apartment, 1 BR, w/heat and hot water, furnished, ready mid-March, $125/mo., no alcohol or smoking allowed. Call 898-671.

WANTED

To contact persons interested in Orient Tour - NO CONNECTION WITH LAA - Nov. 16 to Dec. 8. Local host, small local group. Scheduled flights, luxury hotels, most meals included. Visit Japan, Hong Kong, day trip to China, Bangkok, Singapore, Manila. Early reply requested to insure minimum group. For further information, call Sinelnick, 596-1851.

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

Volume 20 Issue 6

March 27, 1981

Adams, Struhar Named Langley Managers

Two new managers have been named within the Management Operations Directorate at Langley.

Joseph R. Struhar is the new Chief of the Financial Management Division, replacing Edward A. Howe, who retired last December. Struhar is former Assistant Chief of that division. Dr. Belinda H. Adams has been selected Assistant Chief of the Programs and Resources Division. She is former Head of the Institutional Programs Branch of that organization.

Struhar will be responsible for all areas of finance and accounting except budget preparation and control.

Adams will assist the chief of the division that is responsible for helping center management plan and implement research and development programs and supporting requirements through analysis of present and proposed programs to provide resources, such as money, manpower and facilities; preparation of budgets and program operating plans; monitoring the budget process; and supporting Langley divisions in resource policy and procedure.

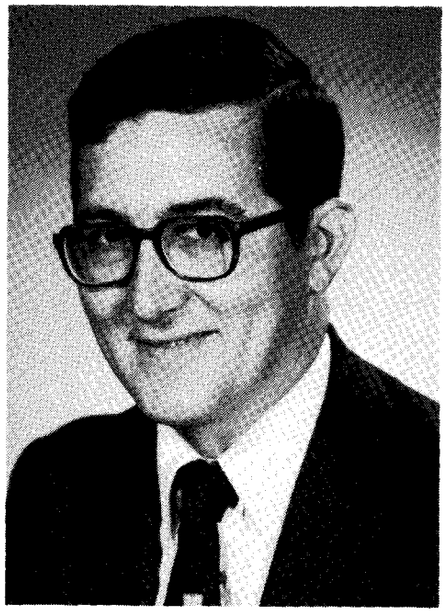
Dr. Belinda H. Adams

Struhar began his Langley career in August 1960 as a staff accountant. In February 1965 he was named Head of the Appropriation Accounting Section. He became Assistant Head of the Accounting Branch in June 1966 and branch Head in April 1970. In March 1973 he was selected Assistant Chief of the division. He served in the U.S. Army from 1961 to 1963.

Born in Pittsburgh, Pa., Struhar graduated from North Catholic High School in 1956. He received bachelor and master of science degrees in business administration from Duquesne University in 1960 and the College of William and Mary in 1973, respectively.

Struhar is a member and Past President of the Federal Government Accountants Association.

He, his wife, Catherine, and their two sons live in Hampton, Va.



Joseph R. Struhar

Adams joined the Langley staff as an aerospace technologist in the Analysis and Computation Division in July 1963. From November 1970 to August 1973 she was an operations research analyst, working first in PRD and then in the Business Data Systems Division. While assigned there, she was responsible for planning and coordinating the training program for a new generation of computers. She became Assistant Head of the Institutional Programs Branch in August 1973 and branch Head in April 1975.

She was an assistant professorial lecturer at the George Washington University's Tidewater Center from 1970 to 1976.

A native of Mississippi, Adams received an associate degree from Hinds Junior College, graduating with honors in 1961, and a bachelor of science degree in mathematics from the University of Mississippi in 1963. She received a doctorate in business administration with a specialty in quantitative methods from the University of North Carolina in 1972.

The author or co-author of four technical papers, Adams is a charter member and Past President of the Peninsula Chapter of the Society for Advancement of Management. She has received a Special Achievement Award and a Group Achievement Award, and in 1977 was NASA's nominee for the William A. Jump Memorial Award for distinguished career service in public administration. She served on the Center Task Team supporting a NASA Task Force of Performance Appraisal and Merit Pay, for which NASA received the first Udall/Derwinski Award for excellence in Civil Service reform implementation.

Adams, her husband, William M. Adams, Jr., and their two daughters, live in Yorktown.

– photo by Ronnie Booth

Jack Van Ness (left), Head of the Office of External Affairs, accepts a painting from Sam Mason, brother-in-law of the artist, Wendell Dowling. Dowling gave the painting, which hangs in the Visitor Center, to NASA along with a plaque that reads: "My father was born in 1900 and died in 1979--an average lifespan for this day and age. On December 17, 1903, man first loosed the bonds of earth's gravity with powered flight, and on July 20, 1969, just sixty-five years and seven months later, man stepped for the first time onto the lunar surface. These two events are each significant in themselves, but that they took place well within one person's lifetime, gives evidence to the remarkable ability that God has placed within us to reach beyond our grasp. That, in a twinkling, our tomorrows become our yesterdays, is literally reflected in Buzz Aldrian's face shield. This original portrait, painted on the tenth anniversary of the moonwalk, is presented to NASA as a testimony to the American Spirit--to challenges faced and dreams realized--and that in reaching ever outward we discover new tomorrows and the realization that earth is not our home."

Reduce Safety Problems

Obey 'No Parking' Signs

Illegal parking is causing real safety problems at Langley. The necessity to maintain fire lanes and access for emergency ambulance response is essential for the protection of everyone at the center.

On a number of occasions in recent weeks, the emergency response units have been hampered by personal vehicles parked in areas clearly defined as "no parking" areas. The driveway in front of the Activities Center and the parking lot behind the Building 1268 and 1192 complexes are two areas that are of particular concern.

At the Activities Center, vehicles frequently are illegally parked on the sidewalk and adjacent to large "no parking" signs. The violations are mostly noted during after-work gatherings and on weekends. There are ample parking spaces, including a large lot behind the Activities Center. In the area behind Buildings 1268 and 1192, the problem is noted during normal work hours, making access to these vital facilities by fire fighting vehicles virtually impossible.

Unless the situation improves and access to our facilities for emergency response is possible, additional measures for enforcing the parking rules will be necessary.

Remember, the ambulance and fire protection is for **our** safety and health. The extra steps required when we park legally is a small price to pay for the insurance of getting help quickly when the need occurs.

Key Positions

Michael F. Cavelli and **Albert C. Knollmann** have been selected assistant heads of the Contracts Branch, Acquisition Division, under Competitive Placement Plan 81-8.

Langley Televises Shuttle Activities

Langley employees and their families will have an opportunity to see televised activities surrounding the first Space Shuttle mission at the Langley Activities Center.

Plans are underway to bring TV coverage directly to Langley via a 30-foot dish antenna. Viewers will be able to see the countdown preparations, launch and landing, plus some activities during the mission.

Based on present plans, the launch will occur around 7 a.m.--depending on the exact date--from the Kennedy Space Center and landing will occur approximately 54 hours later at the Dryden Flight Research Center.

More details will be provided through a special employee announcement once the date of launch has been selected.

FEGLI Dates Set

The "Open Season" for the Federal Employees' Group Life Insurance program will end March 31.

New enrollees will be covered for the Basis Life Insurance or the various options beginning April 1 if they are in duty status. Employees on travel are considered to be on duty.

For new enrollees on annual or sick leave or otherwise absent from duty, coverage will begin upon their return to work.

Employees, who were previously covered for the Basic Life Insurance or the Basic Life and Option A-Standard and wish to continue these elections, will have their coverages continued without interruption, regardless of their duty status on April 1.

The SF 2817A, included in each employee's "Open Season" material, reflects more precise information on the effective dates.

The *Langley Researcher*, as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond
Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees' of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

Lee Receives Technology Utilization Award

Inventors Honored at Luncheon

Sixteen Langley inventors were honored for receiving United States patents in 1980 at the annual Inventors' Luncheon Thursday, March 19.

Awards were presented by Dr. Donald P. Hearth, Langley Director. Guest speaker for the luncheon was Floyd I. Roberson, Director of the Technology Transfer Division at NASA Headquarters.

This is the first time a woman has been the sole inventor of a contribution for which a patent has been issued. Carmen E. Batten was presented an award for a visible and infrared polarization ratio spectroreflectometer.

In addition to receiving an award for a retainer for murine specimens and test equipment, Roland W. Lee was presented the Langley Technology Utilization Award. The citation accompanying the award read, "For outstanding accomplishments in a number of biomedical applications projects, which have resulted in significant transfers of NASA technology and expertise and substantial benefits to the public, thereby, reflecting considerable credit to NASA."

Other inventors receiving awards were Randloph F. Culotta and Donald L. Posey, for a static pressure orifice system testing method and apparatus; Maynard C. Sanford and David L. Gray, for a solar cell angular position transducer; Wilford E. Sivertson, Jr., for a radar target for remotely sensing hydrological phenomena;

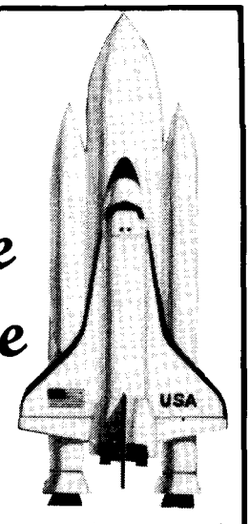
William R. Hood, for detection of the transitional layer between laminar and turbulent flow areas on a wing surface; Emmett L. Bryant, for a noncontacting method for measuring angular deflection; David C. Grana and Richard T. Wilem, for a natural turbulence electrical power generator; Ronald N. Jensen, for a combined solar collector and energy storage system; Dr. Joseph S. Heyman, for a CDS solid state phase insensitive ultrasonic transducer;

William M. Kahlbaum, Jr., for a chromatically corrected virtual image visual display; Dr. Wolf Elber, for a partial interlaminar separation system for composites; and Bobby L. Berrier, for a thrust augmented spin recovery device.

– photo by Don Ward

Inventors honored for receiving patents in 1980 are: (Front row from left) Dr. Wolf Elber, Maynard C. Sanford, Bobby L. Berrier, Carmen E. Batten, William R. Hood, David C. Grana and Richard T. Wilem; (back row from left) Dr. Joseph S. Heyman, Ronald N. Jensen, William M. Kahlbaum, Jr., Wilford E. Sivertson, Jr., Emmett L. Bryant, David L. Gray and Roland W. Lee. Absent from the picture are Randolph F. Culotta and Donald L. Posey. In addition to the patent award, Lee also received Langley's Technology Utilization Award.

Space Shuttle Update



The insulation on the external tank has been repaired and crews at the Kennedy Space Center, as of Tuesday afternoon, March 24, were preparing for two tanking tests this week.

The tests, filling the external fuel tank with liquid oxygen and hydrogen propellants, are similar to those conducted in late January when insulation on the external tank became unbonded.

During the first tanking test, scheduled for Wednesday, propellants were to be loaded at above normal operating pressures. The second test, scheduled for today, will be conducted at normal pressures.

The success of the tests is considered by NASA officials as a major step in meeting the launch date, now scheduled for no earlier than the week of Apr. 5. An official target date for launch is expected to be set early next week.

Thanks

Howard J. Curfman, Jr., writes: "Many thanks to all my friends--old and new--who made my retirement party something very special. Good friends are the best 'fringe' benefit of years of work. Thanks, again."

Vivian W. Holmes, Financial Management Division, writes, "I'd like to thank each of you for the prayers, cards, flowers, telephone calls and visits during my recent illness. They all played an important part in my recovery."

Frank Hohl. writes, "My family and I would like to thank all of our friends for their throughtfulness and best wishes during my recent surgery. I expect to join you back on the job very soon."

– photo by Bob Nye

Twenty high school students and their faculty advisers from Virginia and surrounding states are shown after the students presented their Space Shuttle experiment proposals March 17 through 19 at Langley. The students are among 200 semi-finalists from acorss the country competing to have their experiments placed on the Shuttle through the Space Shuttle Student Involvement Project. The objective of the project, sponsored by NASA and the National Science Teachers Association, is to stimulate the study of science and technology in grades 9 through 12 by engaging students in a competition to develop payload experiments suitable for flight aboard the Space Shuttle.

NASA News

Ames: Dr. Robert T. Jones, who worked at Langley from 1932 to 1946 and is now a senior staff scientist at the Ames Research Center, received the President's Award for Distinguished Federal Civilian Service March 13.

Ames will be testing women aged 55 to 65, beginning April 1, to determine if they can withstand the physiological stress of weightlessness. Eight test subjects, selected from more than 200 volunteers, will be the oldest group of women NASA has subjected to prolonged bedrest (which closely simulates the effects of weightlessness). The study will conclude a series of six experiments designed to establish baseline medical criteria for Space Shuttle participation.

Thomas Fryer, a 30-year employee of Ames, has been named NASA Inventor of the Year for 1980. Fryer, who was chosen from inventors at NASA centers, was cited for his work in medical electronics. The winning device, completed in 1977 and patented in 1980, measures intracranial pressure.

Lewis: Center Director Dr. John F. McCarthy, Jr. has been elected to the National Academy of Engineering, the highest professional distinction that can be conferred on an engineer.

Lewis has begun a program on de-icing for small aircraft and helicopters. The goal of the effort is to increase the effectiveness of existing ice protection systems and, concurrently, develop advanced concepts for both anti-icing and de-icing systems that will be reliable, cost-effective, energy efficient, light in weight and easy to maintain.

Headquarters: The International Affairs Division represented NASA in an interagency meeting March 12 at the State Department to prepare for UNISPACE, the United Nations Conference on the Exploration and Utilization of Outer Space planned for Vienna in August 1982.

The Voyager Mission Team, represented by Dr. Edward G. Stone, has been selected to receive the Collier Trophy, the nation's oldest aviation award. The award, given annually for the greatest achievement in aeronautics or astronautics in America, will be presented May 19, for "the spectacular flyby of Saturn and return of basic new knowledge of the Solar System."

Goddard, Johnson and Langley: The first NASA Equal Opportunity Trophy has been awarded to the Goddard Space Flight Center by the Equal Opportunity Council Subcommittee. The trophy recognizes the NASA installation and management team which has implemented the most effective management strategies and has achieved the most positive affirmative action results. The Johnson Space Center and Langley were commended for their fine managerial efforts and accomplishments.

Wallops: The first several Space Shuttle flights will be tracked by radar from the Wallops Flight Center during both launch and orbit. The Shuttle will appear on Wallops' horizon about two minutes after it lifts off from Kennedy and remain in its range about 15 minutes. During this phase of the launch, safety commands, such as an order to abort if something goes wrong, could be transmitted from Wallops. After the space vehicle begins orbiting, it will be monitored by Wallops radar every other day for four or five orbits.

Tech House to Close

A Langley landmark, having served its major research purposes, will be closed to the public beginning Monday, April 6.

The NASA Technology Utilization House, located near Langley's Visitor Center, is ending a five-year research program to demonstrate the transfer of space-related technology systems to residential uses.

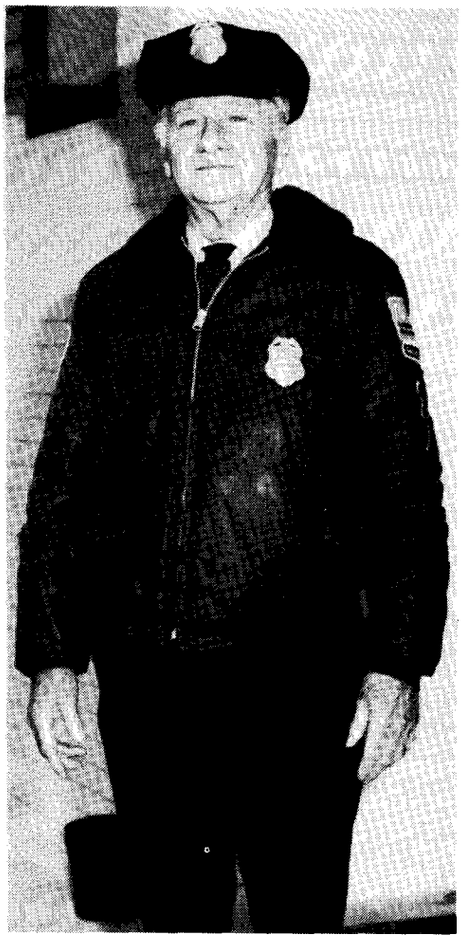
The Tech House was designed to demonstrate energy- and resources-saving equipment and systems that were available--or would be available within a few years--to the average homeowner.

Major systems in the house include solar collectors on the roof, a water recycling system, several thermal protection features, energy-saving lighting and appliances, extra hot water storage tanks, and a special fireplace air-heating unit.

A family of four people lived in the house for one year, testing the systems under normal living conditions. That experiment proved that considerable amounts of both energy and money could be saved through the use of technology systems developed from the space program.

The Tech House will be open each weekday and for two more weekends, March 28–29 and April 4–5, on Saturdays from 8:30 a.m. to 4 p.m. and on Sundays from noon to 4 p.m.

Dowling Hangs Up His Guard Hat



As a NACA plant protection man, a NASA security assistant and a contractor security guard, Wallace J. Dowling has devoted 31 years of his life to Langley, keeping a watchful eye on the center.

On Tuesday, March 31, Dowling will hang up his guard hat and retire at the age of 80.

Dowling came to Langley in 1950 as a plant protection man assigned to the Security Office, working for Edward B. Boswell. "Back in those days, guards were civil service employees," Dowling explained. "There were only three of us responsible for the entire installation, for both security and fire protection. Two of us covered the West side and one covered the East."

The guard force increased in size as the center grew, and in 1961 plant protection was placed under contract with the M & T Company. Dowling was the only guard to stay on at Langley; the others either retired or found other employment. "At that time I continued to work in the Security Office as a security assistant," Dowling said. "My job was seeing that the contract guard force had their assignments. If anything special came up that the guards had to check on or look for, I explained that to them."

Dowling said he enjoyed the 10 years he worked as a security assistant because he worked more closely with center employees. "I had a pass to go anywhere on the field and could keep in touch with what was going on. I always checked out the security violations, such as leaving safes unlocked or classified material on desks, that were reported to the office by the guards. It seemed like every day somebody had a violation that had to be checked. I performed badge checks regularly to make sure employees were wearing their badges," he said.

In 1971 Dowling retired from NASA at the age of 71. He immediately went to work for Industrial Maintenance Services, Inc., as a contractor security guard. He worked at the old Gate 5 for more than seven years and has been stationed at the new Gate 5 for about two years. He has also filled in at Gate 4 whenever needed. "I worked at the Visitor Center, too, for a year 'guarding the moon rock,'" he laughed. "That really was my main duty then. I also had to keep my eyes open all the time to make sure kids didn't put stuff in their pockets."

Dowling has seen many changes at Langley during his 31 years here. "It seems to me that Langley was more self-sufficient in the 1950s. Langley had good facilities, such as carpenter shops and machine shops, where all the work was done by the employees. There was also an excellent maintenance staff here and really good technicians in all branches. As the technicians retired, it seems many were replaced by contractors. Everything now is definitely more contract oriented. There are more facilities now and, with the complement cutbacks, I guess more work had to go under contract."

One of the most exciting times Dowling remembers was during the days when the first seven astronauts were assigned to Langley. "The days the astronauts were training here and the first spaceflight were exciting times for Langley. After all, this center was where a great deal of the research took place. It was during those days that history was made. The ones of us that were here then will always remember those special events.

"While the astronauts were in training, their offices were in the East area. They kept their research equipment and space suits there and we had to make sure those items were secure. I knew all seven of those guys. They were all nice guys, every one of them."

Dowling said his career has been a good one--one he said he will miss. "Thirty-one years of my life have been spent here. You never forget old acquaintances and the people you work with. You're always thinking back about the good times you've had. There weren't many bad times, either."

How much time will Dowling spend out here in the future? "Not much," he said. "I plan to spend a lot of time with my wife and we plan to travel."

As Dowling retires from Metropolitan Security Service, he leaves this message with his friends: "I would like to say that my associates at Langley have been the finest people anyone could ever hope to work with and my comrades of the guard force are equally as fine."

Your comrades of the guard force think you are fine, too, Wallace J. Dowling. Major Winfred L. Jones, the contract manager, has this to say to you: "In recognition of your 31 years of faithful and dedicated service as a federal and contractor guard at Langley, I would like to take this opportunity to commend you on your outstanding performance as a guard, instructor and adviser. During this long period of time, your fellow guards have been most impressed by your positive attitude, professional ability, personal appearance and behavior, which set an example for all to follow. Your expert suggestions and recommendations have been a decisive factor in formulating the professional guard force we have today. Your personal accomplishment, enthusiasm and exceptional devotion to duty will always be remembered.

"The expressions stated here are the sole expressions of your fellow guards . . . . It is their way of saying you are Number 1.

"Captain Depue, the entire guard force and I extend our sincere appreciation for a job 'superbly well done.' We wish you and your family the best of health and happiness and wish you well in all your endeavors."

Review Hotel Fire Survival Rules

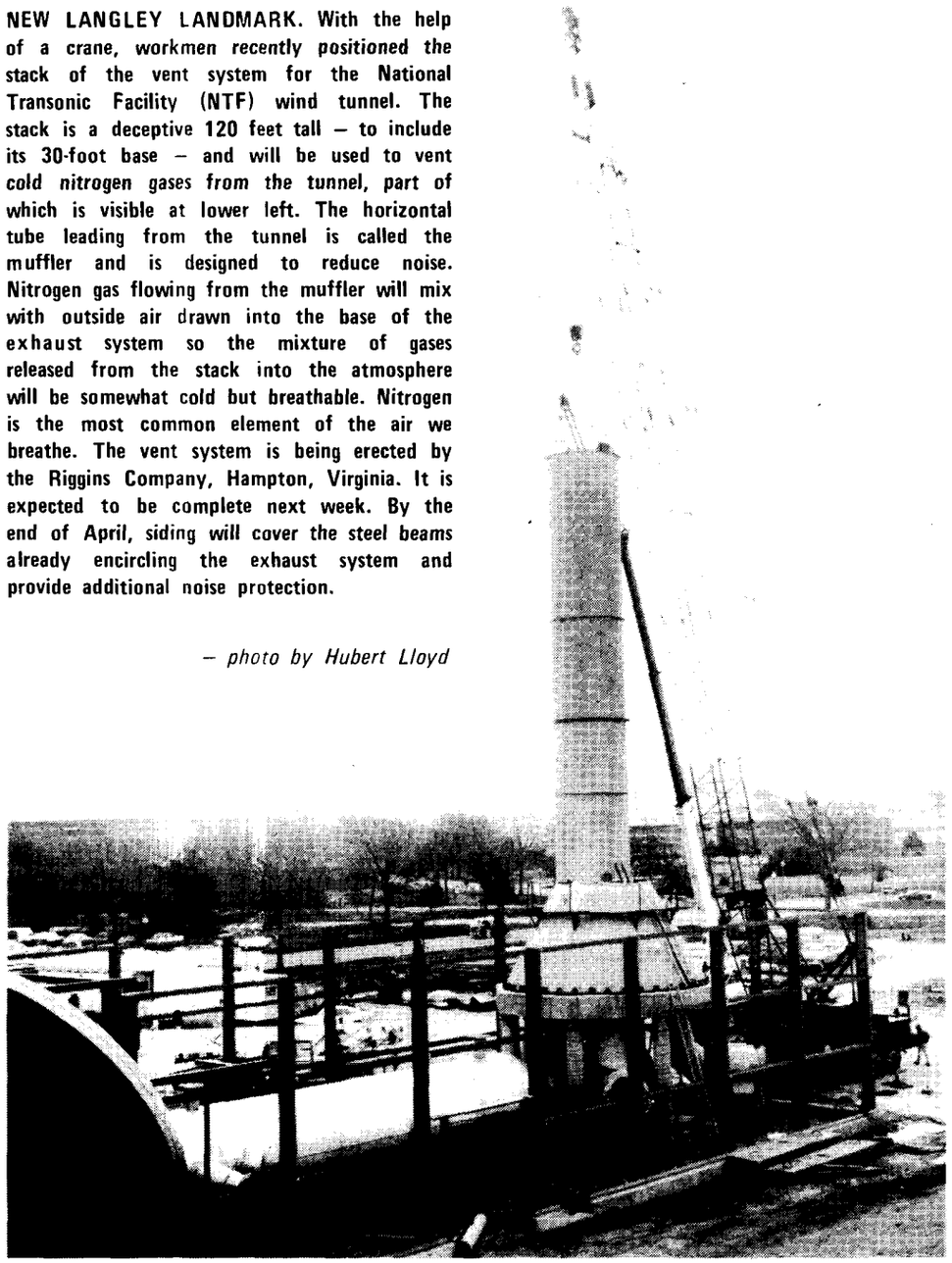
As a result of recent hotel fires, the Safety Office has suggested that survival rules be published for Langley employees. A number of articles have already appeared in local newspapers and national periodicals, and the following rules should be reviewed by everyone here.

RULES FOR HOTEL FIRE SURVIVAL

1. If you smell smoke, call the fire department, not the desk. The desk may send a security guard. The fire department will send firemen. Tell the fire dispatcher what room you are in.
2. Touch your door. If it is hot, do not open the door. If it is not hot, and can be opened, proceed to the nearest fire exit.
3. Never use the elevator in case of fire.
4. If you go to the stairwell, do not run; close the door behind you. Smoke in the stairwells is often caused by people leaving the fire door open. If the stairwell is too smokey going down, turn around and go up.
5. Keep room key on bedside table and **not** on dresser or TV top.
6. Always take your key with you; you may want to get back into your room where it is safer, if exits are blocked.
7. **Know** location of fire exit.
8. If you detect smoke, **leave** immediately! By knowing floor plan, you stand a better chance of getting out.
9. Do not panic.
10. If you are forced to stay in your room, follow these precautions:
    - Open the window, if possible, for fresh air. Do not break the window; if there is smoke outside, you will need to close the window.
    - Fill the bathtub with water. Wet towels and sheets and stuff them around the door. If the bathroom vent has a motor, turn it on; if not, block it with wet towels too.
11. If the door and walls are hot, bail water on them with your ice bucket. Keep everything wet. Put a wet towel over your nose and mouth.
12. Remember smoke rises. Stay close to floor if air becomes contaminated.

NEW LANGLEY LANDMARK. With the help of a crane, workmen recently positioned the stack of the vent system for the National Transonic Facility (NTF) wind tunnel. The stack is a deceptive 120 feet tall – to include its 30-foot base – and will be used to vent cold nitrogen gases from the tunnel, part of which is visible at lower left. The horizontal tube leading from the tunnel is called the muffler and is designed to reduce noise. Nitrogen gas flowing from the muffler will mix with outside air drawn into the base of the exhaust system so the mixture of gases released from the stack into the atmosphere will be somewhat cold but breathable. Nitrogen is the most common element of the air we breathe. The vent system is being erected by the Riggins Company, Hampton, Virginia. It is expected to be complete next week. By the end of April, siding will cover the steel beams already encircling the exhaust system and provide additional noise protection.

– photo by Hubert Lloyd



They're No. 1

Roller skates have passed skateboards as the leading cause of recreational injury, reports the Consumer Product Safety Commission.

At least half the estimated 135,000 injuries are suffered by teenagers but a surprising number of adults are fracturing bones and spraining muscles. A quarter of the injuries are to people older than 25 -- more than 10,000 to middle-aged adults.

Stay off skates if you are out of shape or overtired, have had too much to drink, or are taking a medication that could dull the senses. And if you get on roller skates learn how to fall relaxed rather than tensed and, wear protective equipment.

— photo by Bob Nye

Ten Langley employees recently completed the first Pre-Supervisory/Management Training Program. Front row, from left, are John Fryer, Jr., Roderick D. Harvey and Tommy C. Steele; back row, from left, Anna J. Lockard, Anna J. "Polly" Bailey, Lois H. Breen, Judy W. Evans, Frances E. Sabo and G. Sharon Fairheart. At right is E. Roy Budd, Head of the Center for Human Resources Development at Thomas Nelson Community College. Absent from the picture is Robert N. Barnes. The Pre-Supervisory/Management Program consists of six courses: Human Relations and Leadership Training, Principles of Supervision I and II, Personnel Management, Organizational Communications, and Interviewing and Organizational Management. Breen, Evans and Sabo maintained a straight-A average for the six courses. There is no guarantee for promotion for persons who complete the program, which is presented at Langley after working hours through the cooperation of TNCC. Persons interested in enrolling in the program should call Eloise McGehee, ext. 2611.

Happenings

CALLIGRAPHY CLASSES. An introductory Calligraphy Course will begin at Thomas Nelson Community College April 13. An advanced course will begin April 16. Each course runs for eight weeks. Call the Office of Continuing Education at 825-2936 to enroll. Wesley Berryman is the instructor.

HAPPY HOUR will be held today from 4 to 7 p.m. in the Activities Center. Music will be provided by "Crabgrass."

LAA GENERAL ASSEMBLY will meet Wednesday, April 8, at 9 a.m. in the Activities Center. Delegates and alternates are urged to attend. Coffee and danish pastries will be served.

EASTER EGG HUNT. The LAA will hold the annual Easter Egg Hunt Saturday, April 11, at 10 a.m. at the Activities Center. The Walt Disney cartoon "The Reluctant Dragon" will be shown. Special prizes will be given to winners of five age groups. Admission is 50 cents per person. Please bring an Easter basket or bag.

TICKETS. LAA now has tickets for: Busch Gardens, $9.25; Kings Dominion, $8.25; Colonial Williamsburg, Option A—$8, Option B—$11; Plitt movie tickets, $2 plus small service charge; and Tidewater Dinner Theater, $13.

Housing Needed

Approximately 40 professors will be coming to Langley in June to participate in the Summer Faculty Fellowship Program.

Anyone who has or knows of housing or rooms that are available for rent from June through August should call Jeane Jones, ext. 3014, or Frank Owens, ext. 2611. The professors housing needs normally range from one room to a three bedroom house.

Probing of Icy Arctic Secrets Featured

Research by NASA scientists is providing new discoveries about polar ice which could lead to future economic and social benefits for the world. The Langley Visitor Center features the work of Langley ice scientists in a special program April 1 through 12.

Exhibits and lectures will explain how microwave sensors are used to determine age and characteristics of ice. Visitors will learn the influence of polar ice on global weather and how research can aid the shipping, fishing and oil industries; assist national defense; and provide insight on long-range changes in climate.

A large display will feature satellite imagery, photographs and information on ice research. A continuous video presentation will show satellite imagery of the north polar region and illustrate how dramatically ice can change over a short period of time.

Two Langley ice scientists will give slide-lecture programs for the public. On Sunday, April 5, at 2 p.m., John Crawford will present "Life At An Arctic Research Station." His presentation tells the story of the six months he spent on an Arctic island climbing glaciers, studying ice floes and observing native polar bears. Dr. Linwood Jones will speak Sunday, April 12, at 2 p.m. on "Langley and Ice Research." His talk will provide an overview of Langley's ice research and its potential applications.

John Crawford, a Langley ice scientist, investigates frost build-up on a wind measurement device on "a warm spring day." This photograph was taken on Coburg Island in the high Canadian Arctic.

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Space Administration

Langley Research Center
Hampton, Virginia
23665

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Retirement Parties

Rupert R. "Monty" Monahan, Plant Engineering Division, will be honored with a retirement dinner party Wednesday, April 22, at the Fort Monroe Officers' Club. A cash bar social will begin at 6:30 p.m. followed by a Beef and Burgundy dinner at 7 p.m. The cost, including gift, will be $9.50 per person. Contributions to the gift only are welcome. For reservations, send check to or call Nancy Shields or Ann Garrett, Mail Stop 447, ext. 4601, by April 15.

A retirement party for **George W. Jones, Jr.**, will be held at the Langley Officers' Club April 21 at 6:30 p.m., with hot hors d'oeuvres and cash bar. The cost will be $8.50 per person including donation for gift. Please make reservations and send checks to Doris Baynes, Mail Stop 340, by April 16.

Keeping Well Seminar Planned

The Occupational Health Services Office will be offering a two-part learning experience in April for center female employees. The program will be conducted by the clinic nursing staff.

Part I will consist of a film on self-breast examination, a brief overview of the topic and a question and answer session. This part will be offered April 2, 3, 9 and 10 from 1 to 2 p.m. in Building 1194A, Rooms 203 and 204.

Part II will consist of individualized instruction in self-breast examination. Appointments for Part II will be arranged after the film is shown.

The men have not been forgotten. There will be a pamphlet, "Message to Men," which provides "how-to" instructions for male self-breast examination, available at the clinic.

For further information, call Mary Anne Weinberg, ext. 2246.

cafeteria menu

WEEK OF MARCH 30

MONDAY: Old Fashioned Bean Soup; Spaghetti Dinner; Chicken Pot Pie; Beans & Franks. Snack Bar: Hot Italian Sausage Sub, Steak & Onion Sub, Egg Salad.

TUESDAY: Manhattan Clam Chowder; Hot Roast Pork Sandwich; Polish Sausage w/Sauerkraut; Corned Beef Hash. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Beef Noodle Soup; Roast Turkey Dinner; Crab Cutlets; Macaroni, Franks & Cheese. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Gumbo Soup; Meat Loaf; Fried Fish Nuggets; Chicken & Dumplings. Snack Bar: Ham & Cheese Club; BBQ; Teriyaki Steak & Onion Sub.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Broiled Beef Liver; Ham & Cheese Omelette. Snack Bar: Deluxe Submarine; Hot Roast Beef; Tuna Salad.

WEEK OF APRIL 6

MONDAY: Ham & Lima Bean Soup; Hot Roast Beef Sandwich; Baked Tune & Noodle Casserole; Spanish Omelette. Snack Bar: Hot Italian Sausage Sub; Steak & Onion Sub; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Baked Lasagna; Chicken Chow Mein; Salisbury Steak. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; Chopped Steak; Beans & Franks. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Tomato & Rice Soup; Braised Chicken Livers; Spanish Mackerel Almondine; Monte Cristo Sandwich. Snack Bar: Ham & Cheese Club; BBQ; Teriyaki Steak & Onion Sub.

FRIDAY: Minestrone Soup; Fish Dinner; Ham Steak; Beef Balls Stroganoff. Snack Bar: Deluxe Sub; Hot Roast Beef; Tuna Salad.

swap and shop

FOR SALE

Articles

Lawn mower, 3.5 hp, Briggs and Stratton engine, power propelled, new, priced near wholesale. Call King, 874-7899 or 826-0619.

Golf Clubs: Full set of Jerry Barber "Golden Touch," with new grips, $100. Call 898-5003 after 5 p.m.

Bread Dough Kneader, Manual, $25. Call Belle, 244-7040.

Vehicles

1978 Alfa Romeo Italian convertible sports car, black w/burgundy int., rust proof, roll bar, many extras, EC, $7,500. Call 599-4321.

Raft: neopreme-coated cloth, one four-man, $50; one six-man, $80; never used. Call Kent, ext. 3095 or 420-8391.

1968 Plymouth Fury III, 4 dr., 318 C.I., PS, PB, AC, AT, very clean, $700 OBRO. Call Maglieri, ext. 3838.

Real Estate

Two land spaces, two burial crypts and two individual memorial bronze markers on choice lot in Veterans Memorial Gardens in Hampton. Priced for quick sale. Call King, 874-7899 or 826-0619.

FOR RENT

Sandbridge: new cottage with liv.-kit.-din. area, 4 BR, washer, dryer, dishwasher, fireplace, AC, phone, six-car parking, one-half block from beach. Summer rates $425/wk. Call Kent, ext. 3095 or 420-8391.

FREE

Garden space available: 90' x 200' space, enough for two or three families, located near Briarfield Road and Roanoke Avenue in Newport News. Person who contacts me first will get use of land yearly if he so chooses. Call King, 826-0619 or 874-7899.

LOST

1959 VPI class ring with plain garnet stone. Inscription: HLB, Marshall, Va. Call H. Bohon, ext. 3081.

WANTED

Riding combination from Hampton (Woodland Road) to West area on 7:30 a.m. shift. Call S. Armstrong, ext. 3373.

Persons interested in forming a Langley Chapter of TOASTMISTRESS. Contact Mary Jackson, Federal Women's Program Manager, at 3487. Male and female applicants are welcome.

National Aeronautics and
Space Administration

Langley Research Center

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Langley Researcher

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Langley Colloquium

Leakey Discusses 'From Fossils to Footprints'

"Short and Wide" has been the description of each of the five 3.5 million-year-old footprints discovered in the Laetolil Beds near Laetoli, Tanzania, East Africa, by archaeologist Dr. Mary D. Leakey.

In a slide presentation Monday, April 13, at 8 p.m. in the Hampton Coliseum, Leakey will lead her audience on a journey through time, pausing to clarify and describe the relics of the past. Her lecture, "From Fossils to Footprints--Evidence of Man's Evolution in East Africa," is presented as part of the "Our Future in the Cosmos" public lecture series, sponsored by Langley and the College of William and Mary. Free tickets are available at the Coliseum box office.

Leakey will give the same lecture Tuesday, April 14, at a Langley Colloquium. The lecture will be held in the Activities Center at 2 p.m., followed by a question and answer session. The speaker will move to the Langley Room at 3 p.m. for an informal discussion.

In her lecture, Leakey will give a brief history of Olduvai Gorge, which she and her husband, Louis, made famous. Her work at Olduvai, located 30 miles north of the Laetolil Beds, led to her discovery of Homo habilis and Homo erectus.

She will then describe her work at Laetolil, which is approximately 1.5 million years older than Olduvai, the height of which has been the discovery of two different sets of footprints that represent the oldest recording of homonid (manlike) ancestry, according to Leakey. The speaker hopes to leave her audience with a new mystery: Five steps in the ashes at Laetolil--who made them; where did he come from; and, indeed, which way did he go?

Leakey is the daughter of landscape painter Erskine E. Nicol. Since her marriage, she has devoted her energies to African prehistory and once a year leaves her adopted African home for a brief tour to lecture on her latest findings. For the past five years she has led expeditions to Laetolil, while supervising the field team's continued work at Olduvai Gorge.

Director's Comments

Hearth Optimistic About Langley's Future

(Editor's Note: This article is an excerpt from Director Don Hearth's March 17 "Outlook for Langley" talk to employees.)

The health of Langley is good. The program that we have underway, and the one that I see in the future, is sound, important and challenging. We have had large turnovers of our staff during the last year. However, we have been very fortunate to have hired a large number of very good people. We've also had a big change in our management team and I am very pleased with what we now have in place. As we look ahead, the opportunities for people at Langley should continue to be excellent.

There have been some negative effects on Langley from the recent budget cuts; despite these reductions, I am optimistic about Langley's future.

Let me start by looking back a little, then bringing us up to the present, and finally, looking into the future.

One should look at Langley from four points of view, because all of these are important to a research laboratory. In the order of importance, they are: people, facilities, program and relationships with others.

Relationships

To discuss them in reverse order, our relationships with industry, other government agencies, other NASA centers and the university community are very important. We do not live on an island; we must deal with other people because our product is technology. For it to be applied, we have to be sure that it gets out to the user community, so the transfer of technology is important.

As I have often said, our reports are useless if people don't read and use

Continued on page 4.

– photo by Bill Salyer

NASA STRUCTURES TEAM. Pictured are the lead engineers from the six NASA centers that were represented on the NASA Structures Team. The team was established by Dr. Alan Lovelace in February 1980 to contribute to the solution of Shuttle thermal protection problems. Under the leadership of Phil Glynn, the team worked on-site at Rockwell in Downey, Calif., for approximately six months with as many as 40 engineers from the participating centers. Langley played a major role in the team's on-site work and has continued to work closely with the Johnson Space Center in the detailed assessment of the Thermal Protection System. The center representatives met at Langley on March 26 and 27 to finalize the summary report of the team's work. Shown from left to right are Dick Snyder, Langley; Al Carter, Dryden Flight Research Center; Phil Glynn, Johnson; Clyde Nevins, Marshall Space Flight Center; Charlie Coe, Ames Research Center; Chuck Lifer, Jet Propulsion Laboratory.

Langley Honors Secretaries

Langley secretaries will be honored with a special breakfast on Secretaries' Day, Wednesday, April 22, at 8:30 a.m. in the Activities Center.

The theme for the program will be "Teamwork," featuring a skit titled "The Ten Commandments of Teamwork." The Langley Aerobic Dancers will perform a dance exercise.

Guest speaker at the breakfast will be Dr. Lora Friedman, Professor of Education and Equal Employment Opportunity/Affirmative Action Coordinator at Christopher Newport College.

Friedman received bachelor's and master's degrees from City College in New York and a doctorate degree in education from the University of Florida.

An advocate for women, minorities and education, Friedman is a member of many community and professional organizations, including American Association of University Women, First District Black Caucus, Peninsula Head Start and Peninsula Girls' Club.

The menu for the fourth annual breakfast will be orange juice, scrambled eggs, Canadian bacon, hash browns, English muffins, sweet rolls, and coffee, tea or milk.

The Secretaries' Day Program is being coordinated by the Training and Educational Services Branch, Personnel Division.

Revised Forms Available from Stock

The following forms have been revised and are now available from Stock:

Langley Form 125	"Purchase Request/Purchase Order"	Rev. Oct. 1980
Langley Form 126	"Continuation Sheet for Purchase Request/Purchase Order"	Rev. Oct. 1980

The separate Routing Slip for Purchase Request/Purchase Order is no longer needed and therefore, should not be used.

Langley Supports Bloodmobile

Langley employees, retirees and contractors donated 299 pints of blood at the March 25 visit of the Red Cross Bloodmobile.

Achieving gallon status were:

10 gallons – Paul W. Culotta

8 gallons – Harry H. Heyson

7 gallons – Robert I. Buchanan and William J. Debnam Jr.

4 gallons – Pendleton M. Jackson, W. Albert Shearin Jr., Alan Beckman and Rodney D. Russell.

3 gallons – Andrew L. Forbes Jr., Samuel Sokol, Kenneth Voss, Richard Norris, Robin K. Rubrecht, Robert J. Wallis, Charles Lane and John R. Karns.

2 gallons – Donald Ruth, Ricky L. Clark, Edward Kerlin, Linwood Burcher and Alfred Porter.

1 gallon – William Wood, Judy A. Hanson, Ernest Burt, Archer Epps, Harold Simmons, Larry D. Crewe, Barbara D. Hopson and Lindsey M. Lowe.

Donating blood for the first time were Glenn R. Slayton, Wendy A. Frasca, Barbara V. Murphy, Bediah Andrews, Jeffrey S. Hill, Ron E. Williger, Jay R. Scott, Eric P. Sanberg, Jeffrey W. Bantle, Lelon A. Garner, Bill Malone, Gregory M. Gatlin, Hubert M. Squires, Thomas E. Wilson, Richard Moore, Joseph M. Falzone.

NASA Coordinator for the Bloodmobile was Ann Forrest; Red Cross Coordinator was Fran Williams. Refreshments were donated by the Langley Federal Credit Union.

Recent Retiree

Elmer L. Goodson, Jr., Operations Support Division, retired March 2.

The *Langley Researcher*, as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond
Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

Junior Achievement Program

Langley Team Needed to Support High School Students

A fund drive will be held April 15 through May 15 to raise $60,000 to support the Peninsula Junior Achievement Program next year and volunteers from Langley are needed in two areas: (1) to collect money from local small businesses and (2) to serve as advisers to the Junior Achievement Companies.

The donations will pay for supplies, equipment, utilities and building rental. The students presently meet at the former Sinclair-Wythe Elementary School on Coliseum Drive once a week with their advisers with different "companies" meeting each night in the week.

The Langley volunteers, who will solicit contributions, will donate their time and work as a team. They will be trained by a group headed by Lloyd Noland, President of Noland Company in Newport News, and provided with packets of information to give to the businesses contacted during the drive.

The Junior Achievement Program has been in existence since 1919, but it is in its first year of operation on the Peninsula. The program has served over 900 students in 12 high schools and the students participating in the program earn one-half credit toward graduation. Norman Neal of the C&P Telephone Company said the program has become very popular and "we are turning down two students for every one accepted."

The educational program is designed to teach high school students the principles of free enterprise with local businessmen serving as advisers. "In groups of 20 to 25, the students learn the free enterprise principles by forming their own small business," Neal explained. "The students elect officers, determine the product they want to manufacture and then sell stock to capitalize their business." Neal said that about $150 is needed to start each company.

Products the students manufacture include candleholders made out of ash trays, clipboards and memorandum holders. Once the products are fabricated, the students sell them and reinvest their profits in the company, Neal said. The company is then dissolved. The entire business cycle is 16 weeks to coincide with a school semester.

If anyone (especially the multi-talented retired employees) is interested in devoting their time to help the Peninsula students further their knowledge of the small business world, or if you simply wish more detailed information, please call John Stokes, ext. 2741, by Tuesday, April 14.

What's New in the Learning Center

The Learning Center has the following new individualized courses to offer employees.

Video Tape Courses:

- Mail Procedures Workshop. This is a workshop on Langley mailing procedures. The course can be viewed individually in the Learning Center. Instructor, Barbara Newton, NASA Langley. Length—1 hour.

- Understanding Microprocessors. This course covers the basics of microprocessors. Prerequisites include a basic knowledge of electronics and number systems. Instructor, Ron Bishop, University of Arizona. Length—12 hours.

- Fundamentals of Vacuum Technology. A self-paced course on video tape to achieve a fundamental understanding of the operating principles and characteristics of vacuum pumps and gauges. Length—11 hours. Produced by Purdue University.

- Review of Basic and Intermediate Calculus. These two courses cover the content of first and second semester college calculus. They are designed for people who have studied calculus but wish to renew their mathematical skill. Length—8 hours each. Produced by University of Wisconsin.

- Negotiating Successfully. This course explains the basic principles of interaction in negotiating and covers the problems from both sides of the negotiation table: buyer and seller, management and employee. Length—6 hours. Prepared by Time Life Video in cooperation with Dr. Chester Karrass.

Audio Tape Courses:

- Effective Reading: Speed Reading-Self Taught. Instruction developed by Xerox Corporation is designed to teach specific skills and techniques to help a person read with greater speed and comprehension. The course is produced on audio tapes and is supplemented by practice readings and pencil-and-paper exercises. Length—10 hours.

- How To Be a No-Limit Person. This course for personal development includes audio tapes and a manual. These tapes can be listened to at lunch time or after work. Dr. Wayne Dyer, author of "Your Erroneous Zones," shows how a person can achieve his or her own highest possibilities for creativity, mental and physical health, and peace of mind. Length—6 hours.

Martin Wins Drawing

Velma R. Martin of the Aeronautical Systems Division has won the March drawing held for registered car pool participants. Martin was presented $20 by the Langley Exchange Council.

Hearth Optimistic

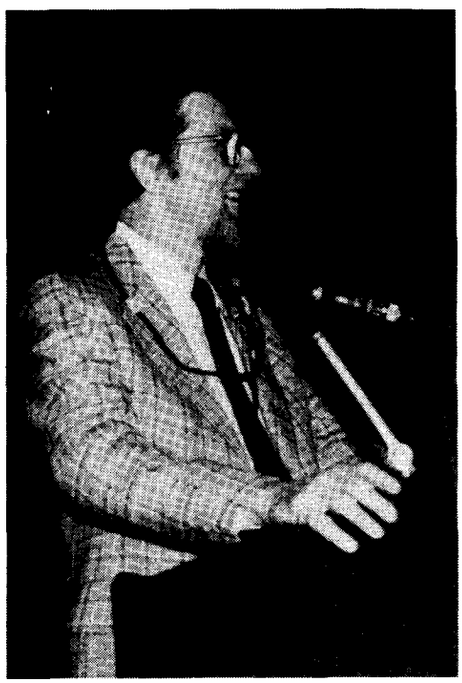
Continued from page 1.

them. In addition, we must (as we formulate our programs) understand the perceived needs of our "customers." We have made significant progress in this area. In the last few years, for example, we have developed a local FAA office. In many aspects of our aeronautical research -- the interface with air traffic control and safety, for example -- our relationship with the FAA is very important.

We have had, for a long time, an Air Force Liaison Office that is effective. We have a very strong Army program locally, with an Army organization of about 60 to 65 people at Langley. It is well integrated into Langley, and I know the Army research and development is dependent upon that relationship.

The same is true with industry. We have close relationships through various mechanisms, but we also have people from industry in residence here. I am encouraging more of that because I think it helps the transfer of our technology to industry.

We have one of the healthiest university programs in NASA, with grants and contracts with over 80 institutions in this country, the third largest university program of all of the NASA centers. I think that's important because they are contributors to the nation's technology and they provide the people who, in the long term, will be Langley's researchers.



Our relationships with other NASA centers are good. JSC and the Shuttle is an excellent example. We have had a major support activity to Shuttle underway for the last two years. At various times, there have been over 300 people involved in Shuttle support. People from the Structures, SE&O, Space, Electronics, and Aeronautics Directorates are all involved. You who are not involved in Shuttle should be very proud of what these people have done and are doing for NASA -- for Langley.

But the thing that's exciting to me is what it tells me about the kinds of people and the talent that we have at Langley, and the role that a research center like Langley can play in an important national project like Shuttle.

Our contributions to the thermal protection system and the other aspects of Shuttle are recognized and appreciated by JSC and NASA management. I think that kind of response to a need is very important for Langley. I know that giving it high priority, as we did, has had some negative consequences on our own programs, but if you're in the research and technology business, it is very important to do what we have done.

Programs

One of the things we had to do for the new administration's transition team was to put together a list of Langley program accomplishments over the last few years. It's a very impressive list, ranging from the work we've done with the 737 on the microwave landing system, to aerosol measurements in space, to active controls and pilot displays, to work on supersonics and spin avoidance, and on and on. It illustrates that the kinds of things we are accomplishing are very good, very important, and very significant.

We get input on our program in several ways. For example, we started a new system last year called Peer Reviews, in which groups of people (peers of our researchers) come in and review particular research areas of the Center. We have had about 12 to 15 of these so far, and the reports we have gotten have generally been very good. We have gotten a few negative comments, of course, and if we hadn't, I wouldn't have believed what I did hear.

By any method you apply, our accomplishments have been good, and the programs we're working on are recognized externally to be the right kinds of problems for a NASA research center like Langley.

If you look at our overall program today, it has a strong research character, which is fitting for Langley. If you look at how we apply our people power (our most precious resource), you will find approximately an 80/20 split; 80 percent on research and 20 percent on project-like activities. That's a good mix for Langley. It should not be all research; we need a few project-like activities.

We have a good mix today between aeronautics and space. This has undergone some major changes in the years I've been at Langley, but today it is about two-thirds aeronautics and one-third space. That's the kind of mix that I think is appropriate in light of the research opportunities and the resources available.

Our program is going to remain dynamic. It may not always appear that way because of no new "big things" coming along, but it is dynamic because our research programs change, as they should, as we respond to new opportunities and needs.

Facilities

We are blessed with some of the best research facilities in the world, and with a plant that's in good condition, but our facilities have become more expensive to operate. One of my messages to you is that we must learn to live with less. Energy is a good example.

In the last seven years or so, we have reduced our electricity consumption some 30 percent. In that time, our VEPCO bill has gone from $1.5 million to $7 million a year. Those dollars are, unfortunately, in that part of the budget which we cannot do much about. Our budget is in different parts, and I can't move money from one part to another. The energy bill is paid for from that part of the budget that pays for all kinds of other things, such as telephones, cutting grass, fixing roofs, fixing pot holes, etc. That's a part of the budget that is always under a great deal of pressure as we go through the budget cycle. The trend of going down in level, and up in demand is going to continue,

so we must learn to live with less. That's the reason, for example, you don't find cab service at the center any longer, and less attention being given to grounds maintenance.

Nevertheless, we must have new facilities, we must operate them, and we have to upgrade and modify the ones we have, because facilities are the lifeblood of a research laboratory. I will cite two examples of facilities that have recently been completed, or are nearing completion, to illustrate that we are moving forward in the facility area despite the overall budget pressures.

NTF is a major challenge for the center. That facility is a tough engineering, fabrication and management task. The people in SE&O are to be congratulated for having done a super job on NTF.

It's impressive to me that NTF is on schedule and within costs, and that, while we have a lot of challenges in front of us, it will become operational next year as has been planned for almost four years. We can be very proud of that facility and of the Langley people that have made it possible.

NTF also illustrates another point: there is no way that facility could have been built in this country at that kind of price, with its capability, if it had not been within an organization that had tremendous in-house capability.

An example of a facility that is quite different, but illustrates the thinking of the center, is RECOUP. On one hand, I talk about a cryogenic wind tunnel, very sophisticated, highly advanced, and then I talk about burning trash. That may seem a little strange, but RECOUP is important to us because of the money it is saving us and the energy we're conserving. We are saving more than two million gallons of oil a year with RECOUP. It's been operational since last fall and is doing well.

In the present year's budget, we have two new major facility items, neither of which were affected by the recent budget reductions. One is upgrading the Landing Loads Track to 220 knots, more than double its current capability, which is important because today's aircraft land at a much higher speed than they did at the time the track was built.

The second facility is Airlab. You won't see anything in the way of a big new building because it's going to be put in an old building, but Airlab is the key to a strong controls and guidance program that we're building at the center.

People

The fourth aspect of a research laboratory like Langley is people, clearly our most important asset. Quality people have always been Langley's hallmark. One of the things I've really enjoyed during the recent Shuttle experience is that I've been involved with lots of excellent Langley people, and seen what they can do. It illustrates a tremendous capability.

We've seen a lot of changes in the past few years. The attrition last year at Langley was very high. We had 320 people leave the center, compared with a normal figure of about 150. It is interesting to me that Langley has a very high fraction of its attrition in retirements, last year about 80 percent.

Because of the large attrition in 1980, we also had a large turnover of supervisors and of experienced people. We replaced about 65 to 70 of our supervisors out of a total of about 240; a big change. We also experienced a 50 percent turnover in the center's Senior Staff.

This was a two-edged sword: we lost a lot of experience, but it presented an opportunity to hire and promote new people. Our 1980 hiring approached almost 300 people, more people than Langley has hired in any year since I've been here. We hired experienced people as well as young people and, despite the fact that Langley is 64 years old, we have the youngest staff of any NASA center, which I think is a good omen for the future.

That large attrition provided opportunities for advancement, both in terms of moving up to supervisory ranks and moving up the GS ladder. Our average grade has gone down; consequently, we were able to increase our promotion rate last year to about 18 percent a year, instead of the previous 12 percent. Practically all of the new supervisors came from within Langley; only three or four were from outside. That is consistent with my philosophy of promoting from within, while including a little outside experience.

There are three unions at Langley and we work closely with the union leadership because they have an important job to do. One of the things I'm pleased with is that we do not have an adversary relationship with them, but a cooperative relationship, and that's important.

The posture of the center today, taking all four of these aspects into account, is good. I'm sorry we have lost so much experience in the past year, but I think in many respects this has been positive because we have a good staff today and we have a good management team. That puts us in a strong position as we move forward into the 1980's.

The Future — With Qualifications

It's risky to speculate on the future, so I'm going to put three qualifiers on what I say: Shuttle, the new Administration, and the new NASA Administrator.

First of all, Shuttle. It's first flight will probably be next month. That flight must be successful. If it isn't, NASA as an agency will have major problems. I also believe that, for Shuttle to be optimized as an operational system, changes will be required -- such as the thermal protection system. Langley will play a major role in some of the necessary changes.

Next, the new Administration. I think it's clear that they are redefining the role of government. This will affect what we do and how we do it. It may not influence particularly what we at Langley do in space, but it will certainly influence what we do in aeronautics.

In addition, the new Administration is taking actions to deal with the national economic and defense situations as they perceive them. This will probably increase, somewhat, the level of our military-related research and technology effort. Their actions in dealing with the economic situation will reduce the Langley budget and personnel complement in the next year.

The NASA budget for FY '82, beginning this October, was reduced by about $600 million, or about nine percent of the Carter budget request. If you look at the budget outside of Shuttle and institutional costs, you find that the NASA program was reduced by 16 percent -- a sizeable reduction.

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Hearth Optimistic

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The effect upon Langley is relatively small, about seven percent on the same basis as the NASA-wide 16-percent reduction. But, while the cost is small, we lost four important items.

We had proposed a start on a primary composite structures program for transports as an extension of the ACEE program. This was eliminated, and it may represent the type of activity that is inconsistent with the fundamental policy of the new Administration on the role of government.

The next item deleted was funding for supersonic cruise research. The intent of this decision is to eliminate the funding of industry, but not to reduce the in-house R&T program.

We lost two important facility modifications from the FY '82 budget: increasing the density and modernizing the Data Acquisition System of the Transonic Dynamic Tunnel. We also lost a planned upgrading of the Mach 19 Tunnel.

The fourth major funding reduction is for a large part of our marine science program. What the timing will be and just how we will accommodate to this reduction, I don't yet know.

Thus, while the effects on Langley are small relative to the rest of NASA, there were some very significant negative program decisions. But looking at the other actions being taken on the non-DOD part of government, I think NASA, and particularly Langley, has done fairly well.

The President has also announced a cut of 63,000 Civil Service positions (outside of DOD) in the federal government over the next two years. That's about four percent of the non-DOD workforce. NASA did not escape a reduction in people. Whether we accept it or not, we are considered part of "Big Government," so we were affected, as an agency, by about the same percentage reduction. The NASA reduction of permanent positions is 840 (out of 22,700) by October 1981, about 3.7 percent. One positive aspect is that the NASA cut is a one-year cut, while most other agencies are taking a cut this year and another next year. Looking into the following fiscal year and the year after that, I think we expect stability in the size of our workforce.

The one thing I don't know today is the size of the Langley manpower reduction, but I do know we will have our complement reduced. Today, we are about 40 under our old ceiling. If the reduction is what I think it will be, we will not have to have a significant reduction-in-force situation to match the on-board with the new ceiling. Obviously, we will have to consider program reductions, skill mix, etc. So we'll have to wait and see.*

New Administrator

I don't think the policies of this administration, beyond what we can tell from the budget actions, will become apparent until the new NASA Administrator is named and assumes his position. I don't know who it will be and I don't know when it will be. I hear the same rumors that you hear, but I suspect the Administration may be waiting until after the upcoming Shuttle flight.

The Future

With those qualifiers in mind, I will now speculate on Langley's future. I think the program of the center will continue its present research emphasis. We will continue to have some project-like activity because that's important and we can't do our research without it. I think you will see about the same mix of aeronautics and space that we have today. I do not see Langley getting into energy R&D activities. In our aeronautics and space programs, we will have more opportunities than we will have either money or people; this means we will continue to make hard choices on program content and emphasis.

In aeronautics, I see more emphasis on military-related technologies. Not a major swing, but clearly, with the increase in DOD programs and the development of some new systems, there will be some increase in DOD support by NASA.

Langley will be engaged in the same basic aeronautical disciplines as today, with a growing emphasis on controls and guidance because I see significant opportunities in that area. We will continue to push technologies that will improve the economics of air travel, fuel conservation, air transportation system congestion, safety, environmental acceptability, etc.

While the funding of industry for supersonic cruise research has been deleted from the budget, we will continue in-house research associated with high-speed travel for both civil and military applications.

The major effect at Langley in aeronautics, due to the new Administration, is that the program will probably move in the direction of research through technology demonstration. Large industrial funding, like the ACEE program, will probably not be in the cards under this administration. The change will not affect much of what we do internally, but it will obviously affect the character and funding level of our total program.

The major change in space will be the reduction in the marine sciences program. We will continue the other three elements of our space activities: spacecraft-related technologies, space transportation, and the atmospheric sciences (including Earth Radiation Budget).

I mentioned before that we need a focus for our spacecraft-related technologies. We spent some time recently looking on that question, wanting to pick something that encompassed a large part of Langley disciplinary research and is a major technology driver to future space systems. In large space systems, which seems to be what's coming, we have chosen large antenna systems as our internal focus. We want to make Langley a "Center of Excellence" in this area. It's a good choice because it brings together a large amount of the research we are doing in materials, structures, controls, and other disciplines. Work in automation and energetics will continue outside of this focus. By choosing antennas we can bring together about 75 to 80 percent of our spacecraft-related technology work.

In space transportation, the emphasis in the near future will be in Shuttle upgrading. At Langley, I suspect we will be getting involved in a significant effort toward the durable thermal protection systems of the future.

We are also going to be using Shuttle more and more as a research flight

*On March 30, I was informed that Langley's complement has been reduced to 2,895, effective October 1. That is a reduction of 85 from our previous ceiling of 2,980. We are examining possible courses of action, and will make final decisions in a few weeks.

vehicle, and we will continue research on the next generation of space transportation systems.

We are well established in the atmospheric sciences, with more instruments flying today in space than any other NASA center. Having come here from Goddard, which prides itself in flying experiments in atmospheric sciences, I find that a very nice thing to be able to say.

One of the items still in the FY '82 NASA budget is experiments for the Upper Atmospheric Research satellite, although at a lower level of funding than planned. We have a major stake in this because we have several instruments that are candidates to fly on that satellite.

In Summary

I am optimistic about Langley; we are in a very good posture today for the future. There will be excellent opportunities for people at Langley; programs to work on that are important and challenging, and opportunities for career advancement.

I am concerned about the future of NASA. The lack of new space projects in FY '82 is disappointing. I hope this situation will turn around with a Shuttle success, and with a new Administrator.

We can look to the future with confidence. Langley continues to be an excellent research laboratory, and I fully expect that it will remain so.

Happenings

HAPPY HOUR is cancelled today due to the Space Shuttle activities in the Activities Center. For those interested in watching post-launch and landing activities on television, the LAA will have chili, sandwiches and drinks for sale today from 4 to 8 p.m., tomorrow from 12 to 8 p.m. and Sunday from 12 to 5 p.m.

WALT DISNEY MOVIE. The LAA will show the cartoon "Test Pilot Donald" and the film "Treasure Island," Robert Louis Stephenson's spine-tingling tales of pirates and hidden gold, Sunday, April 26, at 3 p.m. in the Activities Center. Admission is 75 cents per person. Food and drinks will be served.

NAGS will sponsor a bus trip to Washington, D.C., April 25. The bus will leave Riverdale Shopping Center at 7:15 a.m. and return there by 9:30 p.m. While in Washington, enjoy the Smithsonian's museums, Mount Vernon, Arlington Cemetary, Kennedy Center, Art Museum, shopping centers and many other attractions in the nation's capitol. The cost will be $15 per person. For more information, call Betty Joyner, ext. 3285, or 826-4684 after 5 p.m. Reservation with check must be received by April 20.

DOG TRAINING CLASSES. The James-York Dog Training Association will register new basic obedience class April 16, at the Hampton Armory, North King St., at 7 p.m. The 12-week course includes the five basics in dog obedience: heeling, come, stand, sit and down stays for control and teaches you to train your dog to become a better companion. Please bring dog's shot record. Dogs must be vaccinated against Parvo. For further information call Garl Gentry, ext. 3611 or 874-5706.

SOCCER PLAYERS. The NASA Soccer Club is now meeting for practice behind the Activities Center every Wednesday at 4:30 p.m. If interested in playing, contact C. E. Byvik, Mail Stop 160, ext. 3781.

EASTER EGG HUNT. The LAA will hold the annual Easter Egg Hunt tomorrow at 10 a.m. at the Activities Center. The Walt Disney cartoon "The Reluctant Dragon" will be shown. Special prizes will be given to winners of five age groups. Admission is 50 cents per person. Please bring an Easter basket or bag.

HONEY BUNCH. The NASA-Langley Apicultural Club will meet Monday, April 20, from 7 to 9 p.m. in Room 180 of Building 1209. After a brief business meeting, films from VPI and SU on beekeeping will be shown.

TIDEWATER DINNER THEATER. "West Side Story" will be performed at the Tidewater Dinner Theater in Norfolk through May 10. Tickets, at $13 each, are on sale at the Activities Office.

Intercenter Meet Underway

Each of the ten NASA centers participating in intercenter meets has sponsored the event once, and the rotation is beginning its second cycle. Headquarters is sponsoring the April contest and only one week remains in the competition.

The 2-mile and 10,000-meter races are scheduled for Langley as follows:

2 MILE – Monday, April 13

10 KM – Thursday, April 16

Two sessions will be held on each of these days: 12 p.m. on the Bethel High School track and 5 p.m. on Doolittle Road to the side of the Activities Center. If you cannot run at these times, contact Larry Spencer, ext. 3681.

The age categories, which include two new categories -- one each for the men and women, are as follows:

Men		Women
29 & under	45-49	29 & under
30-34	50-54	30-39
35-39	55-59	40-49
40-44	60 & over	50 & over

The races are open to all NASA employees, retirees, contractors and university affiliates. Members of their immediate families are also welcome to run, but will not affect the center scoring totals.

Langley placed well this past fall because of increased participation, the largest factor in the scoring. If all the dedicated walkers as well as runners come out this time, Langley could enjoy even greater success. In addition to the 10 Km and the 2-Mile races, there will be a "Walker's 2 Mile" Wednesday, April 15, at 4:30 p.m. in front of Building 1199.

LAA Notice

Requests for reserving the Activities Center for social events must be submitted in writing no sooner than 60 days in advance and sent through regular mail distribution.

ARTS AND CRAFTS SHOW. The LAA will sponsor an Arts and Crafts Show May 2 and 3 from 12 p.m. to 5 p.m. in the Activities Center. Included in the show will be country carvings, hand painted china, ceramics, weaving, paintings, and many other crafts.

National Aeronautics and
Space Administration

Langley Research Center
Hampton, Virginia
23665

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Retirement Party

Jack Ashe and **Ed Sealey**, Fabrication Division, will be honored with a retirement luncheon Thursday, April 23, at the Activities Center. A baked ham and turkey a-la-king luncheon will be served at 11:30 a.m. The cost, including gifts, will be $8 per person. Contributions to gifts only are welcome. For reservations, call or send check to Fred Ferrari or Al Shearin, Mail Stop 222B. ext. 3853, by April 15.

Thanks

Edward A. Howe writes, "I want to thank all my friends for my super retirement party and the very thoughtful gifts and mementos. It is difficult to think of any new ways to say thank you, but I want you to know that you warmed my heart and made me very happy.

"I not only thank you for the party, gifts and well wishes but for all that you did for me through the years as we worked together. I loved every minute of it and shall forever retain many happy memories."

swap and shop

FOR SALE

Vehicles

1978 Alfa Romeo Italian sports car, black convertible, like new, many extras, $7,500. Call 599-4321.

1967 Dodge Coronet, PS, PB, AT, AC, V-8 engine, GC, $250 OBRO. Call Moore, ext. 3966.

1979 Honda CM 400T, showroom condition, low mileage with extras. Call Watkins 826-9077.

Real Estate

Lot in Windsor Forest, Section 6, Lot 2; $19,900 includes $1,300 in prepaid water and sewer hook-up fees. Call 838-1735.

FOR RENT

New vacation home in uncrowded area of N.C. Outer Banks with view of ocean and Currituck Sound. Large living room, 4 BR, 2 baths, deck, central air and heat, outside shower, carpeted floors, fireplace, telephone, DW, W/D. Short walk to either ocean or sound beach. No pets. $440 per week in season, $230 out of season. Call James T. Davis at ext. 4631.

WANTED

To join or form a car pool from Virginia Beach (Shore Drive near Diamond Springs Road) to NASA on 8 a.m. shift. Call Atkins, ext. 3964 or 460-4725.

A fifth person to join a car pool from Riverdale to West area on 8 a.m. shift. Call Miserentino, ext. 2817.

Ride from Southampton Apartments to West Area on 8 a.m. shift; will pay. Call Dawkins, ext. 3741.

cafeteria menu

WEEK OF APRIL 13 — 17

MONDAY: Old Fashioned Bean Soup; Spaghetti Dinner; Chicken Pot Pie; Shrimp Curry. Snack Bar: Corn Dog; Steak & Onion Sub; Egg Salad.

TUESDAY: Manhattan Clam Chowder; Roast Beef; Polish Sausage; Ham & Swiss Quiche. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Beef Noodle Soup; Roast Turkey Dinner; Fried Ocean Perch; Beef Enchiladas. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Gumbo Soup; Meat Loaf; Fried Fish Nuggets; Chicken & Dumplings. Snack Bar: Ham & Cheese Club; BBQ; Teriyaki Steak & Onion Sub.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Broiled Beef Liver; Ham & Cheese Omelette. Snack Bar: Deluxe Sub; Hot Roast Beef; Tuna Salad.

WEEK OF APRIL 20 — 24

MONDAY: Ham & Lima Bean Soup; Hot Roast Beef Sandwich; Veal Parmesan; Crab Cutlets. Snack Bar: Hot Italian Sausage Sub; Steak & Onion Sub; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Baked Lasagna; Chicken Chow Mein; Turkey Scallops. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; Braised Beef & Vegetables; Quiche Lorraine. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Tomato & Rice Soup; Braised Chicken Livers; Spanish Mackerel Almondine; Monte Cristo Sandwich. Snack Bar: Ham & Cheese Club; BBQ; Teriyaki Steak & Onion Sub.

FRIDAY: Minestrone Soup; Fish Dinner; Ham Steak; Beef Balls Stroganoff. Snack Bar: Deluxe Sub; Hot Roast Beef; Tuna Salad.

Competitive Placement Announcements

The following Competitive Placement Announcement is currently open:

81-24 -- Secretary (Stenography); GS-0318-5 or 6; Office of the Director; Office of External Affairs; Closes April 17, 1981.

The following Growth Opportunity Announcements are currently open:

GO-81-1 -- Engineering Aid/Technician; GS-0802-3. 4, or 5; Office of Director for Systems Engineering and Operations; Fabrication Division; Office of the Chief; Closes today.

GO-81-2 -- Engineering Aid/Technician; GS-0802-3, 4, or 5; Office of Director for Systems Engineering and Operations; Operations Support Division; Office of the Chief; Closes today.

Secretaries' Week

April 19 - 25

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

Volume 20 Issue 8 April 24, 1981

Welcome Home, Columbia!

First Space Shuttle Mission Successful

"Hello Houston, Columbia here. We're doing Mach 10.3 at 188. Our L over D (lift over drag) is nominal."

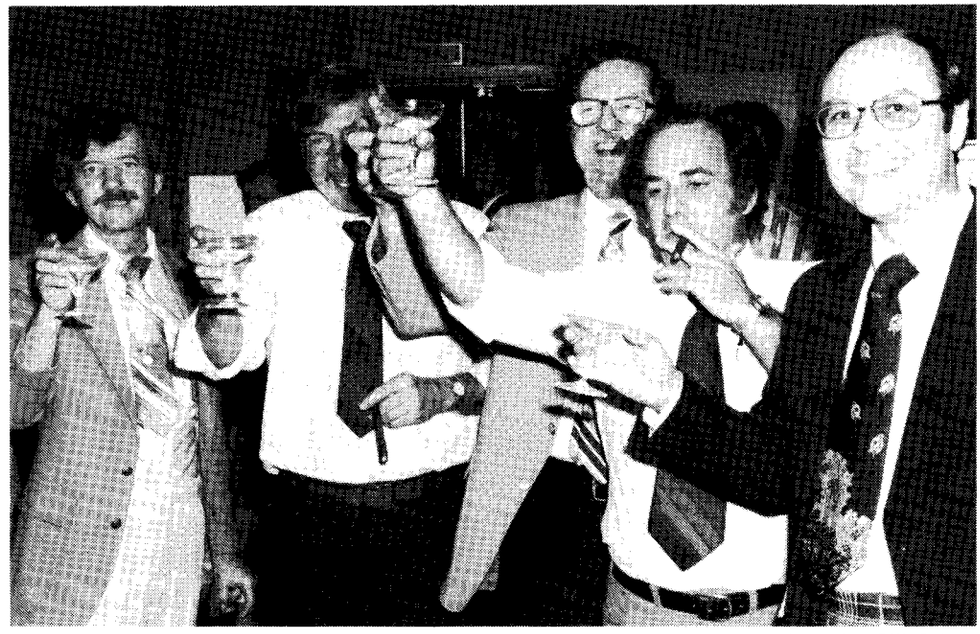
A sigh of relief could be heard from the approximately 600 Langley employees gathered at the Activities Center as those words echoed through the audio system. The tension that had built up while Columbia was in its re-entry communications blackout had been broken. The Orbiter survived the intense heating and pressures of re-entry.

In Mission Control at Houston, Crimson Team Flight Director Don Puddy instructed his team that they would have "15 seconds for exhilaration" at touchdown before returning their attention to monitoring their systems consoles.

Columbia's landing ended a nearly flawless mission of two days, six hours, 20 minutes and 52 seconds.

The Shuttle was launched, with astronauts John Young and Robert Crippen at the controls, from the Kennedy Space Center 3.98 seconds after 7 a.m. EST April 12.

Continued on page 4.



– photo by Bill Salyer

A TOAST! Langley employees (left to right) Dick Snyder (SED), Bernie Spencer (SSD) Langley Director Donald P. Hearth, Space Director Paul Holloway and Jim Arrington (SSD) pause during celebration activities to toast the Space Shuttle Columbia shortly after its landing at 1:20 p.m. (EST) April 14 at Edwards Air Force Base in California.

Purdue University Honors Langley Manager

Petersen Receives Distinguished Alumnus Award

Langley Deputy Director Richard H. Petersen will receive the Distinguished Engineering Alumnus Award from Purdue University today in a special ceremony at the university.

One of 11 graduates to be honored, Petersen will be presented the award by Purdue President Arthur G. Hansen.

Each year since 1964 the faculties of the engineering schools at Purdue have given the award to Purdue alumni "in recognition of outstanding achievements in professional and related fields of activities."

Petersen graduated from Purdue in 1956 with a bachelor of science degree in aeronautical engineering, with highest distinction. In 1957 he received a master of science degree in aeronautics from the California Institute of Technology.

Deputy Director of Langley since July 1980, Petersen serves as General Manager of the center. He is responsible for directing aeronautical research and technology activities and programs, and for institutional management of all facilities and equipment.

Before his assignment to Langley, Petersen was Chief of the Aerodynamics Division at the Ames Research Center, where he directed a 200-man team conducting research in aerodynamics and fluid mechanics in seven major wind tunnels.

Petersen worked at Ames for most of his professional career, joining NASA in 1957. His initial work at Ames was in theoretical and experimental aerodynamics, particularly in the supersonic and hypersonic speed ranges.

Continued on page 2.

Petersen Receives Award

Continued from page 1.

More recently he has directed research programs in aircraft noise, hydrogen-fueled aircraft, and short take-off and landing aircraft, as well as spacecraft studies and budget and facility planning.

He was a Program Analyst temporarily assigned to NASA Headquarters from 1965 to 1966 and a Sloan Executive Fellow at the Stanford Graduate School of Business from 1972 to 1973. From 1973 to 1975 he was a senior research engineer/executive for Nielsen Engineering and Research in Mountain View, Calif.

The author of several technical publications on aeronautical subjects, Petersen is an Associate Fellow of the American Institute of Aeronautics and Astronautics.

Petersen and his wife, Jody, live in Newport News. They have a son and a daughter.

Richard H. Petersen

NAGS Excellent for Networking

The secret that businessmen have known for years and businesswomen are gradually learning, is the importance of making contacts, or "Networking." In the last few years, Networking has become a much-used phrase, with many articles being written on it, as well as new women's organizations being formed specifically for this purpose.

One local organization, the Hampton Roads Branch of the National Association of Government Secretaries (NAGS), has been helping working women in this regard for 12 years. Although NAGS was started by a group of secretaries in 1969 and still denotes secretaries in its name, the active membership is now made up of women in all areas of government service, including secretaries. NAGS is an excellent medium for Networking. Its meetings and workshops give opportunities to meet, learn and share with those in various career fields. These contacts can play a vital role in personal development and job effectiveness.

The main goal of NAGS is to help its members expand their potential for professional advancement in their careers through educational workshops, seminars, and monthly programs. Topics cover a wide variety of subjects, such as time management, office automation, assertiveness training, stress management, writing job resumés, career wardrobe planning and physical fitness. Speakers from government, universities and industry are often featured. Topics of current interest are also addressed, such as Congressional actions on federal and state benefits; just recently the group traveled to Richmond to observe a session of the Virginia General Assembly and to tour the Capitol and Governor's Mansion.

NAGS also plans occasional trips to Washington and local dinner theaters, and has light programs on subjects, such as handicrafts and trip planning, to round out a full program for its members.

Women working for local, state and federal government, and contractors are eligible for membership. A dinner meeting is held at 6:30 p.m. the third Tuesday of each month at the Activities Center. For more information, contact Bernice Barrack, ext. 3274, or Betty Joyner, ext. 3285.

Recent Retirees

Franklin K. Goodson and **James R. Maley, Sr..**, Operations Support Division; and **Kenneth W. Heising**, Aircraft Energy Efficiency Project Office, retired April 3.

Purchase Request Routing Changed

A recent change in the Purchase Request Routing System eliminates one stop along the way. This should save time in getting the request to the Acquisition Division buyer.

Initiators should route the purchase request through management channels and appropriate functional manager(s) and thence to the Property Management Branch, Management Support Division; Financial Management Division; and Acquisition Division.

A purchase request should never be addressed or hand carried directly to the Acquisition Division since no action can be taken until all approvals and fund certificates have been obtained.

McWithey Wins April Drawing

Robert McWithey, Structures and Dynamics Division, won the April drawing for $20 given to a registered car pool participant by the Langley Exchange Council.

Check Your Blood Pressure

May is National High Blood Pressure month.

Have your blood pressure checked at the Medical Center, Building 1145, any day during May from 1 to 2:30 p.m.

High Blood Pressure? Treat it and live.

Change Your Clocks

Daylight Savings Time begins Sunday, April 26, at 2 a.m. Remember to turn your clocks forward one hour before retiring Saturday night.

The *Langley Researcher*, as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond
Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

Langley Researchers Acknowledged for Shuttle Work

Beginning with the first glimmer of a potential Shuttle program in 1968 with the signing of the Integrated Launch and Reentry Vehicle Contract--later to become the "Phase A" feasibility study of shuttle *(the McDonnell Douglas contract, one of four, was managed by Langley--and at McDonnell Douglas reported to John Yardley)* . . . . Continuing with the Space Shuttle Task Group activities in Headquarters *(four groups reporting to an Executive Steering Board--Langley had members on all five groups--the only research center involved, and the only center other than the "manned" centers, JSC, MSFC, and KSC)* . . . . After the formation of the Space Systems Research Division, peaking at 350-400 man-years of effort during the Space Shuttle Discipline Technology Working Groups *(three of the six agency-wide working groups were chaired by Langley personnel)* . . . . Dwindling to a minimum in the late 70's *(but retaining critical tasks in aerodynamic flight certification testing on a nationwide basis, flight control system evaluation and improvements, landing gear and runway tests and evaluations, and flight certification testing in the arc jet facilities and the 8-Foot High Temperature Structures Tunnel)* . . . . Peaking again beginning in 1979, by 1981 when over 350 employees were involved *(thermal and aerodynamic flight certification testing intensified as STS-1 approached, flight control system efforts increased, structural integrity analysis and testing was initiated, new certification tests were defined requiring major modifications to the 8-Foot Transonic Pressure Tunnel, major multidiscipline support was dedicated to the NASA Structures Team charged with clearing the TPS system for flight, we participated in three of the 13 Flight Certification Assessment Teams organized by NASA's Chief Engineer (chairing two)--and more, much more).*

From the beginning through the magnificent landing April 14, 1981, Langley has maintained a technical role in support of Shuttle in our areas of discipline expertise. Now we turn our attention to evaluation of flight data to assist JSC in clearing Columbia for STS-2, to utilization of Columbia as a research vehicle under the banner of the OEX (Orbiter Experiments) Program *(a program started at Langley)*, to the use of Shuttle as a transportation system to deliver our experiments to orbit *(the payload on the second flight, STS-2, carries seven experiments including two from Langley--the Measurement of Air Pollution from Satellites (MAPS) and the Feature Identification and Location Experiment (FILE))*, and, finally, to many "product improvement" tasks for Shuttle aimed at enhancing performance, reducing ground turnaround time, and reducing costs.

The contributions of this center will never be tabulated, but each of us at Langley can take great pride in our staff and our facilities--pride in our agency, for all centers contributed--and pride in our nation, for no other country in the world could have done what NASA accomplished with the first Shuttle mission.

After the landing Tuesday afternoon, April 14, many of the key contributors to the program congratulated me. In my excitement, I occasionally failed to return the congratulations. My role in this program has been relatively simple--to facilitate the true working specialists at this center so they could bring their expertise and talents to bear on critical problems of national significance. When given the opportunity to do their thing, our people deliver.

My reward from the program is unmatched in most people's lives. Shuttle has afforded me an opportunity for many years to work closely with people who are **unquestionably the best in the world** at what they do. Few people have such an opportunity and I am very grateful for mine. So congratulations to you--researchers, systems engineers, facility and fabrication technicians, computer programers--all who participated. It was you, and the unique blend of skills available at this center, that made it possible for Langley to contribute. All us managers are bursting with pride **in you** and in our center.

Paul F. Holloway
Director for Space

Flinn to Speak at Langley Colloquium

Modern research in tectonics and seismology requires measurement of the Earth's crustal deformation and plate movement, but classical ground-based geodetic methods are incapable of providing these measurements to the required accuracy, over the distance scales of interest, according to Dr. Edward A. Flinn, Chief Scientist of the Geodynamics Program at NASA Headquarters. Within the past few years several methods of precise positioning have been developed to overcome this problem.

Flinn will discuss these methods at a Langley colloquium Monday, May 4, in the Activities Center. His lecture, "Space Technology Applied to Geodesy and Geophysics," will begin at 2 p.m.

Flinn said research programs have been established in several countries to apply space technology methods to geodesy and geophysics; the program in the United States is led by NASA and involves four other federal agencies: the U.S. Geological Survey, National Geodetic Survey, National Science Foundation and Defense Mapping Agency.

Mobile laser ranging and very long-baseline microwave interferometry facilities have been developed by NASA, and are being deployed to study crustal deformation by the NASA Crustal Dynamics Project at the Goddard Space Flight Center. The principal objective of these studies is to support the earthquake prediction research program led by USGS.

During the first half of the project, which runs through 1986, observations will be concentrated in western North America; after 1983, measurements will be made in other tectonically active regions of the world.

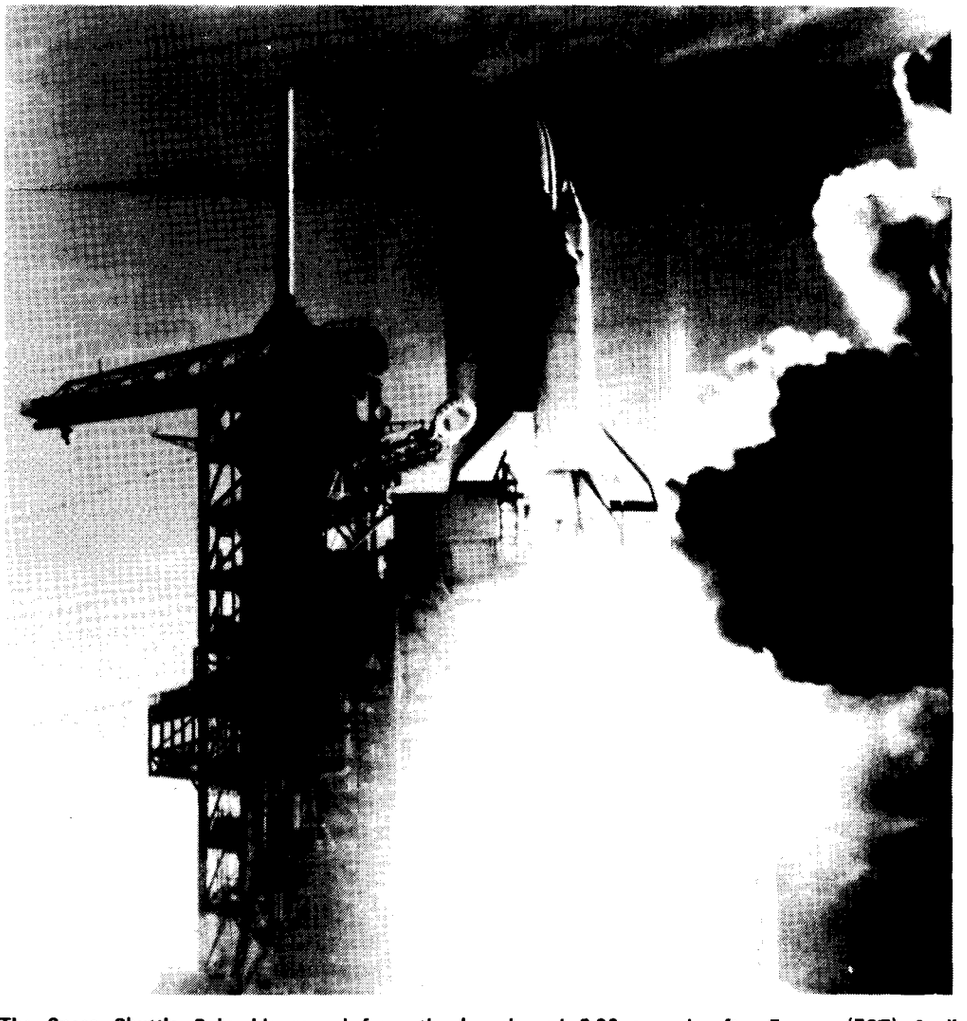
Mobile facilities are also being built by the Dutch and West Germans, and NASA is cooperating with these scientists, through a commission established by the International Association of Geodesy, to build an integrated global program of space geodynamics.

Flinn has worked at NASA Headquarters since 1975, and has been Director of Lunar Programs, and Chief Scientist of Lunar and Planetary Programs and Earth and Ocean Programs.

The excitement of the first launch of the Space Shuttle Columbia was expressed in various forms as seen by these three youths at the Langley Activities Center seconds before the Shuttle lifted from its pad at the Kennedy Space Center in Florida.

– photos by Bill Salyer

Charles Llewellyn (left), head of Langley's STS integration office, and Dave Throckmorton (SSD) discuss the details of the mission shortly after the Columbia released the external tank and conducted the first orbital maneuvering engine firing.



The Space Shuttle Columbia roared from the launch pad 3.98 seconds after 7 a.m. (EST) April 12.

Shuttle Successful

Continued from page 1.

The solid rocket boosters separated from the external tank and Orbiter 2 minutes, 12 seconds later, putting on a spectacular show for millions of viewers below. The two boosters, later recovered 151 miles downrange, will be refurbished, and the motors may be used on the sixth Shuttle flight.

The Orbiter's main engine cutoff occurred 8 minutes, 34 seconds into flight. Shortly thereafter, the external tank separated from the Orbiter and broke up over the Indian Ocean.

The enthusiasm surrounding the launch was short-lived, however, Approximately two hours into the flight, when the payload bay doors were opened and the radiators deployed, TV viewers could see that tiles on the pods covering the orbital maneuvering system were missing or damaged.

Study by Mission Control officials of television pictures from the Columbia revealed that at least one, possibly two, complete tiles on the starboard pod were missing. A total of nine tiles on the starboard pod and four to six tiles on the port pod were reported damaged or missing by NASA officials.

NASA workers investigating the situation determined that the missing tiles, which were not in a critical area, would not be a threat to the Orbiter or crew during re-entry. Further studies left officials optimistic that the critical tiles

on the underside of the Orbiter were not damaged.

The remainder of the mission posed only a few small discrepencies to the flight crew and Mission Control. The discrepencies included malfunctioning transducers, system gauges and valves.

The final steps -- successful re-entry and landing -- were only needed to complete the 36-orbit mission.

Re-entry interface began about 12:50 p.m. EST at Mach 25. At about 12:55 p.m., Columbia went into a communications blackout and 16 minutes later it announced to Mission Control its final approach.

As a string of affirmative systems reports sped through Mission Control, Flight Director Puddy said, "I don't know how much more good news I can take."

At 1:20 p.m. the landing gear touched down, completing the successful first flight of the Space Shuttle Columbia.

Once Columbia's many systems were safed, Puddy told his flight controllers that they could "return to exhilaration mode." And they did, with a standing, back-slapping bellow of relief and pride.

Even without sound, no one who watched John Young bound out of Columbia, check out its fragile underside and gesticulate his feelings could fail to comprehend that he, too, was in an "exhilaration mode."

The two astronauts later met their families, were flown to the Johnson Space Center and began briefing Shuttle officials, including some from Langley, on the Shuttle's near-perfect performance.

– photo courtesy of Associated Press

IT'S OVER. Space Shuttle Columbia rests on the runway Tuesday, April 14, at California's Edwards Air Force Base after gliding safely back to earth following it's 2¼-day mission.

The Orbiter, towed to the servicing area at the Dryden Flight Center, is being prepared for its return to Florida atop a modified Boeing 747. The transport is to take place no earlier than today. At Kennedy, Columbia will be readied for its next flight, now set to take place in about six months.

Photos Unavailable

Photographs or lithographs of the Space Shuttle Columbia's launch or landing will be available at the center for the public no earlier than May 15. Watch the next issue of the *Researcher* for an update.

Langley employees turned out at the Activities Center in full force to watch the landing of the Columbia. Approximately 600 employees watched the landing at the Activities Center, while another 300 employees and public watched at the Visitor Center.

"Who said it wouldn't fly?" This group of Langley researchers celebrate and reflect on the near flawless mission of the Columbia, which lasted two days, six hours, 20 minutes and 52 seconds.

Personal Opinions

What do you think are the most important secretarial duties?

Why did you choose this profession?

Secretaries' Week is observed nationally each year to show appreciation to secretaries for the many jobs they perform for their bosses.

The *Researcher* staff thought it an appropriate time to ask some Langley secretaries what they think are the most important duties of a good secretary and why they chose the secretarial profession.

Deborah S. Mitchell

Computer Management Branch, Analysis and Computation Division

"The main duties of a good secretary are to insure a smoothly and efficiently run office, to meet deadlines, to have lots of flexibility, and to be able to put one's hands on whatever material is needed immediately.

"To run an efficient office, the secretary needs to know and understand the work performed in the branch.

" I selected this profession because I enjoy working with people. The procedures can be complex at times and I like that. It gives me a sense of responsibility. It's not a routine or boring field. Each day holds something different."

Carole D. Moore

Systems and Experiments Branch, Space Systems Division

"I think organization is the most important duty of a secretary. Someone has to overall organize the office and handle the administrative details.

"I decided to be a secretary because I knew I would be getting married shortly and it was the only thing I could do. I enjoy it."

Betty P. Joyner

Office of Director for Aeronautics

"Organizing a very busy man's time -- keeping his time organized so he can carry on his duties -- I think is the most important duty of a secretary. Also important is running a happy office. I really don't care what I have to do as long as the office is coordinated and I can keep everyone happy.

"I didn't choose the profession. The profession chose me. I started out as a mathematics technician. I learned to type and my boss started giving me more secretarial duties because of the lack of secretaries. As I became proficient in typing, the secretarial duties started overlapping my other duties. Somewhere along the way I changed my job description. I never started out to be a secretary, but I feel I make myself happy whatever I am doing."

Elizabeth F. Buchan

High-Speed Aerodynamics Division

"Mr. Harris is involved in many and varied things. With all of his activities, I think the most important aspect of my job is to relieve him of as much of the detail work as I can so he can do his job more effectively. I like the responsibility. He'll let me take on as much as I am willing to assume.

"I enjoy the interaction with people. Especially as a secretary of a large research division, I know what is going on and I have a good overview of the organization. It's like enjoying the view from the top without having the responsibility."

Grace M. Girton

Scout Project Office

"The most important duty is to keep the boss informed. I think a good secretary needs to be as accurate and punctual as possible, courteous and friendly to visitors as well as coworkers, and to have a good sense of humor.

"The reason I chose to be a secretary is that I enjoy working with other people and for other people."

Anna P. Plott

Office of Director for Projects

"To me, the primary duty of a good secretary is keeping your boss on schedule by making sure his calendar is straight. You have to develop a sense of calmness for those panic situations that arise. The most important thing is to develop a rapport with your boss and keep in tune always with his policies.

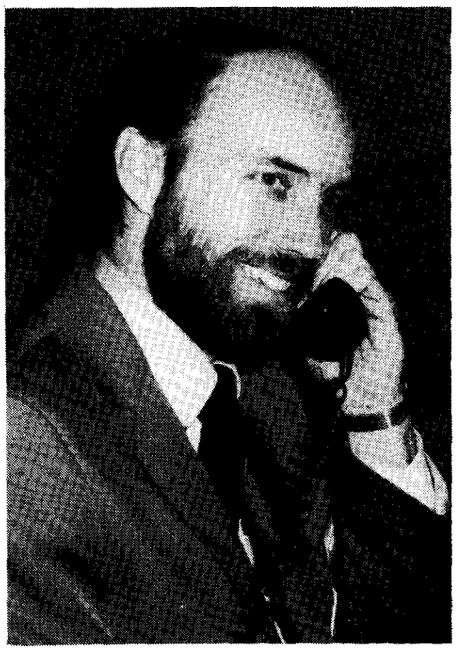
"I chose to be a secretary because of the variety of duties. You get involved in everything that is going on. It is very challenging, never dull, and you meet and interact with lots of people."

Millie M. Boone

Training and Educational Services Branch, Personnel Division

"I think a good secretary needs to be alert, sharp, have a good memory and help her boss.

"I like secretarial work because I like working with people. I enjoy working in the Training Office because I can help employees with their training, enroll them in different courses and find out what courses people are interested in. I also work with the educational resource lecturers who come here to speak."



– photo by Hubert Lloyd

George Hastings, Programs Manager at the Langley Visitor Center, is shown giving the first international telelecture to the New Zealand Spaceflight Association in Wellington April 10. The Space Shuttle telelecture was requested by the NZSA, who has stayed in close touch with Langley, keeping abreast of space projects. The NZSA works to publicize significant space missions, preparing displays, disseminating information and working closely with the New Zealand news media. The telelecture was presented via a special satellite-relayed, conference telephone call, with a signal traveling approximately 22,000 miles into space to a communications satellite from which it was redirected to Wellington. For more information on telelecture programs, call Renee Benton, ext. 3341.

Give Us Your Opinion

The *Langley Researcher* staff would like to know your opinion of this paper. Please take a few minutes to fill out the questionnaire and return it to the Public Affairs Office, Mail Stop 154, by Wednesday, April 29.

Question	Answer
1. Do you usually read the Langley Researcher?	Yes____ No____
2. Do you think the Researcher should keep you informed about Langley research programs?	Yes____ No____
3. Do you think the Researcher should keep you informed about Langley management programs, such as personnel actions, insurances, awards, training, and fellowships?	Yes____ No____
4. Do you enjoy reading articles on Langley employees (People at Work, Personnel Profiles and Personal Opinions)?	Yes____ No____
5. Should the Researcher place more emphasis on:	
A. research programs?	A_____
B. management programs?	B_____
C. employee activities, such as LAA-sponsored activities, dance exercise classes, Happenings?	C_____
D. no change needed.	D_____
6. Do you think the Researcher is a good way for the Office of the Director to communicate with employees?	Yes____ No____
7. If so, how often?	
A. monthly	A_____
B. quarterly	B_____
C. semi-annually	C_____
D. annually	D_____
8. Are you interested in stories about work at other NASA centers (excluding Langley)?	Yes____ No____
9. Do you take the Researcher home for your family to read?	Yes____ No____
10. Which of the following categories fits you?	
A. Clerical	A_____
B. Aerospace Technologist (AST)	B_____
C. Technician and Wage Grade	C_____
D. Administrative/Professional	D_____
E. Retiree	E_____

A Club For Any Reason

Have you enjoyed your Christmas Club, but always seemed to need money in April or June?

Now there is a club at the Langley Federal Credit Union that allows you to set aside funds for special times of the year when you most need your money -- the All Purpose Club.

The club is similar to a Christmas Club since it encourages regular savings of at least $5 weekly. However, you are allowed three withdrawals per year on dates chosen by you. Perhaps April for taxes, June for vacation, or September for school. Another plus is that you are paid the same quarterly dividend as regular shares (currently 7 percent).

Sign up now with a minimum payroll allotment of $20 per month and receive a free stainless steel roast holder.

Happenings

DOG TRAINING. The NASA Dog Training School will sponsor a free dog ownership responsibility clinic May 9 at 2 p.m. at the Hampton Convalescent Center. Young pet owners will hear local dog experts discuss feeding, grooming, training, the importance of regular veterinary check-ups, pet population control and other topics related to more responsible pet ownership. A Kiddie Dog Show will be held May 16 at the Hampton Convalescent Center. The show will be held in conjunction with Nursing Home Week, May 10 through 16. For more information, call Barbara Foy, 851-3256.

ARTS AND CRAFTS SHOW. The LAA Arts and Crafts Show will be held May 2 and 3 from 12 to 5 p.m. at the Activities Center. Featured at the show will be stained glass, artwork, flower arrangements, wood working, hand painted china, country carvings, needlepoint and tole painting. Refreshments will be available in the lounge.

