Sir Frank Whittle (second from left), inventor of the jet engine, visited the Center on December 13 and toured a number of research facilities. Blake W. Corson Jr., Head of 16 foot Transonic Tunnels Branch, explains a swept-wing supersonic aircraft configuration to Sir Whittle while Laurence K. Loftin Jr., Assistant Director, and Mark R. Nichols, Chief of Full-Scale Research Division, look on. Sir Whittle, who was knighted for his jet engine, lives in Changford Deva, England.

LUNAR EXPLORATION OFFICE

A unified office is being established by NASA to coordinate the United States exploration of the moon.

The purpose is to increase the effectiveness of direction of Apollo lunar exploration and the planning of scientific exploration of the moon beyond the initial Apollo landing.

The Apollo Lunar Exploration Office was announced by NASA Administrator James E. Webb. The new unit will be part of the Apollo Program Office of the Office of Manned Space Flight (OMSF) but will be staffed by personnel from both OMSF and from the Office of Space Science and Applications (OSSA).

The new office will be directed by Lee R. Scherer, who has been Assistant Director for Lunar Programs and Lunar Orbiter Program Manager in OSSA. Scherer will transfer to OMSF.

The Apollo Lunar Exploration Office will be responsible to OSSA for the scientific aspects of the Apollo lunar exploration program including dealings with the scientists whose investigations will be carried out on Apollo missions.

HARRIS RETIRES FROM CENTER AFTER 40 YEARS OF SERVICE

Thomas A. Harris, Research Assistant in the Office of the Director, retired from the Center on January 5 with over 40 years of Federal service.

Prior to his retirement Harris received a Special Service Award for Exceptional Service "for his initiative and guidance in the formulation of effective procedures that have permitted the Center to carry out its missions safely, efficiently, and economically; and for his many contributions in the planning and implementation of research programs and facilities in the field of stability and control of aircraft and missiles that have contributed significantly to this Nation's progress in aeronautics and space."

Harris was born May 22, 1903 in Whites. He received his Bachelor of Science Degree in Physics from the College of William and Mary.

He joined the Langley staff in September 1927 as an assistant scientific aide. In August 1939, he was appointed head of the Atmospheric Wind Tunnel Section. He served as Assistant Chief of the Stability Research Division from 1943 to 1947, and as Chief of that division from 1947 to 1959. He was appointed to his present position in September 1959.

He is widely known as an expert on factors relating to stability and control of aircraft and frequently consulted with industry in these areas. Harris was one of the early (Continued on page 4)
"It's ridiculous the things people will do to get their names in the paper."

The following menu will be served in the cafeterias during the week of January 15:

**Monday** - Cream of tomato soup, barbecued spare ribs, chuckwagon steak, spaghetti and meat balls, Spanish omelette. Snack bar - Soup, hot dog, meatball sandwich.

**Tuesday** - Cream of celery soup, roast ribs of beef, grilled pork chops, beef stew, grilled luncheon meat. Snack bar - Soup, barbecued pork sandwich, roast beef on roll, French fries, corn fritters.

**Wednesday** - Chicken noodle soup, chopped steak, baked ham, fried chicken, macaroni and weinel's. Snack bar - Soup, cheeseburger, baked ham sandwich, baked beans, French fries.

**Thursday** - Vegetable-beef soup, Swiss steak, stuffed shrimp, creamed chicken, Austrian ravioli. Snack bar - Soup, ham and egg sandwich, steak sandwich, fried eggplant, German potato cakes.

**Friday** - Clam chowder, Hungarian goulash, knockwurst, stuffed flounder, deviled crab, cheese omelette. Snack bar - Soup, sea dog, flying saucer, deviled crab, French fries.

The following menu will be served in the cafeterias during the week of January 22:

**Monday** - Puree of bean soup, Spanish pot roast, chicken pie, smoked pork sausage, franks and beans. Snack bar - Soup, hot dog, roast beef on roll, French fries.

**Tuesday** - Cream of mushroom soup, beef stroganoff, broiled swordfish steak, liver and onions, baked hash. Snack bar - Soup, grilled cheese sandwich, veal steak sandwich, French fries.

**Wednesday** - Chicken noodle soup, chopped steak, baked ham, fried chicken, macaroni and weinel's. Snack bar - Soup, barbecued pork sandwich, roast beef on roll, French fries.

**Thursday** - Vegetable-beef soup, Swiss steak, stuffed shrimp, creamed chicken, Austrian ravioli. Snack bar - Soup, ham and egg sandwich, steak sandwich, fried eggplant, German potato cakes.

**Friday** - Clam chowder, roast ribs of beef, fried fish, sauteed chicken livers on rice, Irish omelette. Snack bar - Soup, barbecued beef on roll, flying saucer, baked beans.
RESA MEETS JANUARY 16

The Hampton Roads Section of the Scientific Research Society of America will meet on January 16 at 8 p.m. at the Space Radiation Effects Laboratory, 11970 Jefferson Avenue. Guest speaker will be Dr. Robert T. Siegel, Director of the Space Radiation Effects Laboratory.

Dr. Siegel will speak on "Research Programs and Facilities at the Space Radiation Effects Laboratory." He will describe the equipment and capabilities of this facility and some of its current research programs. He will discuss in some detail the topic "Mesonic Atoms," an object of some recent studies at the laboratory. A tour of the facility, which includes a large synchro-cyclotron, will be included in the program.

RESA is a scientific society which provides a means for interchange of scientific information among men in various industrial and governmental fields of science. It is affiliated with the Sigma XI, its counterpart organization at colleges and universities. The Hampton Roads branch, through this and similar meetings, is seeking to promote cooperation and an interchange of scientific knowledge between the various scientific and educational institutions in this area.

CREDIT UNION NOTICE

Year-end 1967 statements will be mailed Credit Union members during the week of January 15. Some pleasant surprises are in store for NASA employees as they receive the full benefit of the Burroughs E4000 Accounting System for the first time.

Dividends will be shown as of January 1 thus making it possible to receive a full 12 months credit for them. Remember, these dividends are 1968 income and are reportable as interest for this year--not 1967. The other side of the coin receives equal treatment. There will be an interest-to-date column which will reflect the cumulative amount of interest paid the Credit Union during 1967. This amount is an immediate credit against 1967 income when figuring your tax. And, finally, transactions for other than just one quarter will be shown. The statement is a photographic reproduction of the actual ledger card. Depending on the degree of activity, the history of an account will be reflected for a matter of many months up to a period of years. It is a good idea to make a habit of saving these statements for reference, tax, or other purposes.

On another subject, 1967 was a very good year topped by a 5% dividend for the seventh consecutive time. Robert Girouard, Credit Union President, will have the pertinent details at the annual meeting in February. His "President's Report" is bound to be of unusual interest so plan now to attend.

FOUND: Man's ring in West Cafeteria. Owner may claim it at Operators Office, Building 1213.

FOR SALE: 7-diamond cluster 14k gold ring, insurance appraised for $325 will sell for $200. Howe, 838-0254.

WANTED: Ride from Southampton to W.A. on 8 shift. Conway, 2691.

FOR SALE: 1948 Ford pickup truck - $125. Dress, 898-7081 after 4 p.m.


WANTED: Driving combination from Lynnhaven to W.A. on 8 shift. Conway, 2691.

WANTED: Ride or driving combination from Fox Grove- Hallwood area to W.A. on 8 shift. Midden, 4871.

FOR SALE: 7-diamond cluster 14k gold ring, insurance appraised for $325 will sell for $200. Howe, 838-0254.


WANTED: Driving combination from Lynnhaven to W.A. on 8 shift. Conway, 2691.

WANTED: Ride or driving combination from Fox Grove- Hallwood area to W.A. on 8 shift. Midden, 4871.
NEW NASA ADVISORY COUNCIL

A new Research and Technology Advisory Council has been created to assist NASA in planning and evaluation of research and technology for aeronautics and space.

The council will assess and render judgments on the relative importance of ongoing research, suggest additional work that should be undertaken and advise on the methods for further developing the nation's resources.

The council will be headed by Dr. Raymond L. Bisplinghoff, Head of the Department of Aeronautics and Astronautics of the Massachusetts Institute of Technology. It will be supported by committees representing seven major technology areas and committee members will be leading specialists in these subjects from industry, universities and other government agencies.

A major function of the council will be to advise the Associate Administrator for Advanced Research and Technology, Dr. Mac C. Adams, on research to fulfill NASA and national objectives.

HARRIS RETIRES FROM CENTER
(Continued from page 1)

participants in the formulation of the transonic research program at Langley. He served as the focal point for the varied inter-agency and intra-agency cooperative research projects conducted at Langley including research in support of the lunar mission and flights beyond the moon.

In a note to the Center staff, Harris expressed appreciation in behalf of himself and his wife, Louise, for the many kind expressions and remembrances on the occasion of his retirement from Federal service. They also included an invitation to their Langley friends to drop by their residence at 37 Yacht Club Drive, North Palm Beach, Florida, when their travels bring them that way.

AN EXCUSE FOR YOUR FATIGUE

If you are an adult of average weight, here is what you accomplish in 24 hours:
Your heart beats 103,689 times.
Your blood travels 168,000,000 miles.
You breathe 23,040 times.
You inhale 438 cubic feet of air.
You eat 3-1/4 pounds of food.
You drink 2.9 quarts of liquids.
You lose 7/8 pounds of waste.
You speak 4,800 words, including some unnecessary ones.
You move 750 muscles.
Your nails grow .00046 inch.
Your hair grows .01714 inch.
You exercise 7,000,000 brain cells.
And all this activity can be stopped, never to start again, by one split-second accident!

FREE: Male Siamese cat, lilac point. Land, 596-2710 or 838-1264.
WANTED: U.S. $1, $5, and $10 silver certificates - any condition. Sheets, 826-0235.

A major U.S. achievement for 1967 was the successful first flight of the powerful Apollo/Saturn V space vehicle on November 9. The 363-foot space vehicle's first stage engines produced 7,500,000 pounds of thrust at liftoff from Kennedy Space Center. All major objectives were met.

NASA CHORAL GROUP

The NASA Choral Group has resumed rehearsals for the year and additional voices are needed. The group rehearses every second, third, and fourth Monday night at 7:30 p.m. in the Activities Building.

The group plans to begin work on "The Sound of Music." Persons interested are invited to attend rehearsal or for information call Marvin Leffel, 4766.

FOR SALE: Sofa - converts to double bed - $20. Yeager, 877-9063.
FOR SALE: 52-gallon electric water heater, 275-gallon oil tank with legs, bathroom fixtures, electric stove, refrigerator. Winfree, 723-4532.
FOUND: Book of bridge tickets. Walker, 4422.
FOR SALE: Registered Cocker Spaniel. Williams, 838-3451.
TECHNOLOGY UTILIZATION NEWS

The University of Georgia under contract to the Technology Utilization Division of NASA has been disseminating computer programs to industry through the Computer Software Management and Information Center (COSMIC) for the past year. The 190 programs presently available were developed by NASA or its contractor. Nineteen of these programs are from Langley Research Center.

A directory of the COSMIC computer programs is available at the Technology Utilization Office, phone 3281, Mail Stop 103. These programs are sold to industry at the cost of reproduction and distribution - usually about $80. Copies of the programs are provided to NASA Centers at no cost, upon request. Persons developing programs that are of general interest and demand are encouraged to make them available to COSMIC. Assembling and transmitting the programs to requesters will then be handled by COSMIC, thereby relieving NASA personnel of the work. For further information, contact the Technology Utilization Office.

Tech Brief publications could be of value to you - either by utilizing ideas or concepts contained in published Briefs for your programs or by submitting your ideas for publication as a Tech Brief. Items published as Tech Briefs carry a $25 award initially and are eligible for additional monetary awards. Become familiar with this publication and submit your innovations to the T. U. Office. An index, by categories, to Tech Briefs as well as the Tech Briefs are available at the T. U. Office.

ERC NAMES CHIEF SCIENTIST

Dr. Richard M. Head has been appointed Chief Scientist at NASA's Electronics Research Center, it was announced by Director James C. Elms.

Dr. Head's responsibilities in his new position will include research in the aeronautics and space program areas of the Center's systems activities and research on solar flares, the eruptions in the atmosphere of the sun.

He joined the Cambridge Center in July 1966 as Special Assistant to the Director. Previously he was Director of the Policy Planning Division in the Office of Policy Analysis, NASA Headquarters.

Before joining NASA in 1963, Dr. Head was Professor of Aeronautics at the U.S. Naval Postgraduate School, Monterey, California. Both as professor and associate professor there, he taught courses in theoretical aerodynamics, magnetohydrodynamics, plasma physics, and missile and aircraft dynamics.

Dr. Head was a special lecturer at Massachusetts Institute of Technology in 1956 and Johns Hopkins University in 1950 and 1951. During a sabbatical year leave in 1961 and 1962, he was engaged in research on spectrographic analyses of plasma properties behind ionizing shock waves. This work was done at observatories in France.

He was educated at the California Institute of Technology where he received a Bachelor's degree in 1942, a Master's degree in Meteorology in 1942, a Master's degree in Aeronautics, and a Doctorate in Aeronautics in 1949.

FOR SALE: 42-inch Sunray copper tone electric range - $80. Myers, 751-5826.


Glenn R. Cella, U.S. Vice Consul to Tangier, recently toured several Center facilities. He was accompanied by William Kral, NASA Educational Programs Office. Cella will present the NASA Spacemobile Program to the North African countries of Libya, Tunisia, and Morocco from January through June 1968. Top photo - Cella (left) and Kral examine the Supersonic Transport cockpit simulator. Lower photo - Donald E. Hewes, head of Spacecraft Research Branch, Space Mechanics Division, explains the research vehicle at the Lunar Landing Facility to Cella and Kral. Their orientation schedule also included briefings at Goddard Space Flight Center, Kennedy Space Center, Manned Spacecraft Center, and NASA Headquarters.
SERVICEMEN SEND THANKS
The Activities Association sponsored a project to send Christmas packages to our servicemen in Vietnam and 1,074 packages were donated by Center personnel.

Numerous letters of appreciation have been received from individual servicemen to whom the packages were delivered. The letters quoted below were received by staff members and are typical of the reaction of the servicemen to whom those packages meant so much, and they are printed so that those who participated in this project will know that the time and effort they put forth was sincerely appreciated by those protecting our freedom so far from home.

Marine Corporal John A. Goff wrote the following to Romie, Fiscal Division, and Robert Ferree, Plant Maintenance:

"Not knowing you, it makes it hard to write and thank you for the Christmas box. But it was wonderful of you and it really means something to know that the people back home care.

"We've been out on an operation against hard corps troops for the last week. They brought us out of the field for Christmas day, but we go back out tomorrow. We don't have too much time to rest.

"But we did get Christmas, and we received gifts from you people back home.

"After you've been here for a while you get to think that the people back home are disinterested, and for the most part don't support us over here. To someone over here it means more than anything else in the world that the people back home care about their servicemen.

"Maybe I've gone on a bit. I'm sorry if I have, I'm just trying to say thanks. The gift, the thought means more than you can imagine.

"If there is anything I can do for you in the future, don't hesitate to ask.

"So thank you again, and Merry Christmas."

Catherine, Research Reports Division, and Frank Hart, Instrument Research, received the following letter from Marine Corporal Edward Windrim:

"I would like to take this opportunity to express my gratitude for your time and effort as well as your thoughtfulness in one small but very special package. I am a Marine aboard the ship, the Valley Forge, off the coast of Vietnam. I can never tell you how much of a pleasure it was to receive a present from someone who cares about us guys here in Vietnam, especially on Christmas Day.

"If all these people who are protesting and complaining about their men in Vietnam would sit down and write or send them a little something on a day like Christmas instead of showing their ignorance in mobs and riots, it would make this war a little easier to fight.

"So for myself and also all the guys here in Vietnam, thank you and I hope you and your family had a very special Merry Christmas and have a Happy New Year."

WANTED: Driving combination from Norfolk to W.A. on 8 shift. Kennedy, 4557.

FOR SALE: 1966 F85 Oldsmobile, 4-door hardtop, air conditioned, power accessories. Williams, 877-6176.

FOR SALE: Gibson stereo electric guitar - $350, fender super reverb amplifier - $350, 45-watt public address amplifier with two 12-inch speakers in cabinets - $90. Bryant, 651-5062.

Pictorial highlights of the 1967 U.S. Space Program included new views of Earth sent back from space. The top picture was taken by Apollo 4 from a distance of 10,545 miles. The center photo was taken from 22,000 miles out by Applications Technology Satellite III and the bottom picture was taken from 214,806 miles by Lunar Orbiter V.
TRAFFIC SAFETY AND PARKING REGULATIONS ON BASE CITED

The number of illegally parked automobiles throughout the Center on Langley Air Force Base has increased during the past few months. The critical parking situation in some areas on the base has necessitated the establishment of more severe penalties for illegal parking. In some instances two parking violations may result in restriction to operate a vehicle on Langley Air Force Base for a period of six months.

A number of surveys has shown that ample parking space is available. The space available may not be immediately adjacent to the facility in which an employee is working; however, in no case is the available space more than two or three blocks from his place of work.

Another base traffic regulation concerning convoy movements has also been brought to the attention of Center officials. Personnel are reminded that when meeting a convoy they are required to move to the right side of the roadway and stop until the convoy has passed. When overtaking a convoy no attempt should be made to pass and vehicles are to remain at least fifty feet behind the convoy. Vehicle operators must exercise caution when meeting or approaching convoys to insure that the complete convoy has passed prior to resuming travel.

Violations of parking and traffic safety regulations represent a failure by the few persons involved to comply with the spirit and intent of these regulations which have been established for the safety and convenience of the entire staff.

TWO NAMED TO NEW POSTS

Two new appointments have been announced at NASA Headquarters. Paul E. Cotton has been appointed Director of the Programs and Resources Division, Office of Advanced Research and Technology, and Bob P. Helgeson, a veteran of space development, will return to the NASA staff as Director of Safety.

Cotton succeeds William E. Hanna, who is becoming Director of the Bureau of Data Processing and Accounts in the Social Security Administration.

Cotton, who has served nine years at NASA Headquarters, transferred from the post of Director, Management Operations, Office of Manned Space Flight. In his new position he will direct planning and resources management, program coordination and administration in the Office of Advanced Research and Technology. He reports to Associate Administrator Dr. Mac C. Adams.

Reporting to Harold B. Finger, Associate Administrator for Organization and Management, Helgeson will have the responsibility of developing and implementing safety programs throughout NASA. He will have broad authority over all safety activities, including those involving manned and unmanned flights in aeronautics and space, and ground and test research operations.

Helgeson comes to NASA Headquarters from the Atomic Energy Commission's Hanford Project, Richland, Wash., where he has served as Deputy Manager since last April. He has been associated with AEC since 1962, when he joined the Space-Nuclear Propulsion Office, a joint operation of NASA and AEC, as chief of the Nuclear Rocket Development Station, Jackass Flats, Nevada.

Three staff members recently received Suggestion Awards from the Incentive Awards Committee. Top photo - Harold E. Poole (left) and Kenny Rexrode, both of Flight Instrumentation Division, shared a $220 cash award for "the development of an attachment bar for setting up shock tests which will reduce removal time of elastic cords, eliminate possibility of damage to the cords, and reduce a potential safety hazard." Bottom photo - Arthur K. Grow, Head of Research Equipment Service Section, Mechanical Services Division, received $130 for "the development and installation of extension shafts and a vertical track for use on technochek valves for the 8-Foot Tunnel thus resulting in more tunnel operating time and fewer overhauls."


FOR SALE: 5-piece Early American living room suite - $500. Langhans, 838-1045 after 5 p.m.

WANTED: Ride or driving combination from Williamsburg to W.A. on 8 shift. Eareckson, 4810.

FOR SALE: 3-bedroom brick rancher, air conditioned, fenced backyard. Brown, 851-5125.

FOR SALE: 8 x 12-foot trailer framed with steel - good for camper. Snyder, 723-6943.
CIVIL SERVICE COMMISSION EXPLAINS NEW LIFE INSURANCE PROVISIONS

The new Postal Revenue and Federal Salary Act makes important changes in your group life insurance protection. These changes and their effect on your pay check are summarized below.

**CHANGE**

You Now (from Dec. 16, 1967) Have--

1. $10,000 regular insurance if your annual pay is $8,000 or less
   or
   Regular insurance equal to your annual pay, rounded to the next higher $1,000, plus $2,000 (but no more than $32,000) if your annual pay is more than $8,000.

2. An additional $10,000 optional insurance good until February 14, 1968.

3. A decision to make, no later than April 14, 1968, about continuing the $10,000 additional optional insurance. You will be given complete information, and a form to file showing your decision.

**EFFECT**

On Your Pay Check

No immediate effect unless a pay raise moves you into a higher $1,000 salary bracket; if it does, life insurance deductions from your pay will increase to cover the new $1,000 of regular insurance.

In the first pay period beginning on or after February 14, 1968, you start paying at a biweekly rate of 27-1/2¢ (instead of 25¢) for each $1,000 of regular insurance you have.

No effect. This is free until February 14, 1968.

No effect if you decide not to buy.

If you do buy, your premium (deducted from your pay) will vary by age and will increase as you move from one age group to another. Initially, deductions will be:

- $3.00 biweekly while you are under 35;
- $6.00 biweekly while you are 35-54;
- $20.00 biweekly when you reach 55 (and until you are both 65 and retired).

No deductions will be withheld unless you specifically authorize them.

If you should die in service between December 16, 1967, and February 14, 1968, you are automatically covered as shown in 1 and 2.

If you plan to retire between December 16, 1967, and February 14, 1968, and will carry your regular insurance into retirement, you don't need to consider life insurance changes in scheduling your retirement date. You will automatically get the increased regular life insurance shown in 1 plus a chance to buy the additional $10,000 optional life insurance described in 3.

Only employees who have regular insurance are eligible for optional insurance. Employees who have waived regular insurance will be given a chance to cancel the waiver.

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I'M GLAD I'M NOT A BIG EXECUTIVE -- MAKING DECISIONS SURE TIES A GUY OUT
BURROUGHS AWARD PRESENTED TO LANGLEY RESEARCH PILOT

John P. Reeder, Assistant Chief of Flight Mechanics and Technology Division, received the Flight Safety Foundation's Burroughs Test Pilot Award on January 17 at a luncheon in New York.

The award was presented to Reeder "for his pioneering work and the wide influence upon his pilot and engineer associates in the development of V/STOL handling qualities, flight research of advanced V/STOL vehicle concepts, and his selfless devotion to excellence and thoroughness of flight testing."

Purpose of the award, which was established by the United Aircraft Corporation in honor of Richard H. Burroughs Jr., an aeronautical engineer and test pilot, is to recognize contributions by a test pilot or groups of test pilots to safe and efficient flight testing in the realm of atmospheric or space flight.

Reeder was selected for the honor in conjunction with Major Robert Baldwin, USAF (posthumously), who was also active in flight research work with V/STOL aircraft.

The award consists of a citation and a half-sized model of a trophy which is on permanent display in the Wings Club in New York City.

Reeder, a native of Michigan, and an aeronautical engineering graduate of the University of Michigan, has been a member of the Langley staff since 1938. In October 1942, after World War II had begun, Reeder, who held a private pilot's license and had some glider experience, was one of several engineers selected for test pilot training. In early 1944 he completed helicopter flight training at the U.S. Coast Guard School, Floyd Bennett Naval Air Station, New York. In August 1952 he became Head of Flight Operations Branch.

As Langley's chief research pilot, he directs, plans, and executes flight research programs to provide basic information for making the vehicle and the man compatible.

Reeder has flown about 5000 hours in 197 different types of aircraft. Of these 33 have been jet airplane types, 54 have been rotary wing aircraft, including French and British types, and 8 have been VTOL airplanes, including British and Canadian types.

In 1959 Reeder was awarded the Octave Chanute Award of the Institute of the Aerospace Sciences (now AIAA).

(Continued on page 7)

DR. F. L. THOMPSON ELECTED AIAA PRESIDENT FOR 1968

Dr. Floyd L. Thompson, Director of Langley Research Center, has been elected President of the American Institute of Aeronautics and Astronautics.

He succeeds Harold T. Luskin as head of the 33,000 member professional society, whose members are scientists and engineers of the nation's space, aviation, defense, and marine programs.

The election was announced at the annual business meeting of the Institute, which took place Tuesday in New York City.

Dr. Thompson was elected a Fellow of the American Institute of Aeronautics and Astronautics in 1949.

Other officers elected were as follows:

Dr. Robert H. Cannon Jr., Chief Scientist of the Air Force; and William H. Avery, Supervisor, Aeronautics Division, Applied Physics Laboratory, Johns Hopkins University, both Directors - Technical.

Marvin Whitlock, Senior Vice President-Operations, United Airlines; and Richard Hutton, Senior Vice President, Grumman Aircraft Engineering Corporation, both Directors-at-Large.

Robert F. Ringham, Vice President and Director of Engineering, Vought Aeronautics, Division of LTV Aerospace Corporation, and Dr. B. G. Bromberg, Vice President, Space and Missile Engineering, McDonnell Douglas Corporation, both Regional Directors.

Dr. Thompson received his Bachelor of Science degree in Aeronautical Engineering from the University of Michigan and joined the Langley staff in July 1926.

At Langley, he rose steadily in position of responsibility and became its Director in 1960.

Besides his duties as Director, he was Chairman of the NASA Policy Planning Board and was Chairman of the Apollo-204 Review Board, which investigated the accident in which three astronauts died last year.

He holds honorary Doctor of Science degrees from the University of Michigan and the College of William and Mary. He has been awarded the NASA Medal for Outstanding Leadership, Distinguished Service Award of the American Legion's Department of Virginia, and the National Civil Service League's Career Service Award.
The following menu will be served in the cafeterias during the week of January 29:


**Tuesday** - Beef broth with barley, hot turkey sandwich with whipped potatoes, dressing and gravy, baked ham, beef stew, grilled hash patty. Snack bar - Soup, chicken patty on bun, baked ham on roll, baked beans, French fries.

**Wednesday** - Chicken gumbo, chicken and dumplings, fried oysters, baked meat loaf, macaroni and wieners. Snack bar - Soup, hot dog, turkey sandwich, fried eggplant, French fries.

**Thursday** - Vegetable-beef soup, Swiss steak, fantail shrimp, beef pot pie, cheese omelette. Snack bar - Soup, fish sandwich, hot roast beef on roll, fried eggplant, French fries.

**Friday** - New England clam chowder, breaded veal steak, salmon loaf, broiled fillet of perch, Spanish omelette. Snack bar - Soup, hamburger, veal steak sandwich, French fries.

The menu for the week of February 5 is as follows:

**Monday** - Puree of bean soup, pot roast of beef, grilled pork chops, baked lasagna, fish cakes. Snack bar - Soup, fish sandwich, hot roast beef on roll, fried eggplant, French fries.

**Tuesday** - Cream of mushroom soup, baked Smithfield ham, chuckwagon steak, liver and onions, chili con carne. Snack bar - Soup, ham and egg sandwich, hot corned beef on rye, French fries.

**Wednesday** - Chicken-rice soup, roast beef, grilled ham slice, fried chicken, franks and beans. Snack bar - Soup, hot dog, flying saucer, French fries.

**Thursday** - Vegetable-beef soup, Swiss steak, fantail shrimp, beef pot pie, cheese omelette. Snack bar - Soup, barbecued beef sandwich, steak sandwich, French fries.

**Friday** - Manhattan clam chowder, braised shortribs of beef, roast pork, fried fish, deviled crab, baked hash. Snack bar - Soup, sea dog, hot roast pork sandwich, deviled crab, French fries.
Five staff members have retired from the Center with a combined total of almost 175 years of Federal service. The retirees are Edward J. Bartsch, Supply Cataloger, Property Control and Utilization Branch, Procurement Division; J. Cabell Messick, Assistant Chief of Engineering and Technical Service; Oce W. Johnson, Engineering Technician, Composite Model Development Section, Mechanical Services Division; Chris Harold, Plastic Model Development Section, Mechanical Services; and Clara C. Anderson, Mail and File Supervisor, General Files and Mail Section, Administrative Services Division.

Bartsch was born February 26, 1906 in Ellwood City, Pennsylvania. He attended Ellwood High School and joined the U.S. Army on March 11, 1927. He was discharged on December 31, 1948 as a master sergeant. He joined the Center staff on October 9, 1950 as a Property and Supply Clerk and retired on December 29 with over 40 years of Government service.

Messick was born in Hampton on April 20, 1909. He graduates from Hampton High School and studied architecture and mechanical engineering with the International Correspondence School. He joined the Langley Center staff in 1928 after serving two years as an employee of the Army Quartermaster Corps at Langley Air Force Base. He served as a designer and structural engineer from 1928 to 1944, at which time he was appointed Chief of the Engineering Service Division. He was named Assistant Chief of Engineering and Technical Services in 1962. In this position he was responsible for the engineering-design and construction of facilities, models, and equipment for the Center.

At retirement, Messick was presented a Special Service Award for Exceptional Service "in the engineering, design, and development of unique, complex research facilities; and supporting hardware; and for his contributions in developing engineering organizations, methods, and procedures which have contributed most substantially to the effectiveness and timeliness of programs of the Langley Research Center and other Centers." He retired on Jan. 2 with almost 42 years of Federal service.

A native of Portsmouth, Johnson was born September 3, 1904. He attended Newport News High School and served his apprenticeship as a Patternmaker at the Newport News Shipbuilding and Dry Dock Company. He started his NASA career on October 12, 1942 and retired January 13 with over 25 years of service.

Harold was born April 15, 1901 in Hampton. He started his Government service in 1923 with the Quartermaster Corps at Langley Air Force Base where he worked for 13 years. He served a temporary appointment at the Center in 1938 and returned on April 22, 1940. He retired on January 13 with almost 41 years of service.

Mrs. Anderson is a native of Isle of Wight. She attended State Teacher's College in Farmville and taught 2 years in Elizabeth City County. She entered on duty at the Center on October 16, 1942 and retired January 13 with over 25 years of service.

APPRENTICE SCHOOL NOTICE

The Spring Semester of the Apprentice School will start on Monday, February 5 and classes will be held in the Apprentice classrooms located on the first floor of Building 586.

Courses offered and the instructors are as follows:


Tuesday - Engineering Drawing I, C. W. Osborn; College Physics II, Y. G. Collins; Strength of Materials I, Gordon Owsley; Industrial Instrumentation, E. J. Yarrington.

Wednesday - Basic Electricity, C. C. Berry; Strength of Materials II, L. V. Clark; Machinery Handbook III, J. W. Simpson; College Physics II, L. R. McMaster.

Thursday - Pattern Making, P. C. Geiger; Metallurgy, W. A. Wright; Transistors II, A. L. Jones.

FOR SALE: Male English Setter puppy, registered. James, 642-4109, Bena.

FOR SALE: Lafayette HE-80 all-band communications receiver, 14-tube; also interior doors, screen doors of plywood and lumber. Rainey, 596-9402.


CREDIT UNION NOTICE

Mark your calendar and reserve Wednesday, February 14 - St. Valentine's Day - for an evening of business and pleasure. The occasion is the Thirty-Second Annual Meeting of the Langley Federal Credit Union. Once again the meeting will be held at the Riverdale Theatre beginning at 7:30 p.m. Admission tickets will be available for adult members at the Credit Union building February 5 on a strictly first come, first served basis.

The business part of the meeting will be streamlined so as to permit a full reporting of 1967 accomplishments and the election of officers without unduly prolonging the evening. One highlight will be Robert L. Girouard’s “President’s Report.” Others will be the presentations of C. S. Hudgens, treasurer, and those of the committee chairmen as they cover their respective areas of interest and responsibility. In connection with the election of officers, the Nominating Committee asks that all names proposed for three Director and three Credit Committee vacancies be submitted to Lee Schilling, chairman, extension 2631, prior to February 1. There may be nominations from the floor.

The entertainment portion will include the drawing of door prizes with last year’s requirement still in effect: a Credit Union bumper decal must be in place to qualify. These decals may be picked up with the tickets. The feature, however, will be the Peninsula premier of a British import, “The Billion Dollar Brain.” This is the latest of their traditionally excellent spy/chase adventure pictures. Starred are Michael Caine, Karl Malden, Ed Begley and Oscar Homolka. Remember, admission is by ticket only and there is not unlimited seating. Monday, February 5, is the date to get your ticket and the earlier the better.

TECHNOLOGY UTILIZATION NEWS

Special Publications and Tech Briefs are issued to disseminate knowledge of research and development that may be useful outside as well as within the aerospace industry. These publications describe new concepts, designs, techniques, materials, processes, equipment and products. They emphasize ideas and data which appear to be of most value to those active in other fields of endeavor. The objective is to facilitate the transfer of potentially useful information from one industry to another, and thus to advance the benefits to mankind from the nation’s venture into space.

Become familiar with these publications. A limited number of “best sellers” are available at the Technology Utilization Office, Room 227, Building 1219, phone 3281. For example:
- Magnetic Tape Recording - SP-5038 326 pages
- Adhesives, Sealants and Gaskets - SP-5066 60 pages

Indexes to these publications are also available. Call or stop by the T.U. Office.

FOR SALE: 9 x 16-foot tent - $45. Garrison, 826-7081.
FOR SALE: 17-foot Beeline camping trailer. Insley, 868-3211 from 4 to 6 p.m.


WANTED: Fifth driver from Windsor Great Park to W.A. on 8 shift. Lamar, 3711.
TIME EXTENDED FOR APPEALS

Liberalized time limits for the filing of appeals, approved by the Civil Service Commission, will enable Federal employees to present more nearly complete appeals without having to request additional time.

The Commission's action extends to 15 calendar days all time limits of less than 15 calendar days for (1) appeals to the Commission, (2) appeals to performance rating boards of review, and (3) adverse action and other appeals to agencies that are subject to regulations of the Commission.

Concurrently, the Commission approved amendments to the regulations to show how to compute a period of days and to specify that all references to days mean calendar days and not workdays unless otherwise defined or limited.

Major changes that will result from the new 15-day time limits are the following:

An employee who previously had 10 days to ask his agency to reconsider its determination that he had not maintained an acceptable level of competence and was therefore not entitled to the next higher salary rate of his grade will have 15 days.

An employee who was previously allowed 10 days to file a complaint of discrimination in his agency in connection with an adverse action will have 15 days.

An employee who previously had 10 days to file an administrative appeal to his agency under the agency appeal system required by the Commission's regulations will have 15 days to file such an appeal.

Other time limits extended from 10 to 15 days are first-level appeals related to: reduction-in-force actions, re-employment rights in transfers to International Organizations, reemployment rights or reinstatement rights under the Foreign Assistance Act of 1961, restoration after military service, position classification changes involving downgrading or loss of compensation, salary retention, adverse action by agencies, and adverse action by the Commission.

In first-level appeals related to reemployment rights in the movement of an employee between executive agencies, the losing agency previously had 5 days and the employee 10 days in which to appeal. Under the change, both will have 15 days.

In all second-level appeals for which time limits were not prescribed, or in which time limits were set at less than 15 days, the time limit will be 15 days.

The changes will become effective January 30.

RETURN BOTTLES TO RACKS

It has been necessary to reduce the janitorial service due to budget limitations; therefore, some services previously provided will no longer be available.

One service which has been discontinued is that of having the janitorial force return empty soft drink beverage bottles to the vending machine racks. Staff members are requested to return empty beverage bottles to vending machine racks on the same day on which the purchase is made. When these bottles accumulate a safety hazard is created.

Staff members are urged to place the bottles in the racks provided so that it will not be necessary to discontinue soft drink vending machine service in any area.

Daniel S. Wentz II Anna P. Plott C. C. Shufflebarger

PERFORMANCE AWARDS PRESENTED

Daniel S. Wentz II, Office of Public Affairs; Anna P. Plott, Lunar Orbiter Project Office; and Charles C. Shufflebarger, Hypersonic Research Engine Project Office, have received letters of commendation and cash awards from the Langley Incentive Awards Committee for sustained superior performance.

Wentz received his award for "his outstanding management of the public information functions associated with the Lunar Orbiter Project." A native of Hanover, Pennsylvania, Wentz received his B.A. degree from the American University. His first assignment with the space agency began in 1952 at Washington Headquarters. In August, 1952, he was transferred to Ames Research Center where he headed the public affairs activities of that Center for 10 years. Since July, 1962, he has been attached to Langley's Office of Public Affairs.

Mrs. Plott was cited for "sustained superior performance in the outstanding and efficient manner in which she carried out her assigned duties and particularly in training and supervising the Lunar Orbiter secretarial and typing staff during a period when work loads were extremely heavy and personnel turnover was abnormally high."

A native of Luray, Mrs. Plott started her Government service in 1957 as a stenographer.

Shufflebarger received his award for "his outstanding performance in organizing and administering Langley's Technology Utilization Program and particularly on hydroplaning effects which have had a significant impact on vehicle safety in their dissemination to industry, civilian organizations and other government agencies." He was born in Dublin and attended the Norfolk Division of the College of William and Mary and the Virginia Polytechnic Institute. Joining the Center staff in 1935, he was assigned to the Flight Section and in 1944 appointed assistant head of the Gust Loads Section. He was transferred to the Research Staff Office in 1959 and was placed in charge of the Technology Utilization Program in 1963. He was appointed to his present position on January 15.

WANTED: Ride from Hilton Village to W.A. on 8 shift. Brinkley, 4891.

FOR SALE OR TRADE: Baby crib with new mattress, maple high chair, electric sewing machine for Port-a-Crib. Woodman, PA2-8667.

WANTED: Ride from Betsy Lee Gardens to W.A. on 8 shift. Nuttall, 3221.

FOR SALE: Stereo components - amplifier, turntable, speaker, tape recorder; also 8 mm movie camera. Borkalwsky, 877-4972 after 6 p.m.
HEART PROBES MAY AID DOCTORS

Blood pressure sensors so small they can pass through a dog's artery into the heart have been developed by NASA. Now used on research animals, they show great promise as a diagnostic and monitoring instrument for humans.

The smallest of the miniature probes, less than five one-hundredths of an inch in diameter, is used by life scientists at Ames Research Center to make measurements on anesthetized dogs.

It is inserted through an ordinary hypodermic needle into an artery and maneuvered into the left ventricle on the end of a thin flexible tube to make measurements inside the artery and the heart without disturbing the flow of blood. Its small size is expected to make the instrument particularly useful in treating babies.

The sensor is a diaphragm-type capacitance transducer mounted on the end of a cardiac catheter. It was invented by Grant W. Coon of the Ames Center, based on transducers originally designed to measure pressures on flight models in wind tunnel tests.

A similar device developed at Electronics Research Center has measured blood pressure with unprecedented accuracy inside a dog's artery and heart in tests conducted with Harvard Medical School. The tests gave promise of combining the sensor with a transmitter so that it could be permanently implanted in a human body for continuous monitoring while the subject moved about freely.

The Ames instrument is described in NASA Tech Brief B-67-10669, the 2,000th of a series of technical bulletins issued by the Office of Technology Utilization to announce innovations resulting from space research to industrial firms, medical and educational institutions and others who may be able to use them in non-aerospace work.

COMMUNICATION LINES LAID

The two-millionth mile of space communications circuits has been laid in a two-foot deep trench across Donkey Plain in the volcanic rubble of The Devil's Ashpit.

This mile of coaxial cable unites two antennas on Ascension Island in the South Atlantic Ocean where NASA is completing one of its links in the chain of Manned Space Flight tracking, telemetry and voice communications facilities.

The towering, cup-shaped antenna reflectors dwarf everything near them and make the mile of desolate lava ash and rock seem short enough to shout across.

But the messages across this mile will be flowing at microsecond speed, with thousands of telemetry data bits of flight information in addition to the voices of flight directors at Mission Control in Houston and of the Apollo astronauts.

The antennas are a 30-foot-diameter paraboloidal reflector for contact with the Apollo spacecraft and a 42-foot-diameter dish to link with the communications satellite, Intelsat II, hovering at 23,300 miles over the Atlantic.

All this communications traffic, thousands of times faster than freeway rush-hour, flows across that mile of coaxial cable to the satellite communications antenna where it is directed skyward to the communications satellite. There it is relayed west across the Atlantic to the AT&T ground station at Andover, Maine, then by land line to Network Communications Control Center at Goddard Space Flight Center and on to Mission Control at Houston.

The flow of telemetry and voice goes to all 14 of NASA's Apollo land stations in the Manned Space Flight Network circling the Earth and to the five Apollo tracking and communications ships which support injection into Earth orbit, insertion of the spacecraft into flight toward the moon, and reentry into Earth's atmosphere and splashdown. The ships are stationed in Atlantic, Pacific and Indian Ocean areas where no land sites are possible.

Integrated in the NASA communications circuits are STADAN facilities for scientific satellites and the Deep Space facilities to support probes to the moon and the planets.

All these circuits comprise the two million miles of NASA Communications, known as NASCOM, of which the Ascension Island cable is the final link.

SEAMANS NAMED CONSULTANT

Dr. Robert C. Seamans Jr., former Deputy Administrator of NASA, has returned to NASA in a new capacity.

Dr. Seamans, whose resignation to return to private life last October became effective January 5, was sworn in by Administrator James E. Webb as consultant.

A seven-year veteran of the 10-year-old space agency, Seamans joined NASA with a commitment to serve two years as Associate Administrator. He was general manager during the successful manned flight Mercury and Gemini programs and a series of unmanned space missions which brought vast amounts of new scientific knowledge and established practical applications of satellites in fields such as communications and weather forecasting.

Webb asked Dr. Seamans to continue to serve the agency and the federal government as a consultant to "lend his talents and experience to the complex problems we face as the space program moves into its second decade."
Astronauts for first manned Earth orbital flight of Apollo spacecraft prepare to enter mockup of command module for couch, panel and stowage area checks at Space Division of North American Rockwell Corporation, Downey, Calif. The astronauts are (from left) Walter Cunningham, Don Eisele and Walter Schirra, spacecraft commander.

REEDER RECEIVES AWARD
(Continued from page 1)
primarily for the study of handling qualities and instrument flight of helicopters. In 1965 he was a co-recipient of the Wright Brothers Medal awarded by the Society of Automotive Engineers for the paper contributing most to aeronautical engineering given at an SAE meeting during 1964 and entitled, "The Aerodynamic and Flying Qualities of Jet V/STOL Airplanes" by Marion O. McKinney, Richard E. Kuhn and Reeder. In 1966 he was presented with an Honorary Fellowship in the American Helicopter Society for outstanding achievement as a research pilot in the advancement of the helicopter.

He is a Fellow of the Society of Experimental Test Pilots and an Associate Fellow of the AIAA. He is a member and past president and secretary of the Twirly Birds, an international association of pioneer helicopter pilots.

He is married to the former Frances L. Winder of Hampton. They have two daughters, Shirley Page and Carol Ann.

COURSE OFFERED STAFF
An elementary ten-week course in College Physics will be offered by the York Technical School. Classes will start the week of February 5 and will be taught here at the Center. Mathematical background necessary for this course includes only a knowledge of Algebra and Trigonometry.

Tuition is $10 and the textbook may be purchased through the NASA Exchange.

Persons interested should contact R. A. Outlaw, 4766.

right panel photo, spacecraft in which the three astronauts will fly is hoisted into position for mating with service module to begin final systems checkout here in nation's largest cleanroom. Space Division at Downey produces the Apollo spacecraft command and service modules for Manned Spacecraft Center.

SPACECRAFT CHECKED OUT
The Apollo spacecraft that will take three astronauts on an Earth orbital mission later this year has entered final systems checkout at the North American Rockwell Plant, Downey, California. A Saturn IB launch vehicle (SA-205) will power the spacecraft on its mission.

Technicians have dubbed the spacecraft "Wally's Ship" in honor of Astronaut Walter Schirra, who will command it. He and his crew - Walter Cunningham and Don Eisele - will take the craft for an Earth orbital mission of several days to "wring out" systems and qualify them for later manned flights to the moon.

The checkout of the craft is done electronically in the cleanroom of NAR's Space Division. Acceptance checkout equipment (ACE) checks each system and its function for the specific mission of a particular spacecraft.

Four other spacecraft are undergoing tests in support of Schirra's flight: two at the Manned Spacecraft Center, one at Kennedy Space Center and another at Downey. One, called "The Pacesetter," is also in final checkout before delivery. It is so named because it must pave the way for the first manned flight. Although it will never leave the ground, it is fully equipped. During tests, three astronauts will put it through paces under space conditions.

FOUND: Pair of lady's black leather gloves in East Area. Osborne, 4856.
WANTED: 9 x 11-foot umbrella tent. Quisenberry, 838-1575.
SURVEYOR VII SUCCESSFUL

Surveyor VII, carrying a television camera, a mechanical claw and a soil testing chemistry kit, is giving the Nation's scientists a look at the roughest part of the moon yet explored.

The craft, last in the Surveyor series, soft landed Jan. 9 in the highlands around the 15,000-foot Tycho Crater near the south-central edge of the lunar disk.

Surveyor VII was launched January 7 from Cape Kennedy. Its trajectory was very accurate and the craft made an almost flat landing. The Surveyor's chemistry kit did not at first lower to the surface, but scientists later managed to maneuver the device into operation.


RESEARCH AIRPLANES: The X-15 and XB-70 are shown outside the hangar at Flight Research Center. The rocket-powered X-15 set a new unofficial world speed record of 4,534 mph last October 3.
Dr. Thomas O. Paine Named NASA Deputy Administrator

President Johnson has announced the appointment of Dr. Thomas O. Paine as new Deputy Administrator of NASA. Since 1963 Dr. Paine has been manager of TEMPO, General Electric's Center for Advanced Studies, Santa Barbara, California.

He succeeds Dr. Robert C. Seamans Jr., who resigned late last year after serving seven years with the space agency.

Born in Berkeley, California, November 9, 1921, Dr. Paine received his Bachelor's Degree in Engineering from Brown University in 1941. After wartime service as a naval officer aboard submarines, he earned his Master of Science Degree in 1947 and a Doctorate in Physical Metallurgy in 1949, both from Stanford University.

Dr. Paine assumed the post of TEMPO Director after working at General Electric Company's Research Laborat-

(Continued on page 3)
ANNOUNCEMENTS

NEWLYWEDS... Wedding bells rang on January 20 when Jean Spinney, Fiscal Division, was married to Phillip G. Golden, U.S. Army.

NOTE OF THANKS... The Activities Association has received the following letter of thanks from Lieutenant Colonel M. McQuowan, U.S. Marine Corps: “The Third Battalion, First Marines, has recently received several hundred packages of Christmas Cheer via Destroyer Squadron Four. These packages reportedly came from your organization. It is my privilege to extend a sincere thank you for your thoughtfulness. The choice of contents and careful packaging brought your Christmas Cheer in good condition in time for Christmas. Be assured that the men do appreciate your forethought and concern. Thank you for each of our Marines.”

OPERA SOCIETY... The Peninsula Civic Opera Society will present “The Threepenny Opera” tonight and tomorrow night at 8:15 in the Warwick High School auditorium. General admission is $2.50. Clyde Winters, Scout Project Office, is technical director of the production. Richard H. Sawyer, Flight Mechanics and Technology Division, is president of the group and Daniel S. Wentz, Office of Public Affairs, is on the Public Relations Committee.

SELECTIVE SERVICE NOTICE... All staff members concerned are urged to keep the Personnel Office, telephone 2568, informed of all selective service and reserve status changes.

BOOK SALE... Donations of books, records, sheet music, etc., are needed for the annual used book sale of the Hampton Branch of the American Association of University Women. Contributors may call Mrs. J.C. Kelly, 851-1470, during the day or Margery Hannah, 595-3144, in the evening.

WANTED: Full-size white canopy bed. Stowe, 877-3726 after 5 p.m.

FOR SALE: Truck camper - sleeps 5. Buckley, 877-3619.

WANTED: Fifth alternate driver from Riverdale to W.A. on 8 shift. Howe, 4724.


FOR SALE: 17,000 btu air conditioner, 22-inch window fan with stand. Clark, 838-0438.

NOTICE: The following book on management is available at the Library: HD38.D68 “The Effective Executive” by Peter F. Brucker.

WANTED: Driving combination or ride from Edgehill to W.A. on 7:30 shift. Robertson, 3761.
The Office of Space Science and Applications Senior Council met at the Center January 25 and 26. Attending were front row (from left): Dr. Abe Silverstein, Director of Lewis Research Center; Dr. Floyd L. Thompson, Director of Langley Research Center; James E. Webb, NASA Administrator; Dr. John E. Naugle, Associate Director of OSSA; Dr. Robert R. Gilruth, Director of Manned Spacecraft Center; Dr. William H. Pickering, Director of Jet Propulsion Laboratory. Back row - Charles J. Donlan, Langley's Deputy Director; Dr. John F. Clark, Director of Goddard Space Flight Center; H. Julian Allen, Director of Ames Research Center; Dr. Wernher von Braun, Director of Marshall Space Flight Center; and Robert L. Krieger, Director of Wallops Station.

ORBITER PROGRAM ENDS

(Continued from page 1)

graphed more than 99% of the lunar surface at resolutions at least 10 times better than earth-based telescopes could provide.

From Lunar Orbiter photography, eight candidate landing sites for Project Apollo astronauts were selected, and scientific understanding of the lunar surface was increased manifold. Tracking information from the Orbiters provided the most detailed knowledge of the moon's gravitational field yet attained, information which will be directly applicable to the Apollo program.

Lunar Orbiter was managed for NASA by Langley Research Center. The Boeing Company, Seattle, Washington, was the prime spacecraft contractor.

FOR SALE: 1964 Mercury Montclair - 4-door. Jones, 877-3892, or Driscoll, 244-7971.

FOR SALE: 1967 Mustang with power steering, 13,000 miles, $200 and assume payments. Gardner, 877-9139.

FOR SALE: 1967 Plymouth Belvedere II convertible - $2400. Fedors, 244-2155.


TEMPO is a 400-man industrial "Think Tank" with branch offices in Honolulu and Washington and with representatives in Geneva, Paris and Tokyo.

Recent programs range from criteria for selection of model cities to the logistics support systems for Polaris submarines; from industrial management information systems to the economic development of Algerian river valleys; from the operation of a major defense data center to the long-range planning for an international bank.

About 18 percent of TEMPO's work is for government and industry overseas and about 15 percent is for General Electric.

NASA DEPUTY ADMINISTRATOR

(Continued from page 1)

trary in Schenectady, N.Y., managing GE's Meter and Instrument Development Laboratory in Lynn, Massachusetts, and managing the GE Research and Development Center in Schenectady.

It carries out about $10 million of interdisciplinary research annually for high-level clients in federal, state and local governments, foreign nations and industry.

Recent programs range from criteria for selection of model cities to the logistics support systems for Polaris submarines; from industrial management information systems to the economic development of Algerian river valleys; from the operation of a major defense data center to the long-range planning for an international bank.

About 18 percent of TEMPO's work is for government and industry overseas and about 15 percent is for General Electric.

NASA has begun preliminary negotiations to obtain a Convair 990 jet transport airplane for research in problems of aeronautics and space science. The airplane is the Convair 990 prototype Model 30-A5, which is stripped of passenger accommodations. The company will make extensive modifications to convert the jet to a flying laboratory for space and aeronautics work. NASA will lease the 990 jet from the Convair Division of General Dynamics Corp.

MARGERY HANNAH HONORED

Margery E. Hannah, an Aero-Space Engineer in the Flight Mechanics Branch, Space Mechanics Division, was one of five who received the 1968 Alumni Citation Awards presented to distinguished graduates of Willamette University, Salem, Oregon, as part of the Founders and Benefactors' Day observance held January 17.

Miss Hannah's citation reads as follows:

"Long before Sputnik, Astronaut or Apollo were a part of our everyday vocabulary, dedicated men and women were investigating and preparing the way for the accomplishments of today's space programs.

"One of these pioneers in space research was Margery Hannah. After earning her master's degree from the University of Idaho, Miss Hannah joined the forerunner of the modern space agency, the National Advisory Committee for Aeronautics in 1939.

"She began her career as a computer mathematician and from which she advanced into aerospace research. She currently holds a position as aerospace engineer with National Aeronautics and Space Administration. Miss Hannah's scientific research has included such programs as 'Lunar Trajectories,' 'Earth-Moon Space' and 'Lenticular Satellites.' She is the author and co-author of several scientific research papers.

"Miss Hannah is an active member of the American Association of University Women and served as president of the Hampton, Virginia branch from 1955-57, and as a member of the Board of Directors for the State of Virginia from 1962-64. The accomplishments of this distinguished Willamette alumna have been included in 'Who's Who of American Women' and 'Who's Who in the South and Southwest.'"

Miss Hannah was born in Lewiston, Idaho. She received her Bachelor of Arts degree in Mathematics in 1932 from Willamette University and her Master of Science degree in Education in 1938 from the University of Idaho.

She began her professional career as a teacher in the public school systems of Idaho and Oregon, teaching mathematics and science. She joined the Center staff in September 1939 as a junior computer and was soon placed in charge of a computing section.

In 1946 she was transferred to Full-Scale Research Division, making mathematical investigations of problems pertaining to airplane performance and presenting the results in the form of technical papers.

She has specialized in aerodynamic theory, including aeroelasticity, flight and fluid mechanics, and trajectory analysis as applied to space navigation.

FOR SALE: Kent electric guitar (hollow body with double pick-up) and case - $74, also Harmony amplifier with 3 inputs and reverberator - $39. Scher, 596-1604.
BUCKLEY, TRUSZYNSKI NAMED TO NEW POSITIONS AT NASA

NASA announced that Edmond C. Buckley has resigned as Associate Administrator for Tracking and Data Acquisition and is being appointed as Special Assistant to Administrator James E. Webb. He will be succeeded by Gerald M. Truszynski who has been Buckley's deputy for seven years.

Buckley's first assignment in his new role will be to serve as vice chairman of a NASA Post Apollo Advisory Group headed by Dr. Floyd L. Thompson, Langley Director.

In commenting on the changes Webb said: "Mr. Buckley, a veteran of 37 years of government service, has been one of the architects of this nation's great competence in tracking and data acquisition. NASA is most fortunate that in this time of transition from the accomplishments of the first decade of the space age to taking steps to meet the opportunities of the second decade, he will be available to give us the benefit of his vast knowledge and experience in a number of special study areas.

"The fact that Mr. Truszynski is so well prepared to undertake the leadership of the Office of Tracking and Data Acquisition is a tribute to both Mr. Buckley and Mr. Truszynski."

Buckley joined the Langley Research Center in 1930. In 1943 he was named Chief of the Instrument Research Division. He was largely responsible for the development of the Wallops Island rocket test area, and for the flight and ground instrumentation used at Flight Research Center.

In 1959 he was named Assistant Director for Space Flight Operations at NASA Headquarters with responsibilities similar to those of his present position. Under his direction, Project Mercury and the Deep Space Networks were established and the Scientific Satellite Network was modernized and expanded.

Similarly, he directed the establishment of the Gemini Network, the plans for the Apollo Network, and, concurrently, the organization of a NASA world-wide wide and high-frequency radio and satellite communication system linking the many stations to the control centers.

Buckley was born in Fitchburg, Mass., in 1904. He earned a Bachelor of Science degree in Electrical Engineering at Rensselaer Polytechnic Institute in 1927.

He is vice chairman of the Space Flight Ground Environment Panel of the Aeronautics and Astronautics Coordinating Board and is chairman of the U.S. Section of the Mexico-United States Commission for Space Observations.

Truszynski has been Deputy Associate Administrator since 1961. Prior to this he was Chief of Operations, Office of Space Flight Operations. He came to NASA Headquarters from the Flight Research Center in 1960.

Truszynski joined the Langley Research Center staff in 1944 where he was concerned with instrument research and development and the early adaptation of precision radar systems to the measurement of high-speed rocket trajectories for aerodynamic research purposes.

In 1947 he transferred to Flight Research Center as instrumentation project engineer on the X-1 rocket research aircraft.

In 1954 he became Chief of the Instrumentation Division, heading the development and operation of on-board research instrumentation, airborne and ground telemetering.

Charles J. Donlan (left), Deputy Director, presents a Special Service Award for Exceptional Service to Louis P. Tosti, VTOL Branch, Flight Mechanics and Technology Branch. "For his exceptional service in managing Phase III of the San Marco Project which led to the successful launching of a satellite from a mobile launch complex." Tosti is a native of New York City. He received his B.S. degree in Mechanical Engineering from the College of the City of New York and joined the Center staff on May 16, 1944.

TAX CONSULTING WARNING

Each year about this time, the question arises whether a Federal employee may act as a tax consultant to private clients without a conflict of interest.

The General Counsel of NASA has stated in this connection:

"...Although an employee may set himself up as a tax consultant without violating the conflict of interest statutes, he is as a practical matter limited to collecting information and giving advice. As soon as he signs a return, which he must do if he prepares it, he creates the possibility that he may be called to discuss it with the Internal Revenue Service, and thereby to violate the law."

A careful reading of Title 18 United States Code Section 205, set forth on Page 48 of Standards of Conduct for NASA Employees (NHB 1900.1 June 1966) is recommended.

ground radar tracking systems and initial automatic data systems required in the flight research airplane program.

The planes included the X-1, which made the world's first supersonic flight, and the subsequent series of rocket and high speed research aircraft including the X-15 which is currently conducting hypersonic flight research investigations. He was responsible for the technical design, implementation and operation of the 500-mile X-15 "High Range" tracking and data network extending from Edwards to northeast Nevada.

Born in Jersey City, N.J., in 1921, Truszynski received a B.S. degree in Electrical Engineering from Rutgers University in 1944.


FOR SALE: 3-400Z G.G. linear amplifier and power supply, also DX-60 and VF-1 VFO. Burks, 877-3502 after 6 p.m.

LOCAL CHAPTERS TO OBSERVE NATIONAL ENGINEERS' WEEK

The Peninsula Chapter of the Virginia Society of Professional Engineers is planning a program for National Engineers’ Week. The purpose of National Engineers’ Week is to focus public attention on the achievements and accomplishments of the engineering profession. The observance for 1968 is February 18-24, the week of Washington’s birthday, who was himself a noted engineer.

As part of the observance, the Hampton Roads Section of the American Institute of Aeronautics and Astronautics will hold a joint dinner-dance meeting on Friday, February 23, at the Activities Building in conjunction with the following engineering groups - VSPE, IEEE, and ASME.

Dr. Newton C. Birkhead, General Electric Company, Philadelphia, will be guest speaker. The title of his talk will be “Engineering and World Health.”

The evening events will include a social hour at 6:30 p.m., dinner at 7:30, the talk at 8:30, followed by dancing to the music of Charlie Johnson and his orchestra.

Reservations may be made by calling Brian O’Hare, 877-3634; Bernard Spencer, 722-6478; or Conrad Willis, 838-0695. Wives, guests, and non-members are invited.

CONTRACTOR BIDS INVITED FOR RESEARCH FACILITY

Langley Research Center has issued invitations to contractors to bid on the construction of buildings, test section and auxiliaries for a new V/STOL Transition Research Tunnel.

Bids will be accepted by Langley’s Procurement Division until 3 p.m. EST March 14.

The new facility is scheduled to go into operation in early 1970 in Langley’s West Area for use in studying the problems of designing and operating aircraft capable of vertical or short takeoff and landing. A test section 15 by 21.5 feet will permit Langley scientists to use large V/STOL models in investigating an aircraft’s characteristics in transition from vertical to forward flight in takeoff and landing.

The specialized research facility is being built adjacent to one end of the 7 by 10-foot wind tunnels building. This structure now houses a low and a high speed test section. The present low-speed section area will be used for model preparation for the new tunnel.

Congress authorized $5,011,000 in fiscal 1966 for construction of the V/STOL Transition Wind Tunnel.

The current invitation to bid calls for services and materials to construct a test section; reentry lip; insulated test chamber and control room; model preparation area; mechanical and electrical equipment room; instrumentation and power wiring; mechanical and electrical utilities; and the dismantling and demolition required at one end of the existing wind tunnel.

This request for bid involves only part of the total authorized fund. Not included are the fan drive system, fan blades and hub, tunnel structure and foundations, which are being procured under other contracts.

FOR SALE: 30-inch Admiral electric range - $65. Bryant, 851-5002.

FOR SALE: 9 piece dining room suite, also adjustable hospital bed. Ashe, 826-1014.

Hans-Juergen C. Blume (left) recently received a check for $700 from the NASA Inventions and Contributions Board for his invention entitled “Negative Impedance Display.” George B. Graves, Chief of Flight Instrumentation Division, makes the presentation.

AFGE GRANTED RECOGNITION

On January 26, the American Federation of Government Employees Lodge 2755 was granted formal recognition at Langley Research Center for a Center-wide unit of both wage board and general schedule employees excluding those employees in the two units where exclusive recognition is currently held by other employee organizations.

Under provisions of Executive Order 10988 which issued guidelines to cover dealings between Government agencies and employee organizations, an organization granted formal recognition shall be consulted from time to time in the formulation and implementation of personnel policies and practices, and matters affecting working conditions that are of concern to its members. In addition, the organization is entitled to raise questions concerning such matters for discussion with appropriate officials.

Executive Order 10988 provides employees the right to join or refrain from joining bona fide employee organizations and requires that agencies not interfere with these rights of employees. In addition it requires that supervisors and other management officials maintain an air of strict neutrality concerning whether or not an employee should or should not join an employee organization.

Exclusive recognition for units here is currently held by the International Association of Machinists and Aerospace Workers, for a unit within the Machine Branch, Mechanical Services Division, and by the Pattern Maker’s League of North America, Newport News News Association for a unit with in the Modelmaking Branch, Mechanical Services Division.


WANTED: 16-foot boat trailer. Prince, 868 9790.

FOR SALE: 42-inch Sunray copperclay electric range - $80. Myers, 851-5826.

FOR SALE: 60 x100-foot wooded lot in Woodhaven Shores, boating, fishing and swimming available. Long, 877-4129.
ANNIVERSARY OF CIVIL SERVICE ACT RECOGNIZED BY PRESIDENT

President Johnson has issued the following statement concerning the 85th Anniversary of the Civil Service Act:

"The 85th anniversary of the Civil Service Act deservedly draws public attention to those who carry forward the vast and complex responsibilities of the Federal Government.

"I have many times expressed my high regard for the members of the Federal Civil service. They are a strategic national resource and an indispensable arm of our democratic society. Individually and collectively, they ensure the continuing success and integrity of our enviable civil service merit system.

"Passed by the Congress on January 16, 1883, the Civil Service Act was a response to an imperative demand to free this nation from the corrupt and degrading spoils system. Over the years, it has repeatedly proved its ability to provide efficient administration of the public business. It has been responsive to the changing needs of the American people, while consistently maintaining high standards of professional honesty and excellence. It served as a model of progressive good government for State and local jurisdictions and by the governments of many other countries.

"On this 85th anniversary, I am happy to reaffirm my pride in our Federal civil service and in its dedicated people. It is a pride that is widely and wisely shared."

WELL STACKED MATERIALS

You will find that you cannot stack materials satisfactorily unless you start with a safe base. If surface of the floor or yard is uneven, see that it is leveled. Use dunnage or timber when necessary to make sure that the pile will not shift. Chock barrels or other round objects that might roll.

How high should materials be stacked? There is only one answer and that is to pile them to a safe height. That height will be determined by the floor load limit, by the types of materials and the strength of containers, and by the requirements of fire protection. Cross-tie (interlock) the pile if necessary. There must be a space of at least 18 inches between the top of the pile and the sprinkler heads. More space must be allowed if the materials can burn easily. Never store things close to open light bulbs or hot pipes.

Do not stack materials in aisles. This practice will hamper the operation of power trucks and fire equipment. It also endangers anyone who walks by. Even in the first row next to the aisle, only pile bulky materials one-item high, unless they can be tightly interlocked so they will not fall into the aisle.

Never pile broken containers. If they are damaged, have them repackaged before stacking.


FOUND: Set of keys on key ring, also pair of glasses in black case. Security Office, 2507.

WANTED: Ride from Sedgefield St. and Main St. to W.A. on 8 shift. Edna Cox, 3313.

WANTED: Driving combination from Riverdale to E.A. on 8 shift. Hilliard, 2601.

FREE: Female puppy, 2-1/2 months old, part Retriever. Childs, 898-6719.

FOR SALE: Walnut drop leaf table and 2 chairs, also floor polisher. Bell, 851-1188.


FOR SALE: American Standard microscope, 3 objectives, one oil immersion lens. Webb, 826-2359.
NEBA HAS LOW-COST LIFE AND ACCIDENTAL DEATH INSURANCE

The NASA Employees Benefit Association calls attention to the life and accidental death insurance available to the Langley staff. The low-cost protection is easy to obtain.

**SCHEDULE OF INSURANCE**

<table>
<thead>
<tr>
<th>Description of Class</th>
<th>Life Insurance Face Amount</th>
<th>With Accidental Death Benefit</th>
<th>Employees' Quarterly Payment*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EMPLOYEES WHOSE BASE ANNUAL EARNINGS ARE:</strong></td>
<td><strong>$2,000</strong></td>
<td><strong>$4,000</strong></td>
<td><strong>$2.60</strong></td>
</tr>
<tr>
<td>Class 1</td>
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<td><strong>$8,000</strong></td>
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<td>Class 2</td>
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<td><strong>$7.80</strong></td>
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<tr>
<td>Class 3</td>
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<tr>
<td>Class 4</td>
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<tr>
<td>Class 5</td>
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<tr>
<td>Class 6</td>
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<td><strong>$20,000</strong></td>
<td><strong>$16.90</strong></td>
</tr>
<tr>
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<tr>
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<tr>
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<tr>
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<td><strong>$36,000</strong></td>
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</tr>
<tr>
<td>Class 11</td>
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<td><strong>$40,000</strong></td>
<td><strong>$32.50</strong></td>
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<td>Class 12</td>
<td><strong>$25,000 and over</strong></td>
<td><strong>$50,000</strong></td>
<td><strong>$32.50</strong></td>
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</tbody>
</table>

*The net cost of the Life Insurance is for the present year $1.15 per quarter per $1,000. The cost of the accidental death benefit is an additional $0.15 per quarter per $1,000. Net cost may vary from year to year based on dividends earned.

Changes in the class of insurance in accordance with the above Schedule of Insurance will be effective on the first day of the calendar quarter following the date of the change in the employee's base annual pay.

Either telephone Lois Taylor at 2605 or drop by and see her in Room 101 of Building 587, and ask for the medical questionnaire and enrollment card. In most instances, that's all it will take to obtain double indemnity life insurance. Home Life Insurance Company is the underwriter, and makes the determination of satisfactory evidence of insurability.

This is not a payroll allotment plan. You pay only four times a year either in cash or by check, in accordance with the above schedule. As you can see, the net cost of the life insurance and the accidental death benefit is $1.30 per thousand each quarter. This amounts to only 10 cents a week, or 20 cents a pay period. This is the total cost-- it is not matched by any other funds.

Further information about the plan may be obtained by contacting the Employee Services Branch of the Personnel Division, telephone 2605, or from any of the officers of the Langley Chapter of the NEBA. They are Charles F. Barnett, President; H. Lee Dickinson, Vice President; and Edward A. Howe, Secretary-Treasurer.

HEADQUARTERS APPOINTMENT

A new appointment and a shift of personnel was made February 1 in the NASA Headquarters staff.

Vice Admiral Charles E. Weakley, USN (Ret.) assumed the position of Assistant Administrator for Management Development and took over the staff of the Organization and Management Planning Division, which was under the Associate Administrator for Organization and Management.

A native of St. Joseph, Mo., Admiral Weakley is a graduate of the U.S. Naval Academy. He took three years of postgraduate engineering study at Annapolis and at Cambridge University in England.

When he retired from the Navy last November, he was Commander, Anti-Submarine Warfare Force, U.S. Atlantic Fleet for which he was awarded the Navy Distinguished Service Medal.

FOR SALE: 50 x 66 inch crocheted afghan in Granny pattern - $45, also new red fur trimmed coat, size 18 - $25. Desper, 722-1107.


TECHNOLOGY UTILIZATION NEWS

NASA's efforts in space have already had a considerable impact on biomedical research and practice, bringing direct health benefits to the public. These benefits have been deliberately induced by Technology Utilization Division's "BAT" teams currently operating at several technological centers under contract to NASA.

These teams, known as Biomedical Application Teams, are made up of professionals with both engineering and medical backgrounds, and are thus more capable of communicating through interdisciplinary barriers. They define, in functional terms, medical problems and ferret potential solutions from aerospace technology. Potential solutions are evaluated and information thus generated is contributed to medical science.

Perhaps you, too, can contribute new ideas or devices to the solution of biomedical problems. A list of designated Biomedical Problem Abstracts is available at the Technology Utilization Office, telephone 3281. Pamphlets which fully describe the functions of the Biomedical Application Teams are also available. Call or stop by the T.U. Office, Room 227, Building 1219.
Dr. George F. Pezdirtz, Head of the Chemistry and Physics Branch, Applied Materials and Physics Division, has been selected to receive the Arthur S. Flemming Award for 1968 as one of the ten outstanding young men in the federal government.

Sponsored by the Downtown Jaycees of the District of Columbia Junior Chamber of Commerce, the award has been presented annually for the past 20 years to honor outstanding young men whose accomplishments reflect a high degree of excellence and uncommon devotion to duty.

The purpose of the award is to recognize young men who have performed outstanding and meritorious work for the federal government; to attract outstanding young men to Civil Service; to encourage high standards of performance; and to enhance appreciation of our form of government and the opportunities and responsibilities that it presents.

Dr. Pezdirtz was presented an engraved plaque at the Arthur S. Flemming awards luncheon on February 15 in Washington. He was a guest along with other winners at a pre-awards dinner on February 14.

His citation reads as follows: “To Dr. George F. Pezdirtz, Chemistry and Physics Branch, Applied Materials and Physics Division, NASA Langley Research Center, for directing research which resulted in a new and promising group of polymer plastics called pyrrones, which resist heat and radiation and offer great potential as heat protection materials, adhesives, dielectrics, and semiconductors, and for research on characteristics of plastics in a simulated space environment.”

Dr. Pezdirtz joined the Langley staff in November 1960, establishing a basic research group to study the fundamental problems associated with the use of polymers and thermal coatings. He conducts and directs pioneering scientific investigations in these and related fields, including research which has led to the development of a new and very promising group of polymers called pyrrones. The pyrrones have considerable potential for application in both aeronautical and space flight. Prior to his employment by NASA, Dr. Pezdirtz conducted basic polymer re-

(Continued on page 4)
HOW TO LIFT AND CARRY

You can make lifting and carrying an easy matter - or you can break your back. It all depends upon how you do it.

First of all, inspect the object that you are going to lift to determine its size and weight, and to see if there are nails or other things that might cause injury.

When you are ready to lift, here's what you do:

- Crouch as close to the object as practical.
- Get a good grip on it.
- Keep your feet apart and bend your knees.
- Lift slowly by straightening your legs. (Keep your back relatively straight - your leg muscles, not your back, should do the work.)
- Avoid an awkward lifting position. Shift your body until you can make a straight lift.
- If you must lift the object higher than your waist, first lift the load waist high (using the procedure just described), then rest it on a support (if available) while you change your grip. Now bend your knees again to give added leg muscle power for the final lift.

When carrying an object, do not try to change its position or adjust your grip while you are in motion. Stop and rest the object against a support. Then make the change.

To set the load down, bend your legs, not your back.
- Lift slowly by straightening your legs. (Keep your back relatively straight - your leg muscles, not your back, should do the work.)
- Avoid an awkward lifting position. Shift your body until you can make a straight lift.

If you must lift the object higher than your waist, first lift the load waist high (using the procedure just described), then rest it on a support (if available) while you change your grip. Now bend your knees again to give added leg muscle power for the final lift.

When carrying an object, do not try to change its position or adjust your grip while you are in motion. Stop and rest the object against a support. Then make the change.

To set the load down, bend your legs, not your back.
- Follow the listing procedure, but in reverse order. Always set one corner down first, then slide your hands out so they will not get pinched.
- Get help before you handle a large or very heavy object. When two or more carry a load, they should decide beforehand how it is to be handled. They should check the route and the clearances. One man should act as leader. He should position himself so he can watch and coach the other.
Charles J. Donlan (left), Deputy Director, presents a Special Service Award for Exceptional Service to James R. Hall, Lunar Orbiter Project Office, "for exceptional service through exemplary leadership which has contributed significantly to the reliability, performance, and operational efficiency of the Scout launch vehicle system and to effective management of the Scout Program." Hall is a native of New York City. He received his B.S. degree in Aeronautical Engineering from Brooklyn Polytechnic Institute and his M.S. in Aeronautical Engineering from Virginia Polytechnic Institute. He joined the Center staff on July 12, 1948.

SIX RECEIVE HONORARY AWARDS

Six employees recently received Honorary Suggestion Awards under the Center's Incentive Awards Program. The award is in the form of a certificate which becomes a permanent part of the employee's personnel record. It gives recognition to an individual who has made a suggestion that has been accepted and put into use. The Honorary Suggestion Award is presented when a cash award is inappropriate because the suggestion is related to the employee's regular duties.

Awards were presented to the following:

William R. Hood, Mechanical Services Division, for developing an improved method of sanding irregular sizes and shapes of metal parts which results in higher quality products at reduced man-hour expenditure.

John H. Crews Jr., Structures Research Division, in recognition of a suggestion relative to the development of an anti-buckling guide plate configuration for extensometers, which allows existing load-controlled servo systems to be immediately converted to strain-controlled servo systems thus permitting special testing of sheet specimens which experience compression loads above the yield stress of both wire strain gages and extensometers.

A joint award to Mercer W. Christian and Oren H. Jones, both of Mechanical Services Division, for the implementation of a method for either cutting or grinding glass tubing to prescribed shapes while concurrently eliminating breakage of the glass.

George C. Salley, Analysis and Computation Division, for his suggestion concerning the use of a computer printed card which contains a special row of printing for indexing the actual punch column under the interpreter printed thus eliminating the need for reproducing an extra card which results in savings of programmer time.

C. W. Kruse, Mechanical Services Division, for the development of a mounting fixture for a light source, electric cell and a detector for a moment of inertia counter which simplifies the light alignment process and reduces the set up time on a knife edge or wire system.

PERSONAL MAIL NOTICE

Langley Management Instruction 1500.4 has been revised to request that employees not use the Center's address for the receipt of personal mail because all mail received at the Center is presumed to be official, and will be opened. The Instruction also states that outgoing personal mail is not to be placed in the mail service for delivery to the post office. This change is a result of the Center's effort to cope with an increasing volume of official mail without having to commit additional personnel to mail handling.

TECHNOLOGY UTILIZATION NEWS

NASA's ever increasing storehouse of new technology is now finding applications in the field of medicine. An ultra-miniature sensor (transducer) originally designed for use in wind tunnels to measure pressures on flight test models shows much promise as a diagnostic and monitoring instrument for human hearts. The sensor is installed on the tip of a thin, flexible (catheter) tube which is inserted through arteries leading into the heart ventricle. The instrument is so small (less than 1.4 mm diameter) that it does not disturb the flow of blood, even in babies.

The sensor was developed at Ames Research Center for use on pressure survey probes on wind tunnel models. Further development, through NASA's Electronics Research Center in Cambridge, has enabled measurement of blood pressure inside a dog's artery and heart ventricle with unprecedented accuracy. The tests, conducted at the Harvard Medical School, indicate the feasibility of implanting the sensor in an unhampered patient with constant monitoring provided by a transmitter.

Tech Brief 667-10669, which describes this innovation in more detail, is available from the Technology Utilization Office, Building 1219, extension 3281. Other new Tech Briefs available are:

TB 68-10002 - Gage Monitors Quality of Cross Wire Resistance Welds
TB 67-10632 - Automatic Design of Optical Systems by Digital Computer
TB 67-10635 - Connector Shorting Cap Provides Pin Alignment Inspection and Stray Voltage Protection
TB 67-10627 - Thoriated Tungsten Tube Provides Improved High Temperature Thermocouple Sheath

The following new compilations are also available:

SP-5904(01) - Selected Fluid and Vacuum Technology
SP-5905(01) - Seals and Sealing Techniques
SP-5907(01) - Electronic Instrumentation Techniques and Equipment


WANTED: Good home for 4-year-old German Shepherd - free. Cox, 826-6474 after 5 p.m.
LUNAR ORBITER PHOTOGRAPHED

A spacecraft orbiting the moon has been photographed from a telescope on Earth.

Studies of photographs made through a 61-inch telescope at the University of Arizona have identified Lunar Orbiter V as it appeared January 21, beyond the left limb of the moon's face.

The spacecraft resembles a 12th magnitude star in brilliance, Dr. Gerard Kuiper, Director of the Planetary Laboratory of the University, near Tucson, said. About 80 photographic plates were made, 52 of them showing Orbiter V.

The spacecraft was first recorded when it appeared close to the north pole at 6:20 a.m., and the last picture when it was slightly past the equator at 6:20 p.m. Scientists believe the experiment was the first success in sending observable light signals from the moon's vicinity to Earth.

The experiment was conducted for NASA and the Boeing Company by three astronomers headed by Dr. Kuiper. Boeing engineers were responsible for the design and fabrication of the Lunar Orbiter spacecraft.

Before they took Orbiter's picture from Earth, engineers used some of the remaining propellant in the spacecraft to resolve it so its mirrors on the equipment mounting deck would reflect sunlight toward Earth.

Stray light near the very bright moon was the worst problem for the photographers. They reduced it with a 6 foot sky baffle near the focus point of the telescope and shaded the inner five inches of the 15-inch secondary telescope mirror. This prevented multiple reflections within the telescope from reaching the photographic plates.

While making the pictures they guided the spacecraft by reference to stars, so that the Orbiter V images could keep full astronomical precision.

Because exposure times were either 5 or 10 seconds, the images of the spacecraft have short tails, due to the combined motion of the moon between the stars, and the spacecraft orbiting the moon.

These reference measurements, used together with NASA radar tracking data, will give scientists a more precise position for the center of mass of the moon with respect to its visible limb.

Lunar Orbiter V was launched by NASA last August 1 from Cape Kennedy. After completing its task, it was crashed into the moon on January 31.

ARTHUR FLEMMING AWARD

(Continued from page 1)

search at the Texaco Research Center, Beacon, N.Y.

The 34-year-old native of Omaha, Nebraska, received his Bachelor of Science Degree in Chemistry in 1955 and a doctorate in Organic Chemistry in 1960 from the University of Notre Dame.

Dr. Pezdirtz was the W.W. Barton Research Fellow at Notre Dame from 1956 to 1958. During 1955 and 1956, he was a chemistry laboratory instructor at Notre Dame and a special lecturer in physics and chemistry for Indiana (South Bend) University Extension in 1956-1957.

Dr. Pezdirtz is the author of several NASA publications as well as presentations in scientific journals and at national meetings of technical societies. He is a member of the American Chemical Society, the Society of Plastics...
LUNAR SITES SELECTED

The first Americans on the moon will land in one of five three-by-five-mile landing areas selected by NASA's Apollo Site Selection Board.

Each of the five landing areas satisfies criteria in which astronaut safety is the paramount consideration.

The places selected are ellipses around the following central points on the face of the moon:

Site 1. 34 degrees East; 2 degrees, 40 minutes North.
Site 2. 23 degrees, 37 minutes East; 0 degrees, 45 minutes North.
Site 3. 1 degree, 20 minutes West; 0 degrees, 25 minutes North.
Site 4. 36 degrees, 25 minutes West; 3 degrees, 30 minutes South.
Site 5. 41 degrees, 40 minutes West; 1 degree, 40 minutes North.

The first two sites are in the Sea of Tranquility, the third is in the Central Bay and the fourth and fifth are in the Ocean of Storms.

The five were selected from eight under study from a choice of 30 original sites. Selection of the five will permit scientists and engineers to concentrate on the fewer areas in preparing data on the specific sites.

The Board studied material obtained by unmanned Lunar Orbiters and soft-landing Surveyor spacecraft. Lunar Orbiter returned high resolution photographs of all the sites and Surveyor provided close-up photos and surface data of the general areas in which they are located.

Following are the criteria considered by the Board:

1. Smoothness of area. The sites should have relatively few craters and boulders.
2. Approach path. There should be no large hills, high cliffs or deep craters which would cause incorrect altitude signals to the landing radar.
3. Propellant. The sites were selected to allow for the expenditure of the least amount of propellant by the lunar module propulsion systems.
4. Recycling during countdown. The sites were selected to allow for the recycling time of the Apollo/Saturn V necessary if the countdown for launch at Kennedy Space Center is delayed.
5. Free return. The sites must be within reach of the Apollo spacecraft in the free-return trajectory. On the free-return trajectory a spacecraft would coast around the moon and return safely to Earth without requiring the operation of propulsion systems.
6. Lighting. For optimum visibility by the astronauts the sites will have a sun-angle of 7-20 degrees behind the lunar module as it approaches the landing.
7. Slope. The general slope of the landing area and the approach to the landing site must be less than two degrees.

All sites are within the Apollo Zone of Interest — that area of the visible side of the moon within 45 degrees east and west of the center of the moon, and five degrees north and south of its equator.

The desired sun-angle range of 7-21 degrees results in a one day launch opportunity per month for a given site.

Before flight to the moon, three of the five sites will be chosen for the specific mission. This will make a three-day period each month available for launching the prime Apollo flight.

FREE: Tortoise shell kitten. Schiess, 247-3097.
VIP NOTICES: Representatives who have not returned the VIP sampling of interest notices are requested to send them to Joe Siefring, MS 238, as soon as possible.

EMBLEM CONTEST: Staff members are reminded that the deadline for entering the LMAA Emblem Contest is March 1. The contest is open to all employees and members of their families and a prize of a $25 U.S. Savings Bond will be awarded to the winner. Entries should be sent to Arnold Mueller, MS 239, by March 1.

CHORAL GROUP: The NASA Choral Group, under the direction of Gene Hunt, is in need of additional vocalists. Rehearsals are already in progress for the “Sound of Music’ spring concert. Persons interested may contact Hunt, 3541, or Hampton Stump, 3234. You don’t have to be a professional to join. Rehearsals are held every second, third, and fourth Monday night at 7:30 p.m. in the Activities Building.

ELECTION: The election for representatives to the Activities Association will be held in April. The election committee is busy with the work of redistricting and listing of election supervisors.