GENERAL ASSEMBLY. The LAA General Assembly will meet May 13 at 9 a.m. in the Activities Center. All delegates and alternates are urged to attend. Coffee and Danish pastries will be served.

HAPPY HOUR will be held today from 4 to 6:30 p.m. in the Activities Center.

WALT DISNEY MOVIE. The LAA will show the cartoon "Test Pilot Donald" and the film "Treasure Island," Robert Louis Stephenson's spine-tingling tales of pirates and hidden gold, Sunday, April 26, at 3 p.m. in the Activities Center. Admission is 75 cents per person. Food and drinks will be served.

TIDEWATER DINNER THEATER. "West Side Story" will be performed at the Tidewater Dinner Theater in Norfolk through May 10. Tickets, at $13 each, are on sale at the Activities Office.

National Aeronautics and
Space Administration

Langley Research Center
Hampton, Virginia
23665

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Retirement Parties

A retirement party honoring **Lowell E. Hasel**, High-Speed Aerodynamics Division, will be held Friday, May 8, at Sammy's Steak House, 12399 Warwick Boulevard (Hidenwood). A social will begin at 6:30 p.m. followed by a steak or stuffed flounder dinner and a program. The cost, including gratuity and gift contribution, will be $8 per person and $15 per couple. Contributions for the gift only are also welcome. For reservations, please call Elizabeth Buchan, ext. 2658, by May 5.

Elmer L. Goodson Jr., Operations Support Division, will be honored with a retirement luncheon on Monday, April 27, at 11:30 a.m. at the Activities Center. The menu is fried chicken and seafood casserole. The cost including gift will be $6 per person. Contributions to gift only are welcome. For reservations call or send check to K. L. Parrish, ext. 3225, Mail Stop 276.

Thanks

Paul Fournier writes, "My family and I would like to say thank you to all who took part in my retirement luncheon and especially those who planned and contributed to this occasion. The roast, gifts, and mementoes will be treasured as well as my association with a great group of workers and friends. Thanks again and best wishes to all."

Federal Women's Week
May 18-22

swap and shop

FOR SALE

Vehicles

1977 Honda Accord, EC, AC, 28-30 MPG, reg. gas, 4 Michelin S.R. tires, No. 9 sticker, $500 below NADA, $3,995. Call Childs, 898-6719.

1978 Alfa Romeo Italian sports car, black convertible, like new, many extras, $7,500. Call 599-4321.

FOR RENT

Sandbridge: new cottage with liv.-din.-kit. area, 4 BR, washer, dryer, dishwasher, fireplace, AC, phone, 6-car parking, one half block from beach and Back Bay, summer rates $425/wk. Call Kent, ext. 3095 or 420-8391.

Pamlico Sound near Cape Hatteras Lighthouse: water front cottage with liv.-din.-kit. area, 4 BR, 2 baths, 2 porches, dishwasher, $350/wk. Call 877-3736.

WANTED

To join an existing car pool or form a new car pool from the Virginia Beach Bayside area to the West area on the 8 a.m. shift. Call Lucy, ext, 4621 or 464-5685 after 5:30 p.m.

To buy a domestic electric hot water heater and small outboard motor for boat (about 5 hp). Call Johnson, ext. 3026 or 898-8160.

LAA Tours

Make reservations now for the "Down Under" tour this fall, October 10 through 28, to New Zealand and Australia with optional stop-overs in Los Angeles (going), Honolulu (either way), and San Francisco (returning).

Do not forget the 10 percent discount on any Carnival cruise sailing from Norfolk this year.

Bermuda – May 12 through 19

Nassau – With optional 2-day stay-over May 27 through June 1 (fly back)

Cruise to Nowhere – September 5 through 8

Bermuda – September 8 through 15

Discount packages to Las Vegas and Hawaii are also available. Call Ernie Greene, ext. 2312 or 838-0567, or the Activities Office, ext. 3139, for details and brochures.

cafeteria menu

WEEK OF APRIL 27

MONDAY: Old Fashioned Bean Soup; Spaghetti Dinner; Chicken Pot Pie; Fried Fish Nuggets. Snack Bar: Hot Italian Sausage Sub; Steak & Onion Sub; Egg Salad.

TUESDAY: Manhattan Clam Chowder; Roast Beef; Polish Sausage; Seafood Quiche. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Beef Noodle Soup; Roast Turkey Dinner; Fried Flounder; Spanish Franks. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Gumbo Soup; Meat Loaf; Chicken and Dumplings; Broiled Pork Chop. Snack Bar: Ham & Cheese Club; BBQ; Teriyaki Steak & Onion Sub.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Broiled Beef Liver; Baked Spanish Chicken. Snack Bar: Deluxe Sub; Hot Roast Beef; Tuna Salad.

WEEK OF MAY 4

MONDAY: Ham & Lima Bean Soup; Hot Turkey Sandwich; Veal Parmesan; Baked Beans & Franks. Snack Bar: Hot Italian Sausage Sub; Steak & Onion Sub; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Grilled Strip Steak; Chicken Chow Mein; Crab Cutlets. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; Beef Tips over Rice; Salmon Loaf; Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Vegetable Soup; Braised Chicken Livers; Pitt Pepper Steak; Beef Enchiladas. Snack Bar: Ham & Cheese Club; BBQ; Teriyaki Steak & Onion Sub.

FRIDAY: Minestrone Soup; Fish Dinner; Ham Steak; Salisbury Steak. Snack Bar: Deluxe Sub; Hot Roast Beef; Tuna Salad.

Key Positions

Beulah C. Baccus has been selected Head, Purchasing Section, Acquisition Operations Branch, Acquisition Division, under Competitive Placement Plan 81-7.

Marshall D. Johnson has been selected Head, Mechanical Support and Utilities Operations Branch, Operations Support Division, under Competitive Placement Plan 81-16.

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

Volume 20 Issue 9

May 8, 1981

Anderson, Park Awarded Thompson Fellowship

Two Langley researchers have been selected for the Floyd L. Thompson Fellowship Program for 1981–82.

Dr. Stephen K. Park, Analysis and Computation Division, will spend one academic year at the Optical Sciences Center of the University of Arizona. Dr. Melvin S. Anderson, Structures and Dynamics Division, will study at the University of Wales' Institute of Science and Technology and the University of Birmingham, England.

The Thompson Fellowship Program was established in 1977 to encourage the development of research potential among the Langley staff. The Fellowship allows researchers who have demonstrated continued growth in research to spend up to 12 months at an educational or research institution. It is named in memory of Dr. Floyd L. Thompson, Langley Director from 1960 to 1968. Thompson joined the Langley staff in 1926, retired in 1968 and was a consultant to the NASA Administrator until January 1973.

Park's research will involve the mathematical and computational modeling of multispectral remote sensing systems for conceptual design studies and performance evaluation, and the analysis and classification of multispectral image data.

"My research is really concerned with mathematical and numerical techniques for remote sensing and digital image processing applications," Park explained. "At the Optical Sciences Center I will be working with some individuals who have made significant contributions in these areas. I work closely with several research groups at Langley and I anticipate that the experience I gain and research contacts I establish will benefit our work for years to come."

Park is looking forward to the year as an exciting and refreshing time for him and his family. "The Thompson Fellowship is a unique research opportunity and I am thankful that I was selected as a recipient. I certainly appreciate the efforts of all the people involved in the initiation and continued administration of the program."

Anderson will develop practical, efficient and accurate structural analysis for the very large structures proposed for future space application by taking advantage of their likely geometry, construction methods and other factors that will result from being in the vacuum and weightlessness of space.

Anderson said he will be associating with people who have developed innovative and sophisticated structural analysis methods that Langley has used to great advantage in aircraft structures. "The potential of these approaches for space structures is great," Anderson said, "and I hope this year of relatively uninterrupted research will result in significant advances that will have long term benefits to Langley and NASA in the design of future space structures.

"I am looking forward to the Thompson Fellowship as a unique opportunity and work experience as well

Continued on page 2.

Beggs, Mark Nominated to Head NASA

President Reagan recently announced the nomination of business executive James M. Beggs as NASA Administrator and Dr. Hans Mark as Deputy Administrator.

Beggs has been Executive Vice President, Aerospace, and a director of General Dynamics Corp., St. Louis, Mo. Mark is former Secretary of the Air Force and Former Director of the Ames Research Center.

Beggs, if confirmed, will succeed Dr. Robert A. Frosch, who resigned January 20, 1981, to become the first President of the American Association of Engineering Societies in New York. Frosch had been Administrator since June 21, 1977.

Beggs, who will be the sixth man to head NASA, has been responsible for General Dynamics Convair, Electronics, Fort Worth and Pomona Divisions.

He was with NASA from 1968 to 69 as Associate Administrator, Office of Advanced Research and Technology. From 1969 to 1973 he was Under Secretary of Transportation. He went to Summa Corporation as Managing Director of Operations and joined General Dynamics in January 1974. Before joining NASA, he had been with Westinghouse Electric Corporation of 13 years.

A 1947 graduate of the U.S. Naval Academy, he served with the Navy until 1954. In 1955 he received a master's degree from the Harvard Graduate School of Business Administration.

Continued on page 6.

photos by Bob Nye

Richard H. Petersen, Langley Deputy Director, congratulates Dr. Stephen K. Park (left photo) and Dr. Melvin S. Anderson (right photo) upon their selection to participate in the Floyd L. Thompson Fellowship Program for 1981-82. Park and Anderson will each spend one academic year at a university conducting research in their areas of expertise.

Thompson Fellowship

Continued from page 1.

as a chance for my family to gain the broadening educational benefits of living in another country. The next year should be one of the highlights of my career."

Park began his NASA career in June 1964 as an aerospace technologist in the Magnetohydrodynamics Branch of the Aero-Physics Division, specializing in applied mathematics and computer science. Since April 1970 he has been assigned to the Computer Applications Branch of the Analysis and Computation Division.

Born in Washington, D.C., Park received a bachelor of science degree in mathematics from Shippensburg State College in Pennsylvania in 1964. He earned a master of science degree and a doctorate in applied mathematics from North Carolina State University in 1967 and 1969, respectively. From 1968 to 1969, he was a research assistant at the university.

The author or co-author of approximately 35 technical papers, Park is a member of the Society for Industrial and Applied Mathematics. He serves on the adjunct staff at Christopher Newport College and George Washington University and has taught graduate courses at Langley for 10 years.

Park and his wife, Rosa, live in Newport News with their son and daughter.

Anderson joined the Langley staff in June 1952 as an aeronautical research intern. He was named Head of the Aerothermoelasticity Section in 1963; Assistant Head of the High-Temperature Structures Branch in 1970; and Head of the Analytical Methods Section in 1974. He became the Principal Scientist in the Structural Concepts Branch of the Structures and Dynamics Division in 1977. He has specialized in plate and shell buckling, composite structure analysis and structural optimization.

A native of Des Moines, Iowa, Anderson received a bachelor of science degree in civil engineering from Iowa State College in Ames in 1952. He earned a master of science degree in applied mechanics in 1955 and a doctorate in engineering mechanics in 1956, both from Virginia Polytechnic Institute.

The author or co-author of over 70 papers and technical society presentations, Anderson is a member of the American Institute of Aeronautics and Astronautics and the Engineers' Club of the Virginia Peninsula. In 1977 he received a NASA Exceptional Service Medal for his work on the Viking Aeroshell Analysis.

Anderson and his wife, Peggy, and their four children, live in Yorktown.

Shuttle Lithographs

Lithographs of the Space Shuttle Columbia's first mission will be available from NASA, including Langley's Public Mail and Public Affairs offices, no earlier than mid-July, according to NASA-Johnson officials.

Check Blood Pressure

May is National High Blood Pressure month.

Have your blood pressure checked at the Medical Center, Building 1145, any day during May from 1 to 2:30 p.m.

High Blood Pressure? Treat it and live.

Recent Retirees

James K. Anderson, Structures and Dynamics Division, retired May 1.

Irvin C. Rowe, Instrument Research Division, retired April 29.

The *Langley Researcher*, as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond
Staff Photographer . . . . . Bob Nye

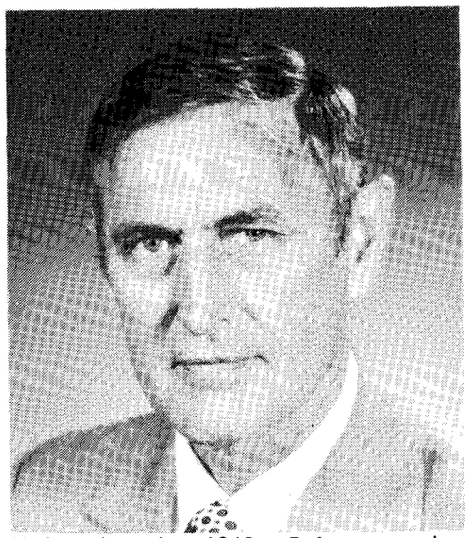
The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

Gribble Retires as Chief of ACD

Albert E. Gribble, Chief of the Analysis and Computation Division at Langley, retired from government service April 29. Since 1975 he has been responsible for the development and application of techniques and equipment needed to meet Langley's research computing requirements in analytical studies, real-time simulation and data reduction.

Gribble began his career with NASA's predecessor agency, the National Advisory Committee for Aeronautics, in 1949 as an electrical engineer. He was named Assistant Head of the Data Systems Branch of ACD in 1959, Assistant Chief of the division in 1969 and Associate Chief in 1974. He received a Langley Special Achievement Award in 1974 for his work in data reduction and research in data processing.

A native of West Virginia, Gribble received a bachelor of science degree in electrical engineering from West Virginia



University in 1949. Before entering college, he served in the U.S. Navy.

Gribble and his wife, Virginia, live in Newport News. They have two daughters and a son.

Savings Bonds Campaign Underway

The 1981 U.S. Savings Bonds Campaign began at Langley May 4 and will continue through May 29.

Director Don Hearth has appointed Sid Dixon, Chief of the Loads and Aeroelasticity Division, as his Vice-Chairman of the campaign this year. Joe Struhar, Chief of the Financial Management Division, is the center's Bond Coordinator and Joyce Fly, Payroll Section, FMD, will maintain and update campaign records.

The center's goal is to achieve 50 percent participation which requires about 200 new participants. Gold eagle pins will be given to the first 24 employees to submit bond authorization cards to the payroll office.

Langley's efforts this year will be enhanced by the establishment of an all-time high interest rate offered on U.S. Savings Bonds. Today's Series EE Bonds pay 9 percent, if held to their full eight-year maturity, effective May 1, 1981. (They pay 8-1/2 percent after five years and 6 percent after the first year.) Savings bonds also continue to offer all the tax advantages that have always helped to make them an excellent way to save for supplementing a retirement income, establishing an education fund or providing a down payment on a new house.

So all Langley employees can benefit from this method of saving, educational seminars on all aspects of savings bonds will be held May 14 at 10 a.m., 12:30 p.m., and 3 p.m. in Building 1229, Room 230.

10 a.m.	Office of Director SE&O Directorate
12:30 p.m.	Electronics Directorate Space Directorate Projects Directorate
3 p.m.	Management Operations Directorate Structures Directorate Aeronautics Directorate

O. M. Stevenson Jr., Virginia Director, U.S. Savings Bonds Division, U.S. Department of the Treasury, will discuss the bond program and answer any questions employees may have concerning savings bonds.

If you cannot attend at your designated time, feel free to attend one of the other sessions.

Key Position

Dr. Sui-kwong P. Pao has been selected Head, Aeroacoustics Branch, Acoustics and Noise Reduction Division, under Competitive Placement Plan 81-17.

Lovelace Thanks Staff for Shuttle Support

Langley Director Don Hearth received the following letter April 23 from Dr. Alan M. Lovelace, Acting Administrator, thanking the staff for their support of the Space Shuttle Program.

Dear Don:

I would like to take this opportunity to thank you and the entire staff at the Langley Research Center for their parts in the support of the Shuttle program. The outstanding people and facilities assigned to help solve complex problems helped immeasurably to give the space program another new direction.

Please pass my personal thanks to the entire staff at Langley in appreciation of their job well done.

Sincerely,

A. M. Lovelace
Acting Administrator

Reagan Praises Shuttle

In case you missed it, the speech President Reagan gave before Congress last week, April 28, wound up with a tribute to the Space Shuttle and to the people who helped make it possible. He said:

"Just two weeks ago, you and I joined millions of our fellow Americans in marveling at the magic historical moment that John Young and Bob Crippen created in their Space Shuttle Columbia.

"The last manned effort was almost six years ago, and I remembered, on this more recent day, over the years, how we'd all come to expect technological precision of our men and machines. And each amazing achievement became commonplace, until the next new challenge was raised.

"With the Space Shuttle, we tested our ingenuity once again--moving beyond the accomplishments of the past into the promise and uncertainty of the future. Thus, we not only planned to send up a 122-foot aircraft, 170 miles into space, but we also intended to make it maneuverable and return it to Earth--landing 98 tons of exotic metals delicately on a remote dry lake bed.

"The Space Shuttle did more than prove our technological abilities, it raised our expectations once more; it started us dreaming again. The poet Carl Sandburg wrote: 'The Republic is a dream. Nothing happens unless first a dream.'"

Directorate Shifts People, Adjusts Programs

A major reorganization of the Aeronautics Directorate has just been completed.

Before a group of about 300 directorate employees last week, Director of Aeronautics Robert E. Bower characterized the reorganization as significant in terms of people, facilities and programs. It is the first major restructuring of the directorate in seven years.

The changes formally went into effect May 3, although some changes had already been informally made.

Approximately one third of all Aeronautics employees will be affected, with well over half of all supervisors either newly appointed to fill a vacancy or appointed to a new position.

A look a the new Aeronautics Directorate organization chart reveals that two of four divisions have new names. Thirteen of 19 branches or offices either have new names, new names with some new responsibilities or are totally new.

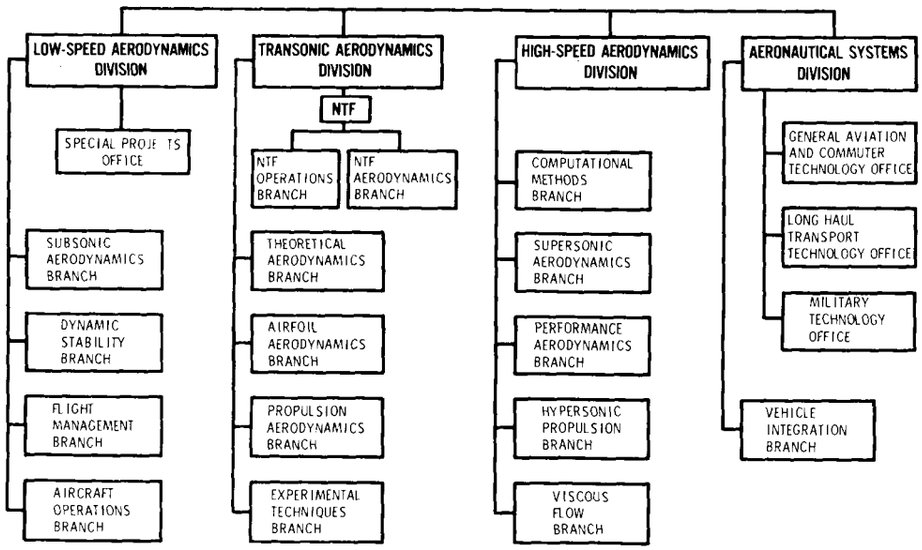
"We have to adjust," Bower said, "to a great number of changes that have taken place in recent years. They represent exciting challenges that dictate a good organization."

Not the least of those changes, he said, is a directorate personnel turnover of 18 percent in the last 18 months. Fifty Aero people retired in Fiscal Year 1980, and 11 have retired so far in Fiscal Year 1981. The overwhelming majority of their replacements, while bright young men and women, are college "fresh-outs," with little or no experience on the job. In contrast, many of the people who recently separated through retirements Bower called directorate "giants," such as Dick Whitcomb. He likened them to "the elephants who put up the (Aero Directorate) tent posts, the real workers."

"We're still strong and progressing," Bower reassured the audience, "but we have to regroup to keep in tune with the times. Many of you will be working for a different boss or in a different group with, I hope, new challenging opportunities and duties.

"Without any question, our business is research, and it's you who perform the research. The organization is only a tool to help carry out that research. My philosophy is to help pick the team members and then support them. I really

AERONAUTICS DIRECTORATE



believe that we work for you, with 'we' being the supervisors. Everything we do should be to support you, get you the resources and provide a more conducive work environment. That is our major concern in this reorganization."

Significant change in several Aeronautics facilities was listed as the second reason for reorganization, with the National Transonic Facility (NTF) heading the list. Construction of the unique wind tunnel is expected to be completed by SE&O and their contractors in a little more than a year and, in Bower's words, "You just don't start using a brand-new facility of that complexity by starting in 1982."

Other facility changes include a new role for the Eight-Foot Transonic Pressure Tunnel (8' TPT). For the last several months, the tunnel had been called into special duty to help with an important part of the flight certification program for the maiden flight of the Space Shuttle Columbia. A panel of tiles representing the Columbia's thermal protection system, at a critical point near its nose, was intensively tested to see how well the six-inch silica squares would hold up under the extreme pressures of simulated launches and landings. The tests validated the safety of the original design for the thermal protection system in that area and helped make possible the Columbia's lift-off as early as last month.

Beginning this week, the 8'TPT will be modified again, this time for research aimed at improving the aerodynamics of airplanes. The tunnel's air flow qualities will be improved to the point of making it the best transonic facility for laminar (smooth) flow research in the country, if not the world, according to Bower.

In addition, a 20-inch supersonic wind tunnel will be moved to Langley from JPL in Fiscal Year 1982, the High-Speed 7 × 10 Tunnel is to be modified soon to give it transonic capability and the Low-Turbulence Pressure Tunnel has been undergoing a modification for several months that is almost complete.

Exciting research opportunities were cited by Bower as being the third, and final, motivation for reorganizing the Aeronautics Directorate:

"The NTF will provide us with an excellent research opportunity to investigate certain aerodynamic characteristics in a very realistic manner. For the first time, we will be able to essentially test a model at full-scale Reynolds numbers (approaching flight conditions) at transonic speeds (just above and below the speed of sound).

"The computational fluid dynamics revolution has been going on for a number of years and continues at an ever-increasing pace. I think we have got to measure up this opportunity. I don't think we have been doing enough so

– photo by Bill Salyer

Approximately 225 bosses and secretaries attended the Secretaries' Day breakfast April 22 at the Activities Center. During a skit titled "The Ten Commandments for Secretaries and Executives," secretaries Grace Girton, Natalie Johnson and Debra Waddell (left photo) read their commandments, "Thou shalt not blame thy secretary for thine own mistakes; Thou shalt not change a report two minutes before deadline; Thou shalt find time for daily planning sessions with thy secretary; Thou shalt appreciate they secretary--and say so!" Wayne Loer, Kim Cannon and Donna Speller (right photo), portraying executives, respond with their commandments, "Thou shalt set a top-notch example for the office staff; Thou shalt grin and bear dealing with changing priorities; Thou shalt type--right--the boss' dictation; Thou shalt be a mind reader."

we've reorganized to emphasize the computational area more.

"Despite the computational emphasis, there's still a lot of exciting opportunities in the experimental area. We're looking at magnetic suspension systems to eliminate sting (model support) effects. We're looking at "smart walls" to eliminate wall effects. And, of course, the area of instrumentation is just blooming, with lasers, holography and so forth.

"Drag reduction, because of the fuel problem, continues to be a major area of emphasis. We're really tackling this viscous flow problem, both from a laminar flow standpoint and also from a turbulence standpoint. Another important area in this drag problem is the interface between the airframe and the propulsion system, so we have strengthened our effort a great deal in propulsion integration.

"We hear a lot about the electronic revolution. The size, cost and performance of electronic components -- the digital avionics and microprocessors -- allow us, as aerodynamicists, to do a lot more than we were able to do before.

"I think one of the largest areas where we interface with the electronics group is in the flight area. We have established a new Flight Management Branch. . . . .We have received a lot of cooperation from the Electronics Directorate. Bill Mace acknowledges, accepts and supports our role in flight management. This area of marrying the man to the machine through avionics, through displays and controls will be emphasized.

"I believe we're going to see a large emphasis in military research. The military is bullish on their new prototype, or demonstrator, programs, with a new concept every two years. We have an opportunity now to take advantage of the work we've been doing for some time at Langley in the military area.

"This should provide new emphasis to the High-Speed Aerodynamics Division where, for a few years, supersonics and hypersonics were not all that popular -- it was lower speed and fuel economy. Right now, we're talking with the Defense Advanced Research Projects Agency about possibly joining them in a program for a hypersonic cruise missile. So the work that we've been pioneering and stubbornly pursuing may pay off sooner than we thought.

"I think we're going to see more propellers in our tunnels. I'm not thinking so much of the high-speed turboprop that came out of the ACEE program -- the Mach .8 turboprop -- but a very efficient turboprop aircraft to meet the shorter haul mission. . . .We, at Langley, also have a responsibility for short haul. . . .I think there's a need for a short and medium range vehicle. Maybe it would be designed for about 1,000 nautical miles but operate at 200 or 300 nautical miles. I think we should conduct research on efficient turboprop aircraft that may see service in the 1990s.

"And, finally," Bower said, "we have more of a need to put it all together, through integration. The ASD group has been asked to look at the various vehicles Langley has responsibility for and look across disciplines to define needs and opportunities.

"That, to me, is why we're reorganizing. There are a lot of new challenges that, in turn, are creating new opportunities. Unless we grow with them, I think they'll leave us behind."

What Do You Call It?

The Flight Management Branch of the Flight Dynamics and Control Division has been renamed the Automation Research Branch. The new title better describes the branch's research in both spacecraft automation (automated decision-making and problem-solving, robotics and machine intelligence) and aircraft automation (man-machine interface of pilot and advanced aircraft automatics, including machine-intelligent flight engineer functions). The new title will also avoid confusion with a new Flight Management Branch within the Aeronautics Directorate.

Speakers Bureau

William C. Woods spoke to the Virginia Beach (Host) Lions Club Feb. 23 on the Space Shuttle.

Delwin Croom spoke to members of the Order of Daedalians at Langley Air Force Base Feb. 19 on flexible wings for transportation.

Billie Ashworth gave a talk to members of the Institute of Electrical and Electronics Engineers March 24 on simulation in engineering.

Langley Observes Federal Women's Week

Federal Women's Week will be observed at Langley May 18 through 22 and the Federal Women's Program Advisory Committee has two special programs planned for center employees.

A luncheon will be held May 20 at 11 a.m. in the Activities Center. Lavonne Parker, Staff Officer in the Office of International Program Policy of the International Affairs Division at NASA Headquarters, will speak on "Climbing the Ladder to Success." The topic is very appropriate because the speaker is a "product" of NASA's Upward Mobility Program.

Parker began her government career as a clerk-typist with the Civil Aeronautics Board in May 1957 and transferred to NASA Headquarters as a secretary in August 1960. She has also served as Personnel Exchange Officer, Visits Coordinator and Assistant Visits Coordinator. In her present job, she is responsible for planning, coordinating and implementing cooperative international projects in aeronautics.

Lavonne Parker

The luncheon will cost $2.50 per person. The menu includes assorted sandwiches, ham biscuits, chicken wing dings, deviled eggs, assorted relished, dessert and punch.

On May 21 at 9 a.m. in the Activities Center, a program will be held on "The Changing Needs of Women." The program will feature a panel discussion on "Property Rights of Women," "Support Systems--Networking," "Assertiveness," "Financial Planning," and "Business Ventures After Retirement."

Both men and women are encouraged to attend these activities. If you plan to attend the luncheon, please call Mary W. Jackson, Federal Women's Program Manager, ext. 3487, as soon as possible.

Beggs, Mark Nominated

Continued from page 1.

A member of the Board of Governors of the National Space Club, the National Security Industrial Association and the American Astronautical Society, his other professional affiliations include the National Academy of Public Administration, the American Institute of Aeronautics and Astronautics, the American Society of Naval Engineers and Sigma Tau.

He holds an honorary LL.D. degree from Washington and Jefferson College, Washington, Pa., and an honorary doctor of engineering management degree from Embry-Riddle Aeronautical University, Daytona Beach, Fla.

Born in Pittsburgh, Pa., January 9, 1926, Beggs and his wife, the former Mary Harrison, have five children.

Mark served as Secretary of the Air Force from July 1979 to 1981. He had been Under Secretary since 1977.

A physicist and nuclear engineer, he joined the Ames Research Center in February 1969. Before that he was a professor and researcher, had served as a consultant to several government agencies and held a number of university committee assignments. He was chairman of the Department of Nuclear Engineering at the University of California in Berkeley from 1964 to 1969 and was Administrator of the Berkeley Research Reactor during the same period.

Born June 17, 1929, in Mannheim, Germany, Mark came to the United States in 1940 and became a citizen in 1945. He received his bachelor's degree in physics from the University of California at Berkeley in 1951 and a doctorate in physics from the Massachusetts Institute of Technology in 1954.

Mark has taught undergraduate and graduate courses in physics and engineering at Boston University, Massachusetts Institute of Technology and the University of California at both the Berkeley and Davis campuses and held an appointment as consulting professor of engineering at Stanford University.

He and his wife, the former Marion G. Thorpe, have two children.

AIAA Annual Awards Banquet

Holloway to Discuss Space Shuttle

Paul F. Holloway, Director for Space, will be the guest speaker at the Annual Awards Banquet for the Hampton Roads Section of the American Institute of Aeronautics and Astronautics Saturday, May 16, in the Activities Center.

Holloway will trace the development of the Space Shuttle, with particular emphasis on the effort at Langley. Results from the recent first flight of Columbia, as well as future Shuttle activity, will be discussed.

Other highlights of the awards banquet will include the introduction of the Section Officers for 1981-82 and the announcement of new Associate Fellows and membership awards for longevity.

The banquet will begin with a social at 6 p.m., followed by dinner at 7 p.m. and the program at 8 p.m. The menu will include salad bar, steamship round, green beans, baked potato, rolls and butter, coffee or tea and desert. The cost of the dinner is $6 for students and $7 for all others.

Since a big turnout is expected, reservations should be made early with Bobby Berrier, ext. 2674; Buddy Cary, ext. 4546; or John Whitesides, ext. 2219.

Happenings

BARBERSHOP HARMONY. The Publick Times Chapter of Sweet Adelines, Inc., will present "Barbershop on Broadway," a revue of the history of musical theater, on May 15 and 16. The show will feature The Pittsburghettes, a delightful comedy quartet. On Friday the show will be at the Williamsburg Lodge Auditorium on Francis Street in Williamsburg. Saturday's show is at Thomas Eaton Junior High School on Cunningham Drive in Hampton. Both shows start at 8 p.m. Tickets are available for a $2 donation either at the door or by calling Linda Hunt, ext. 3681.

QUILT SHOW. In celebration of Mother's Day, visit the Third Annual Quilt Show, presented by the Tidewater Quilters' Guild, May 8 through 10. The show will be held from 10 a.m. to 8 p.m. at the new Virginia Beach Pavilion Arts and Conference Center, located off the Virginia Beach Expressway (Route 44). Quilts will be displayed each day and quilt making will be demonstrated from 1 to 3 p.m. each day. There will also be door prizes and a boutique and merchants mall. Admission is $1.

KARATE. The Langley Karate Club will offer a beginner's class starting May 18 at 5 p.m. on the Activities Center grounds. The class is restricted to NASA and Air Force personnel and Langley contractors. For more information, call Roy Albang, ext. 3737, or Gus Davis, 838-1010.

NAGS will hold its monthly dinner meeting Tuesday, May 19, at 6:15 p.m. at Sam's Spaghetti and Steak House, 10731 Jefferson Avenue. The speaker will be Agnes Braganza, Director of Continuing Education at Christopher Newport College. She is a founding member of the Peninsula Women's Network, Inc., and will address "How Networking Benefits the Working Woman." Braganza is listed in Who's Who in American Women (1980). Reservations should be made with Reachie Hall, Mail Stop 175, ext. 4156, by May 18.

A SQUARE DANCE SEMINAR for novice or beginner dancers will be held from 2 to 4 p.m. May 31 in the Activities Center. The cost will be $1.50 per person. For more information, call Dick Kurtz, ext. 4666.

Dog Training School Keeps Active

Recent activities of the NASA Dog Training School have been the completion of puppy and basic obedience classes, the showing of various dog-related films, visitation with the patient/residents of the Hampton Convalescent Center and participation in a Richmond obedience trial.

NASA participants in the recently completed classes were Beverly Abbott (husband, Ira, PED) and dachshund, Patty; Frank Turpen (wife, Nell, SPO) and dachshund, Pepper; Ken Yates (wife, Janis, PRD) and golden retriever, Corky; and Phil Drummond (HSAD) and labrador retriever, Shadow.

Since the first of the year several films on various phases of dogs in action have been shown to the trainees and also to the patient/residents of the Hampton Convalescent Center. Around 20 NASA instructors and trainees with their puppies and dogs (3 months to 12 years) visited with about 25 patient/residents and enjoyed viewing a Ralston-Purina film, "Dogs: Born for Action." The NASA trainees, their puppies and dogs, put on a simple obedience demonstration and visitation followed. Virginia Diggs, a patient of the Center and mother-in-law of Charles B. King (NASA retiree) requested her picture be taken with ALL the puppies and dogs; Mercedes Figueras, mother of Mercedes Hobbs ((RG&UA), also attended.

Participants from the school won top honors in the Richmond, Portsmouth-Chesapeak and Hampton Roads obedience trials while earning "legs" (qualifying scores out of a maximum 200 points) towards obedience titles.

Major (golden retriever) and owner Gary Davis placed first with a Novice A score of 190 at Richmond and third with Novice A score of 196 at Hampton Roads; Nutmeg (golden) and owner Nancy Hinman placed first with Novice A score of 196 at Portsmouth-Chesapeake, and Rex (golden) and owner Him Phillip scored 193 in Novice A at Hampton Roads.

Others qualifying towards "legs" for Companion Dog (C.D.) titles were Brandy (golden) and owner Mike Tullep, Wayne Dochterman with black labrador Susie (two legs) and Laser (golden) and owner Doris Bryan. Tuppence (golden) and owner Doris Bryan also passed the tracking test recently at the Eastern Region Golden Retriever Specialty. Goldens Major, Nutmeg and Tuppence were sired by Doris Bryan's CH Spectre, CDX, TD, W.C. (Companion Dog Excellence, Tracking Dog, Working Certificate).

These dogs along with others currently enrolled now in the obedience, field and tracking program of the NASA Dog Training School will participate in the Hampton Convalescent Center dog ownership responsibility clinic May 9 and also the Kiddie Dog Show to be held in conjunction with Nursing Home Week May 16 at the convalescent center. For more information about the clinic and Kiddie Dog Show, call Barbara Foy, 851-3256; notify Doris Bryan, 898-6273 after 5 p.m. of NASA relatives living at the Hampton Convalescent Center.

Plans are now underway to begin a series of tracking classes possibly later this month. Instructors for the NASA Dog Training School are Barbara Foy, Alan and Judy Kemmerling; Doris Bryan is Director.

GENERAL ASSEMBLY. The LAA General Assembly will meet May 13 at 9 a.m. in the Activities Center. All delegates and alternates are urged to attend. Coffee and Danish pastries will be served.

HAPPY HOUR has been cancelled for today.

TOASTMASTERS offers members an organized communication and leadership program to help improve speaking skills. Opportunities are provided to sharpen your thinking and listening skills, improve abilities in evaluating yourself and others, express yourself more effectively in group discussions or in impromptu situations, practice group leadership, make conference/meeting arrangements, serve as master of ceremonies and conduct meetings in accordance with proper parliamentary procedures. The TAC air toastmasters Club meets at the Langley Officers' Club at 7 p.m., the second and fourth Wednesdays of each month. For further information, call Gale Wilson, ext. 3856 or 596-3991; or Terry Grinnalds, ext. 6216 or 596-3264.

Thought for the Day

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Vehicles

1970 Apache pop up, hard sides, new canvas, sleeps 7, stove and ice box, GC, $800 OBRO. Call Haggerty, 898-3645.

Real Estate

Land: Five to six-acre tracts with 14 ac. private, stocked pond, underground utilities and other extras, mid to upper $30s, temporary financing available. Call 693-3583 after 5:30 p.m.

Lot in Windsor Forest, Section 6, Lot 2, $19,000 includes $1,300 in prepaid water and sewer hook-up fees. Call 838-1735.

Lot in Lake Monticello, Section 2, Lot 10, includes prepaid water and sewer connections, within short walking distance of club house and beach. Call 838-7987.

Articles

Foam Rubber Mattress double bed size. Like new. Very clean. Used with protective covering. Has a Blue & White floral covering. $75. Call anytime between 5 and 8 p.m.

Animals

VizsLa Puppies, AKC registered, good hunting pedigree. Available 5/22/81, $100. Call Daniel ext. 3561 or 357-5074.

FOR RENT

Poquoson Townhouse - 3BR, 2½ BA, LR, DR, heat pump, dishwasher, and garbage disposal. Avail. immediately. $395/mo. Call 868-9365.

Beach cottage on white sand dune beach, sleeps 11, sailboat included, $200/wk. Call Jim Martin, ext. 3911 or 693-4241.

Sandbridge: new cottage with liv-kit-din area, 4 BR, washer, dryer, dishwasher, fireplace, AC, phone, 6-car parking, 1/2 block from beach and Back Bay, summer rates $425/wk. Call Kent, ext. 3095 or 420-8391.

Retirement Party

Jack Locke of the Operations Support Division will be honored with a retirement social May 15 at 5 p.m. in the Activities Center. The cost will be $3 per person. Contributions of $1 for gift only are welcome. Send reservations to Barry Hogge, Mail Stop 498-A, or Jimmy Goodwin, Mail Stop 171.

Langley Supports Small Business Week All Year Long

Langley is helping celebrate National Small Business Week, May 10 – 16, by awarding a total of $58 million in contracts with small business firms during this fiscal year.

As part of the national small business program, NASA has established a 1981 goal of allocating $420 million to small businesses. While Langley's $58 million share of that goal is ambitious, it is considered realistic and achievable by the program's coordinators.

Small business firms are doing many jobs at Langley, including building and grounds maintenance, warehousing, transportation, security, custodial service, data management, and research and development.

Among the highlights of special projects being done by small businesses are these:

- More than $10 million in construction costs for the National Transonic Facility, Langley's newest transonic wind tunnel, is allotted to small business firms, including one contract, valued at $1.75 million, for the installation of complex insulation inside the tunnel.
- Rehabilitation of the Flight Control Research Laboratory and Data Reduction Center is being done by a small, local minority-owned firm, with work valued at $365,000.
- The first phase of upgrading electrical research equipment at the Gas Dynamics Laboratory is being negotiated with a small, local minority-owned firm.

Langley managers have taken an active part in several business development conferences that support small businesses. The most recent meeting was a "Small Business Day" symposium, sponsored by the Small Business Administration and the National Contract Management Association.

cafeteria menu

WEEK OF MAY 11 — 15

MONDAY: Old Fashioned Bean Soup; Spaghetti Dinner; Chicken Pot Pie; Fried Fish Nuggets. Snack Bar: Hot Italian Sausage Sub; Steak & Onion Sub; Egg Salad.

TUESDAY: Manhattan Clam Chowder; Seafood Quiche; Polish Sausage; Fresh Stuffed Bell Pepper. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Beef Noodle Soup; Roast Turkey Dinner; Veal Parmesan; Spanish Franks. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Gumbo Soup; Fried Shrimp Dinner; Chicken & Dumplings; Ham & Cheese Omelette. Snack Bar: Ham & Cheese Club; BBQ; Fried Oyster.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Broiled Beef Liver; Rhode Island Ragout. Snack Bar: Deluxe Sub; Hot Roast Beef; Tuna Salad.

WEEK OF MAY 18 — 22

MONDAY: Ham & Lima Bean Soup; Hot Turkey; Braised Beef & Vegetables; Baked Beans & Franks. Snack Bar: Hot Italian Sausage Sub; Steak & Onion Sub; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Baked Lasagna; Chicken Chow Mein; Crab Cakes. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; Beef Tips over Rice; Ham & Swiss Quiche. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Vegetable Soup; Braised Chicken Livers; Pitt Pepper Steak; Beef Enchiladas. Snack Bar: Ham & Cheese Club; BBQ; Fried Oyster.

FRIDAY: Minestrone Soup; Fish Dinner; Ham Steak; Salisbury Steak. Snack Bar: Deluxe Sub; Hot Roast Beef; Tuna Salad.

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

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NASA Studies Basic Aquatic Life Forms

Researchers from NASA and other research organizations in the eastern United States recently used remote sensors to conduct experiments focusing on phytoplankton, one of the basic life forms in the aquatic food chain, on Nantucket Shoals, off the Massachusetts coast.

Through these experiments, conducted May 4 through 15, NASA researchers will determine the feasibility of using passive and active remote sensing techniques to verify, calibrate and enlarge satellite scanner imagery for measuring temperature, chlorophyll, suspended solids and light attenuation.

From the data gathered, researchers will also gain a better understanding of the relationships between physical and biological processes controlling plankton distribution and the ecosystem (the ecological community and physical environment) structure on Nantucket Shoals.

The researchers used instruments aboard six ships and remote sensors aboard four aircraft in the NASA-sponsored research effort investigating the dynamics of phytoplankton patches on the Shoals, according to principal investigator Dr. Wayne Esaias, MATD.

The investigations focused on the distribution and abundance of phytoplankton (tiny floating aquatic plants) in relation to various factors, including rates of nutrient supply, growth and vertical mixing. Also, the National Marine Fisheries Service conducted studies on zooplankton and fish larvae in this important fish spawning area.

In addition to the plankton studies, researchers from the University of Rhode Island studied whale activity in the area in relation to physical and biological features.

The thrust of the experiments was using real-time remote sensing techniques to determine the distribution of temperature, chlorophyll, phytoplankton diversity, suspended solids and salinity of surface waters along the coast.

Gathering data through remote sensors aboard aircraft can be useful since large areas can be studied in shorter periods than with present measurements from ships. The ships used

Continued on page 2.

Yardley Leaves NASA

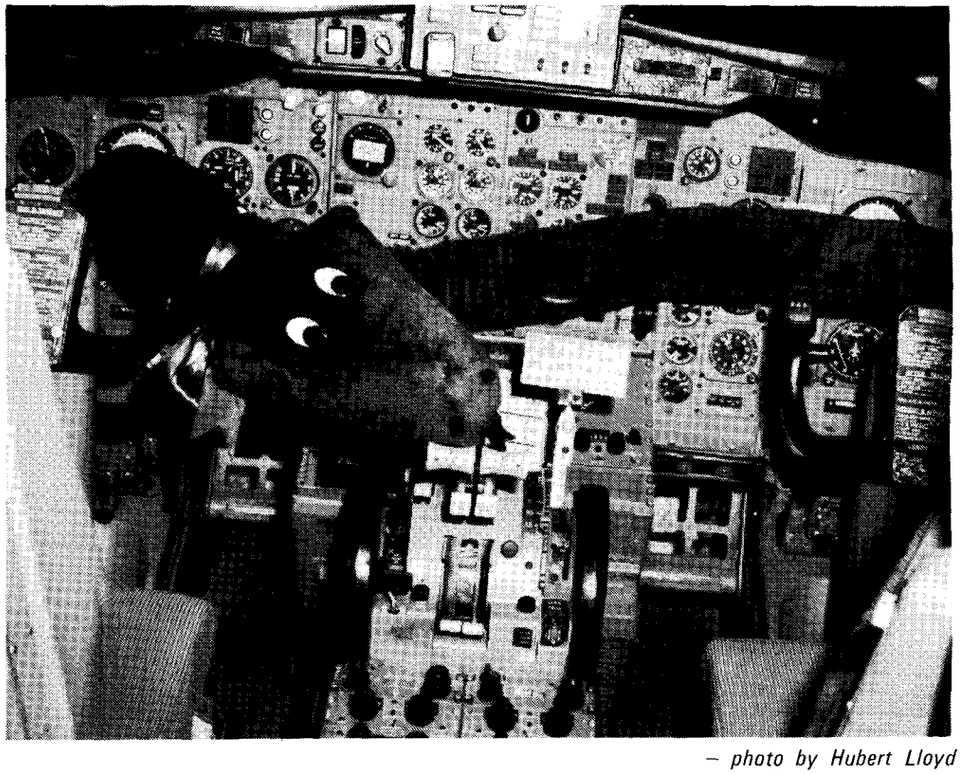
John F. Yardley, NASA Associate Administrator for Space Transportation Systems, has been named president of McDonnell Douglas Astronautics Co., Division of McDonnell Douglas Corp., St. Louis, Mo.

Yardley joined NASA in May 1974 as Associate Administrator for what was then called the Office of Manned Space Flight. In his current position he has been responsible for development and acquisition of the Space Shuttle, its upper stages, associated ground facilities and equipment and system improvements.

L. Michael Weeks will become Acting Associate Administrator for Space Transportation Systems at NASA effective June 1.

Yardley came to NASA from McDonnell Douglas Astronautics, where he was vice president and general manager of the Eastern Division.

Continued on page 2.



– photo by Hubert Lloyd

This Terminal Configured Serpent is a larger-than-life model of a real reptile that recently found crawl space inside the snakepit of Langley's Boeing 737. Research pilot Dick Yenni, spotting the sinuous stowaway in flight, quickly landed the plane at Wallops and the flying serpent was returned to its natural habitat.

– photo by Bob Nye

Astronaut David Walker (center) is shown with Langley Director Donald P. Hearth (left) and Langley space director Paul Holloway (right) shortly before addressing Langley employees at the Activities Center. Walker spoke to about 700 employees May 5 on the first mission of the Space Shuttle Columbia. Walker's presentation included film and photographs taken by astronauts John Young and Robert Crippen during the mission.

Message From the Deputy Director

In 1980, MSFC at Huntsville set a new safety record with the completion of more than four and one half million man-hours worked without a lost time injury. The record setting performance covered the period from April 23, 1980, to January 23, 1981. For the entire year there were only two lost time injuries. Everyone at Marshall can take justifiable pride in that achievement.

In recent years we have experienced continual improvement in employee safety at LaRC, but we have not achieved the level of success that Marshall had last year. I believe that our staff is as safety conscious as any within the Agency, and further that we can establish a goal and better the Marshall performance. Therefore, I am asking each of you to join me in trying to establish our own safety record. Marshall has set a mark; I believe all of us working together can challenge that mark and, in fact, surpass it.

I am setting a target of five million man-hours without a lost time injury (approximately 230 work days). Langley Research Center has always been a pace setter in the Agency and this is both a challenge and an opportunity for us to re-establish our commitment to high productivity and excellence of performance. To reach the goal, each of us must take an active part in the effort. With your support we can once again demonstrate to our sister Centers Langley's ability to set and achieve very challenging goals.

Richard H. Petersen
Langley Deputy Director

AIAA Elects Officers

The Hampton Roads Section of the American Institute of Aeronautics and Astronautics recently elected its officers and councils for 1981-82.

The new officers include Bob Berrier, Chairman; John Whitesides, vice chairman; Richard Wallsom, secretary; and Robert Calloway, treasurer.

The newly elected council includes John Allen, Bob Bower, Jim Cambell, John Duberg, Tom Foughner, Buzz Henderson, Richard Petersen, Jack Reeder, Al Taylor, and Bill Woods.

Key Position

Harry L. Beach, Jr. has been selected Head, Hypersonic Propulsion Branch, High-Speed Aerodynamics Division, under Competitive Placement Plan 81-9.

Aquatic Life Forms

Continued from page 1.

in the experiment, stationed at positions along the aircrafts' flight paths, gathered data which will be used to verify the remote sensing information, and performed critical physical and biological measurements at depths greater than those seen by the remote sensors.

Working with NASA-Langley on the project were NASA's Lewis Research Center and Wallops Flight Center, Brookhaven National Laboratory, Woods Hole Oceanographic Institution, State University of New York Bigelow Laboratories and the University of Massachusetts Field Station on Nantucket.

Yardley

Continued from page 1.

He joined McDonnell Aircraft Corp. in 1946 as a structural engineer and went on to become project engineer for Mercury spacecraft design, launch operations manager for projects Mercury and Gemini, and vice president and general manager for the Skylab project.

Born in St. Louis in 1925, he received his bachelor's degree in aeronautical engineering from Iowa State College in Ames in 1943 and his master's degree from Washington University, St. Louis, in 1950. He served in the U.S. Navy in World War II.

Yardley received NASA's Public Service Award for his contributions to the Mercury Program in 1963, and for the Gemini Program in 1966. He was awarded the Spirit of St. Louis Medal by the American Society of Mechanical Engineers. He is a fellow of the American Institute of Aeronautics and Astronautics and the American Astronautical Society and is a member of the National Academy of Engineering.

He and his wife, the former Phyllis Steele, have five children and make their home in Potomac, Md.

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Editor . . . . . Jean Drummond
Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

'Full Participation for All Citizens'

Langley Develops Program to Help Disabled

This year has been proclaimed the International Year of Disabled Persons (IYDP) by the United Nations General Assembly. Langley joins other federal agencies in developing programs and planning activities to heighten public awareness of the rights, abilities, achievements and needs of disabled persons and to involve them in all aspects of life.

The aim of the General Assembly's resolution is "to encourage the full integration and participation into society of the estimated 450 million people on Earth who suffer from some form of physical or mental impairment."

To support national and international efforts in meeting the needs of the disabled, a Federal Interagency IYDP Committee, formed at the direction of the White House, has established five primary objectives for this year.

- Further the development of a U.S. policy on disability.
- Promote research, demonstration, service delivery, policy and planning activities to improve the quality of life for the disabled.
- Develop an awareness throughout the federal government of the needs of individuals with disabilities.
- Further the development and implementation of programs to educate and inform the public of the rights of disabled persons.
- Foster the implementation of human rights.

NASA strongly supports programs that lead to improving the well-being and quality of life for disabled persons and has appointed the agency's first Handicapped Coordinator, Valerie Stucky, to coordinate all activities relating to IYDP and NASA's Handicapped Program.

Randy Manning, Langley's Handicapped and Disabled Veterans Coordinator, said Langley has set up an advisory committee to invite all handicapped employees to participate in planning and coordinating IYDP activities at the center. "We have a set of goals and objectives that we must achieve and some of the programs are already in effect. We have also surveyed center employees to make sure credit was given to all individuals who are disabled."

Manning said Langley has a direct hiring authority that enables the Personnel Division to hire severely handicapped persons. "The direct hiring authority allows us to by-pass the register to hire the disabled; however, they must be fully qualified for the vacant position." Disabled persons are hired on a 700-hour trial appointment to prove they can perform the duties satisfactorily and to adjust to the work environment.

Other center activities and programs supporting the NASA Handicapped Program and IYDP are:

- In the supervisory training courses at Langley, instructors make sure supervisors are advised of NASA's Handicapped Program. In training disabled employees, training programs are modified to accommodate employee needs.
- In-house awareness activities, such as reasonable accommodations for handicapped conditions, job reassignments and job modifications, have been established. These activities are coordinated with the Peninsula Vocational Rehabilitation Center, which serves as consultant and conducts specialized training of Langley employees.
- A NASA conference, which will include the handicapped coordinators from each NASA center, has been planned to discuss IYDP activities and possible improvements to NASA's Handicapped Program. Manning explained that from the NASA conference, Langley hopes to gain information to set up center symposia and workshops which will deal with the program and IYDP.
- Langley encourages firms with handicapped employees to bid on government contracts.
- Federal law requires buildings to have accommodations for handicapped individuals, such as enlarged entrances, ramps, rest room modifications and lowered water fountains and wash basins.

All modifications or rehabilitations to buildings constructed at Langley in the past five years are complete and the center has begun modifications to older facilities to accommodate the disabled.

- The Public Affairs Office publicizes the accomplishments of disabled employees through news releases to the local news media and the *Langley Researcher* includes profiles on these employees.

Manning pointed out that for the last three years, Langley has had the agency selection for the Handicapped Employee of the Year Award. "We have some severely handicapped employees working here and we are doing our best to publicize their accomplishments, meet their needs and involve them in all aspects of life."

Employees and supervisors needing assistance or advice in working with the disabled, should call Manning, Staffing and Special Programs Branch, ext. 3007.

Mugs Raffled to Car Poolers

In addition to the $20 monthly raffle now offered to car pool participants, travel mugs will be raffled as an added incentive to ridesharing.

Five names will be drawn every week as long as mug supplies last. You must be a registered car pool participant to be eligible.

Mugs will also be given to the next 50 new car pool registrants.

In addition, if you receive your mug before June 30, you can receive a free refill of coffee at participating Tidewater-area Hardee's restaurants by presenting your mug.

These hot and cold-drink mugs, which have a nonspill top and a holder that attaches to any convenient part of the car, are perfect for car pools or van pools.

For car pool registration and further information contact, Kathi Porter, extension 3511.

U. S. Savings Bonds Now Pay 9 Percent

Heldenfels Receives AIAA Award

Richard R. Heldenfels, former Langley Director for Structures, has received the American Institute of Aeronautics and Astronautics' 1981 "Structures, Structural Dynamics and Materials Award."

Heldenfels received the award "for outstanding contribution to understanding of the behavior of structures and materials in the environment of high-speed flight, the development of facilities for elevated temperature testing and for leading the research and development of advanced composites for commercial aircraft applications."

Heldenfels, 60, served as director for structures from April 1975 to June 1980. The directorate is responsible for research work in acoustics, noise reduction, materials, structures, loads, dynamics, aerolasticity and special programs in computer-aided design and composite structures for aircraft and space vehicles.

He joined the Langley research staff in November 1947 and was assigned to the Structures Research Division. In 1952 he was assigned to the office of the Chief of Research to initiate design of a new high-temperature structures facility.

He was one of the first investigators of aircraft structural problems produced by aerodynamic heating, and he has been particularly active in the development of structures test facilities that simulate or duplicate the environment of high-speed flight.

Heldenfels served as Head of the Elevated Temperature Section from May 1952 to November 1955 and Head of the Aero-Thermal Branch from 1955 to August 1956. At that time he was appointed Chief of the Structures Research Division.

He became Assistant Director for Structures in October 1970, planning and directing research on structural and material problems for all types of flight vehicles. His personal interests focused on application of composites to aircraft and automated structural analysis and design.

He received NASA's Exceptional Service Medal in 1969 for his work on high-temperature facilities and advanced aerospace structures.

He is an Associate Fellow of the AIAA and is a member of the Engineer's Club of the Virginia Peninsula.

He and his wife live in Newport News.

NASA Consolidates Centers

NASA is consolidating its Dryden Flight Research Center under Ames Research Center management and its Wallops Flight Center under Goddard Space Flight Center management.

Under the consolidations Dryden, Edwards, Calif., becomes an operational element of Ames, Mountain View, Calif.; and Wallops, Wallops Island, Va., becomes an operational element of Goddard, Greenbelt, Md. The Dryden and Wallops centers will retain their identities but will be under the overall management and direction of Ames and Goddard, respectively.

Dr. Alan M. Lovelace, NASA Acting Administrator, said the consolidations will focus the resources of each of the installations on what it can do best.

"The close relationship between Ames' and Dryden's efforts in aeronautical programs and Wallops' and Goddard's efforts in suborbital programs, as well as the unique facility capabilities and the physical proximity of the installations provides an opportunity to improve overall program effectiveness through these consolidations," Lovelace said.

Flight research operations for Ames will be carried out primarily at Dryden and sounding rocket development and operations for Goddard will be carried out primarily at Wallops.

The consolidations are expected to be completed by Oct. 1, 1981.

Aerospace Penpoints
by Wesley Berryman

PRIDE in the SPACE SHUTTLE

AMERICA NOW HAS THE FIRST REAL SPACESHIP. THE SHUTTLE HAS LAID THE CORNERSTONE FOR MANNED SPACE EXPLORATION FOR THE NEXT COUPLE OF DECADES.

Christopher C. Kraft, Director
Johnson Space Center

WHEN GIVEN THE OPPORTUNITY TO DO THEIR THING, OUR PEOPLE DELIVER; PEOPLE WHO ARE UNQUESTIONABLY THE BEST IN THE WORLD AT WHAT THEY DO.

Paul F. Holloway
Langley Director for Space

Savings Bond Campaign - Status Report

As of noon Friday, May 15, 31 new participants have purchased U.S. Savings Bonds through Langley's payroll savings plan. In addition, 22 existing enrollees increased their bi-weekly contributions by a total of $186.87.

The Langley Activities Association has donated two $50 savings bonds for drawings to be held at the end of the campaign; one for new participants and one for employees who increased their allotments.

The Langley goal is 200 new participants. If you are considering enrolling through the payroll savings plan, please do it during our campaign which ends May 29, 1981.

NASA News

Goddard: A joint Environmental Protection Agency/NASA workshop was held April 16-17 at Goddard's Eastern Regional Remote Sensing Application Center to define the status of remote sensing as applied to water quality measurement and monitoring. Water quality problem areas were identified, prioritized and grouped into 25 categories. Potential remote sensing application alternatives to be directed towards these problems were developed by the participants.

Ames: Angelo Gustaferro assumed the duties of Deputy Director April 6. Gustaferro has been associated with NASA for 18 years, 16 at Langley and two at NASA Headquarters.

Ames is doubling the size of its worlds largest wind tunnel, the "40 by 80", and converting it in the process into two huge tunnels. The tunnel which moves 60 million cubic feet of air per minute, is large enough to test full-scale airplanes with their engines running, and has operated at two shifts a day for 30 years. It has tested most important U.S. aircraft designs including the Space Shuttle. The tunnel is known for the size of its 40 by 80-foot test section. The current project is adding an 80 by 120-foot test section, large enough for planes with 100-foot wingspans--large enough for full-scale tests with engines running of all aircraft below large commercial transport size. The project will increase the top speed of air flow in the 40 by 80-foot test section to 345 mph, an increase of 115 mph.

Headquarters: Dr. Alan M. Lovelace, NASA Acting Administrator, and Hans-Hilger Haunschild, State Secretary, Ministry for Research and Technology (BMFT) of the Federal Republic of Germany signed a Memorandum of Understanding April 28 concerning the ministry's use of the Space Transportation System.

The agreement confirms general understandings for the terms and conditions under which NASA will furnish launch and associated services on a reimbursable and cooperative basis using the transportation system. The Federal Republic of Germany has long been a supporter of Space Transportation System utilization and has contributed 40 percent to the European Space Agency development of the Spacelab.

The Langley Research Center and the American Federation of Government Employees, Local 2755, recently negotiated an Agreement on a Performance Appraisal System for employees in Local 2755's Bargaining Unit. The System, which will be placed in effect on October 1, 1981, is the first negotiated by any NASA Center and is also the first negotiated by an AFGE Local. Shown at the signing ceremony are left to right: John T. Hughes III, Local 2755 Steward; James J. Fay, Management Chief Spokesman, Dr. Donald P. Hearth, Center Director; Ira H. A. Abbott, President of Local 2755 and also the Union's Chief Spokesman; Ned D. Wagner, First Vice President, Local 2755. Standing are Diane S. Wieting, Personnel Division; Kenneth N. Cole, Assistant Chief, OSD; William O. Moore III, Second Vice-President, Local 2755; James F. Meyers, Classification and Organization Branch; Donald B. Shortt, Secretary Treasurer, Local 2755; William C. Tennis, Chief Steward, Local 2755; James E. Privette III, Steward, Local 2755; John B. Warren, Sergeant at Arms, Local 2755; and William M. Phillips, Jr., Chief, FD.

Kennedy: The Space Shuttle Columbia is undergoing preparations for its next flight, now set for Sept. 30. Only 10 to 12 of the Orbiter's approximately 3,000 ceramic tiles will have to be replaced because of damage suffered during the Columbia's maiden voyage.

The second in a series of three improved Geostationary Operational Environmental Satellites is scheduled to be launched today for the National Oceanic and Atmospheric Administration (NOAA).

GOES-E, to be designated GOES-5 once in geostationary orbit at about 35,792 kilometers (22,240 miles) altitude, will monitor the eastern half of the United States and Canada, all of Central and South America and much of the Atlantic Ocean.

The new spacecraft will watch hurricane development and movement in the Caribbean Sea, locate Gulf Stream System currents for marine interests, warn Florida citrus growers of approaching crop-killing frosts, and provide government and private weathercasters with a variety of information crucial to the accurate forecasting of the weather.

Marshall: Marshall Director William R. Lucas was one of two 1981 recipients of the Roger W. Jones Award for Executive Leadership. The award was presented at the American University Honors Convocation May 9.

Dryden: Flight testing of the pivot-winged AD-1 (Ames-Dryden-1) aircraft is once again underway. The aircraft flew for the first time since Aug. 30 on March 31, pivoting its wing to a 50-degree angle. Since that flight the aircraft has flown several times and on April 24 a 60-degree wing sweep was achieved, the first time the aircraft has had a maximum sweep in flight.

Lewis: Bruce A. Banks, head of the In-Space Research and Technology Section, has been selected to receive the 1980 Arthur S. Fleming Award, which honors outstanding young men and women in the federal service. The Lewis research scientist was chosen "for his outstanding achievement in developing a program applying NASA space technology for the direct benefit of mankind in biomedical devices."

— *photo by Bob Nye*

John F. Royall, Jr. (left), receives a Special Achievement Award from Dr. Alvin F. Anderson, Head, Office of Research Grants and University Affairs. The award was presented for "outstanding performance as Grants Coordinator for the period of 1980–81."

North Carolina Student Wins Competition

Karla R. Hauersperger of Charlotte, N.C., a sophomore at East Mecklenberg High School, is being given the opportunity to have an experiment she developed fly aboard a future Space Shuttle mission.

She is one of 10 high school students selected, through the NASA/National Science Teachers Association Space Shuttle Student Involvement Project, to have their experiments placed on a future Shuttle.

Hauersperger, 16, recently presented her experiment, titled "The Effect of Prolonged Space Travel on Levels of Trivalent Cromium in the Body," at Langley during semi-final competition.

The objective of the project is to stimulate the study of science and technology in grades 9 through 12 be engaging students in competition to develop payload experiments suitable for flight aboard the shuttle.

Upon notification of her selection, Hauersperger said, "I was in a state of shock. I couldn't believe it."

She noted that after the initial shock had turned to pure excitement, she started calling "everybody" about being a winner of the contest.

She said her parents, Mr. and Mrs. Richard C. Hauersperger, "thought it was fantastic. They're really happy for me."

Hauersperger began her experiment as a class project. She said that when she decided to enter in the Space Shuttle contest, "I really didn't think I had a chance. I guess I was wrong."

The winners and their advisers will attend a special educational conference in August at NASA's Kennedy Space Center in Florida. The 10 winners were chosen from among 200 semi-finalists and 1,500 original entries from across the U.S.

A second Space Shuttle Student Involvement Project contest will open in September, with a series of regional conferences planned for March 1982. Selection of new groups of student winners will be made in May 1982.

Key Position

Eugene L. Kelsey has been selected Head, Systems Development Branch, Systems Engineering Division, under Competitive Placement Plan 81-23.

Western Dance Party Scheduled

"An Afternoon of Fun--Western Dance Party" will be held for NASA employees from 2 to 4 p.m. May 31 in the Activities Center.

The program, aimed at people who have had no previous experience or only occasional experience with western style dancing, will be presented by Stan Burdick of Sandusky, Ohio.

No special equipment is needed for the program. It is recommended that women wear comfortable, full skirted dresses and low heeled, leather soled shoes and men wear a pair of slacks and a long sleeve sport shirt. However, if you desire to dress up a bit, Western style clothing is appropriate.

Burdick and his wife Cathy are editors and publishers of American Square Dance, a national publication enjoyed by thousands of dancers, callers and leaders.

He has also published several books of his own, regularly publishes books on square dance by other authors and is a cartoonists and illustrator for many square dance publications.

Burdick has been a keynote speaker at many statewide square dance leadership clinics and has been invited each year for the last 12 years to lead panels and workshops at the National Square Dance Convention.

LAA Officers Elected

The LAA General Assembly elected a new executive board at its May 13 meeting. The new officers are: William E. Sanders, FD, president; Frank C. Thomas, TAD, vice president; Geoffrey M. Tennille, ACD, treasurer; and Frances Sabo, LSAD, secretary.

Others on the board include Ernest L. Green, ACD, activities chairman; Dana J. Morris, LSAD, childrens chairman; Thomas J. Yager, SDD, building and grounds chairman; Betty C. Farmer, ACD, arts and crafts chairman; and D. Eugene Hicks, ACD, social chairman.

Holbrook Wins Drawing

G. Thomas Holbrook of the Flight Mechanics Division has won the May drawing held for registered car pool participants. Holbrook was presented $20 by the Langley Exchange Council.

Happenings

HAPPY HOUR. A special Happy Hour will be held from 4 to 7 p.m. today in the Activities Center. Music will be provided by "Crabgrass."

FOOD TRAILER. The LAA concession trailer, located on the Activities Center grounds, will open May 26. The trailer will be open on weekdays only from 11 a.m. to 1 p.m.

AFGE. The regular monthly meeting of the AFGE Local 2755 will be held at 4:30 p.m. Wednesday, May 27 in the union office, Building 1232B.

AERO CLUB. The Langley Aero Club will hold an open house and picnic from 9 a.m. to 4 p.m. Sunday, May 31 at the Aero Club, Building 891. The day's activities include competitive flying in such areas as spot landing, landing over an obstacle and precision landing with a minimum of distance. The food and drinks for the picnic, which begins at noon, will be provided. For further information call 851-8837.

AIAA SPRING PICNIC. The Hampton Roads Section of the American Institute of Aeronautics and Astronautics will close out the Section's 1980-81 year with its Second Annual Spring Picnic on Wednesday, May 27, 1981 at the NASA Activities Center Grounds. The bill of fare includes an abundant supply of hot dogs, hamburgers, polish sausage, soft drinks, beer, and all the trimmings, plus a host of extra goodies. For those who can still move with a full stomach, volleyball, softball, and horseshoes may offer an exciting challenge. The picnic will begin at 4:00 p.m. Costs for members is $3.00 each and for guests is $4.00 each. Reservations can be made through Bob Berrier, ext. 2674, John Whitesides, ext. 2219 or Buddy Cary, ext. 4546.

BUSCH PASSES. The Langley Activities Association now has season passes to Busch Gardens. For more information, call extension 3139.

BLOOD MOBILE. The Red Cross Blood Mobile will be at the Activities Center from 9 a.m. to 3:30 p.m. Wednesday, June 3.

Marie Watkins, a Thomas Nelson Community College secretarial co-op student in the Management Systems and Analysis Office, was crowned Miss Williamsburg during the Miss Williamsburg Pageant May 9 at Lafayette High School. Watkins, a 20 year old native of Poquoson, also won the pageant's talent and swimsuit competitions. She will compete in the Miss Virginia Pageant July 7 through 11 at the Roanoke Civic Center.

Thunderbolts Win Bowling League

The NASA Tenpin Bowling League celebrated its 45th Anniversaty at its annual dinner/dance banquet May 8 at the Activities Center.

Awards were presented for the 1980-81 season, with the Thunderbolts capturing top honors as the first place team.

Having been second or third place finishers over the past ten years, the Thunderbolts won the title with a surge at the end of the season. The Thunderbolts won their last 12 games averaging 1008 pins per game.

Other award winners and the leagues final standings are below:

High Team Series	Half and Half
High Team Game	Short Circuits
High Series, Women	Susan Wilson
High Series, Men	Geoff Tennille
High Game, Women	Marge Mikula
High Game, Men	Ralph Muraca
High Average, Women	Marilyn Aldrich
High Average, Men	Al Bell
Most Improved, Women	Pat Williams
Most Improved, Men	Aubrey Fitzgerald
Sportsperson of the Year	Stuart Johnson

TEAM STANDINGS	WON	LOST
Thunderbolts	85	51
Flyers	79½	56½
Aces	79	57
Beer Tasters	76	60
Medallions	74	62
ACD	73½	62½
Question Marks	73½	62½
Half & Half	72	64
Pinwigglers	71	65
Short Circuits	70	66
Hits & Misses	67½	68½
Bombers	66½	69½
Good Times	63	73
Ballers	61½	74½
Lucky Ladies + 1	59	77
Mixed Nuts	59	77
CSC	48	88
Alley Cats	46	90

Retirement Party

A. E. (Gene) Gribble of the Analysis and Computation Division will be honored with a "Commencement" party June 9 in the Activities Center. The cost will be $7 per person for dinner and gift. Contributions of $1 for gift only are welcome. Send reservations to Karen Evans, Mail Stop 157, by May 29.

Shuttle Film Featured

A video presentation of the Space Shuttle Columbia's first mission into space, narrated by astronauts John Young and Robert Crippen, will be featured at the NASA-Langley Visitor Center through June 7.

In the 17-minute, large-screen video presentation, Young and Crippen recount their space adventure from pre-launch activities through the landing at Edwards Air Force Base, Calif. Film taken aboard the Columbia provides a cockpit view of the launch and landing, as well as striking footage of the Earth as seen from space.

The presentation will be featured hourly on weekends and at noon on weekdays.

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Sailing Classes Scheduled

The Langley Yacht Club is sponsoring both adult and junior sailing classes beginning in June. Classes ranging from basic sailing to advanced racing will be available to both adults and juniors and will be taught by a staff of highly qualified instructors.

The junior program is sanctioned by the Chesapeake Bay Yacht Racing Association. The program provides four levels of instruction which emphasize sailing for pleasure, as well as advanced competitive racing.

Junior classes will begin June 15 and meet from 8 a.m. to noon or 1 to 5 p.m., five days a week, for five weeks. Junior sailors must be 10 through 17 years old.

This should be a particularly interesting year for junior sailors since Langley will host the CBYRA Junior Program Championship in July. Young sailors from twelve CBYRA clubs, from Annapolis to Norfolk, will compete for two days at the Langley facility on Back River.

Adult lessons will be held three hours in the evening, two days a week for four weeks. Classes start June 8, July 6 and Aug. 3. As in the junior program, both one and two man sailboats will be available.

In spite of rapidly rising costs for boats, maintenance and equipment, Langley has announced that the cost of instruction will remain the same as last year, so that more adults and juniors will be able to take advantage of the programs offered.

Adult lessons will cost $45 for club members and $55 for non-members. The junior program will remain at $65 for club members and $80 for non-members.

For further information contact Joe Goodwin, extension 3095.

swap and shop

FOR SALE

Real Estate

Courthouse Green Townhouse, 3 BR, 1½BA, Hampton model $40,900. Call 599-4321.

Articles

Firm-a-Pedic form rubber mattress. Custom made for Spencer's Furniture in Newport News. Like new, very clean with blue and white floral covering. Call between 5-9 p.m. 595-0184.

Reg. size pool table with green felt lining, all accessories included, like new $100. Call Heath 596-3430.

FOUND

Book: "Apocolypse-Dominant Contemporary Forms" in Bldg. 1244, Rm. 234. Contact R. Wright ext. 2466.

FOR RENT

Water front cottage at Hatteras, liv-din-kit, 4 BR, 2B, 2P, DW. $300/wk. Call 877-3736.

Sandbridge - new cottage, liv-kit-din area, 4 BR, washer-dryer, fire place. One block from beach and back bay (fresh water), AC, phone, 6 car parking. Summer rates $425/wk. Call Kent 827-3095 or 420-8391.

Courthouse Green Townhouse, 3 BR, 1½ BA, Hampton Model, available July 1, no pets, $310/mo. Call 599-4321.

Low cost vacation: "Buzzards Roost" on Hatteras Island at Frisco. Oceanside, 50' house trailer, furnished including dishes; 2 BR, full bath, sun-porch, outdoor shower, AM/FM stereo, walking distance to beach and fishing pier, 5 min. drive to Sport Fishing Center and charter boats. $155/wk., weekends also available. Call Fogle, est. 2651.

WANTED

Music Lessons, piano and organ - beginners welcome, exp. teacher w/masters, teaches all styles, all levels. Near York High School, 596-2836.

Croquet set. Please call Natalie Johnson, 898-8160 or ext. 3026.

cafeteria menu

WEEK OF MAY 25

MONDAY: ☆★☆★☆

ENJOY A SAFE HOLIDAY

☆★☆★☆★

TUESDAY: Manhattan Clam Chowder; Seafood Quiche; Polish Sausage; Fresh Stuffed Bell Pepper. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Beef Noodle Soup; Roast Turkey Dinner; Veal Parmesan; Salmon Loaf. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Gumbo Soup; Meat Loaf; Chicken & Dumplings; Ham & Cheese Omelette. Snack Bar: Ham & Cheese Club; BBQ; Fried Oyster.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Broiled Beef Liver; Rhode Island Ragout. Snack Bar: Deluxe Sub; Hot Roast Beef; Tuna Salad.

WEEK OF JUNE 1

MONDAY: Ham & Lima Bean Soup; Hot Roast Pork; Crab Cutlet; Baked Beans & Franks. Snack Bar: Hot Italian Sausage Sub; Steak & Onion; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Baked Lasagna; Chicken Chow Mein; New England Scrod. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken; Beef Tips over Rice; Ham & Swiss Quiche. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Vegetable Soup; Braised Chicken Livers; Beef, Macaroni & Tomatoes; Beef Enchiladas. Snack Bar: Ham & Cheese; BBQ; Teriyaki Steak & Onion Sub.

FRIDAY: Minestrone Soup; Fish Dinner; Ham Steak; Salisbury Steak. Snack Bar: Deluxe Sub; Hot Roast Beef; Tuna Salad.

Retirement Party

A retirement party honoring **Irvin C. Rowe**, IRD, will be held Wednesday at 11:30 a.m. June 17 in Room 114, Building 1230. The cost will be $2.25 per person. Contributions for gift only are welcome. Send reservations to W. D. Rowland, ext. 3446, Mail Stop 238, by June 5, 1981.

National Aeronautics and
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Langley Research Center

NASA

Langley Researcher

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Projects Directorate

ACEE Manager Retires from Langley

Dr. Robert W. Leonard retired from Langley May 29 after more than 30 years of government service. He was Manager of the Aircraft Energy Efficiency Program Office.

Since 1976, Leonard has managed three major efforts to develop and stimulate the application to commercial transports of advanced composite structures, advanced aerodynamics and active control, and a system for laminar flow control. These programs have so far paved the way for application of composites to control surface structures in aircraft to be introduced in 1982 and active wing load alleviation on transports already in service.

Leonard began his career with NASA's predecessor agency, the National Advisory Committee for Aeronautics in 1949, conducting research in structural response to transient loads and panel flutter. In 1958 he was named Head of the Elasticity and Plasticity Section and in 1961 Head of the Structural Mechanics Branch. He became Assistant Chief of the Structures Division in 1971 and Associate Chief of the Structures and Dynamics Division in 1973, where he helped manage analytical and experimental research and develop the structural analysis methods and computer programs (NASTRAN, IPAD).

He chaired a Structural Design Technology Panel which conducted a large NASA-wide research and development program for the Space Shuttle and chaired or served on numerous other ad hoc groups, including committees to investigate structural problems of the Atlas booster, NASA's nuclear rockets and NASA's Research Advisory Committee for Aircraft Structures.

The author or co-author of over 20 publications, Leonard is an Associate

Fellow of the American Institute of Aeronautics and Astronautics, a member of the American Society of Mechanical Engineers and former chairman of the ASME Aviation and Space Division.

Leonard received a bachelor of science degree in naval technology from the University of Minnesota in 1946, a master of science and a doctorate in engineering mechanics from the University of Nebraska and Virginia Polytechnic Institute in 1949 and 1961, respectively.

Leonard and his wife live in Newport News.

Langley Colloquium

Margulis to Discuss 'Earliest Life'

The fossil evidence for the earliest life on Earth, in light of newly emerging concepts of microbial evolution, will be reviewed by Dr. Lynn Margulis at a Langley colloquium Monday, June 15.

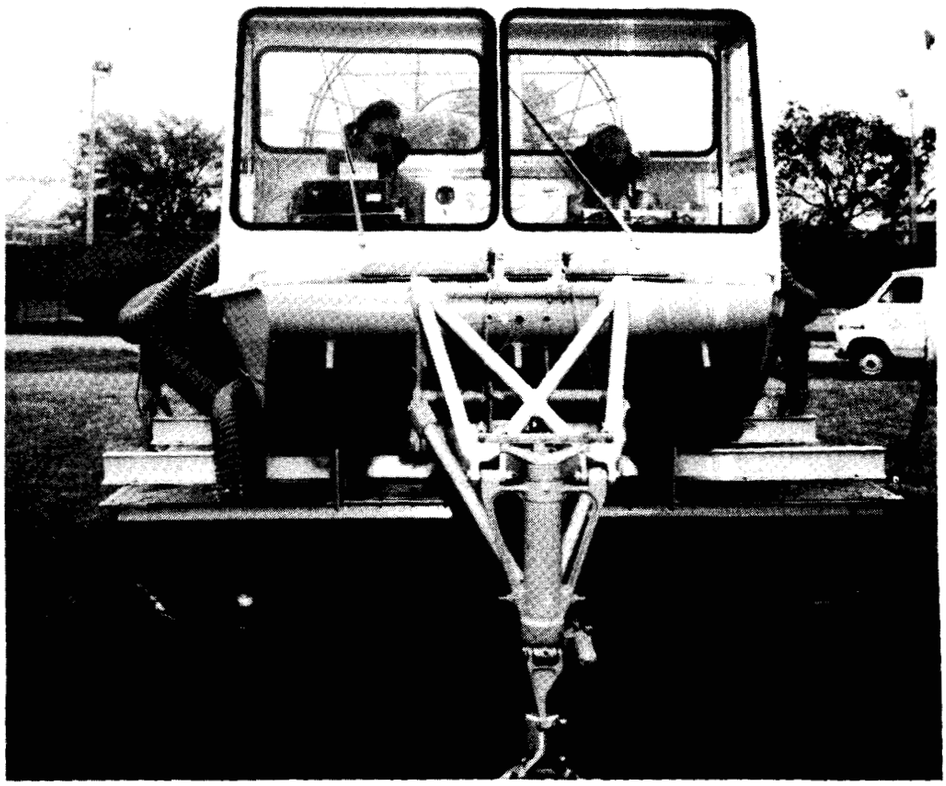
Margulis' lecture, "The Earliest Life," will be held in the Activities Center at 2 p.m., followed by a question and answer session. The speaker will move to the Langley Room at 3 p.m. for an informal discussion.

In her lecture, Margulis will present a model for the origin of nucleated cells from bacterial ancestors.

Margulis, Professor of Biology at Boston University, is a pioneer researcher in the study of cellular and microbial evolution. She is the author of the book "Origin of Eukaryotic Cells" and the recently published "Symbiosis in Cell Evolution." She, along with Dr. James E. Lovelock, is the originator of the "Gaia" hypothesis which states that life itself makes and/or modifies much of its own environment -- many properties of the atmosphere, sediments and hydrosphere are controlled by and for the biosphere. Some of Margulis' work concerning the earliest life on Earth was recently described in a feature story in the July/August 1980 issue of Science 80.

Her publications span a wide range of scientific topics from the origin and evolution of life to global ecology. From 1977 to 1980 Margulis chaired the National Academy of Science's Space Science Board Committee on Planetary Biology and Evolution, which is responsible for developing research goals and strategies for NASA.

Margulis received a bachelor of arts degree in liberal arts from the University of Chicago, a master of science degree in zoology and genetics from the University of Wisconsin and a doctorate in genetics from the University of Chicago. She held a Sherman Fairchild Fellowship at the California Institute of Technology in 1977 and a Guggenheim Fellowship in 1979.



– photo by Hubert Lloyd

A FUTURE SPACE SHUTTLE? Not exactly. Langley Director Donald P. Hearth prepares for a demonstration ride with Daniel P. Vigliotti (OSD) in the "airboat" during a recent visit to the Structures and Dynamics Division. The airboat, which can travel up to 11.5 mph, is used to investigate steering and braking techniques for air cushion landing systems.

Moore Named NCMA Fellow

Robert R. Moore, Chief of the Acquisition Division, has been elevated to the class of Fellow Member by the National Contract Management Association National Board of Directors.

The Fellow designation is bestowed on those who have made significant and outstanding contributions to the field of contract management and to the NCMA. The NCMA Board of Directors particularly noted Moore's leadership in founding the Hampton Roads Chapter of NCMA and nurturing it during its early years, his role as chairman of various committees, and his contributions as a teacher of contracting courses for the University of Virginia School of Continuing Education.

Moore joined the Langley staff in January 1962 as a procurement agent. He was named Assistant Head of the Research and Development Contracting Branch in October 1973, Assistant Chief of the Procurement Division, now known as the Acquisition Division, in November 1975 and Associate Chief in November 1978. In January 1981, he was named Chief of the organization.

Thanks

Bob Howell writes, "My thanks to the many friends who contributed to and participated in the party given me, March 3 upon my retirement from federal service. It was delightful to see and speak with old friends. The spoken words, gifts, and mementoes were deeply appreciated and will be treasured in the years to come. Best wishes to each of you."

Jack E. Ashe writes, "I want everyone who took part in my retirement luncheon to know how very, very grateful my wife and I were for the attention shown us. The gifts and mementoes were sincerely appreciated as were the kind words. It was not easy leaving such a meaningful and important part of my life and all my friends and former co-workers who helped me over the years are very much missed. Thanks again for everything."

Reeder Addresses AHS

"Some NACA/NASA Langley Flight Experience with Vertical Rising Aircraft, 1944 – 1979" will be discussed by John P. Reeder at the Hampton Roads Chapter of the American Helicopter Society June 17.

Reeder, who retired from Langley in 1980, began his career with NASA's predecessor agency, the National Advisory Committee for Aeronautics in 1938. He was active in research flying from 1942 through 1965 and in management from 1952 until he retired. He was the first helicopter pilot for NACA in 1944. He has flown and tested over 230 different aircraft, 60 of which were rotary wing and eight were other vertical take-off and landing.

A social will be held at the Fort Eustis Officers' Club at 11:30 a.m. and lunch will be served at 12 p.m. The cost is $3.75 per member or $4.50 per non-member.

For reservations, call Donna Garrett, 878-4371 or 878-2105, by June 16.

Pet Care Tips

The following pet care tips are offered to help you make your pets more comfortable during the summer.

- With the outbreak of parvovirus, be sure your dog or puppy is in good health; get parvo innoculation.
- Check for heartworms; put pets on preventative.
- Do not leave pets in a parked car unless the car is in the shade and windows are partially down for good ventilation.
- Provide shade in hot weather and lots of cool, fresh water for pets.
- Begin flea prevention program.

Due to parvovirus and approaching hot weather advanced classes will be held on an informal basis. This summer, emphasis will be on tracking and field retrieving. For information, contact Doris Bryan, 898-6273, after 5 p.m.

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Editor . . . . . Jean Drummond
Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

Former Langley Researcher Receives Langley Medal

Dr. Robert Thomas Jones, formerly of Langley and now senior scientist at the Ames Research Center, recently was awarded the distinguished Langley Medal by the Smithsonian Institution for his "extensive contributions in theoretical aerodynamics, particulary with regard to development of the swept wing, supersonic area rule and, more recently, the oblique wing."

The Langley award has been given to just 16 recipients since it was established 73 years ago. Past recipients include Wilbur and Orville Wright, Colonel Charles Lindbergh and Rear Admiral Byrd. Named for Samuel Pierpont Langley, aeronautical pioneer and third secretary of the Smithsonian, the medal honors "especially meritorius investigations in the field of aerospace science."

Jone's career with NASA began in 1934, when he came to Langley to work on a nine-month Public Works Administration assignment. He stayed on at Langley, and by World War II had published important papers and became well-known in aeronautical circles.

Jones discovered the theory of the "simple sweepback," one of the most important discoveries in aerodynamics (swept wings are seen on most jet aircraft today) in 1944 while at Langley. The theory was not accepted by most scientists at the time, but the National Advisory Committee for Aeronautics began experiments to test the theory.

When the Allies defeated Germany, U.S. scientists discovered the Germans knew about the effect of sweep and were incorporating it in new aircraft designs.

For his discovery of the sweep effect slender wing theory and other contributions, Jones was given the Sylvanus Albert Reed Award by the Institute of the Aeronautical Sciences in 1946. That same year he went to work at Ames.

In 1963, Jones left NASA to work for AVCO Everett Research Laboratory, where he applied fluid dynamics to the problems of blood flow. Returning to Ames in 1970, he went back to work on his oblique wing concept. An oblique wing research aircraft now is being tested at Dryden.

In 1973, Jones was elected to the National Academy of Engineering and the American Academy of Arts and Sciences. He was honored in 1976 with a cash award from NASA's Inventions and Contributions Board and received the Prandtl Ring Award in 1978 from the German aeronautics society (Deutsche Gesellschaft fur Luftund Raumfahrt), considered the highest honor in the field of fluid dynamics.

A Fellow of the American Institute of Aeronautics and Astronautics, Jones in 1979 was chosen for the award of Honorary Fellow. In 1981 he was elected to the National Academy of Sciences.

Earlier this year, Jones was presented the President's Award for Distinguished Federal Civilian Service, in honor of the many contributions of his 40-year government career.

Griffin Returns to KSC

Gerald D. Griffin, Acting Associate Administrator for External Relations at NASA Headquarters and Deputy Director at the Kennedy Space Center, relinquished his Headquarters duties June 1 and returned to full-time duty at Kennedy.

Griffin has been serving in the dual role since July 7, 1980. Russell Ritchie, the Deputy Associate Administrator for External Relations, will manage the office until a successor is chosen.

While at Headquarters, in addition to his External Relations duties, Griffin served as the NASA Transition Officer during the Carter-to-Reagan transition. He also played a key role in planning NASA's external activities related to the first flight of the Space Shuttle on April 12–14.

Since assuming the Headquarters post, he has spent about 25 percent of his time at Kennedy Center.

Dr. Alan M. Lovelace, NASA Acting Administrator, said: "Gerry Griffin has done an outstanding job in handling the responsibilities of two demanding jobs simultaneously. His duties as Transition Officer, coupled with the complex planning required for the first Shuttle flight, caused us to keep him in a dual role for about a year at considerable hardship to Gerry and his family. I very much appreciate his efforts and the cooperation of the KSC management team that allowed this arrangement to work."

– photo by Bob Nye

Michael D. Gilsinger, a sophomore at Tabb High School, receives from Langley Director Donald P. Hearth a Certificate of Appreciation for his work under the NASA Volunteer Student Program. Gilsinger, 15, received the award for his dedicated service under the program and "for the development of an interactive computer code for the analysis of solar-powered high altitude airplane platforms." The award was the first Certificate of Appreciation presented by Langley and the first Volunteer Student Program Award. With Gilsinger and Hearth are Gilsinger's parents, Tech. Sgt. and Mrs. Dennis M. Gilsinger.

Scotty Was a 'Doer, Gentleman, Friend'

"He was an incredible guy in terms of creativity and innovation, and that shop he ran could do damn near anything." A sentiment echoed by many who worked with the remarkable Bernard H. "Scotty" Curran.

Curran, who died last month at the age of 84, worked at Langley from 1939 until his retirement in 1966.

After immigrating from Scotland as a young man, he worked in various jobshops in New York and New Jersey during the Depression before coming to Langley. When he arrived, he was already a trained patternmaker. By the time he left, 27 years later, he had earned a reputation as a "leader, doer, innovator, teacher, gentleman and friend," according to ASD's Cornelius Driver, one of a legion of Langley people touched by his work.

The old "East Model Shop" where Curran spent most of his career until about 1960 has now been taken over by the Air Force, and the old "Prop Shop" where he finished his career is now a newly-surfaced parking lot. But he and his work are remembered by the people who worked with him.

Joe Boyle, who retired from Langley last year, remembers Curran as having a keen, penetrating mind and adds, "Scotty liked to accept challenges and show that he could solve problems. One of his achievements was to develop a unique way of making three-dimensional fuselages for aircraft models. Boyle's reference is to Curran's pioneering of the casting of metal models, as opposed to machining them, which Driver calls a breakthrough in terms of time, money and materials.

Curran dramatically demonstrated that precision patterns could be used to make precision metal castings, cutting production time from a wind tunnel model from months to less than 30 days. The patterns that Curran and his men would make from a researcher's drawings were fashioned into wood which, in turn, were used to make sand molds for the castings of steel or other metal. Even Langley's modern day numerically-controlled machining equipment cannot produce models with internal ducting, for instance, without taking the time to break the model into separate components, Boyle asserts.

"What Scotty did," Boyle continues, "was to force the patternmakers and the foundry workers to work much closer together and produce a casting to very close tolerances. Scotty would say, 'Hey, as long as you're casting this, cast it more truly to size.' He was a tough task master, but it's partly because of Scotty that we do things in the foundry at Langley that aren't done anywhere else."

To underscore the significance of all this to Langley researchers, Driver recalls that when the first highly-swept "arrow wing" models were required, around 1962, a $100,000 budget produced 13 models instead of the anticipated two models, due to Curran's new casting technique and other innovations.

Early in the space program, Curran and his men also actively contributed to at least two important space projects at Langley, the Echo I satellite and a huge map of the lunar landscape.

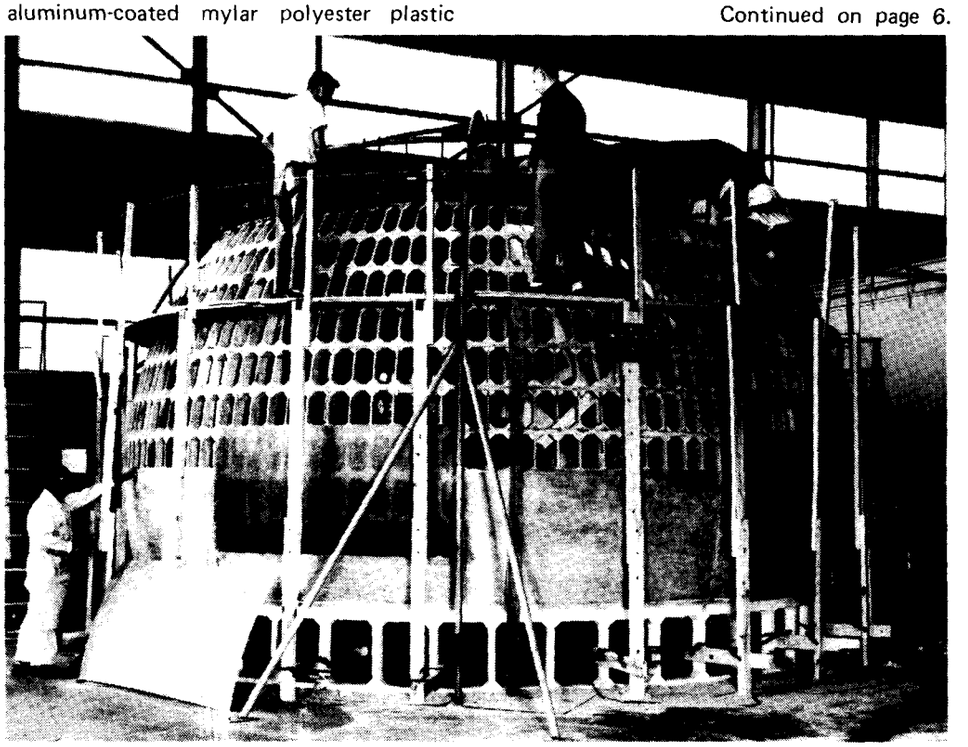
Curran helped develop the method for constructing Echo I, NASA's first experimental communications satellite. Launched in 1960, the passive balloon-type satellite was constructed of aluminum-coated mylar polyester plastic of a thickness equal to about half that of the cellophane on a cigarette package, according to one description. Echo I was launched inside a cannister 26 inches in diameter. Upon reaching low Earth orbit, the cannister ejected Echo and a special chemical inside the satellite changed from a solid to a gas, thereby expanding the balloon until its diameter reached 100 feet.

Boyle remembers the precise day Echo I was launched from the Cape -- August 12, 1960. At the time, Boyle worked for Curran in what is now the Composites and Models Development Section of FD.

"Inflatable satellites were pretty unique," says Boyle, "nothing like that had ever been tried before. The technology did not exist in industry to do the job, so we did it all in-house. A lot of testing had to be done to develop a method of packaging these satellites, then inflating them and putting them into orbit. We were involved with the folding and packing of these balloons (to include Echo II and two smaller balloons)."

The lunar landscape project was another challenge that Curran's shop

Continued on page 6.



Curran's crew also built the "simulator ball" where television pictures from the lunar landscape were transmitted onto the specially-prepared interior walls. The landscape and simulator combined to create a realistic panorama for astronauts training to land on the Moon's surface.

Personnel Profiles

Ann Garrett and Her 'Girls' Receive Well-Earned Recognition

– by Allan Hanrahan

"Born and raised in Mathews," answered BERTIE ANN S. GARRETT somewhat proudly during a conversation that had reached the subject of the neighborliness of rural and small-town folk, precipitating the question of her birthplace. Although a resident of Hampton for a number of years, she visits Mathews frequently--her mother lives there--and still appreciates neighborliness, finding it in the membership she has enjoyed for 10 years in the Woodmen of the World, an organization that accorded her and her group of girls, Rangerette Youth Unit 423 of Hampton, national honor by being selected Rangerette Youth Unit of the Month for September 1980. Recently they were honored further by being selected the National Rangerette Youth Unit of 1980.

While she credits the aged 8- to 16-year-old girls for the Unit's recognition, much of the acclaim must go to Ann, as she is known to fellow workers, particularly those in the Contracts and Specifications Section of the Plant Engineering Division where she serves as a Procurement Assistant. On March 26 she will reach the 18 year mark as a center employee.

To explain how Ann and her group of girls reached their place of honor begins with elaborating on the Woodmen of the World, a combination of fraternal organization, civic association, and life insurance society.

"It's the family fraternity," stated Ann. "It stresses family . . . and provides orphan care, for example, through college even." There is visiting among families, socials, and "families collect for others" (when hardship or tragedy strikes) she added.

Ann's own family includes her husband, Bill, a 26-year-old son, Robert I. Armistead, Jr., and three daughters: Livinia Pompa, Beverly Burrage, and Brenda Armistead, ages 23, 22 and 21, respectively. And there are two grandchildren in addition to Ann's stepdaughter, 15-year-old JoAnn, who is president of the Rangerettes this year.

Ann credits her assistant, as well as JoAnn, for a great part of the Youth Unit's success this year--Ann's fourth year as leader--in those four areas considered critical in selecting the Youth Unit of the year: increase in unit membership, attendance at meetings, civic activity or participation in local community projects, and effectiveness in promoting good public relations within the community. The third and fourth criteria are in keeping with the civic goals of the Woodmen of the World (WOW), which is the largest private purchaser of American Flags--flags donated to such organizations as the Girl Scouts with which the Rangerettes have many similarities. For example, the Rangerettes award patches and badges for achievements and accomplishments, similar to the merit badge system in scouting.

WOW donates flags to hospitals, among others, and has donated wheelchairs to Hampton General Hospital as well as lent hospital beds and crutches to those unable to afford same. In addition, it is a supporter of the Horn Harbor Nursing Home in Mathews. The Rangerettes, emulating the parent organization, have contributed outstandingly by serving as hospital volunteers, Christmas caroling to and visiting with the elderly in nursing homes, as well as making Christmas decorations for them. They have planted shrubs, trees, etc. at such locations as the Sarah Bonwell Hudgins Regional Center, cut weeds for the elderly, helped the community on "clean-up" campaigns, collected for the Salvation Army, and participated in national fund drives for the Red Cross, Heart Fund, etc. As if those activities were not enough they prepare food baskets for the needy, help clean the WOW meeting hall, and even place WOW purchased flags on graves during special holidays.

– photo by Bob Nye

Ann Garrett displays the two awards the Rangerette Youth Unit 423 of Hampton received from the Woodmen of the World. The unit was selected Rangerette Youth Unit of the Month of September 1980 and National Rangerette Youth Unit of 1980.

(No wonder that they won the Award.)

Do all of these activities, plus educational field trips, plus their participation in the Spring Thing parade last year (their float won second prize) occupy much of Ann Garrett's time?

"I'll tell you, it kept me busy last year," stated the lady who herself won the "Woman of Woodcraft" Award in 1978 for her work in the local lodge. But it is no doubt worth the effort expended "to see them become good citizens," she said.

Of the Rangerettes in particular, and WOW in general, she explained, "Like so many other things, I've found that I get out of it what I put into it. The more time I devote to it the more benefits I seem to get out of it."

Scotty

Continued from page 4.

tackled successfully. Essentially a relief map, the approximate 20- by 40-foot structure was part of a simulator used by the astronauts to practice landing approaches on the Moon's surface.