DANCE: Final arrangements have been made for the Glenn Miller Band to play for a dance at the Activities Building on April 24. Dancing will be from 9 p.m. until 1 a.m. Only a limited number of tickets will be available and they may be purchased at the Activities Building after March 1. Reservations may be made by calling Bruce Amoie, 4583. All tickets will be sold on a first come first served basis.

BASEBALL DIAMONDS: The Association is readying the playing fields for baseball. The new field which will be available for spring practice is located behind the Activities Building in back of the tennis courts. The backstops and pitching mound will be installed soon.

NEW PIANO: The Activities Association has purchased a new piano for the lounge. It is available for group parties. Parents are requested to restrain children from using the piano when attending a function in the building.

PAYDAY GAME NIGHT: Payday game nights are still held biweekly at the Activities Building. Come out and join your friends in an evening of fun and profit.

APPRENTICE HONOR ROLL

Twelve apprentices completed the fall semester with an average of 96 or better. Members of the honor roll are:

Joseph P. Budik, Materials Processing and Development; James R. Clair, Plant Model Development; Everett L. Davis, Roy A. Heath, and Dallas G. Summerfield, Composite Model Development; George C. Firth, Research Projects and Models; Glenn A. Gates, Ground Support Systems; Alton C. Hall and Barry D. Meredith, Electronic Fabrication and Development; John F. Rogers, Fabrication Shop; Homer F. Rush, 8-Foot High Temperature Tunnel; and Nelson L. Seabolt, Rendezvous Docking.

FOR SALE: Kenmore copper tone washer and dryer. Miller, 877-2720.

Apollo 6 (A/S-502) the second unmanned space vehicle in NASA’s Apollo Saturn V program, leaves the Vehicle Assembly Building February 6 for erection at Pad A of Complex 39. The 363 foot, three-stage rocket and spacecraft, weighing 6,286,000 pounds when fueled, is being transported on the mobile launcher to the launch pad by the transporter. The transporter moves over the specially constructed crawlerway designed to support loads of approximately 18 million pounds. The unmanned Earth orbit Apollo 6 mission will be a high apogee flight, with systems testing, several propulsion systems burns, and a heat shield testing lunar reentry speeds. Launch is programmed for the first quarter of 1968.

CHARLES E. HEATH RETIRES

Charles E. Heath, Aerospace Technologist, Experimental Facilities and Equipment, Research Projects and Models Section, Research Models and Facilities Division, retired from the Center February 8 with almost 32 years of NASA service.

Heath was born November 14, 1906 in Norfolk. He attended Maury High School in Norfolk and studied electrical engineering with the Charles E. Heath International Correspondence School. He also studied radio technology at the Goyng Radio School.

He joined the Center staff on May 1, 1936 as a Junior Engineering Draftsman. The major part of his NASA career was spent in the East Engineering Section.

FOR SALE: 600 x15 snow tires with good tread; also 60 x 100-foot lot in Woodhaven Shores. Long, 877-4129.
AEROSPACE SAFETY PANEL

NASA has announced the appointment of five members to the Aerospace Safety Advisory Panel.

Named were Major General Carroli H. Dunn, Director of Military Construction in the Office of the Chief of Army Engineers; Dr. J. A. Hornbeck, president of Sandia Corp. and former president of Bellcomm, Inc.; Dr. Henry Reining Jr., Dean of the von KleinSmid Center of International Affairs at the University of Southern California; Dr. Eberhard F. M. Rees, Special Assistant to the Apollo Spacecraft Manager (on detached duty from his position as deputy director of George C. Marshall Space Flight Center); and Bruce T. Lundin, Associate Director for Development, Lewis Research Center.

Reining was appointed for a term of six years, Dunn and Lundin for a term of four years and Hornbeck and Rees for a term of two years.

The appointments implement Section 6 of Publie Law 90-67 (the NASA Authorization Act for Fiscal Year 1968) which directed formulation of the panel.

General Dunn holds engineering degrees from the University of Illinois and Iowa State University. He held key engineering assignments during World War II, Korea and was assistant chief of staff for logistics of the U.S. Military Assistance Command in Vietnam. He also is a former Division Engineer of the Southwestern Division, Dallas.

Dr. Reining is an internationally recognized authority on public administration, a past president of the American Society of Public Administration and a former director of the National Institute of Public Affairs in Washington.

He is a distinguished educator, having taught at Princeton, American and George Washington universities. He has served as a management consultant and carried out a number of national and international assignments for the U.S. government.

Dr. Hornbeck is a research physicist who joined the Bell Telephone Laboratories in 1946 and remained there for 12 years during which time he was concerned with the development of the Telstar satellite.

Before he assumed the Sandia presidency in 1966, he was president of Bellcomm, Inc., which was created in 1962 to provide engineering assistance to NASA for Project Apollo. He is a native of Northfield, Minn., and holds a Ph.D. in Physics from Massachusetts Institute of Technology.

Dr. Rees, a native of Trossingen, Germany, came to the United States in 1945 after working on the German rocket development program headed by Dr. Wernher von Braun, presently Director of Marshall Space Flight Center.

He was assigned to the Army Ordnance Corps' Research and Development Office at Fort Bliss, Texas, and subsequently worked at White Sands Proving Ground, New Mexico, before moving to Redstone Arsenal in Huntsville.

He is an expert in thermodynamics, engine design, production engineering and technical plant management.

Lundin, a native of Alameda, California, joined NASA's Lewis Research Center in 1943 and was named to his present position in 1961.

He directs the planning, procurement and execution of the various propulsion and power generation development programs at Lewis, including the Centaur and Atlas-Agena launch vehicles, and the SNAP-8 power system.

PERFORMANCE AWARDS PRESENTED

Dale W. Dalin, Nellie S. Medaris, Floyd E. Rankin

Dale W. Dalin, Mechanical Services Division; Nellie S. Medaris, Full-Scale Research Division; and Floyd E. Rankin, Instrument Research Division, have received letters of commendation and cash awards from the Langley Incentive Awards Committee for sustained superior performance.

Dalin received his award for "his ingenuity in designing a motorized system for changing model sideslip angle in the 20-inch Mach 6 facility and for his superior performance and leadership in force measurement research programs." He is a native of Vilas, Kansas, and entered on duty at the Center February 2, 1951.

Mrs. Medaris was cited for "sustained above average performance in providing the efficient administrative and clerical support that has been a major factor in maintaining the effectiveness of the Large Supersonic Tunnels Branch." A native of Poquoson, Mrs. Medaris first joined the Center staff in 1941. She resigned to assume household duties and returned in 1953.

Rankin received his award for "his outstanding performance in supporting division operation activities during the period of occupation and activation of three new laboratories by the Flight Instrumentation Division." A native of Greensboro, North Carolina, he started his NASA career on January 23, 1951.

PROCUREMENT COUNSEL

Porter H. Gilbert has been appointed NASA's Assistant General Counsel for Procurement Matters, by Paul G. Dembling, General Counsel.

Gilbert took over the post February 11. He succeeds S. Neil Hosenball who became Deputy General Counsel last October.

Gilbert has been serving as Deputy Chief Counsel for Manned Spacecraft Center. He entered Federal service in 1951 as an attorney-adviser with the Air Materiel Command at Wright-Patterson Air Force Base and transferred to the NASA Space Task Group in 1961.

A graduate of Berea College, Berea, Kentucky, with an A.B. degree in Economics, he received his L.L.B. degree from the University of Kentucky College of Law.

He is admitted to practice in Kentucky and is a member of the Federal Bar Association and the American Bar Association.

FOR SALE: 1965 Mustang GT, V-8, 4-speed, air conditioned - $1450. Adkins, 596-8416.

AUTO DECALS TO BE ISSUED BY WEST SECURITY OFFICE

Commencing Monday, March 4 the issuance of NASA automobile decals will be handled by the Security Office at the West Gate Pass Office (Building 1228), instead of by the Procurement Division's Property Control and Utilization Branch.

The issuance procedure will remain the same, but the staff is requested to pick up decals, insofar as possible, between the hours of 10 a.m. and 2 p.m. This will permit the Security Office to concentrate on the issuance of contractor and employee badges when the volume of this work is heaviest and NASA employees will not be unduly delayed in obtaining a vehicle decal.

CAFETERIA MENU

The following menu will be served in the cafeterias during the week of February 26:

Monday - Puree of bean soup, braised lamb shank, broiled ham slice, clam croquettes, western omelette. Snack bar - Soup, hamburger, hot corned beef on rye, French fries.

Tuesday - Chicken gumbo, chicken and dumplings, stuffed shrimp, baked meat loaf, tamale pie. Snack bar - Soup, ham and egg sandwich, baked meat loaf on roll, French fries.

Wednesday - Minestrone soup, pot roast, baked stuffed pork chop, stuffed floury, grilled cheese sandwich. Snack bar - Soup, grilled cheese, hot roast beef on roll, French fries.

Thursday - Vegetable-beef soup, grilled steak, broiled swordfish steak, spaghetti with meat balls, Spanish omelette. Snack bar - Soup, hot dog, steak sandwich, French fries.

Friday - New England clam chowder, hot roast beef sandwich, fried fish sticks, franks and beans. Snack bar - Soup, hot dog, hot roast beef on roll, French fries.

The menu for the week of March 4 is as follows:

Monday - Chicken noodle soup, Swiss steak, chicken pie, fried fish sticks, franks and beans. Snack bar - Soup, hot dog, hot roast beef on roll, French fries.

Tuesday - Lentil soup, roast beef, grilled pork chop, Polish sausage, chili con carne. Snack bar - Soup, cheeseburger, hot turkey sandwich, corn fritters, French fries.

Wednesday - Cream of tomato soup, breaded veal steak, shrimp newburg, fried chicken, cheese omelette. Snack bar - Soup, sea dog, veal steak sandwich, French fries.

Thursday - Vegetable-beef soup, grilled rib eye steak, fried shrimp, sauteed chicken livers on rice, cheese ravioli. Snack bar - Soup, hamburger, steak sandwich.

Friday - Manhattan clam chowder, baked corned beef brisket, chicken chop suey, fried haddock, baked hash. Snack bar - Soup, barbecued meat sandwich, hot corned beef on rye, French fries.

FOR SALE: Danish modern light mahogany bedroom suite with twin beds with box springs and mattresses, double dresser, mirror, makeup table/desk, night table - best offer. Spirn, 596-3200.

FOR SALE: 1965 Pontiac Catalina, 4-door sedan, air conditioned, power accessories. Matthews, 868-2261.

FOR RENT: Rooms at 86 Fox Hill Rd. McAdams, 851-2656.

FOR SALE: Three staff members recently received cash awards for suggestions under the NASA Incentive Awards Program. Top photo - Emily B. Hackney receives a check for $65 from W. E. Rew, head of Contract Management Section, Procurement Division, for her suggestion relative to the development of a better procedure for reducing the number of telephone calls from Voucher Examiners to Accounting Clerks within the Fiscal Division. Center photo - James C. Ferguson (left), head of Structural Fabrication Shop, presents $35 to Oscar Jennings for his suggestion concerning the development of a special tool for use in cutting precision lap joints for custom "O" rings. Bottom photo - Martin J. Menges (left), head of Systems Evaluation and Instrumentation Section, Electrical Systems Division, presents a check for $75 to James R. Maley for his suggestion relative to development of a 1000 degree F microorganism incinerator which both eliminates shut-down time due to changing heating units and prevents contaminated air from entering the chamber when additional air is being supplied.
GLENN MILLER ORCHESTRA TO PLAY HERE APRIL 24

The world famous Glenn Miller Orchestra, under the direction of and featuring Buddy De Franco, will play for the Activities Association’s Spring Dance on Wednesday, April 24 at the Activities Building.

Playing in the Glenn Miller tradition with the authentic Glenn Miller arrangements, the 16-piece orchestra will furnish entertainment from 8:30 p.m. until 12:30 a.m. Featured vocalist with the group is Joan Shephard.

Only a limited number of tickets will be sold and admission will be $7 per couple including free setups. Tickets may be purchased at the Activities Building. Reservations may be made by calling Bruce Amole, 4583.

The Glenn Miller Orchestra was organized by the late Glenn Miller in 1937, but for several years the going was extremely rough. An over-abundance of dance bands already existed and for two years Glenn’s was “just another band.” Then came his first big record hits and for three and a half years the Glenn Miller Orchestra rode the waves as America’s Number One Band. Its liquid reeds with the unique clarinet lead, the ooh-wah brass, the romantic ballads, the jumping swing numbers and the imaginative novelties all combined to win millions of fans the world over.

When Glenn entered the Army with the rank of Captain in October 1942, only to lose his life in a flight over the English Channel on December 15, 1944, the spirit of the Miller music still stayed on.

Finally, nearly ten years after Glenn had played his last notes, the big Miller revival took shape, sparked by the highly successful movie of his career, “The Glenn Miller

(Continued on page 5)

JOINT CAMPAIGN PLANNED

William L. Williams, Administrative Specialist, has been appointed chairman of the joint fund raising campaign for the National Health Agencies and the International Service Agencies. He will be assisted by Joyce M. Gray, Personnel Division Office, and Ruth A. Verell, Langley Researcher.

The campaign will be conducted at the Center from March 15 through April 1. Last year staff members donated a record total of $5,216 to the health agencies and $2,049 to the service agencies.

Contributions will be collected for nine health agencies and three service agencies.

The health agencies include United Cerebral Palsy Association, American Cancer Society, American Heart Association (Heart Fund), Muscular Dystrophy Associations of America, National Society for Crippled Children and Adults (Easter Seals), National Cystic Fibrosis Research Foundation, National Foundation-March of Dimes, National Society for the Prevention of Blindness, and National Multiple Sclerosis Society (Hope Chest).

The service agencies include American Korean Foundation, CARE, and Project HOPE.

The campaign is conducted annually in compliance with the Executive Order establishing rules and regulations on Federal fund-raising.

Employees will be given contribution envelopes. All donations should be turned in to the attendance clerks who will send them to the following division monitors:

(Continued on page 6)
ANNOUNCEMENTS

AUTO CLUB... Plans are underway to form a Peninsula Chapter of the Antique Automobile Club of America. Persons interested are requested to contact Charlie Clarke, 2631, or Bob Baucom, 4870.

DIAPER LINE... Weighing in at six pounds, twelve ounces on February 21 was Ronda Deane, new daughter of Frank Hill, Flight Instrumentation Division. Sandra Chaney, Photographic Division, recently became the mother of a nine pound, four ounce son, William Taylor II.

MESSICK HONOR... J. Cabell Messick, who recently retired from the Center, has been presented a life membership in the Skywatchers Astronomy Club. The certificate was designed by Dave Willment, Technical Illustrators, and a club member, and presented to Messick by Leonard Weinstein, club president, and Wilbur Gaskins, vice president.

AUTO TAGS... Virginia State and Hampton City auto tags will again be sold at the Phoebus Amoco Station, 201 E. Mellen St. in Phoebus. The office will be open from 8 a.m. to 6 p.m., including Saturdays, from March 15 to April 16.

WANTED: Ride from Decatur St., Betsy Lee Gardens, to W.A. on 8 shift. Nuttall, 3221.
FOR SALE: 1964 Dodge Dart 270, 4-door, hardtop. Lambotte, 877-5816.
FOR SALE: Silver Toy Poodles, AKC registered. Leatherman, 722-8723 after 5 p.m.

CAFETERIA MENU

The following menu will be served in the cafeterias during the week of March 11:

Monday - French onion soup, roast leg of lamb, chuck wagon steak, broiled fillet of perch, western omelette. Snack bar - Soup, western omelette on roll, chuckwagon steak sandwich, French fries.

Tuesday - Tomato-barley soup, barbecued spare ribs, stuffed shrimp, liver and onions, Austrian ravioli. Snack bar - Soup, barbecue sandwich, hot pastrami on rye.

Wednesday - Vegetable-beef soup, Spanish pot roast, chicken cacciatore with spaghetti, fried beef steakette. Snack bar - Soup, hot dog, hot roast beef sandwich, fried egg plant, French fries.

Thursday - Cream of mushroom soup, grilled sirloin steak, broiled ham slice, beef stew, fish cakes. Snack bar - Soup, ham and egg sandwich, steak sandwich, French fries.

Friday - New England clam chowder, roast beef, crab cakes, broiled fish, grilled cheese sandwich. Snack bar - Soup, fish sandwich, hot corned beef on rye, French fries.

The menu for the week of March 18 is as follows:

Monday - Cream of tomato soup, braised lamb Shank, grilled pork chops, meat loaf, Spanish omelette. Snack bar - Soup, hamburger, meat loaf on roll, fried egg plant.

Tuesday - Puree of bean soup, corned beef and cabbage, veal cutlet, smoked pork sausage, hash patties. Snack bar - Soup, hot dog, hot corned beef on rye, French fries.

Wednesday - Split green pea soup, grilled steak, roast pork, spaghetti and meat balls, wiener and sauerkraut. Snack bar - Soup, cheeseburger, steak sandwich.

Thursday - Vegetable beef soup, braised short ribs over noodles, broiled halibut steak, fried chicken, Irish omelette. Snack bar - Soup, barbecue sandwich, hot pastrami on rye, French fries.

Friday - Manhattan clam chowder, pepper steak, braised beef over rice, fried fish, deviled crab, grilled spiced luncheon meat. Snack bar - Soup, deviled crab, satellite sandwich, French fries.

FOR SALE: Boy's roller skates, size 8 - $8; Polaroid camera with flash, model 240 - $85; 275-gallon oil tank - $20. Shearer, 722-7840.

FOR SALE: 2 Sears 14,800 btu air conditioners - $90 each; painted metal bed with springs and mattress - $10; boy's 24-inch bicycle - $15; white vinyl, brass studded twin bed headboard - $8; red wagon - $2; 2 painted straight back chairs - $2 each. Essick, 596-3674.
EMERGENCY LEAVE POLICY CITED

Snow storms, hurricanes and other weather emergencies occasionally have required that Langley Research Center suspend or curtail operations. In some instances, personnel have been dismissed prior to the close of the work day, or excused from reporting to the Center because of hazardous traffic conditions.

In cases where the emergency has occurred prior to the beginning of the work day, there has sometimes been confusion as to whether personnel should report to work, or wait until specifically directed.

There have been procedures developed at the Center for handling this matter. In each case involving potentially hazardous conditions, the Director will make a determination concerning the work schedules to be followed at the Center. If it is found necessary to alter work schedules before normal duty hours begin, official announcements to the staff will be made through facilities of radio stations WVEC of Hampton, WGH of Newport News, and WTAR of Norfolk. Every effort will be made to get the appropriate announcement concerning the Center on the air as early as possible.

In the absence of such a specific announcement, personnel must assume that normal working hours will be observed by the Center. In such cases, employees are requested to take normal precautions as well as special precautions specified by local authorities in traveling, and are encouraged to leave home early enough to allow for the increased driving time resulting from hazardous road conditions.

As soon as possible after resumption of Center operations following any disruption of normal working hours, an announcement will be issued confirming the Director’s decision and citing the job order to which excused absence will be charged.

The amount of excused absence will apply to all staff members of the Center, regardless of where they might live.

Personnel who had previously applied for leave covering any of the excused time shall be charged for the leave without regard to the excused absence.

SPECIAL NASA ASSIGNMENT
(Continued from page 1)

He began his science career in July 1926 as an aeronautical engineer at Langley, becoming Director in 1960. Counting his four years of military duty, he has nearly 46 years of Federal Government service.

Dr. Thompson has received other special NASA assignments. He served two years as Chairman of the NASA Policy Planning Board at NASA Headquarters, and was Chairman of the Apollo 204 Review Board appointed to investigate the Apollo accident which occurred at Cape Kennedy on January 27, 1967.

Donlan, a native of Lawrence, Massachusetts, is a 1938 graduate of the Massachusetts Institute of Technology, with a B.S. degree in Aeronautical Engineering. He has served at Langley since 1938.

In 1958 Donlan became a pioneer member of the NASA Space Task Group established at Langley that year to conduct Project Mercury. He served as Associate Director of Project Mercury until 1961 when he returned to the staff of the Langley Research Center as Associate Director. He was appointed Langley's Deputy Director in 1967.

Four staff members have received cash awards from the NASA Inventions and Contributions Board. Top left photo - Weymouth B. Crumpler, Research Models and Facilities Division, received $100 for his invention suggestion entitled "Multilegged Support System." Top right photo - Following a reevaluation of his invention Donald E. Hewes, Space Mechanics Division, received an additional $100 for his "Rotating Space Station Simulator." Bottom photo - Stanley H. Scher (left), Flight Mechanics and Technology Division, and James G. Dunavant, Mechanical Services Division, shared a $200 award for their invention entitled "A Hot Air Balloon Deceleration and Recovery System."
**APOLLO MISSION SCHEDULED**

The effort to land American astronauts on the Moon faces another crucial test this month when NASA launches a 36-story high Apollo/Saturn V space vehicle.

The six-million-pound Apollo 6 will be launched no earlier than March 25 in an unmanned test to qualify the space vehicle further for manned flight. This will be the second flight of the rocket which produces seven-and-a-half million pounds of thrust. The first Saturn V was flown successfully last November 9.

The 10-hour Earth orbital Apollo 6 mission includes a five-and-a-half-minute second burn of the rocket's third-stage engine, separation and flight of the Apollo spacecraft to 12,000 nautical miles above Earth, followed by a high speed spacecraft reentry into Earth's atmosphere simulating lunar mission return flight maneuvers.

This flight is also the second test of the command and service modules on the Saturn V.

As a result of the long third-stage burn time, the stage will travel some 279,000 miles into space on a 16-day elliptical Earth orbit. A four-minute retro-burn of the Apollo spacecraft main propulsion system after separation from the rocket, limits the spacecraft apogee (high point above Earth).

The flight plan calls for recovery of the Command Module after landing in the Pacific Ocean.

**LUSKIN APPOINTED AT NASA**

Harold T. Luskin, chief advanced design engineer at Lockheed-California Company, Burbank, has been named Deputy Associate Administrator for Manned Space Flight (Technical), effective March 18.

Luskin shares with the Associate Administrator for Manned Space Flight, the Deputy Associate Administrator for Manned Space Flight and the Deputy Associate Administrator for Manned Space Flight (Management) the responsibility for the overall planning and direction of the Manned Space Flight Program. In particular, he is responsible for insuring the technical excellence of all work carried out in MSF.

Prior to his present position at Lockheed, Luskin was manager of the Agena space vehicles produced for NASA’s Gemini, Ranger, Mariner, Orbiting Geophysical Observatory, Nimbus and Echo II missions.

Before joining Lockheed in 1959 he was with the Douglas Aircraft Company for 20 years. He is co-holder of the design patent on the X-3 supersonic research airplane and was responsible for aerodynamic development of the DC-8 aircraft.

Luskin holds membership in leading technical societies and served as president of the American Institute of Aeronautics and Astronautics in 1967. He is the author of 10 engineering papers and has served on advisory committees of NASA, Department of Defense, Air Force and University of Southern California.

He received a Bachelor of Science degree in Aeronautical Engineering from the University of Michigan in 1939 and took graduate work in physics and mathematics at the University of California at Los Angeles.


WANTED: Alternate driver from Norfolk to W.A. on 7:30 shift. Hudgins, 4851.

Astronaut Bruce McCandless (top photo) demonstrates an exercise cycle for news photographers in a Saturn IB rocket workshop crew station design review at Marshall Space Flight Center. The cycle is one of many medical experiments planned for the first Saturn I workshop flight in 1970. McCandless and seven fellow astronauts went through many proposed workshop tasks for designers and engineers. In the bottom photograph a space suited astronaut leaves the full size model of the station. Crew quarters built into a spent Saturn stage will include individual sleeping rooms, kitchen-dining area, laboratory work space and a waste management area. Astronauts will convert its liquid hydrogen tank into a "shirtsleeve" workshop for a 28-day stay in space.
LASERS MAY HELP ALERT PILOTS TO AIR TURBULENCE

The laser beam which in the distant future may carry messages between Earth and deep space is now being called upon to solve another pressing problem.

This time, however, the role of the laser would be confined to the space in which airplanes fly.

NASA believes the laser may be helpful in alerting airline pilots of the presence of clear air turbulence in their flight paths.

Clear air turbulence, generally referred to as CAT, has been a nuisance, and at times a hazard to aircraft and passengers, principally because the pilot receives no warning of the impending encounter.

For some time investigators have been searching for ways to give the pilot some indication of CAT in advance of actual encounter.

If a pilot had sufficient warning, he could avoid the turbulent area by changing his course, as he does when radar warns of severe storms ahead.

At least, a warning signal could give the pilot time to flash the seat belt sign and trim the aircraft to lessen the discomfort to his passengers.

At Langley Research Center engineers are teaming with space electronic specialists to devise a pilot warning system based on the principles of the laser beam.

Although their experiments with a laser mounted on an airplane have not been entirely successful, they are now optimistic with the preliminary results from tests to detect CAT by aiming the laser beam in a straight vertical line into the skies from the ground.

If this method proves successful, the warning of CAT in the path of airplanes could be relayed to the pilot from a ground station.

Most airplane passengers have at one time or another had a sudden, unexpected bounce on their flight. Now, some day the laser beam may help make airline trips both more comfortable and safer.

GLENN MILLER ORCHESTRA

(Continued from page 1)

Story. In addition, there have appeared a number of reissues of his earlier phonograph recordings.

Ray McKinley conducted the present Glenn Miller Orchestra from June 6, 1956 through January 5, 1966 when he retired from the road. When this happened, the Glenn Miller estate, after careful consideration, arranged to have Buddy De Franco, one of the foremost musicians in the United States, take over direction of the orchestra.

De Franco has been considered the number one clarinetist in the United States for the past fifteen years and he has consistently won practically every major poll as an instrumentalist. He comes out of the big band school and served his apprenticeship with Tommy Dorsey. Buddy is a strong admirer of the Glenn Miller music, understands it, and continues on in the development of the Miller style.

The fact that he is a clarinetist contributes a great deal because the Miller style was founded on a clarinet lead.

FOR SALE: Black poodle puppies, toy bred, champion line, available after March 26 - $75 and up. Myers, CH4-1062.

FOR SALE: 1956 Chevrolet station wagon - $100. Mungan, 506-0435.

FOR SALE: Gibson Skylark amplifier - two inputs; volume, on-off control and fuse - $45. Osborne, LK6-7866.

FOR SALE: 1967 Ford Mustang, air conditioned, powered accessories, 6,000 miles - $2600. Sheets, 838-0235 after 5.
JOINT CAMPAIGN PLANNED
(Continued from page 1)

Connie Parker, Office of Director; Margaret Strickland, Research Reports; Jackie Boswell, Lunar Orbiter Project Office; Gloria Alto, MORL Studies Office; Nell Turpen, Scout Project Office; Ann Timberlake, Space Vehicle Design Criteria Office; Agnes Dunkley, Applied Materials and Physics; Nancy Holt, Analysis and Computation; Mary Jim Joslin, Flight Instrumentation; Mary Hall, Instrumentation Research; Myrle Wells, Space Mechanics; Fernette Mahaffey, Dynamic Loads; Frances Arnn, Structure, Mary Catlett, Aero-Physics; Rosemary Neubaurn, Flight Mechanics and Technology; Doris Vandeveer, Full-Scale.
Catherine Chamberlain, Office of Engineering and Technical Services; Polly Redmon, Electrical Systems; Virginia Vohringer, Flight Vehicles and Systems; Louise Griggs and Sarah O'Keefe, Mechanical Services; Thelma Jones, Research Models and Facilities; Barbara Hogge, Office of Assistant Director for Administration; Carolyn Wilt, Administrative Services; Elsie Oliver, Fiscal; Ruby Felker, Photographic; Louise Griggs, Plant Maintenance; and Doris Forrest, Hypersonic Research Engine Project.

In urging the Federal agencies to support the Joint Campaign, John W. Macy Jr., Chairman of the Civil Service Commission, stated, "The National Health Agencies and the International Service Agencies are volunteer supported and volunteer led and perform important services for the American people and for the people of other nations. Through the work of the National Health Agencies, progress is made toward better health for all as a result of concentrated efforts in medical research, services to patients, and public and professional education. These agencies are partners of the Government in the effort to improve health standards for all Americans. Through the International Service Agencies, we help millions of people around the world in their daily struggle against hunger, sickness, and human misery. Our support of these agencies advances the cause of human dignity and freedom."

TECHNOLOGY UTILIZATION NEWS

NASA encourages use of its technical resources by industries, organizations and individuals in a number of ways. In addition to the Special Publications and Tech Briefs which are widely distributed to explain new concepts, designs, techniques, materials and equipment, NASA sponsors Regional Dissemination Centers.

These information dispensing agencies, strategically located at technological centers convenient to most of the nation's industry, are intended not only to transfer technology but to educate industrial management in the use of externally generated knowledge. The RDC's maintain, on microfilm, a collection of over 200,000 documents and are thus equipped to give their industrial clients virtually direct access to much of NASA's information collection. RDC's assist technical people of industry in problems and objective definition, literature searching, product development, or process improvement. These services have proven useful to companies in product innovation, process improvement, prevention of duplication in research, continuing education of technical personnel, and improvement of managerial practices.

These centers, initially supported by NASA funds, are scheduled to be self-supporting within several years on the basis of industrial fees for services rendered.

RADIATION FORM REVISED

Langley Form 7530-F19-1199, "Appointment of Employees Authorized to Work in Radiation Areas," was recently revised to enable the form to be used for the appointment of radiation workers, division radiation safety coordinators, and for authorizing employees to work with lasers. The revised form has the notation "Revised February 1968" printed after the form number.

Offices having supplies of the old form should destroy them and order supplies of the revised form from the Stockroom.

FOR SALE: 15-foot boat trailer - $50. Fedors, 244-2155.
WANTED: Single girl to share apartment with one other girl. Sandy Dunn, 2635.
WANTED: Driving combination from Glen Gardens Apt. to W.A. on 8 shift. Fixx, 4561.
KNOW YOUR CREDIT UNION

Once again April 15 looms on the horizon. Even if your income tax forms are safely in the mail, the date still is disturbing. If they are not, it can become a real bugaboo. Here are a few tips that may simplify the reporting of your Credit Union pluses and minuses.

To begin with, Credit Union dividends are reportable as interest — there is no offsetting credit. They are income in the year received — not in the year in which earned. For instance, the tax is due now on the dividends credited January 1, 1967. It will be due next year on dividends credited this year. They are part of the husband’s income in the case of husband-wife joint accounts — and part of the adult’s in adult-child accounts. They belong to the child for income tax purposes in the case of accounts set up under Virginia’s Uniform Gift to Minors Act.

The other side of the coin is interest paid the Credit Union. It is 100% deductible. It is too bad that the service charge collected by most stores on revolving or extended-pay type accounts is not. The rule there is that 6% of the average unpaid monthly balance for the year is deductible — or the service charge, whichever is less. In the words of the Internal Revenue people, “The latter is rarely the case,” and it is easy to see why. On a $100 purchase spread over 10 months, the service charge is $7.25 while the amount deductible is $3.30 or only 40% of the actual credit cost instead of 100%. It makes better sense to borrow from the Credit Union and pay cash, particularly if you remember that your loan is insured at no out-of-pocket cost to you.

Finally, for your own convenience and protection save your Credit Union statements. Have the facts at your fingertips when you want them. Remember year-end statements are actually as of January 1 the next year since they show the dividend as credited that day. This makes the dividend part of the new year’s income. The statements also show, in a special column, the total interest paid the Credit Union during the previous year. You will need both figures for preparation of tax forms and maybe later, to support your calculations. File them safely as you receive them.

Two staff members recently received cash awards for suggestions under the NASA Incentive Awards Program. Top photo—Arthur K. Grow (right), head of Research Equipment Services Section, Mechanical Services Division, presents a check for $35 to Roland W. Lee for his suggestion concerning the development of a method for constantly checking the cylinder pressure of the arresting gear of the Orbital Docking Simulator by means of mounting a pressure gauge in the hydraulic line on the pressurized side of the check valve. Bottom photo—William H. Guy Jr. (right), head of General Photographic Branch, Photographic Division, presents a check for $30 to Prentiss Childs for his suggestion relative to the development of an improved method for motion picture filming of tunnel tests.

Artist’s concept shows the insect-shaped OGO V in orbit around the Earth. The 1,347-pound observatory was launched Monday from Cape Kennedy. The 25 experiments aboard weigh 339 pounds and have been designed to study the relationship between the sun and the Earth’s environment in a period of maximum solar activity.
**SPORTSMAN'S NIGHT MARCH 27**

The Activities Association will sponsor a Sportsman's Night on Wednesday, March 27 at 7 p.m. at the Activities Building. No admission will be charged and employees and members of their families are invited to attend.

Guests for the night will be Charley Johnson, quarterback for the St. Louis Cardinals, and Norman Snead, quarterback for the Philadelphia Eagles. They will show movies of a game between the two teams and discuss the offense and defense during a question and answer session.

Charley is serving a tour of military duty with the Army and is assigned to Langley Research Center. He is a member of the Chemistry and Physics Branch, Applied Materials and Physics Division.

**NASA BOWLING LEAGUE**

Mets lead Group A in the NASA Tenpin League with 60.5 wins and 35.5 losses. ABT is second with 60 wins and 36 losses and HMS is in third with 59 wins and 37 losses. Top scores for the week were rolled by Bill Cordle with a 256 game, Jerry Sisson with a 665 set, and Linda Squires with a 240 game and 599 set.

Knads are in first place in Group C with 70 wins and 26 losses. Greenhorns trail in second with 62.5 wins and 33.5 losses and Question Marks are in third with 60.5 wins and 35.5 losses. Five Rebels rolled high team game and set with a 1109 game and 3236 set. Greenhorns rolled a 1108 game to miss the number one spot by only one pin.

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**PROFESSOR TO VISIT HERE**

Dr. Fred DeJarnette, Department of Aerospace Engineering, Virginia Polytechnic Institute, will visit the Center on Monday, March 18 to discuss the graduate program with interested staff members.

Persons wishing an appointment with Dr. DeJarnette are requested to call Training Branch, telephone 2611.

**SLOWPITCH LEAGUE**

Plans are underway to form a NASA Slowpitch League. Persons interested in joining a team or entering a team in the Slowpitch League are requested to contact Jim Ellison, 4861.

**FOR SALE**:

- 600 x 15 snow tires - good tread; also 60 x 100-foot wooded lot in Woodhaven Shores. Long, 877-4129.
- Lafayette HE-80 shortwave receiver, 6 meters, 540 kHz to 30 Hertz, with speaker and calibration crystal - $85; Homebren 30-watt, 6 meter transmitter with power supply and push-to-talk mike - $45. Peters, 596-3689 after 5 p.m.
- 2-piece living room suite with 2 end tables and coffee table. Wright, 826 5390 after 5 p.m.
- Akai (Roberts) M-6 stereo tape recorder. Price, 826-0689.

**PERFORMANCE AWARDS PRESENTED**

G. Calvin Broome, Jack E. Harris, A. Thomas Young, Lunar Orbiter Project Office, have received letters of commendation and cash awards from the Langley Incentive Awards Committee for sustained superior performance.

Jack E. Harris was cited for “sustained superior performance in the skillful management of the Lunar Orbiter Photographic Subsystem and for significant contributions in the areas of calibration techniques and V/H sensor design.” He is a native of Hattiesburg, Mississippi, and received his B.S. and M.S. degrees in Physics from Mississippi State University. He joined the Center staff on June 12, 1962.

Young received his award for “sustained superior performance as the spacecraft Power Subsystem Manager and for his outstanding contributions that led to the added power capabilities of the system that allowed the spacecraft to operate in the ‘off sun’ mode on all five Lunar Orbiter missions.” Harris was born in Milwaukee, Wisconsin, and received his B.S. degree in Physics from Marquette University. He entered on duty at the Center on February 6, 1959.

Young received his award for “sustained superior performance in the formulation and implementation of the photographic site selection for Lunar Orbiter Missions I, II, and III, and for performing skillfully as the Mission Manager for Mission V.” He is a native of Nassawadox and received his B.S. degree in Aeronautical Engineering from the University of Virginia. He started his NASA career on December 18, 1961.

**CAR AUCTION**

On Wednesday, March 13 at 1 p.m. the Credit Union will sell a 1964 Thunderbird, as is, to the highest bidder. Car may be seen on the Credit Union parking lot at anytime between 8:30 a.m. and 3:30 p.m. Excellent chance for some do-it-yourself mechanic to get a good car cheap.

**WANTED**:

- Driving combination from Todds Lane area to W.A. on 8 shift. Conway, 3194.
- 1964 Thunderbird, as is, to the highest bidder. Car may be seen on the Credit Union parking lot at anytime between 8:30 a.m. and 3:30 p.m. Excellent chance for some do-it-yourself mechanic to get a good car cheap.

**FOR SALE**:

- Lafayette HE-80 shortwave receiver, 6 meters, 540 kHz to 30 Hertz, with speaker and calibration crystal - $85; Homebren 30-watt, 6 meter transmitter with power supply and push-to-talk mike - $45. Peters, 596-3689 after 5 p.m.
- Kingston vacuum cleaner by Electrolux - take over 10 months payments of $10 each. Edmundson, 722-0352.
- Akai (Roberts) M-6 stereo tape recorder. Price, 826-0689.
The National Aeronautics and Space Administration announced this week that Dr. Floyd L. Thompson, Director of its Langley Research Center, will retire when he reaches the age of 70 on November 25, 1968, and that Edgar M. Cortright, Deputy Associate Administrator for Manned Space Flight at NASA Headquarters, will replace him as Director of the Langley Center on May 1, 1968, enabling Dr. Thompson to utilize a large part of his time on agency-wide planning and evaluation activities.

Dr. Thompson will continue to serve as Special Assistant to the Administrator until his retirement and will serve as Consultant to the Administrator on a part-time basis after retirement. On May 1, Charles J. Donlan, Deputy Director of the Langley Research Center, will transfer from the Langley Center to NASA Headquarters to serve as Deputy Associate Administrator for Manned Space Flight (Technical).

Replacing Cortright May 1 as Deputy Associate Administrator for Manned Space Flight will be Charles Mathews, Director, Apollo Applications Program, and formerly Program Manager for Gemini.

The successor to Mathews will be Harold Luskin, former Chief of Advanced Design Engineering of Lockheed-California Company and the former President of the American Institute of Aeronautics and Astronautics. Until May 1, Luskin will serve as Deputy Associate Administrator for Manned Space Flight (Technical).

As Program Manager for Apollo Applications, Luskin will have responsibility for planning and carrying out the utilization of the large Saturn boosters and the Apollo spacecraft systems in the period following the demonstration of the capability of this equipment to land men on the moon and return them safely to earth.

In October 1967, Cortright joined the Office of Manned Space Flight in NASA Headquarters as Deputy Associate Administrator. In this position, he serves as general manager of NASA’s program for manned space flight.

Cortright joined the former National Advisory Committee for Aeronautics (predecessor to NASA) as an aeronautical research scientist at the Lewis Flight Propulsion Laboratory (now Lewis Research Center), Cleveland, Ohio, in 1948. From 1949 to 1954, he was head of the Small Supersonic Tunnels Section; from 1954 to 1958, he was Chief of the 8-by-6-foot Supersonic Wind Tunnel Branch. In January 1958, he was appointed Chief of the Plasma Physics Branch.

Upon NASA’s creation on October 1, 1958, Cortright became Chief of the Advanced Technology Programs and directed initial formulation of NASA’s Meteorological Satellite Program, including Tiros and Nimbus. In February 1960, he became Assistant Director for lunar and planetary programs in the former Office of Space Flight Programs. In this capacity, he directed the plan-
FOR RENT OR SALE: 3-bedroom brick rancher with attached garage - pay $125 per month rent or pay equity and assume payments of $102 per month. Alvarez, 723-0991.

WANTED: Temporary ride from New Market to W.A. on 8 shift. Swanson, 3326.

The following menu will be served in the cafeterias during the week of March 25:

Monday - Beef broth with barley soup, beef stroganoff over noodles, broiled Canadian bacon, stuffed flounder, tamale pie. Snack bar - Soup, hamburger, hot corned beef on rye, French fries.

Tuesday - Chicken-gumbo soup, chicken and dumplings, baked ham, broiled fish, franks and beans. Snack bar - Soup, hot dog, baked ham sandwich, French fries.

Wednesday - Cream of potato soup, roast leg of lamb, beef pot pie, chicken chow mein, fish cakes. Snack bar - Soup, fish sandwich, chicken fried beef steak on roll.

Thursday - Vegetable-beef soup, grilled rib eye steak, smoked pigs in a pone, sauteed chicken livers over rice, cheese omelette. Snack bar - Soup, cheeseburger, steak sandwich, French fries.

Friday - New England clam chowder, Spanish pot roast, ham and macaroni loaf, fried fish, deviled crab, beef ravioli. Snack bar - Soup, sea dog, hot roast beef on roll, deviled crab, French fries.

The menu for the week of April 1 is as follows:

Monday - French onion soup, roast veal, grilled pork chops, Polish sausage, cheese omelette. Snack bar - Soup, ham and egg sandwich, hot pastrami on rye, French fries.

Tuesday - Cream of tomato soup, roast beef, chicken pie, liver and onions, Austrian ravioli. Snack bar - Soup, cheeseburger, steak sandwich, French fries.

Wednesday - Puree of bean soup, chopped steak, roast pork, fried chicken, chili con carne. Snack bar - Soup, hot dog, satellite special, baked beans, French fries.

Thursday - Vegetable-beef soup, grilled steak, shrimp Newberg, Spanish omelette, chicken chop suey. Snack bar - Soup, barbecued pork, steak sandwich, French fries.

Friday - Manhattan clam chowder, hot turkey sandwich, fried oysters, broiled fish, knockwurst, franks and beans. Snack bar - Soup, cheeseburger, sliced turkey on roll.
CORTRIGHT NEW DIRECTOR
(Continued from page 1)
ning and implementation of NASA's automated lunar and planetary programs, including such projects as Mariner, Ranger, and Surveyor. On November 1, 1961, he was appointed Deputy Director of the Office of Space Sciences. He was then appointed NASA's Deputy Associate Administrator for Space Science and Applications on November 1, 1963; as general manager of that office, he carried major responsibility for planning and directing NASA's program for the automated scientific exploration and utilization of space. These programs included the lunar and planetary probes, the geophysical and astronomical satellites and probes, biosciences, meteorological and communications satellites, and the development and use of light and medium launch vehicles through the Atlas-Centaur class.

Cortright was born in Hastings, Pennsylvania, and served as an officer in the U.S. Navy from 1943 to 1946. He earned the Bachelor of Aeronautical Engineering degree in 1947 and an M.S. degree in Aeronautical Engineering in 1949, both from Rensselaer Polytechnic Institute. He is a member of Sigma Xi, Tau Beta Pi, Gamma Alpha Rho, and Pi Delta Epsilon, honorary societies.

During his NACA research career, Cortright specialized in high speed aerodynamics, particularly problems related to air induction system design, jet nozzle design, and interactions of a jet with external air flow. He is the author of numerous technical reports and articles.

In October 1967, NASA awarded him its Distinguished Service Medal. He received the NASA Medal for Outstanding Leadership in 1966, and in 1965, the Arthur S. Fleming Award from the Washington, D.C., Junior Chamber of Commerce. He is a Fellow of the American Astronautical Society and an Associate Fellow of the American Institute of Aeronautics and Astronautics.

He and his wife and their two children live in Bethesda, Maryland.

TECHNOLOGY UTILIZATION NEWS
Most of the Regional Dissemination Centers (see last issue) specialize in particular areas of new technology. The Technology Applications Center, for example, located at the University of New Mexico, specializes in natural resources.

The photographs taken during the Gemini missions (approximately 2200 slides) have proven to be extremely valuable in this area. Selected sets of these 35 mm photographs have been prepared to cover interests from the following disciplines: geology - 61 slides, geography - 58 slides, hydrology - 23 slides, oceanography - 46 slides, meteorology - 54 slides, and land uses and urban studies - 16 slides.

An additional "Selection Set" of 36 slides is designed to stimulate a "round the world" flight with the astronauts. This set is popular among lecturers for civic clubs such as Lions or Rotary. The 35 mm transparencies are of excellent quality and have square images in full color. (Commonly called "Superslides").

These sets are available at 50¢ per slide from Technology Applications Center, University of New Mexico, Albuquerque, New Mexico 87106, Attention: Tom Lyons.

WANTED: Cushman Eagle parts. McConnell, 596-6447.

JOINT CAMPAIGN ENDS APRIL 1
The Center's Joint Fund Raising Campaign for National Health Agencies and the International Service Agencies ends April 1.

William L. Williams, chairman of the drive, urged that employees give their contributions to the attendance clerks who in turn will send them to the division monitors. Monitors may turn in the collected money to Joyce Gray, Personnel Division Office, Building 1219; Ruth Verell, Langley Researcher, Building 1195-A, or Williams, Building 1219.

Contributions will be collected for nine health agencies and three service agencies.

The health agencies include United Cerebral Palsy Association, American Cancer Society, American Heart Association (Heart Fund), Muscular Dystrophy Associations of America, National Society for Crippled Children and Adults (Easter Seals), National Cystic Fibrosis Research Foundation, National Foundation-March of Dimes, National Society for the Prevention of Blindness, and National Multiple Sclerosis Society (Hope Chest).

The service agencies include American Korean Foundation, CARE, and Project HOPE.

LECTURE SERIES PLANNED
Dr. P. C. Gugelot, Professor of Physics, Virginia Associated Research Center, is planning to present a series of five lectures at the Center. The first one will be on "The Methods of Classical Physics" and it will be held at 9 a.m. on March 27 in the Conference Room, Building 1212.

Subsequent lectures will be scheduled about one week apart and will cover the following subjects: "Classical Mechanics," "Basic Electrodynamics," "Special Relativity," and "Acquivalence of Mass and Energy."

For further information call the Training Office, 2611.


RESEARCH EQUIPMENT MANAGEMENT

L. S. Hanson, Director of Property and Supply Division at NASA Headquarters, talked to Langley Center officials Wednesday relative to the need for effective management of research laboratory equipment. He stressed the management of equipment intended for use in the conduct of an experiment or study in a scientific laboratory.

Major objectives of such research equipment programs are to utilize equipment in the most efficient manner possible, avoid unnecessary procurements, standardize on laboratory equipment wherever possible, and provide for effective maintenance and calibration of instrumentation to assure that the researcher obtains valid data.

Following Hanson's talk, the Center's cost reduction officers presented a review of Fiscal Year 1968 cost reduction achievements to cost reduction monitors who attended the meeting. The achievement of goals, monitors' responsibilities, and validation procedures were reviewed in detail.

TWO STAFF MEMBERS DIE

William D. Mangan, Office of Chief Counsel, and R. Donald Smith, Lunar Orbiter Project Office, died recently following brief illnesses.

Mangan was born February 13, 1911 in Binghamton, New York. He graduated from Hamilton College in 1930 with an A.B. degree and was awarded an L.L.B. degree from St. John's University School of Law in 1936. He was a member of the New York and Florida bars.

He is survived by his wife, Mrs. Elizabeth A. Mangan of Williamsburg, and his son, Thomas J. Mangan of Syracuse, New York.

Smith, 34, was a native of Hampton. He graduated from Hampton High School and received his B.S. degree in Chemistry from the College of William and Mary. He joined the Center staff on June 18, 1956 as an Aeronautical Research Intern.

He is survived by his wife, Mrs. Jean Israel Smith; two sons, Roderick K. and McDonald Drew; and a daughter, Lauren Beth.


FOR SALE: 20-inch Craftsman power mower. Williams, 851-0675.

FOR SALE: AKC Dachshund pups - shots started. Barfoot, 826-8139.


FOR SALE: 1960 Corvair 700 series - $100. Yarrington, 826-3284 after 5 p.m.

WOMEN'S TENNIS...A ladder will be formed for women interested in tennis competition. Instructions will be given, if enough people are interested. Persons interested in the ladder or instructions should contact Pat McLean, 3560.

PIANO...The Activities Association will auction the mahogany Baldwin Acrosonic spinet piano by accepting sealed bids at the Activities Building until April 19. The piano is in excellent condition and can be viewed in the lounge of the Activities Building. The Association reserves the right to accept or reject all bids.

BASKETBALL...No Name and Missfits, winners of the two NASA Basketball Leagues will meet for a play-off tomorrow morning at 11 a.m. in the Activities Building.

BRIDGE CLASSES...The Activities Association is offering bridge classes for beginners starting during the latter part of April. Classes will be held at 7:30 p.m. on Wednesdays at the Activities Building. Instructor will be Mrs. Ashby Wilson, a Life Master of the American Contract Bridge League. Mrs. Wilson has won numerous sectional and regional championship. A fee of eight dollars per person will be charged for the eight-week course. A partial refund will be made to members who attend all meetings.

This is done to encourage full attendance at all sessions as it is important to have full tables. Interested persons may register and pay the fee at the Activities Building.

The class is available only to NASA employees and members of their families.

BROCKETT NAMED TO NEW POST

H. R. Brockett, former Langley staff member, has been appointed Deputy Associate Administrator for Tracking and Data Acquisition of the NASA.

Brockett succeeds Gerald M. Truszynski, who has become Associate Administrator for OTDA. A member of the team that pioneered construction and operation of the NASA tracking network, Brockett has been serving as director of the operations, communications and automatic data processing (ADP) division since October 1965.

The OTDA program encompasses three major networks supporting manned space flight, unmanned scientific satellites and probes the moon and planets. Its land stations are located in the United States and 14 other countries.

Brockett joined the Langley Research Center in 1947 soon after graduation from college. He worked in the Instrumentation Research Division where he helped formulate the ground instrumentation plan for Project Mercury. In 1959 he transferred to NASA Headquarters as a technical assistant in the office of space flight operations.

Born November 12, 1924 in Atlanta, Nebraska, Brockett received a B.S. degree in Electrical Engineering from Lafayette College in 1947.

FOR SALE: 3-bedroom brick rancher with 1-1/2 baths, fireplace, storm doors and windows, large lot. Pay equity and assume conventional loan. Heath, 877-3045 after 5.

FOR SALE: 7-room brick rancher in Beechwood - selling below appraisal price, 5-1/4% assumption. Goering, 877-4369.

FOUND: Chevy hub cap. Goering, 4926.

--Give to the Joint Campaign today--
Dr. Robert C. Seamans Jr., who resigned as NASA Deputy Administrator on January 1, was a guest at the Center on March 8. Dr. Seamans has been appointed a visiting professor at Massachusetts Institute of Technology and he will continue as consultant to NASA. Top left photo - Inspecting the Space Radiation Effects Laboratory with Dr. Seamans (center) are Charles J. Donlan, Langley Deputy Director, and Dr. John E. Duberg, Assistant Director. Top right photo - Touring the Space Radiation Effects Laboratory with Dr. Seamans are (from left) Mrs. Seamans, Mrs. Floyd L. Thompson, Dr. R. T. Siegel, Director of Virginia Associated Research Center; and Dr. Duberg. Dr. Seamans (above) checks out the Tactical Effectiveness Simulator, Space Mechanics Division, while Mrs. Seamans looks on. Right center - Looking over the Boeing 747 flutter model in the Transonic Dynamics Tunnel are (from left) Laurence K. Loftin Jr., Assistant Director; A. Gerald Rainey, Head of Aeroelasticity Branch, Dynamic Loads Division; Donlan, Dr. Seamans, and Dr. Floyd L. Thompson, Langley Director. Lower right - Dr. Thompson presented the guest with a plaque on which was mounted a barometer and a set of pictures depicting the Lunar Orbiter and Supersonic Transport programs.
GODDARD ESSAY COMPETITION

The National Space Club announces the opening of the Robert H. Goddard Historical Essay Award competition for 1968. This annual nationwide competition, with a $500 prize, is open to any U.S. citizen.

The contest is named in honor of the world rocket pioneer, Dr. Robert H. Goddard, whose scientific and technological contributions — although belatedly recognized in the United States — helped open the door to space.

Essays may treat with any significant aspects of the historical development of rocketry and astronautics and will be judged on their originality and scholarship. They may bring new information to light or may cast a new and different light upon events or individuals influencing rocketry and astronautics in the United States.

Entries should be submitted by November 1 to the Goddard Historical Essay Contest, c/o National Space Club, 1140 Connecticut Ave., N.W., Washington, D.C. 20036.

The winner, who will be announced at the Dr. Robert H. Goddard Memorial Dinner next March, will receive the Goddard Historical Essay Trophy, certificate and a $500 prize.

No winning essay was selected for 1967, as none of those received fully met the criteria of the award. The judges determined that one essay was worthy of Honorable Mention, one on “Apollo’s Minion,” by James H. Wilson of Altadena, California.

The Robert H. Goddard Historical Essay Award was the first literary competition devoted to historical affairs in the field of rocketry. Members of the NSC’s Committee for the History of Rocketry and Astronautics serve as judges for the contest. They include Dr. Eugene M. Emme, NASA Historian, chairman.

Rules of the contest are available to the interested staff members by calling the Langley Researcher Office.

HANDLING HAND TOOLS

Keep tools clean. Check their condition before you use them. If heads of striking tools become mushroomed or blurred, have them dressed. If handles are splintered, broken or loose, have them replaced before you use the tool.

Each tool should have its own storage place. Tools must be returned to their proper places, and not be allowed to lie around where they could fall on, or trip, you or someone else.

Carrying tools in your pocket is dangerous, especially if the tools are sharp or pointed. Use a kit or tool belt. Do not use excessive pressure or force on any hand tool.

When chopping, or doing other work that may cause particles to fly, protect your eyes by wearing eye protection.

Here are specific rules:

SCREWDRIVERS: Use the right size and type of screwdriver for the job. Do not hold the work in the palm of your hand — the screwdriver may slip and injure you. Screwdrivers should be filed properly to prevent slipping. Do not hammer on them as you would a chisel or use them for a pry.

HAMMERS: Use a machinist’s hammer for machine work and a claw hammer for carpentry work. In using a sledge or maul, always look behind you before you begin your backswing.

WRENCHES: In using any wrench, it is better to pull than push. If it is necessary to push, use your open palm. When using an adjustable wrench, exert pressure toward the movable jaw. Stand to one side when you are pulling down on wrenches above your head. Do not hammer on wrenches or use a pipe extension. Use a proper-size wrench.

SAWS: Saws that are sharp and free of rust are less likely to bind or jump. Start cuts with both wood saws and hack saws by guiding the blade with your thumb.

FILES: Do not use a file without a handle. Do not use a file for a pry, as it is brittle and breaks easily.

PRY BARS: Be sure your bite is secure by applying first a slight pressure. Then check your own balance before you exert your full force. This will prevent a fall in case the pry slips.

FOR SALE: Storm window and aluminum frame for 4-foot 6-inch x 6 foot picture window. Gay, 596 9504.


WANTED: Ride from Southampton to East Area on 8 shift. Powell, 2553.
Twenty high school students from four states visited the Center during a three-day Youth Science Congress. In the left photo Leroy Spearman, Head of Large Supersonic Tunnels Branch, Full-Scale Research Division, explains the area rule concept to Paul M. Ford (left), Portsmouth, and

EASTER EGG HUNT APRIL 13
The Activities Association's Annual Easter Egg Hunt for children of Center employees will be held on Saturday, April 13 at 1:30 p.m. on the Activities Building grounds.
The annual event is free for NASA children. Two areas will be marked off - one for the smaller children and one for the older children. Six regular chicken eggs, well marked, will be hidden and prizes will be awarded to the children who find them.

Parents are requested to stay out of the hunting vicinity and let the children have the pleasure of finding the eggs. Please have each child bring a small paper bag.
The hunt will continue until the supply of eggs has been exhausted.

ADULT EDUCATION COURSES
The spring term of Adult Education classes at Hampton High School will begin on April 1 at 7 p.m. Registration will be held at the high school on Monday, March 25 and Wednesday, March 27 from 7 to 9:30 p.m.
Courses include typing, shorthand, bookkeeping, F.S.E.E. exam course, G.E.D. high school diploma course, interior decorating, sewing, woodworking, bricklaying, modern math, algebra, basic math, basic English, and reading.
A course in Americanization will be offered for those who want to prepare for the citizenship test given by the Naturalization and Immigration Department. This course will be free to students because the Hampton Exchange Club will sponsor it and pay the tuition.
For further information call 826-2020.

WANTED: Used car for $500 or less. Miotke, 596-8684.
WANTED: Ride from Tartan Lane (near Kecoughtan High School) to W.A. on 8 shift. Helene Smith, 3320.

Michael L. Barringer, Rockwell, North Carolina. Right photo - During a luncheon Charles J. Donlan, Acting Director, presented certificates to each invited student. Shown receiving his certificate from Donlan is David A. Burns, Ferguson High School, Newport News.

SCIENCE CONGRESS HELD AT CENTER
Twenty high school students from Virginia, North Carolina, South Carolina and Kentucky participated in a regional Youth Science Congress conducted on the Peninsula March 13-15.
The National Science Teachers Association sponsored the congress in cooperation with Langley Research Center.
The students, including three from the Hampton Roads area, were selected in a four-state competition on the basis of an outstanding research-type science project they completed.
During the congress, each student presented an oral report of his project and had an opportunity to engage in discussion sessions with fellow students, NASA scientists, science teachers and other professionals in the science field.
The congress opened March 13 with a dinner at the Hotel Chamberlin for the students and other program participants.
The March 14 and 15 sessions were held at the Langley Research Center. The visitors toured NASA facilities each morning and heard lectures on aeronautical and space projects and saw demonstrations of research. The students presented their technical papers at the two afternoon meetings.
Certificates for each of the invited students were presented by Charles J. Donlan, Deputy Director, at a NASA luncheon March 15. The certificates are in recognition of their accomplishment in being selected to participate in the congress.
There were five students from each of the four states. Those from Virginia included David A. Burns of Ferguson High School, Newport News; Edward B. Fischer of Woodrow Wilson High School, Portsmouth; Paul M. Ford of Cradock High School, Portsmouth; David G. Altizer of Graham High School, Bluefield; and Clifford W. Lober of J. E. B. Stuart High School, Falls Church.
FOUND: Stone bracelet in Building 1146. Patterson, 4636.
SPORTSMAN'S NIGHT MARCH 27
Charley Johnson, quarterback for the St. Louis Cardinals and a member of the Chemistry and Physics Branch, Applied Materials and Physics Division, and Norman Snead, quarterback for the Philadelphia Eagles, will be guests at a Sportsman's Night on Wednesday, March 27 at 7 p.m. at the Activities Building.

The event will be sponsored by the Activities Association and no admission will be charged. Employees and members of their families are invited to attend.

Charley is a Lieutenant in the U.S. Army and is assigned to Langley Research Center. A native of Big Spring, Texas, he graduated from Big Spring High School and attended Schreiner Institute in Kerrville, Texas. He received his B.S. degree in Chemical Engineering from New Mexico State University and his M.S. degree in Chemical Engineering from Washington University. He joined the Center staff in November 1967.

SPRING DANCE FEATURES GLENN MILLER ORCHESTRA
The Activities Association will open its spring social season with the world famous Glenn Miller Orchestra, under the direction of and featuring Buddy De Franco, on Wednesday, April 24 at the Activities Building.

Playing in the Glenn Miller tradition with the authentic Glenn Miller arrangements, the 16-piece orchestra will furnish music and entertainment for the informal Spring Dance from 8:30 p.m. until 12:30 a.m.

Only a limited number of tickets will be sold and admission will be $7 per couple including free setups. Tickets may be purchased at the Activities Building. Reservations may be made by calling Bruce Amole, 4583.

The Glenn Miller Orchestra, established by the late Glenn Miller, has been playing with great success for the past nine years under the supervision of the Glenn Miller Estate. With the exception of Lawrence Welk, it is the only orchestra to have its own television band show - Glenn Miller Time - in the past nine years.

The orchestra has played at many famous hotels and clubs and has played two concert tours in Europe and three such tours in Japan and the Far East.

FOR SALE: 23-inch Zenith black and white, remote control TV - $100; console Singer sewing machine - $30. Woodman, PA2-8667 or TW8-5015.
NOTICE: Persons interested in umpiring Little League Baseball games contact Al King, 3308 or 595-0919.

The Hampton Roads Chapter of the Red Cross recently presented a bronze plaque to Center employees in recognition of their outstanding performance in the blood donor program from 1949 to 1967. Joyce A. Gray, Personnel Division Office, is shown hanging the plaque in the Headquarters Building.

EMPLOYEES DONATE BLOOD
The Red Cross Bloodmobile visited the Center on March 6 and staff members contributed a total of 186 pints of blood.

Charles W. Miller reached the eight-gallon mark and James J. Fay and Robert J. Guillette completed their quota for a seven-gallon pin. Recognized as four-gallon donors were Mike Jurscaga, John W. Paulson, John A. Moore and Frances Powell.

Reaching the three-gallon mark were Paul C. Geiger, James W. Haas, Edward F. Germain, William B. Jones, Robert W. Boswinkle and William C. Macom. Merle Ott received her two-gallon pin.

One gallon donors were Irving M. Miller, Albert L. Rose, Frank H. Joynes, Herbert J. Pelton, Richard J. Bendura, Durward M. Foster, John F. Bryant and Prentiss Childs.

Assisting during the visit were Dr. M. L. Reubens and Dr. Richard Clark.

The next Bloodmobile visit to the Center will be on May 29. Staff members who wish to participate in the blood program and have not registered may do so by calling East Dispensary, telephone 2243.

PROFESSOR TO VISIT HERE
Dr. Robert W. Truitt, Head of the Department of Mechanical and Aerospace Engineering, North Carolina State University, Raleigh, will visit the Center on Friday, April 12.

Dr. Truitt will present a lecture on "Relativistic Compressible Flow" at 9 a.m. in the East Area Projection Room, Building 587. Interested staff members are invited to attend.

Employees wishing to discuss graduate study with Dr. Truitt should call 2611 for an appointment.

FORMER STAFF MEMBER RECIPIENT OF AIAA AWARD

Dr. John C. Houbolt, former member of the Center staff and now Vice President, Aeronautical Research Associates of Princeton, has been named recipient of the Structures and Materials Award, the American Institute of Aeronautics and Astronautics announced this week.

The award was presented for Dr. Houbolt's "original, definitive, and continuous research leading to the use of random processes in aircraft gust loads design." The award consists of a certificate and honorarium of $500.

The award was presented at the Honors and Awards reception last Tuesday during the AIAA 9th Structures, Structural Dynamics and Materials Conference in Palm Springs, California.

Dr. Houbolt graduated from the University of Illinois in 1940 with a B.S. degree in Civil Engineering and in 1942 he received a Master of Science degree. He received the Doctor of Technical Sciences from the Swiss Federal Institute of Technology, Zurich, Switzerland, in 1958. He joined the Langley staff in 1942 and resigned in 1963.

Dr. Houbolt has had a profound impact on the use of random process in aircraft response to turbulence and orbital mechanics as applied to the Apollo mission. After considerable study, it was shown that the most efficient mode for the Apollo mission was to provide for a direct flight to a lunar orbital mode, then separate and conduct the lunar landing from the lunar orbit, leaving the return capsule in orbit. This mode was finally selected for the Apollo mission.

Dr. Floyd L. Thompson, Director, has been elected as a Fellow of the Royal Aeronautical Society. The RAS, in which are incorporated The Institution of Aeronautical Engineers and The Helicopter Association of Great Britain, was founded in 1866 and incorporated by Royal Charter in 1949.

The Society was established for the general advancement of aeronautical art, science and engineering and more particularly for promoting that species of knowledge which distinguishes the profession of aeronautics.

Edgar M. Cortright (second from left), who will become the new Director of Langley Research Center on May 1, visited the Center on March 20. Greeting him on his arrival are (from left): Laurence K. Loftin Jr., Assistant Director; Charles J. Donlan, Deputy Director; T. Melvin Butler, Assistant Director for Administration; Clifford H. Nelson, Eugene C. Draley, and Dr. John E. Duberg, Assistant Directors.
**ANNOUNCEMENTS**

DIAPER LINE...Celebrating the birth of a six pound, fourteen ounce son, James Whitted, on March 18 is John Wither- spoon, Training Branch, Personnel Division...Robert Moore, Procurement Division, recently welcomed the arrival of his third son...Weighing in at six pounds, twelve ounces on March 17 was John Huffman, son of Thomas E. Walton, Applied Materials and Physics Division.

PASSION PLAY PICTURES...Lt. Col. G. C. Fisher, Wing Chaplain, will show his color slide pictures of the Oberammergau Passion Play on Monday, April 8 and Wednesday, April 10 at the TAC Auditorium, Dodd Blvd. The pictures will be shown at 12:10 p.m. during lunch hour and will be open to the public. The Oberammergau Passion Play has been put on in Germany since 1633 by that village which was spared from the bubonic plague that followed Europe’s 30-year war. The villagers have gained worldwide fame by keeping their vow to perform the Passion Play every ten years. The only exceptions have been during the Napoleonic Wars and the two World Wars. Millions of people have seen the play or the village. Included are some beautiful Bavarian scenes, close-ups of the actors portraying the Bible story of Christ’s last week on earth, and the official scenes of the 1950 and 1960 plays.

ENGAGED...Making plans to desert the bachelor ranks is James R. Clair, Mechanical Services Division. He is engaged to Diane Elizabeth Roach, Hampton, and plans call for a June 15 wedding.

ASTRONOMY CLUB...The Skywatchers Astronomy Club will hold a brief business meeting in the Activities Building at 7:30 p.m. on April 11 followed by a viewing session. All members are requested to send their current address, home telephone number, and NASA extension to E. F. Taylor, Mail Stop 198.

FOR SALE: Citizen’s band radio equipment: Webster model 550 11-channel mobile or base unit; Webster model 565 5-channel mobile. Both sets fully transistorized, all crystal controlled. Fiberglas whip antennas and mounting for mobile unit. Super Magnum base antenna. Cables for each. AC power supply for base unit. Talbott, 722-2787.

FOR SALE: 1963 F85 Olds, 4-door sedan, power accessories - $950. Snow, 826-3142.

Members of the Misfits, who won the 1968 NASA Basketball Championship, are (from left): Hugh Mahanes, J. F. Creedon, Ronald Weber, Wayne Goff, Benjamin Keeter, W. L. Kelly, James Gormsen, and William Woods. Not shown are William Debnam and Otto Youngbluth. In a post season game Misfits overwhelmed No Names 76-44.

**CAFETERIA MENU**

The following menu will be served in the cafeterias during the week of April 8:

Monday - Consomme julienne, Swiss steak, stuffed shrimp, spaghetti with meat sauce, baked hash. Snack bar - Soup, hot dog, sliced turkey on roll, French fries.

Tuesday - Tomato-rice soup, pot roast of beef, veal cutlet, knockwurst, grilled cheese sandwich. Snack bar - Soup, grilled cheese, hot roast beef on roll, French fries.

Wednesday - Vegetable-beef soup, roast ribs of beef, grilled ham, beef stew, fish cakes. Snack bar - Soup, ham burger, veal cutlet on roll, French fries.

Thursday - Chicken-rice soup, grilled steak, barbecued pork chunks, fried chicken, western omelette. Snack bar - Soup, barbecued pork on roll, steak sandwich.

Friday - Manhattan clam chowder, simmered corned beef, fried beef steakette, broiled perch, cheese ravioli. Snack bar - Soup, fish sandwich, hot corned beef on roll.

The menu for the week of April 15 is as follows:

Monday - Puree of bean soup, braised lamb shank, chuckwagon steak, chicken chow mein, Irish omelette. Snack bar - Soup, hot dog, chuckwagon steak on roll.

Tuesday - Cream of tomato soup, Spanish pot roast, breaded scallops, liver and onions, franks and beans. Snack bar - Soup, cheeseburger, hot roast beef sandwich.

Wednesday - Cream of celery soup, braised short ribs, baked ham, Salisbury steak, Austrian ravioli. Snack bar - Soup, grilled ham sandwich, flying saucer, French fries.

Thursday - Vegetable-beef soup, grilled steak, chicken pie, Polish sausage, Spanish omelette. Snack bar - Soup, ham and egg sandwich, steak sandwich, French fries.

Friday - New England clam chowder, hot roast beef, grilled pork chops, fried fish, deviled crab, baked hash. Snack bar - Soup, sea dog, hot pastrami on rye.

FOR SALE: Cosco bridge table and 4 matching chairs - $40. Bainbridge, 722-6793.
FOR SALE: 1963 F85 Olds, 4-door sedan, power accessories - $950. Snow, 826-3142.
ASM HOST TO LOCAL STUDENTS

High school students and their science instructors from several schools in the Tidewater area will be guests at a meeting of the Hampton Roads Section of the American Society of Metals on April 15 at the Ambassador Club, 364 Peninsula Ave., Portsmouth.

Robert B. Pond, Associate Professor of Metallurgy in the Mechanics Department, Johns Hopkins University, will be guest speaker.

Pond is a native of Franklin. He received his B.S. degree in Metallurgical Engineering from Virginia Polytechnic Institute.

His industrial experience includes five years in production metallurgy work with Bethlehem Steel Company before joining Johns Hopkins University in 1947, and consultant work for numerous industries in the United States and Anglo-American Extrusions in England. He holds a number of patents in the field of continuous casting of metal filaments.

The meeting will be preceded by a social period at 6:30 p.m., followed by a family style dinner at 7 and the meeting at 8.

JACK SMITH DIES AT AGE 41

Jack S. Smith Jr., Instrument Construction Shop Section, Mechanical Services Division, died last Friday following a brief illness.

Smith was born July 16, 1926 in Hampton. He graduated from Hampton High School and entered on duty at the Center on June 16, 1943 as an apprentice. He entered the U.S. Army in 1944 and returned to the Center following his discharge. He graduated from the Apprentice School in 1950 as an Instrument Maker.

Survivors include his widow, Mrs. Norma G. Smith; a daughter, Nancy Johnston of Personnel Division; a son, Donald L. Smith; his mother, Mrs. Jack S. Smith Sr.; three sisters, Mrs. Barbara Evans, formerly of Public Affairs Office, Mrs. Floyd L. Bruce of Newport News, and Mrs. W. H. Graham of Richmond; and one brother, Robert C. Smith of Terre Haute, Indiana.

FOR SALE: 17,000 btu air conditioner. Clark, 838-0438.
FOR SALE: 1967 guitar and amplifier. Dennis, 723-9398.
WANTED: 17,000 btu air conditioner. Clark, 838-0438.
FOR SALE: 1967 guitar and amplifier. Dennis, 723-9398.
WANTED: Alternate driver from Norfolk to W.A. on 7:30 shift. Hudgens, 4851.
WANTED: Used Chris-Craft (Chevrolet) 263 cubic-inch V-8 marine engine - for parts - any condition considered. Barriett, 877-9429 after 4 p.m.
FOR SALE: Fedders air conditioner - 18,000 btu - $100. Atkins, 596-8416.
FOR SALE: 4-bedroom, 2-1/2-bath, 2-story home with fenced back yard. Croaston, 877-3926 after 5 p.m.
NOTICE: Will the person who borrowed a Hewlett-Packard power amplifier Model 467-A from Bill Fox, IRD, please return it as soon as possible or call Fox, 3291.

The Training Branch, Personnel Division, recently sponsored a get-together for Co-operative Education Students in the Activities Building (top photo). This gathering gave Center co-op students, who represent 21 schools in 13 states, the opportunity to become acquainted with each other. Entertainment included folk singing (bottom photo) by Joan Vincke, daughter of Cletus Vinke of Electrical Systems Division, and Steve Streka. Refreshments were furnished by the Activities Association.

TECHNOLOGY UTILIZATION NEWS

Technology surveys are conducted by research institutes for NASA under sponsorship of the Technology Utilization Division. The results of these "State-of-the-art" surveys are published in the NASA SP-5000 series of Special Publications, for example:

- Advanced Valve Technology, SP-5019;
- Thermal Insulation Systems, SP-5027;
- Structural Design Concepts, SP-5039;
- Solid Lubricants, SP-5059;
- Membrane Technology, SP-5061;
- Adhesives, Sealants and Gaskets, SP-5068.

The T. U. Office solicits your suggestions for new areas of technology suitable for coverage by this media. Please submit any suggestions or comments to the Langley T. U. Office, telephone 3281.

A new Technology Survey on the "State-of-the-art" in Teleoperator Control is now underway with Langley input scheduled for May. Contact the T. U. Office if you are interested in this rapidly developing area of new technology and can offer something to the publication.
TO A FALLING STAR: 'THANKS FOR MAKING ME LOOK UP'

Echo I, a symbol of space research for peaceful purposes for the past eight years, will soon end a billion mile journey which has taken it around the earth more than 35,600 times.

The world's first passive reflector communications satellite, viewed by millions of persons in many sections of the world since it was rocketed into orbit on August 12, 1960, is the product of a concept born at Langley.

The 100-foot-diameter Echo I was developed by Langley under the direction of William J. O'Sullivan Jr., Staff Scientist of the Applied Materials and Physics Division, with the cooperation of many individuals and organizations at the Center.

Constructed of very thin Mylar plastic film, with an outside vapor deposited coating of aluminum, the compactly folded satellite was launched from what is now Cape Kennedy, Florida, ejected from its metal container, and automatically inflated to spherical shape.

The balloon, which proved the feasibility of using a satellite as part of a passive communications system, has been in continuous use for a variety of other purposes since it was launched into orbit.

It has served as a test target for research, development, alignment, and calibration of innumerable radars.

The sphere has been a test vehicle for the development of the satellite method of performing world-wide geodetic surveys by strictly geometric means--eliminating the uncertainties of other methods that involve the magnitude and direction of gravity.

Other functions have been to provide atmospheric measurements on the borders of space and to be the focal point for long-duration tests in the actual space environment of spacecraft construction materials--specifically the plastic film and the vapor deposited aluminum coating.

This highly reliable combination of materials is being used as temperature control materials in other spacecraft, as well as in numerous industrial and civilian applications on earth.

Echo I grew out of Langley's activities during 1957-1958 in support of the International Geophysical Year, especially in research on the earth's atmosphere.

At that time, Langley conceived, designed, developed and built a small inflatable satellite for investigating the density of the earth's upper atmosphere.

This was a 30-inch-diameter inflatable sphere made of plastic film covered with aluminum foil to reflect both sunlight and radio waves so it could be tracked optically and by radar.

The 30-incher was the ancestor of Echo, the present-day 12-foot-diameter air density Explorer satellites and the PAGEOS 100-foot air density geodetic satellite.

Scientists who keep a watchful eye on Echo I say it is in a nearly circular orbit 800 miles above the earth. It has been descending for the past year from the position where it has been seen by more people than any other man-made object in space.

It is expected to enter the earth's atmosphere soon--possibly before this month is ended.

Echo I has been easily visible to the unaided eye over most of the earth. Echo fan clubs sprang up in schools. Newspaper and radio stations reported daily predictions where it would pass, and when. Boy and Girl Scout troops waited for her...as did many thousands of others in big and little communities.

During the past eight years, O'Sullivan and other NASA officials have received communications about Echo I from all over the world.

Some time after Echo I went into orbit, a poetic young Canadian girl who found the sight of the satellite in the nighttime sky inspiring, sent O'Sullivan a poem she had written about her observations of this glittering new moving star.

She closed her message with words which hold true for many of us: "Thank you for making me look up."

GROUND INFLATION tests of the 100-foot sphere were conducted by NASA prior to the launch of Echo I. Forty thousand pounds of air were required to inflate the sphere on the ground. In space, Echo I was inflated by residual air and subliming powders--benzoic acid and anthraquinone, which made it firm and round.
FOLDING TECHNIQUES for a 100-foot inflatable satellite are shown being developed at Langley during early design stages of Echo I. The satellite being folded at right is held in place by large clothespins. The satellite at left, further along in the intricate folding process, is being encased in a vinyl sleeve preparatory to the evacuation of bulk air trapped inside. Stretched out on the work table, each satellite is 157 feet long. Stages of the three-stage Delta launch vehicle are seen partially uncovered prior to launch of Echo I at Cape Canaveral, now Cape Kennedy. Resting on the solid propellant third stage before the fairing is installed is the 28-inch canister which contained the folded 100-foot deflated Echo I sphere. In the photograph at left the plume from Delta rocket fumes resulted from the liquid oxygen vented prior to the historic launch of Echo I at 5:30 a.m. EDT, August 12, 1960. The drawing illustrates how the satellite was inflated in space.
NASA SPONSORS SCIENCE FAIR AWARDS

Langley Research Center is presenting awards this spring in 15 regional and state science fairs in Virginia, North Carolina, South Carolina, and Kentucky as part of the annual participation of NASA in the International Science Fair.

Up to five certificates of outstanding achievement in aeronautics and space-related categories are being awarded by NASA in the participating science fairs, including four regional competitions in Virginia. The Virginia science fairs include the Tidewater Science Congress to be held tomorrow at Denbigh High School and the regional competitions in Arlington, Fairfax, and Roanoke.

Three Langley Staff members - John T. Suttles and Robert L. Wright, both of Applied Materials and Physics Division, and Otis S. Childress, Electrical Systems Division - will represent Langley in the selection of NASA award winners at the Tidewater Science Congress.

NASA awards are being presented by Langley at science fairs at Charlotte and Chapel Hill, North Carolina; Spartanburg, Florence, Greenville, Columbia, and Charleston, South Carolina; and Morehead, Jeffersonstown, Williamsburg, and Campbellsville, Kentucky.

Other NASA centers will take part in regional fairs in their geographical areas.

Langley's participation in the 15 science fairs is coordinated by the Office of Public Affairs.

The 1968 International Science Fair will be held in Detroit, Michigan, May 15-18, where winners of regional and state fairs in the United States and Canada will compete for honors.

Axel T. Mattson, Langley's research specialist for manned spacecraft projects, has been named for the sixth successive year as a judge for the NASA awards program.

NASA awards at Detroit will include certificates of merit to six student winners in aerospace categories.

The prizes will be invitations to them to visit a NASA research center selected on the basis of the interests of the individual winners. Each student will be permitted to select a teacher to accompany him on the NASA tour, which will include visits to center research facilities and an opportunity to consult with staff scientists.

CHEMICAL SOCIETY MEEETS APRIL 27

The annual spring meeting of the Virginia Section of the American Chemical Society will be held in Williamsburg on Saturday, April 27.

The program includes a technical lecture by Dr. E. C. Ashby, Georgia Institute of Technology on "The Chemistry of Grignard Compounds" at 4:15 p.m. in the William Small Physical Laboratory (Physics Building) College of William and Mary, followed by a social hour and dinner.

Non-members are invited to attend. For further information contact George Sands, 3041.

FOR SALE: 17-foot Lyman boat, fiberglass, convertible top and side curtains, 50 hp electric Evinrude Starflight, trailer. Smith, PA3-6488.

FOR SALE: 1963 F85 Olds coupe, straight stick - $800. Mangan, 229-4227.

FOR SALE: Carrier air conditioner - 13,000 btu - take up payments. Pease, 851-0181.

LETTERS PROVE SPACE INSPIRES KIDS, SOMETIMES FRUSTRATES THEIR MOTHERS

Mail from young students interested in aeronautics and space continue to come into the Langley Research Center at an increasing rate.

They prove many things— that young persons are sincere in expressing their views, pro or con; they are sometimes exasperating in their requests; they are vitally interested in the nation’s efforts to advance the science of flight; they don’t always use the right words, but get their point across; and they are not always good spellers.

Langley Researcher, from time to time, will report on Langley’s kid mail in an effort to keep the staff informed of what the younger generation-- tomorrow’s aerospace scientists-- are thinking.

Here are excerpts from a cross-section of letters received in recent months from young boys and girls-- and sometimes adults-- who request educational publications and other general information from the Office of Public Affairs:

From a young Brazilian boy, Gilberto:

“I am writing this letter to you and after reading it you will know how you have friends in all the world. I wish that you go on well in your work so beneficial for humanity.”

Michael of Paterson, New Jersey, writes:

“I am interested in receiving all you have on space, if impossible.”

A youngster who signs his letter— Your friend, Phil (of Philadelphia) observes all in one breath:

“Please send me everything on Langley Research Center because I have not written for three months and I go to the library to catch up but they don’t have the new stuff they have the same stuff.”

Jimmy, an interested NASA fan from Phenix City, Alabama, says:

“...You probably are wondering why I printed this letter? Well, the very unusual truth is I don’t like to hand write!”

Daniel, a future astronaut from Wilkes-Barre, Pennsylvania, was curious about the Langley Research Center:

“I imagin Langley must be beautiful and large. I wonder about such things as the planets, satellights, astronauts and the technology workers. Can you give me some information on these?”

A student from Kansas put his request in the form of a poem, part of which went:

“I am Stanley Kerby, and I live in Derby.”

Myron, who lives in Harrison, Ohio, expressed this desire:

“I have about 35 pictures of space flights. Wish I had all the space things in the world so I could be the smartest space walking boy there is.”

Kent of Amherst, Virginia, had an original idea on how to celebrate his recent birthday:

“Could I call the Langley Research Center on my birthday? I think the best birthday present would be to talk to important people. I hope the other letter to the President and to Cape Kennedy will be answered with a yes, and no charges. If there are any charges, Mom and Dad says I can’t call your group.”

A letter from Ralph of Roanoke Rapids, North Carolina, concerned a small liquid fuel rocket engine he was building:

“My science teacher told me that I should ask you to help me. I have tried almost every way to make it, but it was useless. You are my last hope. All I need made is the combustion chamber, throat, and nozzle. I would like it made out of one peace of tungsten steel or copper. I am very low in money so try to keep the price low. Try to make it free if possible.”

A long letter from Perry of ElPaso, Texas, requested information on 31 different subjects. One of the topics was Adult Education and he added in parentheses— “Don’t worry, I’ll learn it.”

Steve, who lives in the metropolitan Washington area— in Alexandria, Virginia, wasn’t sure whether he was doing the right thing:

“I forgot to ask you if children could send to NASA. If children can, send me a letter and say yes or no.”

And finally— to end on a motherly note— comes this letter from LaCrosse, Wisconsin, on behalf of Neal:

“I, Mrs. --, am typing this letter for my above-mentioned son—7 years young. I sometimes wonder just how many helpless and frustrated mothers are in my position in today’s world. The following is what my son would like to receive from you— he has spelled the proper names for me, which I trust are correct. If you can help him, we all will be most grateful.”