Once again, Curran was instrumental in helping puzzle out the best method of construction. After discarding several alternatives for making a mold for the lunar surface, he decided to go with a certain type of foam that would be cut into a large number of individual blocks, each three by five feet. The blocks were contoured by the machine shop, assembled into one unit and smoothed out. The finished mold was then covered with a number of layers of fiberglass with a polyester resin to build up the lunar "skin" to a thickness of a little more than one-sixteenths of an inch.

Once the surface was finally completed, it was lifted off the mold and hung vertically where the simulated Earth landscape is now in the hanger of Building 220. A television camera would move over the surface and transmit a picture of the lunar landscape to a simulated cockpit located elsewhere in the hanger.

In all, the project involved 20 to 25 from Curan's workforce, plus people from the machine shop and other areas, over a period of about 18 months. Boyle calls it "a very big and demanding job" that probably would have cost $4-5 million if it had been contracted out. As it was, he says, Curran and others could take credit for saving some money and still producing a very accurate scale model of the surface area that had been selected as a lunar landing site.

The last year before his retirement in 1966, Curran served as an assistant branch head but, according to Boyle, refused to go up to the branch office, preferring to stay in the shop. He liked to be at the hub of activity and keep involved.

One fond memory Driver has of Curran is that, when asked to take on a difficult assignment, "Scotty would never say 'No' or 'I'm too busy,' just 'Let me think about it.' In a day or so he would find a way to get the job accomplished -- even if it meant a new way of doing business."

Recent Retiree

Cleveland Slade of the Plant Engineering Division retired May 15.

– photo by Don Ward

Fran DeMarco and Mike Garula, BDSD, each received a $100 award "For exceptional dedication and performance beyond normal job duties." Mike is BDSD Lead Analyst for the Payroll/Personnel System and Fran is his assistant. The award was jointly presented by Andy Swanson (left), Chief, BDSD, and Bill Williams (right), Chief, Personnel Division. It is the first such joint Division award made under the revised system which delegates award budgets and authority to division chiefs. Bill Williams, who initially proposed the joint award, said, "There have been a lot of changes required in the Personnel System because of the impact of the Civil Service Reform Act and other legislation, such as the recent changes in the Federal Group Life Insurance Program (FEGLI). Fran and Mike have done an excellent job in providing computer system support to us. Their ideas for special FEGLI computer programs, especially, saved the Personnel staff an enormous amount of work."

Happenings

PICNIC. The annual Fourth of July picnic, sponsored by the LAA, will be held on the Activities Center grounds beginning at 10 a.m. Food, drinks and beer will be sold. Activities tentatively planned include volleyball, 1-mile race, egg toss, tug of war, 3-legged race, wheelbarrow race and watermelon-eating race. Tickets to Busch Gardens, Kings Dominion and movie theaters will be given as prizes. Raffle tickets for the 1981 Carnival will be on sale.

TIDEWATER DINNER THEATER. "Heaven Can Wait" is being performed at the Tidewater Dinner Theater in Norfolk through June 27. Tickets, at $13 per person, are on sale at the Activities Office.

LAA SERVICES. The Activities Office has discount tickets for Busch Gardens (regular tickets and season passes), Kings Dominion, Colonial Williamsburg and Plitt movies.

HAPPY HOUR will be held today from 4 to 6:30 p.m. in the Activities Center.

Tennis Tournaments Held

Number one seed M. Charles Bryant withstood a late charge by L. Dennis Bartlett to come from a three game, third set deficit and win the "A" Championship Men's Spring Ladder Tournament held May 8 through 10.

After winning the finals 6-4, 4-6, 6-3, Bryant announced his retirement from ladder competition stating that he was not able to "bare down" with such lean competition.

Unseeded Roy Zalameda surprised all "B" Championship competitors when he defeated Ron Amole 6-3, 6-2 in the finals.

In the finals of the Women's Singles Tournament, held May 16 and 17, Joanne Re defeated Betty Hughes 6-3, 1-6, 6-2. Hughes semi-final opponent, Evelyn Myers, had to default due to injury. Re blanked Gretchen Lingenfelsen 6-0, 6-0 in the other semi-final match.

Sailplanes in Research Featured at the Visitor Center

Let your thoughts wend their way skyward as the Langley Visitor Center salutes National Soaring Week, June 7 through 14, with a tribute to sailplanes and their contributions to scientific research. Films, exhibits and speakers furnished by the Tidewater Soaring Society will be featured throughout the week to show the role of sailplanes in research, as well as to discuss the pleasures and beauty of powerless flight.

Noontime programs to be featured during National Soaring Week are: Monday, Charles Lindsay on "Effect of Lee Wave on Aviation;" Tuesday, "Montain Waves," an historic silent film on the Sierra Wave project of the early 1950's; Wednesday, "Two Niner Juliet," a color and sound film on sailplanes in atmospheric research; Thursday, Michael Jenkins on "Using Sailplanes for Low Cost Flight Research;" and Friday, "El Mirage," a color film on competition flying in the desert.

Exhibits will feature a number of major sailplane research projects.

The full-length feature film, "The Sunship Game," will be presented free of charge at the Activities Center, Wednesday, June 10, at 7:30 p.m. The public is invited to attend.

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NASA News

Lewis: Lewis has awarded a contract to the Boeing Engineering and Construction Company, Seattle, Wash., to build a Mod-2 wind turbine generator for installation at Medicine Bow, Wyo. The Mod-2 system is a 2.5-megawatt wind turbine with a 78-meter (255-foot) high tube-type tower and a single-span 91-m (300-foot) blade. This turbine generator has enough power equivalent to meet the needs of about 700 families.

Lewis has awarded a contract to the General Electric Co., Lynn, Mass., for the design, fabrication and testing of a TF 34 convertible turbofan/shaft aviation engine. The objective of the program is to explore the technology for integrating turbofan and turboshaft engine capabilities into a single engine. Such an engine could be used in future helicopter and advanced vertical and short-takeoff-and-landing aircraft concepts requiring shaft-driven propulsion for hover and low speed flight and auxiliary turbofan propulsion for high speed flight.

Kennedy: Workers are preparing the Orbiter Columbia for its second flight. Stacking of the solid rocket boosters for the second flight was competed earlier this week. Testing of the mechanical and electrical interfaces between the Orbiter and the OSTA-1 payload is completed. The OSTA-1 payload will be installed in the Orbiter in July for flight on STS-2.

Dryden: Flight testing in the HiMAT (high maneuverability aircraft technology) program is slated to begin this summer. During 1981, both HiMAT vehicles are scheduled to be flight tested, each having unique mission requirements. Five flights are planned for each vehicle.

Dryden/USAF flight research testing of the supersonic B-1 bomber was recently completed at Edwards AFB. The flight tests, which consisted of two flights totaling 10 hours, were conducted in a joint research program to evaluate and gather data on the Structural Mode Control System. Control of the structural deformations of an aircraft in flight is desirable to minimize the stresses on the structure, thus prolonging fatigue life of the aircraft, and, as in the case of the B-1, to reduce the aircraft motions for the flight crew.

The tilt Rotor aircraft will perform during the Paris Air Show, June 5 through 14. During its performance, the aircraft will lift off in the helicopter mode, hover, fly sideways in both directions, circle to the right and left, fly backward, convert to the airplane mode, fly by the crowd, reconvert to helicopter, bow to the crowd and land.

Headquarters: The Aeronautics Advisory Committee, Informal Advisory subcommittee on Rotorcraft Technology, met at Headquarters April 21 and 22 to review Office of Aeronautics and Space Technology ongoing programs, facilities needs and future plans. The subcommittee reviewed in detail, rotorcraft technology activities presented by OAST, Ames, Lewis and Langley representatives. A key element of the meeting was a thorough and constructive review of the NASA Facilities Update Plan and preparation of a needs statement specifically addressing rotorcraft technology needs.

National Aeronautics and
Space Administration

Langley Research Center
Hampton, Virginia
23665

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FOR SALE

Articles

Roll-away bed with inner spring mattress, extra size, $50; Maple finished crib with mattress and matching dressing table, $50; wood and plastic potty chair, $5; baby car seat, $5; stroller, $25; Spanish-style light fixture, $15. Call Tanner, 838-5492 anytime.

CB base station, AM/SSB/Radio Shack Navaho, complete w/pre-amp base CB mike, crossbow .74wave CB antenna, 100' RG 8/U CB cable assembly, used one week, value $500, sell for $300. Call 596-8649.

Refrigerator, 15 cu. ft. frost-free GE, GC, coppertone finish, $200; Carburetor for 68 Plymouth, 318 cu. in., used, $12. Call Youngblood, 877-1224 after 4 p.m.

Real Estate

Courthouse Green Townhouse: 3 BR, 1 1/2 BA, Hampton model, $40,900. Call 599-4321.

Gloucester: Grand 100-year old country home with three acres, over 40 fruit and nut trees; home restored and modernized, new roof, insulation, plumbing, heating and air conditioning, two wood stoves, 4 BR, 1 1/2 BA, sun room, tractor included, $79,000, owner financing available. Call Heyman, 229-9514.

FOR RENT

Water front cottage on Pamlico Sound at Hatteras, liv.-din.-kit, 4 BR, 2 BA, DW, $300/wk. Call 877-3736.

Sandbridge: new cottage with liv.-kit.-din. area, 4 BR, washer, dryer, dishwasher, fireplace, AC, phone, 6-car parking, 1/2 block from beach and Back Bay, summer rates, $425/wk. Call Kent, ext. 3095 or 420-8391.

Courthouse Green Townhouse: 3 BR, 1 1/2 BA, Hampton model, available July 1, no pets, $310/mo. Call 599-4321.

WANTED

Ride for summer student from bus stop on Norfolk side of Hampton Roads Tunnel to West area on 8 a.m. shift, for month of June only. Call 587-5836 after 5 p.m.

Two people to join existing car pool from Riverdale to West area on 8 a.m. shift. Call Everhart, ext. 2621, or 838-0040 after 5 p.m.

Retirement Parties

Robert Emond of the Flight Electronics Division will be honored with a retirement luncheon June 17 at 11:30 a.m. at Sammy & Nick's Family Steak House, 2718 West Mercury Blvd., Hampton. Order from the menu, which will include tip. Contributions for gifts only are welcome. Send reservations to Sam Sokol, Mail Stop 488, ext. 3581, by June 15.

McCreary "Mac" Beasley, Operations Support Division, will be honored with a retirement luncheon on Wednesday, July 1, at 11:30 a.m. at the Activities Center. The cost including gift will be $6.50 per person. Contributions to gift only are welcome. Send money or check to Ann Bell or Bob Schwartz, Mail Stop 286, by June 26.

LAA Travel

There are two Cruises sailing from Norfolk this year offering a 10 percent discount per person (based on double occupancy).

September 5 through 8 — Party Cruise to Nowhere

September 8 through 15 — Bermuda

Both Cruises are all inclusive.

This is the last call for the New Zealand and Australia Tour as there are only a very few spaces left. Special Las Vegas and Hawaii discount packages are also available.

Call Ernie Greene, ext. 2312, or the Activities Office, est. 3139, for details.

cafeteria menu

WEEK OF JUNE 8

MONDAY: Old Fashioned Bean Soup; Spaghetti Dinner; Chicken Pot Pie; Fried Fish Nuggets. Snack Bar: Hot Italian Sausage Sub; Charcoal Hoagie; Egg Salad.

TUESDAY: Manhattan Clam Chowder; Skipper Lobster & Scallops; Polish Sausage; Fresh Stuffed Bell Pepper. Snack Bar: Chicken cutlet; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Roast Turkey Dinner; Spinach & Bacon Quiche; Chopped Steak. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Gumbo Soup; Meat Loaf; Chicken & Dumplings; Ham & Cheese Omelette. Snack Bar: Ham & Cheese Club; BBQ; Chuckwagon.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Broiled Beef Liver; Knockwurst Reuben. Snack Bar: Deluxe Sub; Hot Ham & Cheese; Tuna Salad.

WEEK OF JUNE 15

MONDAY: Ham & Lima Bean Soup; Hot Roast Pork; Crab Cutlets; Baked Beans & Franks. Snack Bar: Hot Italian Sausage Sub; Charcoal Hoagie; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Baked Lasagna; Chicken Chow Mein; New England Scrod. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; Spanish Mackerel Almondine; Quiche Lorraine. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Vegetable Soup; Braised Chicken Livers; Broiled Pork Chop; Red Chili Burritos. Snack Bar: Ham & Cheese Club; BBQ; Chuckwagon.

FRIDAY: Minestrone Soup; Fish Dinner; Ham Steak; Sicilian Chopped Steak. Snack Bar: Deluxe Sub; Hot Ham & Cheese; Tuna Salad.

Thanks

The Federal Women's Program Manager wishes to take this opportunity to thank all who helped make Federal Women's Week 1981 a success. Watch the *Langley Researcher* for announcements of follow-up sessions of "Networking" and "Property Rights."

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

SPECIAL AWARDS ISSUE

June 12, 1981

Langley Employees Presented Awards

Certificates of Recognition

A **Certificate of Recognition** is awarded for the creative development of a scientific contribution which has been determined to be of significant value in the advancement of the aerospace technology program of NASA.

Invention awards have been presented to the following:

Anne K. and **Terry L. St. Clair**, for a "process for preparing high temperature polyimide film laminates;" **Terry St. Clair** also received an award for "thermoset-thermoplastic aromatic polyamides;"

Joseph S. Heyman, for a "pulsed phase locked loop strain monitor," and "acoustic tooth cleaner;"

Archibald L. Fripp, James B. Robertson and **Roger A. Breckenridge**, for "pyroelectric detector arrays;"

Carl L. Fales, Jr., Roger A. Breckenridge and **William J. Debnam, Jr.**, for a "magnetometer with a miniature transducer and automatic scanning;"

Bordie D. Poole, Ian O. MacConochie and **Richard R. Adams**, for a "miniature spectrally selective dosimeter;"

David B. Rhodes, for an "optical scanner;"

David C. Grana and **David P. Haynes**, for a "remote water monitoring system;"

Thomas Vranas, for a "hot foil transducer skin friction sensor;"

Charles J. Camarda and **H. Neale Kelly**, for a "heat pipe honeycomb panel;"

Lucio Maestrello, for an "apparatus and method for jet noise suppression;"

Maynard C. Sandford and **David L. Gray**, for a "miniature angular position sensor;"

Frank Hohl, for a "large volume multiple path nuclear pump laser."

Special Achievement Awards

A **Special Achievement Award** is granted for performance exceeding job requirements. The award may be either for sustained superior performance or for a one-time special act or service in the public interest, connected with, or related to official employment.

Awards have been presented to the following employees:

James L. Hudgins, for "excellence in the fatigue testing evaluation of the 600 psi Air Storage Field;"

James W. Westervelt, for "outstanding and diligent work on the Boiler No. 1 Automation Project;"

Shirley R. Stephenson, for "outstanding performance and contribution to word-processing efficiency within the Environmental Field Measurements Branch;"

Virginia K. Anderson, for "outstanding performance and individual excellence in fulfilling all duties and responsibilities including, in particular, special contributions in the preparation of the FY '83 CoF Budget while assigned to the Facilities Engineering Planning Section of the Plant Engineering Division

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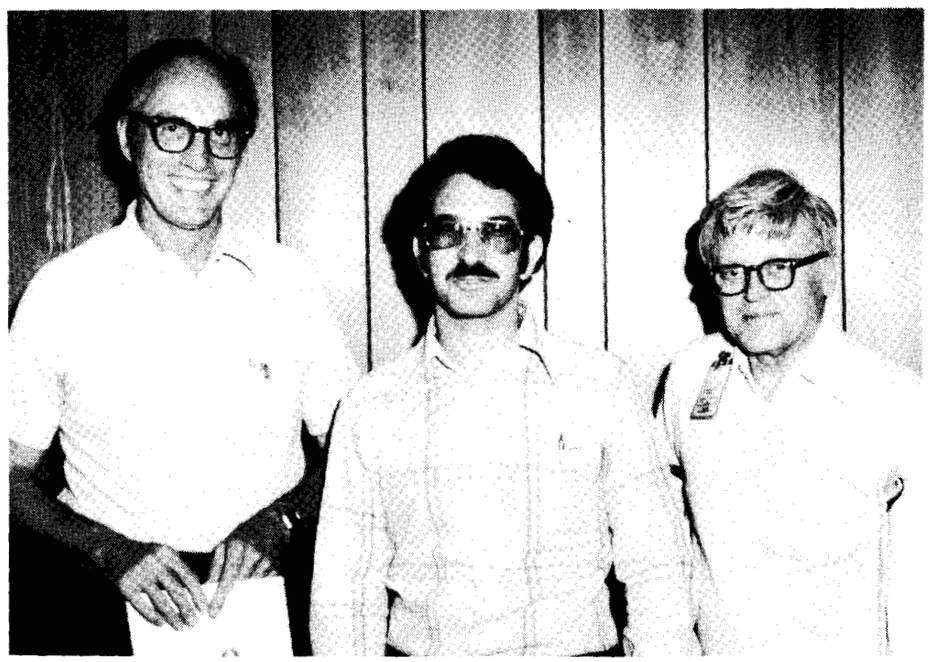


Robert W. Herr, Jerrold M. Housner and John L. Sewall received Special Achievement awards for "an outstanding research paper on the vibrations of liquid filled tankage structure for engineering applications selected as the best paper published in 1980 by the Structures and Dynamics Division."

Mark A. Evans and Nicholas A. Kepics received awards for "accomplishments in the development of exceptional skill and special hardware required for the successful completion of the Sidewall Boundary-Layer Thickness Investigation in the 6- by 19-Inch Transonic Blowdown Tunnel."

Awards

Continued from page 1.

from mid-September 1980 to mid-January 1981;"

Shirley W. Forrest, for "assuring the smooth and efficient operation of the Systems Engineering and Operations Directorate Office by performing directorate secretary responsibilities while simultaneously overseeing the functions of her own position and training new and rotating employees;"

Oscar E. Hillard, for "exemplary performance and exceptional contributions to the Center's Supply System;"

Mary J. Mesic, for "continued outstanding support as protocol assistant for the Office of External Affairs;"

Walter B. Mitchell received an award for "excellence in electronic control technology."

Jan R. Tulinius, for "sustained superior performance in evaluation of steady and unsteady aerodynamic loads on thousands of Space Shuttle surface insulation tiles in addition to evaluation and guidance of major ACEE Project contract efforts;"

Sandra S. Chaney, for "outstanding performance and contributions to the success of the Second Annual Large Space Systems Technology Conference during 1980;"

Ira B. Tate, for "exceptional performance in support of the Category B ADP Reviews and Furniture Utilization Review;"

Carl F. Calfee, for "exceptional services rendered in support of material storage, control and distribution requirements;"

William J. Boyer, for "skill and dedication in performing as the Acting Division Chief for the Projects Management Systems Division while also holding the position of Deputy Manager of the LSST Program;"

Vivian B. Merritt, for "sustained excellence of quality of work;"

Barbara G. Newton, Lillian H. Evans and **Ruth A. Koren**, for "outstanding performance in accomplishing the distribution, code classification, and filing of Langley correspondence with a decreased staff during a period of increased mail activity;"

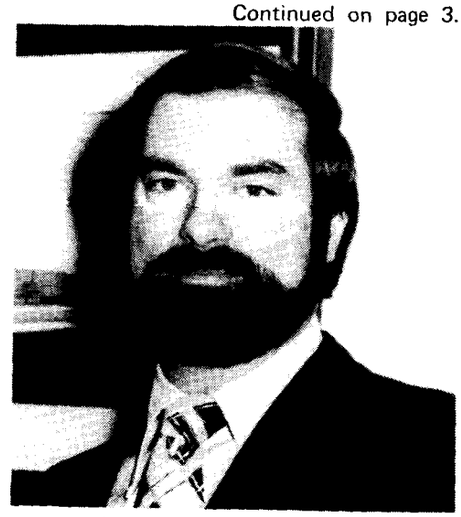
Richard L. Shearer, for "exceptional dedication and expertise applied to achieving the successful completion of a complex analysis of the Shuttle tiles stress loads in support of the first Shuttle flight;"

Edward A. Crossley, Jr., for "consistent superior application of technical skills and dedication in the performance of design tasks on the LHS Project and special Space Shuttle test fixture designs;"

Charles A. Baldwin, in "recognition of the consistently superior design and the innovative application of design principles in support of the NASA Microwave Remote Sensing Research Programs;"

R. Paul Seaford, for "proficient management of IRD laboratories relocation and rehab preparations with minimum disruption to Langley research projects;"

Continued on page 3.



Larry L. Harvey received a Special Achievement Award in "recognition of extraordinary technical effort in support of the CLOT Project."

Langley Research Center NASA

Langley Researcher

The *Langley Researcher* is an official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665.

Editor . . . . . Jean Drummond

Staff Photographers . Hubert Lloyd & Don Ward

Awards

Continued from page 2.

Colossie N. Batts, for "design and application of analysis instrumentation to support wind tunnel model flutter tests;"

Thomas A. Byrdsong, for "special performance in recognizing possibilities for furthering loads research, and planning, initiating and coordinating wind tunnel models design, and conduct of wind tunnel and laboratory tests of flight vehicle modifications to confirm those possibilities;"

James L. Rogers, for "initiating a continual process of CAD/CAM information exchange at LaRC, beginning with organization of the NASA/LaRC CAD/CAM conference held on February 9-12, 1981;"

Robert F. Mayo, for "sustained excellence in the leadership and coordination of critical tests of Shuttle TPS in Aerothermal Loads Branch arc facilities;"

Margaret P. Simonton, in "recognition of continual dedicated service, application of exceptional skill in advising on promotion candidates, and for providing considered advice to management resulting in more efficient organizational and position structuring;"

Charles P. Shore, for "outstanding performance in performing analyses in support of Shuttle TPS teams;"

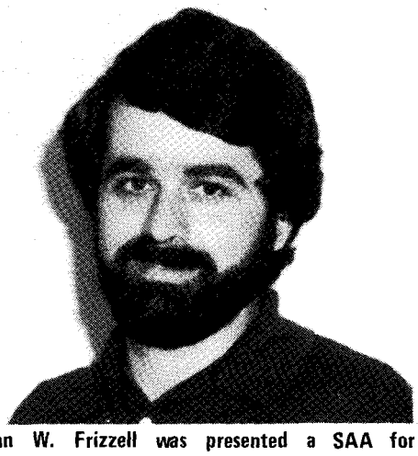
Charles L. Ruhlin, for "successfully planning and accomplishing the first combined analytical/experimental flutter

Continued on page 4.

Kay S. Bales has been presented an award for "outstanding dedication and support to the Structures and Dynamics Division during 1980-81."

Charlie Haynes, Jr. was presented a SAA for "innovative and exceptional service in the manufacturing of the Entry Vehicle Flow Simulator."

Hubert F. Shackelford was presented a SAA for "exceptional service in the manufacture of the laminar flow control panels."



Alan W. Frizzell was presented a SAA for "original and innovative contributions in the development of the Hot Melt Surface Attachment Assembly for the On-Orbit Inspection and Repair System."

Rex A. Current was presented his award for "the efficient and timely support to the development of a solid propellant rocket motor for the spin/stall recovery of light aircraft."

Wendell G. Adams, Ronald L. White and Gary B. Bayless received Special Achievement Awards for "exemplary performance in the support of the F-18 Stall/Spin Program."

Awards

Continued from page 3.

study of a full-span arrow-wing configuration at transonic speeds;"

John R. Karns, for "sustained service and exceptional creativity in designing equipment to facilitate efficient operation of Aerothermal Loads Branch facilities;"

Ronald D. Brown, for "sustained dedication and excellence in support of critical tests of Shuttle TPS in Aerothermal Loads Branch arc facilities;"

Jacqueline L. Conrad, for "the achievement of highly successful results in maintenance and execution of cost accounting activities for the National Transonic Facility Project Office;"

Nadine E. McHatton, for "outstanding administrative and secretarial support for the research programs conducted by the Dynamic Stability Branch;"

Judy R. Neil, for "exceptional dedication in the support of the Plant Engineering Division;"

Helen W. Hughes, for "exemplary performance in managing a large clerical work load;"

Virginia H. Jones, for "outstanding performance in the investigation of the 4- by 7-meter tunnel accident;"

Kathy H. Samms, for "outstanding performance leading directly to the success of the 'Flight Path Optimization Seminar' for Airline and Aircraft Manufacturers;"

Donna M. Thibodeau, for "exceptional dedication and performance of duties;"

Anne E. Overbay and **Lahoma L. Hart**, for "exceptional dedication and performance beyond normal job duties;"

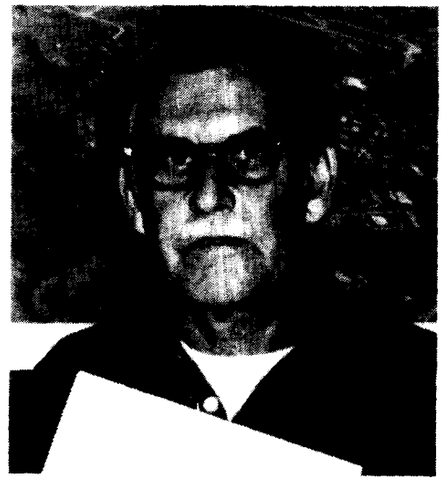
Denise F. Robinson, for "recognition of outstanding performance of duties during the two-year development of telecommunicating vendor payments;"

Undrell Battle, for "recognition of an outstanding performance of duties in preparing the vendor payments disk for telecommunication during the absence of the key operator;"

Peggy H. Langford, for "recognition of an outstanding performance of the special assignment of developing and writing the program to be used in computing travel voucher payments;"

John C. Gustafson, for "outstanding performance in the successful management of the NTF Work Packages (4.6), Nacelles and Shrouds, and (4.18) Machines Parts for the National Transonic Facility (NTF) and for performing the many tasks necessary to

Continued on page 5.



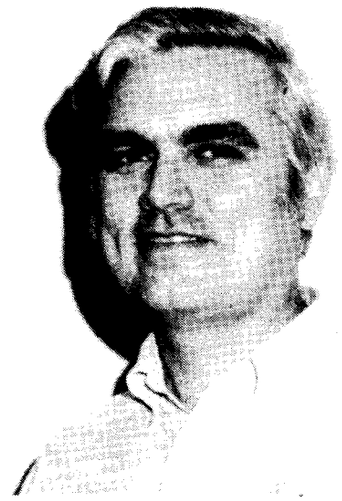
Leslie E. Deane has been presented an award for "high quality piping support to LaRC research facilities."

Catherine A. McCargo received her award for "exceptional performance in operating a daily reporting/recording system in the Instrument Development Section."

Daniel P. Vigliotti received an award in "recognition of timely innovative solutions to directional steering control problems encountered on the Free Body Air Cushion Vehicle during the period June 1980 through March 1981."

Duane C. Zellers received his award in "recognition of outstanding leadership and achievement associated with the operational efficiency of the Building 1211 Solar Field Complex during the period June 1980 – March 1981."

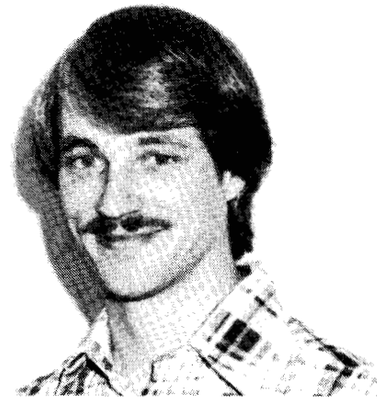
Ray M. Burcher has been presented a Special Achievement Award for "exceptional service in the manufacture of a universal tunnel fixture."



R. Wayne Barfoot received a SAA for "exceptional service in the manufacture of the EER-Semi Span Wing."

James M. Curro received an award for "diligent and conscientious efforts during inspection of the Eight-Foot Transonic Pressure Tunnel and associated support equipment."

Catherine L. Herstrom was presented an award for "outstanding performance and contributions to the development of computer programs for the analysis of lattice structures."



Bruce D. Little was presented an award for "excellent performance in the development of a hot melt adhesive pad used with the Work Restraint Unit for Shuttle's Surface Attachment Assembly."

Thomas O. Carmines, Jr. has received a SAA for "superior service in manufacture of a wide variety of research models and test facility equipment."

William N. Willoughby has been presented a Special Achievement Award for "excellence in electronic technology."

Dr. James W. Sawyer received his award for "providing critical, timely data on static and cyclic structural behavior of Shuttle TPS."

Awards

Continued from page 4.

deliver these major pieces of hardware on schedule and with a minimum of cost;"

Robert K. Faison, for "exceptional dedication and performance of duties;"

Jean P. Mason, for "the elegant design and timely completion of an efficient and accurate computer program for the Kapteyn series in support of a theoretical investigation of the role of helical vortex filaments in aerodynamic noise generation;"

Irving M. Stewart, for "outstanding performance in directing and coordinating the implementation of the Joint NASA/Boeing Wing Coating Experiment;"

Arthur R. Hayhurst, for "excellence in electronics packaging development;"

Joseph L. Johnson, Jr., for "exceptional technical contributions and leadership to design methodology for highly-swept fighter configurations at high angles of attack;"

Maria Vallas, for "superior performance and dedication in providing program coding, checkout, and execution support to the Langley nonlinear Shuttle TPS analysis development and for support in developing a computerized data base to facilitate the analysis of large arrays of tiles on the Space Shuttle Orbiter Vehicle;"

Henry T. Thornton, Jr., for "superior performance in instrumentation layout and unsteady data analysis for the Combined Loads Orbiter Test (CLOT) and for rapid resolution of a compressor problem in the Langley 8 Ft. Transonic Pressure Tunnel;"

Joe C. Gowdey, for "exceptional performance and dedication in support of the Space Shuttle Tile Dynamics testing and Combined Loads Orbiter Test, and management of the SED vibration testing responsibilities;"

Robert K. Hedgepeth, for "conscientious and dedicated service to the Space Shuttle/Combined Loads Orbiter Test (CLOT)."

William F. White, in "recognition of vital technical contributions to the successful consumation of the reduced drag/wing coating experiments in the areas of systems design and integration, system installation, experimental definition, and data acquisition and processing;"

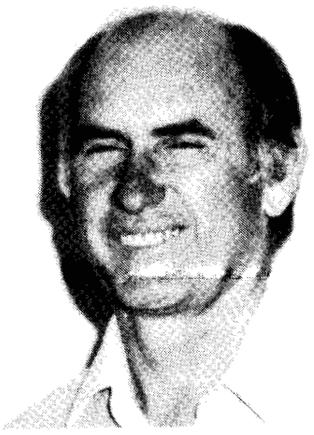
William M. Phillips, Jr., Roy A. Heath, Jr. and **Ernest L. Rowe,** for "outstanding performance and contributions in recruiting and selecting minorities and females to staff engineering technician positions;"

Timothy R. Rau, for "outstanding performance and contributions as on-site engineer for the IPAD project and in use of IPAD technology to support NASA shuttle tile investigations;"

Noland S. Liddle received an award for "innovative and exceptional service in the manufacturing of the Entry Vehicle Flow Simulator."

Robert L. Fox received an SAA for "original and innovative contributions in the development of the Hot Melt Surface Attachment Assembly for the On-Orbit Inspection and Repair System."

Mary A. Curtis received a SAA for "outstanding performance and contributions which assist the Fabrication Division in achieving its goals and objectives."



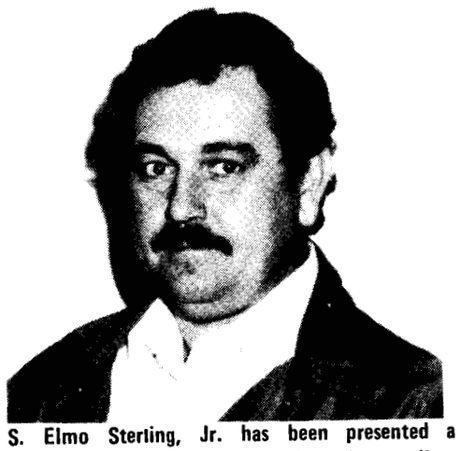
Leland E. Wilkinson has been presented an award for "innovative and exceptional service in the manufacturing of the Entry Vehicle Flow Simulator."

Stephen C. Wright received a SAA in "recognition of superior performance and service on the Jet Noise Lab Rehab Project."

George H. Veneris received an award for "continued excellence of performance and contributions of craftsmanship resulting in superior flight research hardware for Langley Research Center Fabrication projects."

Raphael P. Borman has received a SAA for "exceptional performance in the training of freon handling operators during a critical period and in a timely manner."

Sandra G. Roark was presented an award for "outstanding performance and contributions to technical development inspection and documentation in 1980."



S. Elmo Sterling, Jr. has been presented a SAA for "superior service in tooling, development and construction for the National Transonic Facility Fan Blades."

Suggestion and Honorary Suggestion Awards

The Langley Suggestion System was established to increase productivity, efficiency, economy and other improvements in center operations. Employees are recognized and rewarded, either individually or collectively, for idea-type contributions which are adopted.

Suggestion awards have been presented to:

Abbie W. Kendall, for a "worksheet for paying contracts;"

Roland G. Kitts, for "savings in operating environmental chamber;"

Diane N. Tingen, for "substituting a 6 page commodity list for a previously used 26 page commodity book;"

Franklin K. Goodson, for "improved scramjet electrode design;"

Gary B. Bayless, for "parachute packing system."

Loyd W. Overbay, for "pockel cell control electronics;"

Robert V. Garletts, Kenneth L. Wallace and **Donald M. Coffey** for a "real time volatile release and bag vacuum monitoring system for the vacuum/pressure research autoclave in Building 1148;"

Mercer W. Christian, for a "foam packing system for NASA/LaRC;"

Everette R. Causey, for an "improved method of cleaning tube-type heat exchangers throughout Langley Research Center;"

Woodrow W. Midgette, Jr., for "chassis mountable documentation/information for electronics/mechanical equipment;"

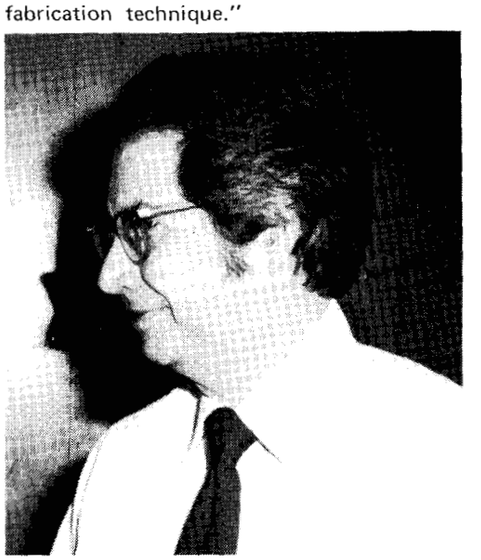
James K. Geiger, for "8-Foot High Temperature Structures Tunnel spool piece seals, Building 1265."

Honorary Suggestion awards have been presented to the following employees:

Donald L. Ewton and **John S. Powell,** for "aeroelastic wing panel fabrication technique."

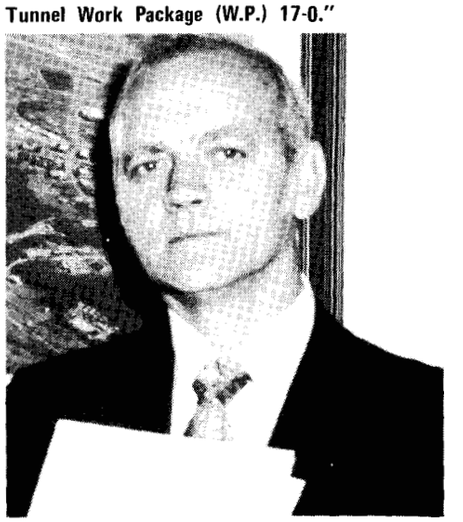
Clarence W. Bailey has been presented a Suggestion Award for "tweezers fitted with cutting blade."

Eugene B. McLemore received a Suggestion Award relative to "use of liquid nitrogen as cutting fluid for machining fiberglass."



Clyde J. May has been presented a Suggestion Award relative to "reduction of drawings distributed for bids with National Transonic Tunnel Work Package (W.P.) 17-0."

Walter C. Whitt and John D. Scholz have been presented Energy Suggestion awards for their idea relative to "Electrical Energy Savings on a Vacuum Pump."



George E. Geiger received an Energy Suggestion Award for his suggestion "Installation of Motorized Stack and Flue Dampers."

National Aeronautics and
Space Administration

Langley Research Center
Hampton, Virginia
23665

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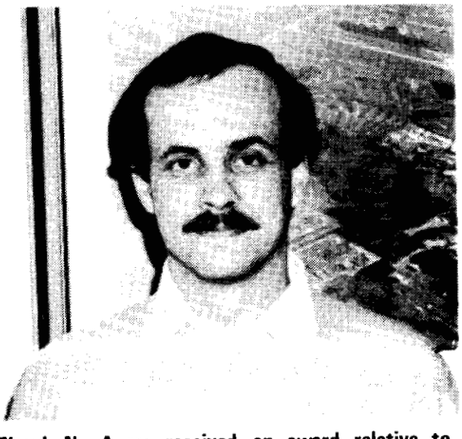
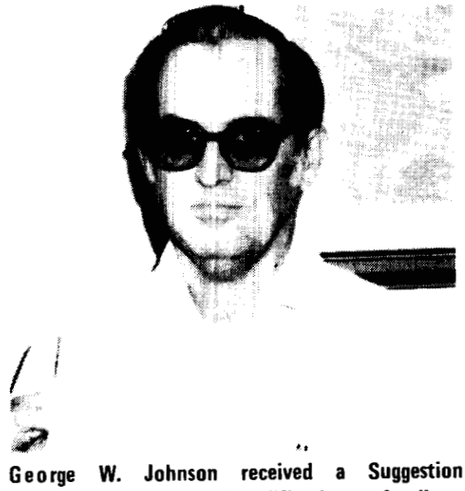
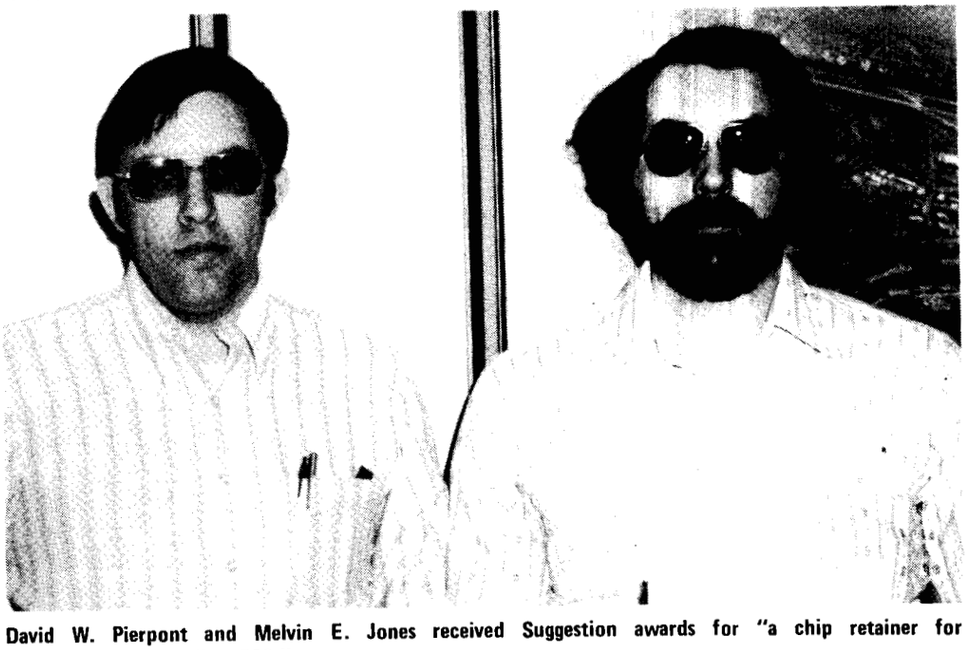


Floyd N. Ayres received an award relative to "the design and fabrication of a precision control system for load test on space shuttle insulation tiles."



George W. Johnson received a Suggestion Award relative to "modification of direct current displacement transducer PC board."

Raymond C. Scholz was presented an award relative to "design, fabrication, and insulation of the model injector-retriever unit in the magnetic suspension laboratory."



David W. Pierpont and Melvin E. Jones received Suggestion awards for "a chip retainer for pressure vessel, Building 582."

Clarence E. Caldwell received an award for "automation of service air system F.S.T., Building 643, eliminating the running of a 100 HP motor, 2 - 5 HP water pumps, and a 16.2 KW dryer, when the 500 psi compressor Building 646 is operating."

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

Volume 20 Issue 12 June 19, 1981

Wallops Flight Center

Krieger Announces Retirement from NASA

Dr. Robert L. Krieger, long time Director of the Wallops Flight Center, has announced his plans to leave the government services in early August, after almost 43 years with NACA and NASA. Since 1948 he has headed the Wallops Island facility on the Eastern Shore of Virginia.

Krieger actually retired on February 29, 1980, but, at the request of NASA's Administrator, has continued to serve as the Wallops Director in order to provide continuity through the busy period of the Shuttle launch. More recently the request has been extended "until August of this year to help make the Wallops/Goddard consolidation as smooth as possible."

A native of Kentucky, Krieger began his career with NASA's predecessor agency, the National Advisory Committee for Aeronautics (NACA) at Langley before World War II in 1936. He left Langley to attend the Georgia Institute of Technology and received a bachelor of science degree in mechanical engineering in 1943.

Returning to Langley, Krieger was part of the group which established a branch facility, the Pilotless Aircraft Research Station at Wallops, under the leadership of Robert R. Gilruth, foremost in also establishing the U.S.'s manned space flight program. Working at Wallops part time, Krieger participated in the first firing of a U.S. guided missile on July 4, 1945.

In 1948 he assumed leadership of the Wallops facility which became an experimental laboratory from which instrumented aerodynamic test models were rocket propelled at high speeds, providing data used as the basis of design of supersonic airplanes and missiles.

In 1958 the Wallops facility became an independent field center of NASA which Krieger led through a period of rapid growth to make the first successful test flight of the Mercury capsule. He has continued to guide the expansion of Wallops' capabilities to accommodate flight systems and component development testing; aerodynamics and heat transfer research; launching small satellites into orbit; sounding rocket probes of the atmosphere; and the training of foreign nationals in space launch, tracking and data acquisition techniques. Thousands of research test vehicles, including nineteen satellites, have been launched from the Wallops range since its beginning in 1945.

During his long career Krieger has initiated and encouraged many important contributions to range, aeronautical and space technologies and is recognized as one of the leaders in that community.

Krieger has twice been awarded NASA's Outstanding Leadership Medal and in 1974 was awarded NASA's Distinguished Service Medal. He is in Who's Who in America and was elected as a Fellow of the American Astronautical Society. In 1978 he was awarded an honorary doctorate in engineering by the University of Maryland Eastern Shore Branch.

Krieger and his wife, Frances, have acquired a home in Hampton, where three of their seven children live. After retirement, Krieger, who has an insatiable interest in the history of Virginia's Eastern Shore, hopes to spend a good deal of time photographing the area and studying Shore History.

– photo by Bob Nye

Ernest L. Rowe (left), former Assistant Chief of the Operations Support Division and now a retiree, Roy A. Heath, Jr., of the Personnel Division, and William M. Phillips, Jr. (right), Chief of the Fabrication Division, have received Langley's Equal Opportunity Award for the first quarter of FY 1981. Richard H. Petersen (second from right), Langley Deputy Director, presented the awards for "significant achievement in equal opportunity through the initiation, development and implementation of programs which have made possible the hiring of minority and female technicians at the Langley Research Center."

– *photo by Bob Nye*

Langley Director Donald P. Hearth accepts a certificate of appreciation and the Yorktown medal from Shirley Cooper, Chairman of the York County Board of Supervisors, and John Richardson, York County Administrator. Langley was commended for its contributions to the Space Shuttle, the nation and the community and for its example as a good neighbor to the County of York. Following the award ceremony, Cooper gave a short presentation on the October bicentennial celebration of the Battle of Yorktown.

Revised Forms Available From Stock

The following forms have been revised and are now available from Stock:

Langley Form 43	"Purchase Request/Purchase Order Routing Control Form"	Rev. April 1981
Langley Form 96	"Approval for Scientific & Technical Presentations and Publications"	Rev. April 1981
Langley Form 125	"Purchase Request/Purchase Order"	Rev. April 1981
Langley Form 159	"Computer Processing Request (Blue)"	Rev. April 1981
Langley Form 173	"LaRC Facsimile Transmission"	Rev. April 1981
NASA Form 692	"Position Description"	Rev. April 1981
NASA Form 1471	"Research & Technology Objectives and Plans"	Rev. March 1981
NASA Form 1471A	"Research & Technology Objectives and Plans"	Rev. March 1981
NASA Form 1471A (OVERPRINT)	"Research & Technology Objectives and Plans"	Rev. March 1981
NASA Form 1471B	"Research & Technology Objectives and Plans"	Rev. March 1981
NASA Form 1471C	"Research & Technology Objectives and Plans (RTOP-Change Notification (RCN)"	Rev. March 1981

Previous editions of the above forms are obsolete and should no longer be used.

For further information regarding forms, contact Kathi Porter, ext. 3511.

Bloodmobile Supported by Langley

Langley employees, retirees and contractors donated 319 pints of blood at the June 3 visit of the Red Cross Bloodmobile.

Achieving gallon status were:

9 gallons – Thomas W. Forrest.

6 gallons – James H. Shipp and Wesley T. Berryman.

5 gallons – Richard Lyeth, Ceylon C. Short Jr., James Monteith and Prentiss Childs.

4 gallons – Danny A. Barrows and Evelyn S. Martin.

3 gallons – Charles E. Longacre, Harry F. Benz, Harvey W. Murray, Franklin E. Creech and Donald L. Simmons.

2 gallons – Daniel J. Milburn, Bruce B. Little, Don E. Avery and L. Conway Rogers.

1 gallon – Walter L. Wade, Sidney C. Dixon, Carol L. Castagno, Barry D. Meredith, Otto C. Ripley, Richard E. Wallsom, Max L. Blosser and Ronnie E. Gillian.

Donating blood for the first time were John R. Ellingsworth, Ronald Hermanderfer, Anthony K. Brooks, Glinda S. Seay, Earl H. Arrowood, Nancy S. Johnson, Lynn K. Wright, Janet E. Schulta, H. Milton Holt, Victor A. Carreno, James F. Pike, Barbara J. Wilt, Gregory M. Buck, Gail R. Dawkins, Rodney T. Quesinberry, Sue E. Davy, Dennis R. Holloway, Richard D. Walters, Michael L. Heck, Robert K. Seals Jr., Chalres D. Pruett and Michael A. Marcolini.

First time donors who were omitted from the March 25 Bloodmobile report were Margaret J. Spruill and Bernice G. Spruill.

NASA Coordinator for the Bloodmobile was Virginia Jones; Red Cross Coordinator was Fran Williams. Refreshments were donated by the Langley Federal Credit Union.

The next Red Cross Bloodmobile will be held July 29 from 9 a.m. to 3 p.m.

The *Langley Researcher* as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond

Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

U.S. Savings Bond Drive Ends

The 1981 Savings Bond Campaign ended Friday, May 29, with 45 percent participation by Langley employees (45 new subscribers). In addition, 41 subscribers increased their level of savings.

The following organizations reached 100 percent participation:

Office of Director for Electronics
Office of Director for Structures
Loads and Aeroelasticity Division Office
Office of Director for Aeronautics
Office of Director for Management Operations
Management Systems and Analysis Office
Management Support Division Office
Technical Library Branch
Program and Resources Division Office
Office of Director for Systems Engineeging and Operations
Operations Support Division Office

The 1981 percentage of participation for all NASA installations is as follows:

Installation	No. of Employees	Percent of Participation	
	*March 21, 1981	March 21, 1981	June 12, 1981
Kennedy Space Center	2397	52	65
Nat'l Space Technology Lab.	113	21	34
Langley Research Center	2954	44	45
Ames Research Center	1665	40	48
Headquarters	1707	26	29
Dryden Flight Research Center	515	34	40
Johnson Space Center	3791	34	38
Lewis Research Center	2910	20	20
Marshall Space Flight Center	3526	35	36
Wallops Flight Center	390	31	31
Goddard Space Flight Center	3403	27	28

*For this year's campaign, March 21, 1981 was considered the starting point for figuring the number of employees and percent of participation.

Drawings for the two $50 U.S. Savings Bonds (provided by LAA) for new participants and increased allotments were held June 4. Joyce Fly, FMD, was the winner as a new participant and John Callas, FD, was the winner for increased allotment.

Special Program Featured at Visitor Center

A special video presentation on flight safety and the art of crafting plastic aircraft models will be featured at the Langley Visitor Center this month.

"The Safety Factor," originally produced for the public television series, "Nova," will be presented from June 22 through 28. The video presentation follows a DC-10 commercial flight from London to Los Angeles giving close consideration to all the safety factors involved in the flight. Some major aircraft crashes of recent history are evaluated, and safety considerations in pilot training as well as aircraft production and maintenance are featured. A number of Langley projects are presented in the film including the Terminal Configured Vehicle program, the Crashworthiness program and wind tunnel studies of trailing vortices.

The informative and non-technical presentation will be shown at noon and 2 p.m. each day with an additional 10 a.m. presentation on Saturday, June 27.

Members of the Tidewater Chapter of the International Plastic Modelers Society will be at the Visitor Center June 20, 21, 27 and 28 working on their current aircraft modeling projects and explaining how it's done. A number of models crafted by chapter members will be on display. The 1/72 and 1/4 scale models include significant World War I and World War II aircraft as well as the most sophisticated aircraft of today. Among those displayed will be the Fokker D-7, the P-51, the British Spitfire, the Japanese Zero, the A-10 and the F-15.

A number of Langley employees are among the chapter's modeling enthusiasts.

Aerospace Penpoints
by Wesley Berryman

It is easy to invent a flying-machine; more difficult to build one; to make it fly is everything.

Otto Lilienthal

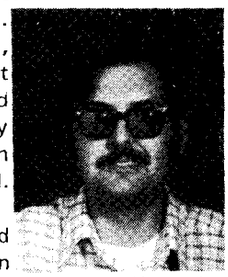
Message from the Deputy Director

A few weeks ago I suggested, as a safety goal for the center, a target of five million man-hours without a lost time injury. I am pleased to report that our last lost time injury occurred on April 23 and as of June 12, we have reached the 830,000 man-hour mark (17 percent). While we are still a long way from our goal, I am pleased that everyone is responding and pulling together to make safety a routine part of getting our job done.

I hope you will keep up the effort--this is a goal that depends on everyone doing their part.

Richard H. Petersen

In Memoriam



Charlie L. Lawson III, Operations Support Division, died unexpectedly Saturday, June 6, in Riverside Hospital. He was 38.

He had worked at Langley as an engineering technician since November 1973 and as a temporary employee from July to September 1973.

A native of the Peninsula, Lawson graduated from Frederick Military Academy in Portsmouth in 1962 and attended Old Dominion University from 1962 to 1964.

Houbolt Elected Honorary Fellow of AIAA

Dr. John C. Houbolt, Chief Aeronautical Scientist in the Office of Director for Aeronautics, has been elected to the grade of Honorary Fellow of the American Institute of Aeronautics and Astronautics.

The high honor was bestowed upon Houbolt for "vanguard contributions in aircraft structural dynamics and in space technology; and especially for his vital contributions to the success of the Apollo project by developing and effectively advocating the lunar-orbit rendezvous concept."

Houbolt joined the Langley staff in June 1942 as an aeronautical engineer. In June 1951 he was named Assistant Chief of the Dynamic Loads Division and in February 1962 Chief of the Theoretical Mechanics Division.

In February 1963 Houbolt left NASA to become Senior Vice President and Senior Consultant for Aeronautical Research Associates of Princeton, Inc., Princeton, N.J. He returned to NASA in January 1976 to assume his present position.

Houbolt received a bachelor of science degree in civil engineering in 1940 and a master of science degree in civil engineering in 1942 from the University of Illinois. He received a doctorate in technical sciences from ETH (Swiss Federal Institute of Technology), Zurich, Switzerland in 1957 and in 1975 received an honorary doctorate degree.

From 1945 to 1963 Houbolt was an instructor at the University of Virginia Graduate Extension Division and the Virginia Polytechnic Institute and State University Graduate Extension.

The author of more than 100 technical reports, Houbolt received the Rockefeller Public Service Award to undertake graduate study at ETH; NASA Exceptional Scientific Achievement Award for conception and development of the lunar-orbit rendezvous concept for performing manned lunar landing mission; University of Illinois Distinguished Civil Engineering Alumni Award, University of Illinois Illini Achievement Award; and AIAA Dryden Research Lecture Award. He was the first recipient of the Structures, Structural Dynamics, and Materials Award presented by the AIAA.

Houbolt and his wife, Mary, reside in Williamsburg. They have three daughters.

Also names an Honorary Fellow was Christopher C. Kraft, Jr., Director of the Johnson Space Center.

NASA News

NASA Headquarters: President Ronald Reagan presented Dr. Alan M. Lovelace, Acting Administrator of NASA, the Presidential Citizen's Medal at ceremonies honoring the successful first flight of the Space Shuttle Columbia. Lovelace is the fourth recipient of the Medal, which was established on Nov. 13, 1969.

Also at the ceremonies, astronauts John W. Young and U.S. Navy Capt. Robert L. Crippen were presented NASA's Distinguished Service Medal as crew of the first Shuttle flight. Young was also presented the Congressional Space Medal of Honor. Young becomes the seventh astronaut to receive the Honor authorized by Congress in 1969 and first presented in 1978.

Lewis: The nation's first large experimental "windfarm," consisting of three machines, each producing 2.5 megawatts (million watts), was officially dedicated May 29 at Goodnoe Hills, Wash.

Designated Mod-2 (Model 2), these machines are designed to produce competitively priced electric energy if built on a volume basis. The Mod-2 is currently the most advanced in a series of horizontal axis wind turbines developed for the Department of Energy by NASA-Lewis.

Marshall: A "request for proposal" has been issued to prospective contractors inviting them to describe how they would build precision mirrors of the type which later this decade will be flown on an orbiting X-ray observatory. Two contractors will be chosen from those responding to perform parallel but independent work toward the building of separate test mirrors. The mirrors will be representative of those to be flown in NASA's Advanced X-ray Observatory currently being studied and proposed for launch later in the decade.

NASA's third High Energy Astronomy Observatory, HEAO-3, has expended the last of its supply of thruster gases used for attitude control, and has been powered down. This completes a mission begun Sept. 20, 1979 when the observatory was launched aboard an Atlas-Centaur rocket.

HEAO-3 is the third in a family of three highly successful scientific satellite observatories. These spacecraft gave astronomers a new capability to study some of the most intriguing mysteries of the universe: pulsars, quasars, exploding galaxies and black holes in space.

Dryden: Researchers are readying the newly refurbished B-57B Canberra bomber to be the test airplane in its upcoming Atmospheric Turbulence Measurement Program. The program is constructed to gather information on turbulence patchiness and spanwise gust gradients--sudden changes in wind creating abrupt and uneven pressure forces on different areas of an aircraft. The information will be used to prove designes in aircraft construction and operation.

The initial flutter clearance flight testing of an advanced turboprop propeller has started. The tests are expected to contribute valuable information for the ACEE program.

Goddard: NASA has invited computer scientist in industry and government to participate through Aug. 14 with university faculty members and NASA researchers in a workshop called "Computer Science: Key to a Space Program Renaissance." The industry input will help set the course for future NASA research and development in computer science and also, indirectly, determine the nature of later spinoffs from the agency's work back to industry. The workshop is being held at the University of Maryland's Donaldson Brown Center.

Employees Recognized for Accomplishments

The following Langley employees have been presented Special Achievement awards:

Leon A. Williams, for "outstanding performance in the management of the systems engineering aspects of the ERBE Project, including the mechanical and thermal designs; and for controlling the associated costs, schedules, technical performance, and the integration of these instruments with TIROS and ERBS Spacecraft Busses;"

William D. Grantham, for "the development of advanced takeoff procedures which reduce community noise with no increase in pilot workload or decrease in aircraft safety;"

Robert D. Witcofski, for "leadership in providing large-scale liquid-hydrogen spill tests, the results of which are significant to both the space effort and possibly future aircraft applications;"

Willard E. Foss, Jr., for "the timely development of a mission-performance computer program for military aircraft;"

H. Neale Kelly, for "exemplary and dedicated managerial and technical supervision during the reorganization of the Aerothermal Loads Branch;"

Dr. George W. Ivey, Jr., for "exceptional performance as a member of the NASA Baseline TPS Team in leading the development of analytical models for Shuttle tile loads;"

Dewey M. Smith for "exceptional performance as a member of the NASA Baseline TPS Team in development of loads for Shuttle TPS analysis;"

David H. Butler, for "outstanding performance in successful management of Work Package 9.0, Cooling Coils for the National Transonic Facility, and for performing the many tasks necessary to deliver and install the cooling coils;"

Faith M. Allen, for "highly capable and exceptionally conscientious performance as secretary for the Aeronautical Systems Engineering Branch, resulting in more effective and efficient Branch operations;"

G. Warren Johnson, for "contributions to the LHS program in the development of a heat transfer strap with seismic isolation capabilities;"

William L. White, for "exceptional contributions and dedication to the operational capability of the Langley Spin Tunnel;"

Dennis H. Petley, for "exceptional performance as a member of the NASA Baseline TPS Team in the development of analytical models for Shuttle tile loads;"

Carol C. Kiser, for "outstanding performance in the successful systems engineering for the Combined Loads Orbiter Test (CLOT) and for the many outstanding efforts which significantly contributed to the CLOT tests being completed successfully and on time;"

William E. Rew, in "recognition of outstanding achievement in the successful negotiation and administration of complex computer procurements exemplified in the award of contracts for the Interactive Processor Systems and Flight Software Verification and Testing Systems;"

A. Carl Knollmann, and **Michael F. Cavelli** in "recognition for outstanding achievements in contributing immeasurably to the meeting of the Center's obligation goals for FY 1980, and for training of new acquisition personnel while establishing a new organizational element;"

W. Roger Phelps, for "effective monitoring of strain-gaging and calibration contract effort;"

Milton L. Williams, Jr., for "contributions to the program of conversion of Langley Research Center Vehicles to Methane Fuel."

Speakers Bureau

Doug Garner gave a talk on The Design of Wood-Gas Generators for Automobiles at the meeting of the Steam Automobile Club of America at Pleasant Garden, North Carolina, May 8.

Dr. Olaf Storaasli spoke to members of the East Hampton United Methodist Mens' Club May 14 on computer-aided design and computer-aided manufacturing.

Key Positions

Sammie D. Joplin has been selected Head, Systems Design Branch, Research Facilities Engineering Division, under Competitive Placement Plan Announcement 81-26.

Dr. William F. Hunter has been selected Head, Structural Analysis Section, Engineering Analysis Branch, Systems Engineering Division, under Competitive Placement Plan Announcement 81-28.

GWU Has Moved

The GWU/JIAFS Personnel which were temporarily located in Building 1195 have returned to Building 1220. The mail stop is the same (169) but the telephone extension is now 3124.

– photo by Bob Nye

Ira Tate, Management Support Division, has his blood pressure checked by Rosalie McLain in the west area dispensary which was recently modified. A wall was removed to make two small rooms into a large one with three treatment areas--one for suturing, one for treatments and one where stretcher patients may be treated in emergencies. Over 3,250 people have been through the treatment and emergency room this year.

NASA Dog Training School

Dog Show Held at Hampton Convalescent Center

The Hampton Convalescent Center in cooperation with the NASA Dog Training School recently sponsored a pet care responsibility clinic and Kids Dog Show on the convalescent center grounds. The show was the climax of National Nursing Homes Week.

Participants were area children (ages 4–14) from Hampton, Newport News, Poquoson and York County who competed in seven classes with the following first place winners:

Smallest Dog, Poodle, Stephanie Matzgannes, Hampton

Best Looking Dog, Cocker-Poo, Lisa Teichmann, Hampton

Best Behaved Dog, Collie, Jimmy Seawell, Newport News

Best Costumed Dog, Poodle, Jennifer Forrest, Poquoson

Funniest Dog, Poodle-Dachshund Mix, Tina Teichman, Hampton

Largest Dog, Great Dane, Rhonda Casper, Hampton

Best Trick Dog, Beagle-Terrier Mix, Dawn Hedden, Newport News

Best of Show from Best Behaved Dog Class, Collie, Jimmy Seawell, Newport News

Judges were resident/patients of the center assisted by trainees of the NASA Dog Training School. Hampton's Mayor Thomas Gear and his mother (resident of Center) presented the trophies. The Best of Show Dog was selected by audience applause.

In addition to the dog show classes, obedience and field demonstrations were presented by the NASA Dog Training School. Also presented was a gymkana (distraction course), consisting of heeling through tires, walking a plank, jumping over high jump, broad jump, water jump, bar jump, walking over plastic, heeling around a cat and ducks in cages, heeling through a zig-zag chute, and finally jumping the bar jump to cross the finish line. The contestants in the Trick Dog Class chose to race this gymkana course with Dawn Hedden placing first with 25 seconds; Karen Kola and her Fox Terrier of Newport News placed second with 28.75 seconds.

NASA employees' relatives who are patients/residents of the convalescent center are Helen Catlett, mother of Mary Korycinski; Mercedes Figueras, mother of Mercedes Hobbs; and Virginia Diggs, mother-in-law of Charles B. King, ret. The NASA School's association with the convalescent center started in January with periodic showing of dog films, a visitation and showing of film in March, and the pet care clinic and Kids Dog Show in May.

Residents and patients at the Hampton Convalescent Center enjoy the Kids Dog Show recently held on the center grounds.

Thanks

Rupert R. "Monty" Monahan thanks his many friends and associates for their attendance and/or contributions to his retirement party. "Your best wishes, gifts and mementoes are greatly appreciated and will be long remembered," he said.

Alfred K. Curtis writes, "I would like to take this opportunity to give my heartfelt thanks to all who donated blood on my behalf to be used during my recent operation at M.C.U. Knowing I had friends like you in my corner, the operation couldn't be anything else but the success it was."

Ken Heising writes, "A beautiful party was given on April 28, 1981, to celebrate my recent retirement from NASA Langley.

"I would like to thank all those who planned or participated in any way in this memorable event. The food and drink, lavish gifts, and the warmth and friendliness of all were first-class.

"The friendships developed through my NASA service will be remembered and treasured a long time."

Lowell Hasel writes, "My family and I wish to thank all of our friends who attended my retirement party or contributed to the gift. We especially appreciate the efforts of those who planned the occasion and participated in the program. To all my NACA/NASA associates, I extend my thanks for your friendship and assistance over the years. Best wishes for the future."

Ann Bristow writes, "Our family thanks you for the concern you have shown us in the death of our beloved Tom Bristow. Your prayers, your presence, the food so lovingly prepared, the lovely flowers, and your messages of condolence will always be remembered. We appreciate, more than words can say, the way you came to us in our sorrow."

Langley Runners Keep the Tracks Hot

Langley had its best finish in years in the recent 11th Intercenter Running Competition held in April. Langley finished second behind the Goddard Space Flight Center in the 10-kilometer (6.2 mile) event and fourth behind the Goddard Space Flight Center, Ames Research Center and Johnson Space Center, respectively, in the 2-mile event.

At Langley, the 2-mile distance was either run or walked by 25 women and 99 men while six women and 48 men covered the 10 km. NASA-wide participation had 914 go 2 miles and 399 go 10 km. It was the combination of both participation and speed that moved Langley up since both are counted in the scoring.

The names of those who finished in the top 11 in their age groups are listed below. If a runner placed in both events, the numbers in parentheses are his position for the 2 mile and 10 km, respectively.

Tom Moul (11, 11); Bob Foulkes (2, 2); Earl Dunham (3, 6); Jim Fields (9, 8); Larry Spencer (10, 9); John Hoppe (11, 11); Don Humes (2, 5); Gale Harvey (9 in 2 mile); Al Graham (10, 9); Wayne Richardson (10 in 10 km); Ray Haynes (11, 10); Jim Robinson (5, 7); Joe Kubalak (3, 2); Harry Carlson (4, 4); Ed Sullivan (7, 6); Frank Mershon (11 in 10 km); Dianne Stewart (8, 5); Pam Rarig (3, 3); Bernice Becher (6 in 2 miles); Nancy Hess (8, 3); Gaylene Thurston (4 in 2 mile); Edith Spritzer (6 in 2 mile); Shirley Freeman (7 in 2 mile); Mary Ann Smith (9 in 10 km); Karen Sage (6 in 10 km); Linda Rowell (11 in 10 km).

The next Runners' Club event is Ribbon Day scheduled for Thursday, June 25, in the vicinity of the Activities Center. This event will feature a variety of races at several distances to suit everyone's speciality. These races (schedule below) are open to all NASA and contractor employees and their families.

5:00 p.m.	5000 meters
5:45 p.m.	100 meters
6:15 p.m.	400 meters
6:45 p.m.	1 mile 2 x 1 mile mixed relay (one man and one woman each running one mile)

Club members and their families will receive ribbons for reaching new achievement levels. For further information call Larry Spencer, ext. 3681.

Happenings

AFGE. The regular monthly meeting of the AFGE Local 2755 will be held at 4:30 p.m. Wednesday, June 24, in the union office, Building 1232B.

HAPPY HOUR will be held today from 4 to 7 p.m. Music will be provided by "Full Circle," a combo featuring two female vocalists.

LANGLEY HISTORICAL SOCIETY. The Langley Historical Society will hold its second organizational meeting in the Columbus Room of the Officers' Club on Wednesday, June 24, from 11:30 a.m. to 12:30 p.m. The Society will elect officers and discuss future plans at this meeting. Membership in the Society is open to everyone. For further information, call 764-3097.

LIVE CHILDREN'S THEATRE. Rainbow Productions presents an original musical based on the classical favorite, "Hansel and Gretel" at the Peninsula Community Theatre June 19 at 7:30 p.m., June 20 at 2 p.m. and June 21 at 2 p.m.; and at Syms Jr. High School June 28 at 2 and 4 p.m. Admission is $2.50 for children, $3.50 for adults. For information, call 851-3242.

LAA GENERAL ASSEMBLY. A special meeting of the LAA General Assembly will be held Tuesday, June 23, at 9 a.m. in the Activities Center. Plans for the carnival and July 4 picnic will be discussed.

National Aeronautics and
Space Administration

Langley Research Center
Hampton, Virginia
23665

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Farewell Parties

McCreary "Mac" Beasley, Operations Support Division, will be honored with a retirement luncheon Wednesday, July 1, at 11:30 a.m. at the Activities Center. The cost including gift will be $6.50 per person. Contributions to gift only are welcome. Send money or check to Ann Bell or Bob Schwartz, Mail Stop 286, by June 26.

Friends and associates of **Louise Williams** are invited to an informal reception at Happy Hour today from 4:30 to 5:15 p.m. Williams is leaving NASA after eight years of service to pursue other interests.

Verniel Wins Drawing

Pamela J. Verniel, Office of External Affairs, has won the June drawing held for registered car pool participants. Verniel was presented $20 by the Langley Exchange Council.

Langley Receives Letters

Hamburgers in Space

Dear NASA,

Now that the Space Shuttle has proven successful (congratulations to you and the crew of the Columbia!), there are going to be a lot more people going into space. As I understand it, space is pretty big, and someone could easily get lost up there wandering around looking for his spaceship. To keep these people from starving in the middle of their journey, I would like to have Emergency Space Meals (ESM's) at several strategic locations in the Earth's orbit.

Each ESM will be preapred by McDonald's and will consist of a Big Mac, regular fries, large Coke (with extra ice), and a hot apple pie. These items along with a straw and napkin will be placed in a medium-sized bag with the golden arches adorning the exterior. McDonald's informs me that this package would weigh precisely 998 grams, and I would like to have about a hundred Emergency Space Meals jetisoned in a fairly uniform manner in the Earth's orbit. What would you charge for carrying a payload of 99.8 kilograms into space and then distributing the one hundred packages all around?

Do you think that one hundred is enough? If not, I will have to buy more. This will give me a head start at least.

McDonald's has advised me that on Earth the ESM's would need to be replaced every ten minutes for maximum freshness, but I think they will last longer in space. What do you think about this?

Please include a shedule of upcoming shuttle flights with your reply so that I can plan ahead. Thanks for your help.

Sincerely,

Blake Austin

Blake Austin

swap and shop

FOR SALE

Articles

Trumpet, Bundy student, GC, $140. Call Boyden, ext. 3711 or 898-5833.

Baby Grand Stuyvesant Piano, needs new tuning pins, case and keys in VGC. Call Burlock, 868-6500.

Golf Clubs: Wilson Blue Ridge, reg. no., left hand, match set, 4 woods, 2 through S.W. irons, putter, Wilson bag and cart, EC, $125. Call 722-7824.

Wurlitzer Piano, Mahogany wood, VGC, $300. Call Nye, 596-8845.

Vehicles

1979 Chevrolet Monte Carlo, AT, PS, PB, AC, ED, 1,600 miles, new tires, mag. wheels, $6,000. Call 827-6064 after 5 p.m.

1939 Ford split-window coupe, VGC, disassembled; excellent for original restoring; $1,000 OBRO. Call 723-2562.

FOR RENT

Water front cottage on peninsula jutting out in sound at Hatteras. Beautiful view, crabbing, fishing, swimming right at cottage. Liv.-Kit.-Din., 4 BR, 2 B, 2 P, DW, nicely carpeted and panelled. $300/wk. Call 877-3736.

Low cost vacation: "Buzzards Roost" on Hatteras Island at Frisco. Oceanside, 50' house trailer, furnished including dishes; 2 BR, full bath, sunporch, outside shower, AM/FM stereo, walking distance to beach and fishing pier, 5-min. drive to Sport Fishing Center and charter boats; $155/wk, weekends also available. Call Fogle, ext. 2651.

Sandbridge: Cottage with 4 BR, AC, phone, liv.-din.-kit., one-half block from ocean, $125/wk. Call Kent, 420-8391.

WANTED

Will the person who borrowed "Elements of Map Projection with Applications to Map and Chart Construction" by C. H. Deetz, please return it to Dariene DeRyder, Mail Stop 364.

Car pool from Virginia Beach, College Park area. Call Amy Young, ext. 3325.

Ride or car pool from Grafton to East area on 7:30 a.m. shift. Call Belinda Adams, 898-9040.

To join or form car pool from Norfolk (Bayview area) to West area on 8 a.m. shift. Call Keller, ext. 4508 or 588-3173, after 5:30 p.m.

cafeteria menu

WEEK OF JUNE 22

MONDAY: Old Fashioned Bean Soup; Baked Lasagna; All-Vegetable Chicken Loaf; Fried Fish Nuggets. Snack Bar: Hot Italian Sausage Sub; Charcoal Hoagie; Egg Salad.

TUESDAY: Manhattan Clam Chowder; Breaded Pork Steak; 1/2 Baked Chicken; Shrimp Creole. Snack Bar: Chicken Cutler; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Roast Turkey Dinner; Spinach & Bacon Quiche; Breaded Mexican Steak. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Gumbo Soup; Meat Loaf; Chicken & Dumplings; Crab Nuggets. Snack Bar: Ham & Cheese Club; BBQ; Chuckwagon.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Broiled Beef Liver; Knockwurst Reuben. Snack Bar: Deluxe Sub; Hot Ham & Cheese; Tuna Salad.

WEEK OF JUNE 29

MONDAY: Ham & Lima Bean Soup; Hot Roast Pork Sandwich; Crab Cutlets; Beef Pot Pie. Snack Bar: Hot Italian Sausage Sub; Charcoal Hoagie; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Spaghetti Dinner; Shrimp Chow Mein; Polish Sausage. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; Broiled Pork Chop; Red Chili Burritos. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Vegetable Soup; Braised Chicken Livers; Fried Ocean Perch; Sicilian Chopped Steak. Snack Bar: Ham & Cheese Club; BBQ; Chuckwagon.

FRIDAY:

HAVE A SAFE INDEPENDENCE DAY!!

Thought for the Day

"There are two types of people who are dissatisfied: those who simply sit and grunt and feel sorry for themselves, and those who try to change things to make them better."

Bernard Benson
Inventor and Scientist

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

Volume 20 Issue 13 July 2, 1981

Director's Comments

Hearth Takes Action to Improve Research Environment

Last summer, Roger Anderson conducted, at my request, a study of Langley's research environment. He talked with many researchers at the Center and summarized their recommendations for improvement. I met with Roger and many of the researchers last fall, and promised to consider their report and to provide feedback. I had planned to write this article a few months ago to provide the feedback. It was delayed until now for reasons independent of the report.

The thrust of each of the five major areas of recommendations from the Anderson Report is summarized below. This is followed by my comments that summarize actions we have taken, or plan to take in the near future.

1. Achieve critical mass and skill mix on priority efforts.

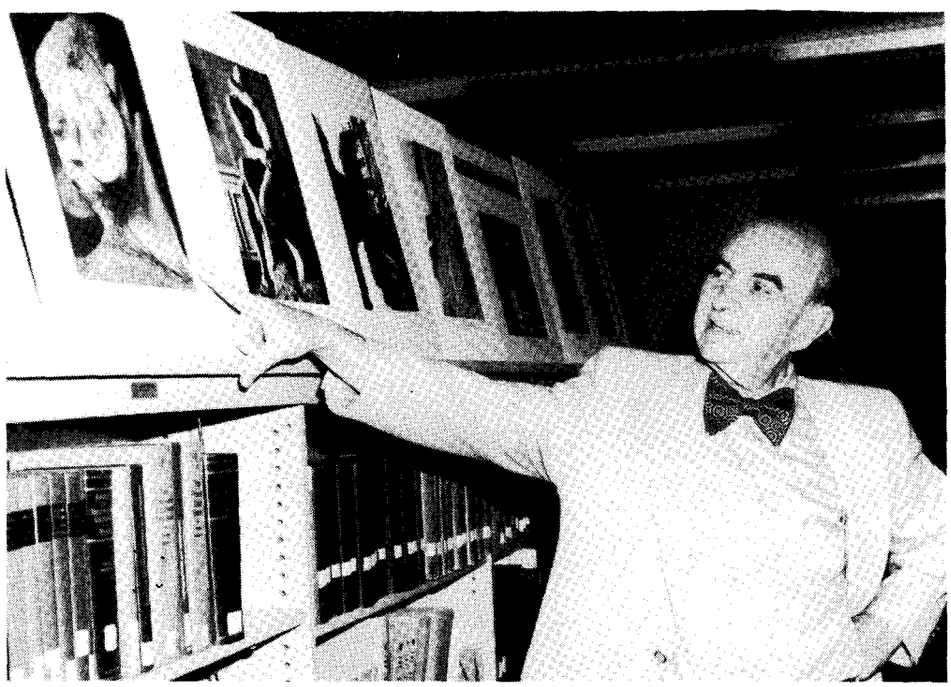
This recommendation focuses on a concern relative to our ability to maintain progress and a quality effort on our diverse program, and also whether we are addressing the most significant research opportunities. The Anderson Report recommends that we develop a compendium of all our research tasks, match them with our competencies and national needs, and critically assess the adequacy of the resources we are focusing on the high-priority opportunities so we can identify organizational deficiencies. Any realignment recommendations would then be presented to me for review and appropriate action.

Comments:

We essentially do what is proposed. However, it is done through the line organization rather than through an ad-hoc off-line approach. In my view, this is the appropriate way to work such questions. Each of the four research Program Directors is held responsible for assessment of the direction and content of the research programs in their Directorates. They consider potential needs of the users, technical opportunities, and Langley's ability to contribute (capability, skill mix, critical mass, etc.). Mr. Petersen, Dr. Hohl, and I review the results each year during our review of the Program Objectives and the RTOP's. The Peer Review system provides useful supplementary information. In addition, the Senior Staff periodically discusses where Langley, as a Center, should be going and how that matches the Center's capabilities, user needs, etc. For example, we are now preparing for a day-long review during July of the Langley program for the next several years. (This is in preparation for a planning session I expect to have with the new NASA Administrator and his Deputy this summer.)

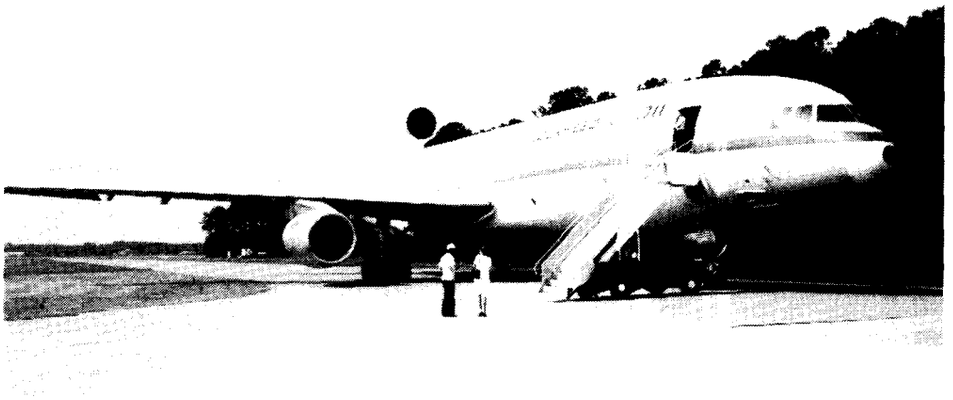
I would also like to comment on a related topic; i.e., projects. While not included in the Anderson Report, I have often been asked why Langley is engaged in "projects" since we are a research laboratory. While research is the Center's

Continued on page 2.



– photo by Bob Nye

Dr. P. Stephen Barna, Professor Emeritus of Mechanical Engineering at Old Dominion University and now working at Langley on a grant to improve the V/STOL Tunnel, discusses his photographs on display in the Technical Library. Barna's black and white photographs are of Dubrovnik, Yugoslavia; Vietnam; Paris and Annecy, France; Hungary; and Norfolk, Va. Photographs of Europe taken by Barna will be featured in the near future.



– photo by Bob Nye

Lockheed California Company's flight test L-1011 TriStar, a fully instrumented wide-bodied jetliner dedicated to research and development of advanced commercial aircraft systems, was demonstrated to NASA, U.S. Navy and FAA representatives around the United States from June 21 through July 1. Discussions and demonstrations were held at Langley June 24 and 25 to explore how the aircraft could be used in government programs aimed at developing advanced systems and improving aircraft fuel efficiency, such as measuring fuel temperatures at cruising altitudes. Other features demonstrated include the new digital autopilot, which offers automatic landing capability combined with the accuracy and reliability of digital avionics; a drag reducing wing span extension made possible by a system of automatically activated control surfaces; direct lift control for more precise landings; a full-flying stabilizer to provide more positive control; automatic braking with selectable pressures; and an on board weight and balance system with flat tire monitoring.

Hearth Takes Action

Continued from page 1.

primary mission, projects are vital to us. In some cases, they permit our researchers to do their research. One example of this is the management of instruments such as ERBE, which will result in a space flight experiment that is required for our Earth Radiation research program. Another example is the National Transonic Facility, which will be a very important tool for future aerodynamics research. The Center is managing the design and construction of NTF as a project in order to meet its performance, schedule, and cost requirements. In other cases, projects provide a focus for our in-house research, encourage industry to pursue high-risk R&D, and assist in technology transfer to industry. The ACEE project illustrates these reasons for projects at Langley. Thus, the successful implementation of "projects" at Langley is important to successful research at Langley.

2. Upgrade management performance.

This recommendation addresses the perception of some Langley researchers that management does not work hard enough at those things that are important to the researcher's performance and motivation. The Anderson Report recommends that the Merit Pay Reform System be used to reinforce managers' position descriptions with some specific improvement actions for the next performance period, that "subordinates" be allowed to help evaluate their superior's performance, and that merit pay could be supplemented with "research sabbaticals" for outstanding managers. If a Branch Head or Division Chief is a strong personal contributor to the organization's research, the Anderson Report recommends that his (or her) assistant be effective in research administration so the rest of the organization doesn't become bogged down in administrative matters.

Comments:

A number of actions have been taken in response to these suggestions. For example, I have recently stated my views relative to the roles of Division Chiefs and Branch Heads. The principal roles of both are to develop and lead research programs, as well as to develop the staff and facilities needed for the research. The Branch Heads, as the principal technical leaders, can be involved in personal research. Division Chiefs, on the other hand, generally should not be extensively involved in personal research. I have encouraged the use of Assistant Branch Heads and Assistant Division Chiefs, and in the last year, a number of individuals have been appointed to such positions. These individuals share in the management/administrative burden of their organization. In research divisions, the use of "Chief Scientists," or similar positions, has also been introduced more than in the past. Such a position represents the culmination of someone moving up the technical side of the dual ladder.

We have also emphasized the importance of the research environment to all levels of supervision at Langley. Performance appraisals are being used to emphasize the importance of the program and program accomplishments, as well as actions associated with enhancing the environment at Langley for innovative research. In addition, we have emphasized to all supervisors the importance of, and their responsibilities for, employee development and career counseling.

I do not believe in having "subordinates" participate in the evaluation of their supervisor's performance. Thus, I will not implement that recommendation from the Anderson Report.

3. Increase technical communications.

The Anderson Report suggests that people at Langley who should be talking, interacting, or working together, are generally not doing so as effectively as they might. The Report recommends that we replace the Monthly Status Review with a broadly--attended and more-frequently-held weekly "Research Forum" covering one of Langley's research areas at each forum with some additional presentations by authors of

Continued on page 6.

The *Langley Researcher* as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond
Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

– *photo by Bob Nye*

Walter L. Sykes (right), Contract Manager for the Klate Holt Company facility and equipment maintenance contract at Langley, receives the Plant Engineer of the Year Award from Charles R. Schilling, Assistant Chief of the Plant Engineering Division. Schilling is the Vice President-elect of the Tidewater Virginia Chapter of the American Institute of Plant Engineers.

Sykes Named Engineer of the Year

The American Institute of Plant Engineers has selected Walter L. Sykes as Plant Engineer of the Southeastern Region for 1980. Sykes is Contract Manager for the Klate Holt Company facility and equipment maintenance contract at Langley.

The AIPE consists of 10,000 professional plant engineers and maintenance managers dedicated to the advancement of engineering practice and management applied to manufacturing and service facilities in the public and private sectors. The professional society is affiliated with similar organizations in 28 other countries.

AIPE is composed of six regions nationwide. The Southeastern Region, with 20 chapters and over 900 members, covers an area from Virginia to Florida and Mississippi.

Sykes was the first President of the Tidewater Chapter AIPE and formerly Vice President and Director of the New England Region AIPE in Boston. He received bachelor and master of science degrees from Northeastern University, Boston.

LAA Plans Carnival Activities

Poster Contest

Enter the Carnival Poster Contest! The winning poster will be used to advertise the Carnival.

Prizes will be awarded for the most original poster to two age groups-adults and children 16 and under.

Submit your entry to Fran Sabo, Mail Stop 286, by July 13.

Carnival Weekend

The Langley Activities Association will sponsor the 1981 Carnival August 28 and 29 on the picnic grounds.

Special activities are being planned, including the crowning of a 1981 Carnival Monarch, sky divers, musical groups and different types of ethnic dancers. There will be rides and games for children and Bingo, a casino and acts and crafts for adults.

The Grand Prize for Friday night will be $1,200 and for Saturday night a cruise for two plus $200. A video casetts recorder will be given away Friday and $500 of gasoline will be given Saturday. Smaller prizes will be awarded every half hour during the Carnival.

Visitor Center Plans July Special

The Langley Visitor Center has scheduled several special programs during July.

For ham radio operators or those who would like to learn more about ham radio communications, members of AMSAT, a group of amateur radio operators who also builds satellites, will present a program from July 1 through 12.

Displays of radio equipment and antennas used for satellite communication and a prototype model of the Oscar 7 amateur radio satellite will be featured. A 30-minute video presentation, "The World of Amateur Radio," will be shown at 10 a.m., 12 and 3 p.m., Monday through Saturday, and at 12:30 and 3 p.m. on Sunday. Ted Mathewson (W4FJ), the AMSAT Coordinator for the state of Virginia, will speak on "Space Communications with Amateur Satellites," Sunday, July 5, at 2 p.m.

For children between the ages of 4 and 8, "Exploration 1981" will be presented at 9 a.m. on weekdays from July 6 through 31.

Because "Exploration 1981" is limited to 30 children each day, reservations are necessary. To make a reservation, contact the Langley Visitor Center at ext. 2855. All children must be accompanied by an adult.

Noon Crowding in the Cafeteria

Long lines are here again -- in the cafeteria -- and employees can be of help by shifting their lunch breaks slightly during the months ahead.

The cafeteria is operating close to its capacity, serving over 1500 people each lunch period. Because of the crowded conditions, employees can help the situation by eating before 11:30 a.m. or after 12:20 p.m. This will help alleviate long lines and help the cafeteria staff to better serve the employees. The cafeteria is open for lunch from 10:45 a.m. to 1:15 p.m.

So, to ease the crowded conditions in the cafeteria, the short-term solution is to reschedule lunch breaks. The long-term solution is an addition to the building which is planned for 1983.

NASA Works
Toward Energy-Absorbing Light Plane Subfloor

– by Keith Henry

A promising concept for protecting people in lightweight airplane crashes is so simple one wonders why it wasn't thought of long ago: Why not make the bottom of the fuselage energy absorbing?

Since the mid-1970s, NASA and the Federal Aviation Administration have been working in a joint research program to improve the general crashworthiness of light planes. In 1977, they added an in-depth look at the energy absorbing possibilities of the fuselage subfloor.

By redesigning the area between the interior floor and the outer skin of the airplane's belly, researchers at Langley hope to reduce the forces transmitted to people inside the plane. In addition to modifying the airplane's basic structure, other work is aimed at improving the crashworthiness of seats and restraint systems.

Americans own a great number of these lightweight, general aviation airplanes and each year many are involved in accidents. The NASA/FAA goal is to give people a better chance to walk away from potentially survivable crashes than is now possible. A subfloor that would be more than strong enough to bear the stresses of flight, yet immediately crush under the force of impact at a predetermined level, may make an important difference.

Phase one of a series of tests has just been completed at Langley. Dozens of energy-absorbing subfloor concepts were considered before five concepts were selected and designed. Several copies of each were fabricated into subfloor sections about one and one-half meters (four feet) square, the typical width of a civil airplane interior at the floor.

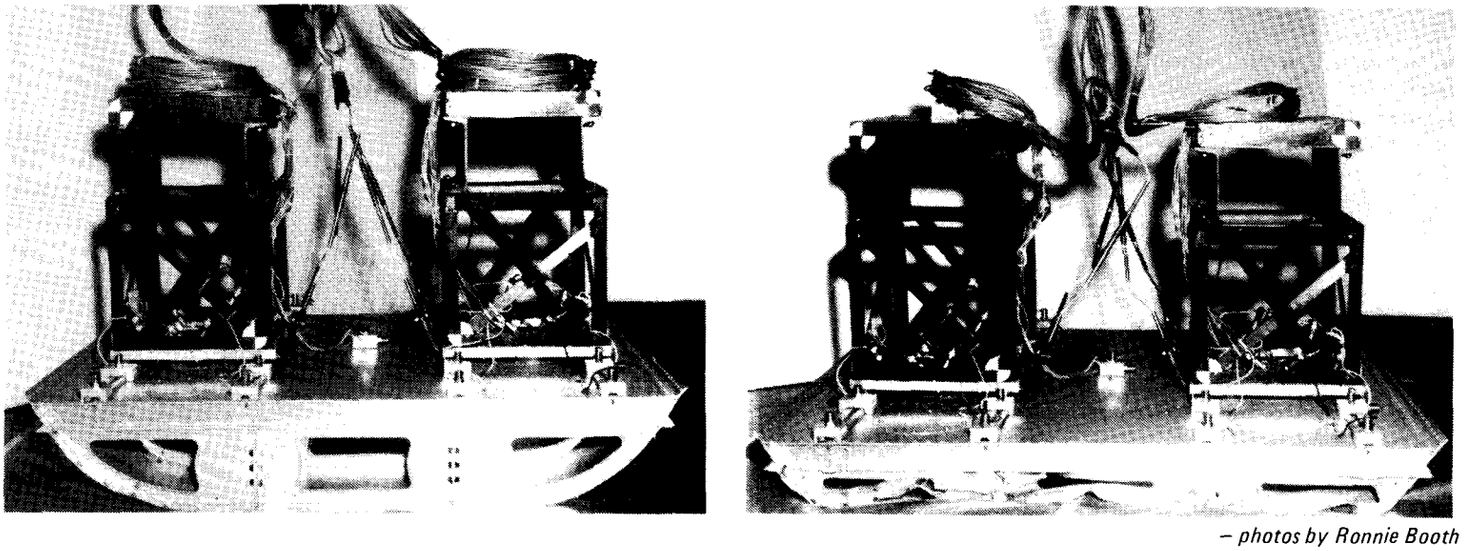
Subfloor sections representing each concept were first tested in a mammoth machine that slowly compressed them with a force equal to that experienced in an average crash. The remaining sections were then hoisted to a height of about three meters (nine feet) and dropped, simulating the vertical component of an average crash. Each subfloor section had mounted to it the equivalent mass of two seats and their occupants.

Some subfloor designs performed better than others but, in general, the concept of transforming a six-inch subfloor, with its stiff longitudinal beams and lateral bulkheads, into a six-inch crush zone with collapsible members was proven worthy of further testing.

"For the purpose of our work here," says Huey Carden, "we use a government design guide that says a human being in top physical condition and held well by a restraint system can tolerate 25 forces of gravity (G's) in a vertical direction before the onset of internal injury. Much greater than that will usually result in serious injury or death." Carden is an aerospace engineer at Langley's Impact Dynamics Facility who, along with fellow engineer Robert Hayduk, has written a paper documenting the subfloor tests.

Theory indicates that a velocity change of about 16 miles per hour at 25 G's crushing force is the maximum energy a six-inch subfloor can absorb. Tests of the subfloor sections have proven that the Carden-Hayduk design concepts are on the right track and getting near the maximum amount of energy absorption possible.

"We didn't know if our subfloors would behave the way we wanted them to," reflects Carden, "but all three of the completely new subfloor concepts performed as we hoped they would and one of the two minimum modification, or 'mini-mod', concepts performed well, too. One mini-mod did not fully crush at the level it was designed to crush, passing on higher forces of impact than it should have. We still think it has potential, though, and are continuing to work with it. A mini-mod is an energy-absorbing design that would require a manufacturer to make only relatively simple modifications, while a



– photos by Ronnie Booth

Before testing, this experimental subfloor section looks similar to a standard subfloor. Note the sturdy floor (left photo) and, in the subfloor, the notched "cutouts" at the juncture of the vertical beams (hidden in this view) and the perpendicular braces. After the drop test, strategically-located instruments confirm that the "crush zone" has done its job of energy absorption, while the floor has obviously remained intact (right photo). The two darker structures, with their lead weights on top, represent airplane seats and their occupants.

so-called 'advanced' concept uses a more radical design departure.

"Overall, we're very proud of the experimental subfloor sections we've designed and built. In addition to providing a measure of safety, their weight is comparable to existing subfloors and they have just as much cross-sectional stiffness as existing subfloors."

With the help of a well-designed subfloor, further protection is possible through the use of energy-absorbing seats. An airplane seat is capable of absorbing even more energy than the subfloor, allowing the occupant several additional vertical inches to come to rest in a crash. Before the seat and subfloor combination can be totally effective, however, the cabin floor must do its job. Typically, a two-inch floor is attached to the top of a six-inch subfloor, and seats are attached to the floor.

Quite often in a crash, the force of impact and the occupant's forward momentum will cause the floor to buckle and the seats to rip loose from the floor. In their drop tests, Carden and Hayduk demonstrated that a reinforced floor will not break apart in an average crash when the force of impact is moderated and distributed uniformly through a crushable subfloor.

Meanwhile, two of the more promising subfloor designs are being fabricated for testing in full-scale crashes at Langley's Impact Dynamics Facility. One advanced section and one mini-mod, each measuring nearly three meters (nearly nine feet), will be built into the bottom of full-size, twin-engine pressurized airplanes. The sections will serve as the subfloor for the passenger area in each plane. A third crash test is planned with a standard subfloor in order to compare the difference.

The advanced concept chosen for this second phase of testing uses corrugated vertical beams inside the subfloor, replacing the unyielding flat beams in a standard subfloor. Small squares of metal were also cut from aluminum corner attachments where the beams and bulkheads meet at right angles. In the mimi-mod concept chosen, only the cutouts are used. In both cases, cross-sectional stiffness is preserved but "loads" approaching crash levels will cause the structure to give vertically.

In the full-scale crash tests, the planes will be swung by cables, pendulum style, from the top of an outdoor gantry onto a concrete-floored test section more than 200 feet below. The cables will be pyrotechnically severed at the last moment and the rocket-assisted planes will freely impact at a forward speed of 75 to 80 miles per hour.

Batteries of motion picture and still cameras will document the collapse and contortion of the airplane fuselages to record just how well the subfloors perform, while instruments on board will measure the impact forces.

Each of the test series contributes data for computer analyses of crash dynamics. The ultimate aim of the NASA/FAA Crashworthiness program on subfloors and floors is to learn enough about their structure to use computer predictions in place of actual testing.

"Of course, we don't design airplanes," Carden explains, "all we can do is provide the technology -- a data base -- to manufacturers and hope our general concepts will eventually work their way into the aircraft structure and save lives. There is a need for it. In 1980, according to a recent report by the National Transportation Safety Board, 1,375 Americans lost their lives in 3,799 general aviation accidents."

Retirement Parties

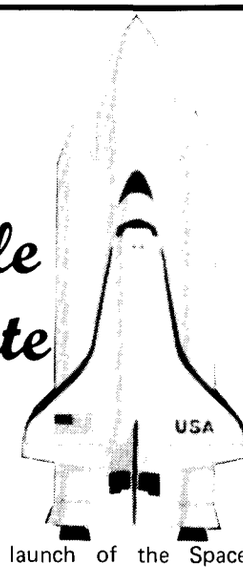
T. W. E. "Eddie" Hankinson will be honored at a retirement party July 30 at the Langley Officers' Club. A cash bar social hour will begin at 6:30 p.m., followed by dinner at 7:30 p.m. The menu will be chicken cordon bleu, baked potato, green beans and tossed salad. The cost is $8.50 per person or $16 per couple, which includes donation for gift. Make check payable to EAB Social, and send to D. Swofford, Mail Stop 431, by July 15.

Dr. Robert Krieger, Director of the Wallops Flight Center, is planning to leave the government after over 42 years of service.

There will be a party at Langley honoring Bob Krieger Friday, July 24, at the Activities Center, Building 1222. The evening will begin with a cash bar at 6 p.m., followed by a buffet dinner. The cost of the dinner is $9 per person.

If you plan to attend or if you are unable to attend but wish to contribute to the gift, please send a check, made payable to Agnes Lindler, to Mail Stop 115 by July 17.

Space Shuttle Update



The second launch of the Space Shuttle Columbia remains on target for Sept. 30 from Kennedy Space Center.

The remote manipulator system, which will be tested during the flight, was installed June 20 and 21. The manipulator system will enable the Shuttle to deploy satellites from its payload bay and retrieve them from space.

Mating of the external tank and the solid rocket boosters began June 29 and was expected to be completed this week. The external tank is scheduled for mating with the Orbiter later this month.

Installation of the OSTA-1 pallet into the Orbiter's payload bay was scheduled to begin July 1. The payload, which includes two Langley experiments, is designed to demonstrate the Space Shuttle's capability as an operational platform for scientific and application's research.

The two Langley experiments are the Feature Identification and Location Experiment (FILE) and the Measurement of Air Pollution from Satellites (MAPS).

The primary goal of FILE is to test a technique for autonomously classifying the Earth terrain into four categories or features: vegetation, bare land, water and clouds/snow/ice. The MAPS experiment is designed to measure carbon monoxide circulation patterns and concentrations in the Earth's troposphere. The performance of the MAPS instrument will be evaluated under various temperatures and other environmental conditions encountered during flight.

Hearth Takes Action

Continued from page 2.

recent papers; appoint a senior person on the Director's staff to arrange the forums, and interact with the researchers and initiate task group studies of important technical issues facing the center for presentation to management; and finally, to more greatly utilize the *Langley Researcher* to increase communication among our researchers.

Comments:

I plan to retain the Monthly Status Review, but place more emphasis on research presentations. This will be done by eliminating the Program Directors' highlights and focusing on more research presentations. In addition, we will more widely advertise the agenda of the Monthly Status Review so that interested researchers may attend talks of particular interest.

We review most papers to be presented at outside technical meetings. These reviews could be set up to make it convenient for interested Langley researchers to attend, and we will consider this possibility. Also, we invite, to Langley, a large number of well-known lecturer consultants. Their lectures will be better publicized. Finally, I plan to increase the use of the *Langley Researcher* for technical communications, meeting announcements, and overview of research highlights.

4. Upgrade career development program.

The Report perceived a need at Langley for a career counseling program encompasing a spectrum of employee needs beyond the role of the Training and Educational Services Branch. The program would serve new employees, those who are unmotivated and need a change, and those at a mid-career point who are seeking new opportunities. The recommendation was for new and comprehensive orientation programs for new hires, an ongoing career guidance service where employees could confidentially discuss their problems, and authority for such a service to negotiate with line management on personnel changes and actions.

Comments:

I think we are doing a great deal in this area. This includes our supervisory training, the establishment of the career development and counseling activity under the Personnel Division, and the requirement levied on supervisors relative to their responsibility for staff career development. We also plan to provide one document to Langley employees containing information on all available graduate study and career development programs.

With respect to personnel transfers within the Center, I encourage transfers when they are in the best interest of an employee's career development and/or the organization as a whole. I know the Senior Staff supports this philosophy. I think we are doing farily well in this regard, despite the many difficulties.

For new employees we are providing a markedly-improved orientation program, as well as counseling on advanced education programs. The improvements include a restructuring of the orientation for a better overview of each Directorate's work, a variety of tours, and hands-on activities to minimize sit-down briefings. In addition, I attempt to meet with most of the new hires in small groups in order to provide them with my views of the Center, and to answer their questions.

5. Review and upgrade processes which reflect on professional standards.

The Report indicates that there are a number of recurring internal processes and functions carried out at Langley that, in themselves, can have a strong effect on the morale of our researchers. The Report recommends that we should strive to minimize the delays and frustrations that the researchers are subject to as a result of the editorial and rehearsal processes for papers and presentations; orient our employees to understand the criteria that are applied in decisions with respect to which researchers are allowed to travel to meetings and how correspondence is to be handled; strengthen the promotion process criteria so that mechanical rules of time in grade and number of reports written be dispelled as real or imagined determinants of promotability, to be replaced by the concept of functioning and contributing at a higher intellectual and experience level; and, finally, increase the access of our researchers to interactive computer terminals as much as possible.

Comments:

Relative to the editorial and review process, a recent comparison of Langley with other NASA centers illustrates that Langley publishes NASA reports faster than the other research centers. While we will continue to improve our current performance, the amount of publication time currently required at Langley is not excessive. We will also streamline the process for publishing journal articles by recognizing that the most important review is the one performed by the journal's reviewers. I feel that the contents of such papers should primarily be the responsibility of the researcher and his next-higher level of management, rather than extending up to the Directorate level. While it may seem a small point, I believe our researchers should sign the letters of transmittal of journal articles. This is done in several other NASA centers, and will be done at Langley.

The Anderson Report recommendation on promitions provides me with an opportunity to reiterate my view on the use of time in grade as a promotion criteria. For several years, I have stated that the principal criteria for promotion must be merit. Time in grade should only be used as a tie breaker. I recognize that this is not universally applied at Langley. I do believe, however, that we have made progress in the last few years. For researchers, publications are clearly a factor in the promotion decision process. As far as possible, we examine publication quality and content, rather than the number of publications.

Computer terminal availability is an area that I strongly support. A few years ago, I authorized a 30% increase in the total number of our interactive terminals, and we continue to examine the situation on an annual basis during the institutional budget review.

In summary, the study conducted by Roger Anderson last summer was very helpful. It highlighted some concerns of which I was aware. It also brought up some that were new to me. I either have, or will implement the intent of many of the Report's recommendations -- not all, but many.

Recent Retirees

McCreary G. Beasley, Operations Support Division, retired June 12.

Robert F. Emond, Flight Electronics Division, retired June 19.

Happenings

TENNIS CLUB. The Langley Tennis Club will sponsor a tennis tournament for men 35 years and older July 9–13. The entry deadline is July 4 at 5 p.m. and the fee is $6. Entry forms are available at the tennis courts or can be obtained from Dennis Bartlett, Mail Stop 158.

TIDEWATER DINNER THEATER. "Show Boat" is playing at the Tidewater Dinner Theater in Norfolk. Tickets are on sale at the Activities Office for $13.50 each.

PICNIC. The annual July 4 picnic, sponsored by the LAA, will be held on the Activities Center Grounds beginning at 10 a.m. Food, drinks and beer will be sold. Planned activities include volleyball, 1-mile race, egg toss, tug of war, 3-legged race, wheelbarrow race and watermelon-eating race. Tickets to Busch Gardens, Kings Dominion and movie theaters will be given as prizes. Raffle tickets for the 1981 Carnival will be on sale.

HAPPY HOUR is cancelled for tomorrow, July 3, due to the holiday.

CARNIVAL MONARCH CONTEST. The LAA is looking for candidates for the Carnival Monarch Contest. Anyone interested in running should contact their LAA delegate. First prize is $100, second is $50 and third is $25. Deadline for submitting names is July 10. For more information, call Fran Sabo, ext. 3611.

SPACE SHUTTLE PRINTS as well as many other Shuttle oriented gift items, are now available from the Visitor Center Souvenir Counter. Of particular interest is a set of eight, full-color 8" x 10" photos, of the Columbia launch and landing at $5 per set. Numerous other space photos are available in 5" x 7", 8" x 10" and 16" x 20" sizes. For more information call ext. 2198.

THE COLLEGE OF WILLIAM AND MARY'S Special Programs Office is featuring some new courses this summer as well as repeating some popular favorites. New programs include a study of cheeses, pocket billiards, a basketry workshop and retirement planning seminars. Other summer courses include sign language, body beautiful, CPA exam preparation and soccer for children. For more information or a free catalog, call 877-9231, ext. 63.

Researcher Readers Respond

In the April 24, 1981 issue of the *Langley Researcher*, employees were asked to give their opinions of the paper by completing a questionnaire for the staff to evaluate.

Three hundred eleven employees, or 10.4 percent of the Langley complement, responded to the survey. The effectiveness of the house organ and the types of articles preferred by the readers have been determined, based on the fair sample.

The results of the survey are shown below:

Questions	Responses
1. Do you usually read the Langley Researcher?	Yes 96.5% No 3.5%
2. Do you think the Researcher should keep you informed about Langley research programs?	Yes 79.1% No 19.9% Non-Committal 1.0%
3. Do you think the Researcher should keep you informed about Langley management programs, such as personnel actions, insurances, awards, training, and fellowships?	Yes 89.4% No 8.7% Non-Committal 1.9%
4. Do you enjoy reading articles on Langley employees (People at Work, Personnel Profiles and Personal Opinions)?	Yes 84.9% No 13.5% Non-Committal 1.6%
5. Should the Researcher place more emphasis on:*	
A. research programs?	A 18.0%
B. management programs?	B 12.2%
C. employee activities, such as LAA-sponsored activities, dance exercise classes, Happenings?	C 32.8%
D. no change needed.	D 44.7%
E. no designation.	E 2.6%
6. Do you think the Researcher is a good way for the Office of the Director to communicate with employees?	Yes 89.4% No 10.6%
7. If so, how often?	
A. monthly	A 36.7%
B. quarterly	B 38.0%
C. semi-annually	C 9.6%
D. annually	D 1.6%
E. no time frame	E 3.5%
8. Are you interested in stories about work at other NASA centers (excluding Langley)?	Yes 49.5% No 48.2% Non-Committal 2.3%
9. Do you take the Researcher home for your family to read?	Yes 47.9% No 49.8% Non-Committal 2.3%
10. Which of the following categories fits you?	
A. Clerical	A 51
B. Aerospace Technologist (AST)	B 135
C. Technician and Wage Grade	C 61
D. Administrative/Professional	D 62
E. Retiree	E ----
F. No job category	F 2

*In this survey, employees provided feedback as to where they desire more emphasis. Three hundred forty-three answers were given by the 311 employees responding. Some employees think greater emphasis should be placed in more than one of the areas indicated.

Based on analysis of the survey, Langley employees are generally satisfied with the variety of topics published in the *Langley Researcher*. The staff will strive to maintain a good balance by printing news about Langley research and management programs, employee activities and work at other NASA centers.

LAA Travel

(Editor's note: The LAA offers many interesting vacations at discount prices that employees may want to consider. I recently returned from a Bermuda cruise, which was arranged by Ernie Greene. It was the most relaxed vacation I have ever had. The cruise was delightful, the entertainment was enjoyable, the food was delicious and Bermuda was beautiful. I look forward to enjoying another cruise in the future.)

Tahiti is being added as an optional stop-over along with Los Angeles, San Francisco and Hawaii on the Australia, New Zealand Tour, October 10 through 28. Tahiti will be offered on the return leg of this trip.

Enjoy Labor Day Holiday on a party cruise to nowhere, September 5 through 8, or cruise to Bermuda for a week, September 8 through 15, on the Mardi Gras. Both cruises sail from Norfolk and you can still take advantage of the 10 percent discount per person (based on double occupancy) on either sailing.

Las Vegas and Hawaii discounted packages are also available from Norfolk with weekly departures.

Contact Ernie Greene, ext. 2312 or 838-0567 or the Activities Office, ext. 3139, for details and brochures.

National Aeronautics and
Space Administration

Langley Research Center
Hampton, Virginia
23665

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Thanks

Rudy Segura writes, "The friendship and support that Langley personnel afforded me in the recent death of my wife, Gloria, has been a great source of inspiration for me. For your kind words and deeds, a heartfelt thank you from me and our son."

Counseling Office is Open

Summer employees, if you have any questions, the Summer Counseling Office will be pleased to help you. It is located in Building 1195, Room 110, ext. 2589. Two counselors, Linda A. Pennington and Demetrius V. Windom, will try to answer questions and give guidance to problems that may arise during your summer stay at Langley. Be sure to drop by and meet them.

Reeder Presents Slides

Retired Langley Test Pilot Jack Reeder will present slides from his New Zealand trip Wednesday, July 15, at the Langley Visitor Center. The one-hour program will begin at 4:40 p.m. The public is invited to attend.

Recent Retirees

Robert D. Lindeman, Operations Support Division, retired June 24.

Juanita D. Parker, High-Speed Aerodynamics Division; **William J. Black**, Operations Support Division; and **Martin T. Moul**, Flight Dynamics and Control Division, retired June 26.

swap and shop

FOR SALE

Articles

Gas stove: Tappan 30" white, propane, good condition, $35. Call Tuck, ext. 3315 or Norfolk 466-8562.

FOR RENT

Courthouse Green: Townhouse, 3 BR, 1½ BA, large eat-in kitchen, fully equipped, utility room, fully carpeted, many extras, $320 mo. Call 599-4321.

Sandbridge: Cottage, 4 BR, AC, phone, liv.-kit.-din. area, one-half block from ocean, $425/wk. Call Kent, 420-8391.

WANTED

Car pool from Virginia Beach, Arrowhead area near Newtown Rd. Call Janet Schultz, ext. 3681.

Retirement Party

Martin T. Moul, Flight Dynamics and Control Division, will be honored with a retirement dinner Wednesday, July 22, at 6:30 p.m. at the Activities Center. The cost including gift will be $10 per person or $19 per couple. Contributions to gift only are welcome. Send check to Virginia Marks, Mail Stop 152A, by July 10.

cafeteria menu

WEEK OF JULY 6

MONDAY: Old Fashioned Bean Soup; Breaded Pork Steak; Baked Half Chicken; Chipper Perch. Snack Bar: Hot Italian Sausage Sub; Charcoal Hoagie; Egg Salad.

TUESDAY: Manhattan Clam Chowder; Baked Lasagna; Fried Fish Nuggets; Western Omelette. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Roast Turkey Dinner; Seafood Quiche; Veal Parmesan. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Gumbo Soup; Meat Loaf; Chicken & Dumplings; Crab Nuggets. Snack Bar: Ham & Cheese; BBQ; Chuckwagon.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Broiled Beef Liver; Knockwurst Reuben. Snack Bar: Deluxe Sub; Hot Ham & Cheese; Tuna Salad.

WEEK OF JULY 13

MONDAY: Ham & Lima Bean Soup; Hot Roast Pork Sandwich; Crab Cutlets; Chicken Pot Pie. Snack Bar: Hot Italian Sausage Sub; Charcoal Hoagie; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Spaghetti Dinner; Chicken Chow Mein; Polish Sausage. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup. Fried Chicken Dinner; Baked New England Scrod; Baked Beans & Franks. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Vegetable Soup; Braised Chicken Livers; 1/2 Lb. Chopped Steak; Ham & Swiss Quiche. Snack Bar: Ham & Cheese Club; BBQ; Chuckwagon.

FRIDAY: Minestrone Soup; Fish Dinner; Ham Steak; Sicilian Chopped Steak. Snack Bar: Deluxe Sub; Hot Ham & Cheese; Tuna Salad.

Telephone Directory Changes Due

Changes in the Organizational Listing of the Service Directory Listing for inclusion in the August 1981 issue are due at **Mail Stop 196** by **July 10, 1981.**

The furnishing of accurate information for the Alphabetical Personnel Section of the Directory is the responsibility of each individual employee. Langley Form entitled, "NIPPS - Telephone Directory Transcript," (Change Notice) is provided in the back of the Langley Telephone Directory for reporting change in mail stop, building number, room number, and telephone number.

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

Volume 20 Issue 14

July 17, 1981

Government Saved $72,000

Technicians Get Largest Single Suggestion Award

The largest single Suggestion Award ever given by Langley was recently presented to two engineering technicians in the Fabrication Division.

Robert C. Evans and Joseph F. Powers received the award for designing the modification to the insulating foam blocks for the National Transonic Facility Tunnel, which resulted in a $72,000 savings to the government. They shared the $3,232 award, which was presented by Langley Deputy Director Richard H. Petersen during a special ceremony.

The NTF Tunnel shell required insulation because of the extremely low cryogenic temperature (-320°F). After a long study of various types of insulation, foam blocks that could be applied to the interior surface with a special adhesive were designed, and the Fabrication Division was given the responsibility for the overall task.

In 1979 Evans and Powers were assigned the job of fabricating the foam blocks that were to be used to insulate the tunnel. Carl Baab, Chairman of Langley's Incentive Awards Committee and Technical Assistant in the Operations Support Division, said that "the two boys were deliberately assigned the project because they were so innovative and they would work to get the job done."

They did get the job done but not without many obstacles in their way. "When the boys started the project," Baab explained, "they found that they needed to map out the whole tunnel because of its surface irregularities and tapered shape, and then to make approximately 150 templates or patterns from which the blocks were to be cut. That would have been a tremendous effort as it takes about four hours to make each template and about 3,700 blocks of insulating foam had to be fabricated and installed.

Continued on page 2.

– photo by Fred Jones

Robert C. Evans and Joseph F. Powers (second and third from left) of the Fabrication Division recently received the largest Suggestion Award ever awarded by Langley. The $3,232 award, which was shared equally, was presented for "foam blocks for the National Transonic Facility Tunnel." Shown with Evans and Powers are Carl G. Baab (left) and Edgar J. Yarrington of the Operations Support Division, who investigated and evaluated the suggestion. Baab is Chairman of Langley's Incentive Awards Committee and Yarrington is a member of the committee.

Langley Colloquium

Weeks to Discuss Shuttle Program

Results from the first Space Shuttle orbital flight (STS-1), objectives of the second, third and fourth test flights and plans to enhance Shuttle capacility for future use will be discussed at a colloquium Monday, July 20, at Langley.

L. Michael Weeks, Acting Associate Administrator for Space Transportation Systems at NASA Headquarters, will speak on "The Space Shuttle Orbital-Flight-Test Program" in the Activities Center at 1 p.m., followed by a question and answer session. The speaker will move to the Langley Room at 2 p.m. for an informal discussion.

In his lecture, Weeks will show a film and vu-graphs emphasizing programmatic aspects of the Shuttle program.

The Space Shuttle, a reusable launch vehicle developed by NASA to replace the nation's current family of expendable launch vehicles, was successfully launched from the Kennedy Space Center April 12, 1981, and achieved a near-perfect landing at Edwards Air Force Base April 14, 1981. This first flight in a series of four test flights met all of the primary objectives during the 54 1/2-hour mission. Preparations are now underway for the second Shuttle test flight (STS-2), planned for September 30, 1981.

Scheduled to go operational in late 1981, the Shuttle will provide a routine, low cost means of delivering payloads into orbit. Once the Shuttle becomes

Continued on page 6.

– photo by Hubert Lloyd

Dr. Joseph S. Heyman (second from left) receives congratulations from Langley Deputy Director Richard H. Petersen upon receiving an invention award of $2,500 and a Certificate of Recognition. The Space Act Award, a monetary award given for creating and reporting new concepts and technology to NASA, was presented for a "CdS Solid State Phase Insensitive Ultrasonic Transducer." Heyman's invention relates to an ultrasonic transducer that is phase insensitive. Ultrasonic measurements are made by transmitting an ultrasonic wave into a sample and then measuring the reflected waves. If the sample is inhomogeneous with nonparallel reflecting surfaces, the reflected waves will not be in phase. These phase differences in the reflected waves result in inaccurate measurements when made by conventional transducers. Heyman's ultrasonic transducer will make accurate measurements even though the reflected waves may be out of phase. The transducer is constructed by annealing a cadmium sulfide crystal at a temperature and for a period of time to provide substantially maximum acoustic attenuation at the operating frequency of the crystal. Also attending the presentation were Dr. William H. King (second from right) of the Office of Patent Counsel and David R. Johnson, Acting Chief of the Instrument Research Division.

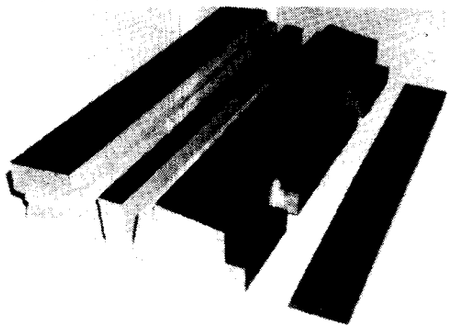
Suggestion Award

Continued from page 1.

"They realized the difficulties involved in installing the blocks as designed. The blocks had to interlock and fit between metal clips and "T" rails. The way the blocks ,were designed, it was almost impossible to install them, especially the last block in a section."

The foam blocks shown in this photograph were designed to insulate the NTF Tunnel.

Baab said Evans and Powers finally decided there was another method of doing the job. "They designed a way to make each tile in two pieces with a tapered wedge in the center. The two smaller blocks could be installed, and by tailoring the wedge in the center, the tiles could be easily adjusted to the welded clips and tunnel surface irregularities, assuring an accurate fit in all areas. Fabricating the tiles in two pieces would also reduce the handling weight by one half.



Due to the irregularities in the design of the tunnel, Evans and Powers designed the modification to the foam blocks--cut the tile into two pieces and insert a tapered wedge.

"They found that they could make a single template for various sections on the tunnel floor and eliminate the need for scaffolding which would have had to be reassembled for each area as they progressed throughout the tunnel. The need for total mapping of the tunnel interior surface was eliminated, saving a tremendous amount of time and money."

Benefits derived from the suggestion are:

- Eliminated alignment problems with tunnel mounting clips.
- Reduced handling weight by 50 percent.
- Reduced size of tiles allowed entry through any tunnel access opening.
- Eliminated one half of the error in tolerances against tunnel walls.
- Blocks were made on a "production line" instead of individual set up for each segment of the tunnel.
- Reduced the number of templates necessary to fabricate blocks from approximately 152 to 65.
- Facilitated instalation of last block in each ring section of the tunnel.
- Reduced schedule time to complete total insulation task.
- Greatly reduced the installation costs to the NTF Project Office.

Baab and Edgar J. Yarrington, a member of the Incentive Awards Committee from OSD, were assigned to investigate and evaluate the suggestion and to come up with an award figure. "It was quite sizeable and three years in the making," Baab explained. "So many people had a hand in the project that we had to make sure these two boys were the ones who had designed the concept, and that the committee was right in what we were doing. Other employees had designed concepts, like laminated types and tiles split into a

Continued on page 6.

The *Langley Researcher* as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond
Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

Summer Faculty Fellowship Programs Begin

Approximately 38 university professors are once again spending a productive summer at Langley, using the center for a variety of research and study projects.

Twenty-nine of the professors are recipients of Summer Faculty Fellowships, sponsored each summer by NASA and the American Society for Engineering Education (ASEE). The fellows will conduct research projects that are of mutual interest to them and to NASA, working with Langley staff members in the fields of aeronautics and space technology.

Directors of the NASA/ASEE program are Dr. Frank Hohl, Langley's Chief Scientist, and Dr. Gene Goglia, Chairman of the Department of Mechanical Engineering and Mechanics, Old Dominion University.

The nine Hampton Institute faculty members are part of the sixth Summer Research Fellowship Program, sponsored by Langley and the college. They will work with scientists and engineers on projects concerned with chemistry, computer science, several fields of engineering, mathematics and physics. Some of the projects may be continued when the felows return to their campus.

Directors of the Summer Research Fellowship Program are Dr. Alvin Anderson, Head of Langley's Office of Research Grants and University Affairs, and John Spencer, Chairman of the Architecture Department at Hampton Institute.

– photo by Bob Nye

Hampton Institute professors participating in the sixth Summer Research Fellowship Program are (front row, from left) Gopala Krishna, John Stith, Annette Billie, Nathaniel Matthews and Manuel Keepler; (back row, from left) John Spencer, David Rudd and Robert Ghent. Not pictured is Richard O'Daniel.

– photo by Bob Nye

These professors are recipients of the ASEE Summer Faculty Fellowship Program. Here from universities as near as Christopher Newport and William and Mary, and as far away as the University of Iowa and the University of Houston are (front row, from left) Andrew Hargrove, Warren Essler, Chris Wild, Lawrence Sacks, Robert Benedict, Leslie Koval and Sheridan Simon; (middle row, from left) Griffith McRee, Mary Powell, Marvin Hamilton, Kwang Lee, John Drew, Aileen Rogers and Douglas McCarthy; (back row, from left) Ivon Lowsley, Walter Hedges, Lonnie Sharpe, Stewart Shen, James Schwing, Arthur Sharp, Gerald Bass and William Talbott. Absent from the photo are Wallace Chinitz, George Henderson, Charles Scanlon, Patricia Smith, Shekhar Munavalli, Gene Goglia and Ron Gibson.

NASA News

Marshall: A series of meetings between U.S. and Italian space officials focusing on NASA's proposed Tethered Satellite System were recently held.

The project calls for a data-gathering satellite to be carried into orbit by the Space Shuttle, then released from the payload bay on a tether -- a super-strong cord that can be as long as 60 miles. The satellite, attached to the Shuttle by the tether line, will be trolled through the Earth's upper atmosphere to gather atmospheric, magnetospheric and gravity data.

If a joint venture were to be taken, the Italians would build the satellite and the U.S. would build the deployer and handle the systems integration.

A Technical Exchange Agreement -- the first of its kind -- has been signed between NASA and Deere and Company, Moline, Ill., to study the effects of low-gravity on various iron alloys. Under such agreements, NASA and a private company agree to be responsible for specific portions of the research effort and no funds xare transferred between parties. The allocation of rights to resulting inventions and data is subject to negotiation between the parties for each effort undertaken. Several other commercial firms are now involved in Technical Exchange Agreement discussions with Marshall.

Headquarters: Dr. Riccardo Giacconi has been named as the first director for NASA's Space Telescope Science Institute, Baltimore, Md. effective Sept. 1.

Giacconi, chosen after a four-month search, now is Associate Director of the High Energy Astrophysics Division of the Harvard/Smithsonian Center for Astrophysics, Cambridge, Mass., and Professor of Astronomy at Harvard University.

James E. Webb, NASA Administrator from Feb. 14, 1961 to Oct. 7, 1968, has been selected to receive the prestigious Sylvanus Thayer Award for 1981. The award has been given annually since 1958 by the Association of Graduates, U.S. Military Academy, to an outstanding citizen of the U.S. whose record of service to our country, accomplishments in the national interest and manner of achievement exemplify outstanding devotion to the principles expressed in the motto of West Point -- "Duty, Honor, Country."

The Executive Subcommittee of the Space Systems and Technology Advisory Committee met on June 16 and 17. Each of the Subcommittee chairmen reported results from subcommittee meetings held during the previous several months. The Executive Subcommittee strongly supported NASA's activities and plans in electric propulsion and agreed that NASA must sort out its role in terrestrial energy technology. The Subcommittee also expressed concern about the lack of process for conducting technology demonstrations.

Goddard: Investigators at Goddard and the University of Maryland have discovered a natural infrared laser on Mars -- an observation that could lead to the discovery of new planets in the universe and might force scientists to rewrite their books on general physics of the planetary atmosphere.

Johnson: Robert F. Thompson, manager of the Space Shuttle Program Office at Johnson since February 1970 and former Langley researcher, left NASA June 5. He retired about one year ago.

Thompson, a native of Bluefield, Va., began his career as an aeronautical engineer with the National Advisory Committee for Aeronautics (NACA) at Langley in 1947.

From 1947 to 1948 he was assigned progressively more responsible positions in the Stability Research Division where he specialized in research investigations of high-speed subsonic, transonic and supersonic aircraft.

While at Langley, he authored and co-authored numerous papers on aircraft stability and control. In January 1959 he was selected as one of the early members of the Space Task Group, which became the nucleus of the present Johnson Space Center.

Ames: Lauren D. King has been named Public Affairs Officer at Ames. He was previously public information officer. In his new post, he is responsible for NASA public information, educational programs and external relations for Ames and the 11 western states. King has been with NASA since 1962.

Recent Retirees

Johnny M. Williams, Operations Support Division, retired July 6.

STS-2 INSIGNIA. This is the official crew insignia for STS-2, the United States' Second Space Shuttle orbital flight test mission. Crewman are Astronauts Joe H. Engle, commander, and Richard H. Truly, pilot. Their spacecraft, Orbiter 102 Columbia, is depicted along with the crewmembers' surnames, the merged eagle and American Flag. The number two is significant as it applies to the number of crewmembers as well as the second flight for the Columbia and the second in a series of Space Shuttle missions.

Celebrate Viking's Fifth Anniversary

The Viking First Mars Landing Society "Pig Picking" will be held tomorrow to commemorate the fifth anniversary of the first Mars landing.

The celebration will be held at the Activities Center, beginning at 3 p.m. with a Viking status direct from the Jet Propulsion Laboratory in Pasadena, and plans for future Mars missions direct from NASA Headquarters. At 4 p.m. volleyball and tennis tournaments are planned. The bluegrass combo "Crab Grass," led by Viking Fred Staggs, will begin at 5:30 p.m. The "Pig Picking," prepared and served by the internationally renowned B & S Cafe of Deep Run, N.C., will be served at 6:30 p.m. Abundant "foamy refreshments" will be on tap all afternoon.

Among the attendees will be Andy Stofan, Acting Associate Administrator for Space Science at NASA Headquarters, Jim Martin, first Viking Project Manager; and Walt Lowrie, Martin-Marietta Lander Manager.

All members of the Viking First Mars Landing Society and spouses are invited. The cost for the day's celebration will be $8 per person. For nonmembers who wish to join the society, a $3 membership fee must be paid at the event.

Lovelace Leaves for General Dynamics

Dr. Alan M. Lovelace, Acting Administrator for NASA, left July 11 for a position as Corporate Vice President – Science and Engineering at General Dynamics Corp., St. Louis, Mo.

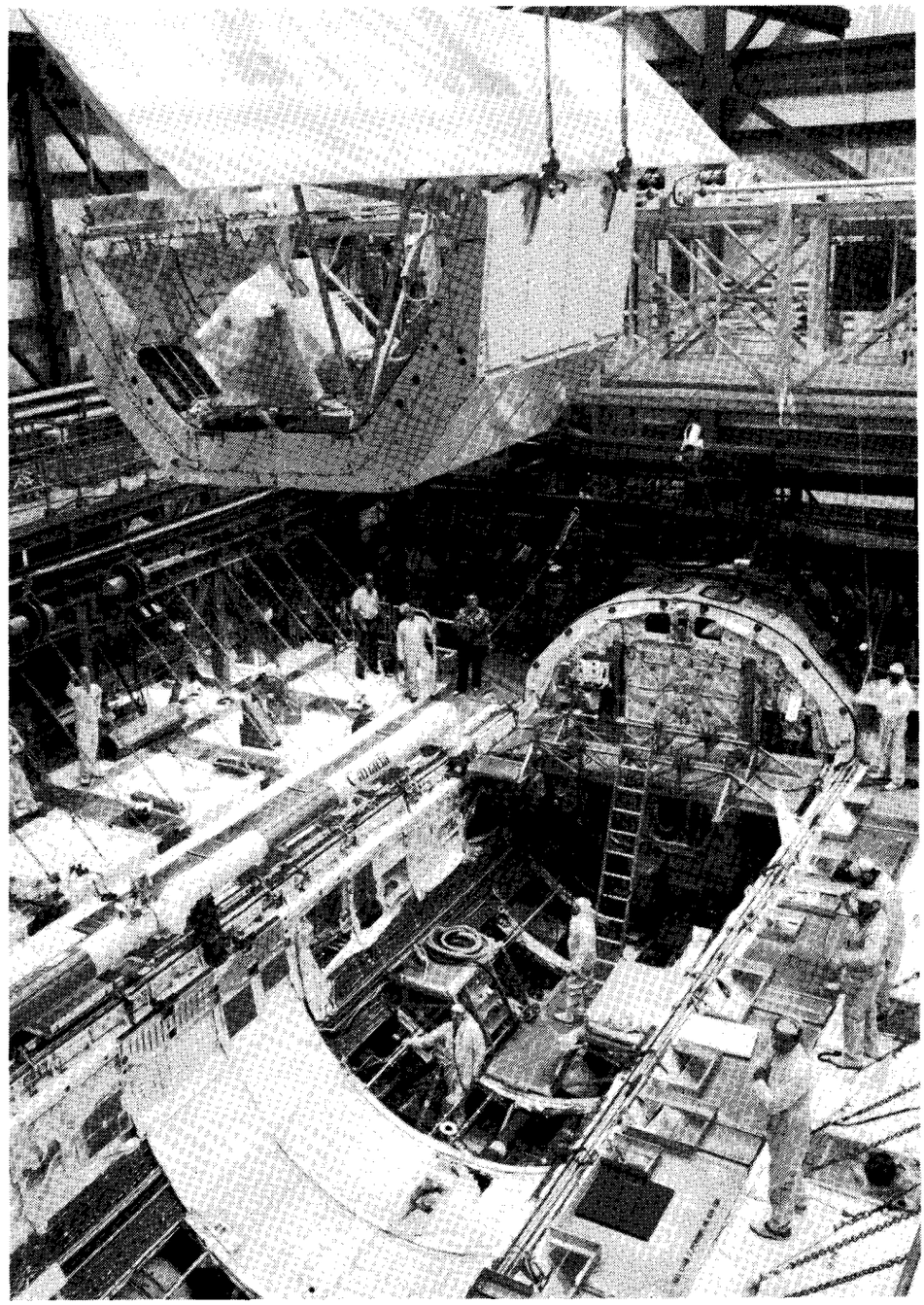
In his new position, he is responsible for directing and coordinating the company's engineering, research, advanced products and program development and for developing and implementing corporate engineering and research policy.

Lovelace retired as Deputy Administrator of NASA in December 1980 but remained on board through the first flight of the Space Shuttle Columbia and the appointment of a new administrator. He became Acting Administrator after the departure of Dr. Robert A. Frosch in January 1981.

Since entering federal service with the Air Force in 1954, Lovelace has held many research management positions. He served at the Air Force Materials Laboratory, Wright Patterson Air Force Base, Ohio from 1954 through 1972, having been named Director in 1967.

From 1972 to 1973, he served as Director of Science and Technology with the Air Force Systems Command, Andrews Air Force Base, Washington, D.C. From 1973 to 1974, he was Acting Deputy Assistant Secretary of the Air Force for Research and Development.

Lovelace joined NASA in 1974 as Associate Administrator for the Office of Aeronautics and Space Technology. He was named Deputy Administrator in June 1976 by President Ford.



The OSTA-1 pallet is lowered into the cargo bay of the Space Shuttle Columbia as crews prepare the Orbiter for its second mission, scheduled for launch Sept. 30. The payload, which includes two Langley experiments, is designed to demonstrate the Space Shuttle's capability as an operational platform for scientific and applications research. The two Langley experiments are the Feature Identification and Location Experiment (FILE) and the Measurement of Air Pollution from Satellites (MAPS) experiment.

Thirty-Year Mortgages Available at LFCU

The Langley Federal Credit Union has found a way to make 30-year mortgages to its members by joining the Credit Union Mortgage Association of Alexandria, Virginia. CUMA originates 30-year mortgages and sells them in the secondary market for member credit unions.

Langley is the second largest of 18 credit unions to join CUMA and offers VA, FHA or conventional loans up to $98,500. Loans in excess of 80 percent must have mortgage insurance. These loans are available for one through four family owner-occupied, permanent residences.

Should you be in the market for a new or existing home, why not let your credit union finance it? Our interest rates are competitive with other mortgage lenders and you will save money on settlement charges. You receive dividends on your escrow funds and have the added convenience of automatic payments from your share draft account each month. There are additional benefits in dealing with your credit union, such as no pre-payment penalties and lower appraisal fees.

For more details, contact Judith Huff at the mortgage office in Riverdale (826-3516) or Charlie Garten (827-7200).

Weeks Discusses Shuttle

Continued from page 1.

operational, however, a number of design changes will be required to improve performance and utility while reducing maintenance time and operational costs. Several modest design changes are being studied to enhance the Shuttle's capability for future use.

A range of possible future developments in space transportation is being examined by NASA. Systems such as reusable upper stages, Shuttle-tended space platforms, space stations and supporting satellite equipment are among the programs being studied by NASA's advanced program planners.

At NASA Headquarters, Weeks is responsible for planning, directing, executing and evaluating the development, procurement and operation of the Space Shuttle, upper stages for Shuttle and future space transportation and space system engineering programs.

Before joining NASA in November 1979, Weeks was Manager of Advanced Systems Development, Reentry and Environmental Systems Division of General Electric since 1975. His initial involvement with the Shuttle came during his employment with LTV Corporation as Vice President and General Manager of the Missile and Space Division. Later, at Perkin-Elmer Corporation, he was associated with the NASA Large Space Telescope Program.

Weeks began his career at McDonnell Aircraft Corporation in St. Louis, Mo., where he worked on the Mercury

program. While employed by the Aerospace Corporation, he helped create the U.S. Air Force Manned Orbital Laboratory concept.

A native of Iowa, Weeks received a bachelor of science degree from Iowa State University and a master of science degree in applied mechanics from Washington University in St. Louis. He is an associate fellow of the American Institute of Aeronautics and Astronautics and a member of the National Security Industries Association, the American Defense Preparedness Association and the Technical Marketing Society.

Visitor Center Salutes Space Week 1981

Space Week 1981 is being observed nationally through July 20.

The Langley Visitor Center salutes Space Week and honors the July 20 anniversaries of the first manned landing on the moon and the first Viking landing on Mars with special films.

The film "Planet Mars" will be shown daily at 1 p.m. and the full-length feature film "Moon Walk" will be shown daily from 2 to 3:30 p.m. through July 31, except July 26.

Visitors to the center may also see the Apollo 12 command module, a moon rock and a space suit worn on the lunar surface. An engineering model of the Viking Mars Lander, photographs of the Martian surface and other space-related exhibits are also on display. Related short talks will be presented periodically throughout each day.

Energy Saving Tip

In areas where you need a lot of light, save electricity by using one large bulb instead of several small ones. For example, a 100-watt bulb produces the same amount of light as six 25-watt bulbs, but uses less electricity.

Thought for the Day

"There is very little difference in people, but that little difference makes a BIG difference. The little difference is attitude. The big difference is whether it is a positive or negative attitude."

W. Clement Stone
Writer

Retirement Parties

Dr. Robert Krieger, Director of the Wallops Flight Center, is planning to leave the government after over 42 years of service.

There will be a party at Langley honoring Bob Krieger Friday, July 24, at the Activities Center, Building 1222. The evening wil begin with a cash bar at 6 p.m., followed by a buffet dinner. The cost of the dinner is $9 per person.

If you plan to attend or if you are unable to attend but wish to contribute to the gift, please send a check, made payable to Agnes Lindler, to Mail Stop 115 by July 20.

William J. Block and **Robert D. Lindeman** of the Operations Support Division will be honored with a retirement luncheon July 22 at the Activities Center at 11:30 a.m. The cost including gifts is $7.50 per person. Make checks payable to Nadine McHatton and send to Mail Stop 355 by July 17.

Jean B. Elliott of the Research Information and Applications Division will be honored with a retirement brunch, August 2 at 10:30 a.m. at Fort Monroe Officers' Club. The cost will be $6 per person. Send reservation and check to Kaye Lee, Mail Stop 185B, ext. 2430, by July 24.

John C. McFall, Jr., Marine and Applications Technology Division, will be honored with a retirement party August 5 at the Fort Monroe Officers' Club. A cash bar social wil begin at 6:30 p.m., followed by Beef and Burgundy dinner at 7:30 p.m. The cost, including gift, will be $8.50 per person or $16 per couple. Make checks payable to Doris Forrest and send to her at Mail Stop 270 before July 31.

Suggestion Award

Continued from page 2.

number of pieces and shapes, to relieve the foam block problem; however, Powers and Evans' concept predated the others."

Baab said more than 20 people were interviewed and many meetings were held with project managers and work package managers in making the decision. "Finally we arrived at the fact that these boys had really come up with the idea on their own," Baab concluded.

Happenings

NAGS. Part II of the mini seminar "Your Professional Performance," sponsored by the National Association of Government Secretaries, will be held July 21 in the Activities Center. Mary Cline, Civil Service Reform Act Coordinator at Langley, wil conduct the seminar. Topics to be covered include components of a performance appraisal system, employee and supervisor's role in performance appraisal, mutual expectations, communications and common pitfalls ,for both parties to avoid. Training certificates will be issued upon conclusion of the seminar. The prime rib dinner will be served at 6 p.m. For reservations, send a check payable to Reachie Hall to her at Mail Stop 175 by July 20.

HAPPY HOUR will be held today from 4 to 6:30 p.m. in the Activities Center.

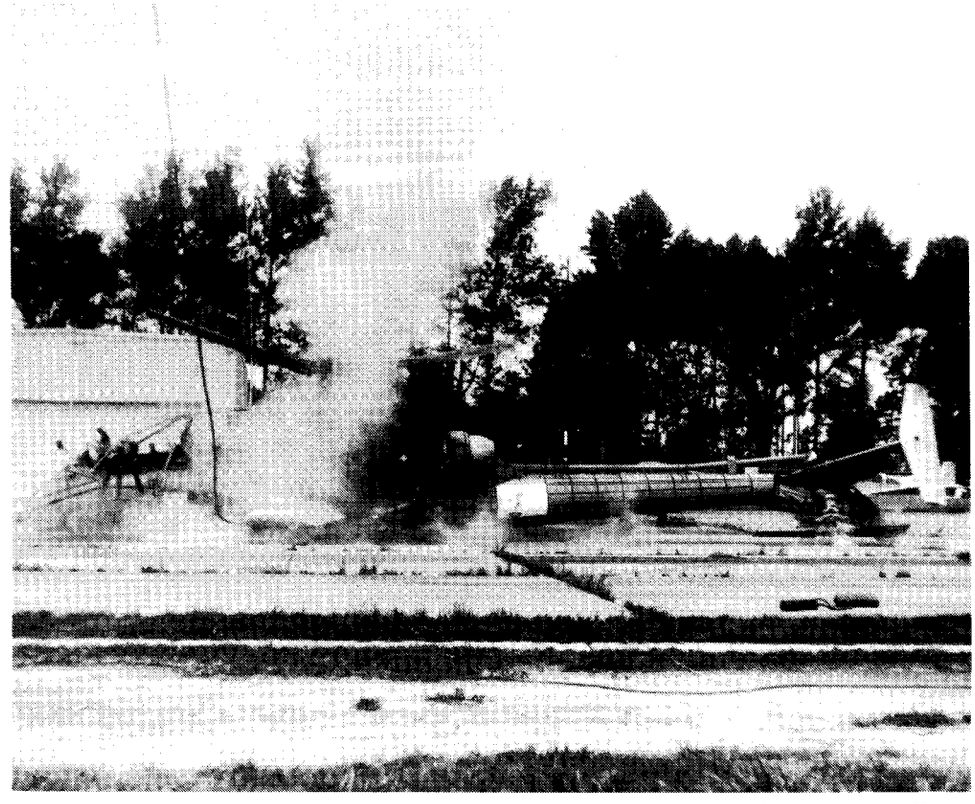
BLOODMOBILE. The Red Cross Bloodmobile will be at the Activities Center from 9 a.m. to 3 p.m. Wednesday, July 29.

CARNIVAL. Volunteers are needed to work two-hour shifts at the 1981 Carnival August 28 and 29. Please contact the following if interested: Stu Johnson, ext. 3898, or Gene Hicks, ext. 3737, Bingo; Dana Morris, ext. 3611, Children's Booth; Fran Sabo, ext. 3611, Information Booth; and Betty Farmer, ext. 2062, decorations.

RAFFLE TICKETS for the Carnival are now available at the Activities Office or from any LAA delegate or alternate. Busch Gardens passes will be given to the person who sells the most tickets and to the runner up (excluding Carnival Monarch candidates).

EMPLOYEES/CONTRACTOR NIGHT at War Memorial Stadium will be held August 5 (rain date August 6). The Peninsula Pilots will play Lynchburg at 7:30 p.m.; however gates will open at 6:30 p.m. Prizes will be given away. Tickets are free and are available at the Activities Office or at the gate upon presentation of NASA or contractor badge.

EMPLOYEES/CONTRACTOR NIGHT will be held at Busch Gardens August 21 from 5 p.m. to 12 midnight. Tickets are $6 and can be purchased at the gate upon presentation of NASA or contractor badge.



– photo by Alton Moore

ARMY TESTS ATTACK HELICOPTER CRASHWORTHINESS. Still twisting and giving from the force of impact, this twin-engine experimental Bell Helicopter was recently dropped at Langley's Impact Dynamics Facility in a crash test for the Army's Applied Technology Laboratory at Fort Eustis. The craft was guided through the 59-foot drop and struck the ground at a steep angle travelling about 34 miles per hour. Even so, the dummy pilot and co-pilot were determined to have survived, due in large part to crash protection built into the landing gear, the belly structure, crew seats and an inflatable restraint system.

Competitive Placement Announcements

The following Competitive Placement Announcements are currently open:

81-37 – Supervisory Engineering Technician; GS-0802-11 or 12 (Temporary); Fabrication Division; Models and Materials Technology Branch; Composites and Models Development Section; Closes today.

81-38 – Supervisory Management Analyst; GS-0343-12 or 13; Office of Director for Management Operations; Management Support Division; Facilities Management and Directives Branch; Closes July 21, 1981.

81-39 – Procurement Clerk (Stenography); GS-1106-5; Office of Director for Management Operations; Acquisition Division; Contracts Branch; Closes July 21, 1981.

Thanks

Albert E. Gribble writes, "The 'commencement' party given me by friends and associates June 9 was superb. I wish to extend my heartfelt thanks and appreciation to everyone who contributed to and participated in the festivity. The mementoes, gifts, and most of all, the congenial gathering will always be treasured and remembered."

Key Positions

Robert F. Graham has been selected Head of the Fluid Systems Section, Mechanical Support and Utilities Operations Branch, Operations Support Division, under Competitive Placement Plan announcement 81-29.

Marie C. Storms has been selected Payroll Supervisor in the Payroll Office, Financial Management Division.

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swap and shop

FOR SALE

Vehicles

1973 MGB in excellent mechanical condition; radial tires, stereo equipment throughout; also comes with canvas car cover, $3,000. Call Patrick, ext. 3205 or 898-4300.

Sailboat: Twelve-foot fiberglass sloop with main, jib and trailer, GC, $825. Call Mauldin, ext. 3654 or 229-1373, after 6 p.m.

Real Estate

Gloucester Point: Brick rancher, 20 minutes from NASA, 4 BR, 2 BA, LR, DR, FR/fp, 2-car garage, energy efficient features, beautiful neighborhood with park and beach right, available December 1981, $78,900. Call 642-5552 after 5 p.m.

Lot in Colington Harbour on the Outer Banks, N.C.: canal front lot with beach, pool, tennis, and clubhouse facilities. $7500 with financing available. Call 220-1390 after 5:30 p.m.

FOR RENT

Courthouse Green: Townhouse, 3 BR, 1½ BA, large eat-in kitchen, fully equipped, utility room, fully carpeted, many extras, $320/mo. Call 599-4321.

Nicely furnished water front cottage at Hatteras with beautiful view on breezy peninsula jutting out into sound. 4 BR, 2 BA, AC, DW, liv.-kit.-din. area. $300/wk. Call 877-3736.

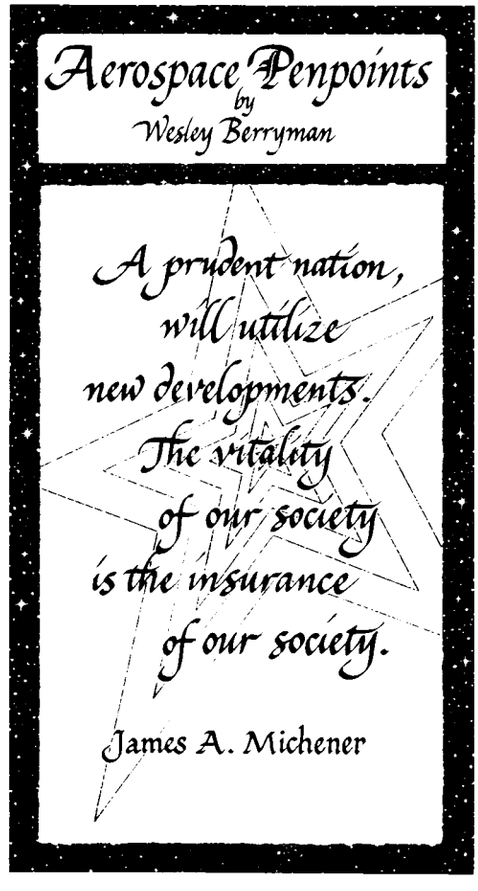
Sandbridge: Cottage with 4 BR, AC, phone, liv.-din.-kit. area, one-half block from ocean, $425/wk. Call Kent, 420-8391 or ext. 3095.

LOST

Gold wedding band in Building 1209. Please contact Diana Smith, ext. 4541, Mail Stop 443, if found.

FOUND

Bright orange poncho on Ward Road near towing tanks. Call Brooks, ext. 2631.



cafeteria menu

WEEK OF JULY 20

MONDAY: Old Fashioned Bean Soup. Roast Beef; Boston Blue Fish; Cheese Ravioli. Snack Bar: Hot Italian Sausage Sub; Charcoal Hoagie; Egg Salad.

TUESDAY: Manhattan Clam Chowder; Baked Lasagna; Fried Fish Nuggets; Western Omelette. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Roast Turkey Dinner; Veal Parmesan; Shrimp Chow Mein. Snack Bar: Sausage Pizza; Crab Cake; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Gumbo Soup; Meat Loaf; Chicken & Dumplings; Crab Nuggets. Snack Bar: Ham & Cheese Club; BBQ; Chuckwagon.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Broiled Beef Liver; Eggplant Parmesan. Snack Bar: Deluxe Sub; Hot Ham & Cheese; Tuna Salad.

WEEK OF JULY 27

MONDAY: Ham & Lima Bean Soup; Hot Roast Pork; Crab Cutlets; Chicken Pot Pie. Snack Bar: Hot Italian Sausage Sub; Charcoal Hoagie; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Spaghetti Dinner; Chicken Chow Mein; Polish Sausage. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; 1/2 lb. Chopped Steak; Baked Beans & Franks. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Vegetable Soup; Braised Chicken Livers; Turkey Breast Nuggets; Ham & Swiss Quiche. Snack Bar: Ham & Cheese Club; BBQ; Chuckwagon.

FRIDAY: Minestrone Soup; Fish Dinner; Ham Steak; Salisbury Steak. Snack Bar: Deluxe Sub; Hot Ham & Cheese; Tuna Salad.

Employee Wins National Award

Bertie Ann S. Garrett of the Plant Engineering Division was recently selected by the Woodmen of the World as the Youth Leader of the Year for 1980 for the entire United States.

Coincidentally, WOW Rangerette Youth Unit 423 of Hampton, which Garrett guides and advises, was selected national Rangerette Youth Unit of the Month for July.

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

Volume 20 Issue 15 July 31, 1981

Langley Colloquium

Lee to Address Severe Storms

Severe convective storms, with their visible features of hail, high winds, strong wind shear, turbulence and tornadoes, have a great impact on people as well as on aviation. The understanding of these storm hazards has been significantly improved in recent years through the melding observations gathered by Doppler radar, satellites, photogrammetry and aircraft.

Mr. Jean T. Lee, a meteorologist-project scientist at the National Oceanic and Atmospheric Administration's National Severe Storms Laboratory, will discuss data collected in the investigations of severe storm hazards when he speaks at a colloquium Monday, August 10, at Langley.

Lee's lecture, "Severe Convective Storms," will be held in the Activities Center at 2 p.m., followed by a short question and answer session. The speaker will move to the adjoining Langley Room at 3 p.m. for an informal discussion.

In his lecture, Lee will describe the investigations that the Federal Aviation Administration, U.S. Air Force, NSSL and NASA are conducting of severe storm hazards and the avoidance of, or design for, these hazards in the development of aircraft and flight systems. Research results include correlation between storm turbulence and the Doppler radar radial wind's spectrum width, and detection of mesocyclone circulations about 30 minutes ahead of tornado formation. Lee will also discuss the Doppler weather radar's potential application to detection of aviation weather hazards.

Lee has been with NSSL since February 1964. In addition to his present work he conducts research in weather satellite application to severe storm identification and forecast.

From 1959 to 1964 Lee was a research meteorologist with the U.S. Weather Bureau's National Severe Storm Project, the forerunner of NSSL; from 1954 to 1959 he was a severe local storms forecaster responsible for tornado and severe storm forecasts for the continental United States; and from 1950 to 1954 he was an educational specialist in the Weather Bureau central office. During this time he developed a pilot briefer course and revised a book, "Meteorology for Pilots."

Lee first entered civilian government service in 1947 as an aviation forecaster in Jacksonvile, Fla. He previously taught mathematics and physics at the University of Southern Mississippi. He served in the military service from 1944 to 1946 as a station weather officer in the continental United States and in the South Pacific.

Lee has received the AIAA's Losey Atmospheric Sciences Award for his contributions to flight safety in the vicinity of thunderstorms and the Department of Commerce's Silver Medal for contributions to storm turbulence descriptions, the improvement of tornado and severe local storm predictions, and

Continued on page 2.

James M. Beggs (right) was sworn in as NASA's sixth Administrator at a White House ceremony July 10. Officiating was Vice President George Bush (left); at center is Beggs' wife, Mary. Following the White House ceremony, Dr. Hans Mark was sworn in by Beggs as NASA's new Deputy Administrator during a ceremony at NASA Headquarters. Beggs succeeds Dr. Robert A. Frosch, who resigned Jan. 20, 1981 to take over as the first President of the American Association of Engineering Societies in New York. He previously was an executive vice president and a director of General Dynamics Corp., St. Louis, Mo. Mark succeeds Alan M. Lovelace, who joined General Dynamics Corp. in St. Louis as Corporate Vice President--Science and Engineering. Formerly he served as Secretary of the Air Force from July 1979 to 1981.

Researchers Study Space Assembly of Large Structures

A possible assembly line in space is being studied at Langley that would allow astronauts to construct large platforms or antennas in Earth orbit from the Space Shuttle.

The concept uses a mobile work station to position a pair of pressure-suited astronauts so they can move horizontally and vertically within a prescribed area to build space systems that are too large or complex to fold up and transport aboard the Shuttle.

The mobile work station is designed to be located inside the Shuttle Orbiter's payload bay or to be a free flyer, operating near the Orbiter.

A large-scale experimental model of the mobile work station is being tested at Langley. The ground test model will enable researchers to uncover difficulties that might be encountered in space and identify assembly aids to improve astronaut productivity, according to Harold Bush of the Structures and Dynamics Division.

Two astronauts would be attached to the station by foot restraints, freeing their hands for assembly tasks, and enabling them to move around and build large platforms without using great amounts of effort.

The astronaut work platforms, one on each side of the mobile station, would be electrically operated, either from the platform or from within the Orbiter's flight deck.

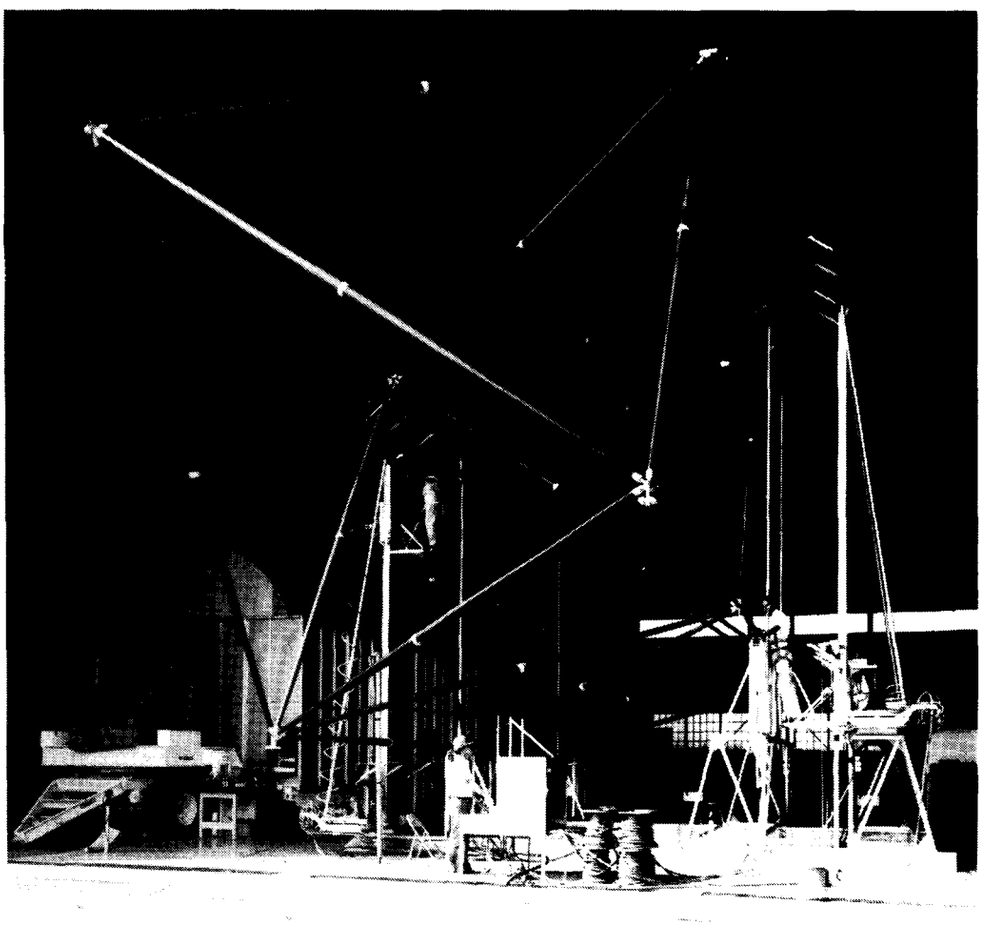
The horizontal and vertical freedom of movement would allow the astronaut team to put together elements of a structure with relative ease. When a section of a structure is completed, it would be moved along the assembly line and the astronauts would extend its size by adding more elements or equipment.

The concept will be tested under normal Earth gravity conditions at Langley during August and under simulated space weightlessness conditions in the Neutral Buoyancy Facility at the Marshall Space Flight Center in September. In this facility, a large water tank, neutral buoyancy techniques simulate weightlessness.

Researchers will conduct these tests to gain basic information about the productivity of astronauts building large space systems, according to Bush.

The experimental work station will be used to construct large truss segments from lightweight, graphite-epoxy conical tubes that can be stacked compactly, like plastic cups, inside the Orbiter for transport into space. A pair of conical tubes are joined at their large ends to form a strut about 18 feet long.

Truss structures are assembled from these struts by joining their ends without tools, using quick-attachment cluster joints developed at Langley. The truss structures may be formed as antennas, beams, or platforms for large solar power or communication systems.



– photo by Bill Salyer

Researchers will use this ground test model of the mobile work station concept to gain basic information about the productivity of astronauts building large space systems. The concept uses a mobile work station to position a pair of pressure-suited astronauts so they can move horizontally and vertically within a prescribed area to build space systems that are too large or complex to fold up and transport aboard the Space Shuttle. Richard Wallsom (left), Walter Heard (center) and Kermit Jensen (right) test out the work station in Building 1220.

Lee

Continued from page 1.

the use of weather radar in safety to flight near thunderstorms.

Lee received bachelor and master of science degrees in meteorology from the University of Chicago in 1944 and 1962, respectively. He is a member of the American Meteorological Society and the American Association for the Advancement of Science. He is past president of the Kansas City and Central Oklahoma chapters of AMS and past vice president of the Washington, D.C. chapter.

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Editor . . . . . Jean Drummond

Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

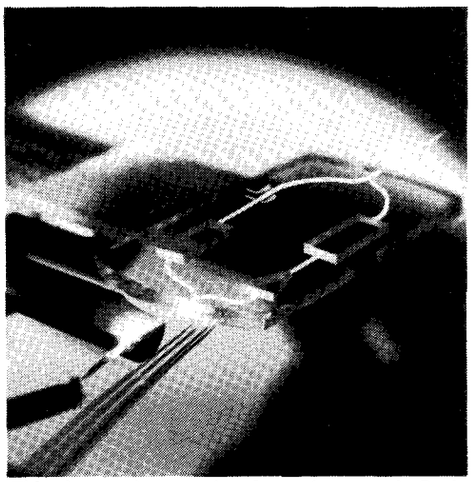
NASA Sponsors Conference on Optical Information Processing

A NASA conference on Optical Information Processing for Aerospace Applications will be held at the Hampton Holiday Inn August 18–19. The conference is sponsored by NASA's Office of Aeronautics and Space Technology in Washington, D.C., and the Langley Research Center.

Approximately 125 engineers from government, industry and the education community are expected to attend sessions on information processing requirements for aerospace applications, optical systems for processing information, integrated optics and optical components, and optical information circuits.

Conference objectives are to outline present and projected aerospace information processing requirements and technological limitations which restrict and limit information extraction; provide a representative view of optical devices, techniques, components and systems used to extract information; and provide guidelines for future research in the field of optical processing.

Thirty papers will be presented during the conference, covering topics that include optical digital computers, new methods for optical matrix operations, incoherent optical matrix-matrix multiplier, monolithically integrated active optical devices, microchannel spatial light modulator, a liquid crystal adaptive lens and optical recognition of statistical patterns.



This is a photograph of an Integrated Optic Circuit for Data Processing. It performs complex mathematical functions, such as fournier transform. Similar circuits could perform matrix multiplication and inversion. Circuits such as this will be discussed at the conference. The photograph has been retouched to illustrate circuit functions.

William D. Mace, Director for Electronics, will welcome attendees at 9 a.m. in the Williamsburg Room of the Holiday Inn. Keynote speaker will be Peter Kurzhals, former Staff Assistant to the Director for Electronics at Langley and now Assistant Director for Research and Technology at the Goddard Space Flight Center. He will discuss "Future Information Processing Drivers in Spacecraft Systems."

The conference is open to anyone interested in optical processing. Registration will be held in the Williamsburg Room August 18 at 8 a.m. There is no registration fee but there is a $12 charge to cover expenses for refreshments. Reservations should be made with Jane Everette, ext. 3535, by August 14.

The conference chairman is Robert L. Stermer and program chairman is Rudy Segura, both of the Flight Electronics Division.

Linger Wins National Business Skills Competition

Thrilled and pleased by her typing performance at the National Leadership Conference in Chicago July 4, Bonnie Linger came home with first place prize in a national business skills competition.

The 1981 Tabb High School honor graduate represented Virginia in the National Clerk Typist II competition, sponsored by the Future Business Leaders of America. She previously had won the regional title at Old Dominion University in March and the state title in Richmond in April.

This is not the first year Linger has won a prize for her accuracy in business skills. Last year she competed in the stenography competition and won second place in shorthand at the state level.

Linger is one of 24 clerical employees in the Stay-in-School Program at Langley. Assigned to the Staffing and Special Programs Branch of the Personnel Division since October, Linger said her work at NASA allowed her to gain real experience in typing and other secretarial skills and helped her to win the National Clerk Typist II title. "I've gotten a lot of practice this year," she admitted "and Lahoma Hart has helped me a great deal. She has given me many good typing tips that helped me advance and has trained me to be more careful and accurate."

The Clerk Typist II competition is offered for advanced typists, Linger explained. "At least two years of typing instruction were required to be eligible for the advanced class," she added. Forty of the best high school typists in the country were tested. The competition included taking priority tests to establish the importance of the material in a given situation and typing seven or eight problems from rough drafts into final format. Some of the problems on the one-hour test included letters, a memorandum, tabulations and a single-spaced manuscript with a tabulation. The quality and quantity of Linger's work were judged, not the actual typing speed. "My typing speed of 74 words a minute helped, I'm sure, because the judging included the amount of typing we could complete in the hour time period."

Linger will attend Christopher Newport College in the fall and will continue working part time at Langley. She hopes to transfer later to the College of William and Mary's business school and eventually perform executive-level work.

Strickland Competes in Miss Virginia-World Pageant

Eileen "Leen" M. Strickland, secretary in the Systems Development Branch of the Systems Engineering Division, will be competing for the title of Miss Virginia-World Saturday, August 1, at the Hyatt Hotel in Richmond.

A veteran of pageants, the Miss Virginia-World 1981 Pageant will be her fourth. She was in three teenage pageants in 1978, placing very high and walking away with the title of Miss Teenage Fort Monroe. After a three-year break in her "pageant hobby," one of the engineers in her office discovered the announcement for the Miss Virginia-World contest in the Daily Press and suggested that she send in her photograph for use in the preliminaries. "I did," Strickland said, "and I was selected to become an official contestant. I look forward comfortably to the pageant contest date."

Strickland said she enjoys her work as a secretary, and thinks her position played a major part in her preliminary application and biographical sketch for the pageant. "I am Branch secretary for 30 engineers and supervisor for a Secretarial Cooperative Education student, both of which involve many important duties. I also hope that my role of being guest speaker at annual Cooperative Education Banquets in the Hampton and Poquoson City Schools and my years of taking public speaking and communication courses will help me in the event of 'stage fright.' I also work as a part-time model and I helped organize the 1979 Miss Kecoughtan High School Pageant. These experiences should prove to be assets in the upcoming competition."

When asked what her greatest accomplishment has been, she responded, "I have obtained a reputation as one of NASA's well-respected secretaries, after three years of training from excellent supervisors and a year of full-time permanent employment at Langley." She is a former Secretarial Science Co-op, graduating in 1980 from Thomas Nelson Community College.

Her ambitions in life are to get a bachelor's degree in business administration and "to become one of NASA's 'top' administrative secretaries."

Visitor Center Features Film, "Living Planet"

"Our flights deep into space have given us a sharper view of Earth -- a fragile home for living things." So reads a portion of the script for "Living Planet," a full-color film produced by Johnson Wax Co. for the National Air and Space Museum.

The film, which will be featured at the Langley Visitor Center from August 8 to 23, shows new views of Earth as seen from space. "Living Planet" explores the challenge of protecting and cherishing our planet and its environment. It considers what our planet was like prior to human life and how man has changed the Earth. The effects of technology and overpopulation are discussed and the beauties of our planet are strikingly revealed.

Return Boxes to Stock

One way you can help conserve supplies and save dollars is by returning cardboard boxes (NSN 8115-00-290-3379 and NSN 8115-00-179-0579) to stock for reuse upon completion of personnel or equipment moves. Writing names, locations and contents on the masking tape instead of the box will allow longer use of the boxes.

Space Shuttle Update

The Space Shuttle Columbia remains on schedule for its Sept. 30 launch at the Kennedy Space Center.

The Orbiter Integration Test, which includes a check of all Orbiter and payload systems, was Monday and Tuesday. The Orbiter and payload bay closeouts were also to be completed this week.

The Shuttle Orbiter is scheduled to be moved Aug. 4 to the Vehicle Assembly Building and will be mated to the external tank several days later.

Approval Needed

The following items containing platinum alloy will only be issued with Branch Head approval:

6145-00-072-0177 — Cable, Special Purpose, Electrical (Platinum)

9545-00-000-1121 — Wire, Platinum Alloy

9545-00-000-1122 — Wire, Platinum Alloy

9445-00-000-1190 — Wire, Platinum Alloy

LFCU Has MasterCard

Beginning August 1, 1981 Langley Federal Credit Union members — who qualify — may enjoy the convenience of MasterCard.

There is little or no red tape. Just come by one of LFCU's three offices and sign up; applications may be picked up on July 31. Use an advance against the associated line of credit to pay off any old card balances and start fresh.

There is no more widely accepted credit card than MasterCard and Langley offers it without a membership fee or other charge.

Hansen Accepts 38-month Project

History of 'Mother Langley' to be Written

Despite more than 60 years of landmark aeronautical achievements, there exists no single full historical account of the Langley Research Center. A formal program to publish Langley's history is now underway and Langley employees and retirees can help document the history of aeronautical technology.

Dr. James R. Hansen, who recently received a doctorate in history from Ohio State University, has been commissioned by the NASA Headquarters' History Office to write a book on the "History of NACA-Langley, 1917–1958." Hansen began his 38-month stay at Langley June 15 and has already begun interviewing people who were here during those years.

"Although a tremendous volume of records are already available to me," Hansen commented, "I hope to acquire even more. There are no doubt private papers and other artifacts that employees and retired personnel have, or are aware of, with yet-undetermined historical value." Hansen hopes people from NACA and NASA will come forward with any information that may help him with the project.

– photo by Bob Nye

Dr. James R. Hansen has begun a 38-month contract at Langley to write a history of the laboratory from 1917 to 1958.

"One thing to emphasize is the importance of oral interviews," Hansen said. "Though documents are the heart of historical research, it is necessary to go far beyond just looking at documents. Whenever you have major historical participants still living, you must interview them. If you do not, all of the nuances and subtleties of the story (which they alone know) die with them." Considering the number of retired personnel who are still in the Hampton area, Hansen remarked that one of his real priorities is to speak with those who know the NACA story. Hansen; Dick Layman, Langley's Historical and Artifacts Program Coordinator, Management Support Division; and Axel Matteson, a Langley retiree and a consultant for the Langley Technology Utilization Program, have compiled a list of approximately 50 people who will be contacted to cover both the institutional and the technical sides of the house.

According to Hansen, whose expertise is in history of scientific institutions, NASA has been looking for someone for a long time to write and publish Langley's history, but for various reasons the project has not been satisfactorily completed. "Histories of daughter NACA- and NASA-sponsored research centers in California (Ames and Dryden) either have been published or are in progress," Hansen said. "Mother Langley's own story lies neglected until now at the ancestral Hampton plantation."

Neglect of the Langley history is more apparent than real, however, for NASA's History Office has never forgotten it, Hansen explained. For at least 15 years, the History Office has recognized the accomplishments of Langley people and facilities and has sought a publishable administrative and organizational history of the center. A former NASA historian, Dr. Eugene Emme, who considered the absence of this history as "one of the big gaps in the history of aeronautical technology," along with retiree Bud Mulac and current NASA historical advisers, frequently discussed the urgency for this work. In the 1960s and 70s attempts were made to write the history, one by a graduate student, another by an ex-Langley engineer, but these works were never published.

The formal historical program was developed about 18 months ago when Layman was asked to take over the program. "Last year I established a historical repository and office space on the second floor of the Technical Library," Layman explained. "I felt that if this was going to be a formal ongoing program, it needed a home. As a result of formalizing the program here, and the general support that I have received from center management and personnel, the NASA History Office responded much more positively to the situation and started working even harder to get our accomplishments documented."

Hansen said Layman organized and maintained many important center records, including a full set of NACA annual reports, programs of the Langley industry conferences, pictorial histories of aircraft and a valuable documents collection, all of which will make his job easier.

"A formal program always helps to attract the kinds of resources you need," Layman explained. "Jim is a resource, if you will, for the agency to get the history documented. Well-trained manpower is the number one resource. A qualified historian was needed to research the documents which I, and others such as Bud Mulac and retiree Neva Brooks had compiled, and to write the history. I just created the atmosphere for the program."

Langley employees and retirees who know of or have any documents or artifacts dating from 1917 to 1958 are encouraged to call Hansen, ext. 3307, or Layman, ext. 3511.

Visitor Center Breaks Record

July 26, 1981 was a record-breaking day at the Langley Visitor Center.

More than 3,100 people visited the center, including 1,400 Boy Scouts from California, Arizona and New Jersey who were en route to the National Boy Scout Jamboree at Fort A. P. Hill, Va. This number far exceeds the previous highest daily attendance of 2,023, recorded in November 1980. The Center has shown a significant upward trend in attendance since Spring 1980.

Males Join Race

Carnival Monarch Candidates Announced

Who will reign over the LAA Carnival this year? It remains to be seen, but again this year, male employees are competing for the title of Carnival Monarch.

The winner will preside over the Carnival scheduled for August 28 and 29 and will assist in the drawings for prizes and in other planned events. The Carnival Monarch will receive $100, first runner up will receive $50 and second runner up will receive $25. You can vote for your favorite candidate when you purchase a Carnival ticket.

Candidates for Carnival Monarch are Beverly Anderson, Laboratories Operation Branch; Debra Bagley, Report Manuscript Control Office; Kevin Barnes, Flight Management Branch; Eric Everton, Computer Science Corporation; Effie Forrest, Space Technology Branch; Wendy Frasca, Metals Applications Technology Branch; Delores Hart, Purchasing Section; Anita Holland, Bionetics Corporation; Rosalyn Johnson, Klate Holt Company; Hubert Lloyd, Photographic Branch; Donna Lynn Miers, Office of Patent Counsel; Susan Paxton, Aerothermo Loads Branch; Tammy Spellman, Computer Systems Branch; and Bill Tennis, Work Control Office.

Contestants

Beverly Anderson

Debra Bagley

Anita Holland

Eric Everton

Donna Lynn Miers

Hubert Lloyd

Susan Paxton

Delores Hart

Kevin Barnes

Effie Forrest

Bill Tennis

Tammy Spellman

Wendy Frasca

Rosalyn Johnson

Richardson Wins Drawing

Luther Richardson of the Fabrication Division won the July drawing for $20 given to registered car pool participants by the Langley Exchange Council.

Anyone commuting to work by bicycle or moped may also register to enter the $20 monthly drawing. By using these modes of transportation, you are saving gas as well as reducing traffic congestion.

Contact Kathi Porter, Ridesharing Coordinator, ext. 3511 for registration.

Voyager-Saturn Encounter Featured

The Visitor Center will feature exhibits and programs in honor of the Voyager II - Saturn encounter.

The Voyager II spacecraft, launched from Earth in August 1977, will make its closest approach to the planet Saturn during the last week in August. Throughout the actual encounter period from August 24 to August 27, pictures from the Voyager II spacecraft will be featured on a large screen television in the Visitor Center. The pictures will be relayed via satellite from the Jet Propulsion Laboratory in California, the mission control center for the Voyager mission.

A large display of the latest images of Saturn, its moons and its ring system will be on display from August 1 through September 13. It will be continuously updated as new material becomes available.

Slide-lecture programs on "Voyager: Mission to the Outer Planets" will be presented each weekend in August on Saturdays and Sundays at 2 p.m. The lectures will show pictures of Jupiter and Saturn taken by the Voyager spacecraft during earlier encounters. A film entitled "Jupiter and Its Moons," assembled from Voyager-Jupiter flyby images, will be shown Saturdays and Sundays at 3 p.m.

Voyager II flew past Jupiter in 1979 at a speed of almost 100,000 miles per hour. Images from Voyager I, which swept past Saturn in November 1980, brought many discoveries, including new moons and startling revelations concerning Saturn's mysterious rings.

Thought For the Day

Kindness may go a long way lots of times when it should stay right at home.

Happenings

HAPPY HOUR has been cancelled for today.

BOWLING. The NASA Tenpin Bowling Conference will hold its annual organizational meeting in the Activities Center Building Hampton Room at 4:30 p.m. August 6. All teams wanting to bowl in the league for the 1981–82 season must be represented. Teams bowling in the conference next season will be determined on a first come, first served basis. Business to be conducted at the meeting will include team selection, starting time, schedule, fees and rule changes. New teams or individuals wishing to bowl should contact Bill Goad, ext. 3234 or Marge Mikula, ext. 4145, before the meeting day.

CARNIVAL. Volunteers are needed to work two-hour shifts at the 1981 Carnival August 28 and 29. Please contact the following if interested: Stu Johnson, ext. 3898, or Gene Hicks, ext. 3737, Bingo; Dana Morris, ext. 3611, Children's Booth; Fran Sabo, ext. 3611, Information Booth; and Betty Farmer, ext. 2062, decorations.

RAFFLE TICKETS for the Carnival are now available at the Activities Office or from any LAA delegate or alternate. Busch Gardens passes will be given to the person who sells the most tickets and to the runner up (excluding Carnival Monarch candidates).

EMPLOYEES/CONTRACTOR NIGHT at War Memorial Stadium will be held August 5 (rain date August 6). The Peninsula Pilots will play Lynchburg at 7:30 p.m.; however gates will open at 6:30 p.m. Prizes will be given away. Tickets are free and are available at the Activities Office or at the gate upon presentation of NASA or contractor badge.

EMPLOYEES/CONTRACTOR NIGHT will be held at Busch Gardens August 21 from 5 p.m. to midnight. Tickets are $6 and can be purchased for families and friends at the gate upon presentation of NASA or contractor badge.

TIDEWATER DINNER THEATER. "Show Boat" is playing at the Tidewater Dinner Theater in Norfolk. Tickets are on sale at the Activities Office for $13.50 each.

4 X 440 RACE. Anyone interested in sponsoring a team or being part of a team in the 4 x 440 Carnival race should contact either Larry Rowell, ext. 2995, or Larry Spencer, ext. 3681, by August 21. A team must represent either a NASA directorate or a contract company (all four members must be from that organization). Any organization can have more than one team.

TALENT SHOW. The LAA will sponsor a talent show at the Carnival Friday, August 28. Anyone interested in performing should call Johnny Arrington, ext. 3961. A public address system will be provided.

Recent Retirees

Jean B. Elliott and **Dolly F. Seward** of the Research Information and Applications Division retired July 24.

Federal Summer Employment Program Supported at Langley

Langley has provided 67 students with temporary summer employment for the Summer 1981. The program, under the direction of the Staffing and Special Programs Branch, Personnel Division, is comprised of the following groups:

The Regular Summer Program consists of 47 engineering, professional administrative and clerical positions. The positions, filled under Announcement 414, are staffed by undergraduate and graduate students at the GS-5 and below level.

The Summer Youth Employment Program includes 20 clerical and mathematical aids. These students are referred to the center by the Virginia Employment Commission and are filled on the basis of economic need.

The program's objectives are to give the students insight into full-time government opportunities after graduation, help supplement the center staffing needs during the summer months, help students enrich their career goals with specialized training and genuine work opportunities and earn money for further education.

The program began May 18 and will end September 15.

– photo by Bill Salyer

SUMMER EMPLOYEES TOUR CENTER. The Summer Counseling Office conducted a tour of Langley facilities July 9 to provide summer employees with a better understanding of the work being done at the center. The tour began with an overview of the center and a narrated film on the Space Shuttle Columbia, included visits to facilities such as the flight simulators, the Unitary Wind Tunnel, the Aircraft Noise Reduction Laboratory and the Hangar, and ended with a demonstration at the Landing Loads Track. Following a picnic lunch at the Activities Center, the group attended a presentation on stall spin research in the Hampton Room. Pictured above is a group of summer employees touring the Hangar with Robert O. Schade, retired Chief of the Low-Speed Aerodynamics Division.

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swap and shop

FOR SALE

Articles

Grandfather clock, solid walnut with Westminster chime on quarter hour and strike on the hour, 72" tall, weight driven, hand crafted, $625. Call Comer, 877-1669.

Vehicles

1968 Plymouth station wagon, runs good, $150 OBRO. Call 838-4227.

Real Estate

Courthouse Green: 3 BR, 1-1/2 BA townhouse, Hampton model. Assumable 8 percent mortgage, EC, good location, $42,000. Call 599-4321.

FOR RENT

Courthouse Green Townhouse: 3 BR, 1-1/2 BA, Hampton Model, available now. $330/mo. Call 599-4321.

FOUND

Black Dog at NASA softball field. Call to identify, 868-8874.

Key Position

Frederick L. Moore has been selected Head, Institutional Programs Branch, Programs and Resources Division, under Competitive Placement Plan Announcement 81-36.

Speakers Bureau

The following employees spoke to various organizations on the Space Shuttle Program during June:

Bob Wright, Williamsburg Kiwanis Club, Retired Officers' Association and Portsmouth Lions Club;

George Ashby, Walnut Hills Baptist Church and NTL Defense Transportation Association;

Bill Boyer, Air Force Association.

Ben Smith and **Jane Hagaman** spoke at the Greek Orthodox Church June 23 on the Space Program.

Softball Association 1981 Final Standings

Team	Wins	Losses
A-League		
1. Shams	17	0
2. Charlie Brown	14	3
3. Decibals	13	4
4. SDC Astros	10	7
5. Misfits	8	9
6. Simulation	5	12
7. ACD	4	13
B-League		
1. RCA	11	5
2. GWU	10	6
3. Ballers	10	6
4. Materials	7	9
5. Firestoppers	7	9
6. Dynamics	6	10
7. CDMS	6	10
C-League		
1. LSB	12	5
2. CDC	11	6
3. FED	7	10
4. dBc	6	11
5. PRC Coeds	5	12
6. Suds	4	13
7. HTC	2	15

Thanks

Quinton C. Davis, IV writes, "I would like to thank my many friends and co-workers for the flowers and cards sent to me during my recent illness. More especially appreciated were the many personal visits made by my friends. You will never know how much this meant to me. Many thanks to each and everyone."

cafeteria menu

WEEK OF AUGUST 3

MONDAY: Old Fashioned Bean Soup; Roast Beef AuJus; Seafood Gumbo Over Rice; Macaroni, Franks & Cheese. Snack Bar: Hot Italian Sausage Sub; Charcoal Hoagie; Egg Salad.

TUESDAY: Manhattan Clam Chowder; Baked Lasagna; Fried Fish Nuggets; Spanish Omelette. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Roast Turkey Dinner; Veal Parmesan; Shrimp Chow Mein. Snack Bar: Sausage Pizza; Steak, Onion & Cheese Sub; Polish Sausage.

THURSDAY: Chicken Gumbo Soup; Meatloaf; Chicken & Dumplings; Crab Cutlets. Snack Bar: Ham & Cheese Club; BBQ; Chuckwagon.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Broiled Beef Liver; Eggplant Parmesan. Snack Bar: Deluxe Sub; Hot Ham & Cheese; Tuna Salad.

WEEK OF AUGUST 10

MONDAY: Ham & Lima Bean Soup; Hot Roast Pork; Chicken Pot Pie; Shrimp Cacciatore over Rice. Snack Bar: Hot Italian Sausage Sub; Charcoal Hoagie; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Spaghetti Dinner; Chicken Chow Mein; Polish Sausage. Snack Bar: Chicken Cutlet; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; 1/2 lb. Chopped Steak; Baked Beans & Franks. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Vegetable Soup; Braised Chicken Livers over Rice; Turkey Breast Nuggets; Spinach & Bacon Quiche. Snack Bar: Ham & Cheese Club; BBQ; Chuckwagon.

FRIDAY: Minestrone Soup; Fish Dinner; Ham Steak; Salisbury Steak. Snack Bar: Deluxe Sub; Hot Ham & Cheese; Tuna Salad.

Retirement Party

George J. Magnus, who retired as Head of the Planning Resource Control Office of the Fabrication Division, will be honored with a retirement dinner party Saturday, August 15, at the Activities Center. A cash bar social will begin at 6 p.m., followed by dinner at 7 p.m. The cost, including gift contribution, is $10.50 per person or $20 per couple. Contributions for gift only are welcome. Send reservations and make checks payable to Fred Ferrari, Mail Stop 222, by August 8.

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

Volume 20 Issue 16

August 14, 1981

Voyager 2 Carries TV Camera for Saturn Encore

NASA's last close-up look until 1986 at a planet other than Earth will take place later this month when Voyager 2 encounters Saturn.

In an encore of Voyager 1's highly successful flyby of Saturn last November, the Voyager 2 spacecraft will reach Saturn August 25 with closest approach occurring at 11:25 p.m. EDT. The robot explorer will pass 101,000 kilometers (63,000 miles) above the cloudtops.

NASA Langley will carry four live television broadcasts on the encounter, from NASA's Jet Propulsion Laboratory, Aug. 24, 25, 26 and 27 at the Activities Center, Bldg. 1222.

The Activities Center will open at 7 each night, with the broadcast beginning at 8 and lasting until 9 except on Tuesday, Aug. 25, when the satellite transmission is scheduled to end at 9:30. Each broadcast will be based on the latest information from the spacecraft. During the televised programs, refreshments will be available from the Langley Activities Association.

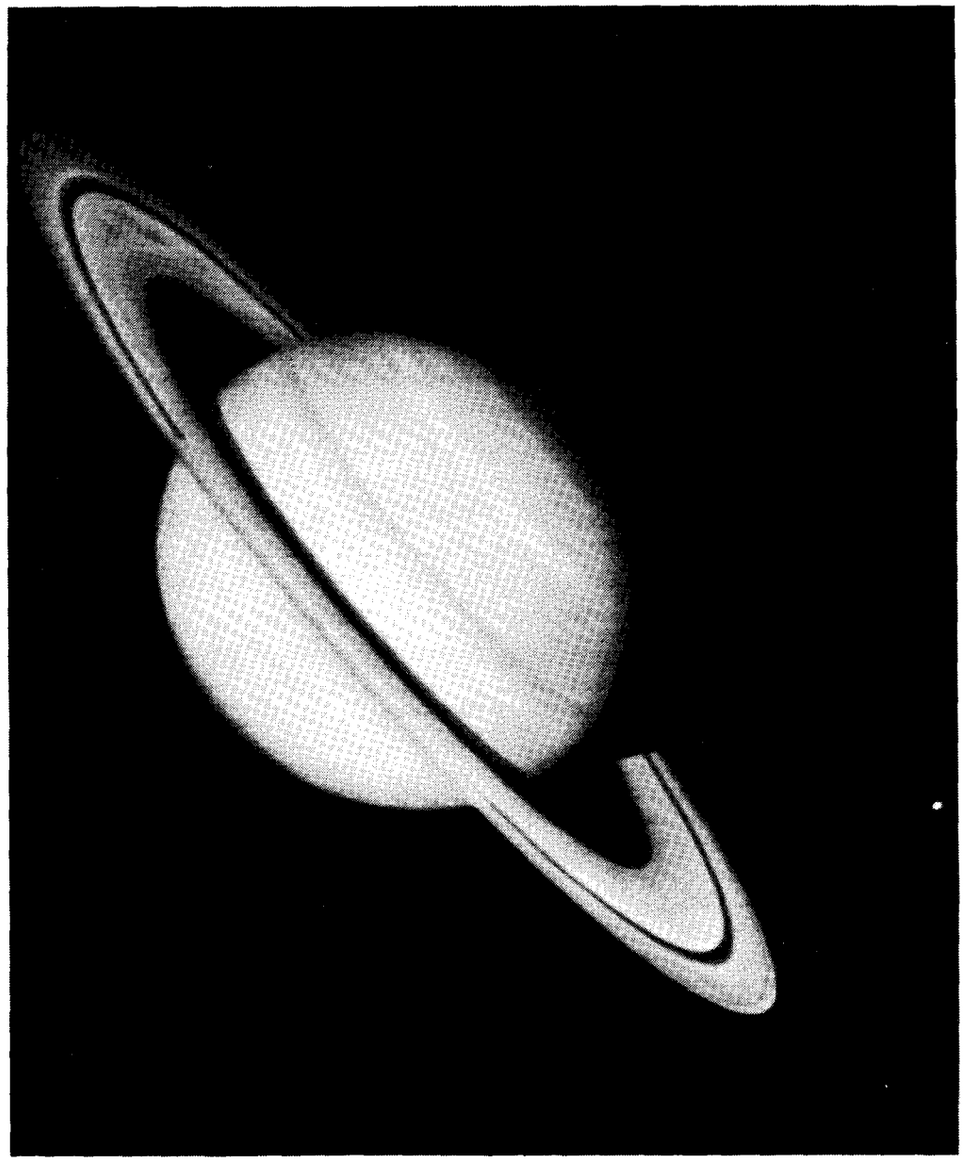
In addition, the Visitor Center is inviting the public to view the live broadcasts of Aug. 25 and 26 at the Visitor Center from 7:30 to 9:30. For those who miss one of the two evening shows, the Visitor Center will also replay a video tape of the broadcasts the following day.

Both the Activities Center and the Visitor Center will be fed the cross-country transmissions from Satcom 1, via Langley's 10-meter antenna dish and the efforts of the Electronics Technology Applications Unit of FD.

Further announcements about the broadcasts will appear on Langley bulletin boards beginning the week of Aug. 17.

Voyager 2, launched in August of 1977 from Florida, is only midway through its planned explorations. Following the Saturn encounter are planned encounters with Uranus in

Continued on page 2.



Voyager 2 took this photograph of Saturn and two of its satellites June 28, 1981, while still 59 days and 56 million kilometers (35 million miles) from its August 25 closest approach. The satellite Nimas is at upper left and Dione is at lower right. The rings in this new photo are much brighter than they were in photos taken by Voyager 1. The first spacecraft flew past Saturn in November 1980, shortly after the planet's vernal equinox, when the Sun illuminated the rings almost edge-on so the rings were at their darkest. Now, 16 months into Saturnian spring, the rings are fuly illuminated and appear as bright as the planet.

Voyager 2 Carries TV Camera for Saturn Encore

Continued from page 1.

January 1986 and, using that planet for an additional gravitational slingshot, with Neptune in August 1989.

Based on the extensive list of discoveries made by Voyager 1, the Voyager 2's onboard computers have been virtually entirely reprogrammed to enable scientists at NASA's Jet Propulsion Laboratory to capitalize on the second visit. The Voyager 2 encounter will concentrate on studies of the intricate and dynamic ring system, on the Saturn satellites and on additional studies of the Saturn cloud structure.

Because the ring system is composed of literally hundreds of discrete ringlets, Voyager 2 will use an occultation technique to assist in the definition of the ring structure. The spacecraft's photopolarimeter -- an extremely sensitive light meter -- will be aimed at the star Delta Scorpii 989 light years away on the other side of the rings as the spacecraft approaches the planet. By measuring the successive dimming and brightening of the starlight, scientists expect to gain the best information yet on the number of ringlets, their densities and widths as well as the size of the gaps between them. Another star occultation will be used after closest approach, with the Voyager 2 photopolarimeter looking back through the rings at the star Beta Tourii, 180 light years away in the opposite direction. This second occultation will help resolve questions about the outer ring sections.

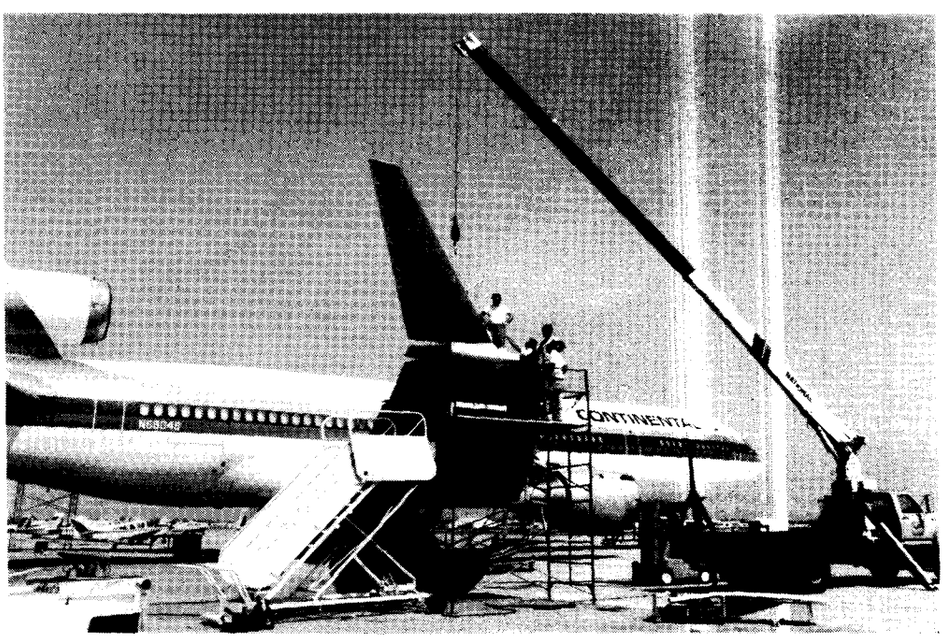
Using a similar technique, but with radio waves instead of light, the Voyager 2's radio signal will be tracked as it recedes behind the planet from the near-north equatorial region to the near-south equatorial region. By monitoring how the signal fades out and then fades back as the spacecraft emerges from behind Saturn, scientists can measure atmospheric components in the higher cloud layers.

Special photographic techniques will be used to allow for a computerized three-dimensional reconstruction of Saturn's strange, braided F-ring. This is expected to provide sufficient information for determining whether this ring structure is actually braided -- implying at least three components -- or is twisted or twined -- implying only two components.

Additional close-up photographs of the Saturn moons, some only barely captured by the Voyager 1 visit, will be taken to better define what is now believed to be a new and important class of solar system moon -- nearly all ice and of an intermediate size to those of Jupiter.

Because of the opague nature of Titan's thick nitrogen atmosphere, surface photographs of the second largest moon in our solar system won't be taken. Titan was discovered to have an almost unbelievably thick nitrogen and methane atmosphere with a high hydrogen haze above the nitrogen layer. The atmospheric pressure at Titan's surface is nearly two and a half times that here on Earth. Various speculations about surface conditions on Titan have included the possibilities of liquid nitrogen seas with methane snow or rain falling.

Voyager 2, along with Voyager 1 and Pioneers 10 and 11 are all on a trajectory taking them out of our solar system. The Pioneer 10, now over two and a half billion miles from Earth, will be the first to actually leave the solar system -- in 1986.



WINGLETS READY, BEING FITTED ON DC-10. The Douglas Aircraft Company is currently installing Winglets on a DC-10 for flight tests which will start next month. Baseline flight tests on the DC-10, which was leased from Continental Airlines, have already been conducted. The project, funded under contract through NASA's Energy Efficient Transport element of the Aircraft Energy Efficiency Program, is being managed at Langley.

Spinak Heads Wallops

Abraham Spinak has been named Acting Director of the Wallops Flight Center, effective August 1.

Thanks

T. W. E. Hankinson writes, "My family and I wish to thank those who planned, participated in and attended my retirement party. The comments, gifts and mementoes will be a reminder of the cooperative spirit at NASA that made my career so enjoyable."

The *Langley Researcher* as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond
Staff Photographer . . . . . Bob Nye

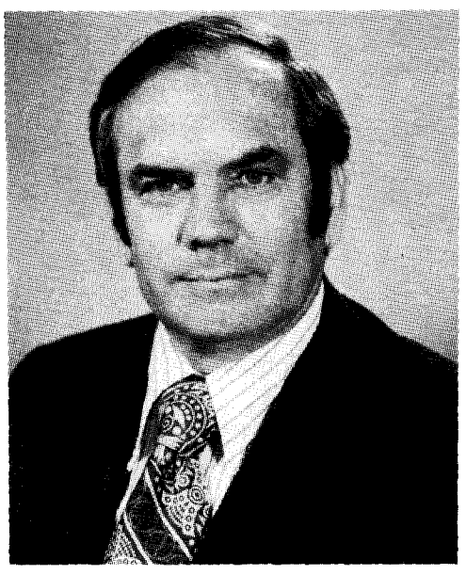
The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

Systems Engineering and Operations Directorate

Clark, Wingate Named to SES Positions

Two Langley managers have been selected for Senior Executive Service positions in the Systems Engineering and Operations Directorate.

Pending formal approval from the Office of Personnel Management, Hubert K. Clark will be Assistant Director for Systems Engineering and Operations and Dr. Robert T. Wingate will be Chief of the Systems Engineering Division.



Hubert K. Clark

As Assistant Director for SE&O, Clark will provide general direction to the overall technical operations and activities of the directorate. He will plan, direct, coordinate and integrate the highly specialized technical and engineering services provided by three engineering divisions, two technical support divisions and two staff officers in support of Langley aerospace and aeronautics research. He will establish and maintain close liaison with NASA Program offices, Langley research directorates and divisions to achieve a thorough knowledge of NASA research programs and the part Langley plays in the technical support of these programs.

Clark began his government career with NASA's predecessor agency, the National Advisory Committee for Aeronautics, in May 1952 as a mechanical engineer. In May 1962 he was appointed Head of the Flight Systems Section. In July 1972 he was named Chief of the Systems Engineering Division, where he administered and technically directed approximately 160 multi-discipline engineers and engineering technicians in the design, analysis, testing, integration and flight operations in support of Shuttle payloads, pollution measurement instruments, spacecraft, research aircraft models, full-scale aircraft systems and subsystems and analytical support to facility design.

Prior to joining the Langley staff, Clark was a power plant engineer in Goldsboro, N.C., and a mechanical engineer (design) in Knoxville, Tenn. He served in the U.S. Navy from July 1943 to August 1946.

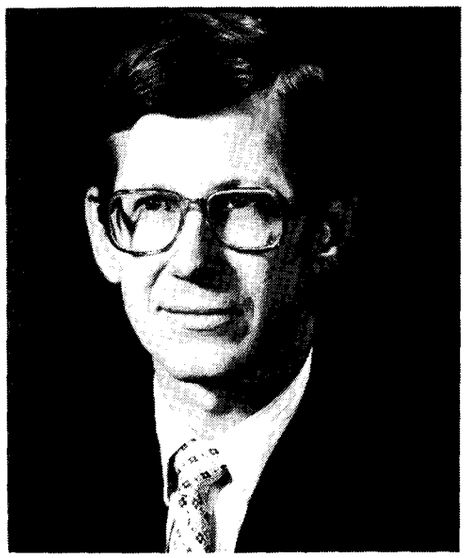
Clark received a bachelor of science degree in mechanical engineering from Duke University.

He has received the NASA Exceptional Service Medal, a NASA Special Achievement Award for contributions and several Group Achievement awards. He holds a patent for a Thermal Pump-Compressor for space use.

Clark and his wife, Georgia, live in Newport News. They have two sons and a daughter.

Wingate will provide technical and administrative direction of a highly diversified engineering organization having responsibility for advancing and applying engineering technology to the design, development, and manufacture of aeronautical and space flight systems and ground-related facilities in the aerospace field.

Wingate began his NASA career in September 1959 as a mechanical equipment design engineer. He was named Head of the Flight Dynamics Section of the Flight Vehicles and Systems Division in June 1968 and Head



Dr. Robert T. Wingate

of the Engineering Analysis Branch of the Systems Engineering Division in March 1971. In September 1979, he became assistant Chief of the Systems Engineering Division, helping manage the division responsible for the mechanical, electrical and systems engineering functions required to provide research facilities and flight hardware for aerospace research, applications and technology development programs.

Before joining the Langley staff, Wingate was an analytical design engineer at Pratt and Whitney Aircraft Company in West Palm Beach, Fla., from September 1958 to March 1959. He was an officer in the U.S. Army Signal Corps from March 1959 to September 1959.

A native of Alabama, Wingate received a bachelor of science degree in

Continued on page 12.

Shuttle Launch

Car Passes, Accommodations Available

Langley has been allocated 75 car passes for the second launch of the Space Shuttle Columbia, scheduled for September 30 from the Kennedy Space Center.

The car passes will be distributed on a first-come, first-served basis. Gary Price, Office of External Affairs, said car passes for the landing at the Dryden Flight Research Center can also be arranged.

There are numerous campgrounds and several hundred motels within a 50-mile radius of Kennedy. Price said rates are high and recommends that reservations be made as soon as possible.

To have your name added to the list to receive a car pass or for information and telephone numbers of campgrounds and motels, call Mary Mesic, exts. 3395 or 3341.