LECTURE SERIES

Dr. P. C. Gugelot, Professor of Physics, Virginia Associated Research Center, will continue his series of lectures at the Center on the general topic of Methods of Classical Physics.

On April 10 Dr. Gugelot will talk on Electricity and Magnetism, on May 1 he will discuss Relativity, and on May 8 his subject will be Program of General Relativity.

All lectures will be held at 9 a.m. in the Conference Room Building 1212 except the April 10 lecture which will be held in the Activities Building. All interested are invited.

GLENN MILLER DANCE. . . A few tickets are still available to the Activities Association’s Spring Dance featuring the famous Glenn Miller Orchestra. The informal affair will be held on Wednesday, April 24 from 8:30 p.m. to 12:30 a.m. in the Activities Building. Tickets are $7 per couple and they may be purchased at the Activities Building. Reservations may be made by calling Bruce Amole, 4583.

TELEPHONE. The Langley Tennis Club will hold a Get Acquainted Tournament on April 20, 21, and 22 with the finale scheduled for 5 p.m. on April 22. The matches will be played on the Activities Association’s tennis courts and the entrance fee will be one can of tournament quality balls. The tournament is open to members who have paid their dues for the 1968 season. Persons interested are requested to contact Bob Bolton, 4766, or Jim Mueller, 4488, before April 15. The LRC Tennis Club played its first match competition last week with the Williamsburg Tennis Club. Six singles and three doubles were played.

SOFTBALL NOTICE. . . A meeting of all team captains for the 1968 softball league will be held at 4:45 p.m. in the Activities Building on April 11. Anyone interested in forming a new team should also be present.

ELECTION DAY. . . The election of District Representatives to the Activities Association will be held on April 30. Each employee is entitled to one vote for one representative. Staff members on leave lose their right to vote.

PIANO. . . The Activities Association will auction the mahogany Baldwin Acrosonic spinet piano by accepting sealed bids at the Activities Building until April 19. The piano is on display in the lounge of the Activities Building. The Association reserves the right to accept or reject all bids.

FOR SALE: 1961 Volkswagon bus - $295. Shaw, 826-7277 after 5 p.m.

WANTED: Ride from Harwood Heights to W.A. on 8 shift. Haggerty, 3420.

At the Sportsman’s Night sponsored by the Activities Association on March 27 Norman Snead (seated left), quarterback for the Philadelphia Eagles, and Charley Johnson, quarterback for the St. Louis Cardinals, presented trophies to winners of various athletic events. Shown with the trophies are back row (from left): Richard Pincus, tennis; Robert Huffman, golf; Hugh Mahanes, basketball; Ken Sutton and Ray Midden, football; and Larry Brumfield, baseball.

Arnold W. Mueller (left), Treasurer of the Activities Association and chairman of the Association’s emblem contest, presents $25 U.S. Savings Bonds to co-winners Nettie J. Chandler and Wesley T. Berryman, both of Technical Illustrating Section. Nettie’s drawing is shown at left and Wesley’s winning entry is shown at right.

AIAA GROUP TO HEAR SHEF

The Hampton Roads Section of the American Institute of Aeronautics and Astronautics will hold a dinner meeting at the Warwick Yacht and Country Club on April 17.

A. L. Shef, Director of Aerospace Systems Analysis, McDonnell-Douglas, will be the guest speaker. The title of his talk will be “National Programs and the Progress of Technological Countries.” He will discuss the relationship between national programs and the progress of technological societies through a description and definition of the nature of technology.

The meeting will be preceded by a social hour at 6:30 p.m. followed by dinner at 7:30 and the meeting at 8:30. Reservations may be made by calling Brian O’Hare, 877-3854; Conrad Willis, 836-0895; or Bernard Spencer, 722-6478. Guests are invited to attend.

ANNUAL EASTER EGG HUNT

Staff members are reminded that the Activities Association’s Annual Easter Egg Hunt for children of Center employees will be held Saturday, April 13 at 1:30 p.m. on the Activities Building grounds.

The event is free for NASA children. Two areas will be marked off - one for children 2-7 years old, and one for children 8-12 years old. Six golden eggs will be hidden and prizes awarded to the children who find them.

It is requested that parents stay out of the marked-off areas. Each child should bring a small paper bag.
GLENN MILLER ORCHESTRA TO PLAY HERE APRIL 24

The world famous Glenn Miller Orchestra, under the direction of and featuring Buddy De Franco, will play for the Activities Association's Spring Dance on Wednesday, April 24 at the Activities Building.

Playing in the Glenn Miller tradition with the authentic Glenn Miller arrangements, the 16-piece orchestra will furnish entertainment from 8:30 p.m. until 12:30 a.m. Featured male vocalist with the group is Roger McCoy.

Only a limited number of tickets will be sold and admission will be $7 per couple including free setups. Tickets may be purchased at the Activities Building. Reservations may be made by calling Bruce Amole, 4583.

The Glenn Miller Orchestra was organized by the late Glenn Miller in 1937. Nearly ten years after Glenn's death the orchestra was revived under the direction of Ray McKinley. When Ray retired in 1966 the Glenn Miller estate arranged to have Buddy De Franco, one of the foremost musicians in the United States, take over direction of the orchestra.

In ceremonies held March 25 in NASA Headquarters James E. Webb (right), NASA Administrator, swore in Dr. Thomas O. Paine as Deputy Administrator of NASA. Dr. Paine succeeds Dr. Robert C. Seamans Jr., who resigned late last year.

DR. JOHN E. DUBERG NAMED ACTING ASSOCIATE DIRECTOR

Dr. John E. Duberg has been appointed Acting Associate Director of Langley Research Center. The appointment announced by Dr. Floyd L. Thompson, Langley Director, was effective April 4.

As Acting Associate Director, Dr. Duberg will serve as the principal assistant to the Director in organizing, directing, and reviewing the program and policies of the Center, particularly in all technical areas.

In addition to his new duties, Dr. Duberg will continue in his present capacity as Assistant Director, Group 2.

Dr. Duberg, a native of New York City, graduated with highest honors from Manhattan College in 1938 with the degree of Bachelor of Science in Civil Engineering.

He received a fellowship to Virginia Polytechnic Institute in 1939-1940 and held a research assistantship as a graduate student at the University of Illinois from 1940-1943.

He served three years as a member of the Langley science staff before returning to the University of Illinois in 1946 to complete Ph.D. requirements, receiving his doctorate in engineering two years later.

Resuming duties at Langley in 1948, he was appointed Chief of the Structures Research Division and served in that post until 1956.

During that eight-year period, the Division developed pioneering techniques of high-temperature structures research which are now standard throughout the country.

From 1956-1959, Dr. Duberg was Director for one year of Aeromechanics, Aeronutronics Systems, Inc., Glendale, California, and a professor for two years on the staff of the University of Illinois.

Dr. Duberg returned to the Langley science staff in 1959 and was appointed in May 1964 as Assistant Director, with responsibility for the research activities of two major divisions: the Dynamic Loads Division and Structures Research Division.

He has been closely concerned with Langley's relationships with the academic community and with the development of NASA's Space Radiation Effects Laboratory in Newport News. He is a member of the scientific advisory committee for SREL in connection with the Virginia Associated Research Center's operation of the facility under contract to NASA.
ANNOUNCEMENTS

ENGAGEMENTS. . .Making plans for a June 29 wedding are Carol J. Pereira, Applied-Physics Division, and Pendleton McGuire Jackson Jr., Flight Vehicles and Systems Division. The wedding will be held at the St. Bede's Catholic Church in Williamsburg. . .Dan Cupid scored a victory when Thomas G. Dudley, Electrical Systems Division, became engaged to Gloria Jean Parker, Chesapeake. The wedding will take place on May 25.

GIRLS SOFTBALL. . .Girls interested in playing in a NASA Softball League are requested to call Sharon Haythorne, 4861.

NEWLYWEDS. . .Eloise Grant, Technical Editing Section, and Elroy J. Johnson, Photographic Division, were married on April 10 in the Centenary Methodist Church in Jarratt, Va.

AFGE MEETING . . .The NASA Lodge 2755 American Federation of Government Employees will meet on Wednesday, April 24 at 7 p.m. at the Central Labor Union Hall.

NEW ARRIVAL . . .Announcing the birth of a six pound, three ounce daughter, Jill Marie, on April 13 are Sarah, formerly of Fiscal Division, and Harry Fuller, Flight Instrumentation Division.

COURSE OFFERED . . .The Adult Education Program of York County is sponsoring a course in "Introduction to Digital Computer Programming." The course will include a general introduction to digital computers, data processing systems, and an introduction to programming on IBM 1401 digital computer. A series of IBM booklets entitled "Introduction to Programming" will be used for the text. Their cost will be approximately $5 and the registration fee will be $10. Classes will meet on Monday and Thursday evenings for a period of 10 weeks. For further information call the York County Adult Education Office, 898-5957, during the day or Richard Margason, instructor, 877-3694, after 5 p.m.

MODEL MEET . . .A free flight model plane contest will be held from 8 a.m. to 4:30 p.m. on May 5 at Curles Neck Dairy Farm, located about 15 miles south of Richmond on Route 5. Awards will be made in three open class events. The events will be combined gas powered, rubber powered, and towline glider and will be open to AMA members only. Similar events will be held for junior and senior AMA members. For further information contact Artie Jessup, 3535.

CHEMICAL SOCIETY . . .Staff members are reminded that the spring meeting of the Virginia Section of the American Chemical Society will be held in Williamsburg on April 27. The program includes a technical lecture by Dr. E. C. Ashby, Georgia Institute of Technology, on "The Chemistry of Grignard Compounds" at 4:15 p.m. in the William Small Physical Laboratory, followed by a social hour and dinner.

CAFETERIA MENU

The following menu will be served in the cafeterias during the week of April 22:


Tuesday - Chicken-noodle soup, roast beef, chicken shortcake, ham and noodle casserole, fish cakes. Snack bar. Soup, hamburger, hot roast beef on roll, French fries.

Wednesday - Cream of mushroom soup, roast pork, Swiss steak, fried fish, cheese omelette. Snack bar - Cheese-burger, soup, hot roast pork on roll, French fries.

Thursday - Vegetable-beef soup, grilled steak, beef pie, sauteed chicken livers, fish sandwich. Snack bar - Soup, fish sandwich, steak sandwich, French fries.

Friday - Manhattan clam chowder, fried oysters, broiled ham, broiled fish fillet, western omelette. Snack bar - Soup, hot dog, chili dog, devilied crab, boiled ham on roll. The menu for the week of April 29 is as follows:

Monday - Egg drop soup, half-pound chopped steak, stuffed shrimp, chicken chop suey, franks and beans. Snack bar - Soup, ham and egg sandwich, satellite special.

Tuesday - Puree of bean soup, Spanish pot roast, grilled ham slice, Polish sausage, Austrian ravioli. Snack bar - Soup, hamburger, hot roast beef on roll, baked beans.

Wednesday - Chicken gumbo, chicken and dumplings, veal steak, beef stew, chili con carne. Snack bar - Soup, barbecued pork, veal steak on roll, French fries.

Thursday - Vegetable-beef soup, grilled steak, smoked pigs in a pone, fried chicken, grilled cheese sandwich. Snack bar - Soup, grilled cheese, steak sandwich.

Friday - Manhattan clam chowder, roast beef, chicken pie, fried fish, Spanish omelette. Snack bar - Soup, hot dog, chili dog, hot pastrami on rye, French fries.
RETIREMENT ANNUITIES INCREASED

A cost-of-living increase in annuities because of the rise in the Consumer Price Index is now definite. The amount of the increase is 3.9 per cent, effective May 1.

Under an amendment to the Civil Service Retirement Act, annuities are automatically increased whenever the CPI goes up by at least 3 per cent over the month (October 1966) used as a base for the most recent cost-of-living annuity increase, and stays up by at least 3 per cent for three consecutive months.

In such a case, annuities are increased by the highest percentage rise during the three month period. The increase is effective on the first day of the third month which begins after the CPI has been at least 3 per cent above the base month for three consecutive months.

The three month period during which the rise was at least 3 per cent and the actual percentage for each month is as follows: December, 3.2 per cent; January, 3.6 per cent; and February, 3.9 per cent. The 3.9 per cent increase applies to annuities commencing on or before May 1. To get the 3.9 per cent cost-of-living increase in annuity, an employee must be separated or his pay must cease no later than April 30.

It is anticipated that there will be some pending disability retirement cases in which the Commission will be unable, by April 30, to determine, and notify the agency, whether or not the applicant is totally disabled. In such a case, if the applicant is carried in pay status on sick or annual leave after April 30, he will not be eligible for the 3.9 per cent annuity cost-of-living increase. To avoid loss of the increase, applicants may request, and agencies may grant, leave without pay from and including May 1.

If the claim is disallowed, sick or annual leave with pay may be retroactively substituted for the leave without pay. If the claim is allowed, the increased annuity commences May 1, and accumulated annual leave is still payable in a lump sum. Sick leave, of course, is forfeited so that where an appreciable amount of sick leave is involved, the applicant should initially be given the choice between forfeiting it or continuing in pay status.

The survivor annuity of each qualified survivor of an employee who retired on or before April 30, is increased by the same percentage as the employee’s 3.9 per cent.

The survivor annuity otherwise payable to the child or children of an employee who dies in service at any time in the future is increased by 3.9 per cent. (A widow’s annuity is not so increased if the employee dies in service on or after May 1. The reason for the difference is that a widow’s annuity is based on the employee’s high 5 average salary and therefore reflects increases in salary whereas children’s annuities are in fixed amounts which do not reflect salary increases.)

The Civil Service Commission will increase annuities of already-retired employees and survivor annuitants by 3.9 per cent. The increase is effective May 1, and will be included in the regular June annuity checks.

A reemployed annuitant whose salary is being reduced by the amount of his annuity must take an additional reduction in salary equal to the 3.9 per cent increase in his annuity. The new rate is effective May 1. The additional reduction in salary is effective from that date or the date of re-employment, whichever is later.

WANTED: Chest-type freezer. Coward, 877-4696.

Six staff members have received cash awards from the NASA Inventions and Contributions Board. Top photo - Charles J. Donlan (left), Deputy Director, presents a check for $900 to Bruce Flagge, Instrument Research Division, for his invention entitled "Vibrating Structure Displacement Measuring Instrument." Center photo - Melvin E. Hathaway (left) and John R. McGehee (right), both of Structures Research Division, share a $200 award with Edmond J. Zavada, Mechanical Services Division, for their invention on "Frangible Tube Energy Dissipation." Lower photo - Amos A. Spady Jr. (left) and Frank G. Read, both of Space Mechanics Division, share a $100 award for "A Backpack Carrier."
ACTING ASSOCIATE DIRECTOR

(Continued from page 1)

A recognized authority in the field of structural analysis, Dr. Duberg is the author or co-author of a number of NASA and other publications and has served as a reviewer of publications for various organizations and publishers. He has served on several national research committees and has lectured extensively.

Dr. Duberg is a member of Tau Beta Pi, Phi Kappa Phi, Sigma Xi, the American Institute of Aeronautics and Astronautics, the Society of Industrial and Applied Mathematics, past president of the Hampton Roads Branch of the Scientific Research Society of America, and is a member of the Executive Advisory Board and past president of the Engineers' Club of the Virginia Peninsula.

Dr. Duberg is on the board of the United Community Services and was chairman in 1965 of the annual fund drive of the Peninsula United Fund.

He is President of the Warwick Rotary Club, member of the James River Country Club, member of St. Andrews Episcopal Church and former vestryman and junior warden. He is a member of the Committee for Greater Newport News and is on the board of directors of the Newport News Savings and Loan Association.

Dr. and Mrs. Duberg live at 4 Museum Drive, Newport News. They have two children.

FOR SALE: High chair (converts to table and chair), youth bed, and stroller. Burton, 826-9075.
FOR SALE: Power driven heavy duty reel-type lawn mower with 1.6 hp air cooled engine. Alexander, 722-6448.

This photographic sequence of the total eclipse of the moon last Friday night was taken by Frederick D. Jones, Photographic Division. Jones took the first photo at 10:07 p.m. and the other shots were taken thereafter at five minute intervals.

TECHNOLOGY UTILIZATION NEWS

The following new publications are available from the Technology Utilization Office, Room 227, Building 1219, telephone 3281.


TECH BRIEFS

B67-10611 Rolamite: New Mechanical Design Concept
B68-10001 DC Pin-to-Pin Testing of Integrated Circuits
B68-10002 Gage Monitors Quality of Cross-Wire Resistance Welds
B68-10024 Locating and Sealing Air Leaks in Multiroomed Buildings
B68-100013 Method for Measuring Thermal Conductivity of High Performance Insulation
B68-10016 Small, Low Power Analog-to-Digital Converter
B68-10034 Continuous Detonation Reaction Engine
B68-10040 Heat-Shrink Plastic Tubing Seals Joints in Glass Tubing
B68-10042 Suspended Chains Damp Wind - Induces Oscillations of Tall Flexible Structures

WANTED: Ride or driving combination from Norfolk to W.A. on 7 shift. Dudley, 4587.
NOTICE: Will the person who borrowed a 4 x 5 Graphic camera from Scout Project Office please return it to Abe Leiss, 2614.
WANTED: Ride from Westminster Dr. and Armistead Ave. to W.A. on 8 shift. Carson, 3675.
WANTED: Ride or driving combination from Warwick Shopping Center to W.A. on 7:30 shift. Campbell, 3541.
WANTED: Alternate drivers from Nicewood to W.A. on 7 shift. Collier, 4626.
FOR SALE: Uncrated 52-gallon electric hot water heater. Larson, 596-1922.
NASA SETS LAUNCH DATE FOR REENTRY F EXPERIMENT

A flight experiment in aerodynamic heating at speeds up to 13,500 miles-per-hour will be launched Thursday, April 25 by NASA from Wallops Station.

The experiment was designed by Langley Research Center.

Purpose of the experiment, known as Reentry F, is to measure heat transfer in a slender cone at hypersonic speeds for comparison with ground studies. Scientists are unable, even with the best available laboratory facilities, to simulate all at once complex variable governing aerodynamic heating. For that reason flight experiments are needed to provide a basis for useful ground test results. The objective is to obtain in flight fundamental research data on aerodynamic heating and the transition from laminar (smooth) to turbulent flow in the boundary layer.

The payload of Reentry F is a graphite-tipped beryllium cone 13 feet long, tapering from 0.1 inch at the nose to 27.3 inches at the base. When it separates from the rocket third stage, the cone and its internal instruments will weigh 600 pounds. It will be launched on a Scout rocket.

Reentry F is the sixth flight in a reentry heating series sponsored by the Office of Advanced Research and Technology (OART).

For this experiment, three of the Scout's four stages will be used. Two will fire on the ascending portion of the flight trajectory, and the third will drive the instrumented payload to hypersonic speeds after it has passed its apogee (highest point) and is descending into the atmosphere.

Aerodynamic heating, the phenomenon which causes a meteor to flare as it streaks into the Earth's atmosphere, is reasonably well understood in relation to flight of high speed aircraft, missiles and spacecraft. Much research and engineering has been done to protect flight vehicles against its effects -- heat shields of manned spacecraft are well-known examples.

The less familiar term 'boundary layer' refers to the layer of air close to the surface of a moving object in flight. The moving object carries a very thin sheet of air molecules held to its surface by friction. These molecules rub against their neighbors, generating heat which increases as speeds go higher.

When the molecules nearest the vehicle surface slide smoothly over their closest neighbors, the boundary layer is said to be 'laminar' or smooth. Designers would prefer to have smooth attached boundary layers over the entire surface, for they reduce air friction and heating.

The boundary layer is sensitive to many factors including speed, pressure, vehicle shape, surface roughness and temperature. Instead of remaining smooth, it frequently begins a churning or turbulent motion, and the 'scrubbing' action in the turbulent zone greatly increases aerodynamic heating.

When the factors which cause turbulent boundary layers and higher heating rates are more thoroughly understood through research, designers of many types of hypersonic vehicles will benefit by being better able to promote or prolong smooth, laminar boundary layer conditions.

The following Langley staff members are key officials for the Scout Reentry F Project:

Eugene C. Draley, Assistant Director for Flight Projects; Earl C. Hastings, Project Manager of Reentry F; James L. Raper, Assistant Project Manager; Howard S. Carter, Experimenter; John N. Daniel, Tracking and Data Acquisition; R. D. English, Head of Scout Project Office; B. Leon Hodge, Operations Director; Robert A. Schmitz, Payload Coordinator; and E. Eugene Hall, Systems Integration Engineer.

Members of the Wallops team are Robert T. Duffy, Test Director, and Tom W. Perry, Project Engineer.

DAYLIGHT TIME EFFECTIVE APRIL 28

Staff members are reminded that in accordance with the Daylight Saving Time Bill, all clocks in Virginia will be moved forward one hour at 2 a.m. on Sunday, April 28. Daylight Saving Time will be observed for a period of six months. Accordingly, clocks will be moved back one hour at 2 a.m. on Sunday, October 27.


FOR SALE: 1967 Triumph Bonneville T-120 motorcycle; 6,000 btu, 110-volt Emerson air conditioner - $90; 2 KLH model 17 speaker systems - $98; floor model sunlamp - $10. Shomo, 229-7016.
LUNAR TOPSOIL DEPTHS CALCULATED

Scientists believe they will know the depth of the moon's topmost layers over much of its surface with reasonable accuracy long before many areas are visited by man or his machines.

Working with Lunar Orbiter and Surveyor photographs and their own laboratory models, Ames Research Center scientists have developed methods of calculating lunar soil depths in most locations on the moon.

Their research makes it possible to calculate with some confidence the depth of the lunar surface material. It will aid in selection of the sites from which future astronauts will select rock samples.

But even before such samplings are made, researchers hope to prepare detailed lunar geologic maps showing the distribution and depth of fragmental surface materials and hard subsurface layers. Such a survey would include parts of the moon that may not be visited for years.

Evidence developed in the experiments indicates that many of the moon's smaller craters and much of the soil and fragmental material on the lunar surface are the result of meteorite impacts. These conclusions are significant in view of the fact that, although impact origin of lunar craters has long been assumed, no meteorite impact and no newly formed crater has every been observed.

The Ames research was based upon measurements made from detailed photographs of most of the moon's surface by Lunar Orbiters II, III and V and from pictures and surface analyses by four Surveyor spacecraft.

Dr. William Quaide and Verne R. Oberbeck have identified four basic types of lunar impact craters among some 100,000 craters examined. Their findings are presented in a preliminary report recently published in the "Journal of Geophysical Research."

The researchers have simulated meteorite impacts on the moon in the laboratory. Such experiments have been performed in a high vacuum and under conditions of lunar gravity, approximating one-sixth of that on Earth. Projectiles fired into simulated lunar soil targets produced craters that matched in detail the craters photographed on the moon.

Of even more significance, a count of numbers versus size of any one of the four crater types in one lunar area can be correlated by laboratory derived formulas with the numbers and sizes of the other three crater types in the same area.

These findings strongly support the theory of impact origin, because no other natural process could be expected to produce such exact matching.

The four crater types and their relationships have been catalogued:

For a three-foot layer of fragmental material over a hard rock surface on the moon, all craters up to 12 feet in diameter have round bottoms and have depths one quarter of their diameter.

Craters from 12 to 22 feet across have flat bottoms and a central mound.

Craters from 22 to 30 feet have flat bottoms and no mound.

Craters larger than 30 feet in diameter have a second crater gouged in the flat bottom.

WANTED: Ride or driving combination from Todds Lane to W.A. on 8 shift. Lockett, 3012.
OXYGEN-NITROGEN MIXTURE PICKED FOR APOLLO ON PAD

The spacecraft for the first manned Apollo mission will use a launch pad cabin atmosphere of 60 per cent oxygen and 40 per cent nitrogen, rather than pure oxygen which will continue to be used in orbit, NASA announced.

The change will apply only to the spacecraft cabin atmosphere during ground operations and will require no changes to the existing spacecraft environmental control system, which supplies pure oxygen in flight.

Astronauts will continue to breathe pure oxygen in their space suits before and during the launch phase, at a pressure slightly higher than the cabin to avoid leakage into the suit. After insertion into orbit the spacecraft environmental control system will gradually replace the 60/40 cabin atmosphere with pure oxygen.

More than 140 flammability tests conducted with a full-scale simulated spacecraft at Manned Spacecraft Center since October 1967 show that modifications to the Apollo spacecraft since the Apollo 204 accident of January 1967 have drastically reduced the hazard of fire in the vehicle.

Ignition sources have been minimized and many materials have been changed to prevent flame propagation. Several new materials not available during initial Apollo design have been introduced. A fire extinguisher and new hatch for crew egress have been developed.

Tests were conducted in a pure oxygen atmosphere at pressures of six pounds per-square-inch encountered in space flight, a 60/40 diluted oxygen atmosphere at launch pad pressures of 16 psi, and 16 psi in pure oxygen.

Tests of pure oxygen at pressures of 16 psi showed that although ignition was difficult, intentionally ignited fires tended to spread in that atmosphere. In about half the tests the fires failed to extinguish themselves and instead, spread beyond acceptable limits. In the other two test conditions the modified spacecraft was judged acceptable.

In evaluating an atmosphere for pre-launch use in the Apollo spacecraft cabin, a major consideration was to provide an adequate amount of oxygen to assure man's ability to perform, while reducing the danger of the fire to an acceptable level. A 60 per cent oxygen mixture will be livable at all times in flight, thus providing a backup to the space suit system for the crew.

JOINT MEETING PLANNED

A joint meeting of the Hampton Roads Sections of the Institute of Electrical and Electronics Engineers and the Instrument Society of America will be held on Wednesday, April 24 at the Chateau Restaurant on Pembroke Ave.

Samuel S. Bowles Jr., Virginia Electrical and Power Company, will be guest speaker. He will talk on "Power Station Instrumentation and Control Systems." Bowles received his B.S. degree in Mechanical Engineering from Virginia Polytechnic Institute in 1949. Since 1960 he has been Efficiency Engineer for the Yorktown Power Generating Station.

A social hour will be held at 6:30 p.m. followed by dinner at 7:30 and the meeting at 8:30. Reservations may be made by calling Richard Boole, 3492, or Cary Spitzer, 3234, by noon on April 23.

WANTED: Driving combination from Dutch Village Apts. to W.A. on 8 shift. Wilmoth, 4632.

ELECTION. Staff members are reminded that the Activities Association’s annual election for District Representatives to the General Assembly will be held at the Center on Tuesday, April 30. No primary election will be held and representatives elected to the General Assembly will serve from July 1, 1968 to June 30, 1969. Members of the Executive Board will be elected from the General Assembly. Voting will be by secret ballot. Each employee may vote for one candidate from his district. Ballots will be placed in sealed ballot boxes and each employee shall sign a register upon casting his ballot. There will be no voting by proxy and persons on leave lose their opportunity to vote.

TENNIS CLUB. The Langley Tennis Club held its get acquainted night on April 11 and 23 persons attended. The following officers were elected: Arnold Mueller, president; Jim Mueller, vice president; Pat McLean, secretary-treasurer; and Bob Bolton, tournament director. The get acquainted tournament will be held tomorrow, Sunday, and Monday on the NASA tennis courts. Membership dues are one dollar this year and they should be sent to Pat McLean, Mail Stop 168.

APPRENTICE HONOR ROLL
Ten apprentices completed the spring semester with an average of 96 or better. Members of the honor roll are as follows:

APPRENTICE EXAM NOTICE
The Apprentice Examination for this year is now open on a continuous basis. The announcement was issued by the Interagency Board of U.S. Civil Service Examiners, Rotunda Building, 415 St. Paul Boulevard, Norfolk, Virginia 23510, and covers all apprentice programs in the state including NASA.

FOR SALE: Large dog house - $14, stainless steel kitchen sink with cuisine - $25, Cavalier cedar chest, limed oak with shelf - $35, 3-bedroom, family room ranch house plan and spec. - $10, evergreen shrubs. Williams 851-2720.
LOCAL AIAA SECTION PLANS DINNER-DANCE FOR MAY

The Hampton Roads Section of the American Institute of Aeronautics and Astronautics will have a dinner-dance as its final meeting of the season on Friday, May 17 at the Activities Building.

Richard R. Heppe, Special Assistant to the Director of Engineering at the Lockheed-California Company, will be guest speaker. The title of his talk will be "A Designer's Look at What's Ahead in Aeronautics."

Heppe's look at what's coming is based on knowledge and plans growing from Lockheed's diverse military and commercial programs. He will discuss current progress and future plans in both military and commercial vehicles as well as in the rotary and fixed wing fields.

Heppe has been active through a series of technical and engineering management assignments in the conception and development of every new airplane of the Lockheed-California Company during the past 20 years.

The meeting will be preceded by a social hour at 6:30 p.m., followed by dinner at 7:30, the talk at 8:30, and dancing thereafter to the music of The Cruisers.

Reservations may be made by calling Brian O'Hare, 877-3634; Bernard Spencer, 722-6478; or Conrad Willis, 838-0695. Guests are cordially invited to attend.

LANGLEY AWARDS CONTRACTS FOR PLANNING MARS MISSIONS

Langley Research Center has awarded three advanced study contracts to provide basic information for planning possible future unmanned explorations of Mars.

Three aerospace companies have been selected to conduct separate five-month studies of different aspects of an unmanned interplanetary mission. None of the proposed contracts involves actual missions or hardware.

The firms are the Martin Marietta Corporation, Denver, Colorado; The Boeing Company, Seattle, Washington; and the McDonnell-Douglas Corporation, St. Louis, Missouri. Each contract is approximately $100,000.

Martin will analyze trajectory, guidance and navigational requirements of two approaches to Mars--a direct landing from an Earth launch versus a landing on the planet's surface from a Mars orbit.

In addition, Martin will provide information on the subsystems needed for both types of entry spacecraft, and

REENTRY F VEHICLE LAUNCHED SUCCESSFULLY FROM WALLOPS

NASA launched a Scout reentry experiment in aerodynamic heating at 12:19 a.m. EST April 27 from Wallops Island.

The purpose of the experiment, known as "Reentry F," was to measure heat transfer rates on a slender cone at hypersonic speeds for comparison with ground studies. Primary objective was to obtain in flight fundamental research data on aerodynamic heating and the transition from laminar (smooth) to turbulent flow in the boundary layer.

The payload was a graphite-tipped beryllium cone 13 feet long, tapering from 0.1 inch at the nose to 27.3 inches at the base, and weighing 600 pounds.

The experiment was designed by Langley Research Center. Reentry F was the sixth flight in a reentry heating series sponsored by NASA's Office of Advanced Research and Technology (OART).

Among the key Langley personnel responsible for the" (Continued on page 3)
ANNOUNCEMENTS

ENGAGEMENT... W. Lane Kelly IV, Flight Instrumentation Division, is engaged to Ennis Marie Pressley, Hampton. The wedding will take place in July. Making plans for a June wedding is Thomas P. Hansen, Lunar Orbiter Project Office. He is engaged to Carolyn Louise Femiani, Hampton.

IAM MEETING... The NASA Lodge No. 892, International Association of Machinists, will hold its monthly meeting on Tuesday, May 7 at 7 p.m. at the Central Labor Union Hall.

NEWLYWEDS... Stephanie S. Gammon, Personnel Division, was married April 27 to John A. Hayes, Newport News.

REPRESENTATIVES TO VISIT HERE... Rollin Slinger, Field Representative of the Indemnity Benefit Plan, will visit the Center on May 14 from 3 p.m. until 4 p.m. Anne Shepherd, Government-wide Service Plan representative, will be here on May 15 from 1 p.m. until 2 p.m. Employees having problems or questions concerning either plan may call Lois Taylor, 2605, for an appointment.

BABY DERBY... Weighing in at six pounds, fifteen ounces on April 14 was Steven, son of Bryan O'Hare, Applied Materials and Physics Division. Celebrating the birth of an eight pound, two ounce daughter, Patricia Louise, on April 18 is James C. Ward, Applied Materials and Physics Division.

TRIO TO APPEAR LOCALLY
The Stern-Rose-Istomin Trio, a chamber ensemble of three top virtuosos, will be presented by the Community Concert Association on May 14. The concert will be the final presentation in the 1967-68 white series and will be presented at the Newport News High School auditorium.

The trio is unique among today's ensembles in that it is made up of three great instrumentalists who put their solo careers aside for part of each year to play as a chamber group.

Isaac Stern is universally ranked as one of the world's supreme violinists. Leonard Rose is enjoying a flourishing career as a cello soloist and recording artist. Eugene Istomin is an internationally renowned pianist.

Ticket information may be obtained by contacting the Community Concert Association Headquarters. 244-3121.

Apollo 6 Command Module landed in the Pacific, northwest of the Hawaiian Islands at 4:56 p.m., EST, April 4. Apollo 6 was the second unmanned flight of the Saturn V in NASA's Lunar Landing Project. Frogmen placed a flotation collar around the spacecraft before it was picked up by the carrier USS Okinawa.

CAFETERIA MENU
The following menu will be served in the cafeterias during the week of May 6:

Monday - Cream of celery soup, pepper steak, fried fantail shrimp, spaghetti and meat sauce, tamale pie. Snack bar - Soup, cheeseburger, hot pastrami, French fries.
Tuesday - Consomme julienne, beef stroganoff, baked ham, liver and onions, fish cakes. Snack bar - Soup, sea dog, baked ham, French fries, baked beans.
Wednesday - Chicken-rice soup, pot roast, grilled pork chops, fried chicken, western omelette. Snack bar - Soup, western omelette, sliced barbecue beef, French fries.
Thursday - Vegetable-beef soup, grilled steak, beef and vegetable pie, broiled fish, grilled luncheon meat. Snack bar - Soup, hamburger, steak sandwich, French fries.
Friday - New England clam chowder, roast beef, smoked pork sausage, fried fish, macaroni and cheese. Snack bar - Soup, fish sandwich, hot roast beef, French fries.

The menu for the week of May 13 is as follows:
Tuesday - Cream of tomato soup, roast leg of lamb, stuffed flounder, knockwurst, baked hash. Snack bar - Soup, cheeseburger, chuckwagon steak, German potato cakes, baked beans.
Wednesday - French onion soup, hot turkey sandwich, braised beef tips, baked lasagna, franks and beans. Snack bar - Soup, barbecued meat sandwich, hot turkey sandwich, French fries.
Thursday - Vegetable-beef soup, roast ribs of beef, shrimp Newberg, grilled pork chopette, fish cakes. Snack bar - Soup, hamburger, steak sandwich, French fries.
Friday - Manhattan clam chowder, corned beef and cabbage, broiled filet of red snapper, tuna patties, beef ravioli. Snack bar - Soup, sea dog, corned beef, French fries.


LANGLEY AWARDS CONTRACTS
(Continued from page 1)
perform conceptual design studies of the alternate entry
techniques.
Boeing is requested to define and investigate the prob­
lems and determine the technical feasibility of using a
spacecraft propulsion system to supplement the perform­
ance of the Titan III-C class of launch vehicles to gain the
additional velocity necessary to send heavier payloads to
Mars.
Other objectives of the Boeing study are (1) to deter­
mine the maximum useful payloads which can be inserted
into Mars orbit through the use of a powered spacecraft
concept; and (2) to accomplish more refined mission analy­
ses and preliminary design analyses for spacecraft weights
to be selected by NASA during the study.
The McDonnell-Douglas study will concentrate on the
concept of soft-landing spacecraft entering the atmosphere
of Mars from an orbit around the planet. The company
will provide detailed design and operational information,
including analyses of the capability of such a spacecraft
and the proposed methods of soft-landing delicate instru­
ments to permit the conduct of successful scientific ex­
periments on the Martian surface.
REENTRY F EXPERIMENT
(Continued from page 1)
success of Reentry F are Earl Hastings Jr., Project Man­
ger; James L. Raper, Assistant Project Manager; Fred­
erick O. Allamby, Instrumentation Project Engineer; Ho­
ward S. Carter, Experimenter; and William A. Thompson,
Technical Project Engineer. Harry L. Smith and Robert
E. Laird were responsible for the reliability aspects of
the Reentry F Project.
The payload was built by the General Electric Company's
Re-entry Systems Department under contract to Langley
Center. Ling-Temco-Vought of Dallas, Texas, is prime
contractor for the Scout vehicle.
LANGLEY HOST TO AIAA GROUP
Langley Research Center is host for a two-day meeting
ending today to the Working Group on Space Simulation, a
subcommittee of the National Ground Testing Committee
of the American Institute of Aeronautics and Astronautics.
Managers and operators of the principal space simul­
ation facilities from 30 organizations in the United States
are meeting for an exchange of ideas, techniques and prob­
lem solutions. The technical agenda includes discussions
pertaining to radiation systems, instrumentation, vacuum
and cryogenic systems, operational problems, man-rating,
reliability, and correlation of flight data with information
obtained from ground-based facilities.
The Langley representative on this AIAA Working Group
is William Conner, Dynamic Loads Division.
LANGLEY TENNIS CLUB NEWS
The LRC Tennis Club held its spring tournament April
20-22. Charles Ruhlin, Dynamic Loads Division, was win­
ter. Results of the matches were as follows:
First round - Doug Whitt over Dr. K. H. Kim 6-2, 6-3;
Jack Kaylor over Arnold Mueller 6-1, 6-2; Bill Boatright
over Earl Dunham 6-0, 6-0; Jim Mueller over Earnie Ang­
lin 6-2, 6-0; Dick Layman over Mike Fischer 6-0, 6-4;
Charles Ruhlin over Robert Lee 6-0, 6-0; John Gregory
over Bob Bolton 6-1, 6-1; and Bob Murray over H. H. Ro-
Two staff members have received cash awards for sug­
gestions under the NASA Incentive Awards Program. Top
photo - George L. Meidinger, Mechanical Services, pre­
sents a check for $25 to Leon B. Holt for his suggestion
relative to improving communications to Center personnel
on an existing procedure for the reclamation of precious
metals. Bottom photo - William C. Tennis (right), Me­
chanical Services, receives a check for $25 from Robert
E. Little. Tennis' suggestion concerned the coordination
of stock listings and stockrooms in the Langley Research
Center stock catalogs.
FOR SALE: Silver miniature Poodle, 5-1/2 months old,
all shots, AKC registered - $70. Saunders, 826-1123 after 5.
berts 6-4, 1-6, 6-2.
Second round - Kaylor over Whitt 6-0, 6-0; Mueller over
Boatright 6-4, 8-6; Ruhlin over Layman 6-1, 6-2; and Mur­
ray over Gregory 8-1, 6-3.
- In the semi-finals Kaylor won over Mueller by default
and Ruhlin defeated Murray 6-3, 6-2. In the finals Ruhlin
defeated Kaylor 6-3, 6-1.
May 1 will be the beginning of the women's tennis meet­
ings. Dick Pincus, 1967 tournament winner, will be in­
structor.
During the months of March and April 30 staff members retired with long service records. The retirees are as follows:

Kenneth W. Ackerly, a Carpenter Supervisor in the Plant Maintenance Division, retired April 19 with almost 26 years of Federal Service. He was born February 17, 1906 in Hampton and first joined the Center staff on November 26, 1941. He served in the U.S. Air Force from 1942 to 1945 and returned to Langley following his discharge.

Alma P. Alexander, Information Receptionist, Administrative Services Division, is a native of Shenandoah, Va. She graduated from Shenandoah High School and attended State Teachers College now known as Madison College in Harrisonburg. She taught school in her home town for six years before moving to Ohio with her husband, Wendall, who retired from the Center last November. She started her Government career in 1943 with the Federal Public Housing Authority in Newport News and transferred to the Center on December 16, 1944 to be in charge of the Housing, Rationing, and Transportation Office. She retired April 30 with almost 25-1/2 years of Federal service.

Anita D. Bivins, Mathematics Technician in Dynamic Loads Division, retired April 30 with 32 years and 10 months of Government service. A native of Atlanta, Ga., she attended Salem Academy and Salem College in Winston-Salem, N.C., and received her A.B. degree from Woman’s College of the University of North Carolina, Greensboro. Before joining NASA on December 29, 1947 she worked for the Treasury Department, Washington, D.C.

Chisman “Chippy” Booker, Assistant Storage Officer in Procurement Division, was born August 10, 1903 in Hampton. He graduated from Hampton High School and attended the University of Virginia. He worked for the Veteran’s Administration before joining the Center staff on September 1, 1939. He retired with 29 years and 6 months of Federal service.

Cecil G. Burkett, Mechanical Inspector, Mechanical Services Division, retired with 25 years of service. He was born June 19, 1917 in Bethel, North Carolina. He attended Rich Square High School in Rich Square, N.C., and served in the U.S. Army from 1937 to 1940. He entered on duty at the Center on April 3, 1946.

Caspers C. Caskey, Cleaning Inspector, Plant Maintenance Division, was born August 20, 1901 in Lancaster County, S.C. He served in the U.S. Army from 1920 to 1921 and worked for the U.S. Bureau of Mines before joining the Center staff on May 12, 1944. He retired with 25 years and 8 months of service.