– *photos by Hubert Lloyd*

Ronald K. Clark, W. Barry Lisagor and John R. Davidson of the Materials Division recently received Space Act Awards for an inventive contribution "Fixture for Environmental Exposure of Structural Materials under Compression Load." The monetary awards and certificates were presented by Charles P. Blankenship, Chief of the Materials Division.

Brown is NASA Inspector General

June Gibbs Brown was sworn in as Inspector General by NASA Administrator James M. Beggs July 27 at NASA Headquarters.

Brown, who is NASA's second Inspector General, previously had been Inspector General, Department of the Interior, from May 1979 to January 1981. At Interior, she directed audits and investigations of the Department's programs and operations to promote their economy, efficiency and effectiveness and to prevent and detect fraud and abuse.

Previous positions held by Brown included: Project Manager, Pay-Personnel System Design, Bureau of Reclamation, Denver, Colo., from June 1976 to April 1979; Chief, Financial Systems Design, Bureau of Land Management, Denver, March 1975 to May 1976; Director, Internal Audit, Navy Finance Center, Cleveland, July 1972 to February 1975; Accounting Instructor at Cleveland State University and at Dyke College in Cleveland, September 1971 to June 1972; Assistant to the Comptroller, S.M. Hexter Co., Cleveland, March 1971 to February 1971; staff accountant, Frank T. Cicerelli, C.P.A., Cleveland; and a real estate broker and office manager for Northeast Realty, Euclid, Ohio, 1961 to 1969.

Brown received a bachelor's degree in accounting, summa cum laude, from Cleveland State University in 1971; a master's in business administration from Cleveland State University in 1972; and a J.D. from the University of Denver, College of Law, in 1978.

Among her awards are the Financial Management Improvement Award, 1980, the only award sponsored by the federal government which specifically recognizes exceptional achievements in financial management; the Outstanding Service Award, 1980, National Association of Minority Certified Public Accounting Firms; the Outstanding Achievement Award, 1979, Association of Government Accountants, Denver; the Outstanding Contribution to Financial Management, 1977, Federal Executive Board, Denver Region; and the Career Service Award for Managerial Excellence, 1974, Federal Executive Board, Chicago Region.

She is a member of the Association of Government Accountants for which she served on the Equal Opportunity for Minorities and Women in Government, National Executive Committee and National Ethics Board; American Institute of Certified Public Accountants; American Accountants Association; and Association of Federal Investigators.

Newman Receives Irwin Award

Dr. James C. Newman Jr. of the Materials Division was honored with the Irwin Award at the 14th National Symposium on Fracture Mechanics in Los Angeles.

The award is presented annually by the American Society for the Testing of Materials to an outstanding scientist for contributions to the field of fracture mechanics. Newman was cited for his work on compact specimens.

Langley Supports Recent Bloodmobile

Three hundred one pints of blood were donated by Langley employees, retirees and contractors at the July 29 visit of the Red Cross Bloodmobile.

Achieving gallon status were:

8 gallons – Davis B. Wright, William G. Chapin and Walter E. Bressette.

7 gallons – James L. Leiffer and Joseph G. Daniels.

5 gallons – Frances Hartman.

4 gallons – Russell E. McKean, William F. Adkins, Robert Spruill, James Scheiman, Charles A. Davidson Jr. and Richard Chattin.

2 gallons – Gary R. Beasley, Henry H. Zumbrun, William C. Woods, Sammie D. Joplin, Robert H. Daugherty and James Sperance.

1 gallon – William D. Castle, James Prohaska, Dave E. Williams, Lawrence Weinberg and Thomas Zang.

Donating blood for the first time were Frank Hoage, Mark Hood, Paul Schutte, Steve J. Hooper, David I. Jett, William B. Krieger, Jon Thompson, Raymond Cruz, Alvin Allen, Obediah Andrews, Jr., James Pike, Ruben Remus, Kenneth Voss, James Zitzelberger, Jeffery L. Lefler, Glinnie Draine, Carl J. Voglewede, Mathew Winder, Alton Burrell, Jean Brown, Nancy Orlando and Pearlie Collier.

NASA Coordinator for the Bloodmobile was Virginia Jones. Red Cross Coordinator was Fran Williams. Refreshments were donated by the Langley Federal Credit Union.

OPM Schedules PACE

The U.S. Office of Personnel Management (OPM) plans to administer the nationwide Professional and Administrative Career Examination (PACE) between October 28 and December 12, 1981.

OPM Job Information Centers will accept applications from September 14 through October 13 to take the test. Applications received before or after that date will be returned without action.

Specific testing dates will be set by OPM regional offices. Individual applicants will be notified as to when and where they will be taking the written test.

Personnel Profiles

Hoops and Heels, Spokes and Wheels

– by Allan C. Hanrahan

Who dat? Who dat? Who dat talkin' bout beatin' de Heels?
Who dat? Who dat? Who dat talkin' bout beatin' de Heels?

The above was a cheer heard emanating from the Carolina crowd just prior to the National Collegiate Athletic Association (NCAA) Basketball Championship contest between the University of North Carolina "Tarheels" of Chapel Hill and the Indiana State "Hoosiers," held at the Spectrum in Philadelphia this Spring. The cheer was Cajun in origin, "borrowed" from Louisiana State University, with "Heels" inserted in place of "Tigers."

What does this have to do with our guest this issue, CARL B. ANDERSON? Well, if you were to change "Heels" to "Wheels" you would have a cheer appropriate to Anderson's basketball team, the Sun Wheelers, Inc. of Virginia Beach, a group of among 800 to 900 men who play basketball in wheelchairs. Like college teams they play by NCAA rules and regulations, with a few obvious modifications.

The Sun Wheelers, winners of this past season's Virginia Beach Mayor's Invitational Tournament, were organized in 1976 by the Virginia Beach Department of Parks and Recreation and consists of players ranging in age from 25 to 55. Many of the players are confined to wheelchairs but some, like 27-year-old Virginia Beach resident Anderson, are able to get around on crutches and aside from walking and running are able to do just about anything they want. In fact, "Everything--except walking and running," is how Anderson answered when asked his main interests and activities.

He enjoyed basketball of course, but lest you think it a mean accomplishment, it wasn't. Not being confined to a wheelchair, it was just as hard for him to play that way as it would be for anyone who had the full use of their legs. While the physical benefits, traveling, competition, personal satisfaction, general fun and a love for the sport are the reasons for playing, it is a pastime punishing to the hands and torso and a grueling game for both the players and the special wheelchairs they use. A well-written article in the "innerViews" section of the March 15 edition of the Daily Press describes wheelchair basketball in depth, and Anderson was mentioned prominently in that article, by the way.

"I enjoy sailing," stated the California-born Anderson, who added, "but my boat was stolen--at Sandbridge . . . out of all the boats that were lined up there that day I don't know why they chose mine. I still have the sails, though," he added.

"Bass fishing, in Back Bay in the brackish water, that's something I like to do," continued Anderson, who later added, "I enjoy getting out," which is a good thing because his position as an auditor in the Defense Contract Audit Agency Office, located in the East Area, requires him to travel a lot. Also required is meeting new people but he has no problem there either, as he stated more than once during our conversation: "I enjoy meeting people."

Anderson also admitted to liking his work. "I take it home with me," he confessed.

"I don't watch TV," was another confession, but reading news magazines such as Time and Newsweek keep him occupied as do such books as one of science-fiction short stories, the last book he read.

– photo by Bob Nye

Carl Anderson is shown behind the wheel of his specially equipped Dodge Colt. To the left of the steering column is the hand-manipulated brake and accelerator control. By pushing it down for braking and raising it for accelerating, Carl manager quite well.

Anderson has studied acoustic guitar for about 10 years and is not averse to playing in front of crowds, having done so in the past on more than one occasion.

We almost forgot to mention swimming, which is a sport at which he was adept even before he was stricken at the age of 13 by a rare virus that attacks the nerve endings, thus leaving his legs paralyzed. Prior to then he had played baseball and was even the captain of his football team.

"I had a 'why me?' attitude," he said, when discussing his disability, "but loving parents, family and friends helped a lot."

Conceivably, the disease could reverse itself and Anderson could use his legs again but he decided against hinging his future on that eventuality.

"We all have some kind of handicap," stated Anderson, who advanced the philosophy that handicaps act in "forcing you to do things that you wouldn't normally do." Continuing, he declared, "I decided to 'bite the bullet' and accept it and make it (life) the best I could."

Aiding Anderson in making his life "the best" he can is his special equipped 1977 Dodge Colt, shown with him in the accompanying photograph and of which he stated, with a tone of satisfaction, "I just paid for it."

One obvious place to which he "rides" his Colt is his parent's home, also in Virginia Beach. His mother is a nurse and his father, a retired colonel in the USMC, is an administrator in the Virginia Beach Public School System. Two of his three older brothers also live in Virginia Beach; the third brother lives in South Carolina.

Continued on page 8.

Langley Experiments Riding in Second Shuttle

When the Space Shuttle Columbia embarks on its second mission this fall, it will carry two Langley experiments in its cargo bay.

The Feature Identification and Location Experiment (FILE) and the Measurement of Air Pollution from Satellites (MAPS) experiment are part of the 16,000-pound payload called OSTA-1, managed by NASA's Office of Space and Terrestrial Applications.

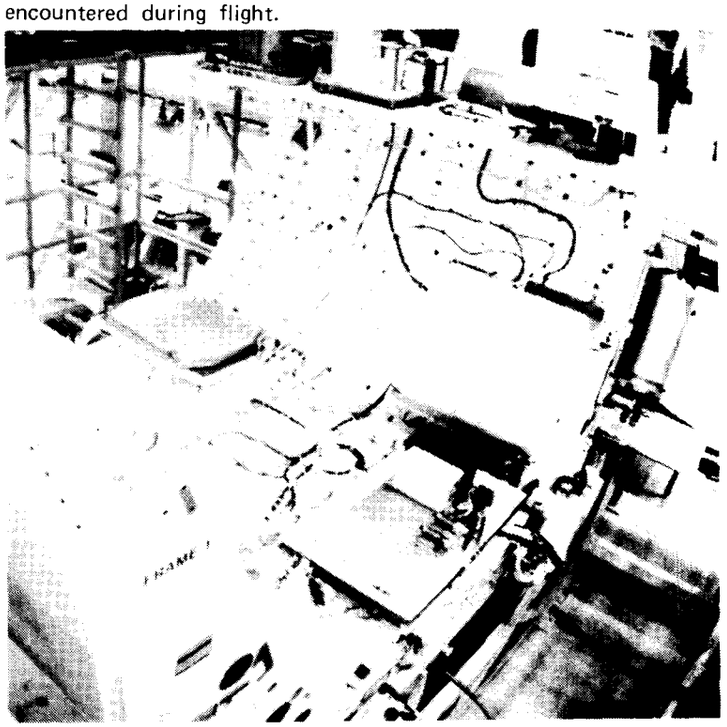
OSTA-1 is designed to demonstrate the Space Shuttle's versatility as an operational platform for scientific and applications research.

The MAPS experiment will measure carbon monoxide (CO) circulation patterns and concentrations in the Earth's troposphere, the region of the atmosphere from the Earth's surface to the cloud tops.

Carbon monoxide is a colorless, odorless, poisonous gas formed by the incomplete combustion of carbon or any carbonaceous material, such as gasoline in automobile internal combustion engines.

This will be the first measurement from space of pollutants at this altitude and an important step toward measuring and monitoring global pollution in locations of public concern, according to Langley's Hank Reichle, the MAPS experiment principal investigator.

The performance of the instrument will also be evaluated under various temperatures and other environmental conditions encountered during flight.



Langley's Measurement of Air Pollution from Satellites (MAPS) experiment (left) and the Feature Identification and Location Experiment (FILE) (center) sit on the shelf of the pallet that will be carried on the second Space Shuttle mission. The first payload to be carried into space by the Space Shuttle, OSTA-1 is being lowered into the Cargo Integration Test Equipment (CITE) stand in the Operations and Checkout Building at the Kennedy Space Center. The CITE stand simulates the Orbiter's cargo bay for testing interfaces between the experiments, mounted to a pallet, and the vehicle.

FILE is a technology development experiment which may have advanced remote sensing applications.

Remote sensing of Earth from space has become a valuable asset to mankind. Observation satellites help us better understand our environment by detecting and monitoring snow cover, cloud cover, food-crop growth and changes, floods, fire and its damage, and drought areas.

Many of these observation tasks require locating, pointing and tracking Earth features, including their identification and classification.

The primary goal of FILE is to test a technique for autonomously classifying the Earth terrain into four categories or features: vegetation, bare land, water and clouds/snow/ice.

Ideally, a remote sensing and tracking system should automatically extract updated information whenever new imagery arrives within the field of view and distribute selected information directly to interested users, according to Gene Sivertson, co-investigator of FILE.

Sivertson said the key to automated remote sensing is onboard decision making. In particular, data selectivity at the sensor state is necessary to prevent collection of unwanted data, to provide timely data to a wide variety of users and to minimize data loads and data rates.

Five of the seven OSTA-1 payload experiments, including FILE and MAPS, will be mounted on an engineering model of a Spacelab pallet -- a 10-foot long, U-shaped structure that mounts in the Shuttle's cargo bay. The other two experiments will be mounted in the Shuttle's crew compartment.

When the Space Shuttle is in orbit, the cargo bay faces the Earth perpendicular to the Earth's surface. The instruments will be operated and data collected during this period.

MAPS has a special viewing window which faces Earth. Behind this window are two small cells containing CO gas and a third "gasless" vacuum cell. Radiation emitted from Earth passes through each of these cells to a detector.

One CO gas cell measures radiation at middle tropospheric altitudes (4-5 miles) and the other measures radiation at upper tropospheric altitudes (6-7.5 miles). This provides a thorough picture of CO distribution in the Earth's lower atmosphere.

Carbon monoxide radiates a unique optical pattern of lines. When a beam of radiation passes through a CO gas cell, the CO lines are filtered out by the gas in the cell. This leaves a "thumbprint" which shows all the other elements in the atmosphere.

Since the vacuum cell is gasless, its "thumbprint" contains a continuous band of lines representing all the elements present in the atmosphere. By subtracting the CO gas cell "thumbprint" from the vacuum cell's, researchers can determine the amount of CO in the atmosphere.

All three cells operate simultaneously, requiring the instrument to compare data from the CO cells to the vacuum cell at the same time. These two separate measurements are then computed to form a thorough picture of CO distribution.

MAPS is a modified version of an experiment Langley has tested worldwide in airplanes. The Shuttle version has been built to withstand forces occuring during take-off, such as the extreme vibration and noise from the Shuttle engines.

The FILE hardware consists of a sensor and electronics unit, a buffer memory, a tape recorder, a film camera and a sunrise sensor.

The experiment is activated when the sunrise sensor detects the sun. Data collected by two electronic cameras (sensors) are put into the electronics unit, where the classification decisions are made. About 120 frames of data will be sent from the sensor and electronics unit, via the buffer memory, to a tape recorder during the mission.

Data for each frame includes digitized images from the electronic cameras, and a count of the total number of picture elements in each scene classified in each category. Date and time of day will also be recorded to allow latitude and longitude determinations for each recorded image.

In addition, the film camera will record an image for post-flight comparison with a composite four-color hard-copy picture to be constructed for each electronic camera frame. Data will be analyzed to determine classification accuracy and research directions for future technology development.

The next level of technology development, FILE II, is a cloud-ice-snow detection and discrimination sensor. FILE II, which will expand the first FILE hardware classification abilities, is under development and is expected to be ready for aircraft flight testing in 1982. An advanced FILE is also being planned for a Space Shuttle payload in 1984.

Bullock Reappointed to Board

Gordon F. Bullock of the Flight Electronics Division was recently reappointed to a second term as a member of the Virginia Advisory Board for the Division for Children.

In a letter from Governor John N. Dalton, Bullock was praised for his volunteer service and contributions to the board. "Virginia and its institutions and agencies greatly benefit by the time, effort and knowledge donated by dedicated citizens such as yourself," Dalton said. "I know I speak on behalf of all Virginians in expressing deep appreciation to you for your willingness to serve in this important capacity."

Bullock's four-year term expires June 30, 1985.

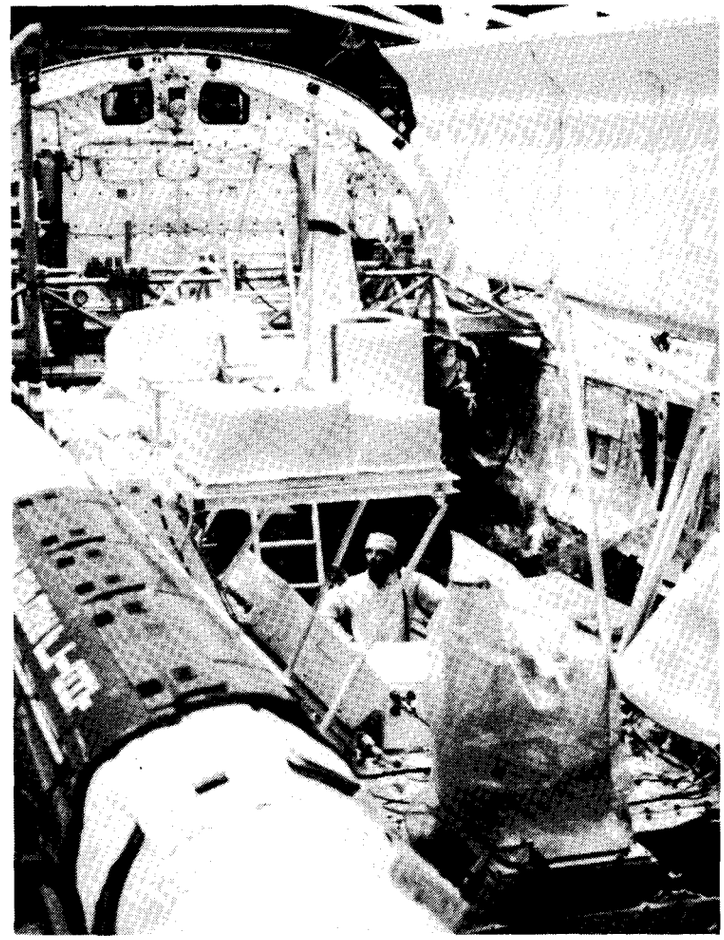
Griffin Resigns from NASA

Gerald D. Griffin, Deputy Director of the Kennedy Space Center, has announced his resignation from NASA to accept a position with Scott Science & Technology Inc. The resignation is effective August 21.

Griffin will become Vice President for Operations with the Scott company, headed by former astronaut David Scott and headquartered in Lancaster, California.

In his present job since May 1977, Griffin was also acting Associate Administrator for External Relations at NASA Headquarters from July 1980 to July 1981. In addition to his External Relations duties, he served as the NASA Transition Officer during the Carter-to-Reagan transition. He also played a key role in planning NASA's external activities related to the first flight of the Space Shuttle. He was Deputy Director at the Dryden Flight Research Center from 1976 to 1977.

Griffin began his NASA career at the Johnson Space Center in 1964, where he was a flight controller during the Apollo Program. He headed NASA's Office of Legislative Affairs from 1973 until he went to Dryden in 1976.



Langley's Measurement of Air Pollution from Satellites (MAPS) experiment (forward on the shelf, center of photograph) and the Feature Identification and Location Experiment (FILE) (experiment package with cone figure behind the MAPS experiment) sit on a pallet that will be aboard the second Space Shuttle. The Langley experiments are two of five that make up the OSTA-1 pallet experiment package. OSTA-1 is being lowered into the cargo bay of the Shuttle Orbiter. The pallet, built by British Aerospace Corp. for the European Space Agency and ERNO, and the package of experiments are scheduled for launch no earlier than Sept. 30. The experiments will operate from within the Orbiter's bay while in orbit.

Langley to Host Noise Workshop

Langley Director Donald P. Hearth, has extended invitations to the U.S. Helicopter Industry to attend a NASA/Industry Rotorcraft Aerodynamic Noise Prediction/Noise Reduction Workshop December 15–18, 1981. Langley is hosting this workshop, organized by the NASA Rotorcraft Working Group, representing Headquarters, Ames, Langley, and Lewis Research Centers.

The objective of the workshop is to determine realistic plans for NASA and U.S. Helicopter Industry cooperation in developing design-for-noise methodology and in identifying promising noise reduction techniques.

Tips for Buying a Fire Extinguisher

If you plan to buy a fire extinguisher for the house, a multi-purpose dry chemical labeled ABC puts out most types of fires -- wood, paper, and cloth, flammable liquid or electrical fires.

If you buy more than one, you might want to get a BC for the kitchen, an A for the living room and an ABC for the basement and garage.

- Extinguishers come in dry chemical, foam, carbon dioxide, water, or halon types. Whatever type you buy, it should be labeled by a testing lab.
- The higher the number rating on the extinguisher, the more fire it puts out. High rated ones are often (not always) the heavier models. Make sure you can hold and operate the one you might buy to use at home or be required to use at work.
- Ask your dealer how to have your extinguisher serviced and inspected. Recharge it after ANY use. A partially used one might as well be empty.
- Extinguishers should be installed away from potential fire hazards and near an escape route.

Competitive Placement Announcements

The following Competitive Placement Announcements are currently open:

81-42 – Supervisory Electrical Engineer; AST, Electrical Systems; GS-0850-13 or 14; Systems Engineering Division; Systems Development Branch; Electrical Systems Section; Closes August 21, 1981, NASA-Wide.

81-43 – Head, Mechanical Engineering Section, GS-0801-13 or 14; Research Facilities Engineering Division; Mechanical Design Branch; Mechanical Engineering Section; Closes August 28, 1981, NASA-Wide.

81-44 – Aerospace Engineer; AST, Fluid and Flight Mechanics; GS-0861-14 or 15; Office of Director for Aeronautics; High-Speed Aerodynamics Division; Computational Methods Branch; Closes September 30, 1981.

Recent Retiree

William F. Croswell of the Flight Electronics Division retired August 7.

Profile

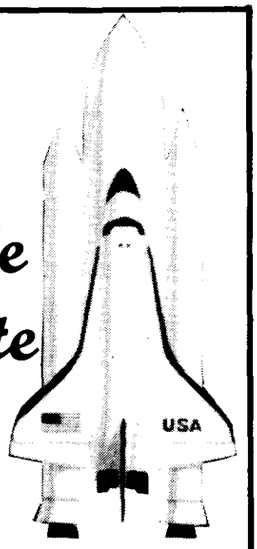
Continued from page 5.

Anderson is a graduate of William and Mary, class of '76, earning a bachelor of arts degree in business administration, with a concentration in accounting. He worked for an accounting firm and a bank before attaining his present position in March 1980. Now less than a year away from Certified Public Accountant status, he continues to strive to make life "the best" he can by using fully his energies and talents, which, in part is what this year is all about--this International Year of Disabled Persons.

Thought for the Day

Accurate knowledge is the basis of correct opinion; the want of it makes the opinions of many people of little value.

Space Shuttle Update



The Space Shuttle Orbiter Columbia was moved Monday from the Orbiter Processing Facility to the Vehicle Assembly Building and mated Tuesday to the external tank.

The Shuttle is scheduled to be moved to the launch pad no earlier than Aug. 26 and will be launched no earlier than Sept. 30.

– photo by Bob Nye

Langley Director Donald P. Hearth purchases a raffle ticket from Langley Activities Association alternate delegate, Kim Cannon. The LAA will sponsor the annual Carnival Friday, August 28, and Saturday, August 29, at the Activities Center.

NASA News

Headquarters: Dr. Jack L. Kerrebrock, formerly Head of the Department of Aeronautics and Astronautics at the Massachusetts Institute of Technology, has become Associate Administrator for Aeronautics and Space Technology at NASA Headquarters. He is responsible for NASA's aeronautics and space technology, and energy research programs.

Kerrebrock has taught and conducted research in energy conversion and propulsion since 1956 when he received his doctorate from California Institute of Technology. He received a bachelor of science degree from Oregon State University in 1950 and a master of science degree from Yale in 1951. He was an aeronautical research scientist at the Lewis Research Center from 1951 to 1953.

His early work was on nuclear rockets, space propulsion and power, and magnetohydrodynamic generators. More recently, he has been involved with the fluid mechanics of turbomachinery for aircraft engines, and is the author of a text on aircraft engines and gas turbines. He was the director of the MIT Gas Turbine Laboratory from 1968 to 1978 and is the first to be appointed as the Richard Cockburn MacLaurin Professor of Aeronautics and Astronautics, a title established in memory of MIT's sixth and youngest president.

National Space Technology Laboratories. NASA research during the past 10 years has led to the development of a simplified natural biological sewage treatment process which represents a major technological breakthrough in wastewater treatment and water recycling. The system, which is odor free and costs less than half as much as a conventional system to operate and maintain, has been approved by the Environmental Protection Agency for treating municipal sewage.

This unique wastewater treatment system, developed by Dr. Bill Woverton, combines the oldest of systems (septic tanks and trickling filters) with space-age technology in anaerobic filter and vascular aquatic plant wastewater treatment. The result is a hybrid wastewater treatment system where microorganisms which live or are active only in the presence of oxygen (aerobic), those which live or are active in the absence of oxygen (anaerobic), and facultative (a combination of the two) are balanced in a high surface area rock or vinyl core filter with vascular aquatic plants added at the aerobic side of the filter to completely balance the system and allow for wastewater recycling capability. The sewage or other type wastewater is never open to the atmosphere until treatment has been accomplished.

The odorous substances normally produced with domestic sewage during the anaerobic digestion phase is converted to non-odorous substances and finally into plant biomass at the end of the filtration column.

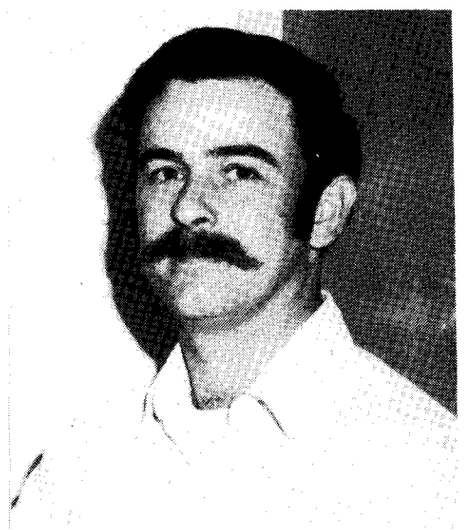
The addition of harvestable plants (reeds, cattails, etc.) to the microbial filter system not only increased the capacity of this system for removing resistant organics such as PCBs, but adds the capability for removing chemical elements such as toxic metals, radioactive elements, nitrogen, phosphorus and potassium from wastewater completing the purification cycle. Vascular rooted plants also add the potential for drinking water purification.

Dryden. Digital Electronic Engine Control is now under study at Dryden. Called DEEC, the project is a cooperative effort between NASA, the Air Force, and Pratt and Whitney to demonstrate and evaluate a full authority digital engine control on an afterburning turbofan engine in a high performance aircraft.

In the DEEC system, the digital computer performs computations that were made by the use of hydromechanical devices such as bellows, cams, levers, and mechanical governors. Digital control provides an improvement in control precision, response, weight, cost, and provides the capability to handle more inputs and outputs, and to detect control system faults.

The DEEC also incorporates new control modes. One of these is an engine pressure ratio mode which eliminates the need to periodically retrim, or adjust the control system to remain within tolerances. Eliminating the requirement to trim the engine saves time, fuel, increases engine life, and reduces noise. The more precise control also allows improved flight performance.

Robert F. Berry, Jr. of the Fabrication Division recently received a Special Achievement Award for "exceptional dedication and technical support of Shuttle TPS studies."



William M. Rollins, Jr. of the Fabrication Division has been presented a Special Achievement Award for "exceptional leadership and technical expertise in the fabrication of 2-dimensional nozzles for the Laminar Flow Control Wing."

Retirement Party

Juanita D. Parker, Transonic Aerodynamics Division, will be honored with a retirement luncheon Thursday, August 20, at the Langley NCO Club at 11:30 a.m. The cost of the luncheon, including gift, will be $6.50 per person; contributions of $1 for gift only are welcome. Please make checks payable to Ida May Collins, Mail Stop 406, by August 17.

Official NASA Program Implemented at Langley

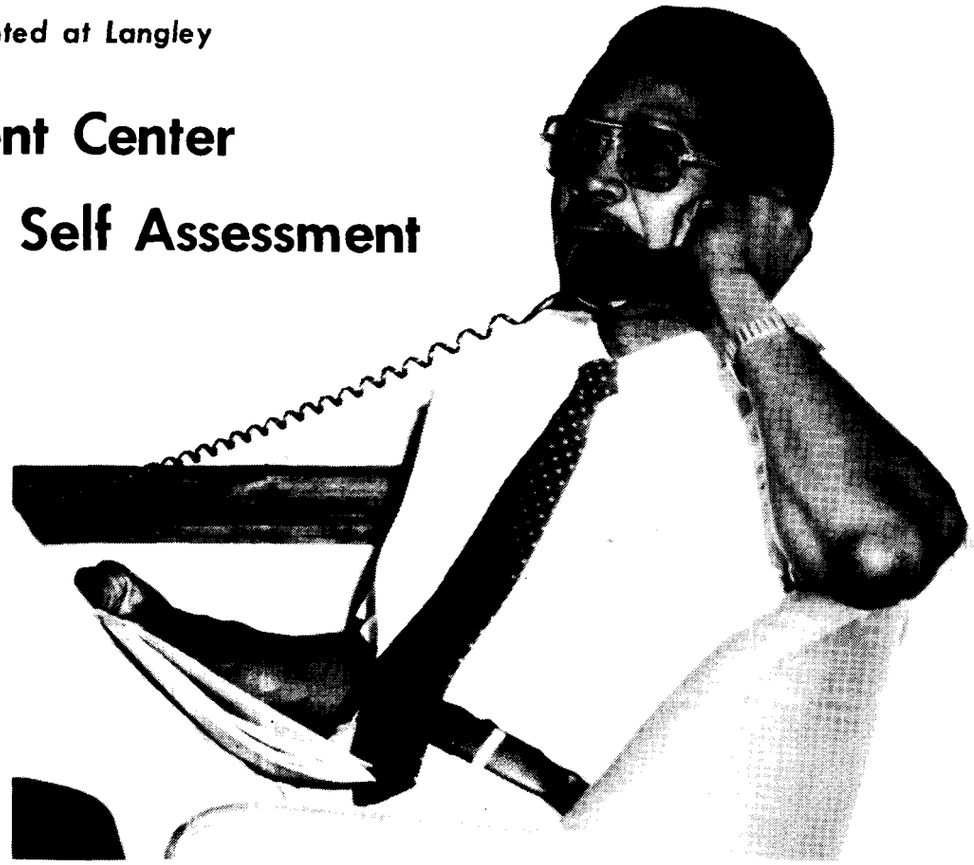
Career Development Center Offers Help in Self Assessment

Career development and counseling is a source of help for the individual employee in self assessment of career direction, plans and goals, and job-related personal problems; a realistic look at personal goals versus organizational goals; and a mechanism for improving job performance.

Langley's new Career Development Center headed by Dr. Samuel Massenberg, offers these and many other professional services to center employees and supervisors, and is a concept that provides a mechanism for the individual and the organization to work toward mutual growth.

Career development and counseling became an official program of NASA in September 1976 and was the beginning of a movement that will continue to grow and become more sophisticated and more pervasive in NASA and other federal agencies. "Because of increasing concern and interest in career development--or human development as many writers define it--industry, government and other institutions have made extensive investments in the development of human resources," Massenberg explained. "Human resource management requires that an effective system of development be implemented to maximize human potential in the organizational environment. Consistent with the thrust toward an enlightened attitude of personal development, career development centers, which provide a variety of developmental services for employees, were introduced."

The purpose of the CDC, which began a one-year pilot program at Langley in July, is to provide human resource development through its Career Resource Facility, orientations and developmental workshops by providing individual assistance through appointments with one of the CDC counselors and by offering consultation to supervisors in the areas of problem identification, referral processes, performance counseling and career development.



The man behind the doors of the Career Development Center is Dr. Samuel E. Massenberg, who has been an Employee Development Specialist in the Training and Educational Services Branch of the Personnel Division since spring 1980. As Coordinator of the CDC, Massenberg conducts briefings, workshops, and staff development training; counsels employees; advises Langley management; develops new program components; administers tests and interprets test results; assesses program effectiveness; and supervises CDC staff. Before coming to Langley, Massenberg was a college administrator at Hampton Institute for 12 years. He has a doctorate in educational administration and counseling from Virginia Polytechnic Institute.

Career Planning and Development Assistance

The CDC provides confidential career planning and development assistance to employees and supervisors through individual or group counseling workshops and seminars. The CDC uses the Career Planning Process model in career counseling, career development workshops, and in the CDC Resource Facility.

The Career Planning Process model integrates an understanding of one's self with the various aspects of one's environment in order to set career goals and take action to achieve those goals.

CDC Resource Facility

The CDC Resource Facility is a self-managed career planning process designed to assist individuals in the management of their career paths.

The facility is designed as:

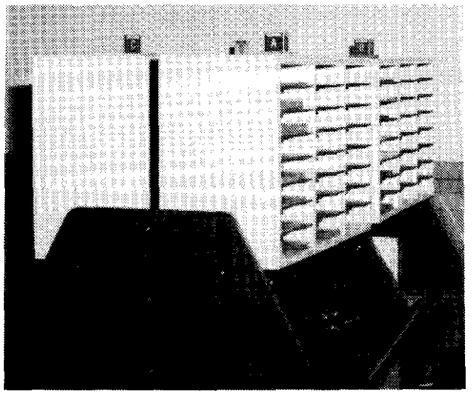
(1) a reading room to browse through career development, life planning and educational materials;

(2) a source of individual career counseling and workshop information; and

(3) a series of work stations to assist individuals with career and life planning.

Some of the career resource material available to employees are a bibliography of career publications, brochures and journals, video cassettes, slides and movies; interest inventories, Dictionary of Occupation Titles, Federal Career Directory and Occupational Outlook Handbook.

The work stations in the Resource Facility are divided into four areas: Understanding Self, Understanding the Environment, Taking Action and Life Management.



Stations A – D of the Resource Facility are designed as a self-managed process with career and life planning.

Understanding Self

Knowing who you are and what your unique values, interests and skills are is vital information to consider when making a career decision.

The activities and information at Station A are designed to provide employees with the "self" data. Employees should be able to develop a profile of themselves and be in a better position to evaluate the information in Station B, Understanding the Environment.

Understanding the Environment

Although clarifying values and skills is important, it is also critical to obtain information about the environment--job climate, career opportunities and career job potential--in which you are making your career decisions.

The data obtained at Station B will help employees develop a "better fit" between them and available career/occupational choices.

Taking Action

Deciding on career option(s) and taking action are probably the most difficult steps to take. Information provided at Station C will help employees identify the decision to be made, weigh the evidence, select a career option, and make the career choice a reality, which may include looking for a new job, going back to school or changing present job activities.

Life Management

One's career may be viewed as an integral, inseparable part of a broader life pattern often referred to as "lifestyle." The lifestyle an individual selects tends to reflect his or her basic way of thinking and behaving, value system, personal needs, view of self, attitudes toward others, and current and long range goals and aspirations. New decisions, problems or major changes related to any one aspect of an individual's lifestyle, such as work or family, will impact to a greater or lesser degree on all other aspects.

Unfortunately, it is not uncommon for individuals to segment their existence by attempting to maintain three separate lifestyles, one for work, one for home and family, and one for personal endeavors. But, events or problems in one area of a person's life will influence and spill over into the other areas. Virtually, no one can get through life without some modification in his or her own behavior, relationships with others, and perceptions of the world.

Effective life management is personal decision making based on a clear and consistent understanding of one's basic needs, interests, and values and how they relate to the totality of one's life activities.

Station D offers complete information, such as checklists, pamphlets and reference books, on dealing with life changes and effective life management. Some of the areas covered include mid-life transitions; leisure/retirement; financial management; separation, death and divorce; marriage, family, parenting; health; stress; sexuality; and handicaps.

> Career development is a process by which individuals and organizations come to grips with their relationship and the quality of work life.

Workshops

To more effectively serve Langley employees, the CDC staff will present workshops on a periodic schedule. These developmental workshops provide employees and supervisors the opportunity to develop skills in the areas of Career Planning, Career Development Orientation for Supervisors and Managers, Motivating Employees, Performance Appraisal Improvement, Remedying Counter Productivity Factors, Action Planning and other work environment topics.

Consultation

The CDC offers consultation services to managers and supervisors in a variety of areas related to career development and counseling, including assistance in performance planning and appraisal writing.

Career development is not a one way street. There are tangible benefits for management that characterize the program as cost effective. Probably the single most important outcome for management is the reduction in counter

Continued on page 12.

Dr. Samuel E. Massenberg (left), Coordinator of Langley's Career Development Center, explained the Center's operation to approximately 60 people who attended the ribbon cutting ceremony July 1. Looking on are Richard H. Petersen (second from left), Deputy Director of Langley; William L. Williams, Chief of the Personnel Division; and Malcolm P. Clark, Head of the Training and Educational Services Branch, Personnel Division. Petersen cut the ribbon dedicating the center during the brief ceremony.

Career Development Center

Continued from page 11.

productivity factors within the organization. Other management gains are as follows:

- Enhanced supervisory capability in career development
- Increased employee motivation
- Improved employee job satisfaction
- More precise performance appraisal program
- Improved job performance
- Enhanced organizational communications
- More realistic career plans for employees
- Work force productivity gains

The Career Development Center is located in Building 1195, Room 116. The hours of operation are 8 a.m. to 4:30 p.m. For appointments, call ext. 3981.

Caryle H. Neal is a graduate intern in the Career Development Center, administering interest inventories to employees, interpreting inventory results, and counseling and assisting employees in completing individual development plans. A graduate student at Old Dominion University, Neal also updates the material in the Career Resource Facility.

Retirement Party

A retirement party for **Dolly Seward**, who retired from the Technical Editing Branch, will be held in the Hampton Room, Activities Center, Sept. 3, from 12:45 p.m. to 1:45 p.m. The cost will be $1.50, including gift. Please send money to Eloise Johnson, Mail Stop 149.

Dr. Mary L. Powell has worked in the Career Development Center this summer under the ASEE Fellowship Program. Powell assisted Massenberg in setting up the work stations, administered the Strong – Campbell Interest Inventory, interpreted the inventory results and conducted extensive literature search on career development. Powell is on the faculty of Appalachian State University in Boone, N.C. Her area of expertise is in industrial and organizational psychology. She received her doctorate in psychology from the University of North Carolina.

Clark, Wingate

Continued from page 3.

mechanical engineering from Auburn University in 1958. He earned a master of science degree in mechanical engineering from the University of Virginia in 1964 and a Ph.D. degree in engineering mechanics from Virginia Polytechnic Institute and State University in 1971.

The author or co-author of 14 technical publications, Wingate has received three Group Achievement awards and three Outstanding Performance awards.

Wingate and his wife, Audrey, live in Hampton with their son and daughter.

Thinking Out Loud

Think, sometimes, of all that you have, instead of wishing for what you don't.

Footprints in the sands of time can never be made by sitting down.

Special Achievement Awards Presented

A Special Achievement Award is granted for performance exceeding job requirements. The monetary award may be either for sustained superior performance or for a one-time special act or service in the public interest, connected with, or related to official employment.

Awards have been presented to the following employees:

David F. Rollins, for "exceptional leadership and expertise in fabrication of NTF insulation panels;"

John T. Hughes and **W. Edward Stoops, Jr.**, for "exceptional dedication and technical support of Shuttle TPS studies;"

Linda F. McKnight, for "outstanding dedication and support to the Operations Support Division during 1980–81;"

William C. Salyer, Jr., for "exceptional service in the creation of outstanding visual aids;"

Betty C. Pate, for "sustained superior performance of duties as secretary to the Chief of the Aeronautical Systems Division;"

Tazewell O. Reed, "in recognition of significant contributions in support of thermocycle testing of NTF hardware;"

Allen T. Gray, for "exceptional service rendered in the production of technical reports and other printing for Langley Research Center and NASA Headquarters;"

Charles W. Watson, Jr., "in recognition of continued outstanding effort to maintain precise scheduling and the highest standards of quality and consistency in visual aid preparation for the Graphics Branch;"

Betty E. Walker, for "unflagging performance and acceptance of responsibility in her duties as editorial assistant in technical report documentation;"

Patricia L. Hosey, for "exceptional performance in the support of the Serials Area of the Technical Library Branch;"

William E. Frazier, for "exceptional service in scheduling and performing photographic laboratory services;"

Donnie K. Shinn, "in recognition of noteworthy innovation and improvements made to test hardware associated with the research investigation of the Active Control Landing Gear concept during the period September 1980 – April 1981."

LAA Finalizes Plans for 1981 Carnival

The LAA expects this year's Carnival to be better than ever. There are special events scheduled throughout the Carnival, beginning with the crowning of the 1981 Carnival Monarch Friday night and ending with the Grand Prize drawing for a cruise for two plus $200.

As in the past, the LAA will have a Casino with many exciting games inside the Activities Center for the adults. On the grounds, there will be an arts and crafts exhibit with an exciting variety of handmade items for sale; children's rides, a train, game booths for all ages, food and drink, and pony rides for the children. This year LAA has added more game booths to test the skill of both children and adults.

The raffle prizes this year are $1,200 cash, a cruise for two plus $200, gasoline worth $500 and a video recorder (incidentally you do not have to be present to win). Raffle tickets are now on sale through LAA representatives, Carnival Monarch candidates, and the LAA. Also LAA will be giving away $25 on the half hour and $50 on the hour (for this one you do have to be present to win).

Bring your family and friends and have a great time. There is something for all age groups.

For additional information, contact the LAA Office, ext. 3139, or Fran Sabo, ext. 3611.

Carnival Events

The following is a schedule of planned activities for the Carnival.

Friday, August 28

5 p.m.	Carnival Opens
6 p.m.	Carnival Monarch wil be crowned
7 p.m.	Open mike — Jam session with all amateur talent. PA system will be provided
9 p.m.	Caravan East, Mid-Eastern Dancers

Saturday, August 29

9 a.m.	Five Mile Race
12 p.m.	Carnival Opens
12 p.m.	Southern Legacy Bank — Country Rack & Tap 40
1 p.m.	Martheia and the Mystic Dancers
2 p.m.	Fort Monroe Area Sport Skydivers Club, Skydiving Exhibition
3 p.m.	Kim Person & Jerry Clendenin — Folk & Contempory Instrumentals & Vocals
3:30 p.m.	4 X 440 Relay Race
4 p.m.	Fort Monroe Area Sport Skydivers Club, Skydiving Exhibition
5 p.m.	Country Gospel Music
6 p.m.	Golden Boots, Western Square Dance Exhibition
7 p.m.	Desert Dancers, Mid-Eastern Dancing Exhibition
8 p.m.	Crabgrass, Bluegrass Music
9 p.m.	Fun Time Cloggers — National & World Champion Title Holders
10 p.m.	Conclusion of 1981 LAA Carnival

Also on Saturday from 2 p.m. till 7 p.m. the Blue Water Van Club of Hampton will sponsor a Truck Show (Vans, pick-ups and 4 x 4's) with trophies to be presented in each class at 6:45 p.m. at the stage.

— photo by Bob Nye

These very artistic individuals are the winners of this year's Carnival Poster Contest, sponsored by the LAA. Displaying their creative work are Laura Daus, daughter of James Daus of the Research Information and Applications Division; Thomas Prothro of the Fabrication Division; Beth Compton, daughter of Harold Compton of the Space Systems Division; and Joseph May representing the Publications Branch, RIAD.

LAA Travel

This is the last call for the two cruises on the Mardi Gras sailing from Norfolk this year. The Party Cruise to nowhere sails Saturday, September 5, and returns Tuesday, September 8. The cruise to Bermuda sails Tuesday, September 8, and returns Tuesday, September 15. You may still take advantage of the 10 percent discount per person (based on double occupancy) on either cruise.

Discount packages are available to Las Vegas from Norfolk with Thursday departures for four days or Sunday departures for five days each week through November. A discount package is also available to Hawaii for one week to one island or two weeks to three islands. These departures are from Norfolk each Tuesday.

For details and brochures, call Ernie Greene, ext. 2312 or 838-0567, or the LAA office, ext. 3139.

Energy Saving Tip

Be sure to pay attention to small repair jobs that could help avoid substantial energy waste. Leaky hot water faucets can waste as much as 63 gallons of hot water in one week plus the fuel required to heat the water.

Happenings

VOLUNTEERS NEEDED. Volunteers are needed to help decorate/setup August 21 and 22 for the Carnival which will be held August 28 and 29. Volunteers are also needed to help in several of the children's booths for two-hour shifts on Friday after 7 p.m. and on Saturday after 5 p.m. If you can help, please call Fran Sabo or Dana Morris, ext. 3611.

HONEY BUNCH. The NASA-Langley Apicultural Club will meet Monday, August 17, from 7 to 9 p.m. in Room 180 of Building 1209. After a brief business meeting Captain Bill Boytim will present a program "Making Mead (Honey-Wine)."

AFGE. The regular monthly meeting of AFGE Local 2755 will be held at 4:30 p.m. Wednesday, August 26, in the union office, Building 1232B.

NAGS. The National Association of Government Secretaries dinner meeting will be held August 18 at 6:30 p.m. in the Langley Activities Center. The program will be conducted by American Travel Company representatives from Norfolk. Discussed will be tours available by bus from this area to various places on the East Coast, what is included and associated information of interest. For more information, contact Betty Joyner, ext. 3285 or 826-4684 after 5 p.m.

4 X 440 RACE. Anyone interested in sponsoring a team or being part of a team in the 4 x 440 Carnival race should contact either Larry Rowell, ext. 2995, or Larry Spencer, ext. 3681, by August 21. A team must represent either a NASA directorate or a contract company (all four members must be from that organization). Any organization can have more than one team.

TALENT SHOW. The LAA will sponsor a talent show at the Carnival Friday, August 28. Anyone interested in performing should call Johnny Arrington, ext. 3961. A public address system wil be provided.

WASHINGTON, D.C. TRIP. Visit either the Smithsonian Institute or the National Zoo Saturday, Sept. 19. All of the Smithsonian Institute is open at this time, including the Air and Space Museum, the Hope diamond and a special exhibition of Rodin's sculpture. A bus will leave Newmarket South at 6 a.m. and arrive at the Smithsonian at 10 a.m. and at the zoo at 10:20 a.m. For the return trip, the bus will pick up passengers at the zoo at 5 p.m. and at Smithsonian at 5:20 p.m., stop an hour for dinner and arrive home by 10 p.m. The cost is $19.50 per person. Please make checks payable to Richard Bennett and send to Mail Stop 397 or 11 Bosch Lane, Newport News, Va. 23606. For further information, call Bennett at 599-5585.

RAFFLE BOOKS AND MONEY should be turned in as books are sold. If more books are needed, call the Activities Office, ext. 3139. Deadline for turning in tickets to count toward Carnival Monarch contest is 4:30 p.m. August 26. Remember, two tickets to Busch Gardens will be given to the person who sells the most raffle tickets (excluding Carnival Monarch contestants).

EMPLOYEES/CONTRACTOR NIGHT will be held at Busch Gardens August 21 from 5 p.m. to midnight. Tickets are $6 and can be purchased for families and friends at the gate upon presentation of NASA or contractor badge.

FOOTBALL. Season tickets for the College of William and Mary football games are available for $22.50 at the Langley Activities Association office. The regular cost is $40. The first game will be played September 12 at Cary Field.

TIDEWATER DINNER THEATER. "Show Boat" is playing at the Tidewater Dinner Theater in Norfolk. Tickets are on sale at the Activities Office for $13.25 weekdays and $14.25 weekends.

In Memoriam

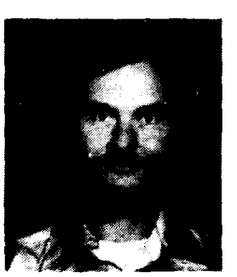
James E. Bailey, Systems Engineering Division, died July 24 in Hampton General Hospital. He was 50.

Employed at Langley as an engineering technician since March 1956, he was a lifetime resident of the Peninsula. A Phoenix High School graduate, Bailey served in the U.S. Army from February 1952 to February 1954.

R. Fabian Goranson, 65, who worked at Langley during World War II and from 1952 to 1962, died July 22 at Fairfax Hospital.

While at Langley the aeronautical engineer worked on the structural development of high-speed aircraft and space vehicles.

In 1962 Goranson joined the Federal Aviation Administration and was assigned to the design of supersonic transport planes. He transferred to the National Highway Safety Administration in 1972 and helped develop guidelines for automative safety until his retirement in 1976.



Harry L. Bloxom, 38, Operations Support Division, died July 29.

A lifelong resident of Poquoson, he graduated from the NASA Apprentice School in October 1966 as an experimental facilities mechanic.

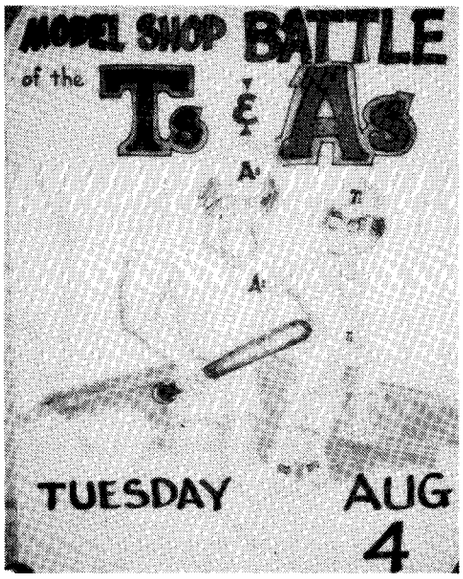
Bloxom, an engineering technician at the time of his death, had worked at Langley since 1962.

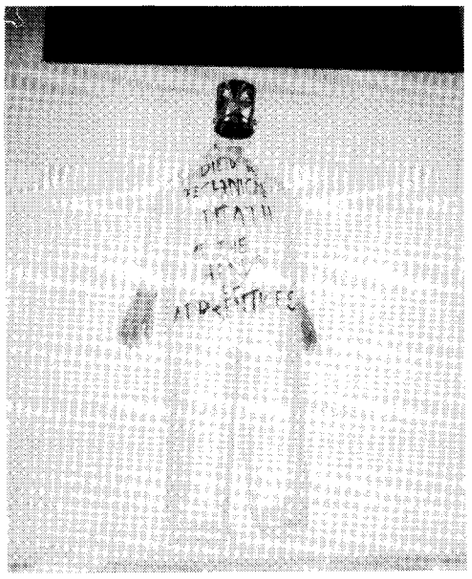
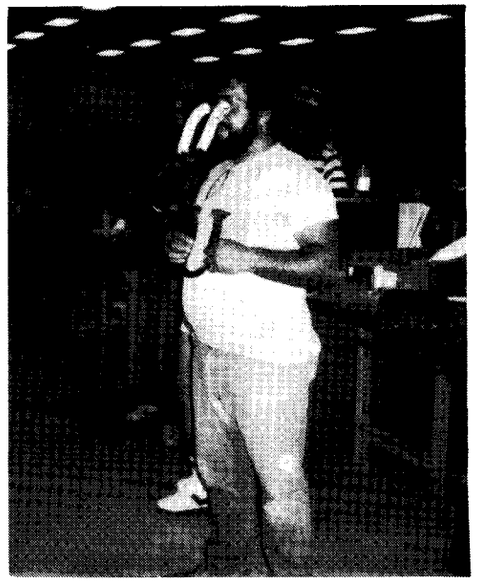
Aerospace Penpoints
by Wesley Berryman

THINKING is the hardest work there is, which is probably the reason so few engage in it.

HENRY FORD

Thanks to Dr. Wayne Erickson who sent in this quotation.



As the August 4 softball game between the Langley technicians and apprentices grew closer, a keen sense of competitiveness started to show. Technician Tom Prothro drew a poster depicting the upcoming battle (first photo), and the apprentices hung a technician from the mezzanine in Building 1238A (second photo). Finding the appropriate umpire (third photo) proved successful when John Jenkins appeared wearing his specially-designed umpire glasses. As the game progressed (fourth photo), the technicians took a quick lead. In the end, a great time was had by all, except Don Smith, the losing coach of the apprentices, needed reviving by Bubba Wilson, the winning coach of the technicians (fifth photo). Apprentice Dale Lupton gets sympathy hug from technician Skinner Jones (sixth photo) following the game, which ended in a triumph for the technicians, 34 – 4. Looking on are technicians Will Rollins, Ed Kerlin and Roy Hutto.

Roderick to Head Army Aeronautical Research Group

Dr. G. Larry Roderick has been named Chief of the Army Aeronautical Research Group, Structures Laboratory, at Langley. He succeeds John L. Shipley who was named Deputy Director of the Applied Technology Laboratory (ATL), Ft. Eustis, one of four labs of the Army Research & Technology Labs AVRADCOM, Moffett Field, Calif.

Roderick joined Northrop Corporation in Hawthorne, Calif., in 1967 as a structures analyst, where he analyzed components on the Boeing 747, the A9-A prototype ground-support fighter, and the F-5 series fighter. In addition, he developed the A9-A egress system and the rocket sled to test it.

In 1971 he joined the then Army Air Mobility Research and Development Laboratory at Langley, and conducted research on fatigue and fracture of advanced composite materials and bonded systems. In 1976 he became group leader for research on fatigue of composite materials and developed and conducted a comprehensive in-house and contractual program to predict fatigue behavior of composite materials.

He joined the Langley staff in 1980 as Assistant Branch Head of the Fatigue and Fracture Branch where he developed the technical program for a Memorandum of Understanding between the U.S. Army and the Italian Ministry of Defense, a plan to improve the impact resistance of composite materials, and a management system to improve operation of the Fatigue Laboratory.

Roderick earned a bachelor of science degree in aeronautical-astronautical engineering from Northrop Institute of Technology, a master of science degree in aerospace engineering from the University of Southern California and a doctorate in engineering mechanics from Old Dominion University.

National Aeronautics and
Space Administration

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FOR SALE

Articles

Garage sale: 205 Woodroof Road (Hidenwood), Aug. 14-15, 9 a.m. to 2 p.m.; children clothes, toys, games, women clothes (size 9-10), various household items. Call Wilson, ext. 3856.

Queen Anne solid cherry silver chest: EC, call Wainwright, ext. 3188 or 877-3985.

Air conditioner, Carrier: 9,000 BTU 230/208 Volts, GC, $75. Call Tuck, ext. 3315 or Norfolk 466-8562.

Real Estate

Seaford: waterfront lot, 1 story, brick, 1 bath, 2 large bedrooms, living room (with fireplace), dining room, family room, large kitchen, 1-1/3 acre lot, screened porch, attached garage, $70,000. Call 868-9406.

FOR RENT

Sandbridge cottage: 3 BR, AC, PH, LR, DR, Kit. One-half block ocean. WK $425, Labor Weekend open; rates after Sept. 15 $300. Call Kent 420-8391.

Courthouse Green: Townhouse, 3 BR, 1½ BA, large eat-in-kit., fully equipped, utility room, many extras, EC, $330/mo. Call 599-4321.

WANTED

Old wooden-shafted (hickory) golf clubs. Call R. Felty, ext. 2701.

cafeteria menu

WEEK OF AUGUST 17

MONDAY: Old Fashioned Bean Soup; Roast Beef; Seafood Gumbo; Macaroni, Franks & Cheese. Snack Bar: Hot Italian Sausage Sub; Charcoal Hoagie; Egg Salad.

TUESDAY: Manhattan Clam Chowder; Baked Lasagna; Fried Fish Nuggets; Spanish Omelette. Snack Bar: Chicken Breast; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Roast Turkey Dinner; Veal Parmesan; Shrimp Creole. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Gumbo Soup; Meatloaf; Chicken & Dumplings; Baked Tuna & Noodle Casserole. Snack Bar: Ham & Cheese Club; BBQ; Chuckwagon.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Broiled Beef Liver; Eggplant Parmesan. Snack Bar: Deluxe Sub; Hot Ham & Cheese; Tuna Salad.

WEEK OF AUGUST 24

MONDAY: Ham & Lima Bean Soup; Hot Roast Pork Sandwich; Shrimp Cacciatore; Chicken Pot Pie. Snack Bar: Hot Italian Sausage Sub; Charcoal Hoagie; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Spaghetti Dinner; Chicken Chow Mein; Turkey Breast Nuggets. Snack Bar: Chicken Breast; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; Beef Balls Stroganoff; Baked Beans & Franks. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Vegetable Soup; Braised Chicken Livers; Seafood Quiche; Sliced Pork BBQ. Snack Bar: Ham & Cheese Club; BBQ; Chuckwagon.

FRIDAY: Minestrone Soup; Fish Dinner; Beef Tips over Rice; Chicken Turnover Pie. Snack Bar: Deluxe Sub; Hot Ham & Cheese; Tuna Salad.

– photos by Don Ward and Bob Nye

TECH BRIEF AWARDS. As part of the NASA Technology Utilization Program, monetary awards are granted to any individual listed in a NASA Tech Brief. Recently, 12 Langley researchers were presented checks and certificates by Richard H. Petersen, Deputy Director. In the left photograph, seated left to right, are Stephen C. Irick, Petersen and Robert M. Baucom; standing left to right are William H. Phillips, Frank Hohl and Mickey R. Gardner. In the right photograph, from left, are Paul G. Sandefor Jr., William H. Wood, Pierce L. Lawing, Robert M. Baucom, Anne K. St. Clair, Terry L. St. Clair, Roy J. Duckett and Charles S. Gilliland.

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

Volume 20 Issue 17

August 28, 1981

Hearth Sets Goal at $186,500

Stickle is Combined Federal Campaign Chairman

Langley Director Donald P. Hearth has appointed Joseph W. Stickle, Acting Chief of the Low-Speed Aerodynamics Division, as Chairman of the 1981-82 Combined Federal Campaign and set a challenging goal of $186,500.

Dr. Willard W. Anderson, Chief of the Flight Dynamics and Control Division, will serve as Co-Chairman; Kenneth A. Frink, Financial Management Division, will be Financial Chairman; Jean W. Drummond, Office of Public Affairs, will be Publicity Chairman; and Patricia A. West, Low-Speed Aerodynamics Division, will serve as Secretary.

A one-day center-wide solicitation will be held Thursday, October 1, preceded by a kickoff meeting for division chairmen and key solicitors Monday, September 28, at 2 p.m. in the activities Center.

Hearth urges all employees to support the Combined Federal Campaign through individual contributions. He said, "Langley has always been a leader in local CFC fund drives. I am confident that we will be again this year. As you consider your contribution, think about all the people that your dollars will help."

– photo by Hubert Lloyd

Langley's one-day Combined Federal Campaign drive will be held Thursday, October 1. Joseph W. Stickle (third from left), Acting Chief of the Low-Speed Aerodynamics Division, will serve as this year's Chairman. Patricia A. West (left), LSAD, will be Secretary; Gary Price, Office of External Affairs, is Langley's representative to the Peninsula CFC Committee; Kenneth A. Frink, Financial Management Division, will be Financial Chairman; Dr. Willard W. Anderson, Chief of the Flight Dynamics and Control Division, will be Co-Chairman; and Frances B. Hartman, FMD, will assist Frink with the finances.

Employees Honored at Service Awards Ceremony

Employees with 40, 35 and 30 years of service and the recipients of the Outstanding Volunteer Service awards will be honored at a special ceremony Thursday, September 10.

Langley's annual Service Awards Ceremony will begin at 1:30 p.m. in the Activities Center, Building 1222.

Langley Director Donald P. Hearth will present service emblems and certificates to the following:

Forty Years' Service:

Kenneth S. Bates; Joseph Briggs; Curtis M. Chappell, Jr.; Prentiss Childs; Glenwood C. Ford; James M. Hughes; Richard P. Kennedy; Sylvester J. Kubalak; William J. Leftwich, Jr.; Joseph Parker; and George H. Veneris.

Thirty-five Years' Service:

Laurence R. Bradshaw; Joseph F. Braig; Albert J. Cacioppo; William G. Chapin; Delvin R. Croom; Aubrey E. Cross; Howard J. Curfman, Jr.; Leslie E. Deane; Thomas W. Forrest; Sherwood Hoffman; William M. Johnson; George W. Jones, Jr.; James O. Joyner; Emma J. Landrum; Virginia S. LaPrade;

Paul E. Lentz; John C. McFall, Jr.; Raymond T. Moore; Richard H. Newman; J. Robert Padelt; Donald E. Pizzeck; Raould M. Price; Wilmer H. Reed, III; W. Carl Roberts; William I. Scallion; Frances E. Thompson; Ellery N. Vandenbree; Donald H. Ward; Johnny McK. Williams; William N. Willoughby; and Troy A. Wilson.

Thirty Years' Service:

Robert E. Andrews; Charles E. Barr; John T. Benthall, Jr.; Doris K. Blanchard; Edward S. Bradshaw; James F. Bradshaw; Eugene L. Bunting; Ernest E. Burcher; Benjamin F. Butler, III; Roger V. Butler; Malcolm P. Clark; Wilson W. Clark; Edna C. Cox; Willaree R. Curtis; John R. Davidson; Clarence A. Dews, Jr.;

James A. Dorst; Kermit A. Edwards; Charles P. Eichelberger; Robert F. Emond; Roland D. English; Robert P. Faust; Aubrey L. Fitzgerald; Charles D. Folwell; Robert B. Forrest; Lee R. Foster, Jr.; Benjamin Franklin; Patrick A. Gainer; Russell C. Gentry, Jr.; James W.

Continued on page 2.

— *photo by Bob Nye*

Samuel J. Scott, Administrative Operations Specialist, Acquisition Division; Mary W. Jackson, Federal Women's Program Manager, Office of Equal Opportunity Programs; Fabiola C. Martin, Contract Specialist, Acquisition Division; and Gilbert A. Haynes, Head of the Experimental Avionics Section, Flight Electronics Division, represented Langley recently at the annual National Football League Players' Association Youth Camp in Culpepper, Va. The camp offered four two-week sessions with approximately 60 youngsters attending each session. Serving as role models to minority youth from the Washington, D.C. area, the Langley employees each attended a session for one day discussing their careers and providing information on opportunities at Langley, as part of the community outreach effort of the Office of Equal Opportunity Programs. This was the first year that Langley participated in the camp's activities.

Service Awards

Continued from page 1.

Goodwin; David C. Grana; Ernest A. Gurganus;

Joseph F. Haggerty, Jr.; William C. Henley, Jr.; Stanley B. Heywood, Jr.; Hiram T. Hogge, Jr.; James L. Hudgins; Joseph G. Hudson; Simeon R. Hunnicutt; Robert C. Ingram; Mary W. Jackson; Dalma C. Johnson, Jr.; G. Warren Johnson; George W. Johnson; Joseph S. Johnson; William B. Jones; Jack T. Kayton; H. Neale Kelly;

David D. Kershner; Bonnie K. Land; Edwin E. Lee, Jr.; Ralph B. Lewis; Charles E. Libbey; Ray D. Lowe; Domenic J. Maglieri; Clyde J. May; Alton P. Mayo; John L. McCarty; Leo B. McHenry; Roger N. Messier; Jimmie C. Miller; Snowden C. Mills, Jr.; Thomas C. Moore; William M. Moore;

William C. Moughon; Harold N. Murrow; Martha J. Norman; Robert E. Nye; Robert L. O'Neal; Lawrence T. Parker; Mark E. Price; Tazewell O. Reed; Albert C. Robinson; L. Conway Rogers, Jr.; Paul G. Sandefur, Jr.; Norma B. Schultz; John W. Schwartz; Dolly F. Seward; John R. Smith;

William E. Stoops, Jr.; Andrew G. Swanson; Moody O. Topping; David F. Varner; George R. Veney; Loretta W. Watkins; Otho E. White; William L. White; Boyd L. Williams, Jr.; Earl E. Williams; Charles H. Wilson; Maywood L. Wilson; John Witherspoon; and Doris R. Yates.

Outstanding Volunteer Service awards will be presented to Bertie Ann Garrett, for "long and dedicated public service in organizing and leading young girls to help others in the community" and Burnett W. Peters, Jr., for "outstanding volunteer leadership in religious, public, and private sectors of the Peninsula community, devoted to improving the quality of life and opportunities for others."

An Outstanding Volunteer Service Group Award will be presented to the Langley Colloquium Team, for "outstanding and dedicated service in conducting the Langley Colloquium Series."

Clemmons Wins August Drawing

Marvin C. Clemmons of the Analysis and Computation Division won the August drawing for $20 given by the Langley Exchange Council to a registered car pool participant.

Federal Women's Program Corner

Brown Bag Session

The film "If You Don't Nobody Else Will" will be presented Tuesday, September 1, in the Projects Conference Room, Building 1192C, Room 124.

Come with a brown bag lunch and share in the fellowship.

Show times are 11 a.m., 11:30 a.m. and 12 p.m. Men and women are invited to attend the free, lunchtime film.

Mark your calendar now!

Nominations Needed for Fellowships

NASA is beginning its review and selection process for candidates for the following Career Development Fellowship Programs:

- Stanford and MIT Sloan
- Education for Public Management Program
- Dryden Fellowship
- Harvard Management Development, Advanced Management, and JFK Senior Executive Fellows Programs
- Maxwell Mid-career Development Program
- Simmons Program for Women

Professional employees at the GS—12 level and above who are interested in being considered should call Joyce Wright or Pat Clark, Training and Educational Services Branch, ext. 2611, for program information and specific eligibility requirements. **Nominations close September 18.**

Thinking Out Loud

Grandparent: one of those things that is "so simple a child can operate."

The *Langley Researcher* as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond
Staff Photographer . . . . . Bob Nye

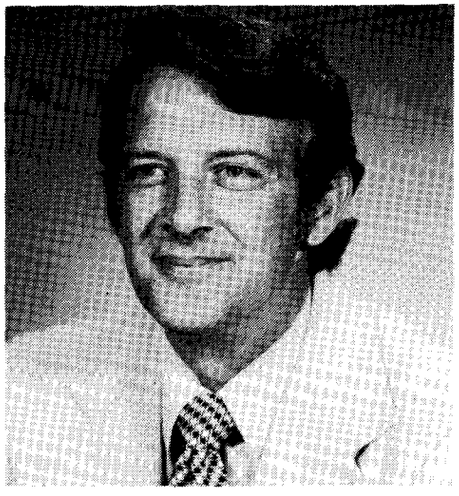
The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

Morin Selected to Head ACD

Maurice K. Morin, Assistant Chief of the Analysis and Computation Division, has been selected Chief of that organization. He succeeds Albert E. Gribble, who retired in April.

Pending formal approval from the Office of Personnel Management, Morin will be responsible for the development and application of techniques and equipment needed to meet Langley's research computing requirements in analytical studies, real-time simulation and data reduction.

Morin began his career with NASA's predecessor agency, the National Advisory Committee for Aeronautics, in June 1955 as an aerospace technologist in the Instrument Research Division. He was named Head of the Programing Techniques Section of ACE in 1962; Head of the Programing Techniques Branch in 1966; and Project Manager of the Star Project Office in 1972. In 1975 he was named Assistant Chief of ACD, where he was responsible for providing center-wide analysis and computational support in the areas of analytical computing, research data reduction and digital flight simulation.



Before joining Langley, Morin was employed as a part-time billing clerk at St. Johnsbury Trucking Company in Cambridge, Mass. He served in the U.S. Army for six months in 1957 as a First Lieutenant.

A native of Massachusetts, Morin graduated from Boston English High School in Boston in June 1951. He received a bachelor of arts degree in mathematics in 1955 from Boston University.

He received Langley Group Achievement awards in 1968 and 1976, a Langley Exceptional Scientific Achievement Award in 1968, and a NASA Medal for Exceptional Scientific Achievement in 1970.

Morin and his wife, Norma, live in Williamsburg, Va. They have four children.

Researchers can use the 'Gas-Net'

WELCOME TO THE GET-AWAY SPECIAL USERS' NET. PLEASE ENTER YOUR NAME.

IS THIS YOUR FIRST TIME ON THE 'GAS-NET'? THIS NET HAS BEEN ESTABLISHED TO SUPPORT USERS IN THE NASA GET-AWAY SPECIAL (GAS) SMALL SELF-CONTAINED PAYLOADS PROGRAM. WOULD YOU LIKE A BRIEF DESCRIPTION OF THE GAS PROGRAM?

NASA, THROUGH THE GET-AWAY SPECIAL PROGRAM, OFFERS TO ANYONE WHO WISHES THE OPPORTUNITY TO FLY AN EXPERIMENT ABOARD THE SPACE SHUTTLE. EXPERIMENTS MUST BE SMALL, SELF-CONTAINED AND OF A SCIENTIFIC RESEARCH AND DEVELOPMENT NATURE.

That's the beginning of a computer "bulletin board" service available from the Washington, D.C., area to computer terminal users who want information about NASA's GAS program.

Researchers at Langley don't need to go outside the center to learn more about GAS, however, Director Donald Hearth has already reserved two experiment spaces in the program for Langley-related payloads: one for Langley researchers and one for universities associated with the center.

He has also presented the opportunity for payload space to the public school system of Charleston, S.C.

The opportunity for researchers to provide experiments is wide open, according to Fred Allamby, Projects Directorate, who is coordinating the program at Langley.

Even simple experiments that use off-the-shelf equipment can qualify as payloads because they could lead to more sophisticated developments. In fact, a great deal of the scientific and engineering space research at Langley could be eligible for GAS.

Payloads do not have to contain space-qualified components and will not have to be integrated with standard Shuttle operations. They only have to weigh less than 200 pounds (excluding container weight), have a volume less than five cubic feet and have their own power supply, if necessary. Beyond three on-off controls located in the Shuttle Orbiter's aft flight deck, GAS payloads will not be able to draw on Shuttle services.

The Goddard Space Flight Center is mission manager for all GAS payloads, furnishing standard flight containers that provide pressurization, thermal control, venting, experiment mounting plates and command links.

Experiments cannot be extended into space by the Orbiter's payload boom, but special cannisters with windows or openable tops can be ordered at some extra cost.

Interested researchers will only be responsible for experiment costs. The containers, integration and flight costs will be paid by the Office of Space Transportation Operations. Experiment costs for Langley payloads will come from the Director's discretionary funds, through the Chief Scientist's Office.

Proposals for GAS experiments should follow guidelines established by Director Hearth in December 1978 and January 1979.

Any Langley researchers with ideas or questions about GAS payloads can get more information by calling Fred Allamby, ext. 3661.

Make-up Training Session Planned

All regularly scheduled training sessions on the new Performance Appraisal System for Non-Supervisory Personnel have been completed. Employees who missed their session should make arrangements to attend the make-up session Wednesday, September 9, at 9 a.m. in the Activities Center.

A video tape of one of the sessions is available in the Learning Center for those employees who did not have an opportunity to attend a live session. Call the Learning Center, ext. 3014, for an appointment.

It's Show Time, Folks

by Allan C. Hanrahan

At the Langley Activities Association's Carnival, occurring today and tomorrow, color and excitement and music will accompany those Langley employees donating their time and talents on behalf of the special events and entertainment served up for the enjoyment of all those attending this annual event. In the accompanying photograph are many of those employees.

Shown first on the left on the front row is JOHNNY ARRINGTON, who for the third year has coordinated and scheduled the special events and entertainment and will act as Master of Ceremonies. A Langley employee for 20 years, he is a Contract Specialist in the Acquisition Division. His extracurricular activities include talent booking and managing the Fun Time Cloggers, and while none of that group are Langley employees, Arrington has prevailed upon them to perform Saturday at 9 p.m. Popular up and down the East Coast, the Fun Time Cloggers have won six National Championships and sixteen World Championships.

Next we meet JAMES DENNIS MCMILLAN, an Engineering Technician in the Operations Support Division and a Langley employee for 10 years. For the past few years McMillan has helped with the truck show and this year he is heading up the truck show **and** contest sponsored by the Blue Water Van Club of Hampton and the LAA. Trophies will be awarded for the best in the categories of van, pick-up truck, four-wheel-drive vehicle and "people's choice."

The remainder of the people on the front row are square dancers with the Golden Boots Club.

RICHARD E. (DICK) HANNA is a Section Supervisor for Kentron International and has been a contractor employee at the center for 21 years. Square dancing for 16 years and a member of the Golden Boots for eight or nine years, Dick Hanna thinks, "It's just a good type of activity, you meet such nice people. We all enjoy it; it's a good, common meeting ground." Hanna's wife, Beverly, in addition to the dancing, designs square dance dresses.

ROBERT C. INGRAM is an Electronics Technician in the Flight Electronics Division and has been a center employee for 30 years. He and his wife, Ruby, have church and square dancing as their main interests.

FAITH ALLEN, 14 years at the center, is a Clerk-Stenographer in the Systems Engineering Division. Square dancing is a family affair with the Allens as she and her husband, Buddy, and their two daughters and son-in-law all learned at the same time. Allen and her husband have been dancing with the Golden Boots for five years.

LOIS H. BREEN, who recently earned her associate degree in administrative management, and her husband, Clarence, share four children and square dancing. A 20-year veteran at the center, she is a Production Controller in the Operations Support Division.

PEGGY H. LANGFORD is a Voucher Examiner in the Passenger Transportation Office of the Financial Management Division and for 16 years she has served at the center.

"My prime hobby," she said of square dancing, and when asked if there were any others she answered, "Well, we've gotten our kids grown." By "we" she meant she and her husband, Allen.

RICHARD L. (DICK) KURTZ is the caller for the Golden Boots and he spends much of his spare time traveling extensively and "following the good

– photo by Bob Nye

Shown above are some of those helping with the entertainment to be presented during the LAA Carnival. In the front row, left to right, are Johnny P. Arrington, James Dennis McMillan, Richard E. Hanna, Robert C. Ingram, Faith Allen, Lois Breen, Peggy H. Langford, and Richard L. Kurtz; back row, left to right are Frederick L. Staggs, Donald Wimer, and C. Gerald Clendenin (who make up "Crabgrass). Also Billy L. Dove, James P. Peterson, William J. Leftwich, Clarence Breen, Berkley Allen Langford, Jr., and Charles E. Libbey.

callers and big events (of square dancing)," he said. At the center, where he has worked for 26 years, he is an Engineering Technician in the Systems Engineering Division.

FREDERICK L. (FRED) STAGGS, DON WIMER, and C. GERALD CLENDENIN comprise "Crabgrass," a bluegrass-playing group that played at last year's Carnival and has only existed about a year-and-a-half.

"It's the first bluegrass band I've played in," stated Staggs, who has played the bass fiddle for 25 years, beginning with Rock and Roll back in the latter 50s. Like the other two gentlemen, Staggs has played professionally but now they play almost only "for the fun of it," he admitted. "All for fun," he added.

"Most of our playing is connected with NASA, such as NASA night at the Peninsula Pilots game," continued Staggs, an Aerospace Technologist in the Flight Electronics Division and a Langley employee for 19 years. He is also serving as a judge for the talent contest.

DON WIMER, an Instrumentation Technician with Wyle Laboratories, for whom he has worked the past 10 years, has been playing the fiddle since he was 14 years old--26 years--and performed on the New Dominion Barn Dance show out of Richmond. Wimer also plays the dobro and mandolin as well as--"a little," he said--the five-string banjo and "flat top" (bluegreas guitar).

C. GERALD (JERRY) CLENDENIN, an Engineering Technician in the Instrument Research Division and a center employee since 1962, plays the six and 12-string guitars, banjo, mandolin, kazoo and nose flute (don't laugh, there is such an instrument).

Clendenin and Kim Person, the daughter of another NASA employee, will also render some folk and contemporary instrumentals and vocals. And incidentally, Don Wimer's wife may join "Crabgrass" for some country gospel music.

Returning to our square dancing contingent we meet BILLY L. DOVE, Head of the Aircraft Electronics Systems Branch of the Flight Electronics Division and an employee since May 1956. Dove and his wife, Nell, enjoy their square dancing as do JAMES P. (JIM) PETERSON, and his wife, Millie. Peterson worked at Langley from May 1944 to February 1980, when he retired. But he still comes out and works three days a week as an ACEE Project Engineer.

WILLIAM J. (BILL) LEFTWICH, JR., an Engineering Technician in the Fabrication Division, has so far put in 38 years at Langley. His wife and square dancing partner, Pauline, was a secretary in the Electrical Section in years past. In addition to square dancing, she is also a member of the Peninsula Cloggers. Leftwich's other interest is farming (10 acres takes him out of the "gardening" category).

CLARENCE F. BREEN, whose wife, Lois, we have met, is a Safety Specialist in the Systems Safety, Quality and Reliability Office of the Office of Director of Systems Engineering and Operations. While Breen enjoys square dancing--and round dancing as well--he did not list either as his main activity what with teaching OSHA courses in the Adult Education Program of the Virginia Educational System and spending 50 to 75 hours a month on work for the Army Reserve, in which he holds the rank of Chief Warrant Officer. He served in the Army during the Korean War and came to work here in 1952.

> "Square dancing is just a good type of activity; you meet such nice people. . . . It's a good, common meeting ground."

BERKLEY ALLEN LANGFORD, JR., is a relative newcomer to the center, entering on duty in 1974, but he is no newcomer to the Carnival having served for the previous four years at the games of chance. And his wife, Peggy, remembered "selling tickets and such in years past." Langford, an Electronics Technician in the Flight electronics Division, enjoys golf and woodworking when away from work.

CHARLES E. (CHUCK) LIBBEY, and his wife, Patricia, are nearer the consummate square dancers than most simply because they approach it more seriously. Still, "it is a lot of fun," stated Libbey, an Aerospace Technologist in the Low-Speed Aeronautics Division and an employee since 1955.

Square dancers absent when the picture was taken were KENNETH V. HAGGARD of the Atmospheric Environmental service Division, ALBERTA SAUNDERS, a retiree, RAY BUMGARDNER, an Engineering Technician in the Fabrication Division, and ROY HEATH, a Staffing Specialist in the Personnel Division. Heath's wife, son, and daughter will be dancing also. Another activity in which Heath engages is refereeing high school football, which he has been doing as long as he has been at the center--since 1964.

Two NASA employees absent when the photograph was taken, who will be "dropping in" on Saturday are PHILIP H. GLAUDE and BRUCE D. LITTLE, members of the Fort Monroe Area Sport Parachutists Club, that will be giving skydiving exhibitions at 2 and 4 p.m. Glaude, a Supervisor in the Materials Processing and Development Section of the Fabrication Division and a worker of 20 years at Langley, has been a volunteer for four years at the Carnival. He is a veteran of 1,800 jumps over the last 10 years and some of his parachuting exploits have been prominently mentioned in area news mediums.

Bruce Little is an Engineering Technician in the Advanced Machining Development Section of the Fabrication Division and has been at the center for 10 years; for the last three years he has been skydiving at the Carnival and for two years before that he worked in other capacities. Little employing his skydiving talents, helped test a wind tunnel structure near Montreal. The test was described in the February 1981 issue of the French-Canadian magazine, **Perspectives**, and describes an aerodium, which is a structure in which a person can simulate free-falling, sans parachute.

Two additional NASA employees not shown in the photograph are STEPHEN C. (STEVE) WRIGHT and JOHN W. (BILL) FOGLE, both Engineering Technicians in the Fabrication Division and both former musicians who have assented to serving as judges for the talent contest.

Another judge will be the drummer and vocalist for "Harvest" (a Rock and Top 40 Band), AL HUNTLEY, a Klate Holt employee. "Harvest" is allowing the

Continued on page 6.

Happenings

TIDEWATER DINNER THEATER. "Show Boat" is playing at the Tidewater Dinner Theater in Norfolk. Tickets are on sale at the Activities Office for $13.25 weekdays and $14.25 weekends.

HAPPY HOUR has been cancelled for today due to the LAA Carnival. The next Happy Hour will be September 11 from 4 to 6:30 p.m. in the Activities Center.

THE COLLEGE OF WILLIAM AND MARY'S Special Programs Office provides a variety of educational courses and programs to those who cannot participate in degree programs. Courses to be offered this fall include basic home repair, a study of cheese and wine, beginning sign language, house plants, investing in gemstones, pocket billiards, communication for couples, speed reading and study skills, grammar and writing, career developments, public speaking and CPA exam preparation. Many programs are tuition free to citizens over 60. For more information or a free catalog, call 877-9231, ext. 63 or 64.

CALLIGRAPHY COURSE. An eight-week introductory Calligraphy course will begin at Thomas Nelson Community College September 28. Call the Office of Continuing Education at 825-2935 to enroll. Wesley Berryman of Langley's Graphics Branch is the instructor.

WASHINGTON, D.C. TRIP. Visit either the Smithsonian Institute or the National Zoo Saturday, September 19. All of the Smithsonian Institute is open at this time, including the Air and Space Museum, the Hope diamond and a special exhibition of Rodin's sculpture. A bus will leave Newmarket South at 6 a.m. and will arrive at the Smithsonian at 10 a.m. and at the zoo at 10:20 a.m. For the return trip, the bus will pick up passengers at the zoo at 5 p.m. and at Smithsonian at 5:20 p.m., stop an hour for dinner and arrive home by 10 p.m. The cost is $19.50 per person. Please make checks payable to Richard Bennett and send to Mail Stop 397 or 11 Bosch Lane, Newport News, Va. 23606. For further information, call Bennett at 599-5685.

FOOTBALL. Season tickets for the College of William and Mary football games are available for $22.50 at the Langley Activities Association Office. The regular cost is $40. The first game will be played September 12 at Cary Field.

DOG TRAINING. The NASA Dog Training School will register a six-week basic obedience class Saturday, September 12; advanced classes will also resume following the summer break. Thomas Nelson Community College will offer, in cooperation with the NASA Dog Training School, a six-week Kids Dog Care and Control Class for children fourth through eighth grades. Included in the class will be pet care responsibility, basic control of your dog and a tour of a veterinary hospital. Registration is through TNCC with class starting Saturday, September 19. All dogs must have all vaccinations current including parvo innoculation. For information, call Doris Bryan, 898-6273 after 5 p.m.

Public Mail Office Closes

The Public Mail Office is closed to "walk-ins" until next spring when the office moves into permanent office space.

For additional information call Renee Benton, ext. 3341.

Show Time

Continued from page 5.

use of their sound equipment for some of the entertainers to use, and ROGER LETT, a former performer on trumpet with "Harvest" and an Advex employee, will be the sound engineer mixing the sound for the Carnival.

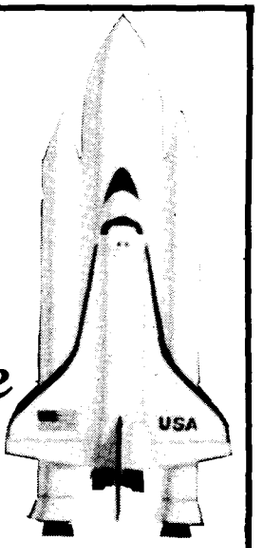
The fifth judge for the talent contest and a talented performer in her own right, is RUTH CHILDRESS, another Klate Holt employee and a Procurement Clerk in the Acquisition Division. She has worked at the center for 14 years and this is her third year serving the Carnival. Her main outside interest--"Definitely," she said is Mid-Eastern dancing which she has been enjoying for six years since "I just heard the music and loved it!" she exclaimed. She will be dancing with about nine other ladies with "Caravan East" and five or six other ladies with "Desert Dancers."

"You get to know the other girls and enjoy the relationship you have," she concluded.

And so we conclude with the hope that no center people in the special events and entertainment areas were overlooked. If so, Heaven knows it was unintentional.

We wish you a fun-filled time at the Carnival.

Space Shuttle Update



A nine-day Shuttle interface test was scheduled to be completed Wednesday of this week. The interface consists of a series of three simulated missions designed to check communications and other elements between the Orbiter, the external tank and the solid rocket boosters.

Preparations are under way for Columbia's rollout from the Vehicle Assembly Building to the launch pad, now scheduled for Aug. 31. The launch is still targeted for Sept. 30.

Visitor Center Features Special Programs

Slide-lecture programs on "Voyager: Mission to the Outer Planets" will be presented at the Langley Visitor Center August 29 and 30 at 2 p.m. The film, "Jupiter and its Moons," assembled from Voyager-Jupiter flyby images, will be shown in 3 p.m. on these days.

By popular demand, the film, "Living Planet," will continue to be featured through August 31.

Originally produced by Johnson Wax Co. for the Smithsonian's National Air and Space Museum, the film shows Earth as seen from space and explores the challenge of protecting the planet's fragile environment.

LAA Carnival Begins Today

The following special events are planned for the 1981 Carnival, sponsored by the Langley Activities Association:

Friday, August 28

5 p.m. Carnival Opens
6 p.m. Carnival Monarch will be crowned
7 p.m. Talent Contest – PA system will be provided by Harvest Band
9 p.m. Caravan East, Mid-Eastern Dancers

Saturday, August 29

9 a.m. Five Mile Race
12 p.m. Carnival Opens
12 p.m. Southern Legacy Band – Country Rock & Top 40
1 p.m. Martheia and the Mystic Dancers
2 p.m. Fort Monroe Area Sport Parachutist Club, Skydiving Exhibition
3 p.m. Kim Person & Jerry Clendenin – Folk & Contemporary Instrumentals & Vocals
3:30 p.m. 4 X 440 Relay Race
4 p.m. Fort Monroe Area Sport Parachutist Club, Skydiving Exhibition
5 p.m. Country Gospel Music
6 p.m. Golden Boots, Western Square Dance Exhibition
7 p.m. Desert Dancers, Mid-Eastern Dancing Exhibition
8 p.m. Crabgrass, Bluegrass Music
9 p.m. Fun Time Cloggers – National & World Champion Title Holders
10 p.m. Conclusion of 1981 LAA Carnival

Also tomorrow from 2 to 7 p.m. the Blue Water Van Club of Hampton will sponsor a Truck Show (Vans, pick-ups and 4 x 4's) with trophies to be presented in each class at 6:45 p.m. at the stage.

Recent Retirees

Joseph M. Freeman Jr., Instrument Research Division, retired August 21.

Prentiss Childs, Research Information and Applications Division, and **Emma J. Landrum**, High-Speed Aerodynamics Division, are retiring today.

In Memoriam

Dr. Thomas K. Dempsey of the Acoustics and Noise Reduction Division died August 21 in Hampton General Hospital. He was 38.

Employed at Langley since 1974, Dempsey was a group leader and an experimental psychologist in the Noise Effects Branch, where he planned and conducted research to determine the response of community residents to aircraft noise and the response of passengers to aircraft cabin noise and vibration.

Dempsey's research results were published in over 30 technical papers and presented at numerous professional society and technical meetings. He had received national and international recognition for ride quality research and a patent is pending on a ride quality meter he invented.

A native of Buffalo, N.Y., Dempsey received a bachelor of arts degree in psychology from the State University of New York in 1966 and a master of arts degree and doctorate in experimental psychology from the University of Louisville, Ky., in 1969 and 1971, respectively.

National Aeronautics and
Space Administration

Langley Research Center
Hampton, Virginia
23665

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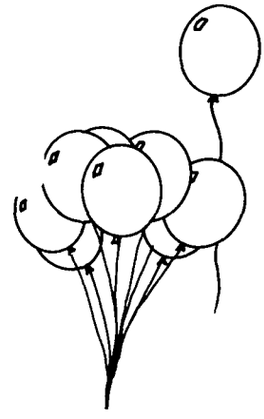


swap and shop

FOR SALE

Articles

Spinet piano with bench, Whitney (by Kimball), VGC, $550. Call Natalie Johnson, 898-8160.

Real Estate

Gloucester (Naxera): Country home restored; nine rooms, including large country kitchen with Danish wood stove and built-in cupboard, high ceiling dining room with French doors, living room with handsome brick work and wood stove, sun porch, 1/2 bath and utility room downstairs. Upstairs to a large foyer off of which are four bedrooms, large walk-in cedar closet, bath, and stairway to a huge attic; energy efficient home on three acres with 40 fruit/nut trees, grape arbor, out buildings and tractor. Forty-five minutes from Williamsburg, Hampton and Newport News. Owner will finance at 12 percent or rent with option to buy, $79,000. Call Heyman, 229-9514 after 6 p.m.

Animals

Lhasa Apso: AKC registered, 8-week old female puppy, wormed, dew claws removed, $150. Call 877-0671.

FOUND

Ladies 25-year NASA service pin (blue stone), found in a commercial establishment in Your County around August 1. For further identification, call Childs, 898-6719.

FOR RENT

Cape Hatteras on Sound: Cottage with 4 BR, 2 baths, water front, Sept./Oct. $275/wk; $100 Wknd - 2 nights, $125 wknd - 3 nights. Call 877-3736.

COMBINED FEDERAL CAMPAIGN

CFC

Romatowski Named to DOE Post

Raymond G. Romatowski has been named Manager of the Albuquerque Operations Office of the Department of Energy. He was Langley's Director for Administration from 1971 to 1975.

Romatowski began his federal government service in 1957 with the Department of Agriculture. He joined NASA in 1959 and served in a number of management positions at NASA Headquarters in Washington, D.C., before coming to Langley in 1969 as Assistant Director for Administration.

He left Langley in 1975 to become Deputy Controller of the Energy Research and Development Administration. He also served as Deputy Director of the Nuclear Waste Management Programs, Office of Nuclear Energy, and since February 1981 he has been Acting Under Secretary of Energy.

The major mission of the Albuquerque Office is the management of the nuclear weapons research, development and production complex. Other programs include development of safe disposal methods for radioactive waste, transportation safeguards of nuclear materials and physical protection of facilities, and management of energy programs--solar, geothermal, fossil and fusion research--through its Sandia and Los Alamos Laboratories.

cafeteria menu

WEEK OF AUG. 31—SEPT. 4

MONDAY: Old Fashioned Bean Soup; Breaded Pork Steak; Seafood Gumbo Over Rice; Chopped Steak; Clams Casino. Snack Bar: Hot Italian Sausage Sub; Charcoal Hoagie; Egg Salad.

TUESDAY: Manhattan Clam Chowder; Baked Lasagna; Fried Fish Nuggets; Spinach & Bacon Quiche. Snack Bar: Chicken Breast; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Roast Turkey Dinner; Seafood Newburg; Fresh Stuffed Bell Peppers. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Gumbo Soup; Meatloaf; Chicken & Dumplings; Baked Tuna & Noodle Casserole. Snack Bar: Ham & Cheese Club; BBQ; Oyster Sandwich.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Broiled Beef Liver & Onions; Polish Sausage & Sauerkraut. Snack Bar: Deluxe Sub; Hot Ham & Cheese; Tuna Salad.

WEEK OF SEPT. 7—11

MONDAY: ENJOY A SAFE HOLIDAY!!

TUESDAY: Bull Island Clam Chowder; Spaghetti Dinner; Chicken Chow Mein; Turkey Breast Nuggets. Snack Bar: Chicken Breast; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; Beef Balls Stroganoff; Boston Blue Fish. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Vegetagle Soup; Braised Chicken Livers; Seafood Quiche; Pork Thriller. Snack Bar: Ham & Cheese Club; BBQ; Chuckwagon.

FRIDAY: Minestrone Soup; Fish Dinner; Beef Tips over Rice; Chicken Turnover Pie. Snack Bar: Deluxe Submarine; Hot Ham & Cheese; Tuna Salad.

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

Volume 20 Issue 18

September 11, 1981

Systems Engineering and Operations Directorate

Cuddihy, PED Chief, Retires from Langley

William F. Cuddihy, Chief of the Plant Engineering Division, retired from Langley August 29. He had been responsible for construction and maintenance of facilities and energy management at Langley since March 1980.

Cuddihy began his NASA career in 1958 as an aerospace technologist in the Instrument Research Division, working on the Echo Satellite, Project Mercury and Project Gemini. In 1963 he was named Head of the Telemetry Research Section of the Flight Electronics Division. In 1969 he became Electronics Manager for the Viking Project and, later, Deputy Lander Manager, Systems Engineering Manager, Deputy Chief Engineer and Chief Engineer for the Viking Extended Mission. He became Assistant Chief of the Systems Engineering Division in May 1978, where he worked on several space projects and the construction of the National Transonic Facility, cryogenic wind tunnel.

Before joining the Langley staff, Cuddihy conducted research in ferrites, semiconductors and high-powered arcs for the Linde Company. He was in the U.S. Army from 1945 to 1947.

A specialist in electronics, space communications, computers and systems engineering, Cuddihy has written or co-authored more than 20 publications and holds patents on a reentry communications system and a plasma arc

Continued on page 2.

Langley Colloquium

Shull to Discuss Water Problems

Environmental problems--accidental and planned spills, ground water contamination, organic regulations, acid precipitation, and the increasing scarcity of water--face the water utility industry. What is being done about them will be discussed at a Langley colloquium Monday, September 14.

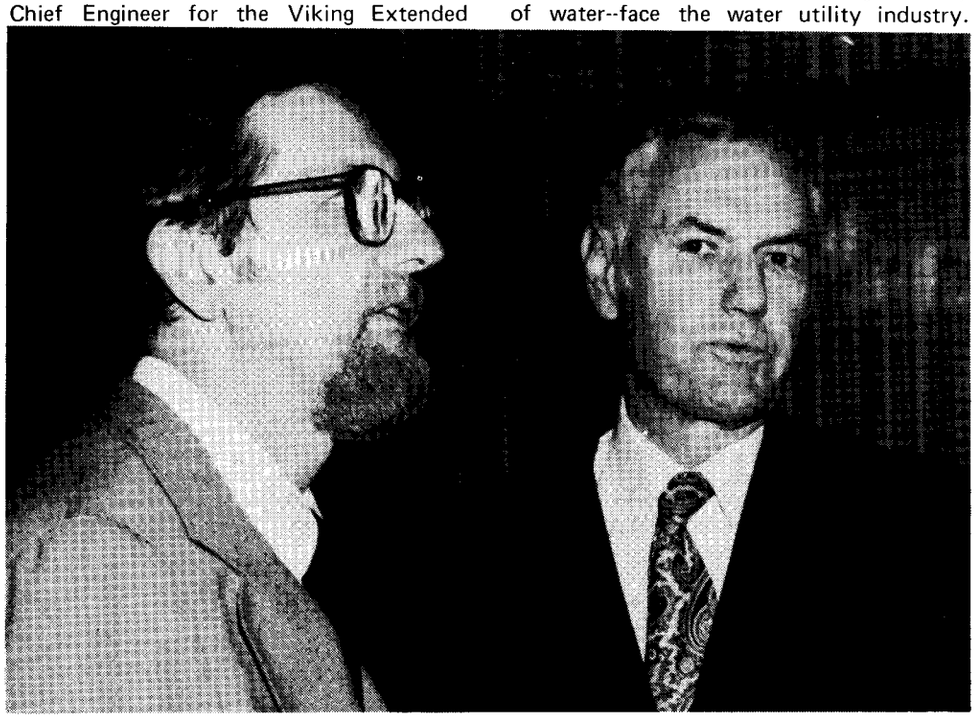
Kenneth E. Shull, Vice President of Research and Environmental Affairs, Philadelphia Suburban Water Co., will discuss "Some Water Problems and How the Industry is Trying to Solve Them" in the Activities Center at 2 p.m., followed by a short question and answer session. The speakers will move to the adjoining Langley Room at 3 p.m. for an informal discussion.

In his lecture, Shull will describe what the water utility industry is doing to correct the six problems, which "are very real," Shull said, "and they're going to be with us for a long time. But, optimistically, the industry has the technical know how and the desire to resolve them."

According to Shull, one of the industry's primary goals is the consistent delivery of enough high-quality water to all customers--hour after hour, day after day, year after year.

Employed by the Philadelphia utility since 1938, Shull has been Chief Chemist; Superintendent of Water Treatment; Vice President, Public Relations and Water Quality Control; and Vice President, Water Treatment, Quality Control and Research.

Continued on page 2



— photo by Bob Nye

Dr. James M. Beggs, new NASA Administrator (right), talks with Langley Director Donald Hearth a few minutes before Beggs made his first talk to Langley employees since assuming his new duties. See story on page 3.

– photo by Don Ward

Langley's Equal Employment Opportunity Award for the second quarter of FY 1981 was presented to Dr. Alvin F. Anderson, Head, Office of Research Grants and University Affairs, in a special ceremony August 26. Richard H. Petersen, Deputy Director, presented the award for "outstanding community outreach efforts and leadership in working with minority universities to encourage their interest and proficiency in science and engineering."

President Reagan Endorses CFC Drive

President Reagan recently issued the following memorandum for all federal employees and military personnel.

"We each have the opportunity to show our concern for those in need through the Combined Federal Campaign. It combines the annual fundraising efforts of the United Way, the National Health Agencies, the International Service Agencies, the National Service Agencies, local non-federated voluntary agencies and the American Red Cross.

"Through voluntary giving, we prove what individuals can do on their own without having to go through government channels. We have the opportunity to provide services and programs for our neighbors and countrymen without making them dependent on government. The CFC also makes it possible to help those in faraway lands, extending a helping hand to friends around the world. We can help relieve pain and problems now and fund research to keep them out of our future.

"In America, we have traditionally accepted the responsibility of voluntary giving for good causes. The values that cause us to care for our neighbors, our countrymen and people around the world are the values that make us great.

"Federal employees and military personnel have a proud record of generosity and concern for others. I am confident that record will continue this year. While the amount you give is a personal, voluntary decision, I hope that each of you will join me in supporting the Combined Federal Campaign."

Voyager II Saturn Images Featured

A special, continuous video presentation of images taken by Voyager II on its recent Saturn flyby will be featured at the Langley Visitor Center September 5 through 21. The presentation shows some of the most striking images transmitted by the spacecraft and includes commentary by Voyager mission scientists. A special exhibit of photographs from the mission will continue through September 30.

Shull Speaks

Continued from page 1.

A native of Pennsylvania, he received a bachelor of science degree in chemistry from the Philadelphia College of Pharmacy and Science in 1938.

He is a member of many professional and scientific organizations, including the National Water Well Association, American Chemical Society, American Water Works Association, Water Pollution Control Federation and American Association for the Advancement of Science.

Cuddihy Retires

Continued from page 1.

device. He has received many NASA awards, including a NASA Exceptional Service Medal.

Born in Hopewell, Va., Cuddihy graduated from Hopewell High School. He received a bachelor of science degree in 1951 and a master of science degree in 1953 in electrical engineering from the University of Virginia.

Cuddihy and his wife, the former Sue Salim, live in Yorktown, Va. They have three children.

The *Langley Researcher* as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond
Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

Happenings

HAPPY HOUR will be held today from 4 to 6:30 p.m. in the Activities Center.

ACCOUNTANTS. The Association of Government Accountants will have a dinner meeting at the Langley Officers' Club September 15 at 5:30 p.m. Dr. Arnold Abrams, Christopher Newport College, will speak on "Body Language and Effective Communication." The public is invited and reservations may be made by calling Bob Hanlon at 727-3524.

AIAA. The Hampton Roads Section of the American Institute of Aeronautics and Astronautics will hold its Annual Oyster Roast Wednesday, September 23, at 4:30 p.m. Traditionally the first activity for the section each year, the oyster roast will feature Chesapeake Bay oysters, steamed crabs, hot dogs, hamburgers, and the usual beverages and salads. The location will be the Langley Activities Center grounds, and prices will be $2 for student branch members, $4 for section members, and $5 for guests. Reservations (recommended) may be made with John Whitesides, ext. 3124; Richard Wallsom, ext. 2608; or Beth Plentovich, ext. 3711.

CALLIGRAPHY COURSE. An eight-week introductory Calligraphy course will begin at Thomas Nelson Community College September 28. Call the Office of Continuing Education at 825-2935 to enroll. Wesley Berryman of Langley's Graphics Branch is the instructor.

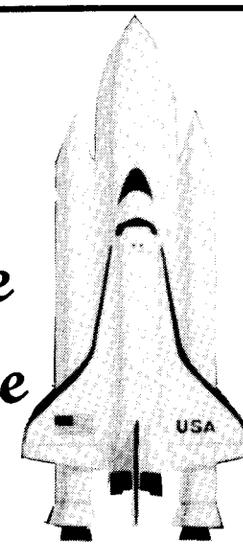
HONEY BUNCH. The NASA-Langley Apricultural Club will meet Monday, September 21, from 7 to 9 p.m. in Room 180 of Building 1209. The program will be directed primarily toward new beekeepers and children. Seasonal aspects of bees and beekeeping; bee equipment demonstration; the three types of bees; and reasons for keeping bees will be presented. A film, "Bees, the Backyard Science," will be shown. There will be a question and answer period, prizes and refreshments.

TIDEWATER DINNER THEATER. "Show Boat" is playing at the Tidewater Dinner Theater in Norfolk. Tickets are on sale at the Activities Office for $13.25 weekdays and $14.25 weekends.

DOG TRAINING. The NASA Dog Training School will register a six-week basic obedience class tomorrow; advanced classes will also resume following the summer break. Thomas Nelson Community College will offer, in cooperation with the NASA Dog Training School, a six-week Kids Dog Care and Control Class for children fourth through eighth grades. Included in the class will be pet care responsibility, basic control of your dog and a tour of a veterinary hospital. Registration is through TNCC with class starting Saturday, September 19. All dogs must have all vaccinations current including parvo innoculation. For information, call Doris Bryan, 898-6273 after 5 p.m.

WASHINGTON, D.C. TRIP to the Smithsonian Institute and the National Zoo has been changed to Saturday, September 26. All of the Smithsonian Institute is open at this time, including the Air and Space Museum, the Hope diamond and a special exhibition of Rodin's sculpture. A bus will leave Newmarket South at 6 a.m. and will arrive at the Smithsonian at 10 a.m. and at the zoo at 10:20 a.m. For the return trip, the bus will pick up passengers at the zoo at 5 p.m. and at Smithsonian at 5:20 p.m., stop an hour for dinner and arrive home by 10 p.m. The cost is $19.50 per person. Please make checks payable to Richard Bennett and send to Mail Stop 397 or 11 Bosch Lane, Newport News, Va. 23606. For further information, call Bennett at 599-5685.

Space Shuttle Update



After a successful rollout of the Space Shuttle Columbia and its high-powered accounterments August 31, the dry Countdown Demonstration Test was scheduled to be held September 8 – 9 at the Kennedy Space Center.

The only tanking test is planned to begin Monday, September 14, and loading the hypergolic propellants should begin about five days after that test.

Countdown preparations will follow completion of the loading tests, and the launch countdown is scheduled to begin October 5, leading to a planned October 9 launch.

Langley Summer Employees Honored

A Career Planning and Recognition Program was held Monday, August 17, in the Activities Center in honor of Langley's summer employees.

The program included highlights of the Cooperative Educational and Graduate Studies Programs, presented by Evelyn D. Myers and Franklin C. Owens of the Training and Educational Services Branch. Randy A. Manning, Staffing and Special Programs Branch, gave an overview of the civil service procedures for 1982 summer employment.

Three summer employees, Lynne A. Hamilton, College of William and Mary; Angela A. Fullwood, Hampton Institute; and Stephen A. Ezzell, graduate of Saint Andrews College, gave presentations on their accomplishments while at Langley.

William L. Williams, Chief of the Personnel Division, presented Outstanding Achievement awards to: Stephen A. Ezzell, Matthew L. Wilbur and Thomas T. Thompson, Jr., Structures Directorate; Joyce A. Blackwell, Sharon S. Joyner and Cheryl L. White, Systems Engineering and Operations Directorate; Ruth A. Holmes and C. Haile Wilson, Electronics Directorate; Elizabeth A. Barnett, Lisa C. Daniels, Sarah L. Howell, Monica L. McClenney, Donna-Lyn Mears, Mark A. Sarrett and Amy Lee M. Young, Management Operations Directorate; Nancy L. Kent, Office of Director; Patrice L. Brown, Arthur C. Grantz, Lynne A. Hamilton and Karen M. Martin, Aeronautics Directorate.

National Aeronautics and
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Langley Research Center
Hampton, Virginia
23665

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FOR SALE

Articles

Honey: medium amber honey from hives in Hampton, $3/qt. Call Harvey, ext. 2576.

Garage sale: 3 Langley Avenue, Beaconsdale, Newport News. Saturday, September 12, from 9 a.m. to 5 p.m. Aquarium set-up, furniture, carpet, linens, assorted household items.

Real Estate

Gloucester (Naxera): Country home restored; nine rooms, including large country kitchen with Danish wood stove and built-in cupboard, high ceiling dining room with French doors, living room with handsome brick work and wood stove, sun porch, 1/2 bath and utility room downstairs. Upstairs to a large foyer off of which are four bedrooms, large walk-in cedar closet, bath, and stairway to a huge attic; energy efficient home on three acres with 40 fruit/nut trees, grape arbor, out buildings and tractor. Forty-five minutes from Williamsburg, Hampton and Newport News. Owner will finance at 12 percent or rent with option to buy, $79,000. Call Heyman, 229-9514 after 6 p.m.

FOR RENT

Azalea Gardens: Brick rancher, 3 BR, 2 BA, LR, den w/fp, w/w carpet, 2-car gar., trees, fenced lot, large patio w/cover, AC, dishwasher, stove, refrig., $435/mo., lease and dep. required, available approximately September 14. Call 722-6872.

Sandbridge: Cottage with 3 BR, AC, phone, liv.-din.-kit. area, 1/2 block from ocean, $300/wk after September 15. Call Kent, ext. 3104, or 420-8391.

LOST

Small spiral pocket notebook, probably near Building 1268A. Call Schy, ext. 3917.

WANTED

Fourth member for car pool from Kempsville/Arrowhead area on 7:30 a.m. shift. Call Janet Schultz, ext. 3681.

Car pool needs an additional driver from Woodland Farms/Elmwood area of James City County to NASA on 8 a.m. shift. Call 564-3296 or 564-8355.

Need fourth person to join car pool from Windsor Great Park on 8 a.m. shift. Call Kennedy, ext. 3191.

To join or start car pool from Ghent area of Norfolk to West area on 8 a.m. shift. Call Ruth Martin, 587-7437 or 623-5373.

Students to take piano or organ lessons. Experienced teacher with master's in piano. References available. Ivy Farms or York High School areas. Call 595-3270.

Ride to West Area from Phoebus area (N. Mallory St.) on 8 a.m. shift; will pay; call T. Edwards, ext. 3473.

FOUND

A Chowan College jacket and two pairs of non-prescription sunglasses were found on the Activities Center grounds following the Carnival. Call the Activities Office, ext. 3139, for more information.

Key found at the entrance to the large blacktop parking lot between the Cafeteria and Dispensary. Call Jean Drummond, ext. 2934, to identify.

Prize Winners

The following people won the grand prizes during the 1981 Carnival August 28 and 29.

Dr. Milton E. Rose — video tape recorder

James W. Walch — cruise for two

Andy Armano — $500 in gas

Nancy T. Kent — $1,200

Retirement Parties

J. A. "Dave" Maloney, National Transonic Facility Project Office, will be honored with a retirement social Friday, October 2, at the Activities Center. The social, including bar, heavy hor d'oeuvers and gift contribution, will cost $8.50 per person or $17 per couple and will begin at 6:30 p.m. Send reservations and make checks payable to Floyd Jennings, Mail Stop 267, by September 18. Contributions for gift only will be appreciated.

cafeteria menu

WEEK OF SEPT. 14 — 18

MONDAY: Old Fashioned Bean Soup; Breaded Pork Steak; Fresh Stuffed Bell Peppers; Beef Enchiladas. Snack Bar: Hot Italian Sausage Sub; Charcoal Hoagie; Egg Salad.

TUESDAY: Manhattan Clam Chowder; Baked Lasagna; Fried Fish Nuggets; Cheese Enchiladas. Snack Bar: Chicken Breast; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Roast Turkey Dinner; Chopped Steak; Chili Mac. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Gumbo Soup; Meatloaf; Chicken & Dumplings; Red Chile Burrito. Snack Bar: Chili Burger; BBQ; Oyster Sandwich.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Broiled Beef Liver; Spanish Rice. Snack Bar: Deluxe Sub; Tuna Salad; Crab Cake.

WEEK OF SEPT. 21 — 25

MONDAY: Ham & Lima Bean Soup; Hot Roast Pork Sandwich; Chicken Pot Pie; Seafood Newburg. Snack Bar: Hot Italian Sausage Sub; Charcoal Hoagie; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Spaghetti Dinner; Chicken Chow Mein; Monte Cristo Sandwich. Snack Bar: Chicken Breast; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; Beef Balls Stroganoff; Veal Parmesan. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Vegetable Soup; Braised Chicken Livers; Seafood Quiche; Polish Sausage. Snack Bar: Ham & Cheese Club; BBQ; Chuckwagon.

FRIDAY: Minestrone Soup; Fish Dinner; Beef Tips; Ham Steak. Snack Bar: Deluxe Sub; Hot Ham & Cheese; Tuna Salad.

Joseph F. Braig, Acquisition Division, will be honored with a retirement party (hors d'oeuvres and cash bar), Thursday, October 1, from 5 to 7 p.m. at the Langley Officers' Club, Williamsburg Room. The cost, including the gift, will be $7 per person or $12.50 per couple. Contributions to gift only are welcome. For reservations, please send check to Betty Brendel, Mail Stop 134, by September 25.

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

Volume 20 Issue 19

September 25, 1981

Former Langley Director for Management Operations

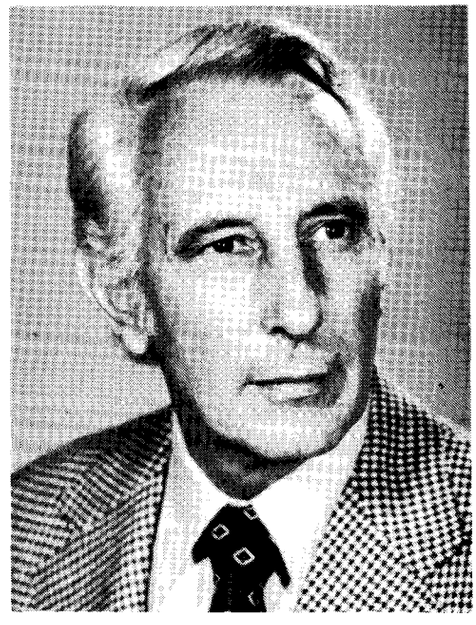
Kilgore to Retire From NASA

Edwin C. Kilgore, NASA Associate Administrator for Management Operations, will retire October 2 after 37 years of service with NASA and its predecessor agency, the National Advisory Committee for Aeronautics.

Kilgore is the senior NASA official responsible for all institutional management and for management of resources in support of programs at all NASA installations.

Ann P. Bradley, Deputy to Kilgore, will be Acting Associate Administrator for Management Operations.

Kilgore has received many awards and decorations: the Presidential Meritorious Award in 1980, the Roger Jones Award for Executive Leadership from American University in 1978, and NASA's Distinguished Service and Outstanding Leadership medals. He is also a winner of the Honorary Group Achievement



Award of the Rocket Motor Review Board for his work in helping achieve a record of 97 consecutive firing successes for solid-fueled rocket motors.

Born January 24, 1923, at Coeburn, Va., Kilgore is a 1944 graduate of Virginia Polytechnic Institute, where he received a bachelor's degree in mechanical engineering.

He joined the Langley staff after graduation and was assigned to the Engineering Division as a developmental design engineer of specialized research equipment. He became Technical Assistant of the Machine Design Branch in 1954, and Assistant Chief of the Engineering Service Division in 1960.

Designated Chief of the Flight Vehicles and Systems Division in May 1969, he shared responsibility for setting policies to operate and manage

Continued on page 5.

Langley Fares Well in Annual IR-100 Competition

Langley researchers have won two of the 100 awards presented this week in the prestigious IR-100 competition for advancing science and technology.

Dr. Joseph Heyman, of IRD, now has four IR-100 awards to his credit, more than any other person in the 12-year history of the award.

Three research chemists from MD, Dr. Vernon Bell and husband and wife research team Anne and Dr. Terry St. Clair, also count as one of the 100 government and business recipients honored in this year's annual competition. This is Dr. St. Clair's second IR-100 award.

The IR-100 award is presented by Industrial Research/Development magazine to the 100 scientists or engineers judged to have contributed the most significant technological developments during the course of the preceding 12 months. The award is in the form of a plaque to the researcher's employing agency or company. Selections are made by a panel of scientists and executives from government and industry after a review of current technology from around the world.

Heyman, and Larry P. Yoder of the U.S. Department of the Interior, Bureau of Mines, collaborated to develop a device they call a geodynamic accumulated strain sensor--or GAS^2 for short. The award was presented to both men and counted as one of this year's 100 awards.

GAS^2 promises to have far-reaching applications in the measurement of stresses deep within structures--both natural and man-made--but was specially designed to increase the safety of mining operations by gauging the stability of rock in a mine's walls and ceiling.

The device uses ultrasonic sound waves to measure stresses within the rock for the first time, resulting in more accurate, reliable information. Prior to this sensing system, a device would have to be mechanically bonded to the external surface of a rock mass at two points to determine if any relative movement had occurred. Part of the problem with such a system is that glue at the attachment points can deteriorate over time, allowing the mechanical device to slip.

Bell and the St. Clairs, all from Langley's Materials Division, collaborated to develop a material for preparing high temperature polyimide film laminates called LARC-TPI. The award was presented to all three and counted as one award.

Continued on page 2.

Heyman, far right, and Yoder, far left, pause before entering the Colorado School of Mines Experimental Mine to test a prototype of the GAS^2 ultrasonic sensor. Also shown are Mr. Gidon Chitombo of the Colorado School of Mines, center left, and Mr. Jim Aggson, formerly with the Bureau of Mines, center right. GAS^2 measures changes in rock stress and is expected to contribute greatly to mine safety.

Dr. Terry and Anne St. Clair

IR-100 Awards

Continued from page 1.

Polyimide laminates are presently being used commercially in flexible electrical circuits in computers, cameras, telephone systems, medical equipment controls and in missile guidance systems. These interconnection devices save space and assembly time. It is anticipated that additional uses in aerospace and other applications will be forthcoming now that electronic designers no longer consider flexible circuits as experimental but accept them as reliable. One problem that has limited their use is the ability of present flexible circuits to remain reliable under extreme temperature variations.

In coming up with LARC-TPI -- which stands for Langley Research Center Thermoplastic Polyimide -- the three Langley chemists have developed a high-temperature material which can successfully bond large areas and shows considerable commercial potential.

In addition to its use as an adhesive for the large-area bonding of metals and films, LARC-TPI is being developed for possible use as a molding powder, composite matrix resin, high temperature film and fiber.

John Samos, Head of Langley's Technology Utilization and Applications Office, accepted the awards for Heyman, Bell and the St. Clairs yesterday at the Museum of Science and Industry in Chicago. An exhibit was opened to the public at the Chicago museum featuring the technological advances represented by the IR-100 award winners. The exhibit will remain open approximately one month.

Offices Move

Two offices in the Training and Educational Services Branch, Personnel Division, have moved to Building 1194.

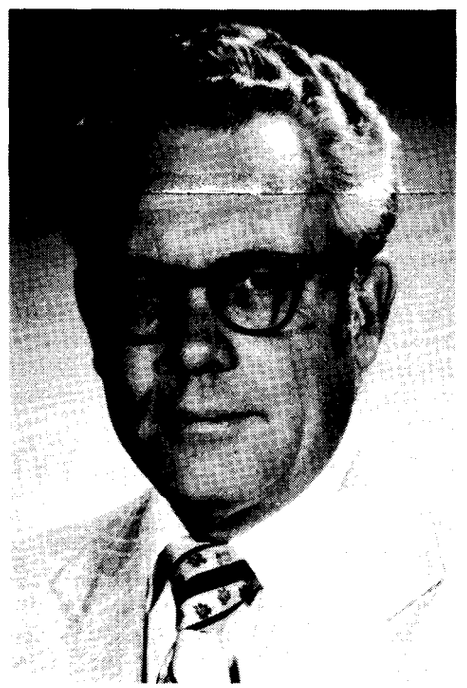
The Learning Resources Center is located in Room 115; the extension is 3014 and the mail stop is 184A. The Career Development Center is located in Room 118; the extension is 3981 and the mail stop is 184.

Both offices are open from 8 a.m. to 4:30 p.m.

Jacobs Wins Car Pool Drawing

Kenneth L. Jacobs of the Research Facilities Engineering Division is the September winner of $20 given to a registered car pool participant by the Langley Exchange Council.

Monthly drawings are held as an incentive to expand the number of car pools at Langley.



Dr. Vernon Bell

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Woods Receives NTA Award

David C. Woods, a physicist in the Aerosol Measurements Research Branch, Atmospheric Environmental Sciences Division, received the Dr. A. T. Weathers Technical Achievement Award at the 53rd Annual National Technical Association (NTA) Convention in Detroit August 4–8.

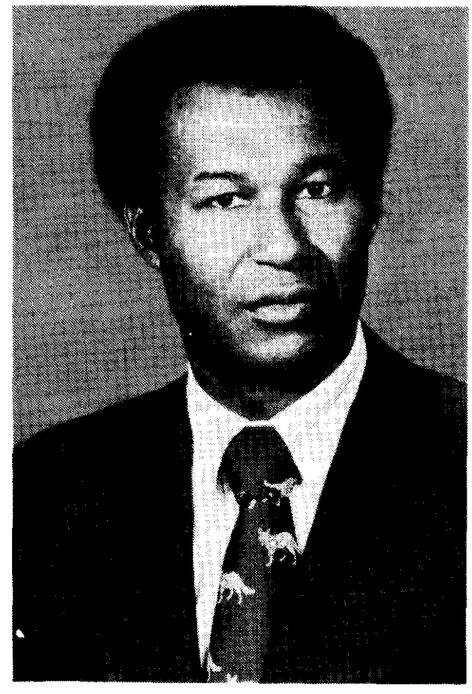
The award, named after an NTA founder, honors people who distinguish themselves by significant technical achievements or contributions. Woods, a member of the Hampton Roads Chapter of NTA, was recognized for his "contributions to characterization of atmospheric aerosols through the development and application of the quartz crystal microbalance (QCM) technique, leading to increased knowledge of the properties of aerosols from volcanic emissions, from rocket firings and on the background stratospheric aerosols."

NTA, established in 1925, is comprised of scientists, engineers and students dedicated to providing an exchange of information among minorities in technical fields.

Employed at Langley since 1962, Woods is responsible for measurement and characterization of atmospheric aerosols, including stratospheric measurements, characterization of rocket exhaust effluents and characterization of volcanic emissions.

One of his most significant developmental contributions is the QCM technique which measures the size of aerosols in real time. Woods has continuously improved this technique from a one-size to a ten-size range covering the most important aerosol sizes.

The QCM was flown through volcanic plumes in Guatemala and at Mount St. Helens in Washington and in a NASA program in the Caribbean, providing new data that can now be applied by volcanologists and atmospheric modelers to understand the geophysics of volcanos and their significance to atmospheric physics and chemistry. It was most recently used to provide correlative aerosol measurements for two satellite experiments, Stratospheric Aerosol Measurements II and Stratospheric Aerosol and Gas Experiment.



Woods graduated from J. B. Dudley High School in Greensboro in 1957. He received a bachelor of science degree in engineering physics from North Carolina A & T State University in 1962 and a master of science degree in physics from Old Dominion University in Norfolk, Va., in 1973.

The author or co-author of over 25 technical publications, Woods has received a NASA Exceptional Service Medal, three NASA Group Achievement awards and two NASA Special Achievement awards.

He is a member of the Optical Society of America, the American Institute of Physics and the National Technical Association.

Woods and his wife, Thomasena, live in Hampton, Va., with their two children.

"Men grow only in proportion to the service they render their fellow men and women.

He who does most, lives most. He who lives most, gives most."

Edward Rickenbacker

A Message from Last Year's Chairman

Langley is a Caring Place, Stand Tall for CFC

Overpaid, underworked, serene in security--unfortunately government workers today are berated from many sides with these characterizations. I am so thankful that this distorted perception does not characterize the NASA Langley workforce, either Civil Service or our many fine supporting organizations/affiliates.

When establishing the many contacts and interfaces required to conduct last year's CFC thrust here at Langley, I became acutely aware of the high sensitivity and sincere appreciation of Langley-associated people for their work, their workplace, their community, and for their coworkers as individuals. An open willingness to participate was evidenced by essentially all, and the highly successful results in last year's campaign bear sure testimony to Langley as a caring place. Individually and collectively we want to keep both our workplace and our communities nice places in which to live and work. Our giving last year (as in many years past) also testified of our concern for the many less fortunate among us--and our willingness to share even that which we have earned.

This year is tough for all of us economically, and little would be gained by recounting statistics of inflation, interest rates and budget-paring. It's even tougher for the many in our own community who will receive the benefits provided through the many local service organizations funded via our 1981-82 CFC donations. Also a small portion of each undesignated CFC dollar goes abroad to the severly-hurting spots worldwide serviced by the International Service Agencies.

As your keyperson approaches you this year with an opportunity to participate in CFC, please open your heart and your wallet (preferably through payroll deduction) to help meet these pressing needs. Someone once said, "when the going gets tough, the tough get going." I look for Langley to once again stand tall for CFC, even in today's tough environment.

Robert L. Swain
Chairman, 1980-81
Combined Federal Campaign

Last of Five Brothers Leaves Langley

Braig, Small Business Specialist, Retires

There are probably not many families that can boast of accumulating over 100 years of service with an agency, but Joseph F. Braig and his brothers surely can. Together, five Braig brothers have accumulated 184 years with NASA and its predecessor agency, the National Advisory Committee for Aeronautics.

The Braig era ended, however, September 8, when Joe Braig, Langley's first and only Small Business Specialist, retired from Langley with 35 years of service.

Braig, who is responsible for establishing the Small Business Program at Langley, said a Braig has worked at NASA for the past 57 years. "All of the Braigs began their careers at Langley," he said, "beginning with Raymond E., the oldest, in 1924. Raymond had Naval pilot training and was a pilot in mechanics in Flight Operations." Shortly after the Ames Research Center was established, Raymond transferred there, where he was Chief of Mechanical Engineering Services until his death in 1965.

James "Ros" and Eugene C. spent a few years at Langley before going to the Lewis Research Center. They both retired in 1970, Ros as Deputy Director of the Plum Brook Station and Eugene as Chief, Equipment Supply Services. They accumulated 33 and 41 years of service, respectively.

Richard V. began his career at Langley in 1937 and died in 1971 while a Contractor Relations Officer.

Joe Braig said he was the last of his brothers to be employed by Langley and the last to leave. "Two of my brothers outranked me in service, three in age," he explained. "Three of us retired from the agency and two died while still working."

The brothers attended schools in Hampton, moving to the area after their father retired from the U.S. Air Force after a 41-year career.

When Joe Braig came to work here, he was an engineering aide, writing mechanical specifications for Cabell Messick in the Engineering Service Division. In 1958 he transferred to what was then the Procurement Division, working for Sherwood Butler. In 1959 he was appointed Small Business Specialist.

Joseph F. Braig (standing at left) poses with his four brothers Raymond (standing), Eugene, Richard and Ros (seated from left). The Braig brothers began their careers at Langley and together they accumulated 184 years of service with NACA/NASA.

The work with small business evolved from the Small Business Act of 1953 and the National Aeronautics and Space Act of 1958, which states that NASA is to place a fair proportion of its total purchases and contracts with small business concerns.

"In 1959 NASA Headquarters said that each center was to have a contact in the small business industry," Braig explained. "I was the point of contact to which small businesses could direct inquiries concerning participation in the NASA procurement program or secure assistance in submitting bids or proposals, as well as performance of contracts."

Braig said that as the Small Business Program grew, NASA became involved in equal opportunity and the disadvantaged or minority groups program, and had to establish goals to include minorities under Section 8(a) of the Small Business Act.

Section 8(a) authorizes the Small Business Administration (SBA) to enter procurement contracts with federal agencies and, in turn, to subcontract the work to small businesses. The program emphasizes providing subcontracts to businesses owned by socially or economically disadvantaged people to help them achieve productive and economic stability in a competitive business environment.

Langley pioneered the Section 8(a) program within NASA by being the first NASA center to enter an agreement with SBA, signed in June 1970. Langley was also the first NASA center to award a contract for construction of a building to an 8(a) firm.

Eugene D. Rosen, Small Business Advisor in the Office of Small and Disadvantaged Business Utilization at NASA Headquarters, said "Braig was a stalwart supporter of the 8(a) program. He was involved in the very first 8(a) contract that NASA ever awarded, which was for $3,500, and has probably been involved in every one that Langley has awarded."

Since June 1970, Rosen said Langley has awarded contracts in excess of $27 million to minority firms in the

Tidewater area and approximately $414 million to small businesses, most of which Braig has been responsible for. Rosen said that during the first year of the 8(a) program, FY 1970, NASA awarded $76,000 in contracts to small business and, of that amount, Langley awarded $50,000.

Braig said Langley has always exceeded its goals under the SBA Section 8(a) Program and will exceed them again this year. "Millions of dollars have gone into the program and I am very proud of what we have done and of the role I have played in helping Langley reach those goals."

He serves on the Board of Directors for the Tidewater Area Business Contractors Association and is a member of the Minority Business Opportunity Committee. Most recently he was selected by the Peninsula city mayors to serve on the Board of Directors for the Virginia Peninsula Economical Development Council.

One of the highlights of his career was "bringing small business contracts back to Virginia contractors," as he put it. "For example, our guard service was performed by Howard Security Service of Baltimore. There wasn't a Virginia firm that qualified for the contract. I suggested ways for Virginia firms to improve their 'track records.' They did, and Langley was able to award the guard contract to Metropolitan."

Braig said he has had an outstanding and excellent relationship with the small business and minority community. That is evident by the number of awards and certificates of recognition, such as Langley's and NASA's Equal Opportunity Awards and citations from U.S. Representative Paul Trible and former Congressman Thomas Downing.

Status Review Set for Monday

In response to the Director's wishes, plans are to advertise the agenda of the Monthly Status Review so that researchers may attend talks of particular interest. The review is held on the fourth Monday of each month in Room 225, Building 1219, unless otherwise announced.

The following technical sessions are planned for Monday, September 28; the morning session will begin at 8:30 a.m. and will include presentations by:

Aeronautics

High Angle of Attack Research on Forward Swept Wing Fighter
Overview of 1981 Severe Storms Program

Structures

Transmission Loss of General Aviation Aircraft Panels Using Acoustic Intensity Methods
Fatigue Crack Closure

Projects

Early Planning and Management Office Overview
Solar Electric Propulsion Solar Array Experiment Status
OEX Composites Experiment Status

The afternoon session will begin at 1:30 p.m. and will include presentations by:

Electronics

Remote Computer Terminals and Switching at LaRC
NASA/ASEE Summer Study On Computer Science

Systems Engineering and Operations

SE&O Overview
NTF Status
Explosive Welding Repairs for Nuclear Piping

Space

The Ozone Field from 23,000 Km: A New Ozone Experiment Aboard Dynamics Explorer I
Recent Results from LIMS: An Experiment On Board the Nimbus 7 Satellite
Results of the 1981 Warm Core Ring Experiment

The review is planned to be concluded by 4 p.m. A copy of the complete agenda may be obtained at the meeting or by calling Raould M. Price, ext. 2417.

Kilgore

Continued from page 1.

centralized engineering support to all Langley research activities.

Kilgore had an important role at Langley in the conceptual planning, design and problem-solving for such space projects as Lunar Orbiter, the S-55 Micrometeoroid Satellite, the Scout and San Marco launch vehicles, Project Fire and Echo satellites 1 and 2.

He first went to NASA Headquarters in 1970, where he had several management jobs, including Deputy and Acting Associate Administrator (Management) in the Office of Aeronautics and Space Technology.

He became Deputy Associate Administrator for Center Operations, a new office formed in 1974, responsible for all NASA field center operations.

Kilgore returned to Langley in 1975 as Director of Management Operations. He was responsible for major administrative functions and oversaw center activities in personnel, financial management, procurement, management support, business data systems, programs and resources, scientific and technical information, occupational health services and technology utilization.

He returned to NASA Headquarters in August 1979 as Acting Associate Administrator for Management Operations; in March 1980, he was named to that position.

Kilgore and his wife, Ann, have two daughters and live in Hampton. Mrs. Kilgore was Mayor of Hampton for 12 years.

Kilgore will be honored with a retirement party (hors d'oeuvres and cash bar), Wednesday, October 28, at 5:30 p.m. at the Activities Center. The cost, including the gift, will be $4 per person, or $7 per couple. For reservations, please send check to Betty Burnes, Mail Stop 111, by October 21.

Thanks

Sandra C. Chaney writes, "I would like to thank my many friends for the flowers, gifts and cards sent to me during my recent surgery. Also, words can never express how much the personal visits and phone calls meant. Thank you, each and every one."

Outstanding Voluntary Service Awards Presented

– photos by Don Ward

Outstanding Volunteer Service awards were presented to two Langley employees during the annual Service Awards Ceremony September 10. In the left photograph, Langley Director Donald P. Hearth presents an award to Bertie Ann S. Garrett, for "long and dedicated public service in organizing and leading young girls to help others in the community." In the right photo, Hearth presents an award to Burnett W. Peters, Jr., for "outstanding volunteer leadership in religious, public and private sectors of the Peninsula community, devoted to improving the quality of life and opportunities for others."

– photo by Don Ward

The Langley Colloquia Committee was presented the Outstanding Volunteer Service Group Award, for "outstanding and dedicated service in conducting the Langley Colloquium Series." Cary R. Spitzer (seated at left), Chairman of the committee accepted the award. In a special ceremony September 17, Spitzer presented individual awards to committee members (seated) Dr. Edward R. Long, Jr.; Dr. Joseph S. Heyman; Sheila T. Long; Dr. James H. Starnes, Jr.; and Edna G. Davidson. Standing from left are Dr. George D. Sands, former committee member and a Langley retiree; James M. Luckring; Robert F. Greene, Jr.; James A. Martin; Dr. Joel S. Levine; Dr. Jay C. Hardin; and Dr. Karen R. Credeur. Current and former committee members unable to attend the special ceremony include Frederick W. Bowen; Dr. John H. Crews, Jr.; Dr. Wayne D. Erickson; William P. Gilbert; Joan T. Harris; Dr. Randall L. Harris, Sr.; Dr. Robert C. Harriss; Jerry N. Hefner; Dr. Cecil E. Kirby; Dr. James D. Lawrence, Jr.; Dr. Samuel H. Melfi; Charles E. K. Morris; Shelby J. Morris, Jr.; Dr. Ralph J. Muraca; George F. Pezdirtz; William H. Phillips; Glen W. Sachse; and Dr. Leo D. Staton.

Hispanic Heritage Remembered

The Office of Equal Opportunity Programs recently sponsored activities in commemoration of National Hispanic Heritage Week.

On September 12 a "covered dish" dinner was held at the Activities Center for Hispanic employees and their spouses and guests. Langley hired several Hispanic employees during FY 81, most of whom arrived during the summer. The dinner allowed the new employees an opportunity to meet other Hispanics, share information and get acquainted in an informal environment.

During the week of September 14 – 18, special dishes, such as refried beans, Mexican corn and rice, Spanish string beans, red chile burritos, beef enchiladas, and chili mac, were served in the NASA Cafeteria in celebration of the occasion.

A formal program, "Hispanics Contribute to U.S. History," was held September 22 in the Langley Activities Center with Dr. José G. Simón as guest speaker. Dr. Simón is an associate progessor of foreign languages at Old Dominion University.

Happenings

HAPPY HOUR will be held today from 4 to 6:30 p.m. in the Activities Center.

FILM FESTIVAL. The LAA 1981-82 Film Festival will begin November 8 and will run through April 3. Titles of the films to be shown will be announced in future issues of the *Langley Researcher*.

DINNER THEATER. The musical "Raisin" is being performed at the Tidewater Dinner Theater in Norfolk through October 11. Weekday prices are $13.75; weekend prices are $14.75. Tickets are on sale at the Activities Office.

TOASTMASTERS helps you prepare for today's communication and leadership demands, through an organized communication and leadership program. Opportunities are provided to sharpen your thinking and listening skills, to improve abilities in evaluating yourself and others, to express yourself more effectively in group discussions or in impromptu situations, to practice group leadership, to make conference or meeting arrangements, to serve as master of ceremonies, and to conduct meetings in accordance with proper parliamentary procedures. In Toastmasters you learn progressively by doing, in an atmosphere of enjoyment and fellowship. The TAC Air Toastmasters Club meets at the Langley Officers' Club at 7 p.m. the second and fourth Wednesdays of each month. For further information, call Bob Miserentino, ext. 2817 or 838-1067; or Dennis Herman, 727-2831 or 723-0598.

Credit Union Closes to Convert

Langley Federal Credit Union's own in-house computer system is almost a reality. Due to the time needed for conversion, the LFCU offices will be closed as follows:

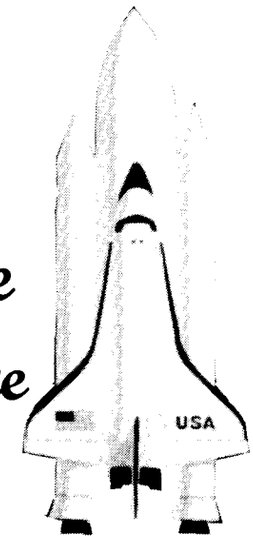
NASA & AF Branches	– October 1 & 2
Riverdale	– October 1, 2 & 3

Make plans ahead for any business transactions on those dates. The credit union appreciates your cooperation in this conversion which will greatly improve service to its members.

– *photo by Bob Nye*

HEARTH RECEIVES 25-YEAR SERVICE AWARD. Langley Director Donald P. Hearth receives congratulations from Deputy Director Richard H. Petersen for completing 25 years of service with NASA. In a ceremony recently, Petersen presented Hearth with a service emblem and a Certificate of Recognition. During his career, Hearth has been Deputy Director of the Goddard Space Flight Center; Director of Planetary Programs and Manager of Advanced Programs, Lunar and Planetary Programs, at NASA Headquarters; and an aeronautical engineer at the Lewis Research Center.

Space Shuttle Update



Shuttle officials at the Kennedy Space Center are working on a recovery plan for the accident that occurred early Tuesday morning, Sept. 22, but a decision on a new launch date is not expected before the end of this week.

George Page, Director of Shuttle Operations at Kennedy, announced late Tuesday afternoon that the planned Oct. 9 launch would be delayed at least one to two weeks, assuming the accident caused only minor damage.

During fueling operations, a ground support valve apparently malfunctioned and caused about three gallons of nitrogen tetroxide to spill down the starboard side of the Orbiter's nose. The hypergolic oxidizer, used in the Orbiter's reaction control system, soaked a section about 20 feet long and from two to six feet wide.

About 67 thermal protection system tiles fell off or were removed soon after the spill; as many as 250 tiles may have to be removed and replaced, according to Page.

If the oxidizer damaged only the tiles, and did not seep into the Orbiter's maneuvering system, the tiles can be cleaned and reattached to the Orbiter on the launch pad. If, however, there is damage to the maneuvering system, the Shuttle will have to be returned to the Vehicle Assembly Building for disassembly. That could cause a launch delay "in excess of a month," according to Page.

National Aeronautics and
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COMBINED FEDERAL CAMPAIGN

CFC

cafeteria menu

WEEK OF SEPT. 28 — OCT. 2

MONDAY: Old Fashioned Bean Soup; Hot Roast Beef Sandwich; Fresh Stuffed Bell Peppers; Chicken Breast Parmesan. Snack Bar: Hot Italian Sausage Sub; Charcoal Hoagie; Egg Salad.

TUESDAY: Manhattan Clam Chowder; Baked Lasagna; Fried Fish Nuggets; Cheese Enchiladas. Snack Bar: Chicken Breast; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Roast Turkey Dinner; Chopped Steak; Spanish Mackeral. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Gumbo Soup; Meatloaf; Chicken & Dumplings; German Style Potatoes. Snack Bar: Deluxe Sub; BBQ; Oyster Sandwich.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Broiled Beef Liver; Spanish Rice. Snack Bar: Chicken Breast; Tuna Salad; Crab Cake.

WEEK OF OCTOBER 5 — 9

MONDAY: Ham & Lima Bean Soup; Hot Roast Pork Sandwich; Chicken Pot Pie; Salisbury Steak. Snack Bar: Hot Italian Sausage Sub.; Charcoal Hoagie; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Spaghetti; Chicken Chow Mein; Monte Cristo Sandwich. Snack Bar: Chicken Breast; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; Beef Balls Stroganoff; Veal Parmesan. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Vegetable Soup; Braised Chicken Livers; Seafood Quiche; Crab Cutlet. Snack Bar: Deluxe Sub; BBQ; Oyster Sandwich.

FRIDAY: Minestrone Soup; Fish Dinner; Beef Tips over Rice; Ham Steak. Chicken Breast; Hot Ham & Cheese; Tuna Salad.

Recent Retiree

James L. Miller of the Fabrication Division retired September 18.

Retirement Parties

Joseph F. Braig, Acquisition Division, will be honored with a retirement party (hors d'oeuvres and cash bar), Thursday, October 1, from 5 to 7 p.m. at the Langley Officers' Club, Williamsburg Room. The cost, including gift, will be $7 per person or $12.50 per couple. Contributions to gift only are welcome. For reservations, please send check to Betty Brendel, Mail Stop 134, by September 25.

A retirement party for **Edward C. Polhamus** will be held at the Langley Activities Center October 10. A social will begin at 6 p.m., with dinner at 7 p.m., and the program at 8 p.m. The cost will be $10 per person, which includes contribution to a gift. Make your reservations with Bernice Barrack, Mail Stop 294, ext. 2601, before October 5.

James C. Dunavant, Space Systems Division, will be honored with a retirement luncheon Wednesday, October 21, in the Williamsburg Room at the Langley Officers' Club at 11:30 a.m. The luncheon and gift contribution will cost $6.50 per person. Send reservations and make checks payable to William L. Wells, Mail Stop 408, by October 14. Contributions to the gift only will also be accepted.

swap and shop

FOR SALE

Articles

Full-size mattress, box springs, maple headboard and frame, GC, $250. Call Youngblood, 877-1224 after 5 p.m.

New York State maple syrup: $24/gallon, $13/half, $7/qt., $4/pt. Order now, available mid October. Call Ann, ext. 4508.

Vehicles

1976 AMF Alcort Sunfish, EC. Call Ransone, ext. 2143 or 642-2646.

1972 Vega, $500 OBO. Call Lee, ext. 3487 or 722-5770.

Sailboat - Chrysler Buccaneer 1980, good condition, 18 ft., black hull with yellow interior, main sail and jib, asking $3000. Call Lynn Bowman, ext. 2866 or 424-7930 after 6 p.m.

Animals

Male Laborador Retriever pups, 9 weeks old, exc. breeding, all shots, $150 each. Call James, 642-4109.

Quarter Horse gelding, gentle disposition, 13 years old, 14.2 hands, English or Western, incl. western tack, $750. Call 868-7091.

WANTED

Car pool from Virginia Beach (Kings Grant vicinity), 8 a.m. shift with some flexibility. Call L. Dixon, ext. 2691 or 340-4375.

To join or form car pool from Chesapeake/Indian River area to NASA on 8 a.m. shift. Call Paul McGowan, ext. 3155 or 424-7392.

To join car pool from the Newsome Park area of Newport News to West area on 7:30 a.m. shift; will pay. Call Jean Eley, ext. 3337.

Carpool to join or start from Kempsville/Providence area of Virginia Beach to NASA on 8 a.m. shift. Call Lynn Bowman, ext. 2866.

FOUND

Glasses with side protector found in tool crib in Building 1221-B. Call R. W. Moore, ext. 2592, to claim.

Thanks

George J. Magnus writes, "My family and I wish to thank those who planned, participated in, and attended my retirement party. The comments, gifts and mementoes will be a reminder of the many enjoyable years and friends at Langley."

Juanita Parker writes, "I wish to thank all those who planned, participated in and attended my retirement luncheon. Thanks so much for the gifts and momentoes; they will be a reminder of the friends I had during my years at NASA."

VSMF Staffed

The Visual Search Microfilm File (VSMF), located in Building 1209, is now staffed Monday through Friday from 9:30 a.m. to 2 p.m. This file consists of distributor, manufacturer, professional and military standards.

For information and assistance call Susan Mixon, ext. 3655.

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

Volume 20 Issue 20 October 9, 1981

Sevareid Gives Yorktown Victory Bicentennial Lectures

For 40 years Eric Sevareid has reported, summarized and analyzed American and world history as a correspondent for CBS news. As the nation embarks on the first evening of its third century, Eric Sevareid is well-qualified as one of the world's premier journalists to speak about the past, the potential and the prospects of the American experience.

As part of America's Yorktown Victory Bicentennial Celebration, Sevareid will be the guest speaker for the "Our Future in the Cosmos" public lecture Monday, October 19, at 8 p.m. in Hampton Coliseum.

Sevareid's lecture, "An Evening with Eric Sevareid," will be the first lecture in the 1981–82 Cosmos series, sponsored by NASA and the College of William and Mary. Free tickets are available at the Coliseum box office.

Sevareid will speak at a Langley colloquium the following morning, October 20, in the Activities Center. His lecture will begin at 10 a.m., followed by a short question and answer session. The speaker will move to the adjoining Langley Room at 11 a.m. for an informal discussion.

In preparation for the Bicentennial and for his visit to the Peninsula, Sevareid issued the following statement:

"A few days in October of 1781 made it certain that a new nation would be born into the world. The certainty did not come with the words of Jefferson in 1776, but with the carefully planned acts of violence at Yorktown in 1781. A long time ago, but to most of us America still feels fairly new. Not as new as it did, but not yet old and set in its ways. It seems to me that the United States has reached what one might, not too fancifully, call middle age. The country is reexamining itself, as persons do at middle age, recognizing its inherent faults and its limitations, reaffirming its strength, beginning to distinguish more clearly those ills of humanity that it can help to cure from those it cannot, realizing that it is not required that a man or a nation solve all problems to live successfully. Amelioration of human ills is the best we can look for. To do that is to live successfully. As Harry Golden said, 'America ain't what's wrong with the world' -- and it never was."

Sevareid, best known for his news analysis on the CBS Evening News, joined the Columbia Broadcasting System in August 1939 as a member of the original news team assembled by the late Edward R. Murrow.

In over four decades as a newsman, Sevareid has been a war and foreign correspondent, radio news broadcaster, television commentator and columnist, as well as a newspaper reporter and editor. He was regularly involved in CBS News coverage of major political events from 1948 until his recent retirement.

Sevareid has received numerous awards for his writing, broadcasting and interpretation of the news, such as the Peabody Award, an Emmy Award by the National Academy of Television Arts and Sciences, the University of Southern California's Distinguished Achievement of the Year Award and the National Institute of Social Sciences Gold Medal Award. He was inducted into the Hall of Fame of the Washington Chapter of the Society of Professional Journalists, Sigma Delta Chi, in 1974.

He is the author of two books, "Canoeing With the Cree" and "Not So Wild a Dream" and three collections of

broadcast essays: "In One Ear," "Small Sounds in the Night" and "This is Eric Sevareid." He also edited "Candidate: 1960" and co-authored, with Robert Smith, "Washington: Magnificent Capital."

Reflecting on his years with CBS News, Sevareid expressed what it means to be a journalist:

"Only one commitment, one passion, remains to a journalist who loves and respects his profession and his colleagues--to find the truth of things as best he can and to relay it with what skill he can command."

CFC Status Report

Contributions Near $122,500

As of *Researcher* press time, Langley personnel and NASA affiliated organizations had donated $122,230 to the 1981–82 Combined Federal Campaign.

Langley has a long history of outstanding participation in community activities, especially in times of community need. The CFC is the one time each year when that community need is made known to us. Please consider the needs of our community and make your pledge if you haven't already done so. Your contribution will help Langley meet its goal, and in turn, will help our community.

Former Langley Researcher Retires at Ames

Dr. Leonard Roberts, who began his NASA career at Langley in 1957, has retired as senior scientist for the Ames Research Center.

Roberts served as director of the Aeronautics and Flight Systems Directorate at Ames from 1970 until September of last year. He left Langley for Ames in 1966 to be director of NASA's Mission Analysis Division. The division was part of the NASA Headquarters Office of Advanced Research and Technology (now OAST), and physically located at Ames.

Roberts was head of the Mathematical Physics Branch at Langley. Before joining the Langley staff, he was a research associate at Massachusetts Institute of Technology for two years. Between 1952 and 1955, he earned bachelor and master of science degrees and a PhD in applied mathematics and aerodynamics at the University of Manchester, England.

He is well known in the fields of aerodynamics, atmospheric entry, and lunar and planetary landing. He has served as a technical advisor and consultant to government agencies, private industry, and educational institutions in the United States and abroad.

While at Langley, Roberts served on several technical committees, including the Reentry Science Program Steering Committee, as chairman of the Manned

Orbiting Telescope Study Committee and as chairman of the Planetary Missions Technology Steering Committee.

Now a research consultant for Stanford University, Roberts expects to join the university's Department of Astronautics and Aeronautics as a professor in 1982.

Roberts became a naturalized citizen of the United States in ceremonies at Norfolk in 1964. He was born in Prestatyn, North Wales, in 1929. He is married and has two children. He lives in Saratoga, California.

Gillam, Assistant to Beggs

Isaac T. Gillam IV has been named Special Assistant to NASA Administrator, James M. Beggs, effective October 1. While in this position, he will be detailed to the White House Office of Science and Technology, where he will be participating in a Space Policy Review until its completion.

He was named Director of the Dryden Flight Research Center in June 1978, after serving as Deputy Director. He was Director of Shuttle Operations at Dryden during the Space Shuttle Approach and Landing Tests in 1977.

Gillam joined NASA in 1963 as a Resources Management Specialist. In 1966 he was appointed Assistant Program Manager for the Delta Launch Vehicle and in 1968 he became Program Manager. In 1973, he was appointed Program Manager, Small Launch Vehicles and International Projects, which included the Delta and Scout launch vehicles and numerous international cooperative and reimbursable projects.

Gillam has received NASA's highest award, the Distinguished Service Medal for his work on the NASA launch vehicle program.

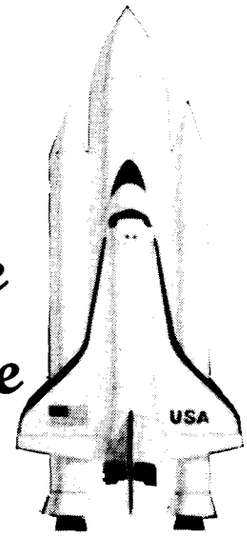
Space Film to be Shown

A film on the Manned Space Program will be shown Tuesday, October 13, in the Activities Center, Building 1222, at 11 a.m. The 50-minute film is on loan to Langley, and only NASA employees are invited to attend.

Thanks

Herb Leybold writes, "My wife and I thank all who recently donated blood for her."

Space Shuttle Update



A launch date for the second flight of the Space Shuttle Columbia is expected to be announced today. Early November is the time period last officially mentioned for a probable launch.

Rebonding of the Orbiter's insulating tiles is progressing well. Of the 370 that became unglued after a propellant spilled over them, 264 have been rebonded as of earlier this week. The Orbiter was powered up Monday and Tuesday for a test of the forward reaction control system, also bathed in nitrogen tetroxide. The system is a critical element in the new launch decision.

Meanwhile, the external tank for STS-3 arrived from the Michoud Facility, New Orleans, and was hoisted in the checkout cell in the Vehicle Assembly Building Monday night.

Graduation Planned

Apprentice graduation exercises will be held Friday, October 23, at 1:30 p.m. in the Activities Center.

The guest speaker will be Dr. Jean Epps, Director of Vocational Education, Newport News School System. The class speaker will be Donald Smith, Fabrication Division.

The *Langley Researcher* as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond
Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

New Director, Deputy Director Named at Visitor Center

Dr. Jack Queijo has been named Director of the Langley Visitor Center and Mary Sandy has been named Deputy Director.

Queijo, who retired from Langley Research Center in 1980 after 36 years of service, brings a wealth of experience to his new position. In the early days of America's space program, he worked closely with the original seven astronauts and to some extent with Dr. Wernher von Braun. In his work with NASA he played a key role in determining lunar orbit rendezvous techniques, worked with the earliest simulated lunar landings and was involved with simulations for the Gemini missions. His later efforts at Langley dealt with research in aerodynamics of swept-wing aircraft, stall/spin problems and unsteady aerodynamics.

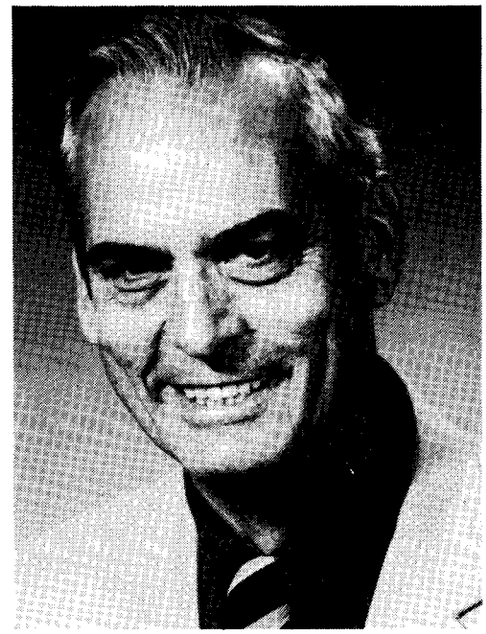
Mary Sandy

Queijo finds his new position "extremely interesting because of all the changes and advances that are still occurring. The most impressive thing for me about the Visitor Center is that it's a living organism rather than a museum. It's constantly being changed and kept up-to-date." He looks forward to "making the public more aware of Langley and NASA-wide contributions to aeronautics, to technology and to the economy."

Queijo has a doctorate in engineering mechanics from Virginia Polytechnic Institute. He and his wife live in Williamsburg. They have two children.

Sandy has been a Public Relations Specialist at the Visitor Center since September 1979. Her new position encompasses enhanced managerial duties as well as public relations activities.

She has a master's degree in public administration from George Washington University. A resident of Newport News, her background includes public relations work and nine years of experience as an educator.



Dr. Jack Queijo

The Visitor Center is managed for NASA by the Bionetics Corporation of Hampton, Va.

Heavy Bicentennial Traffic Expected

Employees who drive to work through the Yorktown area should plan to rise a bit earlier than usual October 16 and 19 because of the Bicentennial Celebration.

The Coleman Bridge over the York River will be open to through traffic but celebration traffic is expected to reduce driving speeds.

Highway 17 will remain open. Through traffic will be routed to the two inner lanes (one in each direction). Bicentennial traffic will use the two outer lanes, according to officials at Bicentennial headquarters.

Despite rumors, no administrative leave will be granted to any Langley employees on either work day during the celebration.

Shuttle Exhibits Featured at Visitor Center

The Langley Visitor Center is featuring special Shuttle exhibits throughout October.

A large exhibit by the Lockheed Missiles and Space Company, Inc., shows the development of Shuttle tiles, and two displays provided by the B. F. Goodrich Company show the landing gear, brake assembly and tires used on the Shuttle. During this same time period, the center is featuring exhibits on two Langley-managed experiments which will be aboard the second Shuttle mission -- the Measurement of Air Pollution from Satellites experiment and the Feature Identification and Location experiment.

Photographs taken at Columbia's maiden launch by photographer Roy Bahls and Visitor Center lecturer Ray Goodman are displayed.

Lilly to Retire From NASA

William E. Lilly, NASA's first Comptroller, will retire this month after more than 37 years of federal service, the last 21 with NASA.

Lilly joined NASA in February 1960 as Chief, Plans and Analysis, Office of Launch Vehicles, and in 1961 became Director of Program Control for the Office of Manned Space Flight. He became Assistant Administrator for Administration in March 1967 and was named to his present post as Associate Administrator/Comptroller in January 1973.

Before joining NASA, Lilly worked for the Department of the Navy and the National Bureau of Standards.

Lilly has received two NASA Distinguished Service Medals, two NASA Exceptional Service Medals and the Career Service Award of the National Civil Service League. In 1980, he was one of the first federal executives to receive the Presidential Rank of Distinguished Executive.

Aeronautics Researchers Talk to Computer 'Face-to-Face'

NASA aeronautics researchers who once swore they would never perform their work at a computer terminal are rapidly being converted to the growing phenomenon of interactive computer graphics.

At Langley, where the new wave began within NASA, aerospace engineer Sharon H. Stack relates, "My favorite human guinea pig would input a fairly simple concept -- he would run the aerodynamics, change it, stabilize it, or whatever his goal was -- and he would just sit there shaking his head. He would turn and say, 'Sharon, this would have taken me three weeks to do, and I've done it in half an hour.'

"And the researchers still find it hard to believe," she laughs. "They say, 'This is fantastic. Not only that -- it's fun'."

Instead of assembling a stack of computer punch cards and waiting in line for time on Langley's large central computer, these researchers are discovering the advantages of interactive computer graphics. Immediate mutual activity with the computer is the principle benefit, made possible by creative programming tailored to the needs of engineers not trained as computer scientists.

Langley researchers have been conversing with computers for years, but only recently have they been talking face-to-face. In interactive computer graphics, a computer program is designed to guide the user through a series of operations by asking for simple decisions at each step along the way, much like one of the new electronic video games that guides its "user" to make decisions that determine the mode of play.

For example, in the fictional game "Space Protectors," the video console flashes the question, "1 or 2 Players?" The player presses the appropriate number on a small keyboard. Then comes another choice of alternatives: "SELECT SKILL LEVEL 1, 2, 3 OR 4." The player presses the button labeled "2" and, suddenly, the screen is filled with electronically generated images of space ships, poised for action. A beginning player may want to take a few moments to study the scoring table now rapidly appearing, line-by-line, beneath the space ships. When the player is ready, he pushes the start button and gets to the real business of this interactive encounter.

Of course, the work at Langley is no game and the product is useful information, but when an aerospace engineer punches up his research program on one of the center's computer terminals the same sort of easy-to-follow, easy-to-use system is at his disposal.

Several research groups at Langley are using interactive computer graphics now, and one group that has rapidly and completely adopted it to research is the Performance Aerodynamics Branch where Stack and 16 other researchers do analytical and experimental evaluation of high-speed aircraft.

"We're a small group working in a very broad area, helping to keep the United States in high-speed research, to include both military and civilian applications. Even though the aircraft concepts we work with are high-speed -- up to eight times the speed of sound in some cases -- even high-speed aircraft must take off and land, so we study the entire speed range to some extent. With our limited resources," comments Stack, "this is quite a challenge. Any useful information we come up with probably won't be used for about 20 years, but it will be used. It's a big task. In order to do a good job we had to come up with good ways to do the work with few people."

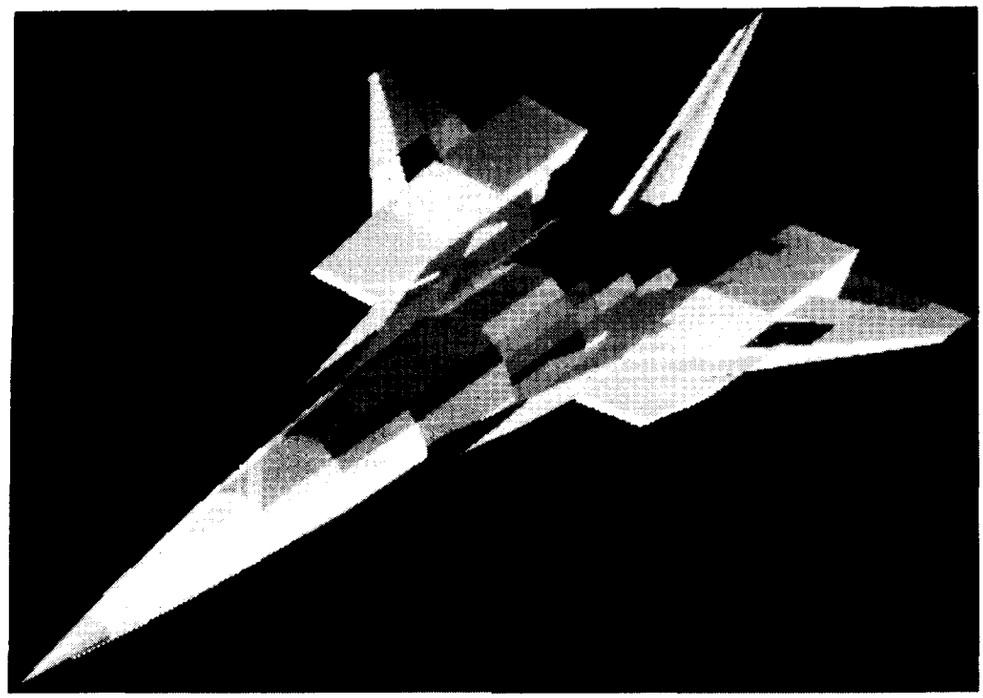
Stack is the first to admit that she is not a computer professional, but it was her fundamental knowledge of what a computer can do that led her and others in the research group to exclaim, "Oh, my goodness, let's clean this up a little, make things easier -- take away the drudge work!"

Although interactive computer capability has been available for several years, explains Stack, researchers are often encumbered by limited access and excessive costs. "It was the combination of keeping the majority of the analysis information in the central computer, with the researcher working directly only with the minicomputer and its quick response time, that resulted in the experiment's tremendous success," Stack said.

Meanwhile, Langley's "distributive" computer system, as it is called, has blossomed to four minicomputers and 44 terminals in the last six months, serving about 30 individual research groups.

Noel Talcott, in the same branch as Stack, is another enthusiastic supporter of interactive computer graphics. Talcott is developing methods for visually scanning large amounts of data where

Continued on page 5.



Flying at Mach 5 -- or five times the speed of sound -- the surface of this hypersonic airplane concept would heat to 900 degrees Fahrenheit in the lightest, almost white, areas. Such a computer-generated graphic can be used by researchers to limit the use of expensive or hard-to-machine, temperature-resistant materials by identifying where they are not needed. A method of automating this technique as an integral part of an interactive computer graphics system is being developed by the center's Performance Aerodynamics Branch.

NASA-Langley Winglets Tested on DC-10 Jetliner

Winglets--NASA-developed devices designed to increase the fuel efficiency of airplanes--are being test-flown aboard a wide-body commercial aircraft as a part of NASA's Aircraft Energy Efficiency Program.

Winglets are small, wing-like structures attached to the tips of an airplane wing, almost perpendicular to the wing surface. They cut fuel-consuming drag in aircraft by lessening the effect of wingtip vortices, the turbulent swirls of air that form at the wingtips of all aircraft in flight.

The test plane, a DC-10 Series 10 jetliner leased from Continental Airlines, has two winglets attached to each wing tip: a 3.2-meter (10.5-foot) winglet is atop the wing, pointing upward; a 0.8 m (2.5-ft) one is attached beneath the wing and pointing downward.

The test program (see *Langley Researcher*, p. 2., August 14) is being conducted by the McDonnell Douglas Corp. under a contract with Langley. Early flight tests have been made at the Dryden Flight Research Center; later tests are being flown at a Douglas development facility at Yuma, Ariz.

Based on wind tunnel tests, a fuel reduction of about 3 percent is expected with the DC-10 winglets. That amounts to an annual savings per plane of about 250,000 gallons of fuel, now priced at more than one dollar a gallon. A successful test program may lead to the use of winglets on all DC-10 commercial aircraft.

The winglet concept was developed by Dr. Richard T. Whitcomb, recently retired Langley aeronautical designer. They have been tested on several kinds of small aircraft, but never before on a plane as large as the DC-10. Winglets are already in commercial use on the Gates Learjet 55 (called the "Longhorn") and the Grumman Gulfstream III.

Winglets reduce lift-induced drag, which accounts for about 40 percent of the total drag on an aircraft at cruising speed and altitude. Lift-induced drag is produced by the same aerodynamic forces that provide the lift that keeps an airplane in the air.

Instead of extending an airplane's wingspan, which adds fuel-consuming weight, winglets can reduce drag with much less weight penalty.

Lift-induced drag is primarily caused by wingtip vortices. Winglets reduce the effect of a vortex by lessening its strength and moving it outward and upward toward the tip of the winglet.

Whitcomb was a consultant to McDonnell Douglas on the design and placement of the DC-10 winglets. Preliminary wind tunnel tests were conducted at Langley, the Ames Research Center and at Douglas, beginning at Langley in 1976.

NASA's Aircraft Energy Efficiency Program is developing improved technologies that could reduce fuel consumption by 50 percent in new transport airplanes.

Aeronautical research is the primary focus at four NASA centers: Langley, Ames, Dryden, and the Lewis Research Center.

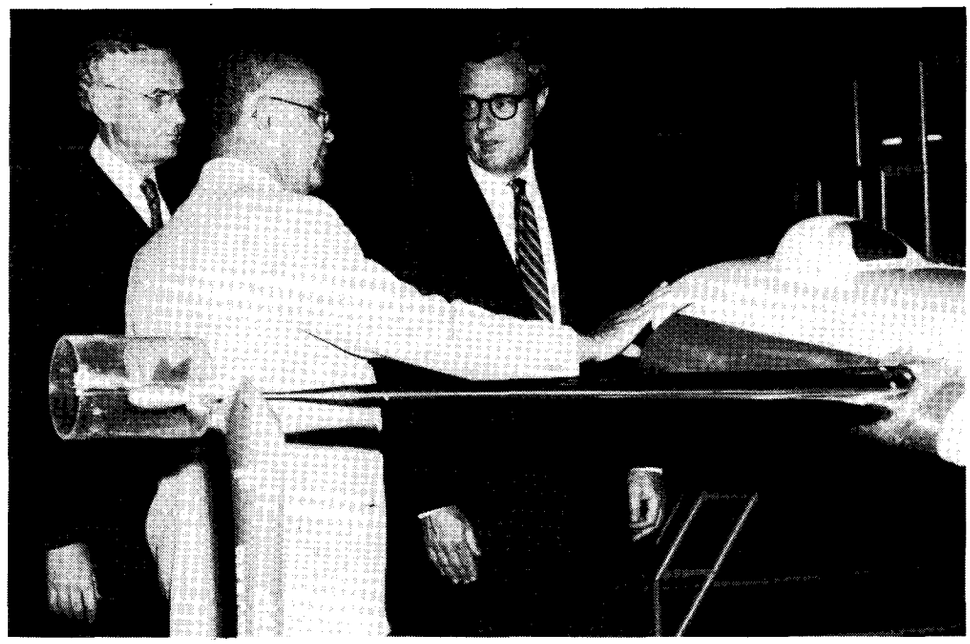
Researchers Talk

Continued from page 4.

aerodynamic, thermodynamic and structural analysis information is graphically overlayed on a computer-generated line drawing of advanced high-speed aircraft, including the Space Shuttle. Color is especially effective in showing regions of high drag, temperatures or stress.

Talcott echoes Stack's view that, initially, it was hard to convince fellow researchers to use the computer frequently and intimately. "But," he says, "now the problem is getting them out of the chair and away from the console. We've had to assign allotted times for its use." Talcott stresses that "we're not trying to sell our exact system to other research groups, just the basic idea of allowing the user to choose individual paths for system flexibility."

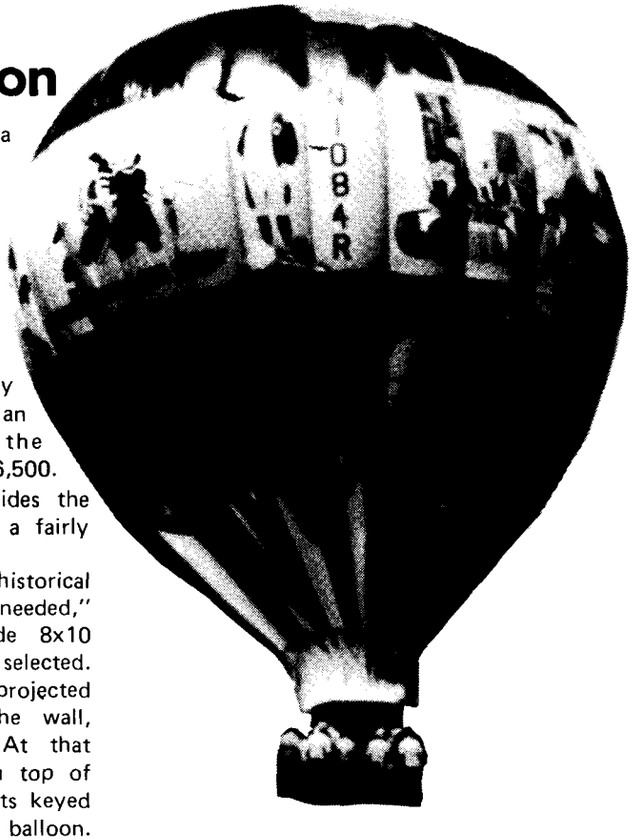
Stack is NASA's representative to the American Institute of Aeronautics and Astronautics' technical committee on interactive computer graphics. She believes that aerospace researchers now using these interactive techniques have more time to consider different aircraft concepts and have a better chance of developing the best ones. "In addition," she says, "configurations and ideas that were impossible to consider before can now be pursued without having to worry about the amount of time and effort that will be required. As a result of all this, the aerospace industry can draw upon our research to design even safer, more reliable high-speed airplanes."



– photo by Bob Nye

Joseph R. Chambers, Assistant Chief of the Low-Speed Aerodynamics Division, describes the role of a modified Beech C-23 Sundowner airplane in Langley's Stall/Spin Research Program for General Aviation to NASA Administrator James M. Beggs (left) and Rep. Bill Green, Ranking Republican on NASA's House Appropriations Subcommittee. Beggs and the congressman toured Langley's research facilities September 3. The airplane is outfitted with a unique hydrogen-peroxide rocket system which uses thrusters mounted on the wingtips to produce calibrated control inputs during flight at high angles of attack and spins. The boom, located on the wing, mounts a swivel anemometer which measures air speed, angle of attack and sideslip.

'Spirit of America' to Fly at Yorktown Victory Celebration



"Up, up and away . . ."

Lou Brunner will probably be singing that tune when he proudly flys his hand-painted balloon at the Yorktown Bicentennial Celebration October 16–19. "It is the only one of its kind," said Brunner.

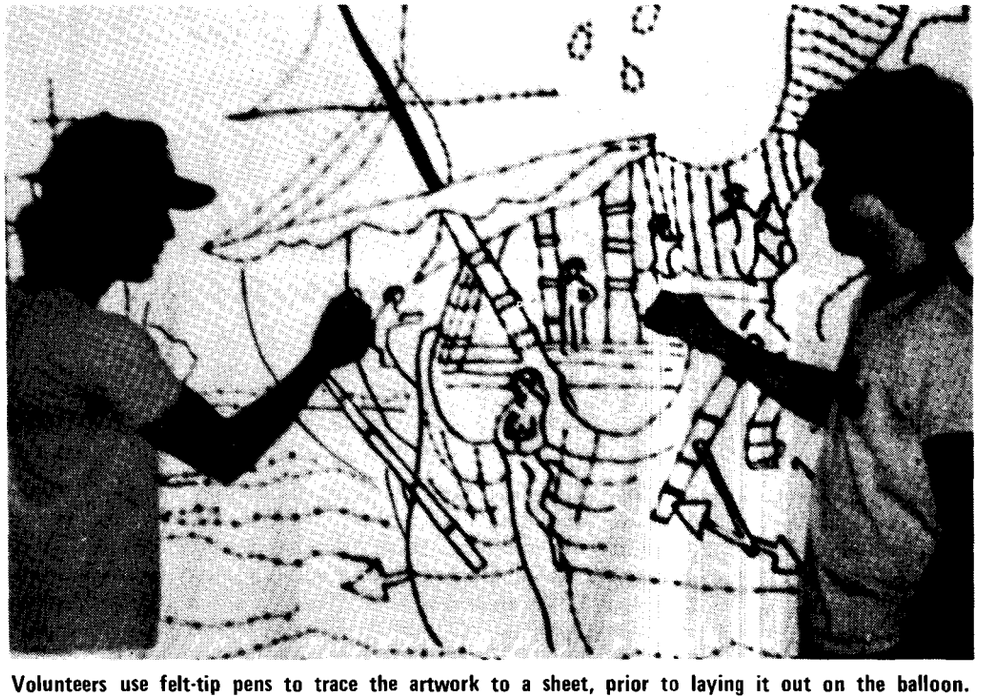
Standing eight stories high and approximately 60 feet in diameter, the "Spirit of America" depicts scenes from the Revolutionary War and the growth of the nation, including aircraft and space exploration.

The hot air balloon, mostly red, white and blue, has four 16x32 foot murals--Signing of the Declaration of Independence, Surrender at Yorktown, Spirit of '76, and Battle of "Bonhomme Richard" and the HMS "Serapis"--along with portraits of local celebrities of the time and larger than life-size figures of Washington, Rochambeau, von Steuben and Cornwallis, the American, French, German and English commanders in the field at the time of the Yorktown surrender.

Brunner said that, even though he owns a controlling interest in the balloon, credit for the idea belongs to his son, Chris, and an Air Force friend, Sgt. Jesse Manning. "When they first told me, back in 1976, that they were going to paint a balloon, I thought they meant an oil painting of a balloon," Brunner explained. "Hearing about their project for several weeks, I realized, 'Hey, these guys aren't talking about painting a picture, they're talking about painting the whole real balloon.' I joined forces with them and, along with Thelma Jones, a retired Langley employee, and others, started an organization to purchase the envelope. The unit cost about $6,500. When we hire a pilot, he provides the basket and propane burners. It's a fairly expensive proposition," he added.

"My son researched many historical books to get the pictures he needed," Brunner said. "Chris then made 8x10 inch sketches of the pictures he selected. The sketches, enlarged and projected onto sheets which hung on the wall, were traced onto the sheets. At that point, the sheets were placed on top of the nylon balloon, with the sheets keyed to the gore pattern of the balloon. Felt-tip pens were then used to dot through the sheets, transferring the outlines onto the balloon. The dots were then connected to form the pictures. It was a very time-consuming job, but well worth it," Brunner said.

"We had 25 or 30 very artistic volunteers, both children and adults, painting the balloon, which took about eight weeks. Chris and several helpers painted flesh tones, expressions, face contours and hands. We used a polyurethane paint, which is very flexible."



Volunteers use felt-tip pens to trace the artwork to a sheet, prior to laying it out on the balloon.

The balloon was used this year by the Langley Federal Credit Union for the July 4th celebration at the Yorktown Victory Center. "During the planning stages for that celebration, we were referred to Shirley Cooper, Chairman of the Yorktown Board of Supervisors, about using the balloon at the Yorktown Bicentennial Celebration," explained Brunner. "When we showed her a picture of it, she said she wanted to use it."

Brunner said the balloon will be one of 13 exhibits at Yorktown, but "it's the largest and only single thing that will show the entire history of that time--it's a wrap-up, a capsulized picture of all the themes that will be there. It's going to be a big attraction."

The balloon will be tethered, but can go as high as 100 feet, depending on the wind and weather conditions. "We will keep the balloon in the air as long as we can during the four days," he added.

Brunner said PM Magazine has contacted him about using the balloon

Continued on page 7.

Happenings

HAPPY HOUR will be held today from 4 to 6:30 p.m. in the Activities Center.

THE TIDEWATER SOARING SOCIETY will meet at the Langley Visitor Center October 21 at 7:30 p.m. Vic Sauder will speak on atmospheric mountain waves, a phenomenon which can cause severe turbulence up to 60,000 ft. Sauder was a principal investigator in the "Sierra Wave Project" conducted in the 1950s. Langley employees are welcome. Contact Wolf Elber, ext. 3192.

THE VIRGINIA CHORAL SOCIETY, formerly the Peninsula Choral Society, opens its 50th season Sunday, November 1, with a program featuring Beethoven's "Mass in C," and Faure's "Requiem." The 122-voice chorus and the orchestra are conducted by Michael Cooley. This year's concert line-up includes Handel's "Messiah" to be performed at Chrysler Hall December 5, Haydn's "Lord Nelson Mass" and Handel's "Ode on St. Cecelia Day" February 28, and Mendelssohn's "Elijah" May 23. Tickets are $5.50 general admission and $4.50 for senior citizens, military enlisted and students. Season tickets are available (excluding the Messiah concert) for $12.50 for single season tickets or $10 for senior cit./military/student. Send name, address, ticket order and check to: Virginia Choral Society, P. O. Box 1131, Newport News, Va. 23601. For additional information, call 596-2278. Regular season concerts will be held at 8 p.m. at Hampton High School.

HONEY BUNCH. The NASA-Langley Apicultural Club will meet Monday, October 19, from 7 to 9 p.m. in Room 180 of Building 1209. After a brief business meeting a program, "Your Best Five-Minute Bee Stories," will be presented, with a question and answer period to follow.

Balloon Flys

Continued from page 6.

and its development as a segment in a future TV show. "We are hopeful that the Bicentennial crowds will find the balloon an inspirational expression of the liberty theme prevalent during those hectic days. It's a rare occasion," he said, "and to my knowledge, there is no other balloon like it or near to it."

Key Positions

Colon R. McMath, Jr. has been selected Head, Facilities Management and Directives Branch, Management Support Division, under Competitive Placement Plan 81-38.

Joe C. Gowdey has been selected Head, Electrical Systems Section, Systems Development Branch, Systems Engineering Division, under Competitive Placement Plan 81-42.

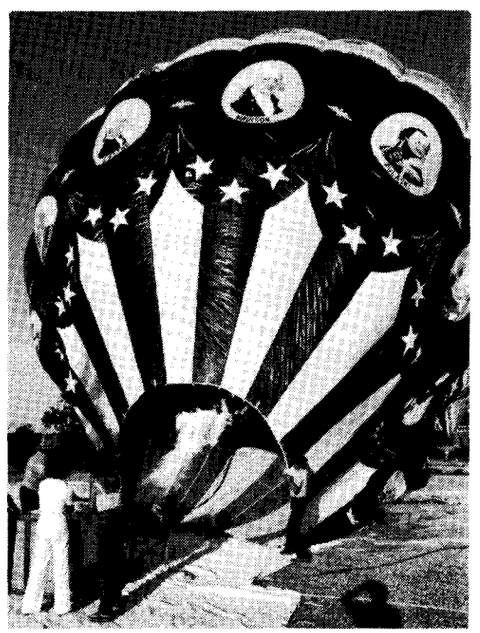
History of American Colonial Times Presented

In honor of the Yorktown Bicentennial Celebration, the Visitor Center will present a slide-lecture program, "Man Looks at His Universe -- From American Colonial Times to the Present," through October 31, at 12 and 3 p.m. daily.

The program shows man's changing views of the universe from 1543 to 1981. When the first settlers came to America, there were five known planets, and most people believed that those planets revolved around the Earth. The lecture begins with this Earth-centered perception of the universe, shows the development of astronomical knowledge during the American Colonial period and touches on some significant astronomical discoveries of the past four centuries.

Nine new permanent exhibits at the Visitor Center show a modern view of the universe, and a computerized quiz game allows visitors to test their knowledge of space.

A taped slide presentation of Stephen Kramer's "The Rittenhouse Orrey," will be shown Saturday, October 10, at 11 a.m. The program is on loan from the National Association of Watch and Clock Collectors, Inc. and will be of special interest to watch and clock collectors.



With the hot air balloon spread on the ground, Lou Brunner uses a cold air fan to partially blow up the balloon, while pilot Mike Patterson observes (left photograph). The volunteers in the background will open the balloon's throat through which the air is blown. In the right photo, a propane burner adds heat to the balloon causing the balloon to stand upright.

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COMBINED FEDERAL CAMPAIGN
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Intercenter Running Competition Set

The Ames Research Center will sponsor the 12th NASA Intercenter Running Competition October 16 through November 16. The 2 mile and 10,000 meter races are scheduled at Langley as follows:

2 mile	Thursday, October 22, and Monday, October 26
10 km	Tuesday, October 20, and Wednesday, October 28
2 mile (walkers)	Wednesday, October 21, and Thursday, October 29

Two sessions will be held each day: 12 p.m. on the Bethel High School track and 5 p.m. on Doolittle Road to the side of the Activities Center. If you cannot run at these times, contact Larry Spencer, ext. 3681.

National Employ the Handicapped Week

October 4—10

National Employ the Handicapped Week provides an opportunity to call attention to the great jobs being done by disabled people in our area and to tell the public how much more other disabled people can do if they have the opportunity to work.

If anyone has questions about Langley's Handicapped Program, contact Randy Manning, Handicapped Coordinator, Staffing and Special Programs Branch, ext. 3007.

swap and shop

FOR SALE

Articles

Three memory modules for HP-41C, $20 each. Call Sherman, 596-0753 after 5 p.m.

Vehicles

Schwinn heavy-duty, 26"-wheel bicycle, single speed, coaster brakes; ideal for paper carriers; less than one-year old; $182 new, will sell for $135, OBRO. Front basket available. Call J. Drummond, ext. 2934 or 722-0710 after 5 p.m.

1970 Monte Carlo, VGC, $1,000. Call Spencer, ext. 3681 or 868-7383.

Real Estate

Windsor Great Park: Contemporary 3 BR, 2 B, LR, DR, FR with FP, WW, CA, deck. Assumption available. $73,900. Call 877-7232 eve/wkends.

FOR RENT

Riverdale on water (5 min. from Langley): Brick rancher, 3 BR, 1½ BA, LR w/fp., DR, eat-in kit, den, garage, patio, large corner lot with fruit trees and garden plot, CA, gas heat, dishwasher, washer, dryer, refrigerator and some furnishings available. Lease and deposit required, $495/month. Available early November. Call 838-5465.

Courthouse Green Townhouse: Hampton Model, 3 BR, 1½ BA, large eat-in kitchen, utility room, avail. now, $330/month. Call 599-4321.

FOUND

Pair of safety-type bifocal glasses found at Activities grounds on September 23. Call Calloway, ext. 2483.

WANTED

Non-smoker wishes to join/form car pool from Janaf/Military Circle area on 7 or 7:30 a.m. shift. Call Ray Gates, 826-1725 or 461-5889.

cafeteria menu

WEEK OF OCTOBER 12 — 16

MONDAY: *HAVE A GOOD HOLIDAY!!*

TUESDAY: Manhattan Clam Chowder; Baked Lasagna; Fried Fish Nuggets; Sliced Pork BBQ. Snack Bar: Charcoal Hoagie; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Roast Turkey Dinner; Chopped Steak; New England Scrod. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Gumbo Soup; Meatloaf; Chicken & Dumplings; Mexican Omelet. Snack Bar: Deluxe Sub; BBQ; Oyster Sandwich.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Broiled Beef Liver; Spinach & Bacon Quiche. Snack Bar: Chicken Breast; Tune Salad Sandwich; Crab Cake Sandwich.

WEEK OF OCTOBER 19 — 23

MONDAY: Ham & Lima Bean Soup; Hot Roast Pork Sandwich; Chicken Pot Pie; Seafood Newburg; Clams Casino. Snack Bar: Hot Italian Sausage Sub; Chicken Breast; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Spaghetti Dinner; Chicken Chow Mein; Chuckwagon Steak. Snack Bar: Charcoal Hoagie; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; Beef Balls Stroganoff; Baked Beans w/Franks. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Vegetable Soup; Braised Chicken Livers; Seafood Quiche; Veal Parmesan. Snack Bar: Deluxe Sub; BBQ; Oyster Sandwich.

FRIDAY: Minestrone Soup; Fish Dinner; Beef Tips; BBQ Chicken. Snack Bar: Chicken Breast; Hot Ham & Cheese; Tuna Salad.

Retirement Parties

Edwin C. Kilgore will be honored with a retirement party (hors d'oeuvres and cash bar), Wednesday, October 28, at 5:30 p.m. at the Activities Center. The cost, including the gift, will be $4 per person, or $7 per couple. For reservations, please send check to Betty Burnes, Mail Stop 111, by October 21.

William "Bill" M. Johnson will be honored with a retirement social (hors d'oeuvers and cash bar) Friday, October 23, at 4:30 p.m., at the NASA cafeteria. The cost will be $4 per person, which includes contribution to a gift. Contributions to gift only are welcome. Make your reservations with Gary Evans, Mail Stop 485, ext. 2922, by Monday, October 19.

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

Volume 20 Issue 21

October 23, 1981

Hearth Receives Presidential Honor

Langley Director Donald Hearth has been selected for the Presidential Rank of Distinguished Senior Executive for "sustained extraordinary accomplishments in the Federal service."

The award was presented to Hearth by President Ronald Reagan in ceremonies at the White House October 14. Only 25 Federal executives received this Presidential honor for 1981.

Hearth was specifically honored for his work in defining NASA's planetary exploration program for the 1970's, for a long-range study of space exploration and for his directorship of the Langley Research Center.

As NASA's Director of Lunar and Planetary Programs from 1968 to 1970, Hearth organized and developed the program for unmanned satellite exploration of the planets that included Mariners IX and X, the Viking Orbiter, Pioneers X and XI, and others.

As leader of a special task force in the mid-1970's, he developed NASA's "Outlook for Space," a definitive analysis and forecast for future space exploration. As Director of Langley, he oversaw the culmination of the Viking Project, construction of the National Transonic Facility and, most recently, a NASA study of program management.

In a letter congratulating Hearth on the Presidential honor, NASA Administrator James Beggs and Deputy Administrator Hans Mark wrote, "Your accomplishments have brought recognition and pride to you, the Agency, and your country. We add our personal congratulations."

Recipients for the Presidential Rank are nominated by their agencies and selected by a blue-ribbon panel from outside the government.

Three other NASA executives were honored with Hearth: A. Thomas Young, Director, Goddard Space Flight Center and former Langley researcher; Richard G. Smith, Director, Kennedy Space Center; and Walter C. Williams, NASA Chief Engineer.

The Presidential honor includes a cash award of $20,000.

Langley Televises Shuttle Activities

Langley employees will have an opportunity to see televised activities surrounding the second Space Shuttle mission at the Langley Activities Center.

Plans are underway to bring TV coverage directly to Langley via a 30-foot dish antenna. Viewers will be able to see the countdown preparations, launch and landing, plus some activities during the mission.

Based on present plans, the launch will occur around 7:30 a.m. EST November 4 from the Kennedy Space Center and landing will occur around 11:40 a.m. EST November 9 at the Dryden Flight Research Center.

More details will be provided through a special employee announcement, which will be distributed next week.

Electronics Directorate

Rowe Named Assistant Chief of ACD

Mickey G. Rowe has been selected Assistant Chief of the Analysis and Computation Division at Langley. He is former Head of the Computer Systems Branch of that organization.

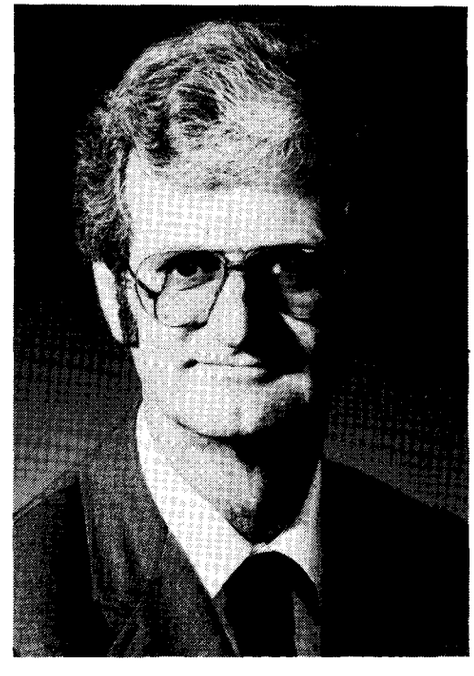
Rowe will share responsibility for the development and application of techniques and equipment needed to meet Langley's research computing requirements in analytical and design studies, real-time simulation and experimental data reduction.

Rowe began his Langley career in February 1961 as an aerospace technologist. He became Assistant Head of the Computer Systems Branch in March 1977 and Head in September 1977.

He served in the U.S. Marine Corps from 1954 to 1957.

Born in Mississippi, Rowe received a bachelor of science degree in mathematics from Louisiana Polytechnic Institute in 1961.

Rowe received a Group Achievement Award, presented to the Digital Computer Complex Group, in 1968; a Special Achievement Award for exceptional service in 1968; and a Group Achievement Award, presented to the STAR Software System Project Team, in 1976.



Rowe and his wife, Betty, live in Hampton. They have a daughter and three sons.

Holloway Selected for Presidential Rank

Paul F. Holloway, Director for Space, has been selected for the Presidential Rank of Meritorious Service for his sustained accomplishments in the Federal service.

He received the award in special ceremonies at the White House October 14.

Holloway was cited for his expertise in hypersonic aerodynamics that correctly identified serious aerodynamic heating problems in the evaluation of candidate Space Shuttle concepts, and for his overall coordination and direction of Langley's Shuttle support program, while simultaneously implementing an environmental observation program.

A total of 96 Federal employees were honored with the Meritorious Service Rank, including 14 from NASA. The honor includes a cash award of $10,000.

Among other recipients of the award were former Langley managers Walter B. Olstad, now at NASA Headquarters, and Raymond Romatowski, with the Department of Energy.

Langley Hosts Symposium on Computational Aspects of Heat Transfer in Structures

A symposium on Computational Aspects of Heat Transfer in Structures will be held in the Activities Center November 3–5. The symposium is sponsored by George Washington University, Old Dominion University and the Langley Research Center.

Approximately 125 representatives of universities, private companies and government agencies are expected to attend the three-day symposium to discuss recent progress in efficiently calculating the temperatures and thermal stresses in complex structures, with emphasis on re-entry flight vehicle structures.

Thirty papers will be presented during the symposium, some dealing directly with predicting the temperature fields in portions of the Space Shuttle Orbiter during its first flight.

The symposium includes sessions on computer programs for thermal analysis, advancements in analysis techniques, thermal analysis of large space structures, thermal analysis of high-speed vehicles and impact of new computer systems.

Richard R. Heldenfels, former Director for Structures and now a Distinguished Research Associate at Langley, will give a special lecture, "Historical Perspectives on Structural-Thermal Technology," November 4. A panel discussion, moderated by Sidney C. Dixon, Chief of the Loads and Aeroelasticity Division, will be held November 5. The five panelists will discuss "Concerns, Issues and Future Directions."

The symposium is being coordinated by Dr. Howard M. Adelman, general chairman. For more information, call Adelman, ext. 3451. There will be a registration fee of $15 to cover expenses for refreshments for non-NASA attendees.

Vance Competes

William M. Vance of the Fabrication Division competed in the national Hobie-Cat races at Ocean City, Md., in late September. He qualified for the nationals after he and his first mate, Cheryl Settle, finished third in the 9th Division race at Virginia Beach.

Vance began racing in the Hobie Cat class in the spring of 1980 and was the first deaf person to race.

Ninety-six skippers raced their Hobie Cats Tuesday, September 22, through Thursday, September 24. Vance was eliminated Thursday after racing in 40 mph winds, but 48 others qualified for the finals held Friday and Saturday.

Thanks

John McFall writes, "I want to thank all my friends of NACA/NASA days for my most enjoyable retirement/commencement (new career) party. As I travel I am meeting Langley alumni all over the country. The gift, 'under-the-seat' flight bag, has been 'under-the-seat' numerous times. It is greatly appreciated. Thanks again for all your support and friendship throughout my career."

Retirement Party

Scott M. Agnew will be honored with a retirement party (light hors d'oeuvres and cash bar) Saturday, November 7, at the Activities Center. A social will begin at 7 p.m. with a program at 8 p.m. The cost, including gift, will be $5 per person, or $9 per couple. For reservations, please send check to Marge Mills, Mail Stop 380, by October 30.

The new Visitor Center sign was designed by David J. Lorincz of the Structural and Architectural Section, Plant Engineering Division. Lorincz also designed the new entry into the Visitor Center.

Langley Exceeds CFC Goal

Thanks to all of you who have contributed to the Combined Federal Campaign.

The center reached and exceeded its goal of $186,500. As of *Langley Researcher* press time, contributions totaled $191,267.99 and were still being received.

Those of you who have not contributed to the CFC, please turn in your pledge card. People who need . . .need people who care.

Time Note

It's time to move back the clocks. Everyone is reminded that the switch from Eastern Daylight Saving Time to Eastern Standard Time will come at 2 a.m. October 25.

Foster Wins Drawing

Margaret Foster, Systems Safety, Quality and Reliability Office, won the October drawing for $20, which is given each month to a car pool participant by the Langley Exchange Council.

The *Langley Researcher* as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond
Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

Sperry to be Guest Speaker

NASA Honors Employees at Awards Ceremony

NASA will honor employees who have made outstanding contributions in aeronautical and aerospace research during the past year at the Annual Honor Awards Ceremony Thursday, October 29.

Robert E. Sperry, Regional Director, Mid-Atlantic Region, Office of Personnel Management, will be the guest speaker for the ceremony, which will begin at 1:30 p.m. in the Activities Center.

Regional Director since 1975, Sperry manages the region which has jurisdiction over federal personnel management matters in Pennsylvania, Delaware, Maryland, West Virginia and Virginia. The responsibilities include all facets of personnel management, such as compensation, staffing, labor relations, training, productivity, evaluations, position management and personnel investigations.

He is former Deputy Director of the U.S. Civil Service Commission's Recruiting and Examining Bureau in Washington, D.C.

Sperry joined the Civil Service Commission in 1959 and held several posts in various CSC offices. He was assigned to the Office of Personnel and Training, Federal Aviation Agency, from 1963 to 1964, working on a Career Planning Program.

Sperry received a bachelor of science degree in political science and history from Washburn University, Topeka, in 1952, and a Doctor of Jurisprudence degree from the University of Missouri at Kansas City Law School in 1961.

Sperry is Co-adjutant Associate Professor in the University College Management Department of Rutgers University and Co-adjutant Assistant Professor in the Graduate School of Public Administration, Temple University, Philadelphia. He has been a guest lecturer at several colleges and universities.

Employees receiving NASA medals and Group Achievement awards at the ceremony will be listed in a special issue of the *Langley Researcher*.

Status Review Set For Monday

The agenda for the Monthly Status Review is given below, so that researchers may attend talks of particular interest. The review is held on the fourth Monday of each month in Room 225, Building 1219, unless otherwise announced.

The following technical sessions are planned for Monday, October 26; the morning session will begin at 8:30 a.m. and will include presentations by:

Electronics

An Ultrasonic in Situ Rock Strain Sensor--A TU Spinoff

Quantumm Mechanics: A Measurement and Analysis Tool for Materials

Space

The Interpretation of SAGE Data

Overview of the NASA/EPA 1980–81 Region Air Quality Studies

Tropospheric Dynamics: Preliminary Results from the Summer 1981 Experiment

Systems Engineering and Operations

SE & O Overview

NTF Status

Vacuum Diffusing Assisted Bonding

The morning session will also include presentations by Management Operations and the Office of Equal Opportunity.

The afternoon session will begin at 1:30 p.m. and will include presentations by:

Projects

ACEE Overview

Energy Efficient Transport

Composite Primary Aircraft Structures

Laminar Flow Control

Structures

Design Considerations and Experiences in Use of Composite Material for An Aeroelastic Research Wing

Results from Recent Aircraft Tire and Brake Research

Noise Effects of Runway Alterations at a General Aviation Airport

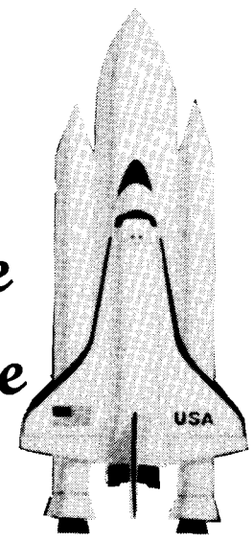
Aeronautics

ASD Conceptual Design Process

Parametric Study of 2-Engine Turbofan, 120 Passenger Aircraft Controls

The review will be concluded by 4 p.m. Copies of the complete agenda will be available at the meeting or may be obtained by calling Raoul'd M. Price, ext. 2417.

Space Shuttle Update



Repair of the Space Shuttle Columbia's thermal protection system progressed better than expected. A total of 379 tiles -- affected by an accidental propellant oxidizer spill -- were rebonded ahead of schedule.

Loading of hypergolic propellants aboard the Orbiter Columbia began Saturday and is expected to be completed no later than today. All oxidizers are already on board.

Once the fueling process is completed, countdown preparations will be the main order of business. The countdown is scheduled to begin at 8 a.m., Oct. 31. Several built-in holds will stretch the 73-hour countdown to launch day, now set for Nov. 4 at 7:30 a.m. EST.

Landing is set for Nov. 9 at 11:40 a.m. EST.

NASA to Give High-Flying Commuters a Lift

Advances in aviation technology at the Langley Research Center could revolutionize commuter flying in the 1990s. New aircraft designs based on NASA technology advances could be on industry drawing boards within 10 years.

These new commuter aircraft would use advanced aerodynamics, propulsion, materials and control and guidance systems being developed at Langley and at NASA's other leading aeronautical centers -- Ames Research Center, Dryden Flight Research Center and Lewis Research Center.

NASA research is aimed at the technology needed for efficient 20- to 60-passenger turboprop concepts that will be larger, faster and that will travel farther than today's commuter aircraft.

Lou Williams, head of Langley's General Aviation and Commuter Technology Office, notes the rising interest in commuter aircraft caused by higher oil prices and airline deregulation which have created "a much greater demand than supply for commuter aircraft."

New technology is needed to meet the dual challenge of costs and comfort. Because of their smaller passenger capacity and short-haul operation, small aircraft must be even more cost-effective than large transports.