Charles A. Clarke, Experimental Facility Techniques, Full-Scale Research Division, retired April 26 with 34 years and 7 months of service. Born July 3, 1908 in Baltimore, Maryland, he graduated from Franklin Sherman High School at McLean, Va., and received his B.S. degree in Mechanical Engineering from Virginia Polytechnic Institute in 1930. Before reporting for duty at the Center on February 24, 1941, he worked for the Division of Disbursement, Treasury Department in Washington, D.C. He is also the retiring president of the Activities Association.

William F. Clark, Stores Receiving and Shipping Attendant, Procurement Division, was born November 9, 1916 in Lee County, Va. He graduated from East Stone Gap High School in Big Stone Gap, Va., and attended Lincoln Memorial University and King College in Tennessee. He served as school principal in Roaring Fork, Va., before joining...
The Center staff on June 10, 1943. He retired with 24 years and 9 months of service.

Lucille C. Coltrane, Aerospace Technologist, Applied Materials and Physics Division, is a native of Baskerville, Va. She received her B.S. degree in Mathematics from Longwood College and taught school in Boydton, Va., before joining Langley on December 2, 1941. She resigned in 1944 and returned in 1945. She was recently honored for her 25 years of service with a retirement dinner. She was presented a letter of congratulations for many jobs well done from Dr. Robert R. Gilruth, Director of Manned Spacecraft Center. The letter included signatures of former close associates at this Center - Paul Purser, Max Faget, Chris Kraft, Emily Stephens, and 43 others. She was also given a Memory Book which included letters from other former LRC personnel now in NASA Headquarters or in industry. The book reviewed with pictures and cartoons her work experiences which were primarily in PARD and AMPD.

Milfred E. Cook, Chief of Plant Maintenance Division, retired April 30 with over 30 years of service - all with Langley. He was born September 18, 1906 in Davie County, North Carolina, where he served his carpenter apprenticeship with local contractors. Joining the Langley staff in 1939, he was made Shop Superintendent in 1943 and Superintendent of Construction and Repair in 1946. He was appointed Chief of Maintenance in 1961.

H. Oliver Diggs, Painter Leader, Plant Maintenance Division, was born May 30, 1904 in Hampton. He attended local schools and worked at the Newport News Shipbuilding and Dry Dock Company and the Veterans Administration before joining NASA on August 5, 1948. He retired with 25 years and 5 months service.

Murray Edwards, Building Trades Foreman, Plant Maintenance Division, retired with 25 years and 4 months service. He was born June 12, 1905 in Chicago, Illinois, and attended Central High School in Nashville, Tennessee. He worked for Basic Engineering Company before joining the Center staff on November 25, 1942.

Marvin Forrest, Assistant to the Chief of Engineering and Technical Services, retired with 40 years and 8 months of service - all with NASA. He was born January 3, 1906 in Poquoson. He graduated from Poquoson High School and attended Southern Business University. He started his NASA career on August 29, 1927. He was appointed Chief of Maintenance Division in 1951 and was appointed in 1961 to the position he held at retirement.

Ray W. Hooker, Special Assistant for Industry Affairs, Office of Assistant Director for Administration, retired April 30 with over 38 years of service. Born January 3, 1906, in Boswell, Indiana, he was graduated from Pine Village High School in Pine Village, Indiana, and received his B.S. degree in Mechanical Engineering from Purdue University in 1929. He joined the Langley staff in February 1930. He was placed in charge of the Construction Section in 1942, heading the design and construction activities during the expansion of Langley's newest and largest research complex-- the West Area. He became Assistant Chief of the Engineering Division in 1943. In 1960 he was appointed Associate Chief of the Engineering Division and was named Chief of the Research Models and Facilities Division in 1962. In April 1966 he was appointed NASA's senior scientific representative in Australia. His primary function was as liaison with the Department of Supply of the Commonwealth of Australia, the cooperating space agency which constructs, staffs and operates the NASA facilities. Following a two-year tour of duty, he returned to Langley.

James F. Jordon, Rigger, Mechanical Services Division, was born August 9, 1912 in Big Bethel, Virginia. He completed a sheetmetal course at Hampton Institute and worked (Continued on page 6)
for the Quartermaster Corps, Fort Monroe, before entering on duty at Langley on August 17, 1936. He had 31 years and 8 months of service.

Julia A. Lancaster, Supervisory Mathematician, Full-Scale Research Division, is a native of New Bern, N.C. She received her A.B. degree in Mathematics from East Carolina Teachers College and taught school in North Carolina before joining NASA on December 10, 1942. She had 25 years and 4 months of service.

Thomas R. McGrath, Equipment Specialist, Technical Service Contract Support Unit, retired with almost 32 years of service. He was born December 3, 1899 in Belfast, Ireland. He served in the U.S. Navy from 1918 to 1921 and served his apprenticeship as a toolmaker at the Newport News Shipbuilding and Dry Dock Company. He started his NASA career on May 3, 1939.

Robert A. Perkins, Research Aircraft Mechanic Supervisor, Flight Mechanics and Technology Division, retired with 27 years and 7 months of service. He was born October 6, 1911 in Kingston, New York, and graduated from Hamilton High School in Cartersville, Va. He served in the U.S. Air Force from 1935 to 1945 and joined the Langley staff on October 10, 1945.

William A. Phelps, AST, Technical Management, Cost Engineering Staff, was born February 1, 1906 in Durham, N.C. He graduated from Durham High School and attended Duke University. He started his NASA career on February 1, 1944 and retired April 30 with over 24 years of service.

John C. Rickman, Electrician, Electrical Systems Division, was born June 30, 1914 in Franklin, N.C. He graduated from Canton High School, Canton, N.C., and served in the U.S. Army from 1943 to 1946. He entered on duty August 21, 1962.

Robert D. Ross, AST, Experimental Facilities and Equipment, Structures Research Division, retired with 35 years of service. He was born November 20, 1905 in Sewickley, Pennsylvania, and received his B.S. degree in Electrical Engineering from the University of Florida. He also did graduate work in Physics and Mathematics at the University of Pittsburgh. He worked at the Norfolk Navy Yard and for the Navy Department at the Newport News Shipbuilding and Dry Dock Company before joining NASA on June 12, 1944.

August V. Sansone, Facility Support Electrician Foreman, Electrical Systems Division, retired with 37 years of Government service. He was born May 14, 1903 in Pittsburgh, Pennsylvania. He started his Government career in 1931 with the Quartermaster Corps at Langley Air Force Base and joined NASA on September 1, 1936.

Moore T. Schilling, Experimental Facilities Mechanic, Mechanical Services Division, retired with 27 years of service. He attended Heights Senior High School in Houston, Texas, and served in the U.S. Army from 1941 to 1944. He entered on duty at the Center on December 29, 1944.

Junius A. Slaughter, Laborer, Plant Maintenance Division, was born August 15, 1917 in Hampton. He graduated from Mary Nottingham High School, Accomack County, Virginia, and served in the U.S. Navy from 1943 to 1946. He joined the Langley staff on August 2, 1955 and retired with over 16 years of service.

Walter R. Spencer, Aeronautical Laboratory Mechanic, Ida Young, former Head of Technical Editing Section, Research Reports Division, poses with Dr. Floyd L. Thompson, Special Assistant to NASA Administrator James E. Webb, at her recent retirement party.

Instrument Research Division, was born November 6, 1905 in Hampton. He attended Syms Eaton Academy and started his Government career with NASA on May 22, 1942. He retired with 26 years of service.

Elizabeth H. Tench, Mathematics Technician, Aeronautics Division, is a native of Jersey City, New Jersey. She attended Christ Hospital School of Nursing in Jersey City for two years and worked briefly at the Hampton Roads Port of Embarkation. She joined the Langley staff on February 7, 1957 and retired with 17-1/2 years of service.

Richard E. Wagner, Mechanical Engineer, Research Models and Facilities Division, retired with over 27 years of service. He was born June 21, 1900 in Ellerslie, Maryland, and attended Waynesboro High School, Waynesboro, Pennsylvania. He worked for the Norfolk Navy Shipyard in Portsmouth from 1941 to 1946 and transferred to the Center on September 17, 1946.

Wyatt G. Walker, Experimental Machinist, Mechanical Services Division, was born May 3, 1898 in York County. He attended Hampton High School and served his apprenticeship as a toolmaker at the Newport News Shipbuilding and Dry Dock Company. He joined the Center on January 29, 1951 and retired with over 17 years of service.

Robena Watkins, Telephone Operator, is a native of Poquoson. She attended Poquoson High School and worked for the Department of Air Force, Langley Field, from 1945 to 1954. She entered on duty at the Center on October 26, 1954.

Ida Young, Supervisor Aero-Space Science Editor, Research Reports Division, hails from Youngs, Georgia. She received her B.A. degree in History and Mathematics from Shorter College, Rome, Georgia, and began her professional career as a public school teacher. She entered Government service in 1934 with the Federal Emergency Relief Agency as a case worker. She joined the Langley staff in 1939 and retired with over 33 years of Federal service. In 1962 she received a Certificate of Commendation awarded by NASA in recognition of her nomination by NASA for the Federal Woman's Award based on high achievement in the Federal career service.
Eight staff members have received cash awards from the NASA Inventions and Contributions Board. Top left photo - Charles J. Donlan (left), former Deputy Director, presents a check for $700 to James H. Schrader, Flight Instrumentation, for his invention suggestion concerning a cooperative doppler radar system. Top right photo - Sharing a $400 award for a controlled glass bead peening are (from left) Thomas T. Bales, Structures Research; Marion B. Seyffert, Mechanical Services; and Wayne B. Lisagor, Structures Research. Also sharing in the award was Charles R. Manning, former staff member. Lower left photo - Rodger L. Naeseth (left) and Francis M. Rogallo, both of Full-Scale Research Division, received $50 each for an aeroelastic structure. Lower right photo - Eugene C. Naumann (left), Dynamic Loads, received $300 and Bruce Flagge, Instrument Research, was awarded $100 for their joint invention suggestion concerning an arbitrarily shaped model survey system.

SMITH NAMED TO NEW POST

Dr. Henry J. Smith has been appointed Deputy Associate Administrator for Space Science and Applications (Science) of NASA. He was Deputy Director of Physics and Astronomy Programs, Office of Space Science and Applications (OSSA).

In his new position, Dr. Smith is Chief Scientist for OSSA and NASA's key man in obtaining and implementing scientific advice for the national space program.

Dr. Smith assumes the job vacated by Dr. John E. Naugle, who was named Associate Administrator for Space Science and Applications last October.

Transferring from the Department of Commerce to NASA in 1963 as Chief of Solar Physics in OSSA, Dr. Smith served in that capacity until May 1966. He then became Deputy Director of Physics and Astronomy Programs.

Dr. Smith was born in Boston and earned his Ph.D. from Harvard University in 1955.

SIMULATOR CONTRACT AWARDED

NASA's Langley Research Center has selected the Norair Division, Northrop Corp., Hawthorne, California, for contract negotiations on the design and construction of a differential maneuvering simulator. The contract will be valued at approximately $2 million.

The complex system to be furnished and installed at Langley will consist of two identical piloted flight simulators, linked electronically through central computer equipment.

Langley scientists intend to use the simulator to study a wide range of future aerospace vehicle concepts. Such problems as collision avoidance -- involving separate airplanes and pilots on different courses -- is typical of the research for which the simulator is needed.

Hardware to be provided by the contractor includes two identical cockpits with visual display equipment, a monitoring and control console, and associated gear.
MODELS TEST FLIGHT BEHAVIOR

Model planes are work, not play, here at Langley Research Center. They are regularly used in research programs to evaluate the flight behavior of new aircraft and spacecraft designs.

One of the techniques used in these programs consists of testing free-flying radio-controlled models.

Taken aloft on helicopters, the models are released and their flight maneuvers controlled from the ground. As each nears the end of its flight, on radio command from the ground a brilliant International Orange parachute balloons from the tail section to soften the impact of landing.

Built to one-ninth scale, the models weigh about 225 pounds. Technically, the models are what is known as dynamically scaled. That is they duplicate not only the mass of the vehicle but other features also are exactly proportional.

Main users of the models at Langley are members of the Dynamic Stability Branch, Flight Mechanics and Technology Division.

In their test flights, generally from about 5,000 feet up, important data can be measured and recorded within the model.

In effect, the model becomes an analog computer. Its flight path and the motions about the flight path are geometrically similar to those the full-scale aircraft would experience under similar circumstances.

Used largely on airplanes, this testing technique is also advantageous for studying characteristics of devices which could be used to land either manned or unmanned spacecraft after they return from orbit.

To reduce the cost of spacecraft launchings, it has been suggested that the large and expensive booster rocket, used only once, be recovered, refurbished and used again.

The principal has been shown to work in tests at Langley, but a tremendous amount of engineering would still be required to produce flight hardware for the actual vehicle.

For now, the models will continue to perform a valuable role in checking out new and experimental aircraft without endangering either the life of a test pilot or the loss of a very expensive vehicle.

UP, UP AND AWAY: Attached to a helicopter, this free-flying radio-controlled model is on its way to a flight of its own at Langley Research Center.

READY FOR RELEASE: Silhouetted against the landscape, this radio-controlled model is ready for its own flight from an altitude of about 50,000 feet. The scale models are used in ascertaining flight behavior and dynamic stability characteristics over a wide range of flight conditions.

KNOW YOUR CREDIT UNION

Certain aspects of the Credit Union's insurance program are highlighted for the benefit of members.

Generally speaking, share-life insurance matches shares held at date-of-death up to $2000 and loan-life insurance pays-off a loan up to $10,000. There are conditions based on age, ability to perform usual duties, etc., but for a quick reading the above is sufficient. Account Number 15129. Loan-disability insurance receives a little more attention. Usually such coverage has strict limitations as regards a prior history of the disabling ailment. Under the Credit Union's policy, the entire loan balance, up to $10,000 is paid off if the borrower becomes totally and permanently disabled (1) before the age of 60, and (2) regardless of previous medical history if the borrower performed his usual duties for a period of at least 12 months from the date of his loan.

Another plus in this insurance business, and one not usually recognized, is the matter of the "hidden" dividend. The 5% the Credit Union has paid for years is most praiseworthy, but how many stop to consider that at age 20, the insurance coverage is the equivalent of another .4% on the first $2000 in shares; at age 35 .5%; and at age 50, 1.2%? Dividends of 5.4%, 5.5% and 6.2% are not to sneeze at.

But the real crusher is that at age 60, the coverage is whatever you care to name...for practical purposes group/term insurance has priced itself out of the picture.

Incidentally, for the member who wonders what his account number is doing in the middle of this story, just call extension 3606. The $5 that will be forthcoming is the Credit Union's way of saying "Thanks" for his interest and attention. To all the others, check the next issue.

EVERHART DIES UNEXPECTEDLY

Samuel L. Everhart, Mechanical Inspector, Research Equipment Service Section, Mechanical Services Division, died at his home on Saturday, April 20.

Everhart was born May 19, 1915 in Winston-Salem, North Carolina. He attended East Spencer High School in East Spencer, N.C., and joined the Center staff on April 3, 1946 as a Mechanic.

Survivors include his widow, Mrs. Cora Rand Everhart; a daughter, Julie Rand Everhart of Poquoson; and a son, Jimmy L. Everhart of Lexington, N.C.
HELICOPTER SOCIETY HONORS CAMPBELL FOR NASA RESEARCH

John P. Campbell, Associate Chief of Flight Mechanics and Technology Division, has been honored for his pioneering contributions in the field of vertical takeoff-landing aircraft research.

The American Helicopter Society selected Campbell to receive the Paul E. Haueter Award for 1968. The award is given annually for significant contributions to the development of vertical lift aircraft other than helicopters.

Campbell was specifically cited "for his personal contributions to and direction of NASA research programs which have provided a sound technology base for a large number of VTOL designs."

The honor was established in memory of an aeronautical engineer, public servant, and AHS officer who was instrumental in fostering the early development of VTOL aircraft in the United States.

(Continued on page 3)

CORTRIGHT ASSUMES DUTIES AS NEW LANGLEY DIRECTOR

Edgar M. Cortright officially assumed the duties of Director of the Langley Research Center on May 1.

He succeeded Dr. Floyd L. Thompson, who is serving as Special Assistant to NASA Administrator James E. Webb.

Cortright, an aerospace scientist and administrator for 20 years prior to his appointment as Director, came to Langley from NASA Headquarters--where he was Deputy Associate Administrator for Manned Space Flight.

He served at the Lewis Research Center, Cleveland, Ohio, from 1948 to 1958, and at NASA Headquarters for the following ten years.

Cortright has been spending his first few days at Langley reviewing with the staff the various activities of the Center.

Briefings and discussions are being presented to the new Director on the Center's aeronautical and space programs, and the research, administrative, and technical services functions of the divisions and other organizational units.

Following each briefing by a division, Cortright plans a tour of its facilities.

On his first day in office, Cortright met with supervisors at a staff meeting in the Morale Activities Building to discuss his plans for becoming acquainted with the many aspects of his new position.

Cortright cited the Center for its reputation as a well-
## ANNOUNCEMENTS

**NEW ARRIVALS...** Weighing in at six pounds, fourteen ounces on April 14 was Edward Christian, son of Mary-anne, formerly of Administrative Services Division, and Reginald Holloway, Flight Instrumentation Division. Celebrating the birth of a six pound, seven ounce daughter, Tina Marie, on May 5 is A. Ernest Moore, Mechanical Services Division.

**AFGE MEETING...** The NASA Lodge 2755 American Federation of Government Employees will meet on May 29 at 7:30 p.m. at the Central Labor Union Hall.

**GAME NIGHT...** Northrop Woman's Club is presenting a "Game Night" on May 18 at 8 p.m. at the Northampton Recreation Center. The donation is two dollars for the Student Activity Fund of the Hampton Virginia State School for the Deaf and Blind. The club will provide refreshments and game prizes. Tickets are available at the door and through Northrop employees at the Center.

**ALUMNI GROUP...** Ray Goodman is replacing Tom McGrath, who retired recently, as the Center's representative for the Newport News Shipbuilding and Dry Dock Company's Apprentice Alumni Association. The association is planning a golf tournament on May 26 at the Municipal Golf Course, Newport News, and the annual crab feast will be held at 5 p.m. on June 21 at the Original club. Dues for the year are three dollars and may be sent to Goodman, Mail Stop 216.

**NOTE OF THANKS...** A note has been received from Alma Alexander, Administrative Services Division, expressing sincere appreciation to her friends and associates who participated in the luncheon and gift presentation on the occasion of her recent retirement from the Center.

**PROFESSOR TO VISIT HERE...** Dr. Thomas L. Reynolds, Department of Mathematics, College of William and Mary, will visit the Center on May 22 to discuss the college's graduate study program. Staff members interested in talking with Dr. Reynolds may call 2611 for an appointment.

**LECTURE...** Dr. P. C. Gugelot, VARC, will present a lecture on "Symmetry" at 9 a.m. on May 29 in the East Area Projection Room. Interested staff members are invited to attend.

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### CAFETERIA MENU

The following menu will be served in the cafeterias during the week of May 20:

- **Monday** - Puree of bean soup, Swiss steak, Polish sausage, fried fish sticks, Spanish omelette. Snack bar - Hot dog, sliced barbecued beef, baked beans, French fries.
- **Tuesday** - Consommé julienne, Spanish pot roast, breaded veal cutlet, liver and onions, Austrian ravioli. Snack bar - Barbecued pork, veal steak sandwich, French fries.
- **Wednesday** - Vegetable-beef soup, grilled steak, breaded scallops, beef stew, chili-mac. Snack bar - Soup, hamburger, steak sandwich, French fries.
- **Thursday** - Chicken-noodle soup, hot roast beef sandwich, grilled pork steak, fried chicken, Irish omelette. Snack bar - Soup, grilled cheese and bacon, hot roast beef.
- **Friday** - Manhattan clam chowder, chicken and dumplings, chuckwagon steak, broiled fish, tuna-noodle casserole. Snack bar - Soup, cheeseburger, chuckwagon steak on roll, German potato cakes.

The menu for the week of May 27 is as follows:

- **Monday** - Cream of celery soup, roast beef, grilled ham slice, stuffed shrimp, franks and beans. Snack bar - Soup, hot dog, hot pantrami, French fries.
- **Tuesday** - Chicken-noodle soup, chicken shortcake, baked meat loaf, fried fish, long hot dog. Snack bar - Soup, long hot dog, sliced barbecued beef, French fries.
- **Wednesday** - Vegetable-beef soup, grilled steak, beef pot pie, smoked pork sausage, western omelette. Snack bar - Soup, smoked sausage, steak sandwich, French fries.
- **Thursday** - H O L I D A Y
- **Friday** - New England clam chowder, corned beef and cabbage, stuffed flounder, knockerwurst, fish cakes. Snack bar - Soup, fish sandwich, hot corned beef, French fries.

**FOR SALE:**
- 4-bedroom, 2-story air conditioned house in Beechwood - $4500 down assume 5-1/4% loan. Clark, 877-4592.
- Hoover and Electrolux vacuum cleaners, both with attachments. Coward, 877-4696.
- Man's London Fog raincoat in Building 1236. Catlett, 4498.
- 8 shift. Pincus, 4826.
- Ride from Briarwood Terrace to W.A. on 7:30 shift. Hurt, 3601.
- Driving combination from Fox Grove to W.A. on 8 shift. Midden, 4871.
- Black frame prescription glasses in Building 1268. Holt, 4851.
- 3 bedrooms. Rowe, 322 Chapel St., 722-7374.
SOCIETY HONORS CAMPBELL
(Continued from page 1)

The award consists of a large plaque which is kept on permanent display in the Smithsonian Institution in Washington, D.C., and upon which is inscribed the name of each winner, and a small individual plaque which is being retained by Campbell.

Campbell joined the Center staff in 1939 after his graduation from Auburn University, where he was elected to Tau Beta Pi and Phi Kappa Phi honorary fraternities. He has been continuously engaged in research at Langley since that time.

His early research dealt mainly with aircraft stability and control. He was instrumental in the development of free-flight model testing techniques at Langley for use in studies of dynamic stability and control.

Since 1949, Campbell has been active in the V/STOL aircraft field. He directed early exploratory research carried out at Langley on a number of different V/STOL concepts.

One of the more important phases of this work was the pioneering research on the propeller tilt-wing concept which eventually led to the Tri-Service XC-142 and the Canadair CL-84 airplanes.

In addition to making numerous presentations on V/STOL aircraft at national and international meetings, Campbell is the author of a number of NASA reports on his research and he wrote the book, “Vertical Takeoff and Landing Aircraft,” published by Macmillan in 1962.

Campbell is the inventor of the external-flow jet flap—a high-lift device now being considered for application to jet- or fan-powered STOL aircraft.

He is an Associate Fellow of the American Institute of Aeronautics and Astronautics and serves as an editorial advisor on the AIAA magazine, Aeronautics and Astronautics.

He lives at 27 Sir Francis Wyatt Place, Newport News, with his wife and three sons.

PRIOR to his first talk to staff members as Director, Edgar M. Cortright (second from right) chats with Dr. Floyd L. Thompson, former Director and now Special Assistant to the NASA Administrator James E. Webb. Dr. John E. Duberg (left) is the new Acting Associate Director. The meeting was held in the Activities Building on May 1.

CORTRIGHT ASSUMES DUTIES
(Continued from page 1)

managed and smoothly-operating organization and expressed pleasure at the opportunity to work with the Langley staff in moving forward as a team to continue to contribute to the advancement of flight.

Cortright, a native of Hastings, Pennsylvania, and a graduate of the Rensselaer Polytechnic Institute, was introduced at the meeting by Dr. Thompson—who discussed his new role as Special Assistant to the NASA Administrator.

LANGLEY AWARDS $1,990,000 CONTRACT

Langley Research Center has announced the award of a construction contract in the amount of $1,990,000 to the Western Gear Corporation, Lynwood, California.

The contract is for major construction in the establishment at Langley of a V/STOL Transition Research Tunnel to study problems concerned with the development and operation of vertical takeoff-landing and short takeoff-landing aircraft.

The Western Gear Corporation, whose bid was the lowest of four submitted in April, will have 680 calendar days to complete the work required under its contract—including the construction of buildings, a test section 15 by nearly 22 feet, and auxiliaries for the tunnel.

The tunnel structure and foundations, the fan drive system, and fan blades are being procured by Langley under separate contracts with other firms.

The facility is being built in West Area and is expected to be operational about mid-1970.

Langley has been studying V/STOL aircraft problems since the mid-Forties. The new tunnel will provide the specialized laboratory facilities required to solve some of the problems that develop from the application of tilt-wing and other revolutionary design concepts in the development and operation of V/STOL aircraft.

LANGLEY Research Center is conducting basic studies of runway grooving as a means of alleviating the hazard of hydroplaning by airplanes landing on wet or slush-covered runways. Hydroplaning occurs when an airplane landing at high-speed travels on a film of water or slush—losing traction. Laboratory research at Langley indicates that the grooving of runways helps to alleviate all known phenomena which result in low tire-ground friction and associated traction losses. Langley is engaged in an operational research program at Wallops Station to determine the effects of pavement grooving on aircraft takeoff and landing performance on dry, wet, flooded, and slush-covered runways having different surface textures. NASA scientists are investigating, in particular, whether undesirable vibrations are introduced into aircraft by pavement grooving. Langley hopes through the Wallops research to obtain additional information on the effects of aircraft loading and climatic conditions on grooved runway life on both asphalt and concrete surfaces. The test grooves at Wallops are made across the runway about one inch apart. They are one-quarter inch wide and one-quarter inch deep. NASA's four-engine Convair 990 airplane (left) is shown in a test landing on a specially-prepared water-covered grooved runway at Wallops. Instruments in the airplane and on the ground record the braking effectiveness of the airplane on landing. Thomas J. Yager (above), Landing and Impact Branch, Dynamic Loads Division, points out the test grooves.

LANGLEY TENNIS CLUB NEWS
All ladder members will play in a ladder tournament to establish 1968 rankings. The tournament will begin tomorrow and run through May 20. Confirmation notices will be sent to all ladder members. Courts will be reserved on these days.

Courts and backboard will be reserved every Tuesday and Thursday afternoon, May through August, for the men's and ladies' teams for practice from 3:30 to 6:30. A sign will be posted on the courts.

The ladies' practice has been progressing nicely with the assistance of Major Pat Latham, LAFB, who instructs the group every Thursday afternoon. Other instructors will be provided from the men's tennis team. Tentative plans are being made to form a ladies' ladder.

The Tennis Club now has 61 members. Dues are one dollar and may be sent to Pat McLean, Mail Stop 168.

FOR SALE: Youth bed with sheets and spread - $25. Poole, 596-4836.

FOR SALE: 3 tickets to Rockingham 500 Stock Car Race in Rockingham, N.C., June 16. Leffel, 877-2393 after 5.

FOR SALE: 3-bedroom brick home - $17,050 - assume FHA 5-1/4% loan. Carson, 838-1731.

FORMER LANGLEY MAN GETS NEW POST
W. Harry Close, former Langley staff member, has been named as a Special Assistant to James E. Webb, NASA Administrator, to assist in special studies and activities particularly related to the Administrator's concept of management.

Close entered the Federal service in July 1957 at Langley, where he was employed in various aeronautical research and mission analysis positions. In 1963 he joined the Office of Programs in NASA Headquarters, and in 1966 was transferred to the position of Assistant Executive Secretary in which capacity he also served as Staff Assistant to the Deputy Administrator and informally as Special Assistant to the Administrator.

Close graduated from The Johns Hopkins University in 1957 with a B.S. degree in Mechanical Engineering.


FOR SALE: 1/2 hp diaphragm air compressor with gun $20; oil space heater with 155-gallon oil tank - $20. Holt, PA3-6624.

WANTED: Old crochet patterns for infant's apparel. Carson, 838-1731.
Fourteen staff members have received cash awards from the NASA Inventions and Contributions Board. Top left photo - Jack J. Hatfield, Flight Instrumentation Division, received $200 for an integrated time-shared instrument display. Top center photo - Arthur L. Newcomb Jr., Electrical Systems Division, was awarded $200 for his variable width pulse integrator. Top right photo - Joseph V. Boyle, Mechanical Services Division, was given $300 for an adjustable attitude guide device. Center left photo - Robert A. Jones (left) and James L. Hunt, both of Aero-Physics Division, shared a $400 award for their flow field simulation. Center photo - Clemens A. Powell (left), Structures Research Division, and David G. Stephens, Dynamic Loads Division, shared $300 for an instrument for measuring the dynamic behavior of liquids. Center right photo - Donald J. Progar (left) and Beverley W. Lewis, both of Applied Materials and Physics Division, shared a $200 award for their joint invention on a process for applying a black coating to metals. Bottom left photo - Wilbert C. Falk (left) and David H. Butler, both of Flight Vehicles and Systems Division, divided a $1,000 award for their miniature vibration isolator. Bottom right photo - Sharing a $300 award for a surface contour surveying system are Robert W. Hess (left) and Frederick W. Gibson (right), both of Dynamic Loads Division, and Collosie N. Batts, Instrument Research Division.
HATCH ACT REGULATIONS CITED

The Civil Service Commission emphasizes that Federal employees and members of their families have the right and obligation to register and vote. The Hatch Act guarantees Federal employees the right to do so free from any interference, persuasion, or official domination.

Queries and comments of Federal employees indicate that many people do not realize the extent of permitted activities under political activity rules governing Federal employees. Listed below are a number of permissible political activities as well as those restricted by the Act:

PERMITTED ACTIVITIES

Registration. It is not only permissible but an obligation on all citizens, including Federal employees, to register and vote.

Voting. The language of the law specifically provides that all Federal employees have the right to vote as they choose.

Expression of opinions. Federal employees have the right to express political opinions, but they may not take an active part in political management or in political campaigns.

Attendance at political rallies, conventions, etc. Federal employees may attend political rallies and conventions to which the general public is admitted.

Nominating petitions. Federal employees are permitted to sign nominating petitions in support of individuals whom they wish to see become candidates for office.

Contributions. It is lawful for Federal employees to make voluntary contributions to a regularly constituted political organization, provided such contribution is not made in a Federal building or to some other Federal employee.

Political pictures. It is lawful for Federal employees to display political pictures in their homes if they so desire.

Badges, buttons, and stickers. It is lawful for Federal employees to wear political badges or buttons or to display political stickers on their private automobiles.

PROHIBITED ACTIVITIES

Serving on or for any political committee, party, or other similar organization, or serving as a delegate or alternate to a caucus or party convention.

Soliciting or handling political contributions.

Soliciting sale of or selling political party dinner tickets.

Serving as officer of a political club, as member or officer of any of its committees, addressing such a club on any partisan political matter, or being active in organizing it.

Serving in connection with preparation for, organizing or conducting a political meeting or rally, addressing such a meeting on any partisan political matter, or taking any other active part therein.

Engaging in activity at the polls (at primary or regular elections), such as soliciting votes, assisting voters to mark ballots, or transporting or helping to get out the voters on election days.

Acting as recorder, checker, watcher, or challenger of any party or faction.

Serving in any position of election officer in which partisanship or partisan political management may be shown.

Writing for publication or publishing any letter or article, signed or unsigned, soliciting votes in favor of or against any political party or candidate.

Becoming a candidate for nomination or election to office. Federal, State, county, or municipal, which is to be

TECHNOLOGY UTILIZATION NEWS

NASA's new technology is often appropriately conveyed to industry and the public through the use of motion picture films. Currently being produced here at Langley is a film coverage of new casting techniques developed in our materials laboratories and shops. It is felt that these new techniques can be of great value to industry in stimulating new or improved products. Modern materials developed for the space program are thus finding increased usage for the benefit of all.

Please notify the T.U. Office if you feel that a new process, product or technique developed here could best be conveyed by this media. A few examples of other films covering NASA developments are:

- Energy Absorption Process Employing Frangible Tubing.
- Hazards of Tire Hydroplaning - Aircraft Operation in Reduced Gravity.
- Simulator for Study of Man's Self-Locomotion.
- Automobile Tire Hydroplaning - What Happens.
- Tire Hydroplaning - A Sequel.
- By-Products of Space Research - Selected Examples.
- Magnetomotive Forming.

These films are available through the T.U. Office, 3281.

FOR SALE: 3-bedroom, 2-bath rancher with double garage in Plantation Acres, Tabbs - $26,000. Mangum, 595-4525.

WANTED: Household water supply system. Mulqueen, 698-6327.
ASME TO HEAR FRIED AND WEIN

The Eastern Virginia Section of the American Society of Mechanical Engineers will hold a dinner-meeting at the Savarin Sky Room, Patrick Henry Airport, on May 22.

Ervin Fried, Consulting Engineer - Thermophysics and Sterilization, General Electric, and Daniel Wein, Manager of Thermal Control on Planetary Exploration Programs, General Electric, will be the guest speakers.

The title of their joint talk will be "Spacecraft Thermal Control - Past, Present, and Future." In tracing the evolution of heat transfer design approaches to early spacecraft through present day vehicles, they will discuss some of the generic problems, such as joint conductance and coating degradation, that have at one time compromised thermal performance and which have been the subject of recent work. Developments in heat pipe applications and their use in the next generation class of space vehicle will be discussed. The speakers will also comment on thermal test philosophy and the dynamic equivalent testing techniques.

Fried obtained his B.S. degree in Mechanical Engineering from Columbia University and his M.S. degree from Union College. He joined General Electric's Missile and Space Division in 1961 and has been active in the areas of analytical and experimental thermal systems and temperature control systems. He has carried out extensive research on the interface thermal conductance of joints as applied to space vehicles, thermoelectric and cryogenic devices and heat pipes.

Wein obtained his B.S. degree in Physics from the College of the City of New York and his M.A. degree in Physics from Columbia University. Pursuing further graduate work at New York University, he completed his credits for a Ph.D. in Physics. He joined the Missile and Space Division of GE in 1966 where he has been engaged in Voyager and Planetary Vehicle design studies.

The meeting will be preceded by a social period at 6:15 p.m., followed by dinner at 7 and the meeting at 8. Reservations may be made by calling Robert Basford, 2635. Wives and guests are invited to attend.

SUMMER CONCERT PROGRAM

The Hampton Recreation Department invites staff members to a summer of free entertainment in the air-conditioned Kecoughtan High School auditorium on Woodland Road. All performances start at 8 p.m. and the schedule is as follows:

June 12 - The Hampton Lions Jug Band under the direction of Waverly Wornom. This unique organization displays its ability to extract unbelievable music from washboards, jugs, scrap metal and the like.

June 19 - SPEBSQSA, Inc. Richmond Chapter, directed by Bryan Whitehead. The Tobaccoland Chorus of Richmond is 55 voices strong and features the famous Knight Kords. The SPEBSQSA is an international organization dedicated to perpetuating a type of singing which is native to America - barbershop harmony.

June 26 - Richmond Choral Society under the direction of Alton L. Howell. The 80 voice society will be making its fourth appearance in the summer concert series.

July 3 - Six outstanding groups involving more than 200 performers from the Peninsula area will present this Patriots Eve program. Participating will be the Singout Virginians, Peninsula Drum and Bugle Corps, Laymen's Gospel Quartette, Khedive Temple Oriental Band, George Amos Male Chorus, and the Khedive Temple Trio.

July 10 - Organ concert featuring Bene Hammel and Kitty Rayle Hutchinson and directed by Charles Bulcher.

July 17 - Variety concert featuring Peninsula talent. Such a wide potpourri of entertainment is seldom offered during any Festival of Fun program.

July 24 - Senior High School Talent Night sponsored by Elyse Latham, Kecoughtan; Rose Hill, Phenix; and Stanley Mitchem, Hampton. The program will feature the 12 best acts from Hampton's three senior high schools.

July 31 - The Hampton Lions Jug Band returns.

August 7 - The Crusaders directed by Charles Flax close the season for the fifth consecutive year.

FOUR STAFF MEMBERS RETIRE

Four staff members have retired with a combined total of over 72 years of Federal service.

Clifton C. Brown, Meter Tester Repairman, Electrical Systems Division, retired on April 30 with almost 20 years of service. He was born October 22, 1901 in Isle of Wight County, Virginia. He attended Sym's Eaton School in Hampton and joined the Center staff on May 3, 1948 as an electrician.

Robert S. Holloway, Supervisory Transport Control Coordinator, Plant Maintenance Division, was born December 11, 1903 in Poquoson, Virginia. Before joining the Langley staff on May 7, 1947 he worked at the Newport News Shipbuilding and Dry Dock Company, the Chesapeake and Ohio Railroad, and the War Department at Langley Field. He retired April 30 with almost 23 years of service.

Henry H. Bunting, Equipment Maintenance Mechanic, Mechanical Services Division, retired April 30 with over 29 years of Federal service. He was born May 8, 1905 in Poquoson and attended Poquoson High School. Before entering on duty at the Center on June 23, 1933 he worked for the U.S. Merchant Fleet at Lee Hall and the Norfolk Navy Shipyard in Portsmouth.

Mercedes K. Halsey, Voucher Processing Clerk, Fiscal Division, retired May 5 with almost 21 years of service. She is a native of Maple Park, Illinois, and graduated from Piney Creek High School, Piney Creek, North Carolina. She joined the Center staff on October 5, 1959. Her previous Government service was with the Fourth Civil Service Region in Winston-Salem, N.C.; Post Engineers at Camp Patrick Henry, Va.; and Department of Army at Fort Eustis.

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JESS G. ROSS HEADS CENTER'S ANNUAL SAVINGS BOND DRIVE

Jess G. Ross, Assistant Chief of Administrative Services Division, has been appointed by Edgar M. Cortright, Director, to head the Center's 1968 U.S. Savings Bond drive.

The drive will be conducted through June 14 and each employee will be contacted by a representative from his division.

Ross stated that the Center's goal this year is 90 per cent participation or better. If the staff reaches the 90 per cent mark, the Center will receive the Treasury Department's coveted Minuteman Flag. The Center's current percentage of participation is 80.

During the campaign, each employee will be asked either to join the Payroll Savings Plan or, if already a member, to increase his allotment. One of the new features added to the Savings Bond program last year are Freedom Shares or U.S. Savings Notes which may be purchased in conjunction with the Series E Bonds.

The current standings according to organizational titles are listed below:

<table>
<thead>
<tr>
<th>ORGANIZATIONAL TITLE</th>
<th>% PARTICIPATION</th>
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<tbody>
<tr>
<td>Personnel</td>
<td>100</td>
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<tr>
<td>Research Models and Facilities</td>
<td>92</td>
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<tr>
<td>MORL</td>
<td>91</td>
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<tr>
<td>Photographic</td>
<td>90</td>
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<td>Dynamic Loads</td>
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<td>Fiscal</td>
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<td>Office, Asst. Director for Administration</td>
<td>88</td>
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<tr>
<td>Electrical Systems</td>
<td>87</td>
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<tr>
<td>Office of Director</td>
<td>86</td>
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<tr>
<td>Procurement</td>
<td>84</td>
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<tr>
<td>Research Reports</td>
<td>84</td>
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<td>Flight Mechanics and Technology</td>
<td>83</td>
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<td>Structures Research</td>
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<td>Mechanical Services</td>
<td>82</td>
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<td>Plant Maintenance</td>
<td>82</td>
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<tr>
<td>Office, Asst. Director for Flight Projects</td>
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<tr>
<td>Flight Vehicles and Systems</td>
<td>76</td>
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<tr>
<td>Office, Engineering and Technical Services</td>
<td>77</td>
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<tr>
<td>Scout Project Office</td>
<td>77</td>
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<tr>
<td>Administrative Services</td>
<td>76</td>
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<tr>
<td>Full-Scale Research</td>
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<tr>
<td>Flight Instrumentation</td>
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<tr>
<td>Instrument Research</td>
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<td>Lunar Orbiter Project Office</td>
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<td>Space Mechanics</td>
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<tr>
<td>Analysis and Computation</td>
<td>70</td>
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<tr>
<td>Aero-Physics</td>
<td>69</td>
</tr>
<tr>
<td>Applied Materials and Physics</td>
<td>68</td>
</tr>
</tbody>
</table>

Crossman, played by WGH news announcer Bob Calvert, in mid-trial Sir Peter is fired and Crawford pleads his own defense.

Larry Rabinowitz is director of the production.

Tickets are available at the box office and reduced rates are offered to enlisted military personnel and students. Adult tickets are $2.50, students and enlisted military are $1.50.

WANTED: Ride from Denbigh to W.A. on 8 shift. Branum, 4585.

FOR SALE: Restorable grand piano. Tapscott, 896-6234.
CENTER employees have reached the 85 per cent participation mark in the U.S. Savings Bond drive to move closer to the goal of 90 per cent. Two sections reported 100 per cent participation this week—Materials Processing and Development (top) and Electronic Fabrication Development (bottom). The drive will continue through June 14.

ANNUAL SAVINGS BOND DRIVE BEING CONDUCTED AT CENTER

Jess G. Ross, Chairman of the Center’s 1968 U.S. Savings Bond drive, announced that Center employees have reached the 85 per cent participation mark to move closer to the goal of 90 per cent. If the staff reaches the 90 per cent mark, the Center will receive the Treasury Department’s coveted Minuteman Flag.

Personnel Division, previously reported 100 per cent, continues to lead in the division class. Two sections, Materials Processing and Development and Electronic Fabrication Development, each reached 100 per cent during the past week.