Travelers accustomed to the comfort of a large airliner want to find the same comfort in a commuter aircraft or they may shun the short hop airline in favor of surface transportation.

"It's tough," says Williams, "but we're trying to anticipate the future and, hopefully, bring along the technologies most likely to be applied by the manufacturers so the technological tools will be ready in time. NASA is contributing its expertise through wind tunnel testing, computer analysis and many other areas," and through research providing industry with technological data that industry considers too high a risk for them or lacks the resources to develop.

"We're not just evaluating existing designs, but are concentrating on advanced configurations and innovations that offer dramatic improvements," says Williams.

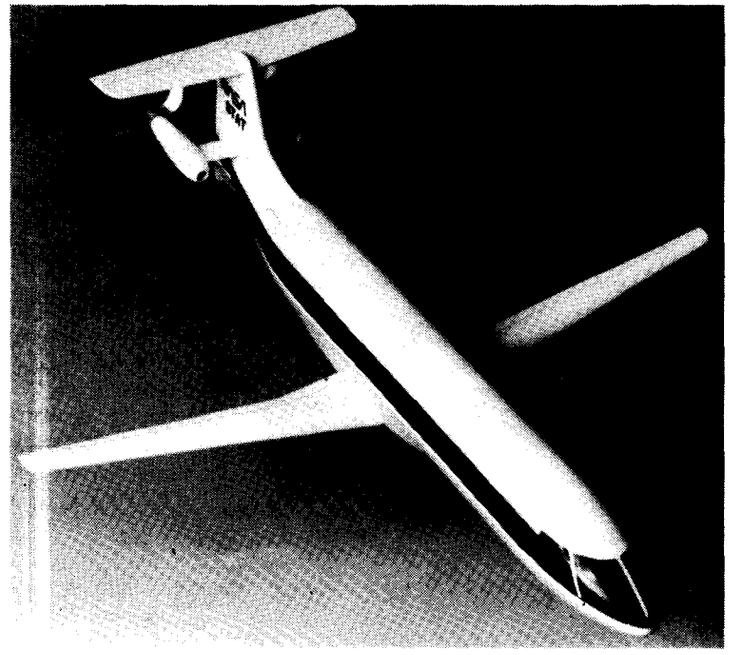
Some of these innovations might surprise the commuter of 1990. Instead of the usual expensive wing, researchers now believe a narrow, slender wing might provide greater lift efficiency. Greater lift is important to aircraft that spend much of their time in flight climbing or descending.

The new turboprop engines that will power the commuter aircraft may be located on either side of the narrow fuselage below the vertical tail and horizontal stabilizers. There they will not interfere with the smooth flow of air over and around the wings and fuselage.

Smaller, more efficient high-speed propellers can allow the engines to be installed on the tail, contributing to a quieter ride for the traveler. The use of a smaller tail plus extensive use of advanced composite material structures will help make the commuter airplane of the future lighter, thus more fuel efficient, helping keep down the price of tickets for commuter passengers.

An on-board computer could smooth the ride of the future commuter aircraft by adjusting more rapidly the airplane's control surfaces to make the craft slice through guests of air and air turbulence with a minimum of "bounce."

NASA hopes to have much of the new technology ready in four to six years. Concludes Williams, "This research would deliver the technology in time for the next generation of commuter transport aircraft for the late 1980s and early 1990s. The country will need that generation's potential dramatic improvements in passenger acceptance, economics, energy efficiency, safety, performance and environmental compatibility. Such improvements would do much to strengthen the nation's transportation system and insure convenient access to air travel for small communities."



A 1990's commuter aircraft might look something like this conceptual design, one of several resulting from NASA studies recently concluded. It would cruise efficiently at about 500 miles per hour, taking advantage of advanced structures, propulsion, cockpit displays and control systems, and an aerodynamically efficient wing.

Langley Sponsors Workshop

Computers are sophisticated research tools used and relied upon by many scientists and engineers at Langley.

Computer Science, the relatively new discipline which provides the know-how to effectively use computers, has recently received considerable attention within NASA. For example, a 1981 NASA/ASEE Summer Study, "Computer Science: Key to a Space Program Renaissance," was funded by several NASA Headquarters program offices, and the recommendations made by the study team for increasing NASA's use of computer technology are now being carefully considered. One recommendation is a more focused program in computer science research.

To further this recommendation, a workshop on Computer Science Research at Langley will be held November 2–5, 1981. The first session will be held Monday, November 2, at 9 a.m. in the Activities Center and will include brief reports on several on-going computer science research activities at the center. Working groups on specific application areas will meet November 3–5 in Building 1209, Room 180 to discuss computer science research topics of direct benefit to each.

The workshop goals are to highlight computer science research supported by Langley and to identify additional research of critical importance to Langley programs. The areas for additional research will form the basis for a coordinated computer science research program plan for the center.

For more information, contact Susan Voigt, ext. 2083.

Epps to Speak

Langley Apprentices Graduate Today

Twenty-six Langley apprentices will receive their journeyman certificates today at the 37th Annual Completion Exercises for Engineering Technicians.

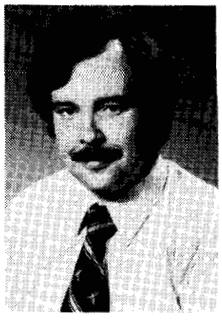
The ceremony will begin at 1:30 p.m. in the Activities Center.

Dr. Jean M. Epps, Director of Vocational Education, Newport News Public Schools, will be the keynote speaker.

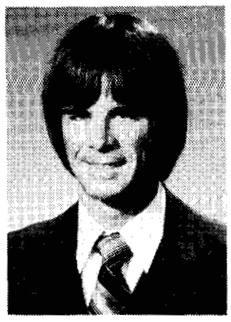
Donald L. Smith, Engineering Technician in the Fabrication Division, will be the speaker for the Class of 1981 and John C. Covington, Administrator of the Apprentice Program, will present the certificates. Special music will be provided by members of the Denbigh High School Band.

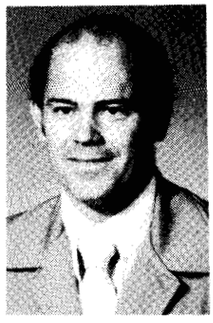
The 1981 class is the first to enter the apprentice program with advanced standing (i.e., at least two years of post-high school study, with emphasis in mathematics and science).

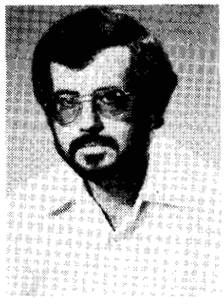
Continued on page 8.

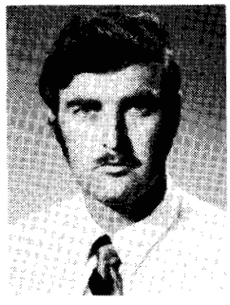

Bruce L. Bishop

Benjamin F. Guenther


Ricky L. Hall


Donald L. Smith

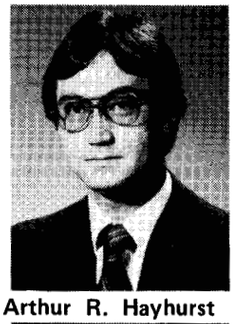

Charles H. Greenhalgh


Carlton G. Pike

James F. Allen

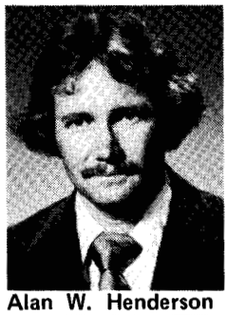
Guy M. Brice

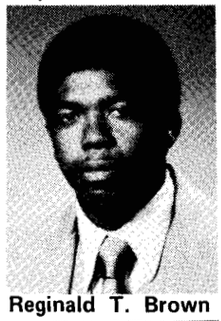
Oletha B. White

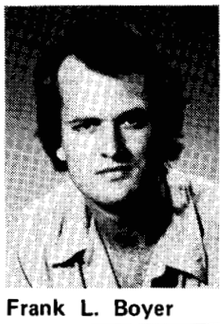

Arthur R. Hayhurst

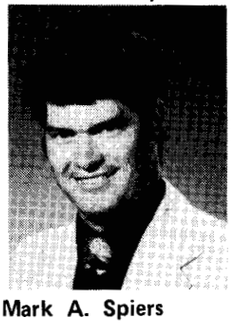
Janice Y. Smith

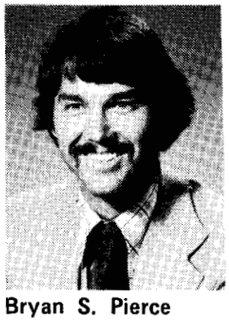
Leonard R. Stevens

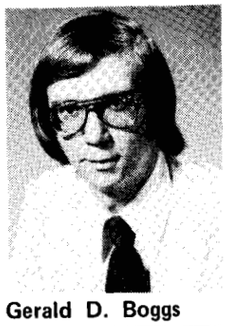

Alan W. Henderson


Reginald T. Brown


Frank L. Boyer

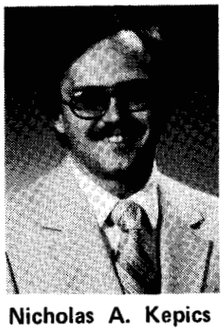

Mark A. Spiers


Bryan S. Pierce


Gerald D. Boggs

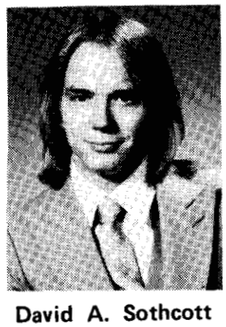
William Gray, Jr.

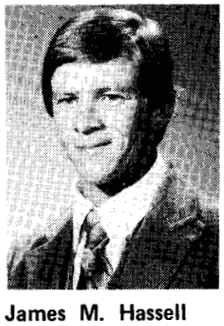
Janice L. McCollum

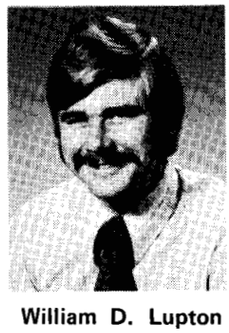

Nicholas A. Kepics

John E. Brown

Vernet P. Boone


David A. Sothcott


James M. Hassell


William D. Lupton

Happenings

HAPPY HOUR will be held today from 4 to 6:30 p.m. in the Activities Center.

TURKEY SHOOT. The LAA annual Turkey Shoot will be held Saturday, November 14, on the Activities Center grounds from 9 a.m. until sunset. Turkey raffle tickets are available from LAA representatives and the Activities Office.

ARTS AND CRAFTS SHOW will be held at the Activities Center November 14 and 15 from 12 to 5 p.m. Included in the show will be country carvings, jewelry, ceramics, dried flower arrangements, weaving, paintings, stained glass and crochet.

FILM FESTIVAL. The following films are planned for the 1981–82 LAA Walt Disney Film Festival: "Song of the South," November 8; "Almost Angels" and "Pluto's Christmas Tree," for the Children's Christmas Party December 6; "Winnie the Pooh," January 10; "The Prince and the Pauper," February 14; "Freaky Friday," March 14; and "The Aristocats," April 3. Admission is 75 cents per person, except for the Children's Christmas Party which will be $1, and films will begin at 3 p.m. For more information, call the Activities Office, ext. 3139.

THE VIRGINIA CHORAL SOCIETY, formerly the Peninsula Choral Society, opens its 50th season Sunday, November 1, with a program featuring Beethoven's "Mass in C," and Faure's "Requiem." The 122-voice chorus and the orchestra are conducted by Michael Cooley. This year's concert line-up includes Handel's "Messiah" to be performed at Chrysler Hall December 5, Haydn's "Lord Nelson Mass" and Handel's "Ode on St. Cecelia Day" February 28, and Mendelssohn's "Elijah" May 23. Tickets are $5.50 general admission and $4.50 for senior citizens, military enlisted and students. Season tickets are available (excluding the Messiah concert) for $12.50 for single season tickets or $10 for senior cit./military/student. Send name, address, ticket order and check to: Virginia Choral Society, P. O. Box 1131, Newport News, Va. 23601. For additional information, call 596-2278. Regular season concerts will be held at 8 p.m. at Hampton High School.

BOWL-A-THON. Bowlers are needed for the annual Bowl-a-thon sponsored by the Arthritis Foundation, to be held Saturday, November 7, at Circle Lanes in Hampton. For further information, call the Arthritis Foundation, 872-8848.

Aerospace Penpoints

by Wesley Berryman

Yorktown, Virginia
October 20, 1781

Sir:

I have the Honor to inform Congress, that a Reduction of the British Army under the command of Lord Cornwallis, is most happily effected.

G Washington

– photos by Bob Nye

A seminar on Advanced Materials Processing and Related Technologies was held at Langley October 7. The AIAA/NASA-sponsored seminar hosted representatives of the non-aerospace Fortune 500 and focused on technology transfer. In the left photograph, Dr. Joseph S. Heyman of the Instrument Research Division explains the importance of critical attachment fastener tension to the visitors and then demonstrated NASA's ultrasonic bolt strain monitoring system. In the right photograph, Dick M. Royster, Materials Division, explains super plastic forming/weld-brazing, an advanced forming and joining method for titanium. This process can save up to 30 percent in weight and cost over titanium parts fabricated by conventional forming and joining methods.

Our Solar System--Key to the Universe

Langley Visitor Center Dedicates New Exhibits

The Langley Visitor Center dedicated nine new space gallery exhibits with the theme, "Our Solar System -- Key to the Universe," October 15. Dr. Donald P. Hearth, Langley Director, officiated at the ribbon cutting ceremony.

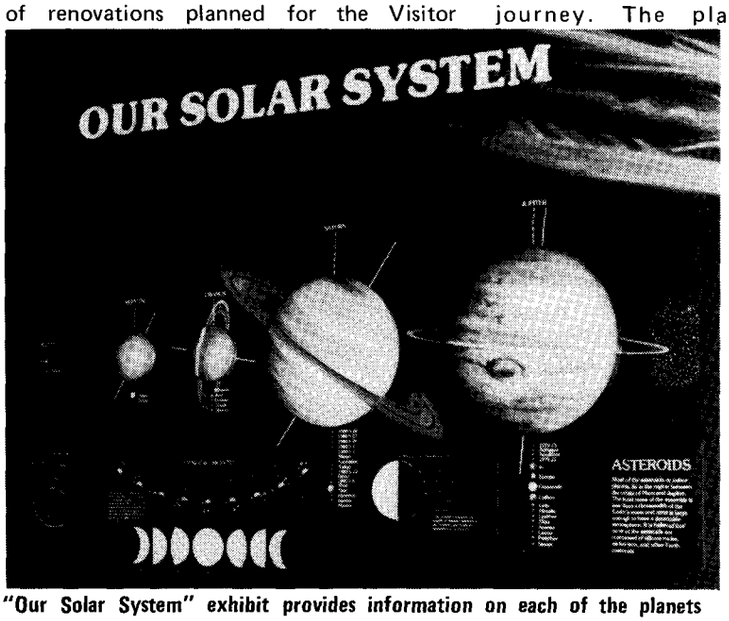
The colorful exhibits show the nine planets of our solar system and use video materials, photographs and hands-on activities to provide up-to-date information on our universe. One hands-on exhibit allows the visitor to determine his weight on each of the planets and to see the effect of gravity on weight. Another allows him to compare temperatures throughout the solar system with the touch of a button. "Space Travel" gives highlights of the Voyager and Viking missions and shows the kinds of Earth orbits as well as the path man used to travel to the Moon. "Our Solar System" and "The Planets" provide information on each of the planets plus comets and asteroids. "The Stars," "The Galaxies" and "The Universe" show the birth and death of stars, the dynamics of galaxies and some of the mysteries of space. A computerized quiz game allows visitors to test their knowledge of the universe.

Marketechs, Inc. of York, Pa., was responsible for the final design, fabrication and installation of the exhibits. Initial design work was completed with assistance from the Smithsonian's National Air and Space Museum.

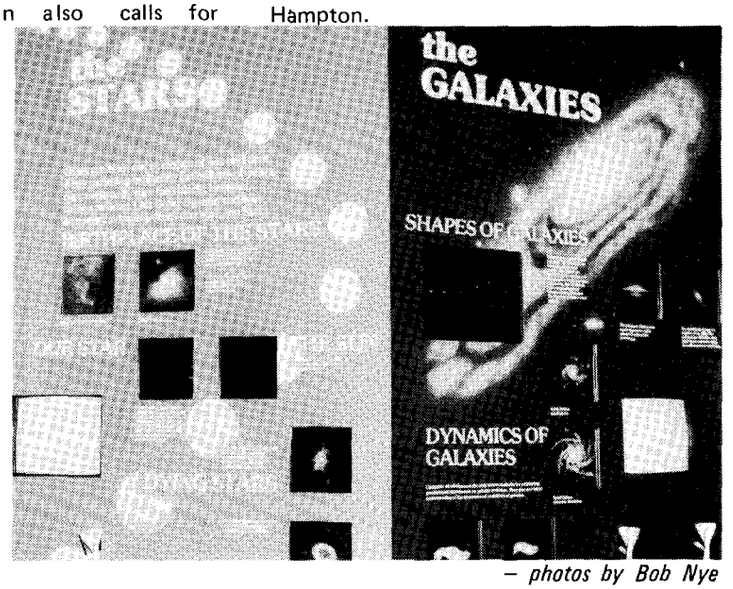
The exhibits represent the first phase of renovations planned for the Visitor Center. Plans are now being formulated for complete renovation of the Center's Aeronautics Gallery. If funding permits, a second phase of additions to the Space Gallery will include the addition of a "spaceport," complete with a spacecraft theater which could provide a "crew" of 30 with a simulated interplanetary journey. The plan also calls for real-time television reception from the Space Shuttle Orbiter. All this will be in addition to the existing displays on the history of the space program and the many space artifacts already featured at the Visitor Center.

The Visitor Center is managed for NASA by the Bionetics Corporation of Hampton.

Langley Director Donald Hearth, assisted by Robert Widder, Chief Designer at the National Air and Space Museum, cuts the ribbon dedicating the nine new space gallery exhibits at the Visitor Center October 15. Speaking to about 50 special guests, Hearth said that our job is not to have just a museum but to illustrate up-to-date technology in aeronautics and space exploration to both school students and adults, thereby increasing public awareness in these fields.



"Our Solar System" exhibit provides information on each of the planets plus comets and asteroids.



– photos by Bob Nye

"The Stars" and "The Galaxies" show the birth and death of stars and the dynamics of galaxies.

National Aeronautics and
Space Administration

Langley Research Center
Hampton, Virginia
23665

Official Business
Penalty for Private Use $300

THIRD-CLASS BULK RATE

Postage and Fees Paid
National Aeronautics and
Space Administration
NASA-451

U.S.MAIL

Apprentices

Continued from page 5.

The graduates and their trades are:

Electrical Engineering Technicians, Operations Support Division: James F. Allen, Vernet P. Boone, Reginald T. Brown and Alan W. Henderson.

Engineering Technicians (Materials Processes), Fabrication Division: Bruce L. Bishop and Charles H. Greenhalgh, Jr.

Engineering Technicians (Research Facilities Operations), Operations Support Division: Gerald D. Boggs; John E. Brown; William Gray, Jr.; Ricky L. Hall; Nicholas A. Kepics; Janice L. McCollum; Bryan S. Pierce; Carlton G. Pike; Janice Y. Smith; David A. Sothcott; Mark A. Spiers; Leonard R. Stevens; and Oletha B. White.

Engineering Technician (Mechanical Development), Operations Support Division: Frank L. Boyer.

Engineering Drafter, Plant Engineering Division: Guy M. Brice.

Engineering Technicians (Aerospace Model Development), Fabrication Division: Benjamin F. Guenther; William D. Lupton; and Donald L. Smith.

Aerospace Engineering Technician, Low-Speed Aerodynamics Division: James M. Hassell.

Electronics Technician, Fabrication Division: Arthur R. Hayhurst.

Epps began her career as an educator in 1954 with the York County Public Schools, where she taught business education, English and history. She taught distributive education in the Newport News Public Schools from 1964 to 1969 and at Virginia Commonwealth University in Richmond from 1969 to 1974. She has held her present position since 1976.

She received a bachelor of science degree in business education from Virginia State College in 1954, a master of science degree in distributive education from Virginia Commonwealth University in 1970 and a doctorate in curriculum and instruction from the University of Virginia in 1976.

Epps is a member of many local, state and national councils for vocational education and administrators, and is President of the Virginia Association of Vocational Administrators. She is co-director for two state-funded projects, one for the Newport News Public Schools and one involving five school divisions, a vocational-training center and a community college. She helped revise a series of marketing textbooks for McGraw-Hill Book Company in 1975 and was a proposal evaluator for the U.S. Office of Eudcation, Adult, Vocational and Technical Education Division, in 1976 and 1980. Since 1978 she has served on the State Department of Education's Steering Committee for the Articulation of Secondary and Community College Vocational Education Programs.

swap and shop

FOR SALE

Articles

Magnavox 4-speed stereo record player, blonde-oak cabinet, $75. Call Shortal, 723-3829.

Carpet: Two pieces of light beige wool, 12'x12' and 25'x25', GC, padding included, $300. Call 877-3736.

Vehicles

Schwinn heavy-duty, 26"-wheel boy's bicycle, single speed, coaster brakes; ideal for paper carriers; less than one-year old; $182 new, will sell for $135, OBRO. Front basket available. Call J. Drummond, ext. 2934 or 722-0710 after 5 p.m.

Real Estate

Windsor Great Park: Contemporary 3 BR, 2 B, LR, DR, FR with FP, WW, CA, deck. Assumption available. $73,900. Call 877-7232 eve/wkends.

Animals

Pekingnese, 4 years old, black, spayed. Very good house pet. Needs to have loving family. We have too many pets. Call ext. 4666, T. Bonner, or ext. 4135, S. Bonner. After 6 p.m. call 642-6374.

WANTED

Anyone with a dream or the desire to be successful. ACCESS (Associates in Collective Cooperation with Eacker Sandberg Services) is looking for a few ambitious men and women who want more out of life. For information call Dr. Sandberg, 596-8399 after 5 p.m. or anytime on weekends.

cafeteria menu

WEEK OF OCTOBER 26—30

MONDAY: Old Fashioned Bean Soup; Hot Roast Beef Sandwich; Italian Sausage over Spaghetti; Baked Half Chicken. Snack Bar: Hot Italian Sausage; Charcoal Hoagie; Egg Salad.

TUESDAY: Manhattan Clam Chowder; Baked Lasagna; Fried Fish Nuggets; Salisbury Steak. Snack Bar: Chicken Breast; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Roast Turkey Dinner; Chopped Steak; New England Scrod. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Gumbo Soup; Meatloaf; Chicken & Dumplings; Seafood Cakes. Snack Bar: Deluxe Sub; BBQ; Turkey Steak.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Broiled Beef Liver; Spinach & Bacon Quiche. Snack Bar: Chicken Breast; Tuna Salad; Crab Cake.

WEEK OF NOVEMBER 2—6

MONDAY: Ham & Lima Beam Soup; Hot Roast Port Sandwich; Chicken Pot Pie; Creole Jambalaya. Snack Bar: Hot Italian Sausage Sub; Chicken Breast; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Spaghetti Dinner; Chicken Chow Mein; Baked Beans & Franks. Snack Bar: Charcoal Hoagie; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken; Beef Balls Stroganoff; Seafood Newburg. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Vegetable Soup; Braised Chicken Livers; Crab Cutlets; Beef, Macaroni & Tomatoes. Snack Bar: Deluxe Sub; BBQ; Turkey Steak.

FRIDAY: Minestrone Soup; Fish Dinner; Beef Enchiladas; BBQ Chicken. Snack Bar: Chicken Breast; Hot Ham & Cheese; Tuna Salad.

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

Volume 20 Issue 22

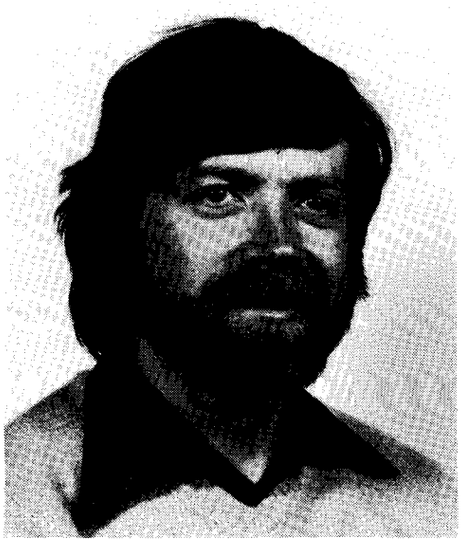
November 6, 1981

Langley Colloquium

Broadwater to Speak Monday

Because of the hostile environment encountered when investigating underwater archaeological sites, special methods must be used to permit underwater archaeologists to locate, identify, excavate and preserve the submerged cultural resources.

The special methods, and the role that science and engineering play in this effort, will be discussed by Dr. John Broadwater at a Langley colloquium, Monday, November 9. Broadwater is Senior Underwater Archaeologist for the Virginia Historic Landmarks Commission's Research Center for Archaeology in Yorktown.



Broadwater's lecture, "Development of an Underwater Archaeology Program for Virginia," will begin at 2 p.m. in the Activities Center, followed by a question and answer session. The speaker will move to the Langley Room at 3 p.m. for an informal discussion.

The Commission's Research Center for Archaeology is implementing a comprehensive plan for underwater archaeology, including extensive documentary research, personal interviews, and field investigations, according to Broadwater. The center's work is supported by electronic remote sensing instrumentation, computer analysis and engineering measurement techniques.

Broadwater, who also directs the Yorktown Shipwreck Archaeological Project, said that next year, funds permitting, the Commission will construct a steel enclosure, or cofferdam, around a well-preserved shipwreck from the Battle of Yorktown, 1781, to improve excavation conditions. The enclosed water will be filtered to improve visibility, and a pier will be constructed from the nearby shoreline to permit visitors to observe the excavations.

Broadwater received a bachelor of science degree in electrical engineering from the University of Kentucky in 1966 and worked for six years as a radar engineer. During this time he was stationed for two years on Kwajalein Atoll in the Marshall Islands of Micronesia, where he investigated and photographed sunken Japanese ships. This project resulted in his book, "Kwajalein, Lagoon of Found Ships."

From 1973 to 1975, as Vice-President and co-founder of Marine Archaeological Research Services Corporation, he participated in searches for the ironclad warship USS Monitor and a search for ancient shipwrecks along the southern Turkish coast, a project of the American Institute of Nautical Archaeology. He was a member of the archaeology team aboard the R/V Alcoa Seaprobe in 1974 when the identity of the wreck of the USS Monitor was verified off the coast of North Carolina. From 1975 to 1976 he helped survey Revolutionary War shipwrecks in the York River and in the Mullica River in New Jersey.

After first serving as a consultant to the Virginia Research Center for Archaeology, he accepted a position in 1978 as Underwater Archaeologist, where he directed a one-year survey for shipwrecks associated with the Battle of Yorktown in 1781. In addition to the York River Shipwreck Project, he will attempt to develop a program of identifying submerged cultural resources in Virginia.

Broadwater is a certified Marine Survey Archaeologist with the Society of Professional Archaeologists.

Third Annual LSST Review Planned

The Third Annual Large Space Systems Technology Review will be held at Langley November 16 – 19.

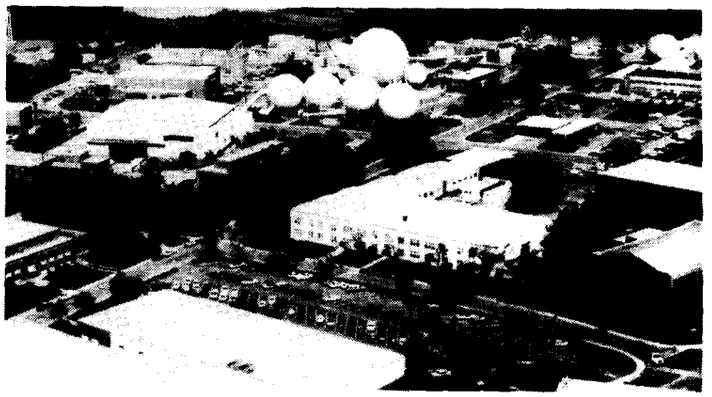
Representatives from universities, private industry and government agencies are expected to attend the meeting at the Activities Center to discuss progress and accomplishments in the past year in large space systems technology development.

Over 50 papers will be presented during the four-day meeting dealing with basic structures and materials to large communication antenna systems. Papers presented the first day will cover structures, materials and analysis of software systems; the second day will cover the control of large systems; the third day will cover large antenna systems including electromagnetic considerations; and the last day will deal with program status and flight experiments.

There will be a structured forum following each day's session, led by invited panelists, with speakers and attendees participating.

The meeting is being coordinated by William J. Boyer. For more information and a detailed agenda, call Boyer, ext. 3661, or Carol Johnson, ext. 3968. There will be a $15 registration fee to pay for refreshments for non-NASA Langley attendees.

Langley Gets New Look



The left photograph shows the old warehouse (Building 1195), originally constructed in 1942. It was built as a temporary structure, to be demolished when permanent facilities were constructed. This has finally been accomplished and during the coming year, several construction projects will be initiated to redevelop the area adjacent to where the building now stands. The first project will provide a new steam service to Buildings 1195A, B and C, which will necessitate the closing of the street in front of Headquarters (Building 1219). This work is scheduled to be completed in December. The second project includes the demolition of Building 1195, which will start in October, conclude in January 1982, and will cause the closing of the street in front of Building 1195. After Building 1195 is torn down, a new exterior wall for the end of Building 1195A will be constructed. Next in the redevelopment plan is the demolition of the streets in front of Headquarters and Building 1195. This work is scheduled for January through June 1982, and construction of the mall area will follow. The right photograph shows how the area will look after the work has been completed, including a future addition to Building 1195A. Employees are asked to be patient during this period of redevelopment. There will be dust, dirt, noise, and rerouting of the shuttle bus. The end results, however, will provide better walking and vehicular traffic patterns and more convenient parking.

Mercedes-Benz Manager Speaks to Engineers Club

Dietrich J. Doerp, Manager, Production Planning and Plant Engineering, Mercedes-Benz, will be the guest speaker at the November 17 meeting of the Engineers Club of the Virginia Peninsula.

The dinner meeting will be held at Captain George's Seafood Restaurant in Hampton. A social will begin at 7 p.m., followed by a buffet dinner at 8 p.m. and the lecture, "A History of Mercedes-Benz in the Passenger Car and Truck Manufacturing Business."

In conjunction with the talk, Mercedes-Benz has agreed to provide a tour that evening of their truck manufacturing plant in Hampton.

According to Doerp, Mercedes-Benz is a leader in automotive excellence. The company's advancements have occurred through research and development in laboratories, grand prix and endurance racing, and highway experience. Doerp said Mercedes-Benz became a leader in racing with their 1908 and 1914 Grand Prix vehicles and continued to show the way into the modern era with their 300 SLR. On the highway, first the 300 SL and later the 230 SL became a standard for sports car excellence; and the type 600 has been the culmination of luxury limousines.

But the 1926 uniting of Mercedes and Benz represents more than their passenger cars, said Doerp. The company has long been recognized in the European Community for leadership in truck manufacturing. With the advent of states-side manufacturing, Mercedes-Benz's trucks are also becoming an important part of the American Transportation System.

The cost of the dinner is $9.50 for members and $11.50 for non-members. Members and guests planning to attend should call Dick Lane, 851-7576 or 380-4605, by Friday, November 13.

RIDESHARING PROGRAM --

A Viable and Successful Program

Langley's ridesharing program, directed by Kathi Porter, Facilities Management and Directives Branch, Management Support Division, has been commended by the Peninsula Transportation District Commission for contributing to the outstanding success of ridesharing for the cities of Hampton, Newport News, and the surrounding communities. Langley has set the example of how to operate a viable and successful program.

An article, published in the Virginia Department of Highways and Transportation's newsletter, "Virginia Transit Horizons," described Langley's program, which has resulted in reducing the high cost of commuting for 2,000 employees who are ridesharing or car pooling.

Porter has a 90 percent success rate in placing employees in some type of pool. If you are interested in sharing a ride or arranging a car pool, contact Porter at ext. 3511.

The *Langley Researcher* as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond

Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

Space Shuttle Mission Specialist Visits Langley

Nov. 6, 1981 Langley Researcher Page 3

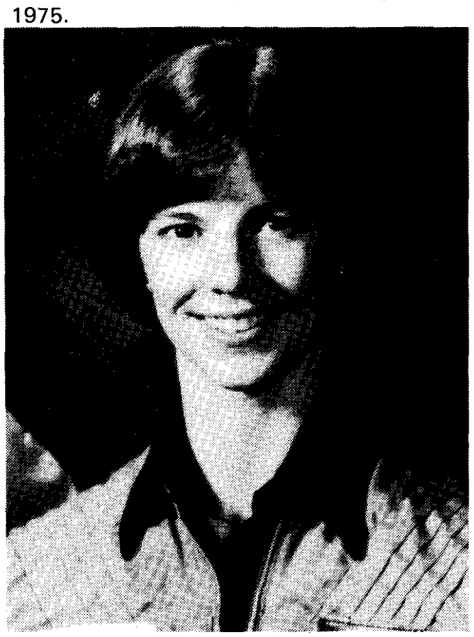
Dunbar Addresses Employees

Astronaut Bonnie Dunbar will speak to Langley employees Thursday, November 12, on "Space Shuttle: The Future is Here." Her lecture, sponsored by the Federal Women's Program, will be held in the Activities Center from 8:45 to 10:45 a.m.

Dunbar was one of 11 mission specialist candidates selected from 2,880 applicants in 1980. After completing a year of intense training at the Johnson Space Center, she was recently selected as an astronaut (mission specialist).

Dunbar began her NASA career as a payload officer/flight controller at Johnson in 1978. She was a guidance and navigation officer/flight controller for the Skylab reentry mission in 1979, and was subsequently designated project officer for the integration of several Space Shuttle payloads.

After graduation from the University of Washington in 1971, Dunbar was a systems analyst for Boeing Computer Services. In 1973 she was awarded a NASA grant and started research for her master's thesis on mechanisms and kinetics of ionic diffusion in sodium beta-alumina. She graduated cum laude from the University of Washington in 1975.



That same year, Dunbar was invited to Harwell Laboratories in Oxford, England, as a visiting scientist to conduct research on the wetting behavior of liquids on solid substrates. Upon her return to the United States, she became a senior research engineer at Rockwell International, Space Division, Downey, Calif., where she developed equipment and processes for the manufacture of the Space Shuttle's thermal protection system. She represented Rockwell as a member of the Dr. Kraft Ehricke Evaluation Committee on prospective space industrialization concepts.

Dunbar's visit to the Peninsula is in commemoration of Work of Women Week, November 8 – 14, sponsored by the Women in Business Program at the College of William and Mary, the Junior League of Hampton Roads and the Peninsula Women's Network, Inc. Dunbar will give the same lecture Wednesday, November 11, at Bethel High School at 8 p.m.

CFC Exceeds Goal

Thanks to You, Langley Claims Victory

The 1981–82 Combined Federal Campaign officially closed yesterday, November 5. Thanks to you, Langley once again can claim victory for exceeding another challenging goal. The total as it stands now is $193,392 or 4 percent over the goal of $186,500. As the few late contributions trickle in, we may see the $194,000 level broken.

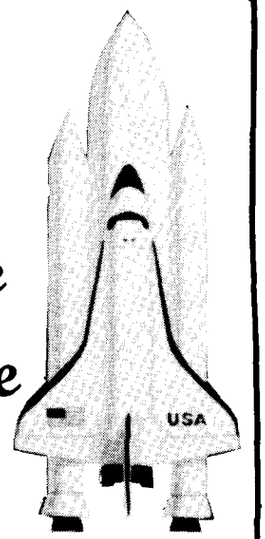
Don Hearth, the Committee, and many others felt that the economic belt tightening might affect the campaign, and perhaps it did. To our surprise the overall effect was positive. An average gift of $65.01 was contributed by 2,975 people.

Special thanks go to our retirees who contributed over $10,000 toward our goal and to the Senior Staff for their exemplary giving. Thanks also to our Division Chairmen, Key Workers, Volunteers, and Union Leaders who supported the drive with their time and talents.

It has been a pleasure working with the CFC Committee this year and I wish next year's Committee and Chairman the best.

Joseph W. Stickle
Chairman
1981–82 Combined Federal Campaign

Space Shuttle Update



By the time you read this, the Orbiter Columbia should be in the second day of its second mission, circling above Earth at 137 nautical miles.

Astronauts Joe Engle and Dick Truly will be operating the Remote Manipulator System -- the long arm for deploying and retrieving future payloads in space -- today as the major part of their work schedule.

Television of today's activities will be available for Langley employees in the Activities Center this afternoon from 4:30 to 6 p.m. TV coverage will include views of the crew operating the manipulator arm and several views of Earth as seen from Columbia.

The Earth-viewing instruments of the OSTA-1 experiments package -- including the Langley-developed Feature Identification and Location Experiment and Measurement of Air Pollution from Satellites -- should be studying Earth's atmosphere and several features of our planet.

Because of the OSTA-1 experiments, Columbia will fly most of the mission upside down in relation to Earth. Except for activation, deactivation and occasional data gathering, the experiments are automated and require a little of the crew's attention.

Recent Retirees

Thomas W. Durkin, Plant Engineering Division; **Scott M. Agnew**, Management Support Division; **Lawrence T. Parker**, Operations Support Division; and **Helen S. Creekmore**, High-Speed Aerodynamics Division, retired September 29.

Langley Supports Bloodmobile

Langley employees, retirees and contractors donated 314 pints of blood at the September visit of the Red Cross Bloodmobile.

Achieving gallon status were:

14 gallons — James J. Fay
9 gallons — Perry W. Hanson
6 gallons — Nelson Seabolt
4 gallons — George J. Trombley and Frederick R. Morrell.
3 gallons — Garland Goodwin, Charles A. Sweet, Howard W. Wilson, Robert Miserentino and Cliff Gentry.
2 gallons — Michael G. Fleck, Mary A. Wiseman, Robert A. Golub, Joseph M. Price, James B. Williams, Tommy R. Augustsson, Steven Lilly and Danny Hoad.
1 gallon — Jimmy J. Waters, William R. Hutto, James P. Bailey, Carl S. Larsen, Jeri Carter, Kenneth S. Brentner, Judy Wright, James D. McMillan and James D. Adkins.

Donating blood for the first time were Rodney Hunter, Barbara Brinson, Edward J. Zisk, Christine Belcastro, Celeste Belcastro, Richard Antcliff, Jane Manning, James Arbuckle, Robert Lutinski, Sherri Lee, Randall Voland, Thomas P. O'Bryan, Donald Deaborn, Ray Seals, Darlene Mays, Bruce Wielicki and Kevin Burnes.

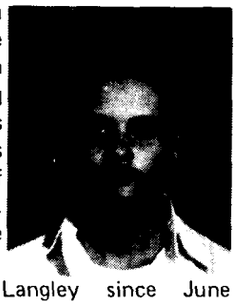
NASA Coordinators for the Bloodmobile were Virginia Jones and Annette Forrest. Red Cross Coordinator was Scotty McArthur. Refreshments were donated by the Langley Federal Credit Union.

The next opportunity to donate blood will be Wednesday, November 25.

Thought For the Day

Some tasks have to be put off dozens of times before they will completely slip your mind.

In Memoriam



Jaime Mattei, a student trainee (engineering) in Materials Processing and Applications Branch, Materials Division, died of cancer October 27, in Puerto Rico. He was 22.

Employed at Langley since June 1979, Mattei was a student at the University of Puerto Rico, working toward a bachelor of science degree in mechanical engineering.

— photo by Hubert Lloyd

The Third Graduating Class of the Peninsula Joint Apprenticeship Training Committee for Maintenance Crafts received their Journeyman Certificates Tuesday, October 6, during an after-dinner ceremony at the Langley Officers' Club. Mike Marshall, Apprenticeship Field Supervisor for the Virginia Department of Labor, presented certificates to (from left) Joseph Falzone, III, electrician; Charles Potter, pipefitter; Douglas Johnson, mechanic; and John Slicer, refrigeration and air conditioning mechanic. Absent was Charles Robinson, mechanic. Guest speaker was John F. Stokes, Langley's Director for Management Operations, who spoke on the business outlook for Langley in coming years. He stressed the value of technical training in our "hardware-oriented society" and of contractor-assisted maintenance efforts at Langley. The Apprentice Program is operated jointly by Klate Holt Company and the International Brotherhood of Electrical Workers.

Was this--a trick or a treat?

— photo by Bob Nye

Bob Bower is the only person who can answer that question. This friendly witch made her Halloween appearance in Headquarters building last Friday and visited the Director for Aeronautics, among others. Behind the mask is none other than Barbara Newton of General Files.

Competitive Placement Announcements

81 — 59 -- Engineering Technician; GS-0802-13 (**Temporary); Office of Director for Space; Marine and Applications Technology Division; Environmental Field Measurements Branch; Closes November 16, 1981.

81 — 60 -- Engineering Technician; GS-0802-9, 10 or 11; Instrument Research Division; Instrument Application Branch; Instrumentation Coordination Section; Closes November 16, 1981.

81 — 61 -- Assistant Chief, Research Information and Applications Division; GM-1001-13 (Temporary Developmental Assignment for 10 months); Office of Director for Management Operations; Research Information and Applications Division; Office of the Chief; Closes November 23, 1981; NASA-Wide.

81 — 62 -- AST, Technical Management; GS-0801-14 (Term Promotion); Office of Director for Projects; Aircraft Energy Efficiency Project Office; (Employee selected will remain assigned to organization where currently working but will be colocated to ACEEPO); Closes November 23, 1981; NASA-Wide.

Langley Staff Members Receive Advanced Degrees

Seventeen staff members have received advanced degrees through the center's Graduate Study Program during Fiscal Year 1981.

The program, established in the late 1940's, provides Langley scientists, engineers, and administrators an opportunity to improve their proficiency in aeronautical and space research and earn advanced degrees while working at Langley. Approximately 812 employees have been awarded master's or doctoral degrees through the program.

New doctoral degrees have been awarded to the following six employees: Robert E. Smith, Jr., Analysis and Computation Division, and John T. Suttles, Atmospheric Environmental Sciences Division, Doctor of Philosophy in Mechanical Engineering; and Theodore A. Talay, Space Systems Division, Doctor of Philosophy in Civil Engineering, all from Old Dominion University; Leonard M. Weinstein, High-Speed Aerodynamics Division, Doctor of Philosophy in Aerospace Engineering from the University of Florida; and Christopher Gracey, Flight Dynamics and Control Division, Doctor of Philosophy in Aerospace and Ocean Engineering from Virginia Polytechnic Institute and State University.

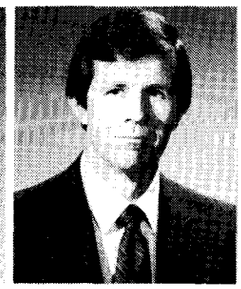
Master's degrees were awarded to 11 employees: Leonard V. Clark, Terminal Configured Vehicle Program Office, Master of Business Administration in Aviation from Embry-Riddle Aeronautical University; Susan A. Motley, Research Information and Applications Division, Master's in Library Science from the Catholic University of America; and Daisy W. Alston, Transonic Aerodynamics Division, Master of Arts in Mathematics from Hampton Institute.

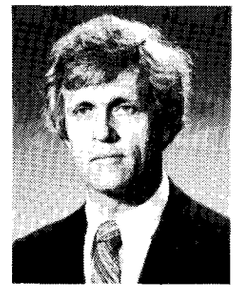
Franklin P. Keesee, Jr., Scout Project Office, Master of Engineering Administration; Michael C. Garula, Business Data Systems Division, Master of Science in Administration; Jimmy L. Pittman, High-Speed Aerodynamics Division, Master of Science in Flight Mechanics; and Dewey L. Clemmons, Jr., Aeronautical Systems Division, Master of Engineering Administration in Administration of Research and Development, all from George Washington University.

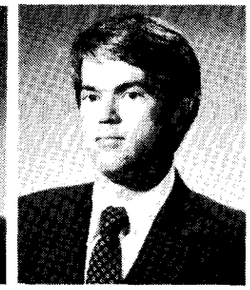
David J. Carter, Jr., Long Duration Exposure Facility Project Office, Master of Business Administration in Management; Wayne S. Melton, Research Information and Applications Division, Master of Public Administration; Vivian B. Merritt, Office of Equal Opportunity Programs, Master of Public Administration in Administration Organization and Management, and Marvin C. Clemmons, Analysis and Computation Division, Master of Business Administration Management, all from Golden Gate University.

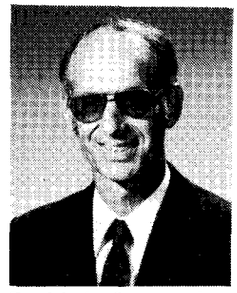
The Training and Educational Services Branch congratulates these individuals for the long hours and hard work necessary for this academic accomplishment. Such work not only brings additional expertise to Langley but also enhances the individual's professional growth and career development.

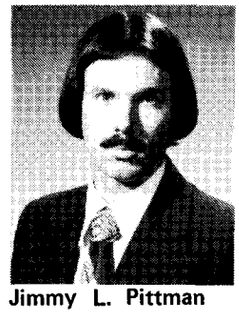
Vivian B. Merritt


Robert E. Smith, Jr.

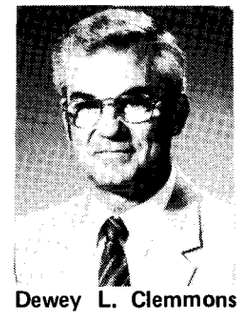

Leonard V. Clark


Christopher Gracey

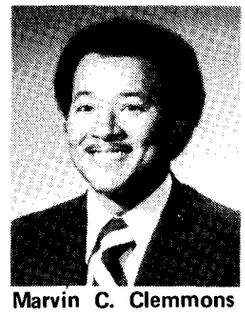

David J. Carter, Jr.

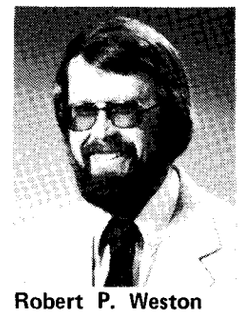

Jimmy L. Pittman

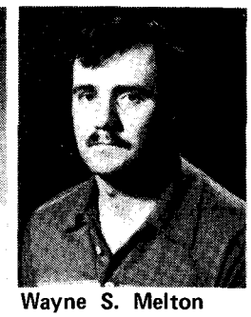
Daisy W. Alston

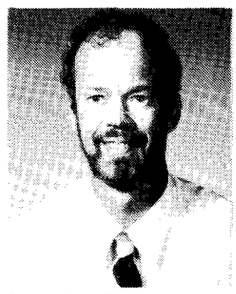

Dewey L. Clemmons

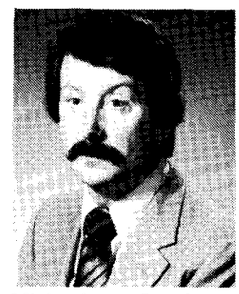
Susan A. Motley

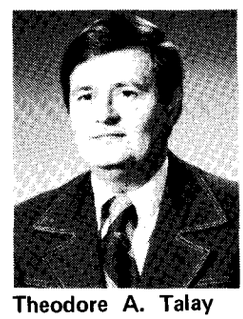

Marvin C. Clemmons

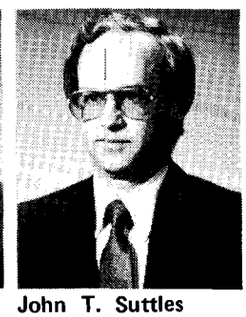

Robert P. Weston

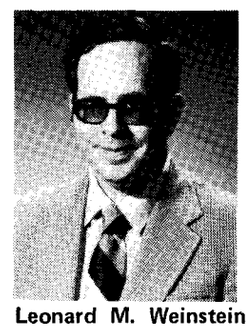

Wayne S. Melton


Franklin P. Keesee


Michael C. Garula


Theodore A. Talay


John T. Suttles


Leonard M. Weinstein

— photos by Bob Nye

Key Positions

George W. Ivey, Jr., has been selected Head, Mechanical Engineering Section, Mechanical Design Branch, Research Facilities Engineering Division, under Competitive Placement Plan 81–43.

William D. Harvey has been selected Head, Airfoil Aerodynamics Branch, Transonic Aerodynamics Division, under Competitive Placement Plan 81-46.

Charles L. Ladson has been selected Assistant Head, Experimental Techniques Branch, Transonic Aerodynamics Division, under Competitive Placement Plan 81-48.

Dr. John W. Edwards has been selected Head, Unsteady Aerodynamics Branch, Loads and Aeroelasticity Division, under Competitive Placement Plan 81-49.

George W. Askew has been selected Supervisory Engineering Technician, Technical Support Section B, Laboratories Operations Branch, Operations Support Division, under Competitive Placement Plan 81–51.

Thanks

Marty Moul thanks all his friends and coworkers who helped make his retirement party such a joyous occasion. He said, "The dinner, comments and gifts were much appreciated and were a reminder of the many enjoyable years and occasions experienced at Langley."

Emma J. Landrum writes, "I would like to thank everyone for the wonderful retirement party given me. The gifts and mementoes are greatly appreciated. I will also remember for a long time the generous comments concerning my 35-year career with NACA and NASA."

Ugo Tuccori wishes to thank each and everyone for contributing blood while he was a patient in Hampton General Hospital.

J. A. "Dave" Mahoney writes, "My family and I wish to express thanks to all those who planned, attended, and in any way had a part in my retirement party. The gifts and mementoes will serve always as reminders of the friends and happy years I have had at Langley."

Eddie Polhamus writes, "Jo and I wish to thank our Langley friends for the very enjoyable retirement party with its well planned and thoughtful program, and the opportunity to visit with many old and new friends. The gifts, mementoes, albums and letters are greatly appreciated and bring back many pleasant memories of 37 years of association with the people who have maintained Langley's reputation as the world's greatest aeronautical research laboratory."

– photo by Bob Nye

J. Wayne Simonton (right), an Engineering Technician in the Fabrication Division, receives the Government Employees Insurance Company (GEICO) Public Service Award, presented annually to federal employees who have made outstanding contributions in the field of alcoholism. In addition to his position as Langley's Alcohol/Drug Abuse Counselor, Simonton works with chemically-dependent persons in the community. Presenting the award is E. Barton Geer, Director for Systems Engineering and Operations.

Abrahamson to Head NASA STS Office

Maj. Gen. James A. Abrahamson, deputy chief of staff for systems, Headquarters Air Force Systems Command at Andrews Air Force Base, Md., has been named Associate Administrator for NASA's Office of Space Transportation Systems, on assignment from the Air Force. He is expected to report to NASA this month.

"General Abrahamson's close acquaintance with the Shuttle and his excellent program management record make him uniquely qualified to head Shuttle development. I am pleased that the Air Force has agreed to allow him to take on this tour with NASA," said Administrator James M. Beggs.

Abrahamson succeeds John F. Yardley who left NASA in May 1981 to become president of McDonnell Douglas Astronautics Co., Division of McDonnell Douglas Corp., St. Louis, Mo. L. Michael Weeks, Deputy Associate Administrator for the Office of Space Transportation Systems, has been Acting Associate Administrator in the interim.

Abrahamson was selected to be an astronaut with the Air Force's Manned Orbiting Laboratory Program and served on that program from August 1967 until it was cancelled in June 1969. He was then selected to serve on the staff of the National Aeronautics and Space Council in the Executive Office of the President of the United States.

In 1979, Abrahamson was a member of a five-man special staff chosen by NASA to assess the management of the Space Transportation System.

Recent Retiree

Fred C. Wilson, Operations Support Division, retired October 30.

Happenings

HAPPY HOUR will be held today from 4 to 6:30 p.m. in the Activities Center. A special Happy Hour, the last for 1981, is being planned for November 20 from 4 to 7 p.m.

TURKEY SHOOT. The LAA annual Turkey Shoot will be held Saturday, November 14, on the Activities Center grounds from 9 a.m. until sunset. Turkey raffle tickets are available from LAA representatives and the Activities Office.

NAGS TRIP TO NEW YORK. There are four seats available on the bus to New York December 3 – 9. Call Betty Joyner, ext. 3285, for more information.

ARTS AND CRAFTS SHOW will be held at the Activities Center November 14 and 15 from 12 to 5 p.m. Included in the show will be country carvings, jewelry, ceramics, dried flower arrangements, weaving, paintings, stained glass and crochet.

FILM FESTIVAL. The following films are planned for the 1981–82 LAA Walt Disney Film Festival: "Song of the South," November 8; "Almost Angels" and "Pluto's Christmas Tree," for the Children's Christmas Party December 6; "Winnie the Pooh," January 10; "The Prince and the Pauper," February 14; "Freaky Friday," March 14; and "The Aristocats," April 3. Admission is 75 cents per person, except for the Children's Christmas Party which will be $1.50, and films will begin at 3 p.m. For more information, call the Activities Office, ext. 3139.

AFGE. The regular monthly meeting of AFGE Local 2755 will be held November 18, at the Union Office, Building 1232B at 4:30 p.m.

INTERCENTER MEET UNDERWAY. There is just a little more than a week remaining to participate in the 12th Intercenter Meet. So far, the number of entrants at Langley is not up to the usual level, but two more days have been scheduled to allow both runners and walkers another opportunity to be counted. Starting time is 4:45 p.m. on Monday, November 9, and Thursday, November 12, and both the 2-mile and 10-kilometer events will be conducted each afternoon. Participants need to meet on Doolittle Road prior to 4:45 p.m. For information call Larry Spencer, ext. 3681.

Continued on page 8.

"A" LEAGUE SOFTBALL CHAMPS. For the sixth consecutive year the Shams have won the NASA "A" League softball championship for regular season play, posting a perfect 17 – 0 ledger. They also won the post-season tournament, winning three straight games. Sham team members are (kneeling from left) Doug Diggs, Ernie Burt, Ronnie Diggs, Ramon Barr, Alan Frizzell, Barry Brunner; (standing from left) Woody Midgette, Mike Luther, Rodney Russell, Stewart Harris, Bobby Hunt, David Shortt, Brad Ball. Not pitcured: Ed Modlin.

"B" LEAGUE SOFTBALL CHAMPIONS. George Washington University has won the "B" League softball championship for 1981 with a season record of 10 wins, six losses. Pictured are (front row from left) Bill McCain, Jim Burley, Lyle Long, Kenji Uneshi, Pat Murphy, Chad Balch; (back row from left) Dan Bush, Steve Tingas, Bo Dotson, Jeff Bantle, Dan Vicroy, Keith Belvin and Mike Jones. Absent when the picture was taken were John Whitesides, Macon Shibut and Jeff Williams.

"C" LEAGUE SOFTBALL CHAMPIONS. The Langley Student Branch (LSB) softball team is the 1981 NASA "C" League champion, winning with a record of 15 wins, six losses. Shown are (front row from left) John Micol, Wes Goodman, Clifford Obara (assistant coach), Stuart Johnson, Glynn Bartlett (coach), Charlie Miller; (back row from left) Marc Takahashi, Jeff Viken, Phil Lavrich, Mark Bryan, Tommy Wiggins and Kenny Commander.

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Happenings

Continued from page 7.

DINNER THEATER. The comedy, "Lion in Winter," is being performed nightly through November 15 at the Tidewater Dinner Theater in Norfolk. The musical, "Li'l Abner," will begin November 18. Tickets, $13.75 for weekdays and $14.75 for weekends, are available at the Activities Office.

BASKETBALL LEAGUE. There will be a meeting to organize the 1982 NASA Basketball League Monday, November 9, at 4:30 p.m. in the Activities Center. Each team should have a representative present. Persons looking for a team to play on should also attend.

ASM. The Hampton Roads Chapter, American Society for Metals, will meet November 9 at the Hampton Elks Lodge. Bill James of the Kentron Technical Center will talk on superplastic forming of titanium. A cash bar social will begin at 5 p.m., with dinner at 6:30 p.m. and the lecture at 7:30 p.m. The cost of the delmonico steak dinner is $7. For reservations call Bill James, ext. 2006 or 868-8795, or Bill Ossa, ext. 2006 or 877-8448.

SKI CANADA. The excitement of Europe, without all the expense, at Mount Tremblant, Quebec. Seventy-five miles of trails for beginner to expert skiing. Stay at the Chalet des Chutes and ski December 11 – 13. Trip includes two nights' lodging, two breakfasts and dinners, transportation to and from Canada and slopes, and three days of skiing. The group will depart December 10 at 4 p.m. and return December 14 at 8 a.m. Cost is $135 and up. Call Norman Willey, ext. 3987 or 490-0238.

swap and shop

FOR SALE

Articles

Antiques, reasonable; glassware and stained glass; Saturdays and Sundays, now until Christmas at Gloucester Shopping Center.

WANTED

To join or form car pool from Hidenwood area to NASA on 7:30 a.m. shift. Call 596-1234.

One person to complete four person car pool from Virginia Beach, Arrowhead area on 7:30 a.m. shift. Call Judy Lyver, ext. 2701, or Janet Schultz, ext. 3681.

To correspond with employees who have used the Mail Handlers Health Benefit Plan. Call Montgomery, ext. 2721.

Another member for a car pool from Norfolk (Colonial Place area) to NASA on 8 a.m. shift. Call Giesy, ext. 3917 or 625-7558.

BARBERSHOP HARMONY NIGHT. The Racquet Squad Barbershop Quartet from Westchester County, N.Y., will be the guest quartet at the annual barbershop harmony night, sponsored by the Merrimac Barbershop Chorus, Saturday, November 7, at 8 p.m. in the Warwick High School Auditorium. Tickets are $4.50 and may be purchased either at the door or from Bill Tennis, ext. 2032. If you have never heard barbershop harmony, now is the time to listen to that old-fashioned natural four-part harmony that is reminiscent of the days gone by, the Roaring 20s. If you have heard this type of harmony, before, now would be the time to retune your ears to one of the native arts of America.

LANIER BUSINESS PRODUCTS will present their newest introductions to the field of word processing at the Langley Officers' Club November 9 and 10 from 10 a.m. until 4 p.m. Lanier will be featuring the new "EZ-1" and "Typemaster" word processors. Also on display will be Lanier's "Insight," "Micro-matic III" and "Supervision III."

cafeteria menu

WEEK OF NOVEMBER 9 — 13

MONDAY: Old Fashioned Bean Soup; Hot Roast Beef Sandwich; Italian Sausage over Spaghetti; Baked Half Chicken. Snack Bar: Reuben Sandwich; Chicken Breast; Egg Salad.

TUESDAY: Manhattan Clam Chowder; Baked Lasagna; Chicken & Dumplings; Salisbury Steak. Snack Bar: Charcoal Hoagie; BBQ; NASA Sub.

WEDNESDAY:

HAVE A
NICE
HOLIDAY

THURSDAY: Chicken Gumbo Soup; Meatloaf; Turkey Breast; Seafood Cakes. Snack Bar: Deluxe Sub; BBQ; Pork Thriller.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Broiled Beef Liver; Polish Sausage w/sauerkraut. Snack Bar: Chicken Breast Sandwich; Tuna Salad; Crab Cake.

WEEK OF NOVEMBER 16 — 20

MONDAY: Ham & Lima Bean Soup; Hot Roast Pork Sandwich; Chicken Pot Pie; Chuckwagon Steak. Snack Bar: Hot Italian Sausage Sub; Chicken Breast; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Spaghetti Dinner; Chicken Chow Mein; Baked Beans & Franks. Snack Bar: Charcoal Hoagie; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; Beef Tips; Creole Jambalaya. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Vegetable Soup; Braised Chicken Livers; Crab Cutlets; Beef, Macaroni & Tomatoes. Snack Bar: Deluxe Sub; BBQ; Port Thriller.

FRIDAY: Minestrone Soup; Fish Dinner; Beef Enchiladas; Knockwurst Reuben. Snack Bar: Chicken Breast; Hot Ham & Cheese; Tuna Salad.

Retirement Party

William F. "Fill" Cuddihy, Plant Engineering Division, will be honored with a retirement party (steamship round dinner and cash bar), Wednesday, December 9, at 6:30 p.m. at the Activities Center. The cost, including gift, will be $11 per person, $20 per couple or $1.50 for gift only. For reservations, please send check to Charlie Schilling or Judy R. Neil, Mail Stop 446, ext. 4501, by December 2.

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SPECIAL AWARDS ISSUE

November 16, 1981

Highlights of the Annual Honor Awards Ceremony

Langley Pays Tribute to Employees

Langley employees who made outstanding contributions in aeronautical and aerospace research during the past year were recognized for their achievements at Langley's Annual Honor Awards Ceremony October 29.

Dr. Donald P. Hearth, Langley Director, assisted by Richard H. Petersen, Langley Deputy Director, presented the Langley awards and NASA medals.

In addition to the H.J.E. Reid Award, Langley Special Achievement awards for Group Accomplishments were presented as follows:

Advanced Supersonic Fighter Technology Team, "For major aerodynamic contributions to the definition of a supersonic fighter configuration resulting in development of an industry prototype;" **Aerodynamic Heating Assessment Team**, "For outstanding team and individual contributions in assessing aerodynamic heating for the Space Shuttle with emphasis on aerothermodynamic screening of candidate configurations, real-gas effects, boundary-layer transition criteria, and tile gap heating;"

Aerodynamic Stability and Control Testing Team, "For outstanding team and individual contributions during the assessment and development of the Space Shuttle Orbiter, a winged spacecraft which achieved a successful controlled flight over a speed range never before flown;" **Aircraft Mission Support for the SAM II/SAGE Satellite Ground-Truth Measurement Program**, "For outstanding performance in carrying out the flight mission responsibilities of the Wallops Flight Center in support of the SAM II/SAGE Ground-Truth Measurement Program;"

Aircraft Noise Prediction Program Development Team, "For developing, implementing, and applying a computer program system for aircraft noise prediction;" **Antiskid Braking Research Team**, "For imaginative and detailed study of antiskid braking system behavior which provided the first comprehensive operational data contributing to improved aircraft stopping performance on slippery runways;"

Atmospheric Ammonia Measurement Team, "For the application of state-of-the-art technology and theoretical atmospheric modeling, which greatly enhanced our understanding of ammonia and the processes that control its production and loss;" **Composite Panel Analysis and Sizing Code Development Team**, "For development of the composite panel analysis and sizing code (PASCO), an accurate, comprehensive, yet easy-to-use code which is being widely accepted and used in government and industry as the best and most efficient means of achieving minimum-weight structural panel configurations;"

Differential Absorption Carbon Monoxide Monitor Team, "For exceptional innovation and team effort in the development and successful field demonstrations of DACOM, a new airborne atmospheric carbon monoxide instrument;" **Digital Integrated Automatic Landing System (DIALS) Design and Development Group**, "For developing and demonstrating with flight testing the significant improvements available to the commercial community through the application of advanced control design techniques;"

F-14/ARI NASA/NAVY Program Team, "For the conception, development, and flight demonstration of an automatic control system concept which provides the F-14 airplane with a high level of departure and spin resistance and with improved handling qualities;" **F-18 Radio-Controlled Drop-Model Test Team**, "For the highly successful development

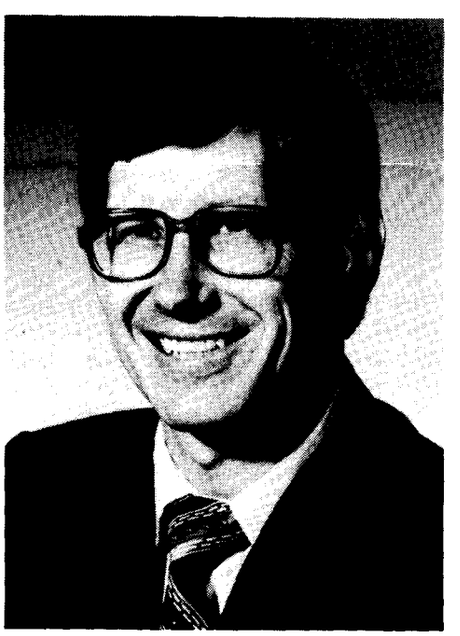
Continued on page 3.

Langley Director, Dr. Donald P. Hearth, was presented the NASA Equal Employment Opportunity Medal by Harriett G. Jenkins, Director of the Office of Equal Opportunity Programs at NASA Headquarters. The medal was presented "For significant administrative achievement characterized by personal dedication, leadership, and professional skill in the formulation and implementation of the Langley Research Center's Equal Opportunity Program."

Dr. Robert W. Leonard, who retired in May as Manager of the Aircraft Energy Efficiency Project Office, receives a NASA Outstanding Leadership Medal, "For exceptional leadership of the Aircraft Energy Efficiency Project Team in successfully accomplishing its primary objective to develop technologies for more fuel efficient transport aircraft by the use of advanced composite materials in major secondary and primary structures and applications of advanced aerodynamic concepts and active controls."

Albert E. Gribble, who retired as Chief of the Analysis and Computation Division in April, was presented a NASA Outstanding Leadership Medal, "For more than 30 years of outstanding contributions and leadership at NACA/NASA in the development of digital computing systems and techniques for scientific research and experimental data reduction."

Richard N. Green, Dr. G. Louis Smith and T. Dale Bess, Atmospheric Environmental Sciences Division, received the H.J.E. Reid Award for their paper, "Deconvolution of Wide Field-of-View Radiometer Measurements of Earth-Emitted Radiation." The award annually recognizes the outstanding scientific or engineering paper written by a Langley employee or group of employees.

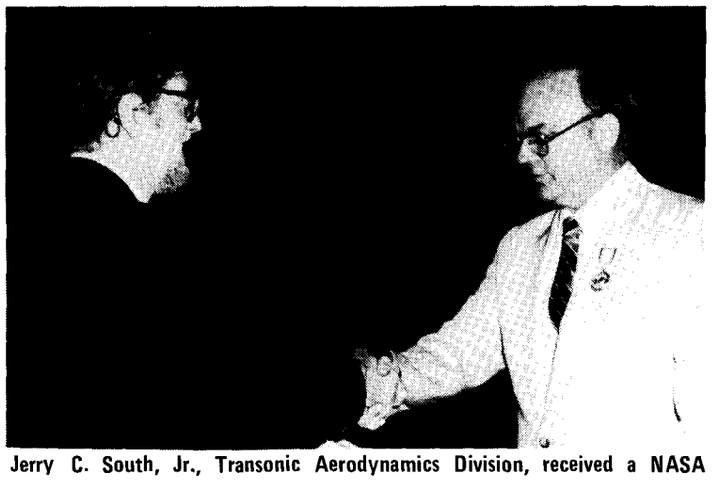


Dr. Robert T. Wingate, Acting Chief of the Systems Engineering Division, was presented a NASA Exceptional Engineering Achievement Medal, "In recognition of his outstanding engineering achievements and demonstrated excellence in the areas of applied engineering analysis and engineering management. These achievements have contributed significantly to the success of key NASA aeronautical and space programs and have resulted in substantial financial savings." Wingate's award was presented by E. Barton Geer, Director for Systems Engineering and Operations, at a ceremony November 3.

The *Langley Researcher* is an official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665.

Editor . . . . . Jean Drummond
Photographers . . . . . Bob Nye, Bill Salyer and NASA Headquarters' Staff

Barbara W. Hogge, Office of the Director, received a NASA Exceptional Service Medal, "For outstanding and dedicated service in effectively carrying out the administrative responsibilities of Executive Assistant within the Office of the Director, Langley Research Center."



Jerry C. South, Jr., Transonic Aerodynamics Division, received a NASA Exceptional Service Medal, "For outstanding contributions to the science of computational fluid dynamics by the development of a long series of innovative analytical and numerical techniques for improved accuracy and computational efficiency leading to the practical solution of a wide variety of fluid dynamics problems."

A NASA Exceptional Service Medal is presented to David G. Stephens of the Acoustics and Noise Reduction Division, "In recognition of outstanding achievements in planning, implementing, and leading research programs on human response to noise and structural acoustics."

Langley Pays Tribute to Employees

Continued from page 1.

of improved flight-test systems and techniques for radio-controlled drop models and the effective application in the F-18 Stall/Spin Drop-Model Flight Test Program;"

General Aviation Full-Scale Crash Test Team, "For outstanding contributions to the understanding of the structural performance of general aviation aircraft under crash conditions by acquiring and interpreting unique free-flight crash data for use in carshworthiness design;" **Impact-Damage-Tolerant Graphite-Epoxy Compression Structures Team**, "For outstanding contributions in identifying the effects of impact damage on the strength of graphite-epoxy compression structures and in defining and demonstrating damage-tolerant structural concepts;"

Langley's Electric Power Negotiating Team, "For outstanding achievement in identifying and successfully negotiating innovative ways to reduce Langley's electric power cost and at the same time provide increased flexibility to operate the National Transonic Facility;" **LaRC On-Orbit Surface Attachment Concepts Team**, "For the timely development of viable new concepts and prototype demonstration models of Hot Melt Adhesive Surface Attachment Assemblies for On-Oribt Operations;"

LaRC TPI Development Team, "For the conception and development of LaRC-TPI, a unique thermoplastic high-temperature adhesive;" **NASA Task Team for the Nantucket Shoals Project**, "For outstanding contributions in planning and conducting a multidisciplinary remote sensing experiment to define the dynamics of phytoplankton growth on Nantucket Shoals and to demonstrate the operational integration of aircraft and shipboard sensors to accomplish synoptic, three-dimensional oceanographic studies;"

Office of Equal Opportunity Programs, "For outstanding accomplishments in implementing equal opportunity discrimination complaint procedures which have maximized the utilization of informal procedures;" **Random Dynamic Loads Test Team**, "For support provided to a critical series of random dynamic fatigue tests essential for STS-1 certification of the orbiter ceramic thermal protection system;"

Refuse Consuming Utility Plant (RECOUP), "For advocating, designing, constructing, and operating the first joint federal/municipal refuse-fired steam generating plant in the United States, which significantly reduced fuel-oil consumption for the Langley Research Center and alleviated refuse disposal problems for the city of Hampton, Virginia; **Research and Development Programs Branch, Programs and Resources Division**, "For the high degree of professional skill, motivation, and originality in providing technical resources assistance to the Program Directors in implementing their programs;"

Shuttle Mission and Vehicle Systems Analysis Team, "For outstanding team and individual contributions in assessing mission demands and technological options and demonstrating the technical feasibility for accomplishing the requirements of the Space Shuttle Program;" **Shuttle SRB Underwater Location Aid Team**, "For design and development of ultrasonic location aids for the Shuttle solid rocket booster recovery operations;"

Harvey G. McComb, Jr., Assistant Chief of the Structures and Dynamics Division, receives a NASA Exceptional Service Medal, "In recognition of his exceptional leadership in development and application of advanced structural analysis and design techniques. Because of his leadership, Langley Research Center has contributed substantially to the development of key analytical tools used to solve critical Agency problems and has provided the cornerstone research developments in computer-aided design."

Dr. Frank Hohl, Office of the Director, receives a NASA Exceptional Scientific Achievement Medal, "In recognition of outstanding leadership and technical contributions to high-power space lasers through development of nuclear-pumped lasers, the concepts for a self-critical nuclear laser in space, and demonstration of the first direct solar-pumped gas laser in support of NASA's future space power needs."

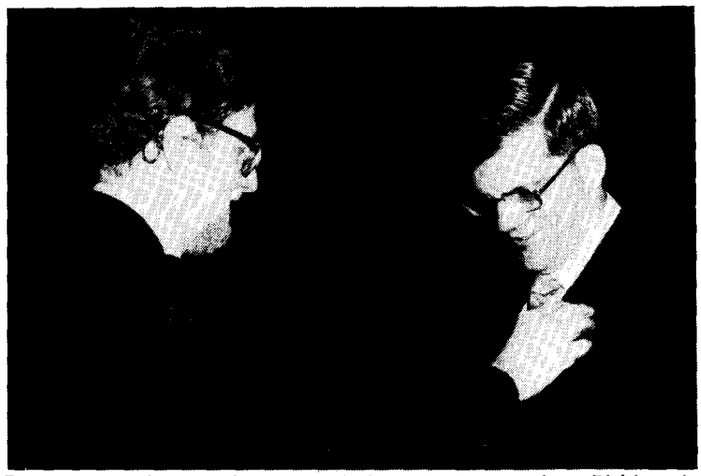
Dr. James C. Newman, Jr., Materials Division, received a NASA Exceptional Scientific Achievement Medal, "In recognition of technical contributions which have advanced fracture-mechanics technology and have enhanced performance, safety, and economy in engineering structures."

Sumner A. Leadbetter, a Distinguished Research Associate who retired from Langley in December 1980, was presented a NASA Exceptional Engineering Achievement Medal, "For recognizing the benefits and developing the technology of scaled-model dynamic testing and applying this technology to understanding the Space Shuttle structural dynamics behavior."

Space Shuttle Booster Recovery Team, "For significant contributions to development of the Space Shuttle solid rocket booster recovery system by initially recommending the selected concept and assisting in the establishment of a method of providing efficient aerodynamic deceleration for safe water impact;" **Space Shuttle Engineering Coordination Panel/Working Group Members,** "For outstanding contributions to the Space Shuttle Program through engineering direction, guidance, and coordination;"

Space Shuttle Model Design and Fabrication Team, "For exceptional achievement and performance in the engineering, design, fabrication, and timely delivery of numerous models to support the Space Shuttle Aerodynamic Test Program;" **The NASA Task Team for the EPA 1980 PEPE/NEROS Field**

A NASA Exceptional Service Medal is presented to Joseph R. Chambers, Assistant Chief of the Low-Speed Aerodynamics Division, "For outstanding contributions in both military fighter and general aviation stall/spin research leading to a fundamental understanding of high angle-of-attack flight dynamics and to improved safety and operational capability in aircraft design."



Everett C. Johnson of the Analysis and Computation Division is presented a NASA Exceptional Service Medal, "For outstanding technical achievements in operating system design and development supporting the realization of the Langley Research Center's STAR/CYBER 203 computer system as a major NASA computational facility."

Study, "For demonstrating the application of NASA development remote sensing technology to regional scale air pollution research of national concern;"

Tile Global Flow Analysis Team, "For development of a multi-tile internal flow analysis which allowed steady aerodynamic loads on tiles to be accurately defined;" **TPS Certification Test Data Review Team**, "For critically reviewing results from TPS Certification Testing and documenting findings on a test-by-test basis."

A NASA Group Achievement Award is presented for an outstanding accomplishment which has been made through the coordination of many individual efforts and has contributed substantially to the accomplishments of the NASA mission.

A NASA Group Achievement Award was presented to the **Solar-Pumped-Laser Research Team**, "In recognition of group achievement in carrying out a research program that culminated in the successful experimental demonstration of the world's first solar-pumped gas laser."

A NASA Exceptional Scientific Achievement Medal was presented to Dennis M. Bushnell, High-Speed Aerodynamics Division, "For outstanding contributions to research on boundary-layer control, drag reduction, and turbulence modeling."

Highlights of the STS-1 Awards Ceremony

NASA Salutes Space Shuttle Workers

Langley employees who have made significant contributions to the Space Shuttle Program were recognized during a special ceremony at NASA Headquarters September 15.

James M. Beggs, NASA Administrator, assisted by Hans Mark, Deputy Administrator, presented the NASA medals and certificates of appreciation.

The following message from Beggs and Mark is reprinted from the Foreword to the awards ceremony program.

"On April 12, 1981, a new era in our nation's space experience opened before us. As the Space Shuttle Columbia rose from its launch pad that day, it carried with it the hopes and dreams of tens of thousands of people across the nation who had worked so long and hard to make that day possible, and to millions of others in all corners of the world who saw in it the opening of a new era of opportunities in space. They were not to be disappointed.

"As Columbia returned to Earth, the hearts and minds of people everywhere soared first because of the successful entry and landing, but more importantly, because of the real meaning of the flight.

"The world now realized that space need no longer be so far away. As Columbia and its successors return from space again and again, they will bring with them more and more benefits for everyone.

"The flight of Columbia represents a technological achievement of the highest order. Only by hard work and, at times, anguish, can such achievement take place. Much of the world celebrated the triumphant flight. National pride swelled

Paul F. Holloway, Director for Space, was presented a NASA Exceptional Service Medal, "In recognition of significant contributions leading to the conceptual design of the Space Shuttle, the flight certification of the Thermal Protection System, the establishment of the vehicle's aerodynamic characteristics, and characterization of the flight control system which enabled a successful first flight of the Space Shuttle."

to heights many thought never could be reached again. The Space Shuttle has caught the imagination of America.

"But to those of you who took part in the Space Shuttle Program there can be a special feeling—the recognition that hard work, dedication and cooperation can overcome almost any obstacle— and the pride of knowing that you were part of the team that made it possible.

"Those to whom we present these special awards would, we are sure, be the first to say that they merely represent the thousands of workers who contributed their best to make Columbia possible. On behalf of a grateful nation, we extend our thanks for all of your efforts."

In addition to the NASA medals and certificates, NASA Group Achievement awards were presented as follows:

STS-1 Orbiter Aerodynamics Support Team, "In recognition of outstanding contributions in the development of the preflight aerodynamic data base which permitted the successful first flight of the Space Shuttle Orbiter;" **Langley Shuttle TPS Arc Jet Test Team**, "For innovative engineering to develop arc-tunnel configurations which could provide the necessary test conditions, and for conducting experiments to verify the capability of Space Shuttle TPS to withstand higher operating temperatures expected during the first flight entry trajectory;"

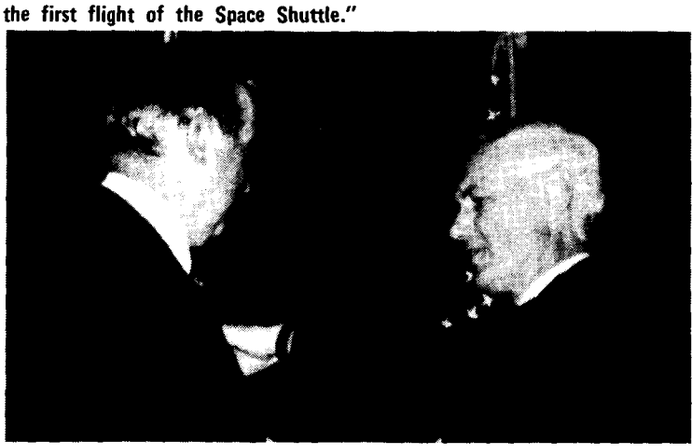
Baseline TPS Life Assessment Team, "For contributions to the more accurate definition of the tile loads and increased confidence in the structural integrity of the Baseline Thermal Protective System;" **Combined Loads Test on Orbiter Tiles (CLOT) Test Team**, "For outstanding contributions to the certification of the Shuttle Orbiter thermal protection tiles through the conception, design, and execution of the combined ascent-loads tests in the LaRC 8-Foot Transonic Pressure Tunnel;"

Shuttle Entry Flight Control Assessment Team, "For outstanding contributions to the development, certification, and successful flight of the Space Shuttle entry flight control system;" **Environmental Simulation Testing Team**, "In recognition of group achievement in planning and preparing a combined/sequenced environments test of a representative space shuttle structural/TPS panel and completing 16 mission simulations prior to first flight;"

Shuttle Tile-SIP Characterization Team, "In recognition of group achievement in providing critical structural response data and analysis to verify Shuttle tile integrity;" **Shuttle Orbiter Detailed Aerothermal Loads Team**, "In recognition of group achievement in conducting timely and comprehensive analytical and experimental studies of detailed aerothermal loads for various regions of the Space Shuttle Orbiter;"

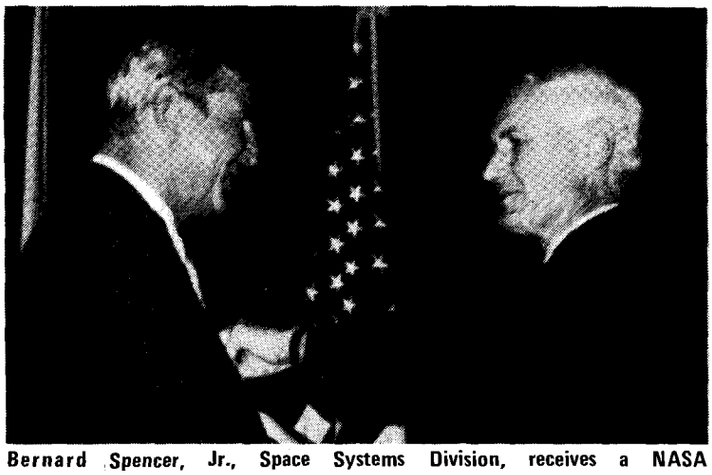
A NASA Exceptional Service Medal is presented to Dr. Ralph J. Muraca, Systems Engineering Division, "In recognition of his outstanding achievements in the structural assessment of the critical elements of the Space Shuttle Orbiter's Thermal Protection System for STS-1, clearing the system for flight."

William H. Phillips, a Distinguished Research Associate and former Chief of the Flight Dynamics and Control Division, is presented a NASA Exceptional Engineering Achievement Medal, "For exceptional engineering achievement in the advocacy, development, and implementation of a superior flight control capability, which was successfully demonstrated on the first flight of the Space Shuttle."

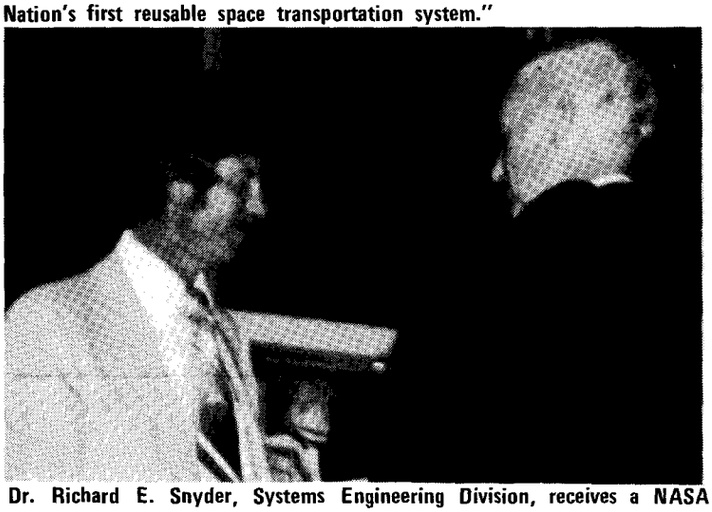


James C. Dunavant of the Space Systems Division receives a NASA Exceptional Service Medal, "For outstanding contributions to the development of Shuttle Orbiter aerodynamic heating prediction techniques both as an individual researcher and as a leader and member of national-level Shuttle Working Groups."

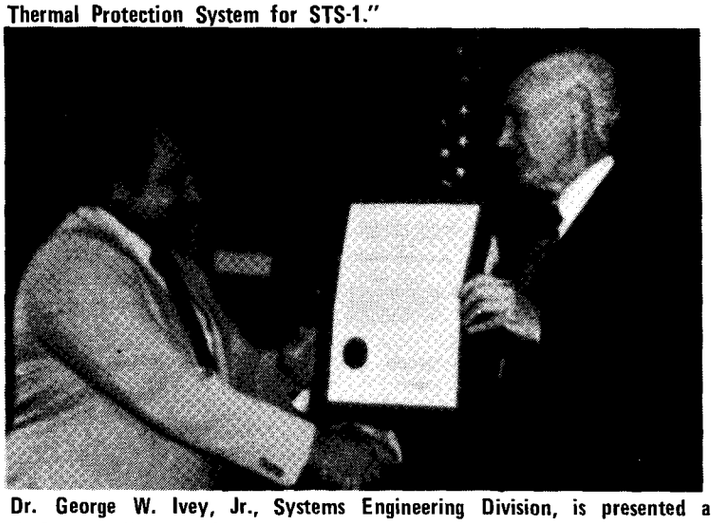
Space Shuttle Aeroelasticity Team, "In recognition of extensive and comprehensive wind tunnel studies throughout the shuttle development program that ultimately established the satisfactory aeroelastic characteristics of the Orbiter and the launch configuration."



Bernard Spencer, Jr., Space Systems Division, receives a NASA Exceptional Engineering Achievement Medal, "For outstanding individual contributions and direction to the aerodynamic/configuration development of the Space Shuttle Orbiter leading to successful accomplishment of the Nation's first reusable space transportation system."



Dr. Richard E. Snyder, Systems Engineering Division, receives a NASA Exceptional Engineering Achievement Medal, "In recognition of outstanding achievements and leadership in the test and analysis tasks required to insure the structural adequacy of the Space Shuttle Orbiter's Thermal Protection System for STS-1."



Dr. George W. Ivey, Jr., Systems Engineering Division, is presented a NASA Certificate of Appreciation, "For substantial contributions to evaluation and modification of the Shuttle Solid Rocket Booster and external tank venting systems and for conceiving and directing the development, validation, and application of a multi-tile flow analysis used to define aerodynamic loads for final clearance of the TPS for STS-1."

A NASA Exceptional Service Medal is presented to Dr. Paul A. Cooper of the Structures and Dynamics Division, "For outstanding leadership of a research team in structural mechanics studies of the Ceramic Thermal Protection System resulting in new understanding of the system behavior and technical data vital to first flight certification."

A NASA Exceptional Service Medal is presented to Dr. Donald R. Rummler, Materials Division, "In recognition of his exceptional technical contributions to the success of the STS-1 mission which included resolution of key materials issues, novel testing and analysis of simulated TPS models, and critical assessments of the overall TPS performance."

A NASA Certificate of Appreciation is presented to Dr. Gary L. Giles of the Loads and Aeroelasticity Division, "In recognition of his development of a Space Shuttle Orbiter insulation tile automated data management/nonlinear stress analysis system that provided rapid structural strength assessment in a few hours for literally thousands of tiles on an individual basis, thereby contributing significantly to the successful performance of the insulation tiles on the first Shuttle Orbiter flight."

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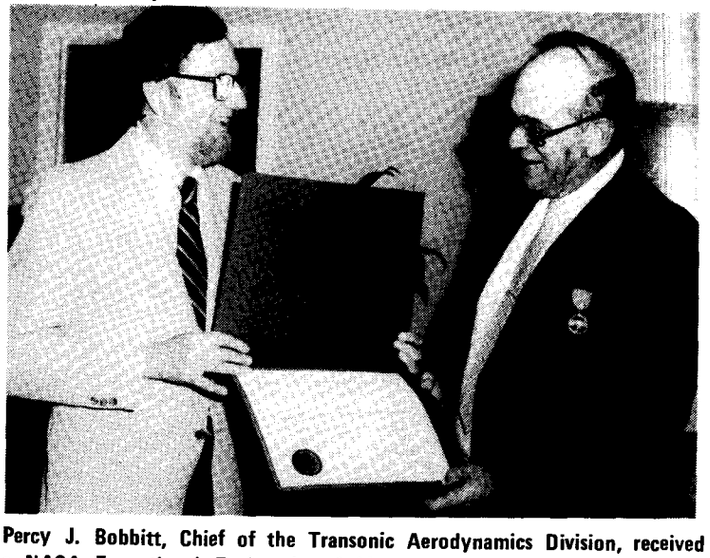
Eugene S. Love, former Director for Space, receives a NASA Exceptional Service Medal, "For outstanding leadership in definition of the shuttle design and systems characteristics during its formative stages and for major contributions to the technological base which made the successful flight of STS-1 possible."



Percy J. Bobbitt, Chief of the Transonic Aerodynamics Division, received a NASA Exceptional Engineering Achievement Medal, "In recognition of his outstanding efforts in the aerodynamic and aerothermal certification of NASA's Space Shuttle for first flight, including participation in critical Agency review committees, and the conception and execution of the Combined Loads Tests on Orbiter Tiles." His medal was presented at Langley by Dr. Hearth.

Robert C. Goetz, Director for Structures, received a NASA Exceptional Service Medal from Dr. Hearth in a separate ceremony at Langley. Goetz's medal was presented "For outstanding contributions to shuttle technology and for direction of a broad range of analytical and experimental TPS certification efforts for STS-1."

John L. McCarty, Structures and Dynamics Division, received a NASA Exceptional Service Medal, "For outstanding leadership in supporting the development of the landing and deceleration system and critical mechanisms." Dr. Hearth presented the medal to McCarty in a ceremony at Langley.

National Aeronautics and
Space Administration

Langley Research Center

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Langley Researcher

Volume 20 Issue 23

November 20, 1981

Ninety Percent of Columbia's Objectives Accomplished

Columbia Hailed as 'a Magnificent Machine'

Space Shuttle Columbia's second voyage to Earth orbit proved that the spacecraft is reusable. The crew called Columbia "a magnificent machine," and it performed flawlessly during launch and landing.

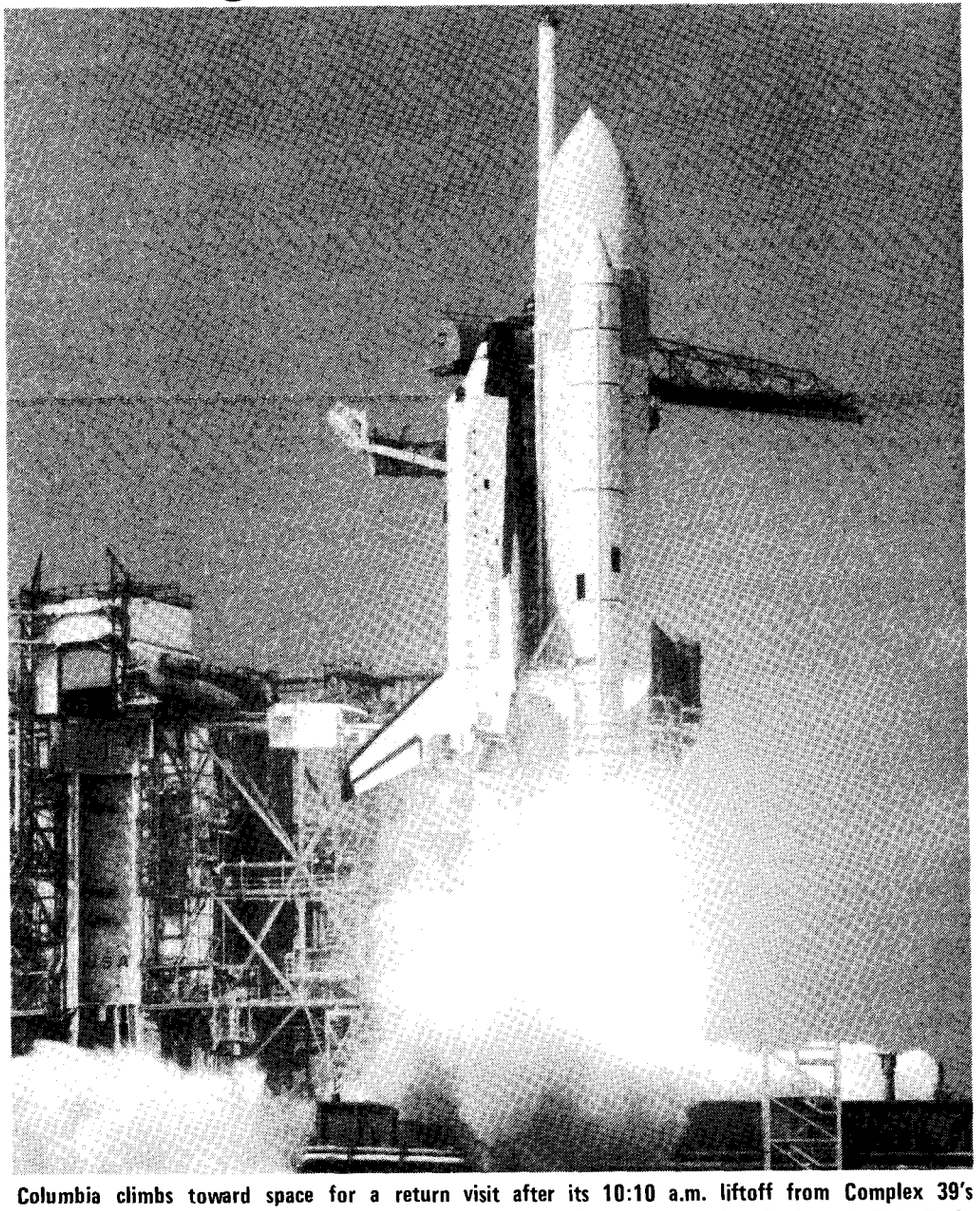
Despite problems with its power systems, Columbia accomplished "90 percent of its objectives," according to JSC Director Chris Kraft.

- The Remote Manipulator System was operated for just under three hours, and worked as planned.
- The OSTA-1 experiments, including two from Langley, were operated through most of the truncated mission. The MAPS instrument recorded up to 35 hours of data, and the FILE camera recorded 45 frames of photographs.
- The Thermal Protection System again protected the spacecraft, and there seems to be very little damage to any of the tiles, certainly much less than on the first flight.
- The extreme pressures that occurred during the first launch were greatly attenuated by the revamped water purge system on the launch pad.
- Landing phase maneuvers successfully tested the aerodynamic qualities of Columbia during the final glide to Earth.

Langley researchers began data analysis of their experiments this week; a detailed report on experiment results will be in the next issue of the Researcher.

Analysis of Columbia's power system problems will begin when the spacecraft returns to the Kennedy Space Center. It is scheduled to begin its piggy-back flight across the country on November 23, arriving at KSC on Thanksgiving Day.

The third flight of Columbia is now set for late March 1982.



Columbia climbs toward space for a return visit after its 10:10 a.m. liftoff from Complex 39's Pad A Thursday, November 12. Aboard the Space Shuttle, Astronauts Joe Engle and Dick Truly man the Columbia's cockpit on the ship's second journey into orbit. On its second mission, the Columbia is carrying a payload of science and applications experiments and a Remote Manipulator Arm--a mechanical arm designed to handle cargo in orbit.

— photos by Bob Nye and Bill Salyer

Ralph Muraca and Don Hearth were among approximately 300 employees who anxiously watched the final minutes of the countdown prior to the second launch of the Space Shuttle Columbia Thursday, November 12. The crowd that gathered in the Activities Center applauded and cheered as the Columbia lifted off the pad at the Kennedy Space Center, following several delays.

Home Computer Demonstrations Featured at NASA Visitor Center

It's tax time. You push a few keys and your home computer retrieves all your financial records for the past year. Or maybe you have a strong desire to learn Russian. For a nominal fee, you purchase a program that will teach you Russian at your own pace, in your own home and with plenty of positive and immediate reinforcement.

Computers, as 250,000 home computer owners in America will testify, are no longer just for businesses. They have become a valuable, as well as entertaining, addition to the American home.

Area owners of home computer systems will give demonstrations of home computers November 21, 22, 28 and 29 from 12 to 4:30 p.m. at the Visitor Center. Members of the Peninsula Apple Core, a club for owners of Apple computers, will be giving the demonstrations and will be on hand to answer questions.

Peninsula Apple Core President Bill White believes that having a home computer is an excellent way to learn about computers. "In some ways, everyone will be dealing directly with computers by 1990," he says. "We're seeing some of this now with cash flow cards and computerized banking machines."

The possibilities for home computer use seem almost limitless. The systems can be used for financial management -- checkbook balancing, record keeping and income tax preparation are a few applications. Home heating and cooling control and home security monitoring are also possibilities. The variety of education programs now available for home computer systems is quite diverse, ranging from simple arithmetic to music to the most complex of subjects. As White stresses, many school systems now make use of computerized learning because the experience is enjoyable and highly individualized.

The popular arcade-type games are available for home computers, as are skilled pastimes like bridge and chess and role-playing adventure games such as "Dungeons and Dragons." Skill levels for games can often be adjusted to that of the players. For a fee, the home computer owner can hook up with a communications network via his home telephone. The network can be used to receive news, stock reports, order tickets, do research, or make purchases -- to name just a few possibilities.

AIAA to Hear Reeder

John P. "Jack" Reeder, former Chief of the Terminal Configured Vehicle Program Office, will discuss his flight experience with vertically rising aircraft at the next meeting of the Hampton Roads Section of the American Institute of Aeronautics and Astronautics.

Reeder will show and narrate a number of film clips concerning his flying career Tuesday, November 24, at the Activities Center at 5 p.m. A social will begin at 4:15 p.m.

Reeder, NACA's first helicopter pilot, was a test pilot at Langley from 1938 to 1965 and has flown and tested some 233 different aircraft types. He is best known, probably, for his pioneering in rotary wing and V/STOL aircraft aerodynamics, performance and handling characteristics.

For reservations, call extensions 3124, 2498 or 2483.

Thanks

Ed Kilgore writes, "I would like to express my thanks to my many friends who attended the recent reception for me at Langley. All the gifts are much appreciated, especially the NACA wings, which every NACA alumnus cherishes. Langley is a great organization with exceptional people and it was my privilege to have worked with you for many years."

William M. "Bill" Johnson writes, "The 'social' given me by friends and associates October 23 was super. Sincere thanks to everyone who contributed, participated and attended. The useful gifts will be reminders of all of the good associations I had during my years of service at NACA/NASA."

The *Langley Researcher* as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond
Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

Deputy Director Speaks

R&T Report Gives Good Overview

This year, at the suggestion of Dr. Frank Hohl, Chief Scientist, every Langley AST will receive a copy of the 1981 "Research and Technology" report. This report consists of summaries of over 100 research tasks taken from a broad spectrum of our aeronautics and space activities. It provides an excellent overview of the breadth and depth of our research programs.

The prime purpose of the "R&T" report is to give outsiders such as NASA Headquarters, the Office of Management and Budget, Congress, and the public an accurate picture of the Langley research program. However, it can be equally useful in informing us and our peers about on-going work. Many of you have expressed a desire to know more about the research going on in other organizations at Langley. I encourage you to read this report and follow up with personal contacts in areas of particular interest. Dr. Hohl, Don Hearth, and I believe this type of knowledge and communication will help all of us do a better job. If you would like more copies of the "R&T" report, or did not receive one, please contact Ed Prior at extension 2664.

Dr. Hearth and I would like to thank all of you who helped create the report, particularly the individual researchers and research teams who prepared the initial drafts and figures. Your efforts resulted in an excellent, worthwhile report.

Pete

Richard H. Petersen

Status Review Set For Monday

The agenda for the Monthly Status Review is given below, so that researchers may attend talks of particular interest. The review is held on the fourth Monday of each month in Room 225, Building 1219. The December MSR will not be held because of the holidays.

The following technical sessions are planned for Monday, November 23; the morning session will begin at 8:30 a.m. and will include presentations by:

Structures

- Energy Absorption of Composite Materials
- Some Advances in High-Speed Propellers and Helicopter Rotor Noise Prediction Techniques

Aeronautics

- Status of Turbulent Drag Reduction Research
- 3-D Rotating Disc Stability Experiments

Projects

- UARS Status
- UARS Science
- In-House HALOE Instrument Build

The morning session will also include presentations by Management Operations and the Senior Staff Office.

The afternoon session will begin at 1:30 p.m. and will include presentations by:

Electronics

- Large Space Systems Control-Overview
- Systems Identification Technology Development for Large Space Systems
- Control Research for Large Space Systems

SE & O

- SE & O Overview
- NTF Update
- The NTF Shakedown Plan

Space

- Interactive Modeling, Design, and Analysis of Large Spacecraft
- The Role of In Situ Measurements in Tropospheric Research
- Development of a Stratospheric General Circulation Model

The review will be concluded by 4 p.m. Copies of the complete agenda will be available at the meeting or may be obtained by calling Raoul'd M. Price, ext. 2417.

Aerospace Penpoints

by Wesley Berryman

Never tell people how to do things. Tell them what to do and they will surprise you with their ingenuity.

Gen. George S. Patton, Jr.
(Born Nov. 11, 1885)

Thought for Thanksgiving

Festive breezes agitate
Autumn's frigid glare,
lift the pious – mind and heart –
to exhilaration.

Wilted lilies slumber, wait
for Spring's explosive fare.
The thankful feast, impart
deep gratification.

– Aarno Davidson

Gifts of Gratitude

If children are taught
to give in the spirit of love,
they will find a treasure
in giving, living, and loving,
no matter the cost or measure.

– Starlette L. Howard

Recent Retirees

Paul B. Gooderum, Transonic Aerodynamics Division, retired October 29.

Harry B. Topping, Operations Support Division, retired November 11.

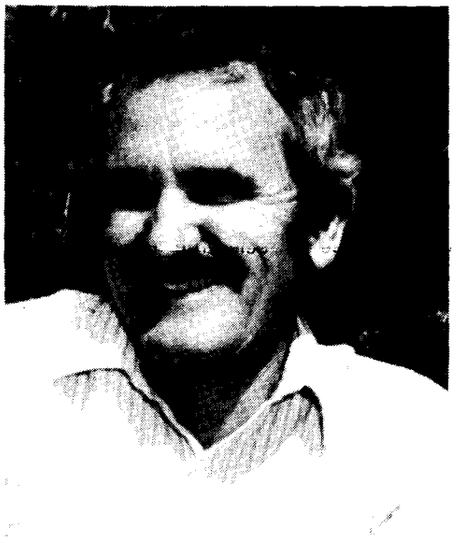
Personnel Profiles

A Quartet to Admire

by Allan C. Hanrahan

Mention quartets and people will variously think of The Statler Brothers, The Oak Ridge Boys, or of course, The Beatles. Well, we have another notable quartet for you; however, the foursome of FREDERICK D. JONES, ALTON T. MOORE, WILLIAM C. SALYER, JR., and DON W. WARD are not musicians but they do harmonize when it comes to youth sports because all are active in that endeavor.

They are also all "in tune"--to carry the music analogy further--when it comes to their duty stations for they are all "upbeat" employees in the Photographic Branch of the Research Information and Applications Division, and all sang their first lusty postnatal notes on the Peninsula.



FRED JONES, for example, was born in Newport News. He grew up there and in Hampton, where he graduated from high school in 1957, and worked for the Boat Factory and Ma Bell before coming to the center in October 1958, first working in Plant Maintenance. Photographic experience in the Naval Air Reserve precipitated a transfer and he is now a Scientific and Technical Photographer.

"I also enjoy nature photography," Fred admitted, and right here at the center he has photographically captured such subjects as a deer, dove and raccoon. But his interests also include memberships in the Elks and the NASA Runners Club, Civil War relic hunting and reading.

"I'm a Civil War buff," he admitted, and his reading reflects that; the "Civil War Times" and Bruce Catton's "Triology" are favorites of his. He is presently reading a contemporary novel, "The Fire Starter," presented him by his daughter, Kelly, a junior at Longwood. Fred's wife, Sandra, a native of Massachusetts, also works at Langley, by the way. She is an administrative assistant with George Washington University.

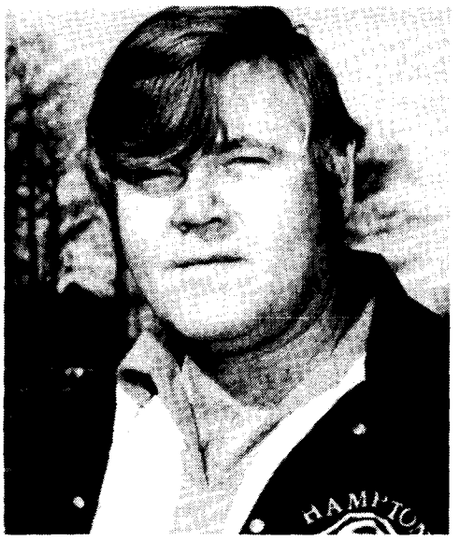
If not Fred's main interest, then surely his most time-consuming one, is his involvement with youth football. He coached a team in Hampton for six years, 1958 to 1964, then took a six-year break, and for 10 more years, 1971 to 1981, he coached in York County.

"I stopped last year to take another break," he admitted, "and I got into something worse," he laughed. "Coaching is easier," he said, making the comparison between that and the job he has now: general manager for the York Patriots, three teams of different age-ranges that belong to a league that receives no public monies but relies on donations and the aid of volunteers such as Fred. Appreciative of all support received, he singled out the Fleet Reserve's gift of $1,000 toward new equipment. He downplayed his own efforts but did state: "We feel that we have helped them (the youths) along in some way . . . It's a type of work that is rewarding."

* * *

"I'm on the inactive reserve this year," said ALTON MOORE, with a chuckle, referring to his coaching of youth baseball for the Phillips Athletic Association of the Fox Bridge area of Hampton. However, he has coached a baseball team comprised of boys 8 to 13 years of age, for eight of the last nine years, and is taking a year's hiatus because of his presidency this year of the Optimists Club, "The one and only club I've ever joined," he said. We noted the irony in that and talked with him about the Optimists Club, its recent resurgence in this area, its fund raising, sponsorship of oratorical competitions and baseball tournaments ("We picked up a lot of new members that way," Fred revealed) and, in general, its service to the youth of the area.

Another activity occupying Alton's



time: he films the Hampton, Bethel and Kecoughtan football games, which is a behind-the-scenes assistance to high-schoolers because most scholarship offers are based on what college scouts see on the game films. So Alton feels he's contributing something there, also; besides, "It's fun," admitted Alton, who added, "I've got an understanding wife." He and his wife, Mary, a native of the area, are the parents of four children: Robin, age 9; Lisa, 14; Robert, 21; and Gayle, 22. Gayle recently made Alton a grandfather when she gave birth to Laureen Michelle.

Alton, a resident of Hampton for the last 23 years, was born in Poquoson and graduated from Poquoson High School in 1955, coming to work at the center the following October. He is the Assistant Head of the Photographic Branch.

* * *

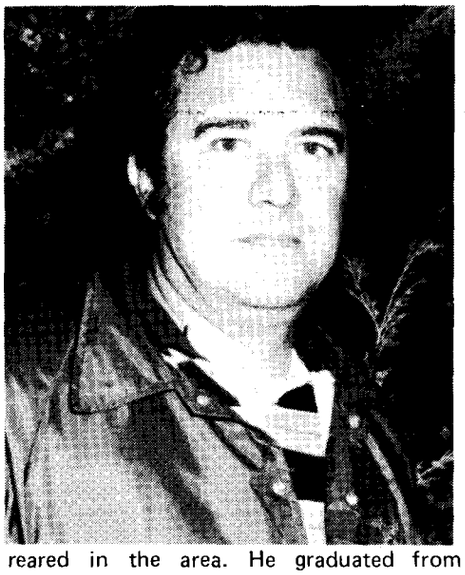
Moving up the Peninsula to Williamsburg we encounter BILL SALYER, a center Scientific and Technical Photographer by day, and by evenings and weekends during the summer and autumn a baseball and football coach, respectively.

"That's a real joy," said Bill, of coaching. Both teams are comprised of Williamsburg youths 8 to 10 years of age, and the baseball team has been coached by Bill ". . . on and off for 15 years," he guessed, and continuously for the last five years. Prior to this year, Bill's association with the football team, named the "Orange Crush," was helping his brother over a two-year span. The baseball team, which sports the moniker,

the "Green Athletics," precipitated Bill's managing of the annual Williamsburg Youth League baseball tournament, and he was quick to acknowledge the participation of other center employees who served as coaches and whose teams played in the tournament: Ross Phillips of the Projects Management Systems Division (NTF) and Gary Carl of the Systems Safety, Quality and Reliability Office were two he mentioned specifically.

As already noted, Bill enjoys his coaching, although "I feel like when November comes around I need a break," he said. "But then I don't know what to do with myself for two months. By the time I get used to it (the inactivity) over the next two months, it's time to start up for baseball again."

Bill is a member of the Quarterbacks Club of Williamsburg, hunts ". . . once in a while," he said, and also keeps busy serving as the photographer for Cub Scout Pack No. 103 of Williamsburg. Bill is a native of Williamsburg, born and

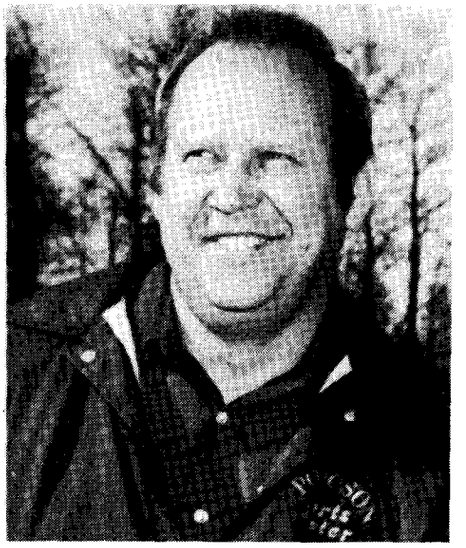


reared in the area. He graduated from York High School in 1959, attended photography school in New York City, and worked for photographic studios in Hampton and Newport News before coming to the center in July 1961.

His wife, Debbie, hails from Roxboro, N.C., and their children include Greta, 13; Tee, 11; Brian, 10; and Keith, 8.

* * *

Closing the square of our foursome of fortitude is DON W. WARD, also a Scientific and Technical Photographer, and the coach of a team in the Poquoson Youth Football League. Of his 12 years of coaching Don remarked, "It's been a lot of fun."



Don has a long-time connection with football. After high school he attended Fork Union Military Academy and Randolph Macon, each for a year, and he played ball at both schools. For the last 17 years he has been filming the games played by Poquoson High School, his alma mater, class of 1956. Moreover, for a three or four year stretch he also filmed the Shipyard Apprentice School games.

Don reminisced a bit about his coaching: "When we first got started 12 years ago we were hurting for money . . . I called on Paul Holloway (Office of Director for Space) to help us," he remembered, "and he really helped . . . served as business manager.

Don appreciatively mentioned others: "Sid Pauls (Office of Director) stayed with us for six years, helping me coach, and Robert Evans (Fabrication Division) stayed with the team for 11 years. This is the first year Evans hasn't been able to help. He's 'paid his dues,' I'll tell you."

Don is also a member of the Poquoson Sports Boosters Club, which is understandable since he is a native and life-long resident of Poquoson, except for three years spent in the Army where he attended photographic school. Although he had worked at the center prior to entering the service, it was after he was discharged that he came back to the center for good; that was in December 1964.

Don and his wife, Elizabeth, a native of Abingdon, Va., are the parents of Bill, 12, and Anna, 6.

* * *

How does one wrap up a piece like this, about four gentlemen like Fred, Alton, Bill and Don? Sid Pauls did it for us when he said, "They're a fine group of 'fellas' and I'm glad to be associated with them."

In Memoriam

Dr. Carl Kaplan, who worked at Langley from 1932 to 1956, died in Baltimore November 8.

He was fomer Chief of the Theoretical Aerodynamics Division.

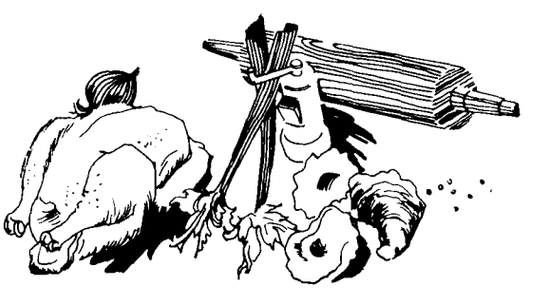
Kaplan joined the Langley staff as an associate physicist in the Physical Research Division, headed by Theodore Theodorsen, where he specialized in fluid dynamics and compressible flaw aerodynamics.

He was Chief Scientist of the Aeromechanics Division with the U.S. Air Force Office of Scientific Research from 1956 until he retired in the early 1960s, when he joined Johns Hopkins University.

Kaplan held a doctorate from Johns Hopkins University and was a Fellow of the American Institute of Aeronautics and Astronautics.

I. E. Garrick, a longtime friend of Kaplans and a Distinguished Research Associate at Langley, remembers Kaplan as a cheerful man. "Many of his old time friends will recall his cheerful outlook on life, despite an early bout with facial cancer, and the cynical and humorous touches that he added to any conversation."

Happy Thanksgiving



Small Tail in Front May Make Light Planes Safer

Researchers at the Langley Research Center, trying to enhance flight safety, are helping to make light planes inherently stall and spin-resistant.

Aircraft safety and efficiency is the focus of work at Langley and NASA's other leading aeronautical centers -- Ames Research Center, Dryden Flight Research Center, and Lewis Research Center.

During the past decade, more than 100,000 Americans were involved in more than 39,000 light plane accidents, according to a recent report by the National Transportation Safety Board.

Nearly one in four of those accidents are believed to have been due to loss of control after the planes were either purposely or accidentally maneuvered into a stall or spin.

One promising development in stall and spin prevention research is the rediscovery of the canard -- a miniature wing that sprouts from the aircraft nose area.

The canard is the most recent focus of a NASA research program aimed at making light planes safer. Joe Chambers, Assistant Chief of the Low-Speed Aerodynamics Division, strongly believes that "the aircraft tail-first, canard configuration is the shape of light planes for the 1990s."

The potential advantages of some of these far-out looking canard-configuration aircraft are very promising, both in terms of safety and efficiency.

The canard was first proven effective by the Wright brothers at the turn of the century. Since then, it has been largely neglected due to early patent considerations and occasional flight handling problems.

The rebirth of the canard is being hastened by the booming market in home-built airplanes. Several designer-manufacturers are selling airplane kits to the public that include this forward, horizontal wing surface, in part because of fuel efficiency.

A demonstrated safety advantage, however, is what intrigued Langley researchers when they approached the designer of the VariEze, a novel-looking home-built airplane with canard, no horizontal tail, and a rear propeller engine. Constructed and flown by more than 400 kit builders in the United States, this two-seater (and others similar to it) have amassed an impressive stall-spin safety record.

A stall -- loss of wing lift and, thereby, loss of aircraft control -- generally occurs at low speeds and at certain flight attitudes, though stall can occur at any speed with gross and abrupt control inputs. A stall can cause a plane to veer sharply off course and out of control into a spin. Spins in some airplanes are unrecoverable.

Tests of a VariEze scale model in Langley's Spin Tunnel confirmed that, properly "loaded," the plane is virtually impossible to spin.

Its unique configuration, a combination of canard and narrow, swept main wing with vertical "winglets" at the wing tips, has a built-in resistance to aircraft stalling or spinning. Winglets, an invention of Langley's Dr. Richard Whitcomb, have already proven to be a fuel-efficient concept.

Another series of tests, however, revealed a problem already experienced by several VariEze owners under certain specific conditions that can result in a lateral stability problem. In "free-flight" tests in Langley's 9- by 18-meter (30- by 60-foot) Wind Tunnel, at low speeds and with the nose high, a model flew with a violent rolling oscillation, or wing rock. After study, researchers solved the problem with a simple modification of the main wing. Burt Rutan, the creator of the VariEze, immediately conducted a full-scale flight test with a modified wing, found it had indeed solved the problem and promptly recommended the change to all VariEze owners.

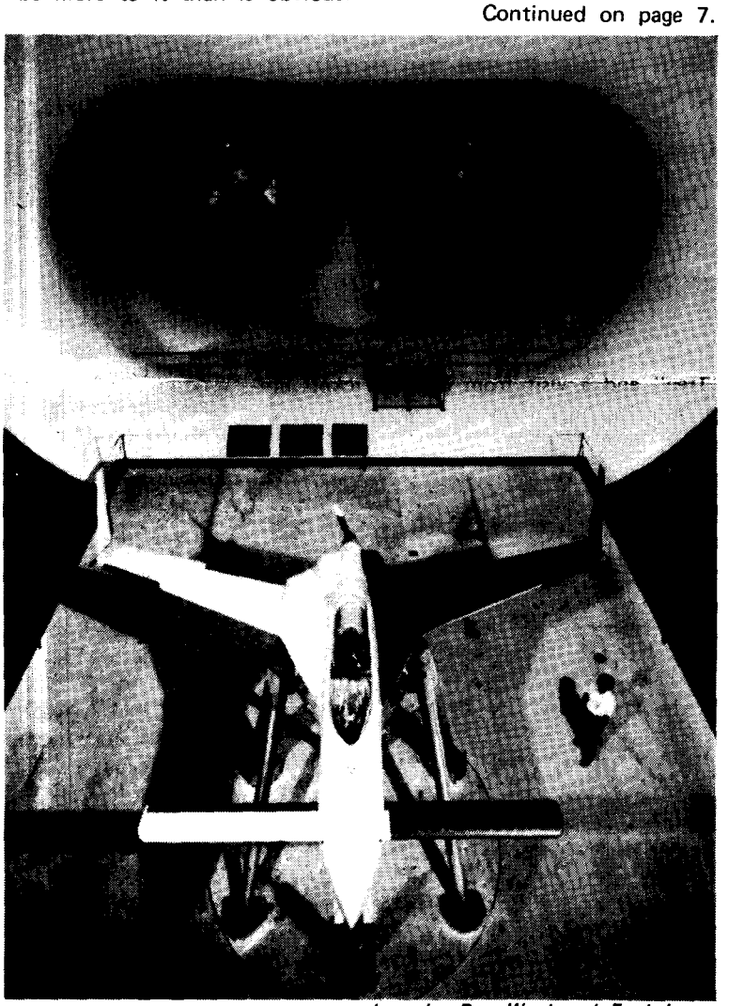
The last phase of wing tunnel testing planned for the VariEze has recently been completed in the wind tunnel. A full-scale VariEze, built in Langley's model shop, contributed detailed data about the complicated relationship of canard and wing placement, and their thickness and shape.

"We're also correlating this experimental wind tunnel work," Chambers says, "with computer codes to predict flight characteristics and hope, ultimately, to end up with a 'cookbook' for designers which can be used to quickly and easily design advanced configurations."

Joe Johnson, head of the Dynamic Stability Branch, points out that "we're really documenting the flight characteristics of an airplane already successfully flying (the VariEze).

Once we understand the reason for these things, then we'll know how to apply the answers to something else. There may be more to it than is obvious."

Continued on page 7.



– photo by Don Ward and Fred Jones

This unusual canard (tail-first) configuration recently completed a two-month series of tests in Langley's 30- by 60-Foot Wind Tunnel. NASA is studying ways of building flight safety into lightplanes through use of canards and other aerodynamic devices. In this full-scale "VariEze," part of the area normally reserved for a second seat and baggage is occupied by a large electric motor installed for test purposes.

Happenings

HAPPY HOUR, the last one for 1981, will be held today from 4 to 7 p.m. in the Activities Center. Bluegrass music will be provided by "Crabgrass."

BASKETBALL: The final organization meeting for the 1982 NASA Basketball League will be held at the Activities Center Tuesday, December 1, at 4:30 p.m. There are 30 teams interested in 24 slots. Teams not represented at this meeting will be put at the bottom of the list. Telephone calls are not sufficient for entering a team.

BLOODMOBILE. The Red Cross Bloodmobile will be at the Activities Center from 9 a.m. to 3 p.m. Wednesday, November 25. For information or an appointment, call the Health Unit, ext. 3976 or 2246.

NAGS TRIP TO NEW YORK. There are four seats available on the bus to New York December 3 – 6. Call Betty Joyner, ext. 3285, for more information.

CHRISTMAS PARTY. The Children's Christmas Party will be held December 6 at 2 p.m. in the Activities Center. Entertainment will include Walt Disney's "Almost Angels" and "Pluto's Christmas Tree" and a visit from Santa. Tickets are available for $1.50 in the Activities Office.

– photo by Bob Nye

A special plaque recognizing Langley Research Center's outstanding contributions to the manned spaceflight program is now exhibited in the Langley Visitor Center. The plaque, presented to Langley by Christopher Kraft, Director, of the Johnson Space Center, bears an American flag carried to the Moon during the Apollo 17 mission.

NASA Dog Training School News

Fall activities of the NASA Dog Training School included competition in obedience trials and participation in the Thomas Nelson Community College Saturday Kollege for the Youth (SKY) program for sixth, seventh and eighth graders.

Nancy Hinman and Golden Retriever Nutmeg (bred by Doris Bryan, PRD) completed requirements for Companion Dog (CD) title by taking top honors in Novice A class at Merrimac Dog Training Club Trial in Newport News and placing second at the Hampton Roads Obedience Club Trial in Norfolk. Wayne Dochterman and Black Labrador Susie completed Companion Dog title at the Norfolk trial. Midge Fagan and Yorkshire Terrier, Chrissy, received two qualifying legs at the Salisbury, Md., trials. Chrissy, bred by Midge, had had two owners and was abused when she returned to Midge. This little dog has overcome many problems and has made quite a comeback.

The first SKY class of 14 sixth, seventh and eighth graders completed a six-weeks course November 1, with Doris Bryan as instructor. This course included basic obedience instruction followed by a costume class, tricks, and competition on a gymkana course of 10 obstances (including walking a board and through a tire, Jumps – high, bar, broad, water, and circling penned ducks, etc.) Dawn Hedden and mixed breed, Peanut, were the winners of the gymkana course in a record time of 26 seconds. Several class participants are 4-H'ers who plan to compete at the 4-H Dog Show during the State Fair in September 1982.

Small Tail

Continued from page 6.

Johnson adds that one reason for the tests is to document the airplane's aerodynamic efficiency -- which is considerable -- without specifically trying to improve it. The airplane is exceptionally streamlined and lightweight, making use of foam sections covered with a seamless, lightweight composite material much like fiberglass. Advanced construction techniques is another area NASA will investigate in its light plane research.

The VariEze tests began more than two years ago when Langley research pilots Jim Patton and Phil Brown put the plane through its paces at the designer's facility in the Mojave Desert.

"We performed a qualitative but pretty accurate evaluation of the VariEze's handling qualities, as good as possible without test instruments," recalls Patton, "and we thought its built-in resistance to stall very impressive."

One negative characteristic obvious to anyone who has flown the plane is that the canard is attached in a position that somewhat reduces pilot visibility during takeoff and landing. VariEze wind tunnel data, still being analyzed, is expected to determine whether the canard can be placed lower on the fuselage, more out of the pilot's sight, without sacrificing its excellent flight safety qualities.

NASA plans to continue tests with twin-engine versions of the VariEze configuration and other unusual canard designs, including possible canard application to larger aircraft such as commuters.

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WASHINGTON DC 20546

Retirement Parties

Robert W. Leonard will be honored with a retirement party (hors d'oeuvers and cash bar) Friday, December 4, from 6 to 9 p.m. at the Activities Center. The cost, including the gift, will be $7 per person. Contributions to gift only are welcome. For reservations, please send check to Wayne Loer, Mail Stop 158, by November 30.

Lawrence T. "Tiggie" Parker, Operations Support Division, will be honored with a retirement party (hor d'oeuvers and a cash bar) December 1, at 6:30 p.m. at the Activities Center. The cost including gift, will be $5.50 per person, $11 per couple or $1 for gift only. For reservations, please send check to Archie Norton or Ernest Moore by November 25.

swap and shop

FOR SALE

Articles

Manual dough hook (kneader), $40. Call Belle, 244-7040.

Sears Shredder/Bagger. Used less than 10 times. $150. Call 877-1020.

Vehicles

Bicycle: Lady's three-wheel bike with basket, $45. Call Belle, 244-7040.

Ford Galaxie: 1969, 390 engine, high mileage but good condition. Call 898-9583.

Schwinn heavy-duty, 26"-wheel boy's bicycle, single speed, coaster brakes; ideal for paper carriers; less than one-year old; $182 new, will sell for $135, OBRO. Front basket available. Call J. Drummond, ext. 2934 or 722-0710 after 5 p.m.

WANTED

Anyone with a dream or the desire to be successful. ACCESS (Associates in Collective Cooperation with Eacker Sandberg Services) is looking for a few ambitious men and women who want more out of life. For information call Dr. Sandberg, 596-8399 after 5 p.m. or anytime on weekends.

To clean carpets professionally using Electrolux circular dri-foam method. This method cleans carpet deep down and adds silicone protectant so carpets stay clean longer. Call Scott Higdon, 595-4636 after 5:30 p.m. or weekends.

One person to complete four-person car pool from Elmwood-Croaker area of Williamsburg on 8 a.m. shift. Call Steve Tompkins, ext. 2143, or Bill Lee, ext. 3273.

Another member for a car pool from Norfolk (Colonial Place area) to NASA on 8 a.m. shift. Call Fiesy, ext. 3917 or 625-7558.

1982 Calendars Available from Stock

Requests for 1982 desk and wall calendars can be submitted to the Stockroom, Mail Stop 382, on NASA/Langley Form 55, for issue in December. Stock Numbers for the calendars are listed below:

NSN	DESCRIPTION
7510-01-023-0347	Calendar pads, flipover; size 3" x 3-5/8"(EA)
7510-01-020-7519	Calendar pads, executive, flipover; size 3-3/4" x 5-7/8" (EA)
7510-01-024-3146	Wall calendars, displays 3 months at a time; size 11-5/8" x 8-7/8" (EA)

In addition, the following item is available from stock for those who ordered the 6-ring binder last year, for use with the looseleaf appointment book:

7530-01-022-3571	Looseleaf Appointment Book Refill, daily and monthly calendar sheets; size 6-1/2" x 5-1/2" (EA)

Requests for other types of calendars from GSA (i.e., pocket planning sets, calendar desk blotters, 6-ring binder for the looseleaf appointment book) should be submitted on a Purchase Request, Langley Form 125.

Each branch secretary should submit branch and section requirements to reduce the number of requests. Other stock supplies should not be ordered on the same request.

cafeteria menu

WEEK OF NOV. 23 — 27

MONDAY: Old Fashioned Bean Soup; Hot Roast Beef Sandwich; Italian Sausage over Spaghetti; Baked Half Chicken. Snack Bar: Reuben Sandwich; Chicken Breast; Egg Salad.

TUESDAY: Bull Island Clam Chowder; THANKSGIVING DINNER $2.00, Roast Turkey Breast w/Dressing, Gravy & Cranberry Sauce OR Ham Steak w/Apple-Raisin Sauce PLUS Two Vegetables, Rolls & Butter, Pie, and any Beverage. Snack Bar: BBQ; Hamburger; Hot Dog.

WEDNESDAY: Vegetable Soup; Braised Chicken Livers; Crab Cutlets. Snack Bar: Sausage Pizza; Polish Sausage; Chicken Breast.

THURSDAY:

HAVE A
HAPPY
THANKSGIVING DAY!!

FRIDAY:

CAFETERIA IS CLOSED TODAY!!

WEEK OF NOV. 30 — DEC. 4

MONDAY: Ham & Lima Bean Soup; Hot Roast Pork Sandwich; Chicken Pot Pit; Chuckwagon Steak. Snack Bar: Hot Italian Sausage Sub. Chicken Breast; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Spaghetti Dinner; Chicken Chow Mein; Baked Beans & Franks. Snack Bar: Charcoal Hoagie; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; Beef Tips over Rice; Quiche Lorraine. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Vegetable Soup; Braised Chicken Livers; Crab Cutlets; Beef, Macaroni & Tomatoes. Snack Bar: Deluxe Sub; BBQ; Port Thriller.

FRIDAY: Turkey Noodle Soup; Fish Dinner; Beef Enchiladas; Knockwurst Reuben. Snack Bar: Chicken Breast; Hot Ham & Cheese; Tuna Salad.

National Aeronautics and
Space Administration

Langley Research Center

NASA

Langley Researcher

Volume 20 Issue 24 December 4, 1981

Systems Engineering and Operations Directorate

Geer to End NASA Career

E. Barton Geer, longtime Director for Systems Engineering and Operations and, for the past three months, Special Assistant to the Acting Director of that organization, will leave NASA's Langley Research Center December 11.

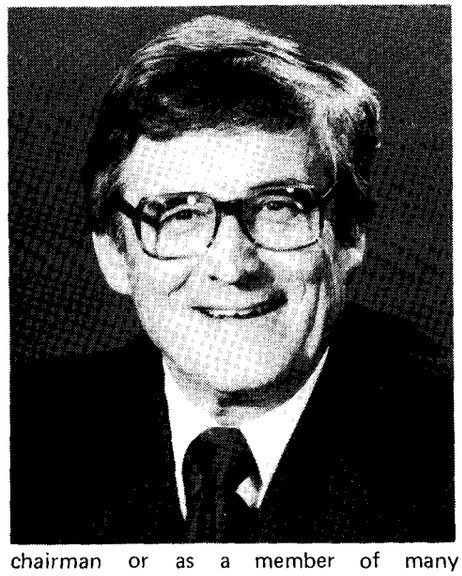
Director for Systems Engineering and Operations from April 1972 to September 1981, Geer managed the activities of five divisions: Fabrication, Systems Engineering, Research Facilities Engineering, Operations Support and Plant Engineering.

He was responsible for engineering, design and construction of the $85 million National Transonic Facility, a national test facility employing the cryogenic concept to achieve high Reynolds numbers at transonic speeds to serve the needs of NASA, DOD, the aircraft industry and the university community.

He also provided the engineering leadership and was responsible for the construction of the new $10 million Refuse-Fired Steam Generating Facility, a joint project involving NASA, the City of Hampton and the Air Force to help solve local refuse problems as well as to save energy.

Geer joined the Langley staff in May 1942 as a mechanical engineer and in October 1954 was named Head, Systems Engineering Section. In July 1960 he became Head, Systems Engineering Branch, Engineering Services Division; in May 1962 Associate Chief of the Flight Vehicles and Systems Division; and in June 1965 Chief of FVSD, subsequently renamed Systems Engineering Division. He was Spacecraft Manager for the Viking Project from November 1969 to April 1972.

Geer is a recognized expert in the field of engineering and systems integration of flight vehicles and has served as a consultant to NASA and to private industry. He has served as

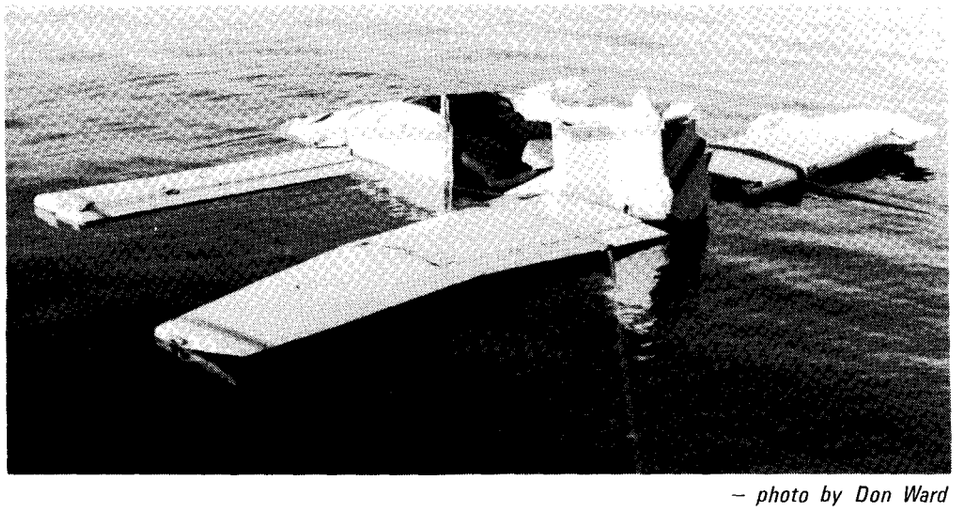


chairman or as a member of many committees and panels concerned with the reliability, compatibility and engineering of flight vehicle systems.

In 1967 Geer was a member of the seven-man Apollo 204 Review Committee which reviewed the most probable cause of the accident that took the lives of three astronauts at the Kennedy Space Center.

In 1969 he participated in the Operational Readiness of the Manned Spacecraft Center's Lunar Receiving Laboratory which received samples of all lunar material from the moon's surface.

Continued on page 6.



– photo by Don Ward

A Piper Advanced Technology, PAT-1, aircraft crashed in the Chesapeake Bay Thursday, November 19, taking the lives of Wendell W. Kelley and Paul F. Coy, Langley employees; and George Mead, designer of the plane and an executive with Piper Advanced Technology, Inc., Wichita. A committee of aeronautical specialists is investigating the aircraft accident. The cause of the accident is not yet known. This photograph shows the wreckage of the experimental plane as it floated in Chesapeake Bay. See the "In Memoriam" column on Kelley and Coy on page 3.

Shuttle Teams Honored at Ceremony

A ceremony was held in the Activities Center Tuesday, November 24, to honor individual members of the teams receiving NASA STS-1 Group Achievement awards.

Approximately 300 Langley employees and contractors received certificates for their work on the Space Shuttle Program.

– photo by Hubert Lloyd

J. Philip Drummond and Elizabeth H. Weidner of the High-Speed Aerodynamics Division receive awards from Robert E. Bower, Director for Aeronautics, for the Outstanding Publication in the Aeronautics Directorate for 1981. The paper, "Numerical Study of a Scramjet Engine Flow Field," was presented by Drummond at the AIAA 19th Aerospace Sciences Meeting in St. Louis on January 13, 1981.

MAPS and FILE Data Being Analyzed

Analysis continues on results from the two Langley experiments that flew aboard the second Shuttle mission. Data from both the Measurement of Air Pollution from Satellites (MAPS) Experiment and the Feature Identification and Location Experiment (FILE) have been received by the investigators, but final results are not yet available.

The MAPS instrument collected data on carbon monoxide in the atmosphere for approximately 32 hours. The instrument cycled between its "operate" and "self-calibration" modes precisely as programmed. Five calibration sequences were initiated, either by the instrument's internal timer or by mission controllers on Earth.

Preliminary examination shows that all three primary data channels--from which carbon monoxide concentrations are inferred--operated properly and the data traces showed expected patterns. The raw data must be correlated with several aspects of the mission before detailed analysis can be completed.

Four aircraft underflights were conducted for correlative measurement with the Orbiter instruments. Two flights were made near the U.S. east coast during orbits 18 and 21, and two flights were about 600 miles west of California during orbits 21 and 22.

The east coast aircraft carried a development model of the MAPS instrument, and atmospheric samples were also collected in evacuated cylinders for laboratory analysis. The west coast aircraft collected atmospheric samples, which will be analyzed at the Ames Research Center.

The FILE experiment collected 45 color photographs from its 70 millimeter camera, but tape recorder problems have caused difficulties in getting data from the tapes. Experimenters expect to have a partial solution to the problem within a few days.

Winterize Your Dogs

The following tips are offered to help you take care of your dogs during the winter months.

- Be very careful when using anti-freeze for your car. Dogs like the taste and will readily drink it. **IT IS VERY POISONOUS.**
- Housing for outside dogs should face south or west with bedding (straw, etc.) off the ground.
- Dogs that sleep in garages should have bedding off the cold, hard concrete (use underlayer of board or cardboard for insulation).
- During cold weather, add extra fat/grease to diet; for inside dogs this will keep the skin from drying out due to dry inside heat; for outside dogs it will provide extra calories needed to keep them warm.

EOP Notice

Janet McKenzie, Assistant Equal Opportunity Officer, is currently participating in a cross-training program in the Personnel Division until May 1982. In her absence, affirmative action concerns should be addressed to Mary Jackson; and matters pertaining to employee assistance and discrimination complaints should be addressed to Vivian Merritt. Both can be reached at extension 3487.

Brandenburger Wins Car Pool Drawing

Gary H. Brandenburger, a William and Mary contractor who works with the Materials Characterization Instrumentation Group in the Instrument Research Division, is the November winner of $20 given to a registered car pool participant by the Langley Exchange Council.

Monthly drawings are held as an incentive to expand the number of car pools at Langley.

The *Langley Researcher* as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond

Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

Langley Colloquium

Hait to Speak on Mount St. Helens' Eruption

The catastrophic eruption of Mount St. Helens, May 18, 1980, captured the attention of the world and has brought into focus the potential volcanic risk to vast areas and to thousands of people and their technological society.

Dr. Mortimer "Tim" H. Hait of the U.S. Geological Survey in Denver will give a slide presentation at a Langley colloquium Monday, December 14, in the Activities Center. Hait's lecture, "Mount St. Helens--Surprise, Surprise," will begin at 2 p.m., followed by a question and answer session. The speaker will move to the adjoining Langley Room at 3 p.m. for an informal discussion.

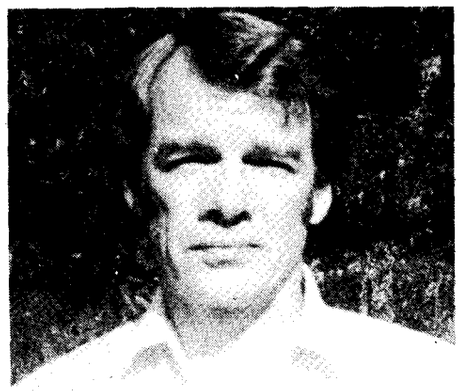
The slides will show the precursory steam eruptions and ominously growing bulge; the events of May 18, including a series of eruption photographs; the immediate results of the blast damage; the landslide and flood; the ash fall and associated problems; and the follow-on lava dome growth.

Hait said the eruption was small on a geological scale and "we are instantly impressed by how small and fragile we and our technological society are. This kind of perspective of ourselves increased the size and kind of fears, such as: are the volcanoes interconnected; will there be a fire-cracker effect; and what about all the dire predictions?

"And amid it all," Haid added, "there is humor: T-shirts, ash trays, schemes to shut down the volcano, and Captain Volcano. At the bottom line," Hait concluded, "Mount St. Helens is an education--about our world and about ourselves."

Hait, a geologist with the U.S. Geological Survey since 1966, has conducted structural and mapping studies in east central and southern Idaho; geologic evaluation of potential nuclear facility sites; volcanic hazard studies of Washington, Oregon and California; and was a spokesman at Mount St. Helens.

He worked on the USGS Astrogeology Program in Flagstaff, Ariz., from 1966 to 1973 and trained astronauts in lunar geological methods



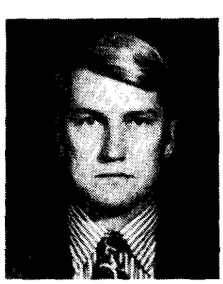
for Apollo 11–17 at the Johnson Space Center. He was a geologist for Texaco, Inc., in Casper, N.Y., from 1963 to 1965.

Hait received a bachelor's degree in geology from Lafayette College, Easton, Pa., in 1955 and a doctorate in geology from Pennsylvania State University, University Park, Pa., in 1965.

Audio and video tapes of all colloquium presentations are available in the Technical Library.

In Memoriam

Wendell W. Kelley and **Paul F. Coy** were killed in the crash of an experimental general aviation aircraft in the Chesapeake Bay Thursday, November 19.



Kelley, 41, was a research pilot in the Aircraft Operations Branch, Low-Speed Aerodynamics Division for the past two years. He joined the Langley staff in August 1975 as an aerospace engineer.

He was a systems engineer for International Business Machines Corporation for four years before he joined NASA.

Kelley was a major in the Virginia Air National Guard and had formerly served for a time in the District of Columbia Air National Guard. He received pilot's training from the Air Force and had served one year as a flying training instructor. During the Vietnam War, his Air National Guard unit was activated and he served one year in Korea.

A native of Franklin County, Va., Kelley received a bachelor of science degree in electrical engineering from the University of Virginia in 1963 and a master of science degree in aerospace engineering from the University of Maryland in 1973.

Coy, 23, was an aerospace engineer in the Dynamic Stability Branch, Low-Speed Aerodynamics Division, where he researched unique configurations of small aircraft. He had been with NASA since July 1980.

Born in Weymouth, Mass., Coy received a bachelor of science degree in aeronautical engineering from Rensselaer Polytechnic Institute in May 1980.

Thinking Out Loud

Life benefits from serving others, for as it reaches out to help, it gathers something for itself – friendship.

Thanks

Jim Dunavant would like to thank all his friends and co-workers at Langley who helped make his retirement luncheon such a wonderful occasion. "The gifts, the luncheon, and the friendship shown were much appreciated and will serve as a reminder of the many enjoyable years and occasions had at Langley," he said.

Kivett Named Fellow

William R. Kivett, Head of the Contracts Branch, Acquisition Division, has been elevated to the class of Fellow in the National Contract Management Association by the National Board of Directors.

The designation is bestowed on those who have made significant and outstanding contributions to the field of contract management and to the association.

Kivett has been with NASA since January 1964 and has held the positions of aerospace technologist, Head of the Contract Administration Section and Assistant Head of the Research and Technology Contracting Branch.

Kivett is a Certified Professional Contracts Manager, awarded by the NCMA.

Behind the Scenes: *Technical Editing Branch*

A look at those people and groups who provide support for Langley's projects and research programs. Photos by Bob Nye.

Langley's Technical Editing Branch in the Research Information and Applications Division edited and typed over 175 research publications totaling approximately 20,000 pages last year, a fact that helps to indicate why TEB has earned a reputation for quality, expertise and professional editorial service within NASA. Eight editors, four editorial assistants and five typists provide editing, typing and proofreading services to researchers at the center.

Jeanne Huffman, Head of the Technical Editing Branch, oversees the editors, editorial assistants and typists who work to ensure top quality research publications at Langley.

"Our editorial focus is primarily to assist the authors to publish concise, clearly written and technically accurate manuscripts," said Jeanne Huffman, Head of the Technical Editing Branch. "In addition, we maintain the uniform publication standards mandated by NASA's scientific and technical information program." The NASA "Publications Manual," to be updated this year, establishes publication policies and prescribes guidelines for format, the use of standard rather than specialized symbols, consistent and standard nomenclature, and availability of all references.

Research publications at Langley receive both editorial and technical review first within the author's branch and division by either a single reviewer or a technical editing committee (TEC)--at the discretion of the respective division chief. One-hundred and eighty days are allotted for publication of formal-series reports from the time they leave the research division until they are distributed. This allows 14 days for division approval, 60 days for TEC or reviewer comment, and 106 days for technical editing, final typing, author review, printing and distribution.

Formal-series publications (Technical Papers, Technical Memorandums, Reference Publications and Special Publications) receive the most intensive editing in TEB. The editor, who is the author's primary RIAD contact during the publication process, improves wording, grammar and punctuation; provides advice concerning layout of equations, figures and tables; and supervises preparation of report figures (the author may submit hand-labeled figures). The typists in TEB, headed by Mary Blount, use typing skills, experience and judgment to produce accurate and visually appealing reports. The editorial assistants, headed by Lillian Wentz, ensure the quality of the Branch's work by proofreading the formal reports before they are sent to the Publications Branch for printing and distribution. The editorial assistants also assist contract monitors to publish Contractor Reports by reviewing them for such items as completeness, pagination and reproducible quality.

The Branch maintains and distributes manuscript preparation kits for authors in Conference Publications (CP's) and assists in the development of publication plans and schedules for CP's such as when to send a call for papers and when to review abstracts and select papers. On request, Technical Editing will also edit journal articles, society meeting papers and speeches.

"We work closely with the Report and Manuscript Control Office (RAMCO) in RIAD to make the publication process as smooth and effective as possible," added Huffman. "RAMCO monitors and coordinates the preparation of formal-series reports, Quick-Release Technical Memorandums (memorandums with limited distribution usually due to the preliminary nature of the data), Contractor Reports, journal articles and meeting papers and presentations."

"Supportive" seems to be the key word most frequently overheard when researchers comment on their contact with TEB. "I have been very impressed with the support I have received during the past three years," said Robert Hall of NTF Aerodynamics.

For more information on editing services, call extension 3325. A

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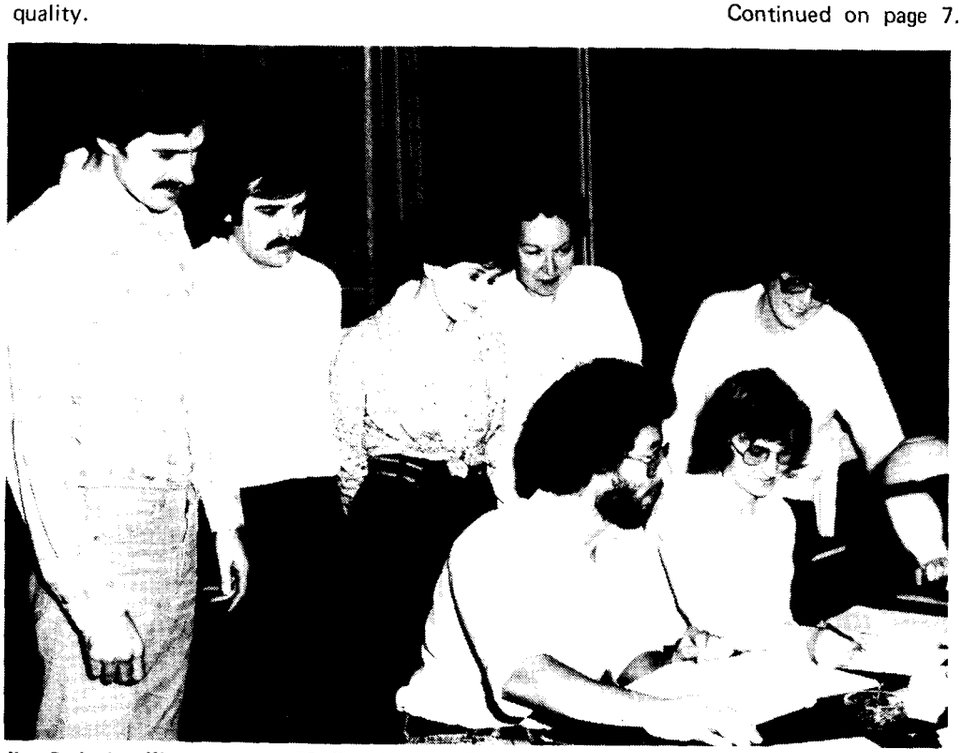


Jim Prohaska, Wayne Melton, Marilyn Heyson, Eloise Johnson, Peggy McGrath and Tom Brinkley and Mary McCaskill (seated), are editors who work closest to the authors during the publication process. Not pictured: Don Ruth.

Army Lab Provides Support to NASA

ATL Conducts Fatigue Tests on Blades

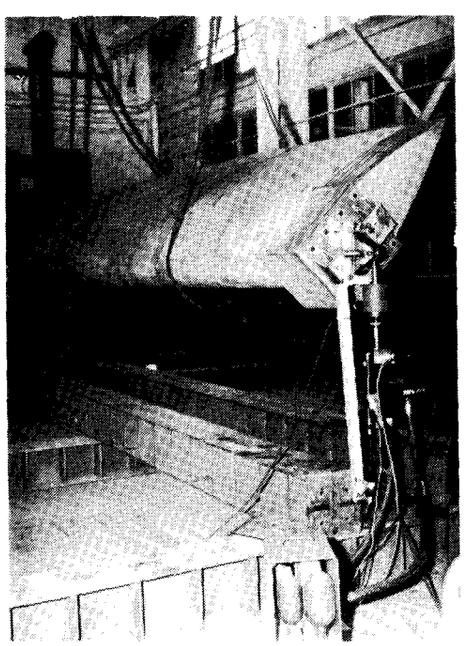
A small Army aviation research and development laboratory at Fort Eustis is providing technical support to NASA in a big way.

The U.S. Army Aviation Research and Development Command's Applied Technology Laboratory (ATL) is fatigue testing a series of windmill blades for the Lewis Research Center, and has completed fatigue testing on one of the fan blades which will power Langley's National Transonic Facility.

Lewis, with the Department of Energy, is developing windmill blades to power wind turbine generators. These huge windmills, some with blade lengths of over 320 feet, will be erected in areas where there is a relatively steady prevailing wind.

The blades are constantly exposed to dust, rain, sunlight, lightning and strong gusts of wind, all of which eventually take their toll. The blades must represent the best trade-off between durability and cost. Testing different kinds of blades is where the Fort Eustis-based laboratory comes into the picture.

ATL can do fatigue tests on windmill blade specimens which duplicate the loads encountered in actual use. A blade is mounted on a rigid steel structure known as a backstop. The root end of the specimen is bolted to the backstop to simulate the mounting of the blade. A hydraulic actuator is affixed to the tip end of the specimen to apply the cyclical loads. During the tests, data denoting the strains encountered at various points on the test article are relayed to a computer, where they are stored for future analysis.



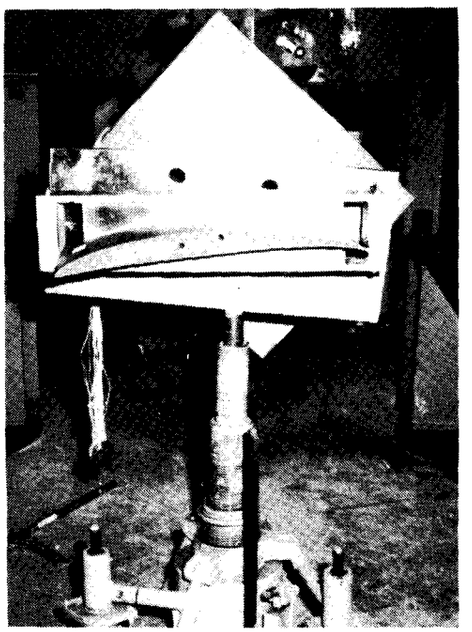
Fatigue tests on a windmill blade specimen for the Lewis Research Center and the Department of Energy are being conducted on the Applied Technology Laboratory's Structural Backstop.

Various candidate windmill blades have been tested, including those made of wood, aluminum and steel, and composite materials such as glass fibers joined together with high-strength epoxy. The evaluation of these blades continues, so the best blade configuration has yet to be selected. Testing is expected to be completed in August 1981.

Langley was not equipped to do the full range of testing desired for the fan blades in the NTF. Two fatigue tests were required that simulate the operating conditions (360 rpm and 600 rpm) of the NTF fan system. The fan blade aerodynamic (bending) and centrifugal (tension) loads had to be applied and released simultaneously in each test. Total number of cycles for each test was 6,000.

The ATL Structures Laboratory Root End Fatigue Machine was used for this test. This machine can apply cyclical bending loads under a constant tension force. With minor modifications, the ability to cyclically apply the tension loads in coordination with the bending loads was added to the machine.

Using an adapter fitting designed and constructed by NASA, the NTF blade was mounted in the test machine. Loads were gradually applied before the start of fatigue testing. As the loads were increased, the blade and the test set-up were closely inspected to insure proper fit and freedom of movement.



Fatigue tests on a National Transonic Facility (NTF) blade specimen for Langley are being conducted on the Applied Technology Laboratory's Root End Fatigue Machine.

After the initial series of checks, testing was begun on the simulated 360 rpm condition. This involved the application of 12,500 lbs bending load and 20,500 lbs tension load. After that test, the simulated 600 rpm test was conducted, which required a bending load of 5,000 lbs. The NTF blade successfully passed both tests.

Langley Employees Receive Awards

A **Certificate of Recognition** is presented for the creative development of a scientific contribution which has been determined to be of significant value in the advancement of the aerospace technology program of NASA.

Space Act awards have been presented to the following:

Delwin R. Croom, for a "vortex attenuation method;"

Joseph S. Heyman, for an "electrically calibratable clock;"

Judd R. Wilkins and **David C. Grana**, for "apparatus and process for microbial detection and enumeration;"

George M. Wood, Jr. and **Jag J. Singh**, for "low energy electron magnetometer;"

Charles J. Camarda and **Lana M. Couch**, for "heat pipe cooled probe;" and

Paul L. Coe, Jr., for "propulsive lateral control nozzle."

Energy Saving Tip

Make sure the pilot light on your gas stove is adjusted properly. It could be using more fuel than necessary. The flame should be blue. A yellowish flame indicates adjustment is needed.

Donors Tie Previous Bloodmobile Record

Langley Responds to Blood Shortage

Langley employees, retirees and contractors donated 339 pints of blood at the November 25 visit of the Red Cross Bloodmobile.

The number of donors tied the record set at the July 30, 1980 Bloodmobile, according to Virginia Jones, Head of the Office of Occupational Health Services. "I am delighted so many people took the time to donate blood last week. There has been a critical shortage of blood at the Red Cross and our staff responded greatly to that need. We received 161 replacement donations which will certainly help those needing blood," Jones said.

Achieving gallon status were:

14 gallons – Charles E. Edmiston.

9 gallons – Robert P. Davis.

7 gallons – Eugene Bunting, Billy W. Beasley and Bruce Conway.

6 gallons – Lewis A. Horsley, Aubrey M. Raiford, George T. Carson and Charles G. Marple.

5 gallons – Eugene McLemore, Carl N. Robeson and Wallie R. Bumgardner.

4 gallons – Harvey W. Murray, Daniel P. Vigliotti and Russell E. Criste.

3 gallons – Clyde C. Lane and James E. Bostic.

2 gallons – Robert M. Connell, Jr., Ellis M. Hogge, Thomas J. Yager, Gary W. Grew, Benjamin Guenther, Kathryn Wurster, Roger N. Messier, Paul W. Kidder, Donald L. Hunt, Robert L. Calloway, and Gwynn N. Gould.

1 gallon – Kim F. Schroeder, Robert L. D'Agostino, Julie B. Fowler, Augustine R. Dovi, Ernest Salisbury, Gary S. Johnson, Pamela Bradley, Fred Whitehead, Patrick Donohue, Joseph Jordan, Marion A. Wise, John R. Huffman, David J. Lorincz, Edwin E. Conner, Barry S. McGee, Kathryn A. Smith and Charles W. Sibbers.

Donating blood for the first time were Rex Current, Carl Borror, Jim Johnson, Velma Clark, Albert Graham, Tim Eldridge, Tom Levin, Scott Thomas, Randall Harris, Noah Scott Higdon, Manja C. White, Robert H. Huffman, James Gearhart, Jill Dunn, Robert Gingell, Charles F. Fuller, James R. Miskell, William S. Inge, Deborah Lewis, J. A. Osborn, Thomas T. Stowell, Mike Brown, William E. Robbins, Christopher Carlson, Bryan Phillips, Kathy Yopp and Gwendolyn A. Gage.

NASA Coordinator for the Bloodmobile was Virginia Jones. Red Cross Coordinator was Scotty McArthur. Refreshments were donated by the Langley Federal Credit Union.

The next opportunity to donate blood will be Wednesday, January 20, 1982.

Geer Retires

Continued from page 1.

In 1971 he was appointed a member of a technical team to review the Apollo and Skylab systems to determine adequacy and verification of design of all systems of Saturn V launch vehicle, lunar excursion module, command module, and the experiments.

In September 1974 Geer was detailed for three months to the Viking Project as a Special Assistant for Viking Lander components. He was responsible for assuring that hardware was delivered from various companies in the United States to Cape Kennedy for assembling and testing as a complete system.

Geer served on a NASA Safety Review Panel, reviewing and enhancing overall personnel and program safety as well as operational efficiency of the Solid Rocket Motor Assembly in the Vertical Assembly Building at the Kennedy Space Center. As a member of NASA's Operations and Engineering Panel, he participated in a technical safety review of modifications to the 40- by 80-Foot Subsonic Wind Tunnel at the Ames Research Center in California.

Geer has received a NASA Exceptional Service Medal, a NASA Outstanding Leadership Medal and a Langley Special Achievement Award. He was named Engineer of the Year by the American Institute of Aeronautics and Astronautics in 1980.

A native of Rockwell, Iowa, Geer received a bachelor of science degree in mechanical engineering from Iowa State College in Ames in 1942.

A registered professional engineer in Virginia, Geer is a member of the Engineers' Club of the Virginia Peninsula, the AIAA, the AIAA Design Engineering Technical Committee and is Chairman of the Hampton Planning Commission. He was appointed to the Industrial Advisory Group and the Electric Utilities Advisory Group for the Commonwealth of Virginia by the Director of the Virginia Energy Office in 1976.

Geer and his wife, Beverly, live in Hampton, Va.

Donald J. Progar, Materials Division, has been presented a Special Achievement Award for "excellent performance in development of a hot-melt adhesive Work Restraint System for Space Shuttle."

Cross-Country Race Planned

The Runners' Club will sponsor a 5KM Interdirectorate Cross-Country Race Tuesday, December 8, at 4:45 p.m. on Doolittle Road beside the Activities Center building. The 5KM course will be one loop around the course used for the recent 10KM run.

The race is open to all NASA and contractor employees, but to be eligible for the team title, each directorate or contractor company must have at least five members finish. The first five members of a team will be counted for scoring and the next two members for displacement in computing the cross-country winner.

There will be a Runners' Club meeting in the Activities Center following the race. For information, call Larry Spencer, ext. 3681.

Key Position

Alton T. Moore, has been designated Assistant Head, Photographic Branch, Research Information and Applications Division.

Happenings

CHRISTMAS PARTY. The Children's Christmas Party will be held December 6 at 2 p.m. in the Activities Center. Entertainment will include Walt Disney's "Almost Angels" and "Pluto's Christmas Tree" and a visit from Santa. Tickets are available for $1.50 in the Activities Office.

NEW YEAR'S EVE DANCE. The LAA will sponsor a New Year's Eve Dance in the Activities Center from 9 p.m. to 1 a.m. Bob Marshall and the Crystals will provide contemporary music. The cost of the semi-formal dance is $15 per couple and includes setups, party favors and a Continental Breakfast from 1 to 2 a.m.; BYOB. Reservations are required. Tickets are on sale at the LAA Office.

HONEY BUNCH. The NASA-Langley Apicultural Club will meet Monday, December 14, from 7 to 9 p.m. in Room 180 of Building 1209. After a brief business meeting, attorney Riley will speak on "Beekeeping and the Law." Copies of the Mississippi Beekeeping Newsletter and the Virginia State Beekeeper Association Newsletter will be available.

SCOPE-ANALYZER. There will be a seminar on the new Data Precision Model 6000 Digital Waveform Scope-Analyzer Monday, December 7, at 9:30 a.m. in Building 1230, Room 270.

ACC. The newly formed Atari Computer Club meets the second Thursday of each month in the Activities Center at 5 p.m. The next meeting will be December 10. Atari owners and others interested in Atari computers are invited. For details call Ware, ext. 3911, or Storaasli, ext. 3401.

SKI TRIPS. Five ski trips are planned for early next year. Enjoy Camelback Weekends: Ski January 23 and 24, January 30 and 31 and February 6 and 7, lodge two nights, includes transportation, from $95. George Washington's Birthday: Ski February 13, 14 and 15, lodge three nights, from $120; Mt. Tremblant, Canada: January 3–9, ski five days, lodge four nights, includes four breakfasts and dinners, from $250. For more information call Norman Willey, ext. 3987 or 490-0238.

BUSCH GARDENS PASSES. Anyone interested in purchasing season passes to Busch Gardens should call the LAA office, ext. 3139, before December 18.

Recent Retirees

Roland D. English, Office of the Director for Projects, retired November 13.

Charles P. Llewellyn, Office of Director for Projects, retired November 27.

New and Revised Forms Available from Stock

The following new or revised forms are now available from Stock.

NEW FORMS:

NASA Form 1592	"Manager and Supervisor Performance Appraisal"	August 1981
NASA Form 1592A	"Manager and Supervisor Performance Appraisal (Continuing Management Responsibilities)"	August 1981
NASA Form 1592B	"Manager and Supervisor Performance Appraisal (Continuing Key Specific Objectives)"	August 1981
NASA Form 1592C	"Manager and Supervisor Performance Appraisal Guidance on Continuing Management Responsibilities"	September 1981

REVISED FORMS:

Langley Form 82	"Information for Preparing Contracts Involving Security Requirements" (This form title has been changed)	Rev. Aug. 1981
Langley Form 91	"Cost Review of Commercial Industrial Products and Services"	Rev. Sept. 1981
Langley Form 160	"Computer Processing Request (GREEN)"	Rev. July 1981
Langley Form 169	"Computer Processing Request (RED)"	Rev. July 1981

Behind the Scenes

Continued from page 4.

handbook focusing on RIAD services, including the Technical Editing Branch, is scheduled for distribution to Langley researchers in late spring.

Doris Yates (seated), Lillian Wentz and Edna Cox are editorial assistants. They ensure the quality of the Branch's work by proofreading the formal reports written by Langley employees and Contractor reports written by contract monitors. Not pictured: Joy Italiano.

Typists assigned to the Branch include Debbie Griffith (seated), Mary Ellen Blount and Betty Walker, who strive to produce accurate and visually appealing reports. Absent when the picture was taken were Cheryl Williams and Pearlie Collier.

Key Position

Dr. Douglas L. Dwoyer has been selected Head, Computational Methods Branch, High-Speed Aerodynamics Division, under Competitive Placement Plan 81-44.

National Aeronautics and
Space Administration

Langley Research Center
Hampton, Virginia
23665

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swap and shop

FOR SALE

Vehicles

1976 Mustang II: AM/FM radio and sun roof. Best offer. Call E. Hastings, ext. 3621 or 229-7242.

1977 Chevrolet, Impala, 2-door, 305 cubic inch engine, AT, PS, PB, A/C, AM Radio, Low Mileage, Excellent Condition. Must see to appreciate. Call 247-6494.

Schwinn heavy-duty, 26"-wheel boy's bicycle, single speed, coaster brakes; ideal for paper carriers; less than one-year old; $182 new, will sell for $135, OBRO. Front basket available. Call J. Drummond, ext. 2934 or 722-0710 after 5 p.m.

Articles

HO Train Set, 2 engines, 40 ft. track, 4 switches, extras, 3½ x 6½ table, $120. Call 898-5833.

Woodstove, 21" x 32" x 25" high, heavy steel, brick lined, air tight, three adjustments, $210. Call 898-6719.

FOR RENT

Seaford: One bedroom furnished apartment, incl. heat, hot water. No smoking or alcohol allowed. Available December 15; $150/mo. Call 898-6719.

cafeteria menu

WEEK OF DEC. 7 — 11

MONDAY: Vegetable Soup; Chopped Steak; Crab Cutlets; Ham & Swiss Quiche. Snack Bar: Reuben; Chicken Breast; Egg Salad.

TUESDAY: Manhattan Clam Chowder; Baked Lasagna Dinner; Chicken & Dumplings; Salisbury Steak. Snack Bar: Charcoal Hoagie; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Roast Turkey Dinner; Roast Beef; Broiled Ocean Perch. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Gumbo Soup; Broiled Beef Liver; Quiche Lorraine; Chicken Chow Mein. Snack Bar: Deluxe Sub; BBQ; Pork.

FRIDAY: Vegetable Beef Soup; Fish Dinner; Baked Beans & Franks; Ham & Cheese Omelette. Snack Bar: Chicken Breast; Hot Ham & Cheese; Tuna Salad.

WEEK OF DEC. 14 — 18

MONDAY: Ham & Lima Bean Soup; Veal Parmesan Dinner; Beef Tips; New England Scrod. Snack Bar: Hot Italian Sausage Sub; Chicken Breast; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Spaghetti Dinner; Fresh Stuffed Green Pepper; Polish Sausage. Snack Bar: Charcoal Hoagie; BBQ; NASA Sub.

WEDNESDAY: Vegerable Soup; Fried Chicken Dinner; Beef Enchiladas; Seafood Newburg. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Vegetable Soup; Braised Chicken Livers; Seafood Quiche; Meat Loaf. Snack Bar: Deluxe Sub; BBQ; Pork Thriller.

FRIDAY: Turkey Noodle Soup; Fish Dinner; Chicken Pot Pie; Ham Steak. Snack Bar: Chicken Breast; Hot Ham & Cheese; Tuna Salad.

Retirement Party

E. Barton Geer, Office of Director for Systems Engineering and Operations, will be honored with a retirement party (steamship round dinner and cash bar) Friday, January 8, 1982, at 6:30 p.m., at the Activities Center. The cost, including the gift, will be $11 per person, $21 per couple, or $1.50 for gift only. For reservations, please send check to Jackie Kallick, Mail Stop 112, ext. 2411, by January 4.

— photo by Bob Nye

A "Stop Smoking Cigarettes" class, sponsored by the Training and Educational Services Branch and the Office of Occupational Health Services, was recently completed. Mary Anne Weinberg, Chief Nurse Practitioner at the Medical Center, instructed the class with Pamela Gebhart assisting. Seventy-three employees initially signed up for the program and 48 stopped smoking. Pictured above are some of the employees who successfully reached their stop smoking goal. Seated from left are Merle Ott; Betty Pate; Mary Anne Weinberg, R.N.; Pam Gebhart; Clara Simmons; Virginia Jones, Head, Office of Occupational Health Services; and Leonard Power. Standing from left are John Stokes, Director for Management Operations; Joseph Goad; John Sundy; Earl German; Carl Smith; Phil Hazlett; Tom Norum; Robert Huffman; Joe Harmon; and William E. Miller.

– *White House photo*

Langley Director Donald P. Hearth receives congratulations from President Ronald Reagan for being selected for the Presidential Rank of Distinguished Senior Executive. The award was presented to Hearth by the President in ceremonies at the White House October 14. The accompanying citation read, for "sustained extraordinary accomplishments in the Federal Service." Hearth was specifically honored for his work in defining NASA's planetary exploration program for the 1970s, for a long-range study of space exploration and for his directorship of the Langley Research Center. Only 25 Federal executives received this presidential honor for 1981.

Crew for Third Shuttle Mission Selected

Jack R. Lousma and Charles G. Fullerton have been selected by NASA as commander and pilot, respectively, for the third flight of the Space Shuttle, Columbia.

Backup crew will be Thomas K. Mattingly II, and Henry W. Hartsfield, Jr.

Lousma, a U.S. Marine Corps colonel, is a veteran of Skylab 3, July-September 1973. As mission pilot, he logged over 1,427 hours in space during which he and his fellow crewmembers accomplished 150 percent of preassigned goals.

Fullerton, an Air Force colonel, was assigned as pilot of the Space Shuttle Enterprise on the first, third and fifth flights in the Approach and Landing Test Series in 1977, when the vehicle was separated from the back of its 747 carrier aircraft and flown to a landing at Edwards Air Force Base, Calif.

This third test of NASA's Space Transportation System is planned for March 1982, and will be a seven-day, three-hour mission with 116 orbits of the Earth. Columbia will carry a payload, called OSS-1, developed by NASA's Office of Space Science. The flight will also involve further testing of the Remote Manipulator System, the mechanical "arm" which would remove payloads from the Orbiter's bay and insert them into space in future flights.

National Aeronautics and Space Administration
Langley Research Center
NASA

Langley Researcher

The *Langley Researcher* as official publication of the Langley Research Center, National Aeronautics and Space Administration, Hampton, Virginia 23665, is published every other week in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 2934.

Editor . . . . . Jean Drummond
Staff Photographer . . . . . Bob Nye

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised here must be offered without regard to race, color, religion, sex, or national origin. All materials submitted are subject to editing.

In Memoriam

Dr. Frank Hohl, Langley's first Chief Scientist, died Saturday, December 6, in Riverside Hospital. He was 47.

Hohl began his NASA career in 1963 as an aerospace engineer. He served as a group leader; Head, Astrophysics Section; Head, Space Physics Branch; and Head, Space Technology Branch, before assuming the Chief Scientist position in August 1980.

Before coming to Langley, he was a member of the technical staff at Bell Telephone Laboratories from 1962 to 63, and he served in the U.S. Air Force from 1954 to 1958.

Hohl graduated with high honors and a bachelor of science degree in electrical engineering from the University of Florida in 1961. He received master of science degrees in electrical engineering from New York University in 1963 and in physics from the College of William and Mary in 1965. He received the first William and Mary doctorate in physics in 1967.

The author or co-author of almost 100 technical papers and reports, Hohl received NASA's Special Service Award for Exceptional Scientific Achievement in 1969 and the NASA Exceptional Scientific Achievement Medal in 1976 and 1981. He also received three NASA Group Achievement awards in 1977, 1979 and 1981. He holds a patent on a volume pump nuclear laser and had applied for a direct solar pump laser patent.

He was a member of the American Institute of Aeronautics and Astronautics, American Physical Society, American Astronomical Society, American Association for the Advancement of Sciences and the International Astronomical Union.

A scholarship fund is being established at the College of William and Mary in memory of Hohl. Contributions may be sent to Nelson Jalufka, Mail Stop 160.

Deadline Notice

The next issue of the *Langley Researcher* will be distributed Friday, January 15, 1982. The deadline for this issue will be Friday, January 8, at 12 p.m.

Headline Highlights

Langley has had a Busy Year

January

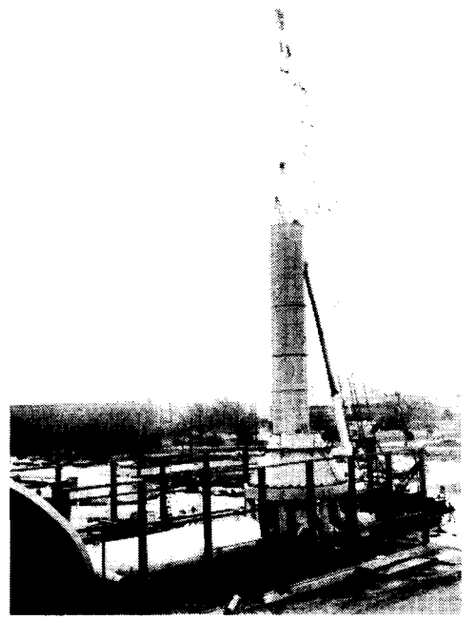
Frosch Bids Farwell to Langley . . . Lovelace Accepts NASA Appointment . . . Howe Retires as Chief of FMD . . . Mutch has Memorial on Mars . . . Bay Study Symposium Set . . . Guastaferro Looks at his Life with NASA . . . Llewellyn Receives Shuttle Award . . . Moore Selected Chief of the Acquisition Division . . . Langley to Observe Black History Month in February . . . NASA Decides to Continue Voyager 2 on Path to Uranus . . . Williams Heads General Aviation Technology Office . . . Saturn Encounter, Computer Graphics: Topics of Two Langley Colloquiums . . . .

February

Johnson New Instrument Research Division Chief . . . Raper Chosen for Senior Executive Fellowship . . . Career Day Scheduled at Langley . . . Peninsula Engineers Week Activities Set . . . Pauls Receives Headquarters Award . . . Shuttle to Encounter Major Hurdle . . . Aviation Pioneer Douglas Dies . . . Employees Recognized for Student Symposium . . . Women Pilots Visit Langley . . . Space Shuttle Engines Pass Critical Test . . . Jensen Elected ASHRAE Fellow . . . Ribner Presents Paper at Dryden Lectureship . . . Deputy Director's Report: Six Months of Challenge and Opportunity . . . Army Structures Lab Names New Director . . . Langley Makes Award to Small Business Firm . . . .

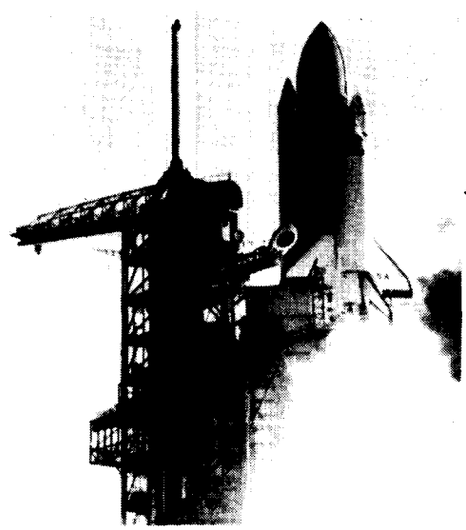
March

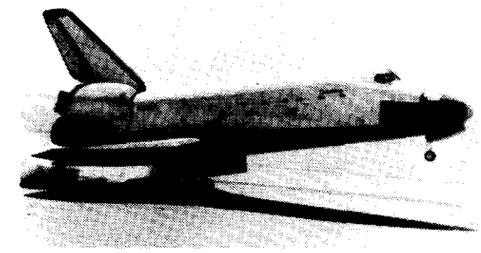
Lee Heads Equal Opportunity Programs Office . . . Hearth Gives State of Center Talk . . . Spouses to Hear Hearth at Breakfast . . . Watson Discusses Recombiant–DNA . . . Telelecture: A Way to Tell Others About NASA . . . Shipley Transfers to Fort Eustis . . . Langley to Host Shuttle Competition . . . Adams, Struhar Named Langley Managers . . . Inventors Honored at Luncheon . . . Tech House to Close . . . Dowling Hangs up his Guard Hat . . . Probing of Icy Arctic Secrets Featured . . . .



April

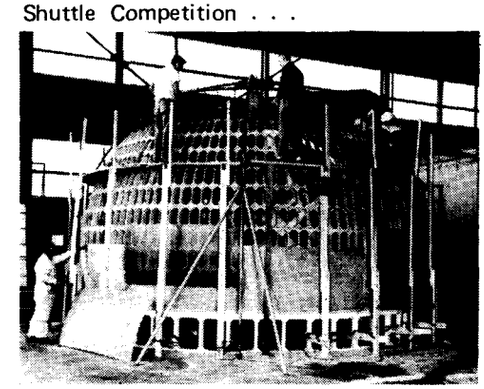
Leakey Discusses "From Fossils to Footprints" . . . Directors Comments: Hearth Optimistic About Langley's Future . . . Langley Honors Secretaries . . . Langley Team Needed to Support High School Students . . . First Space Shuttle Mission Successful . . . Petersen Receives Distinguished Alumnus Award . . . Langley Researchers Acknowledged for Shuttle Work . . . Flinn to Speak at Langley Colloquium . . . .





May

Anderson, Park Awarded Thompson Fellowship . . . Beggs, Mark Nominated to Head NASA . . . Gribble Retires as Chief of ACD . . . Savings Bonds Campaign Underway . . . Lovelace Thanks Staff for Shuttle Support . . . Reagan Praises Shuttle . . . Aeronautics Directorate Shifts People, Adjusts Programs . . . Langley Observes Federal Women's Week . . . Holloway to Discuss Space Shuttle at AIAA Annual Awards Banquet . . . Langley Supports Small Business Week All Year Long . . . NASA Studies Basic Aquatic Life Forms . . . Langley Develops Program to Help Disabled . . . Heldenfels Receives AIAA Award . . . NASA Consolidates Centers . . . North Carolina Student Wins Shuttle Competition . . .



June

ACEE Manager Retires from Langley . . . Margulis to Discuss "Earliest Life" . . . Moore Named NCMA Fellow . . . Reeder Addresses AHS . . . Scotty was a Doer, Gentleman, Friend . . . Sailplanes in Research Featured . . . Langley Employees Presented Awards . . . Krieger Announces Retirement from NASA . . . U.S. Savings Bond Drive Ends . . . Houbolt Elected Honorary Fellow of AIAA . . . .

July

Director's Comments: Hearth Takes Action to Improve Research Environment

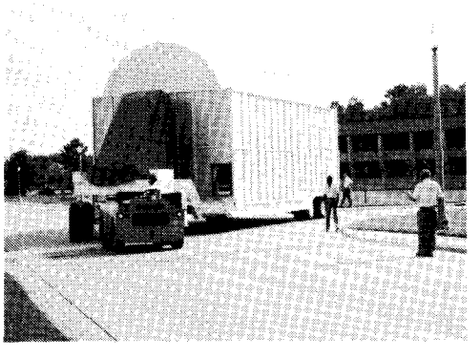
. . . Sykes Names Engineer of the Year . . . NASA Works Toward Energy-Absorbing Light Plane Subfloor . . . Technicians Get Largest Single Suggestion Award . . . Weeks to Discuss Shuttle Program . . . Summer Faculty Fellowship Programs Begin . . . Celebrate Viking's Fifth Anniversary . . . Lovelace Leaves for General Dynamics . . . Visitor Center Salutes Space Week 1981 . . . Employee Wins National Award . . . Lee to Address Severe Storms . . . Researchers Study Space Assembly of Large Structures . . . NASA Sponsors Conference on Optical Information Processing . . . History of "Mother Langley" to be Written . . . Visitor Center Breaks Record . . . Voyager-Saturn Encounter Featured . . . Federal Summer Employment Program Supported at Langley . . . .

August

Voyager 2 Carries TV Camera for Saturn Encore . . . Clark, Wingate Names to SES Positions . . . Car Passes, Accommodations Available for Shuttle Launch . . . Newman Receives Irwin Award . . . Langley Experiments Riding in Second Shuttle . . . Bullock Reappointed to Board . . . Langley to Host Noise Workshop . . . Career Development Center Offers Help in Self Assessment . . . LAA Finalizes Plans for 1981 Carnival . . . Roderick to Head Army Aeronautical Research Group . . . Stickle is Combined Federal Campaign Chairman . . . Employees Honored at Service Awards Ceremony . . . Nominations Needed for Fellowships . . . Morin Selected to Head ACD . . . Researchers can use the "Gas-Net" . . . .

September

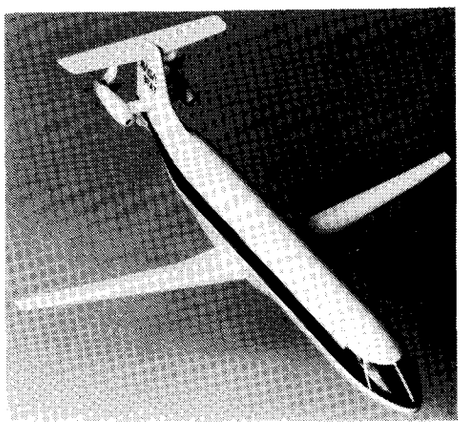
Cuddihy, PED Chief, Retires from Langley . . . Shull to Discuss Water



Problems . . . Beggs Sees "Great Future Ahead" for NASA . . . Lansing, Pinelli Selected for Critical Assignments . . . LDEF Investigator Working Group Meets Here . . . SHARP Students Get Firsthand Aerospace Experience . . . Kilgore to Retire from NASA . . . Langley Fares Well in Annual IR-100 Competition . . . Woods Receives NTA Award . . . Braig, Small Business Specialist Retires . . . Hispanic Heritage Remembered . . . .

October

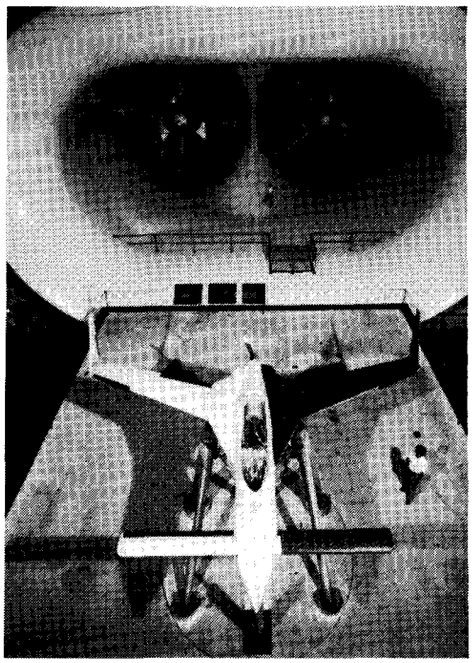
Sevareid Gives Yorktown Victory Bicentennial Lectures . . . New Director, Deputy Director Names at Visitor Center . . . Aeronautics Researchers Talk to Computer "Face to Face" . . . NASA-Langley Winglets Tested on DC-10 Jetliner . . . "Spirit of America" to Fly at Yorktown Victory Celebration . . . History of American Colonial Times Presented . . . National Employ the Handicapped Week, October 4 – 10 . . . Hearth Receives Presidential Honor . . . Langley Televises Shuttle Activities . . . Rowe Names Assistant Chief of ACE . . . Holloway Selected for Presidential Rank . . . Langley Hosts Symposium on Computational Aspects of Heat Transfer



in Structures . . . Langley Exceeds CFC Goal . . . NASA Honors Employees at Awards Ceremony . . . NASA to Give High-Flying Computers a Lift . . . Langley Apprentices Graduate Today . . . Langley Sponsors Workshop . . . Langley Visitor Center Dedicates New Exhibits . . . .

November

Broadwater to Speak Monday . . . Third Annual LSST Review Planned . . . Mercedes-Benz Manager Speaks to Engineers Club . . . Langley Staff Members Receive Advanced Degrees . . . Langley Pays Tribute to Employees . . . NASA Salutes Space Shuttle Workers . . . Columbia Hailed as a "Magnificant Machine" . . . Home Computer Demonstrations Featured at NASA Visitor Center . . . AIAA to Hear Reeder . . . Deputy Director Speaks: R & T Report Gives Good Overview . . . Small Tail in Front May Make Light Planes Safer . . . .



December

Geer to End NASA Career . . . Shuttle Teams Honored at Ceremony . . . MAPS and FILE Data Being Analyzed . . . Hait to Speak on Mount St. Helens' Eruption . . . Kivett Named Fellow . . . Behind the Scenes: Technical Editing Branch . . . ATL Conducts Fatigue Tests on Blades . . . Langley Responds to Blood Shortage.

– *photo by Bob Nye*

Richard W. Storey (right), Atmospheric Environmental Sciences Division, receives a check and a Special Achievement Award for Superior Accomplishments from Donald P. Hearth, Langley Director. The award was presented "For dedication to duty in carrying out atmospheric research on aerosols and meteorological variables with tethered balloon and ground-based sensors."

Storey Receives Special Award

Richard W. Storey of the Atmospheric Environmental Sciences Division recently received a Special Achievement Award for Superior Accomplishments from Langley Director Donald P. Hearth.

The accompanying citation read, "For dedication to duty in carrying out atmospheric research on aerosols and meteorological variables with tethered balloon and ground-based sensors."

Storey has been involved in the development and use of tethered balloon systems for atmospheric measurements since this work began at Langley in 1976, and in the characterization of aerosols for the Shuttle effluents program.

The tethered balloon systems have been used to measure atmospheric constituents, primarily aerosol and ozone, and meteorological variables, such as wind speed and direction, temperature, and relative humidity, in a number of research programs. These programs have included various noise experiments, Earth's potential field experiments, aerosol climate studies, Differential Absorption Lidar ground truthings, the Southeastern Virginia Urban Plume Study and the Persistent Elevated Pollution Episodes-Northeast Regional Oxidant Study summer field studies. Storey has been a key member of the team that has developed this unique and flexible system which can carry a payload of 75 pounds to about 8,000 feet measuring up to seven variables and telemetering them to Earth simultaneously.

In the Shuttle effluents program, Storey has led the group responsible for the ground-based aerosol measurements produced from rocket launches at the Kennedy Space Center. In recognition of his expertise, KSC requested that Storey train personnel in the routine monitoring of rocket effluents at ground-based sites in and around KSC. This was accomplished in time for the first Space Shuttle launch in April 1981.

CHRISTMAS is the season for kindling the fire of hospitality in the hall, the genial flame of charity in the heart.

– Washington Irving

Wright Brothers' Work Featured

A special exhibit on the work of Orville and Wilbur Wright will be featured at the NASA Langley Visitor Center through December 31. December 17 was the 78th anniversary of the Wright's historic first flight.

The display includes photographs of the Wright's first powered flights, their work with gliders and their introduction of aircraft to the military. A replica of a section of the wing of the 1903 Wright Flyer is included in the exhibit.

The film, "The Aeroplane: A Chronicle of Flight," will be featured through December 31. The 12-minute film, on loan from the National Air and Space Museum, takes a look at the earliest flying machines in the United States and in Europe and chronicles man's first decade in the air, using actual footage of early aviators and their aircraft.

NASA Combines Two Program Offices

NASA has completed plans for the combination of its Office of Space Science and Office of Space and Terrestrial Applications. The new organization was effective December 3.

The new Office of Space Science and Applications will retain the programs and responsibilities of the two program offices with the exception of the Technology Utilization Program, which is transferred to the Government/Industry Affairs Division of the Office of External Relations.

Andrew J. Stofan has been named Acting Associate Administrator of the Office of Space Science and Applications and Samuel W. Keller has been named Deputy Associate Administrator of the office. Stofan has been Acting Associate Administrator for Space Science and Keller has been Deputy Associate Administrator for Space and Terrestrial Applications.

The combination is part of the NASA Headquarters reorganization announced September 29.

Key Position

Thomas G. Campbell has been selected Head, Antenna and Microwave Research Branch, Flight Electronics Division, under Competitive Placement Plan 81-57.

Happenings

NEW YEAR'S EVE DANCE. The LAA will sponsor a New Year's Eve Dance in the Activities Center from 9 p.m. to 1 a.m. Bob Marshall and the Crystals will provide contemporary music. The cost of the semi-formal dance is $15 per couple and includes setups, party favors and a Continental Breakfast from 1 to 2 a.m.; BYOB. Reservations are required. Tickets are on sale at the LAA Office.

SKI TRIPS are planned for Thursdays, January 7, to Massanutten; January 14 to Bryce Mountain; January 21 to Homestead; and January 28 to Bryce Mountain. The cost of each trip is $36 ($7 less with own equipment). A bus will depart Newmarket South (in front of Hechingers) at 5 a.m. and return there by 9:30 p.m. A check should be made payable to Richard Bennett and sent to him at Mail Stop 397 or 11 Bosch Lane, Newport News, Va. 23606. Please specify the date you wish to ski. For further information call 599-5585.

FEDERAL ALMANACS. Orders are now being taken for 1982 Federal Almanacs. The cost will be $2.60 and must be paid in advance. Please send money or check to LAA Office, Mail Stop 496, by January 8.

HAPPY HOUR. The first Happy Hour for 1982 will be held January 15 in the Activities Center from 4 to 7 p.m.

WALT DISNEY films "Winnie the Pooh" and "The Ugly Duckling" will be shown January 10 at 3 p.m. in the Activities Center. Admission is 75 cents per person.

BUSCH GARDENS season passes for 1982 are on sale at the Activities Office. Call ext. 3139 for more information.

SKI TRIPS. Five ski trips are planned for early next year. Enjoy Camelback Weekends: Ski January 23 and 24, January 30 and 31 and February 6 and 7, lodge two nights, includes transportation, for $95. George Washington's Birthday: Ski February 13, 14 and 15, lodge three nights, from $120; Mt. Tremblant, Canada: January 3 – 9, ski five days, lodge four nights, includes four breakfasts and dinners, for $250. For more information call Norman Willey, ext. 3987 or 490-0238.

Thanks

"To all of our friends at the Langley Research Center: We would like to thank you for all of the love and support shown at the recent death of my husband and our father, **Frank Hohl**."

Sincerely,

Margarete, Claudia, Ursula and **Frank**

Special thanks to **Wesley T. Berryman, Jr.**, Research Information and Applications Division, for designing the cover of this Chirstmas issue and to **Robert E. Nye**, RIAD, for taking the photograph on page 2.

The *Langley Researcher* staff also appreciates the Aerospace Penpoints and all the graphic and photographic assistance that Wes and Bob have provided all year long.

Scott M. Agnew thanks all of his friends, co-workers and associates for the party and gifts presented to him on the occasion of his retirement. "Bess and I agree it was one of the nicest parties -- if not the nicest -- we have ever attended. You know I will miss it all -- even the complaints, and once in a while an appreciative note or phone call. Especially missed will be the humor of the crazy crowd at PMB. The only thing that will not be missed will be the pressure."

IRA's Available

At last, there's a tax shelter for every wage earner – even those on a company plan. Starting January 1, 1982, each employee becomes eligible for an Individual Retirement Account.

A single person can defer $2,000 of his income to a special retirement fund with an IRA. A married couple with both spouses working can set aside up to $4,000 a year, providing each has a separate account with no more than $2,000 a year added. A couple with one working spouse can set aside $2,250 a year divided between two accounts.

Rollover IRA's and IRA's for members eligible in a previous tax year may be set up at the Langley Federal Credit Union. You can begin withdrawing funds from your IRA when you reach 59½, or if you should become disabled, at any age.

Your working years are your busiest. That's why your credit union offers convenient services like direct deposit and payroll deduction. By signing up for payroll deduction to an IRA account you can earn dividends from the earliest possible date.

To maximize your earning potential and tax savings, contact your closest LFCU office today.

– photo by Bob Nye

K. James Weilmuenster of the Space Systems Division presented two telelectures to students at the Virginia Polytechnic Institute December 1. The telelectures, "Complete Viscous Flowfield Solutions About a Blunt Parabolic Body in a Supersonic Stream" and "A Method for Computation of Inviscid Three-Dimensional Flow over Blunt Bodies Having Large Embedded Subsonic Regions," were the first technical telelectures presented since Langley's Telelecture Program began. The program is designed to inform the public in other cities, states and countries about current NASA research. For additional information about Langley's Telelecture Program, call Renee Benton, ext. 3341.

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Vehicles

Falcon '5' hang glider, 22-foot spread, cover included; brand new, never flown; $1,200 when bought, will sell for $950. Call Vic Lockard, 595-0184.

Ford Fairmont Futura: 1978, 6 cyl., PB/PS/AC, heater, radio, light blue with white trim, 47,000 miles, $3,595. Call 596-3430.

WANTED

Ride to central Florida for the Chirstmas holidays, willing to share in the driving and expenses. Call Cliff at 596-7641.

FOUND

Bifocal glasses and case at Building 1203, brown make-up kit in front of Building 1195C. Call Security, ext. 2452.

Thanks

Angie Waits writes, "I would like to thank my friends and co-workers for the beautiful gift given to me after my misfortune. You have restored my faith in mankind, and most of all, you have given me the best Christmas ever! I cannot thank you enough. My family wishes to thank all of you, too. God Bless You."

Renee Benton thanks Carmen Batten, Richard Hofler and Bob Lutinski for all their assistance this year in translating letters for the Public Mail Operation.

Retirement Parties

E. Barton Geer, Office of Director for Systems Engineering and Operations, will be honored with a retirement party (steamship round dinner and cash bar) Friday, January 8, 1982, at 6:30 p.m., at the Activities Center. The cost, including the gift, will be $11 per person, $21 per couple, or $1.50 for gift only. For reservations, please send check to Jackie Kallick, Mail Stop 112, ext. 2411, by January 4.

The retirement party for **William F. (Fill) Cuddihy** has been changed from December 9, 1981, to January 27, 1982, at 6:30 p.m. in the Activities Center. The cost, including gift, will be $11 per person, $20 per couple or $1.50 for gift only. For reservations, please send check to Charles Schilling or Judy R. Neil, Mail Stop 446, ext. 4501, by January 17.

cafeteria menu

WEEK OF DEC. 21 — 25

MONDAY: Vegetable Soup; Veal Parmesan Dinner; Chicken Chow Mein. Snack Bar: Reuben Sandwich; Chicken Breast; Egg Salad.

TUESDAY: Manhattan Clam Chowder; Spaghetti Dinner; Meat Loaf. Snack Bar: Charcoal Hoagie; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Chopped Steak; Fried Sea Trout. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Vegetable Beef Soup; Braised Checken Livers; Crab Cutlets. Snack Bar: Deluxe Sub; BBQ; BLT.

FRIDAY:

MERRY CHRISTMAS
and
HAPPY NEW YEAR!

CAFETERIA will be **CLOSED** until Monday, January 4, 1982.

WEEK OF JAN. 4 — 8

MONDAY: Vegetable Soup; Chopped Steak; Chicken & Dumplings; Quiche Lorraine. Snack Bar: Reuben Sandwich; Chicken Breast; Egg Salad.

TUESDAY: Manhattan Clam Chowder; Baked Lasagne; Crab Cutlets; Baked Beans & Franks. Snack Bar: Charcoal Hoagie; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Roast Turkey Dinner; Beef & Peppers over Rice; Fried Sea Trout. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Gumbo Soup; Broiled Beef Liver w/Onions; Broiled Flounder; Chicken Chow Mein. Snack Bar: Deluxe Sub; BBQ; BLT.

FRIDAY: Vegetable Beef Soup; Fish Dinner; BBQ Turkey Wing; Beef Burgundy Over Noodles. Snack Bar: Chicken Breast; Hot Ham & Cheese; Tuna Salad.

WEEK OF JAN. 11 — 15

MONDAY: Ham & Lima Bean Soup; Veal Parmesan Dinner; Beef Tips over Rice; New England Scrod. Snack Bar: Hot Italian Sausage Sub; Chicken Breast; Egg Salad.

TUESDAY: Bull Island Clam Chowder; Spaghetti; Fresh Stuffed Green Pepper; Polish Sausage. Snack Bar: Charcoal Hoagie; BBQ; NASA Sub.

WEDNESDAY: Vegetable Soup; Fried Chicken Dinner; Beef Enchiladas; Seafood Newburg. Snack Bar: Sausage Pizza; Polish Sausage; Steak, Onion & Cheese Sub.

THURSDAY: Chicken Vegetable Soup; Braised Chicken Livers over Rich w/Onions; Seafood Quiche; Meat Loaf. Snack Bar: Deluxe Sub; BBQ; Pork Thriller.

FRIDAY: Turkey Noodle Soup; Fish Dinner; Chicken Pot Pie; Ham Steak. Snack Bar: Chicken Breast; Hot Ham & Cheese; Tuna Salad.

About the Cover

Langley employees come from many different backgrounds that stretch all around the world. Some of these countries are represented on the cover by the way the native language expresses Merry Christmas.

Wesley Berryman, the cover artist, wishes to thank the following for their assistance with some of the various languages: Murthy Annageri, Julio Chu, Betty Joyner, Pete Korycinski, Ed Liu, J. Pai, Paul Pao, Bill Shinn, Marie Tuttle, D. Venneman, Nghia T. Vuong and Andy Zigamalas.

Directory Changes Due

Changes in the Organizational Listing or the Service Directory listing for inclusion in the February 1982 issue are due at **Mail Stop 196** by **January 8, 1982.**

The furnishing of accurate information for the Alphabetical Personnel Section of the Directory is the responsibility of each individual employee. Langley Form entitled, "NIPPS — Telephone Directory Transcript," (Change Notice) is provided in the back of the Langley Telephone Directory for reporting change in mail stop, building number, room number, and telephone number.

Recent Retirees

Robert L. Hunt Research Information and Applications Division, retired December 16.

James F. Montgomery, Business Data Systems Division, retires today.