Edgar M. Cortright, Center Director, in discussing the campaign noted that a raise is scheduled for GS employees in July and that pledge cards may be filled out now to authorize payroll deductions effective July 14, the planned date on which the pay raise becomes effective. The Center will be given credit for the employee’s participation and the employee will benefit by savings he might not otherwise realize.

Join the Center in this very important support of your employer—the U.S. Government.

STEEL for the new V/STOL Transition Research Tunnel forms an interesting foreground shadow pattern at the West Area construction site. In the background, the section shown on the left is the tunnel shell at the fan location. The section, in a horizontal position on its foundation, is 40 feet in diameter. The steel section beside it will be rotated and joined to the fan section. The new facility is under construction adjacent to one end of the 7 by 10-Foot Tunnels Building which is shown at right. A story on the new facility and photographs of some of the V/STOL research conducted at Langley in the past 20 years may be found on Pages 4 and 5.

DR. MAC ADAMS RESIGNS; BEGGS AND LUNDIN NAMED

Dr. Mac C. Adams, Associate Administrator for Advanced Research and Technology, will resign from NASA July 1 to return to private industry.

He will be succeeded by James M. Beggs, a 42-year-old engineer and corporation executive who presently is the Director of Purchases and Traffic, Westinghouse Electric Corp., Pittsburgh. Beggs will join NASA on June 1.

Bruce T. Lundin, Associate Director for Development, Lewis Research Center, has been named NASA Deputy Associate Administrator for Advanced Research and Technology.

When Dr. Adams joined NASA in October 1965, he came from Avco Corp., where he was Vice President and Assistant General Manager for Space Systems in the company’s Research and Advanced Development Division in Wilmington, Mass. He is returning to the Avco Corp. in Wilmington as Vice President and Deputy to James R. Dempsey, Vice President and Group Executive of the Avco Government Products Group.

(Continued on page 3)
ANNOUNCEMENTS


LECTURE. . .Dr. Ernest E. Burniston, Associate Professor of Mathematics, North Carolina State University at Raleigh, will lecture on “An Example of the Use of the Wiener-Hopf Technique” on June 4 at 9 a.m. in Room 236, Building 1229. Interested staff members are invited.

IAM MEETING. . .The NASA Lodge No. 892, International Association of Machinists, will hold its monthly meeting on Tuesday, June 4 at 7 p.m. at the Central Labor Union Hall, Newport News.

TENNIS CHAMP. . .Edwin P. Riddle, Analysis and Computation Division, won the Hilton Club Ladder Tennis Tournament by defeating Jackie A. Butler, Flight Vehicles and Systems Division, in the finals by scores of 6-3 and 6-3.

MARRIAGE PROMULGATION. . .Harry M. Lawrence, Assistant Head of Telecommunication Research Branch of Flight Instrument Division, has announced his intentions of marriage to Alice Williams, Gloucester, on June 8.

SKYWATCHERS. . .The Skywatchers Astronomy Club will meet on June 6 at 7:30 p.m. at the Activities Building. Following a brief business meeting a viewing session will be held, weather permitting.

GOLF NEWS. . .In its first match of the year in the Peninsula Industrial Golf League, NASA was defeated by the C & P Telephone Company 17-1/2 to 6-1/2 at the Newport News Municipal Golf Course. Dave McDougal, Applied Materials and Physics Division, won low gross with a 78 and Bernie Garrett, also of AMPD, was runner-up with 82.

TRAILER AUCTION: At 10 a.m. on Saturday, June 1, the Langley Federal Credit Union will sell 8 trailers individually at public auction. Site of sale is Bloxom’s Trailer Park, 191 Atlantic Ave., Buckroe Beach. All sizes, all prices. Get yourself a week-end hideaway or a comfortable home at a bargain. Up to 75% of bid price can be financed by members in good standing.

WANTED: Driving combination from Norfolk to W.A. on 7:30 shift. Hefner, 3735.

The girls of the LRC Tennis Club meet on Thursdays at the courts in back of the Activities Building right after work. All female employees or wives of employees are invited to join the club. Shown in the group are front row (from left): Ruth Luper, Annis Morison, Pat Lester and Sandy Clark. Back row: Betty Baker, Pat McLean, Carolyn Grantham, Barbara Hixon, Frances Taylor, Katherine Smith and Jeane Pendleton. --Photo by Al Moore

CAFETERIA MENU

The following menu will be served in the cafeterias during the week of June 3:

Monday - Cream of tomato soup, roast veal, shrimp Newberg, chicken croquettes, baked hash. Snack bar - Soup, satellite special, hot dog, German potato cakes.

Technical Symposium Dinner - June 3, $1.50, served from 4:30 to 5:30 p.m. - chilled tomato juice, tossed salad, grilled Delmonico steak, whipped potatoes or French fries, gravy, green beans, hot rolls, butter, coffee or tea, ice cream sundaes.

Tuesday - French onion soup, baked Smithfield ham, liver and onions, beef steakette, Welch rarebit. Snack bar - Soup, hamburger, veal steak, French fries.

Wednesday - Minestrone soup, pepper steak, salmon steak, fish sticks, chili con carne. Snack bar - Soup, sea dog, steak sandwich, French fries.

Thursday - Vegetable-beef soup, roast beef, spaghetti and meat sauce, fried chicken, devilish crab, cheese omelette. Snack bar - Soup, hot roast beef, French fries, cheeseburger, devilish crab.

Friday - Manhattan clam chowder, braised lamb shank, stuffed flounder, grilled pork chopette, macaroni and cheese. Snack bar - Soup, barbecued pork, hot pastrami.

The menu for the week of June 10 is as follows:

Monday - Consomme Julienne, Spanish pot roast, Salisbury steak, fried fish, grilled cheese sandwich. Snack bar - Soup, grilled cheese, sliced barbecued beef, fried beans.

Tuesday - Egg drop soup, baked Canadian bacon, chicken chow mein, stuffed cabbage, franks and beans. Snack bar - Soup, hot dog, corned beef, German potato cakes.

Wednesday - Cream of mushroom soup, chopped steak, chicken pie, baked lasagna, fish cakes. Snack bar - Soup, fish sandwich, flying saucer, French fries.

Thursday - Vegetable-beef soup, grilled steak, baked ham, chicken livers, Austrian ravioli. Snack bar - Soup, hamburger, steak sandwich, French fries.

Friday - Manhattan clam chowder, corned beef and cabbage, fantail shrimp, broiled fish, Spanish omelette. Snack bar - Soup, sea dog, corned beef, French fries.
DR. MAC ADAMS RESIGNS
(Continued from page 1)

Beggs has been with Westinghouse since 1955 where he held varied management positions. Prior to his present position he served concurrently as General Manager of Westinghouse’s Surface Division in Baltimore and as the Vice President of the company’s Defense and Space Center.

Beggs was responsible for the development of several major weapons systems including research and feasibility studies in the underwater and surface armament fields. Since January 1968, he has been a consultant to NASA on management and policy matters.

A 1947 graduate of the U.S. Naval Academy, he served as a line officer in destroyers and submarines for several years before leaving the service as a lieutenant commander. He received his master’s degree in business administration from Harvard University in 1955.

His professional memberships include the American Ordnance Association, the American Society of Naval Engineers, Sigma Tau, an engineering society, and the Armed Forces Communications and Electronics Association.

Lundin, who will be reporting directly to Beggs, has had a long and distinguished career in propulsion and launch vehicle technology. Prior to his assignment to NASA Headquarters he directed various propulsion and power generation programs assigned to the Lewis Research Center including Centaur, Atlas-Agena and SNAP-8.

He has authored some 40 technical papers in the aeronautical powerplant field.

His government career began 26 years ago when he joined the Lewis Center following graduation from the University of California with a B.S. degree in mechanical engineering. As emphasis was placed on jet engines after World War II, he headed the jet research effort at Lewis which conducted some of the early work on turbojet engines, afterburners for turbojet engines, and on other forms of thrust augmentation. In 1953 he was appointed Chief of the Engine Research Division with responsibility for supervision and direction of the full-scale engine research program.

EDGAR KERSEY HEADS JAYCEES

Edgar D. Kersey Jr., Applied Materials and Physics Division, has been elected President of the Hampton Roads Jaycees. This is the first time a NASA employee has been elected to this high position in the local Jaycees.

The Jaycees, a civic organization for young men between the ages of 21 and 35, are noted for their community service work but few people realize that their prime function is to give young men leadership training. The member gains managerial training by serving as a project chairman. Eventually, he may become a member of the Board of Directors or he may reach the post attained by Kersey.

Billy R. Ashworth, Analysis and Computation Division, was elected to the Board of Directors for one year.

WANTED: Responsible person to drive car to Houston between June 24-July 1. Hopp, 595-2067.
FOR SALE: Hotpoint electric range - $35; imported human hair wig - $35; Danish modern sofa and chair - $50; laundry stove - $12. Barricklow, 596-5108 after 4:30.
WANTED: Fifth driver from Williamsburg to W.A. on 8 shift. Sidebottom, 4705.

VICTORY ARCH CONCERT JUNE 2

The Peninsula Symphony Orchestra will be featured in a free outdoor concert at the Victory Arch Plaza in Newport News on Sunday, June 2 at 7:30 p.m. The program, entitled “Hits of the Season,” will include popular favorites from the orchestra’s 1967-68 season.

Cary McMurran will conduct the concert which is being patterned after the famous Watergate Concerts given by the National Symphony near the Lincoln Memorial in Washington and the summer Esplanade Concerts by the Boston Symphony on the banks of the Charles River in Boston.

Staff members who play in the orchestra are Patrick A. Gainer, Space Mechanics Division, oboe; and Roger W. Peters, Structures Research Division, bass violin.

Fifteen hundred seats will be arranged around the Arch and free parking will be available on adjacent city parking lots and on roped-off city streets. Signs will direct the public to the Victory Arch. In case of inclement weather, the concert will be held in the Newport News High School auditorium.

FOR SALE: 1965 16-foot fiberglass runabout with 40 hp Evinrude and tilt-bed trailer - $1000. Mascotti, 596-0176.
FOR SALE: 1958 Fiat Sunliner with spare parts, needs emergency brake repairs - $75. Pelton, 838-1535.
FOR SALE: Sears Sunliner with spare parts, needs emergency brake repairs - $75. Pelton, 838-1535.
FOR SALE: Sears air conditioner, 12,000 btu. Lucy, 596-4470.
LOST: Prescription safety sunglasses, black frames. Middleton, 4685.
FOR SALE: Kent electric guitar and case, guitar has 2 pick-ups - $75. Scher, 596-1604.
FOR SALE: 1968 305 Honda scrambler. Greenman, 838-2973 after 5 p.m.
LANGLEY RESEARCH Center became a pioneer in laboratory studies of VTOL aircraft in 1949 with the investigation of the crude free-flight model (left) powered by a five-horsepower motor driving a small dual-rotation propeller. The success obtained in hovering tests with the model was a significant factor in the Nation's decision to push the development of vertical-rising airplanes, such as the XFY-1 tail-sitter--a model of which is shown (above) at Langley's former control line research facility. Another early concept studied by Langley was the cascade airplane model (right) which had four wings that deflected the propeller thrust downward at right angles.

NEW TUNNEL VITAL IN V-STOL FLIGHT PROGRESS

The V/STOL Transition Research Tunnel now under construction will be an important addition to the Langley Research Center's facilities for studying the problems of vertical takeoff-landing and short takeoff-landing aircraft. Langley has been active in the V/STOL field for two decades, studying a variety of concepts both in the laboratory and in the operation of full-scale research vehicles. Langley flew its first vertically-rising airplane model in a free-flight tunnel in 1949.

Special features incorporated in the design of the test section and equipment of the new tunnel will make it a particularly efficient research tool for the study of V/STOL flight problems. Many proposed V/STOL designs call for wings or engines to tilt to change the direction of thrust. The new tunnel will be used to investigate the critical problems that develop from the employment of such methods to shift between vertical and horizontal flight at low altitudes. In addition, Langley scientists will study takeoff and landing characteristics.

The tunnel will be equipped with a model support system to permit the fixing of a model in the airstream at varying angles. During research, the height of a model can be varied over a removable endless moving-groundboard installation capable of simulating landing conditions up to about 230 miles an hour.

The test section, the heart of the research facility, will be 15 feet high, nearly 22 feet wide, and 50 feet long. This will enable Langley scientists to use models that will allow for adequate simulation of the powered lift features which are unique to V/STOL aircraft.

The tunnel will include an 82-foot long by 77-foot wide by 62-foot high (two story) test chamber, a 100-foot long by 60-foot wide by 35-foot high single story model preparation area, and a 25-foot long by 55-foot wide by 15-foot high mechanical and electrical equipment room and associated equipment.

The facility's electric motors will deliver 8,000 horsepower to a single drive shaft and will be capable of 12,000 horsepower output for up to 30 minutes at a time. The motors will turn a 40-foot-diameter fan at speeds ranging up to 327 revolutions per minute.

The specialized research facility is being built at one end of the 7 by 10-foot wind tunnels building, adjacent to the Yorktown Highway. It was authorized by Congress in fiscal 1966 and is expected to cost over $5,000,000. It will go into operation about mid-1970.
SPIN AND RECOVERY characteristics of a tilt-duct V/STOL model are studied in the Spin Tunnel (above) by recording data as the vehicle descends through a vertically rising airstream. The P-1127 (top right), powered by a vectored-thrust turbofan engine, is at Langley for use in a general research project to accumulate technology on this type of V/STOL airplane. A tilt-wing V/STOL research aircraft (right) is in flight during operational studies by a Langley engineering pilot. Scientists used a one-ninth scale free flight model of the XC-142A in the Full-Scale Tunnel (below) to study dynamic stability and control characteristics during transition, vertical and short takeoff and landing, and in hovering flight. The unsupported model flew in a moving airstream with a slack overhead cable carrying electrical signals to its control surfaces and compressed air to power the motors. Transition was accomplished by tilting the wing from its vertical position used for hovering to a horizontal position for conventional cruising flight. A one-fifth scale model is shown prior to tests in the 17-foot test section of the 7 by 10-Foot wind Tunnel (lower right) for investigations to determine stability and control characteristics of a deflected slipstream STOL aircraft.
WEATHER-PHOTO RECEIVER BUILDING
INSTRUCTIONS PUBLISHED BY NASA

Instructions for building a $500 ground station that can receive local cloud-cover pictures anywhere in the world from United States weather satellites passing overhead have been published by NASA.

Detailed how-to directions, drawings, wiring diagrams and parts lists are contained in a 66-page booklet entitled, "Constructing Inexpensive Automatic Picture-Transmission Ground Stations." It says a reliable receiving station can be built from surplus parts for less than $500 or purchased for as little as $5,000.

The booklet is for sale as NASA SP-5079 for 50 cents from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Va. 22151.

It was written by Charles H. Vermillion of the Goddard Space Flight Center and published by NASA's Office of Technology Utilization as part of the agency's program to disseminate widely the practical results of space research and development.

Automatic Picture-Transmission (APT) systems are carried by NASA's experimental Nimbus weather satellites and the operational ESSA series designed and launched by NASA for the U.S. Environmental Services Administration (Weather Bureau). Receiving stations around the world record thousands of cloud pictures from them every week.

An APT satellite in a near-polar orbit will pass within range of any ground station two or three times a day. Over the daylight portion of the globe it broadcasts a succession of television pictures covering an area of 1,200 to 1,700 miles on a side.

These can be received by stations as far as 2,000 miles away in about three minutes - the time it would take to dial a telephone and receive a complete weather forecast. Pictures of cloud patterns signifying weather conditions thus can be immediately available to local weather stations, schools, airports, ships, business offices, farmer co-ops, government offices and amateur observers.

ST. CLAIR SPECIAL EVENTS DIRECTOR

Wade St. Clair has been named Director of Special Events in NASA's Office of Public Affairs.

He succeeds Brian M. Duff, who has joined the staff of the Urban Coalition. St. Clair joined NASA in 1963 and has served as Duff's deputy since August 1966.

NASA's Special Events Division is responsible for various activities which communicate NASA's role in aeronautical and space research and exploration to selected audiences and the general public.

St. Clair joined NASA as a consultant and established and directed a number of educational radio and, later, television program series.

Prior to joining NASA, he was employed by the Jefferson Standard Broadcasting Company, Charlotte, North Carolina, from 1954 to 1963.

St. Clair was born in Welch, West Virginia, and graduated from Duke University with a B.A. degree in 1952. He served two years in the Air Force as a first lieutenant.


IN A COOPERATIVE program with the United States the European Space Research Organization (ESRO) successfully launched a satellite from the Western Test Range, California, on May 16. Designated ESRO II-B, the 164-pound satellite was built in Europe under the direction of the 10-nation ESRO. The spacecraft carried seven scientific experiments to study solar and cosmic radiation. NASA launched it on a Scout rocket, under an agreement signed in 1964. At left technicians paint the flags of the 10 nations on the spacecraft— including Belgium, Denmark, France, Federal Republic of Germany, Italy, the Netherlands, Spain, Sweden, Switzerland, and the United Kingdom. The headquarters are located in Paris. At right, the vehicle is shown prior to its successful launch.

AIRCRAFT BRAKE PERFORMANCE

NASA and the British Ministry of Technology on May 20 started a month-long test of devices for predicting the performance of aircraft brakes.

The tests, concerned with various weather and runway surface conditions, run through June 20 at Wallops Island. A runway at Wallops Station has been prepared to include different grooves and other surfaces.

Twenty-five different ground vehicles will be used to measure runway friction. Engineers want these measurements in order to establish a system for runway length requirements to bring a landing airplane to a safe stop.

This research project follows runway grooving tests recently made at Wallops. It is under the direction of Walter B. Horne, Assistant Head of Landing and Impact Branch, Dynamic Loads Division.

The tests will be made on four grooved and five ungrooved pavement surfaces under dry, damp, water-flooded, and slush-covered conditions with the various ground vehicles.

The British researchers plan to test various friction measuring devices now used in England. These include a high-speed skid trailer, "Juggernaut" vehicle with an anti-skid braking system and devices for measuring pavement textures.

A NASA tire research truck will be used to measure both side-force and braking coefficients; the NASA antiskid-equipped automobile will also be used.


NASA PERSONNEL ACTION CITED

NASA has notified elements of the agency to hold permanent employment to their on-board strength as of the close of business May 13.

In addition, NASA field centers have been advised that this level may be further decreased by 75 per cent of its attrition between May 14 and June 30. This means that for every four losses by attrition one may be replaced.

The agency's action is prompted by budget considerations.

No adjustment in the currently authorized summer employment is planned at this time.

By limiting new employment now and reducing personnel ceilings through attrition, NASA is minimizing the impact of potential manpower adjustments which may become necessary at the beginning of the new 1969 fiscal year.

NASA's budget for FY 1969 includes 32,727 permanent civil service employees. The actual employment level which can be supported in FY 1969 will depend on the final action of Congress on pending legislation and on actions by the Administration.

If current employment limitations are continued, the reductions in civil service employment in FY 1969 could exceed 1000.

For planning purposes NASA installations have been requested to assess the program impact of continued reduction of civil service employees and contractor support effort.

FOR SALE: Beagle pups - $20 each. Adkins, 596-8416.
THE LANGLEY Center is conducting advanced research at Wallops Station to provide data on para wing flight behavior during controlled gliding flight and landing touchdown by means of a dynamically scaled instrumented radio controlled, lifting-body para wing model. At left a 20-foot long para wing with a 325-pound, 6-foot long lifting body is mounted on a helicopter. At right the model is released at an altitude of 4,000 feet for deployment, and flight radio controlled from the ground. The technology developed in the present tests will be applicable to landing of future manned spacecraft on land and to provide research information on flight characteristics of controlled para wing flight vehicles.

SUMMER YOUTH PROGRAMS
Two summer programs for disadvantaged youths will begin at the Center in June.

Sixty Neighborhood Youth Corps (NYC) enrollees will arrive June 17. They will work three days a week for a 10-week period and will be assigned to Administrative Services, Procurement, and Mechanical Services Divisions. They will be paid by their sponsoring agencies--the Newport News Office of Economic Opportunity and the Hampton Community Action Agency.

Seventy-two Youth Opportunity Campaign (YOC) trainees will arrive on June 12, 19, and 20. They will work a regular 8-hour day, 5-day week shift and will fill temporary positions authorized the Center under the President's Youth Opportunity Campaign for the summer of 1968.

An orientation meeting of all supervisors of NYC's and YOC's will be held at 10 a.m. on Friday, June 7 in the Projection Room (Room 200) in Building 1212. These supervisors will be notified individually prior to the meeting.

FOR SALE: Carrier room air conditioner - $50. Shipp, 596-4192.
FOR SALE: Portable TV, stroller, high chair, play pen, and 2 car seats. Youngblood, 877-1224.

TECHNOLOGY UTILIZATION NEWS
A new series of Special Publications covering the machining, fabrication and processing of ultra-high strength steels and "P-H" Stainless steels is available through the Technology Utilization Office. This series is the result of joint NASA-AEC sponsorship to make information on new materials and processes available to everyone. Most of the steels described were developed for special space-age requirements but are potentially useful wherever corrosion resistance and high strength at elevated temperatures are needed.

SP-5084, Machining and Grinding of Ultrahigh-Strength Steels and Stainless Steel Alloys
SP-5085, Adhesive Bonding of Stainless Steels - Including Precipitation-Hardening Stainless Steels
SP-5086, Shaping of Precipitation-Hardening Stainless Steels by Casting and Powder-Metallurgy
SP-5087, Welding of Precipitation-Hardening Stainless Steels
SP-5088, Deformation Processing of Precipitation-Hardening Stainless Steels
SP-5089, Thermal and Mechanical Treatment for Precipitation-Hardening Stainless Steels
SP-5090, Surface Treatments for Precipitation-Hardening Stainless Steels.

Call the T. U. Office, 3281, for your copies.

FOR SALE: 1963 Impala convertible with many extras - $995. Miller, 245-1782 after 5:30 p.m.
FOR SALE: Metric wrenches - set of 6 open end, set of 7 combination box end and open end, and set of 8 socket wrenches. White, 868-9879.
SUMMER FACULTY FELLOWSHIP PROGRAMS STARTED AT LANGLEY

Langley Research Center will cooperate in sponsoring two summer faculty fellowship programs for 49 outstanding educators from 35 colleges and universities in the United States. The Langley program started Monday.

Thirty-three faculty members from 24 institutions of higher learning will participate in a ten-week program of aeronautical and space research at Langley. In addition, they will attend seminars and lectures by scientists and engineers representing NASA, universities, and industry. The program extends through August 16.

Another group of 16 faculty members representing 14 schools will engage in an 11-week program in engineering systems design. They will work together on a summer project concerned with the design of the optimum educational television satellite system for the United States during the mid-1970's. The program concludes on August 23.

The fellows in the systems engineering design program will have offices at the Virginia Associated Research Center in Newport News and will work on the satellite project under the direction of Dr. Emil Steinhardt of the University of West Virginia. The fellows will visit NASA facilities for research and consultation with members of the Langley science staff in carrying out their project.

Cooperating in the administration of the two NASA-American

(Continued on page 3)

WOODY HERMAN ORCHESTRA TO PLAY HERE ON JUNE 29

The Activities Association will feature Woody Herman and his orchestra at their summer dance on Saturday, June 29 at the Activities Building. Dancing will be from 9 p.m. until 1 a.m.

Woody and his orchestra are stopping by Langley on their way to participate in the annual Newport Jazz Festival during the July 4 week-end.

Only a limited number of tickets will be sold and admission will be $10 per couple including free set-ups. Tickets may be purchased at the Activities Building. Reservations may be made by calling Bruce Amole, 4583. No reservations will be held after 10 p.m.

Everywhere Woody and his band go, it's the same story. The crowds are huge, the management is delighted, and everyone wants to know when they'll be back.

Such is the repeat business for his band that Woody may this year equal the gross business done by his 1945 unit, during the golden years of the big bands.

How has Herman built such a following in a period that is generally considered inimical to big bands? By remaining contemporary and by putting the emphasis on youth and excitement.

The band is not an imitation of his past bands, though of course many tunes that Herman made famous, such as "Caldonia," "Apple Honey," and "Sidewalks of Cuba," remain in the book. But there is little catering to sentimentality for the past.

"What is so outstanding about this particular band?" George Simon wrote in the New York Herald-Tribune. "First of all, it has the almost forgotten sort of pulsating ensemble sound and drive that makes you want to cheer. The arrangements are exciting. The brass is brilliant. The trumpets blast as one. They blow high, but they're accurate. And they get a great blend. The saxes are loose and easy, and the rhythm section - well, if there's one reason why this band stands out among all the rest, it's because of the rhythmic trio's fantastic, swinging drive."

Herman's new band was formed around 1962 and was built on a nucleus of excellent young musicians - most members of the present band are in their early twenties. Yet as young as the band is and as contemporary as its

(Continued on page 3)
ANNOUNCEMENTS

ADVANCED MISSIONS... Charles J. Donlan, former Langley Deputy Director, has been designated as Acting Director of the Advanced Missions Program in the Office of Manned Space Flight at NASA Headquarters. The new assignment, announced by George E. Mueller, Associate Administrator for Manned Space Flight, is in addition to Donlan's duties and responsibilities as Deputy Associate Administrator for Manned Space Flight (Technical).

AFGE MEETING... The NASA Lodge 2755 American Federation of Government Employees will meet on June 26 at 7:30 p.m. at the Central Labor Union Hall.

ENGAGEMENT... Edwin J. Prior, Applied Materials and Physics Division, is engaged to Margaret McCutchen, Fishersville, Va. Plans call for a fall wedding.

NOTE OF THANKS... Margaret T. Satterfield, East Dispensary, wishes to express her thanks to the 18 staff members who donated blood for her husband, Leo, during the last Bloodmobile visit.

FISH-EYE VIEW: One antenna is shown in this unusual view of the forward deck of the Apollo support ship, USNS Mercury. The ship is one of five vessels which will support and track the Apollo spacecraft on its journey to the moon. The ship is equipped with four dish antennas as well as several helix and whip antennas.

CAFETERIA MENU

The following menu will be served in the cafeterias during the week of June 17:

Monday - Split green pea soup, roast beef, grilled pork chops, veal fricasse with dumplings, Irish omelette. Snack bar - Soup, cheeseburger, hot roast beef on roll, French fries.

Tuesday - Cream of tomato soup, barbecued spare ribs, stuffed shrimp, liver and onions, baked hash. Snack bar - Soup, barbecued pork, hot pastrami, French fries.

Wednesday - Puree of bean soup, baked Smithfield ham, chicken cacciatore with spaghetti, Polish sausage, tamale pie. Snack Bar - Soup, hot dog, steak sandwich, baked beans, French fries.

Thursday - Chicken noodle soup, chicken and dumplings, broiled slice of ham, meat loaf, fish cakes. Snack bar - Soup, hamburger, broiled ham slice, French fries.


The menu for the week of June 24 is as follows:

Monday - French onion soup, pot roast of beef, breaded veal cutlet, sauteed chicken livers over rice, western omelette. Snack bar - Soup, cheeseburger, veal steak.

Tuesday - Tomato rice soup, barbecued pork chunks, Salisbury steak, chicken croquettes, baked hash. Snack bar - Soup, barbecued pork, hot corned beef, French fries.

Wednesday - Chicken-vegetable soup, Swiss steak, ham and macaroni casserole, fried chicken, grilled cheese sandwich. Snack bar - Soup, grilled cheese sandwich, sliced barbecued beef, French fries.

Thursday - Vegetable-beef soup, grilled steak, Hungarian goulash, salmon loaf, spiced luncheon meat. Snack bar - Soup, hot dog, steak sandwich, French fries.

Friday - Manhattan clam chowder, hot roast beef sandwich, boiled ham, broiled fish fillet, Spanish omelette. Snack bar - Soup, hamburger, hot pastrami, French fries.

FOR SALE: 1965 Volvo, 4-door. Rodgers, 877-9083.
SUMMER FACULTY PROGRAM
(Continued from page 1)

As mentioned on page 1, the Society for Engineering Education programs will be the College of William and Mary and Old Dominion College.

Co-directors of the summer programs are Dr. John E. Duberg, Acting Associate Director of the Langley Center, and Dr. Gene L. Goglia, Head of Thermal Engineering at Old Dominion College.

Coordinating the two programs at Langley are S. Walter Hixon Jr., Langley's Educational Programs Officer, and Dick J. Cole and Malcolm P. Clark, members of the staff of Langley's Training Branch.

Objectives of the summer programs are to further the professional knowledge of qualified engineering and science faculty members, stimulate an exchange of ideas between participants and NASA, and enrich and refresh the research and teaching activities of institutions represented.

The program officially started at 8:15 a.m. Monday at a meeting of participants and Langley officials in NASA Building 1212.

Edgar M. Cortright, Director, welcomed the faculty fellows to Langley and Dr. Duberg discussed plans for the summer session. The faculty fellows, who were selected for the programs from a large group of applicants, were introduced at the meeting.

Similar programs are being conducted by: Auburn University, the University of Alabama and the NASA Marshall Space Flight Center, Alabama; the University of Houston, Texas A&M and the NASA Manned Spacecraft Center, Houston Texas; University of Maryland, Catholic University of America and the NASA Goddard Space Flight Center, Moffett Field, California; the Case Western Reserve University and the NASA Lewis Research Center, Cleveland, Ohio; the University of California at Los Angeles and the Jet Propulsion Laboratory, Pasadena, California; and Northeastern University and the NASA Electronics Research Center, Cambridge, Massachusetts.

Participating professors in the aerospace research program include: Dr. Robert L. Ash,Dr. H. Marshall Booker, Dr. Preston B. Johnson, Dr. Richard A. Palmer, and Dr. William D. Stanley, Old Dominion College; Dr. Cecil D. Bailey, Ohio State University; Dr. Furman W. Barton and Dr. Jackie O. Bunting, University of Virginia (VARC); Dr. Edward D. Garley, Dr. Jerry S. Lee, and Dr. James C. Mulligan, North Carolina State University; Dr. William A. Thornton and Dr. Charles W. Haines, Clarkson College of Technology; Dr. Harris Burns Jr., Hampden-Sydney College; Dr. Arthur M. Clauing, University of Illinois; Dr. Robert G. Dubensky, University of Akron; Dr. John L. Grundvig, Virginia Military Institute; Dr. Gordon E. Madge, Medical College of Virginia; Dr. Robert G. Rolen, Cleveland State University; Dr. Andrew J. Vargasco, Georgetown University; Dr. Richard M. Haynie, Kansas State University; Dr. R. Wayne Major, University of Richmond; Dr. R. Ronald Richards, Greenville College; Dr. William D. McLenahan, Tennessee Technological University; Dr. John W. McNabb and Dr. Yahya B. Safdari, Bradley University; Dr. Ralph Mekel, City College of City University of New York; Dr. Richard W. Mortimer, Drexel Institute of Technology; Dr. Harry D. Powell, East Tennessee State University; Professor William T. Reece, College of William and Mary; Dr. Alan T. Roper, Rose Polytechnic In-

THREE co-authors of the Lunar Orbiter Project Office recently shared a $200 award and received citations from The Institute of Electrical and Electronics Engineers for their technical paper which won the 1968 Leonard G. Abraham Award in the Communication Technology Group. Shown with the citation are (from left): Charles H. Green, Edmund A. Brummer, and William T. Bundick. The citation was presented to each "in recognition of his contribution to the Technical Literature as co-author of a paper entitled 'The Lunar Orbiter Telecommunications Systems' published in the IEEE Transactions on Communication Technology, Volume 15, Number 3, June 1967."

WOODY HERMAN ORCHESTRA
(Continued from page 1)

sound may be (some of its members have never heard the classic Herman records of the 1940s), it maintains a definite continuity of spirit with the previous Herman bands.

The current success of the Herman band comes, coincidentally, during Woody's silver anniversary as a band leader. It was 25 years ago that he took over the Isham Jones band when its leader retired. Since then, his bands have written important chapters in the history of American light music, bringing to eminence such musicians as Stan Getz, Zoot Sims, Ernie Rolay, Bill Harris, the late Sonny Berman, Shorty Rogers, Ralph Burns, Neal Hefti, and many more. The present band seems to be developing a new crop of important players and writers.
MEDICS SAY GET TOUGH WITH COLDS

Common colds bug you? Advice from the Health Insurance Institute is: Try getting physical with it.
Drown it.
Sweat it out.
Sleep it to death.
Cool it.

Chances are, the Institute says, if you catch a cold early you can fight it off - hopefully overnight.

The Institute cited data supplied by the Life Extension Foundation which recommended:
At the first sign of a cold go directly to bed with one or two aspirins and a hot lemonade.
Most important: "drink you must-- water, fruit juices, tea-- almost anything, so long as you drink."
If your cold has already started, more drastic measures are prescribed. Such as:
First, take a hot bath, follow with a hot drink to induce perspiration. Then go to bed.
If you are accustomed to whiskey, there is no harm in putting a couple of tablespoons in the lemonade. It will assist the perspiration process.
Next, bundle up well by using extra blankets. To further aid your sweating, you might wear a sweater over your night clothes. Wool socks may also help.
If your throat is sore, a hot salt gargle is recommended. Be sure to stay in bed at least ten hours.
When you get up in the morning, a cool shower may be taken.

Such a regime may break up a cold within the first 24 hours.

The foundation also recommends that the average person "toughen" himself against the onset of a cold by "exercise, fresh air and cool water baths."

SAFETY DATA BANK ESTABLISHED

NASA has established an Aerospace Safety Research and Data Institute to seek solutions to technical safety problems and to provide NASA and its contractors with the latest information on safety data and procedures.

The Institute will be under the management direction of the Lewis Research Center. I. Irving Pinkel is Director of the new institute.

Pinkel, a chemist at Lewis, has won international recognition for his extensive research into crash fire and crash injury in transport and personal airplanes.

One of the immediate tasks of the Institute will be to set up a safety technical data bank for the storage and retrieval of safety information and to provide data and consultation on request to NASA, its contractors and other segments of government, industry and universities. It will establish research programs to extend safety technology.

The research programs will include investigations of fire, explosion and chemical hazards; mechanics of structural failure; systems malfunction hazards; environmental hazards; and the relationship of hazards to man, including psychological and physical stress, hazard awareness, safety training techniques, safety equipment and practices.

FOR SALE: Hammond electric chord organ - $295. James, 642-4109 Hayes.
AEROSPACE SAFETY RESEARCH PROGRAMS
IN OART HEADED BY H. KURT STRASS

The Administrator has approved the establishment within the Office of Advanced Research and Technology, NASA Headquarters, of an Office of Aerospace Safety Research Programs. This office will report to the Associate Administrator for Advanced Research and Technology through the Director, Space Vehicles Division, OART.

H. Kurt Strass has been appointed Chief, Aerospace Safety Research Programs, effective May 26. In this capacity, Strass will be responsible for the overall direction and administration in OART Headquarters of a comprehensive research program which encompasses safety considerations relating both to aeronautical and space vehicle operations and systems, which will be performed by the NASA Safety Research and Data Institute recently established at the Lewis Research Center.

In 1944, Strass joined the staff of the Langley Research Center, where he was assigned to the 16-Foot High-Speed Wind Tunnel and later to the newly formed Pilotless Aircraft Research Division. He conducted research and development experiments in control effectiveness, thermo-aerodynamic effects on structures, and heat transfer phenomena.

He transferred in 1959 to the NASA Space Task Group at Langley and later to the Manned Spacecraft Center at Houston, where he has served in several important capacities related to the development of Project Mercury, Project Gemini, and Project Apollo, including management and direction of the Space Environment Simulation Laboratory.

Since last July, he has been serving as Chief of the Earth Orbital Mission Office, Advanced Spacecraft Technology Division, at the NASA Manned Spacecraft Center.

Strass received a Bachelor of Science Degree in Aeronautical Engineering from the Georgia Institute of Technology in 1943, and following his graduation he performed wind-tunnel testing at Georgia Tech for major aircraft companies; he also taught wind-tunnel and structural testing laboratory classes. He is the author of a number of technical papers on research conducted during his career.

SCOUT SUPPORT CONTRACT

Langley Research Center and LTV Aerospace Corporation, Dallas, Texas, will negotiate a unified contract to provide complete system management for the Scout launch vehicle.

The fixed-price-incentive contract will continue support services LTV has been providing under predecessor system management contracts since July 1965.

The Langley Center, which is responsible for Scout project management services, will conduct the contract negotiations. The new contract is intended to cover a period of 24 months beginning November 1, and is valued at more than $14 million.

FOR SALE: Pleated, draw drapes for triple and double windows - 72 inches long, misty rose antique satin, need cleaning. Hicks, 877-3469.
FOR SALE: Electric powered air compressor, 1/6 hp, 115 or 220 volts. Barger, 596-2987.

FOUR staff members have received cash awards from the NASA Inventions and Contributions Board. Top photo - Alexander P. Sabol, Aero-Physics Division, receives a $200 check from William E. Boatright for his invention concerning a self-repeating plasma accelerator. Center photo - Otis J. Parker (right), Flight Vehicles and Systems Division, was awarded $100 for an ullage compensator. Making the presentation is Hubert K. Clark. Bottom photo - William M. Haraway (left) and Robert T. Magee (right) shared a $300 award for a thermal protection ablation spray system. Presenting the checks is James C. Ferguson.
NOVEL MATERIAL USED IN EXPERIMENTS

The brightly-colored artificial orange seaweed floating underwater at Wallops Island has a very serious purpose. It is part of an experiment seeking to find an answer to the problem of beach erosion.

If all goes well, the artificial seaweed will create an underwater drag, causing suspended sand particles in shallow water to fall to the bottom. And, if it works out, this buildup of sand offshore should protect the shoreline.

At the Wallops Station the seaweed is planted in water about 8 feet deep and about 600 to 800 feet offshore. Erosion control has been a continuing effort at Wallops.

The mile long test area is off the south end of the island, south of the southern-most launch pad.

The 6-foot long artificial seaweed fronds are attached by rings to weighted frames "planted" underwater.

The frames, of different sizes and shapes for test purposes, are about 8 by 20 feet. They were planted in a variety of patterns underwater to determine which pattern is most effective.

Off Wallops, a total of 68 frames were put down in the fall of 1967 in the shape of a V with the apex towards shore. The frames are checked quarterly in this long term experiment.

In earlier tests in other areas, it was found that after the artificial seaweed had been submerged for some time, it shrunk up to half its original length but ballooned out to twice its original width, taking on the appearance of underwater tumbleweed.

The orange fronds float underwater even as real seaweed does and attracts attachments, barnacles, water blisters, and various sea ferns.

The earlier tests also revealed that numerous fish were also found at the artificial reef installations where in previous years fish were notably absent.

The problem of beach erosion still is far from solved but the waving fronds of artificial seaweed may prove to be a partial solution, at least in selected instances.

NASA SOFTBALL LEAGUE

After two weeks of play in the NASA Softball League, a tight race for the championship is in the making. The Ballbusters (3-0) moved into a tie for first place with a 5-1 victory over the Knads, the defending champions. Also in first place are the Maurnders (3-0). The Maurnders have shown a big improvement over last year and may affect this year's outcome for the championship.

Close behind in third place are the Packers (2-0). Tied for fourth are ACD (2-1) and the KNADS (2-1). Rounding out the league are Jim's Gems (1-2), Swingers (0-3), and Al's Owls (0-3).

FOR SALE: Duncan Phyfe sofa - $75. Baldwin, 723-3284.
FOR SALE: 3-bedroom brick house in Chesapeake Heights, Ezell, 838-3801.
FOR SALE: 18,000 btu Frigidaire air conditioner. Powell, 838-0617.
WANTED: For occupancy in August, 2 or 3-bedroom brick house with den and fireplace. Will buy owners equity and assume loan. L. Anderson, Suffolk 539-2561 after 6 p.m.
FOR RENT: Spend vacation or honeymoon in deluxe cabin in mountains of Bath County, Va. Ideal for hiking, fishing, swimming, golfing. Located 13 miles from Warm Springs. Yates, PA2-7753.
LOST: Man's London Fog raincoat. Sibbers, 4717.
FOR SALE: Restonic mattress and box spring - full size. Sullivan, 596-6104.

ASSEMBLING SEAWEED FRAMES: Workers put 6-foot long artificial seaweed fronds onto weighted metal frames. The artificial seaweed is being tried out in an experimental program off Wallops Island to see if it can help prevent beach erosion.

TECHNOLOGY UTILIZATION NEWS

The New Technology Clause has become an important part of research and development contracts administered by Langley and other NASA centers. The clause protects the government's interest in new technology and assures that the public will receive "interest" (on its sizeable investment) in this new technology.

NASA's guideline, the National Aeronautics and Space Act of 1958, states that the contractor "shall furnish promptly to the Administrator a written report containing full and complete technical information concerning any invention, discovery, improvement, or innovation which may be made in the performance of such work."

Compliance with these provisions enables your T.U. Officer to readily transfer the new technology generated through Langley contracts to the public domain where it rightfully belongs. Details concerning the implementation of the clause may be obtained from C. J. Shoemaker, Langley T.U. Office, extension 3281.
ASTRE Whitman, June 14, 1968

As the ads in the slick magazines say, "Isn't that the President of the Credit Union behind those Foster Grant's?"
And indeed it is - Robert L. Girouard. Members who finance new cars during June and July will be given a pair of these optically correct sunglasses. Bob hopes they will add to the member's comfort and promote safety on the highway.

CREDIT UNION OFFERS BONUS
During the rest of June and July each check issued to finance a new automobile will be accompanied by a pair of best-selling Foster Grant's. The Credit Union doesn't really believe members will rush to finance new cars just to receive a pair of these optically correct sunglasses.

It does believe that the gift of so attractive and necessary an item may, however, ring a bell. Hopefully, a member instead of signing up at point-of-purchase will remember the glasses, think of the Credit Union, and decide to hold off while he investigates a little further. He will do himself a favor if he does.

Professional, courteous, one-day service; financing up to 85%; loan insurance at no out-of-pocket cost; payments as low as $31.63 per month per thousand; and right to pay off at any time without penalty, are hard to beat.

LANGLEY TENNIS CLUB NEWS
The Langley Research Center Tennis Club played the Hilton Tennis Club June 2. Hilton was victorious with an 8-1 triumph. Ed Riddle, No. 1 for Hilton, led the effort with a 6-2, 6-4 victory over Langley's Dick Pincus.

Other results were as follows:
Singles - Lane Kelly defeated Horst Ripperger (H) 6-2, 6-2; Jim Conrad (H) won over Elmore Goyette 3-6, 6-4, 6-4; Lou Garcia (H) defeated Dick Layman 6-0, 6-0; Tom Farmer (H) won over John Gregory 6-2, 6-1; and Jerry Hogge (H) defeated Bob Shanks 6-1, 4-6, 6-1.
Doubles - Riddle and Ripperger (H) defeated Pincus and Kelley 3-6, 6-0, 6-4; Ron Summerlin and Saunders (H) won over Gregory and Layman 6-1, 6-2; and Harry Chandler and Walter Lysaght (H) defeated Shanks and Goyette, 6-3, 6-6.

Future play will be with Warwick Yacht Club, Hidenwood Tennis Club and Glendale Tennis Club.
Anyone wishing to join the Tennis Club should contact Pat McLean, 3560.

WOMAN'S SOFTBALL: Anyone wishing to play in a NASA Woman's Softball League should contact Sharon Hathorne, 4861.
BOND DRIVE NEARING GOAL

Jess G. Ross, Chairman of the Center’s 1968 U.S. Savings Bond drive, announced that 86.6 percent of the staff are now participating in the payroll savings plan. This is only 2.4 percent short of the goal of 90 percent participation and only 120 additional subscribers are needed to attain this goal. If the staff reaches the 90 percent mark, the Center will receive the Treasury Department’s coveted Minuteman Flag. The Center has not won the Minuteman Flag since 1952.

Ross also pointed out that the drive has been extended through Friday, June 21, because of the President’s recent announcement concerning an increase in interest rates on Savings Bonds and Freedom Shares. The increase was effective June 1.

In his announcement President Johnson stated:

“The new rate on both series E and H Savings Bonds will move from 4.15 to 4.25 percent-- the maximum permitted by law. This higher rate will apply not only to newly-purchased bonds but also proportionately to all outstanding E and H Bonds for their remaining period to next maturity. Thus, present bond-owners will be rewarded for investing in America and will not have to cash in their present bonds to take advantage of the higher rates.

“The rate on Freedom Shares will be increased from the present 4.74 percent to a full 5 percent when held to maturity of four and one-half years. Since these are savings notes, rather than Savings Bonds, there is no provision in the law for applying this increase to Freedom Shares which are outstanding. I am assured, however, that because of the rising scale of Freedom Share interest accruals, most of these outstanding shares will earn a comparably high rate for their remaining period of maturity.

“Limitations on the combination purchase of Bonds and Freedom Shares will also be relaxed so that any American, at any time, may buy this attractive savings package over the counter at his bank rather than only through a ‘Bond-a-Month’ plan.”

Staff officials hope that this more attractive interest rate will provide the stimulus for those not currently enrolled in the payroll savings plan.

Three organizational units have reached the 100 percent mark - Administrative Services Division, Office of Assistant Director for Administration, and Personnel Division.

ORGANIZATIONAL UNIT % PARTICIPATION

Administrative Services 100
Office, Asst. Director for Administration 100
Personnel 100
Electrical Systems 97
Dynamic Loads 95
Fiscal 94
Research Models and Facilities 92
MORL 91
Structures Research 91
Photographic 90
Research Reports 90
Procurement 88
Scout Project Office 87
Flight Mechanics and Technology 86
Office of Director 86
Mechanical Services 85
Office, Engineering and Technical Services 85
Plant Maintenance 82
Flight Vehicles and Systems 80
Office, Assistant Director for Flight Projects 80
Space Mechanics 78
Full-Scale Research 77
Aero-Physics 76
Lunar Orbiter Project Office 75
Flight Instrumentation 74
Instrument Research 74
Analysis and Computation 71
Applied Materials and Physics 69

WANTED: Driving combination from Ft. Monroe to W.A. on 7:30 shift. McCormick, 4766.
FOR SALE: Cedar wardrobe, gooseneck rocking chair. Reel, 838-1315.
FOR RENT: 2 rooms in Poquoson, with or without meals. Simpson, 1404 Poquoson Ave., 868-5072.
FOR SALE: 1962 Peugeot - $595 or best offer. Anderson, 596-5869 after 5 p.m.
FOR SALE: Carrier window air conditioner, 13,000 btu. take up payments; studio couch with back rest and 2 pillows; Smith-Corona typewriter and table. Pease, 851-0181.
FOR SALE: Vaurien sailboat with trailer, sloop rig, 13 feet long - $400. Drewry, 722-4443.

FOR SALE: White Hot Point electric range with double oven - $35. Butler, 596-3394.
WOODY HERMAN ORCHESTRA
TO PLAY HERE TOMORROW

A number of tickets are still available to the Activities Association's summer dance featuring Woody Herman and his orchestra. The informal affair will be held tomorrow night in the Activities Building and dancing will be from 9 p.m. until 1 a.m.

Woody and his orchestra are stopping by Langley on their way to participate in the annual Newport Jazz Festival during the July 4 week-end.

Tickets are $10 per couple including free setups. Tickets may be purchased at the Activities Building or at the door. Reservations may be made by calling Bruce Amole, 4583. No reservations will be held after 10 p.m.

Herman's band is not an imitation of his past bands, though of course many tunes that he made famous remain in the book. But there is little catering to sentimentality for the past.

Woody's new band was formed around 1962 and was built on a nucleus of excellent young musicians--most members of the present band are in their early twenties. As young as the band is and as contemporary as its sound may be, it maintains a definite continuity of spirit with the previous Herman bands.

The current success of the Herman band comes, coincidentally, during Woody's silver anniversary as a band leader. It was 25 years ago that he took over the Isham Jones band when its leader retired. Since then, his bands have written important chapters in the history of American light music.

INDUSTRIAL EDUCATION PROGRAM
UNDERWAY AT LANGLEY CENTER

Langley Research Center is cooperating with the state in sponsoring a summer program in industrial arts and vocational trades for 22 high school instructors in Virginia.

The purpose of the six-week program, which got underway at Langley on June 17, is to give the teachers a firsthand opportunity to increase their knowledge of space age materials, shop equipment, and fabrication techniques by working closely with shop supervisors and skilled craftsmen in the conduct of various NASA aerospace projects.

During their stay at Langley, they will be divided into four groups and assigned to the following Langley organizational units--the Machine Branch, Structural Fabrication Branch, Electronic Fabrication and Development Section, and Aerospace Model Development Branch.

In addition to receiving formal classroom instruction and working at Langley to gain new experience, the teachers will participate in seminars at which Langley scientists and technicians will discuss some of the latest technology of interest in the fields of industrial arts and vocational.

(Continued on page 3)
DIAPER LINE. Seeing double these days is Bill Deaton, Flight Instrumentation Division. He became the father of twin daughters on June 9. Dana Marie weighed in at four pounds, two ounces, and Denise Louise tipped the scales at three pounds, nine ounces. James D. Ferrell, Administrative Services, became the father of a seven-pound, eleven-ounce son on June 8. Celebrating the birth of a son, Randall Jay on May 26 is M. Dayne Aldridge, Flight Instrumentation. Announcing the birth of a son, Norman D. Jr. on June 14 is Norman D. Akey, Flight Instrumentation. The stork made another stop by Flight Instrumentation when he delivered a daughter, Holly Elizabeth, to the James W. Johnson household on June 7.

AUTO DECALS. Staff members are reminded that automobile decals should be obtained from the Security Office at the West Gate Pass Office (Building 1228), instead of from Procurement Division’s Property Control and Utilization Branch. Staff members are requested to pickup decals, insofar as possible, between the hours of 10 a.m. and 2 p.m.

REPRESENTATIVE TO VISIT HERE. Rollin Slinger, Field Representative of the Idemnity Benefit Plan, will visit the Center on July 10 at 9:15 a.m. Employees having problems or questions concerning the plan may call Lois Taylor, 2605, for an appointment.

I AM MEETING. The NASA Lodge No. 892, International Association of Machinists, will hold its monthly meeting on July 2 at 7 p.m. at the Central Labor Union Hall.

MASON S. All NASA employees who are Master Masons are invited to attend the Tidewater Square and Compass Club. Meetings are held every Tuesday from noon to 12:30 in the Patio Room, Langley NCO Open Mess.

BLOODMOBILE. The Red Cross Bloodmobile will visit the Center on July 24. Additional donors are needed to help meet the Center’s quota. Those who have not registered to donate blood and wish to do so may call East Dispensary, telephone 2243.

FOR SALE: Magnovox AM-FM stereo console in cherry finished walnut cabinet. Lightener, 877-4242.

FOR SALE: Chrome dinette set with 6 chairs. Price, 826-8690.

ANNOUNCEMENTS

CAFE TERIA MENU

The following menu will be served in the cafeterias during the week of July 1:

Monday - Beef broth with barley, pepper steak, chicken pie, fried fish, Austrian ravioli. Snack bar - Soup, barbecued pork sandwich, steak sandwich, French fries.

Tuesday - Cream of celery soup, roast veal, fried scallops, liver and onions, franks and beans. Snack bar - Soup, hot dog, veal cutlet on roll, French fries.

Wednesday - Vegetable-beef soup, grilled steak, beef stew, chicken croquettes, chili con carne. Snack bar - Soup, hamburger, sliced turkey on roll, French fries.

Thursday - Holy Day

Friday - Cream of tomato soup, corned beef and cabbage, stuffed shrimp, Polish sausage, fish cakes. Snack bar - Soup, cheeseburger, hot corned beef sandwich, baked beans.

The menu for the week of July 8 is as follows:

Monday - Puree of bean soup, roast ribs of beef, grilled pork chops, chicken chow mein, tamale pie. Snack bar - Soup, hot dog, hot pastrami on rye, French fries.

Tuesday - French onion soup, Swiss steak, broiled slice of smoked ham, fried fish sticks, Irish omelette. Snack bar - Soup, cheeseburger, pork sandwich, French fries.

Wednesday - Chicken noodle soup, chopped steak, spaghetti and meat sauce, fried chicken, deviled crab, beef ravioli. Snack bar - Soup, ham and egg sandwich, deviled crab, Lou’s satellite special, French fries.

Thursday - Vegetable-beef soup, grilled steak, roast pork, salmon loaf, wiener and sauerkraut. Snack bar - Soup, cheeseburger, veal steak sandwich, French fries.

Friday - Manhattan clam chowder, Spanish pot roast, chuckwagon steak, broiled perch. Snack bar - Soup, hot roast beef, grilled cheese, French fries.

WANTED: 1 man’s and 1 lady’s bicycles. Essick, 596-3674.


FOR SALE: 15-round clips for GI carbine. Breen, PA3-8929 after 5 p.m.

FOR SALE: 5-bedroom, 2-1/2-bath Cape Cod house in Ivy Farms, central air conditioning. Johnston, 595-4197.


FOR SALE: 15-round clips for GI carbine. Breen, PA3-8929 after 5 p.m.

FOR SALE: 5-bedroom, 2-1/2-bath Cape Cod house in Ivy Farms, central air conditioning. Johnston, 595-4197.


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INDUSTRIAL EDUCATION PROGRAM
(Continued from page 1)

The high school instructors will receive six semester hours of college credit for industrial arts and vocational trades courses they will take at Langley in conjunction with their on-the-job activities. The courses are sponsored by Old Dominion College, Norfolk; NASA; and the State Division of Vocational Education of the State Department of Education, Richmond.

The instructors will attend classes for two hours each day and work five hours a day throughout the six-week program. David L. Joyner, Assistant Professor of Industrial Arts Education in the School of Education at Old Dominion, will teach the courses at Langley.

Coordinating the program for NASA are S. Walter Hixon Jr., Langley's Educational Programs Officer, and Frank Penland, a member of the staff of the Langley Training Branch.

Participating high school instructors include:

- Norfolk - William Ferguson, Rosemont Junior High School; and Ray L. Humphries, Norview Junior High School.
- Chesapeake - John Jackson, Great Bridge High School.
- Roanoke - Wayne F. Gray and James C. Napier, Roanoke County Educational Center.
- Amherst - Stanley M. Jordan, Amherst County High School.
- Arlington - Charles E. Hall, Wakefield High School.
- Fairfax - Louis F. Patch, Robert Frost School.
- Henrico County - Alton Ragland, Varina High School.
- Lee County - Thomas E. Brown, Lee County Vocational School.
- Pittsylvania County - Albert Osborne, Dan River High School.

FOR RENT: Room with or without kitchen privileges. Cowan, 926-0130 or 722-8613.
FOR RENT: Unfurnished 2-bedroom house in Buckroe. Moore, 826-2589 after 4 p.m.
FOR SALE: 4 x 6-foot heavy duty roof top luggage carrier, 8 supports and 8 tie downs. Clevenson, LY6-8319.
FOR SALE: 5 Volkswagen tires - $15 each. Garrison, 826-7081.
FOR SALE: 20-foot sloop with inboard engine and head. Schafer, 877-2069.
WANTED: Driving combination from Southern Shopping Center, Norfolk, to W.A. on 7:30 shift. Hefner, 3735.
WANTED: Ride from 22nd St. to E.A. on 8 shift. Vann, 2266.
WANTED: Ride from East Walker Rd. to E.A. on 8 shift. Treatt, 2624.


LECTURE SERIES PLANNED

The University of Minnesota will conduct a series of 16 lectures at the Center during the week of July 8. The lectures will be given in conjunction with the "Basic Environmental Microbiology" course.

Personnel interested in hearing any of the lectures should report to Building 587, Room 219, at the designated times. Prior registration is not necessary.

July 8 - 9:30 a.m., Introduction to Biology; 9:30 a.m., Levels of Bio-organization; 11 a.m., Inhabitants of the Microbial World.
July 9 - 8 a.m. - Growth, Death, and Nutrition of Microorganisms; 9 a.m., Detection and Enumeration of Microorganisms; 10:30 a.m., Design and Interpretation of Microbiological Experiments; 11:30 a.m., Concepts in Taxonomy and Nomenclature.
July 10 - 8 a.m., Mechanism and Kinetics of Microbial Inactivation; 9 a.m., Physical Disinfection and Sterilization; 10:30 a.m., Chemical Disinfection and Sterilization.
July 11 - 8 a.m., Contamination Control; 9 a.m., Biocontamination Control - State of the Art; 1:30 p.m., Quarantine Parameters; 3:30 p.m., Automated Biodetection.
July 12 - 8 a.m., Concepts in Epidemiology and Quarantine I; 9:30 a.m., Concepts in Epidemiology and Quarantine II.

Questions concerning the lectures should be directed to Joshua R. Foys, extension 2811.

FOR SALE: 1965 Skylark. Copeland, 244-3435 after 4:30.
KNOW YOUR CREDIT UNION

So, maybe, sunglasses do help promote automobile loans. It is either the Foster Grants, so effectively modeled by Bob Girouard in the June 7 issue, or the pleasing combination of Credit Union terms and service. Or maybe both. Maybe it took the Foster Grants to impress members with the fact that the Credit Union just might have something worthwhile to offer. And maybe — being convinced — word-of-mouth advertising from the earlier doubting Thomases has helped. Anyway, business is booming. The week just passed was the largest ever insofar as the financing of automobiles is concerned. Famous first and last words around the Credit Union these days are, “What do you know, it is cheaper!” and “Now, where do I get my Foster Grants?”

Which leads to another matter. Why is the Credit Union with its background, philosophy, and generally accepted image always promoting car loans, $750 personal loans, FHA Home Improvement loans, or what have you? There are two valid reasons. One, it believes in most instances, that it can give its members the better deal and save them money. Anyone who doesn’t think so has only to multiply the amount of each payment by the number of payments to find out. But it takes constant repetition of this fact, in varying ways, to save the member from the old point-of-purchase bugaboo. The Credit Union does not sell debt. It does not urge a member to buy a thing. It does say, once the decision to buy is made, for the member to consider his own best interests. . . . pay no more than he has to, check with his Credit Union.

The second, lesser reason is equally valid. The Credit Union needs the loan-income to pay a fair dividend to those whose shareholdings make the loans possible. The Credit Union does not want any member to borrow just for the sake of borrowing. It does want the business now going elsewhere at greater cost. Business which, if it gets it, will benefit borrower-shareholder-Credit Union alike. Remember, in practically every instance, loans to $10,000 are insured at no out-of-pocket cost.

DO NOT LITTER GROUNDS

Summertime usually brings with it some additional problems for those having responsibility for grounds maintenance at the Center. With personnel taking advantage of the outdoors to eat lunches and patronizing outside vendors, there is a noticeable increase in refuse about the grounds.

Soft drink bottles constitute a serious hazard when left in the path of lawnmowing equipment and paper litter requires special handling prior to lawncutting operations.

With serious budget cuts making it more and more important that we do only the very essential work, it is important that each of us make the special effort necessary to insure that additional work is not created in the maintenance area. Just a little more personal attention on the part of each staff member will make a big difference in the way we look to our visitors.

FOR SALE: 65000 btu G.E. air conditioner - $100. Cooper, 877-1480.

WANTED: Driving combination from Wythe to W.A. on 7:30 shift. Regone, 3681.

WANTED: Driving combination or ride from Presidential Apts. to W.A. on 7:30 shift. Powell, 3761.

WANTED: Young man to share apartment. Leach, 596-2801.

RUNWAY FRICTION measuring vehicles were used under Langley Research Center direction in a month-long test at Wallops Island in a program to devise a standard procedure for predicting the performance of aircraft brakes. Engineers from NASA tested 25 devices to measure runway friction under different weather and runway surface conditions. These measurements will be used to establish a system for runway length requirements to bring a landing airplane to a safe stop. The tests were conducted jointly with the British Ministry of Technology, The Federal Aviation Agency, U.S. Air Force and tire and automobile manufacturers also participated. State highway departments participated in the tests to gather information on a variety of pavement surface conditions. Tests results may have an application in the design of highway surfaces with improved traction for highway safety. Tests were performed on the Landing Research Runway under dry, damp, water-flooded and slush-covered conditions as well as the grooved runway which NASA has designed for airport runways. Pictured here are: 1. Ford Motor Co. Mustang wheel torque skid, 2. British Min. of Tech. ML meter trailer, 3. General Motors vertical and drag force brake torque skid trailer, 4. FAA Pontiac station wagon with Swedish skidometer, 5. Virginia State Highway with skid trailer brake torque, 6. Bureau of Public Roads, Dept. of Transportation skid trailer, 7. British Min. of Tech. Juggernaut brake force anti-skid and locked wheel, and 8. NASA braking and side force truck—three decelerometers.

WANTED: Ride from Clover St. to W.A. on 8 shift. Pesko, 3313.

TRANSPORTATION NOTICE: Effective Monday, July 1, all shipments to Wallops Station will be handled by the Freight Traffic Unit, Stores Branch, Building 1206, telephone 4560. A completed Shipping Request (Form 7530-F19-1073) will be required for all shipments.
BOHLEN AND STATE DEPARTMENT OFFICIALS VISIT LANGLEY CENTER

Charles E. Bohlen, Deputy Undersecretary for Political Affairs, and other State Department key personnel visited Langley Research Center on June 20 on their tour of selected NASA Centers. Accompanying the State Department representatives were Dr. John C. Fisher, Chief Scientist (Designate) USAF, and Donald R. Morris, Associate Administrator (Acting), NASA Office of International Affairs.

With Ambassador Bohlen were Sidney N. Graybial, Deputy Assistant Director, Science and Technology Bureau, U.S. Arms Control and Disarmament Agency; George C. Denney Jr., Deputy Director, Bureau of Intelligence and Research; Herman Pollock, Director, Office of International Scientific and Technological Affairs; Robert J. Webber, Scientific Attaché, U.S. Embassy, Japan; Ernest K. Lindley, Special Assistant to Secretary Dean Rusk; Charles W. Bray III, Special Assistant to Ambassador Bohlen; Ely Maurer, Assistant Legal Advisor; and John A. Halsh, Deputy Executive Secretary, Executive Secretariat.

Following a general orientation session with Director Edgar M. Cortright and other Center officials, the visitors toured research facilities where presentations were made on highlights of aeronautical research at Langley, support of military programs, spacecraft sterilization, Apollo support, Lunar locomotion, and V/STOL research.

ACOUSTICS COURSE HELD AT VARC

Approximately 80 scientists and engineers, most of them from Langley Research Center, completed a short course in Acoustics and Noise last Friday at Virginia Associated Research Center.

Dr. J. Kenneth Haviland, Professor of Aerospace Engineering at the University of Virginia and course director, described the event as the first concentrated non-credit course to be given locally.

Eighteen three-hour instruction periods were held over the two-week duration of the course. There were 18 lecturers, including 15 from points as distant as Southampton, England.

Primarily scheduled for Langley employees, the course drew students from NASA Centers in Ohio and California, as well as from the Newport News Shipbuilding and Dry Dock Company and Navy facilities around Norfolk.

I. E. Garrick, Chief of Langley's Dynamic Loads Division, and Harvey H. Hubbard, Head of the Acoustics Branch, served as lecturers. Also included on the list of 18 lecturers were two former Langley staff members--Dr. Herbert S. Ribner, University of Toronto, and Dr. John C. Houbolt, Associates of Princeton, Inc.

The course included a review of physical fundamentals followed by discussion of noise sources, underwater acoustics, sonic boom, building-structure response to sound, acoustic instrumentation, and noise control.


FOR SALE: 1961 Oldsmobile F85 station wagon - 4-door - $595. Lepton, Crittendon 238-2476.

FORMER WOMAN EMPLOYEE, AVIATION PIONEER, DIES

Pearl I. Young, 72, first woman technical employee of the former National Advisory Committee for Aeronautics and an aviation pioneer with "a million dollars worth of memories," died June 16 in Hampton.

In addition to doing research and heading the technical editing staffs at the Langley Research Center and at the Lewis Research Center in Cleveland, Ohio, for 28 years, Miss Young taught engineering physics for 12 years.

Born in Tiopa, Minnesota, on October 12, 1895, Miss Young grew up in North Dakota and attended school there. After two years at Jamestown College, she transferred to the University of North Dakota, where she was an outstanding student.

After her graduation from the University in 1919 as a Phi Beta Kappa and with majors in physics, mathematics, and chemistry, she taught physics there for two years before beginning her colorful career in aeronautics at Langley in 1922.

While working as a physicist in the Instruments Section, she was closely associated with Dr. Henry J. E. Reid, who served as Langley Director from 1926 to 1960. When Miss Young suggested the need for a technical editor at Langley, she was promptly given the assignment. She was the author of a technical editing manual subsequently used at all the NASA centers.

At the end of World War II she resigned her position as chief technical editor with the NACA and turned to full-time teaching. She accepted a position with Pennsylvania State College, now Pennsylvania State University. From time to time teaching. She accepted a position with Pennsylvania State College, where she was closely associated with Dr. Henry J. E. Reid, who served as Langley Director from 1926 to 1960. When Miss Young suggested the need for a technical editor at Langley, she was promptly given the assignment. She was the author of a technical editing manual subsequently used at all the NASA centers.

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At the end of World War II she resigned her position as chief technical editor with the NACA and turned to full-time teaching. She accepted a position with Pennsylvania State College, now Pennsylvania State University. From 1947 to 1957 she was Assistant Professor of Physics at the Penn State Center at Pottsville, teaching engineering physics. She also taught engineering physics at Fresno State College in Fresno, California, during 1961-1962.

After her period of teaching at Penn State, Miss Young returned to Lewis and did special bibliographical work. She retired from the NASA in 1961. After her retirement she lived for several years in Lancaster, Pennsylvania, and then returned to Hampton in 1964.

In retirement, Miss Young turned her energies toward full-time research for a book for which she had started gathering material in 1947. The work was to be a biography of Octave Chanute, early air pioneer for whom Chanute Field in Illinois was named. Chanute was a civil engineer whose career was the building and maintenance of railroads and railroad bridges. He had become interested in aviation as a hobby.

Miss Young's task of finding and collecting Chanute source material carried her to many places— from Pasadena, California, where Chanute's last surviving daughter lived until her death in 1967, to Clermont-Ferrand in France, where records of the Chanute family appear as early as 1100 A.D. Miss Young received grants from The American Philosophical Society in Philadelphia and from the University of Wyoming, as well as aid from the Chanute descendants, in pursuing her work.

After being stricken ill several years ago, she was able with assistance to sort and index most of the material she had collected.

Miss Young had previously published a booklet entitled "Octave Chanute, a Bibliography," which contains a brief biography of Chanute and lists all his writings and speeches and many papers about him. Miss Young also collected and indexed material on other pioneers in aeronautics, notably Mouillard, Wenham, and von Zeppelin. She recently finished a paper on Alphonse Penaud's aeronautical letters, which is now with the publisher and will be issued as a memorial to her. One of her most extensive undertakings, also incomplete but, she hoped, in shape to be finished sometime is a file on "Who Was Who in Aeronautics before 1910."

In the final disposition of the materials she collected, the original material on aeronautics will go to the Aeronautical Collection of the Denver Public Library, whereas the original railroad material will go to the University of Wyoming, where the "Pearl I. Young Collection" has become a part of the "Transportation History Foundation."

While employed at Langley, Miss Young also worked as a part-time reporter and feature writer for what is now the Norfolk Ledger-Star.

An adventure about which Miss Young sometimes reminisced was her trip to Europe on the first west to east flight of the airship "Hindenburg" in 1936. She paid $800 for ticket No. 1 (round trip) on the huge zeppelin, and she said that for $800 she purchased a million dollars worth of memories. She was one of 50 passengers on the airship just about a year before it crashed in flames at Lakehurst, New Jersey, and ended zeppelin passenger carrying.

In 1967, at the Commencement exercises at the University of North Dakota, Miss Young received the "Sioux Award." This trophy is reserved for the most distinguished alumni of the school and is in recognition of their professional achievements and their loyalty and service to the University.

NEW BUS SERVICE OFFERED

The Citizens Rapid Transit Company started a new bus service from West Area on Monday.

The bus leaves Data Reduction (Bldg. 1268) at 4:45 p.m., proceeds to 7 x 10-Foot Tunnels (Bldg. 1212), on to 16-Foot (Bldg 1146) where it turns left and stops at Headquarters (Bldg 1219), stops at AMPD (Bldg 1222) and proceeds to East Area. Service is also offered to downtown Hampton and Newport News.

The service was offered because of the large number of summer employees who desire transportation in the afternoon. The bus is available for the use of all staff members and it will become a permanent service if sufficient interest is shown.


LOST: "Calculus of Variations" by Weinstock, Library No. 517.4 W43. Shaughnessy, 4653.

WANTED: Ride from downtown Newport News to W.A. on 7:30 shift. Edmundson, 4801.
A LARGE group of high school and college students are working at the Center this summer under the Youth Opportunity Campaign and the Neighborhood Youth Corps. Top left photo - Working under the YOC program are front row (from left): Andrew Jenkins, Brenda Wheeler, Faye Milton, Joy Ratledge, Wilhelmina Boone, Gayle Mansfield, Ramona Amos, Janice M. Williams, Malinda Toyster, Brenda Fletcher, and Janice Williams. Second row - Howard Cash, David Richerson, Patricia Moore, Donna Boothe, Rita Hopson, Pat Edmondson, Sandra Wright, Betty Taylor, Thomasena Brown, Janet Vaughan, Dot Duffy, Judy Jones, and Arlinda Youngblood. Top right photo - Members of the NYC are front row (from left): Joseph Venable, Larry Brown, Portia Thomas, Vivian Langford, Barbara Harris, Elizabeth Bowles, Ike Jones, Joel Silver, Glen McNeihl, Robert Hill, and Barbara Weinstock, NYC Counselor from the Newport News Office of Economic Opportunity. Second row - Kenneth Knight, Isaac Ellison, Paul Johnson, William White, Thomas Smith, Arthur Greene, Gerald Ashley, Alfred Wardrett, Stanley Wiggins. Third row - Floyd Tucker, James Guy Irving Banks, Tyrone Draughn, Anthony Williams, Ronald Winship, Linwood Gray, and Larry Cooper. Lower right photo - Also working under the NYC program are front row (from left): Robert Davis, Patricia Dobson, Carolyn Sumpter, Barbara Hill, Joyce Dickerson, Regina Lee, Patricia Jones, Delsey Whiting, Milton Hollo-

APPRENTICE HONOR ROLL

Thirteen apprentices completed the spring semester with an average of 96 or above. Members of the honor roll are as follows:

Joseph P. Budik and Kenneth W. Hall, Materials Processing and Development; James I. Clemmons, Gas Parameters Measurements; John W. Cox, Entry Structures; George C. Firth and George B. Whitehurst Jr., Research Equipment; Alton C. Hall, Simulator Development; David L. Lyons and Bordie D. Poole, Electronic Fabrication Development; Barry D. Meredith, Instrument Physics Research; Homer F. Rush, 8-Foot High Temperature Tunnel, Ceylon C. Short, Fabrication Shop; and Russell Lyeth, Spin Tunnel.

LOST: Pair of lady's glasses in dark frames. Pressey, 3797.


FOR SALE: Waterfront lot in Piney Point. Weade, 851-1243.

SUMMER YOUTH PROGRAMS

This summer the Center is participating in the largest summer program for youths yet undertaken.

Sixty Neighborhood Youth Corps (NYC) enrollees arrived on June 17 and 72 Youth Opportunity Campaign (YOC) employees arrived June 12, 19, and 20. During the summer of 1967 there were 35 NYC enrollees and 29 YOC employees at the Center.

Six of the NYC enrollees are assigned to Administrative Services, 11 to Procurement, 10 to Fiscal, 17 to Fabrication, and 15 to Research Support. They are working a three-day week for a period of 10 weeks, and are paid by their sponsoring agencies, the Newport News Office of Economic Opportunity and the Hampton Community Action Agency.

Twenty-nine of the YOC employees are assigned to divisions of Engineering and Technical Services, 19 are assigned to divisions under the Assistant Director for Administration, and 24 are assigned to research divisions and project offices.

FOR SALE: New 3-bedroom brick rancher, 2 baths, central air conditioning - located on one acre lot in Dare. Matthews, 868-2261.
LANGLEY TENNIS CLUB NEWS

The tennis match results when LRC's men's tennis team met with Glendale tennis club on June 16 were as follows:

Singles - Ruhlin (L) over Hargrave (G) 7-5, 6-4; Kelly (G) over Carl Horne (L) 4-6, 6-4, 10-8, Elmore Goyette (L) over Block (G) 6-0, 6-1, Bill Compton (L) over Fournier (G) 6-4, 6-3, Bob Boswinkle (L) over Nevins (G) 6-0, 6-2, and Norman Silsby (L) over Burris (G) 6-2, 6-0.

Doubles - Hargrave and Kelly (G) over Ruhlin and Horne (L) 6-3, 6-4, and Compton and Boswinkle (L) over Block and Fournier (G) 4-6, 6-4, 7-5.

The latest challenge match results are: G. Keating over R. Lee 6-4, 6-4, J. Mueller over R. Layman 6-1, 6-0, L. Creduer over J. Drozdowski 6-3, 6-3, and Lee over Drozdowski 5-7, 6-3, 6-4.

The Langley team will play Hidenwood Sunday at 1:30 p.m. The women's tennis team has started forming a ladder.

FOR SALE: Roll-about 3-speed fan, 7500 cubic-foot per minute, thermostat controlled, intake and exhaust. Gainer, 585-3639.

FOR SALE: Mahogany double tester bed. Huggett, 596-9583.
NASA conducted a materials technology flight experiment to test the performance of a phenolic nylon charring ablation material on June 27. The experiment was the seventh flown in the Pacemaker series managed for NASA by the Langley Research Center.

A four-stage solid fueled Pacemaker rocket carrying a 52-pound spacecraft was launched from Wallops Station at 12:37 p.m. EDT in a southeasterly direction. The spacecraft reached a speed of 7200 miles per hour and was lowered into the Atlantic Ocean by parachute after a four-minute flight. A recovery helicopter retrieved the payload which was returned to Langley Research Center for evaluation. It landed about 127 statute miles from Wallops Island.

Purpose of the experiment was to obtain flight ablation data on a phenolic nylon material which has been extensively tested in a number of arc jet ground facilities throughout the United States. Heating and ablation sensors and instruments in the spacecraft telemetered information on char formation, heating rates, vehicle performance, and temperatures.

While the primary experiment concerned the phenolic nylon with which most of the spacecraft was covered, panels of three other ablation materials were carried around the base of the vehicle. These included a foamed quartz material prepared by the Lockheed Missiles and Space Company; and ablation material named Mod V by its manufacturer, Avco Corporation; and a foamed Teflon material also produced by Avco.

Langley's project manager for the Pacemaker materials technology experiment was Brian J. O'Hare, Applied Materials and Physics Division. The Wallops Station project engineer for the launch was Roger Navarro.

ANNUAL BOND CAMPAIGN

A final report on the Center's annual U.S. Savings Bond campaign shows that staff members passed the 90 per cent participation mark. This is the first time since 1952 that Langley Research Center has achieved this high rate of participation.

Jess G. Ross, chairman of the 1968 effort, again expressed his appreciation to all members of the staff who are subscribing to Savings Bonds through the payroll deduction plan, as well as to the chairman of each division and project office for their special effort which made this achievement possible.

Three organizational units reached the 100 per cent mark - Administrative Services Division, Office of Assistant Director for Administration, and Personnel Division. Dynamic Loads finished with 99 per cent and Electrical Systems was close behind with 98 per cent.

A final report showing organizational participation is shown on Page 8 of this issue.
ANNOUNCEMENT

LECTURE PLANNED...Dr. Larry Kaufman, Manlabs, Incorporated, will give a lecture on "Stability Characterization of Refractory Materials Under High Velocity Atmospheric Flight Conditions" on July 17 in Room 236, Building 1229. Dr. Kaufman received his B.S. degree from Brooklyn Polytechnic Institute and his Ph.D. from Massachusetts Institute of Technology. He has been employed at the Lincoln Laboratory of MIT and is now Director of Research at Manlabs, Inc., Cambridge, Mass. His field of interest is thermodynamics, specializing in the thermal qualities of materials.

DIAPER DERBY...William L. Williams, Office of Assistant Director for Administration, became the father of a five-pound daughter, Susan Beth, on June 27...Announcing the recent adoption of a daughter, Susan Gordon, is Judy Cottle, Instrument Research Division...Gail Day, Space Mechanics Division, became the mother of a son, John Morgan, on June 17.

NEWLYWEDS...Carol J. Pereira, Aero-Physics Division, and Pendleton M. Jackson Jr., Flight Vehicles and Systems Division, took their final vows on June 29 at the Saint Bede's Catholic Church, Williamsburg.

REPRESENTATIVE TO VISIT...Anne Shepherd, Government-wide Service Plan representative, will be here on July 17 from 1 to 2 p.m. Employees having problems or questions concerning the plan may call Lois Taylor, 2605, for an appointment.

FOR SALE: Refrigerator replacement unit for trailer or boat use, window and table fan, belt massager, boat trailer, electric iron, 4 old slat-seat chairs, 4 captain's chairs, record cabinet. Mrs. Gilman, PA2-5847.
FOR SALE: Siamese kittens - $10; female Siamese cat 1-1/2 years old - $15. Florella, CH5-6833.

CAFETERIA MENU

The following menu will be served in the cafeterias during the week of July 15:
Monday - Cream of tomato soup, braised lamb shanks, baked ham, stuffed pepper, grilled cheese and bacon sandwich. Snack bar - Soup, grilled cheese and bacon, baked ham on roll, French fries.
Tuesday - Consomme julienne, hot roast beef sandwich, grilled veal steak, fried flounder, baked hash. Snack bar - Soup, hot dog, hot roast beef, French fries.
Wednesday - French onion soup, chicken and dumplings, grilled pork chops, meat loaf, fish cakes. Snack bar - Soup, sea dog, hot pastrami, French fries.
Thursday - Chicken gumbo, grilled steak, crab cakes, baked lasagna, western omelette. Snack bar - Soup, hamburger, steak sandwich, French fries.
Friday - New England clam chowder, baked Smithfield ham, hot turkey sandwich, stuffed flounder, franks and beans Snack bar - Soup, hot dog, sliced turkey on roll, German potato cakes.

The menu for the week of July 22 is as follows:
Monday - Cream of mushroom soup, roast beef, fried shrimp, smoked pork sausage, Austrian ravioli. Snack bar - Soup, barbecued pork sandwich, hot cornded beef sandwich, French fries.
Tuesday - Puree of bean soup, pepper steak, broiled ham slice, spaghetti and meat balls, deviled crab, chili-mac. Snack bar - Soup, hot dog, deviled crab, steak sandwich.
Wednesday - Tomato-rice soup, chopped steak, chicken cacciatore with spaghetti, fried fish sticks, Spanish omelette. Snack bar - Soup, ham and egg sandwich, satellite special, French fries.
Thursday - Vegetable-beef soup, grilled steak, shrimp Newberg, fried chicken, tamale pie. Snack bar - Soup, hamburger, chuckwagon steak, French fries.
Friday - Manhattan clam chowder, pot roast of beef, smoked pigs in a poke, fried flounder, cheese ravioli. Snack bar - Soup, fish sandwich, hot roast beef.

FOR SALE: 1967 Ford Mustang, automatic transmission, 289 engine - $2300; 60 x 100-foot wooded lot in Woodhaven Shores, New Kent County, 1/2 block from lake - $1050. Oliver, 723-4204 after 5 p.m.
FOR SALE: 1962 Chevrolet Impala, 4-door. Smith, 595-3000.
FOR SALE: Heath 5-inch oscilloscope - $20; two Heath range extending speakers - $25. Cubbage, 838-0993.
FOR SALE: Three 5600 btu window air conditioning units - $60 each. Braxton, 596-2785.
Terrestrial benefits are the results of lunar research. The Northrup Corporation, under contract to NASA, has been conducting studies of complex rock materials under extremes of temperatures and pressures.

These studies are necessary to develop the basic knowledge needed for the beneficial use of lunar rocks. Significant terrestrial byproducts of these studies are becoming apparent. Materials with properties not possessed by the original rock have been produced. These may be single or multi-phase, or composites with interlocking grains. In addition, the elastic wave propagation factors through the rock media at elevated temperatures and pressures are very important contributions to the science of geophysics or seismology.

Here at Langley Research Center, a technique for sorting particles by shape rather than by size has been studied and appears feasible. This technique, resulting from experiments with simulated lunar "soil," may have an important impact on several industries in which particle shape as well as size is important. The shape of solid particles influences both their physical and chemical behavior. Soil bearing strength, reinforcement of plastics, concrete, hiding power of paints are examples of mechanical behavior which are affected by the shape of the particles. Burning rates of propellants and dissolving rates are examples of chemical behavior affected by particle shape. Contact your T.U. Office for further details.

THIS picture of Saturn was made with the 16-inch telescope of the Langley Skywatchers Astronomy Club which was built by club members. The rings of Saturn are seen nearly edge on. Many of the wonders of the sky can be seen with this telescope which is located behind the Activities Building next to the tennis court. There are regularly scheduled viewing sessions open to everyone at Langley. These viewing sessions are held every Thursday night from 8:30 to 10:30 and the entire family is invited. For further information call Leonard Weinstein, 4705.

TWO STAFF members of the Dynamic Loads Division recently received cash awards from the NASA Inventions and Contributions Board. Sidney A. Batterson (top) received $300 for his brake control system. After a re-evaluation Upshur T. Joyner (bottom) received an additional $50 for his steering system.
APOLLO 7 SPACECRAFT TESTING

The Apollo spacecraft which will carry three astronauts on an 11-day Earth orbital mission late this summer is undergoing combined systems testing at Kennedy Space Center.

The combined systems test validates simultaneous performance of all systems and subsystems.

Crew for the mission, designated Apollo 7, will be Astronauts Walter M. Schirra Jr., commander; Donn F. Eisele, command module pilot; and Walter Cunningham, lunar module pilot.

The spacecraft was installed in the KSC altitude chamber and following the combined systems test it will be put through both unmanned and manned altitude runs.

The spacecraft will be further tested in the KSC Manned Spacecraft Operations Building preparatory to being moved to Launch Complex 34 at Cape Kennedy where it will be placed on its Saturn IB launch vehicle. Tests and checkout procedures have been underway on the launch vehicle on the pad for several months.

The Apollo 7 mission will demonstrate performance of the spacecraft's command and service modules, the crew, and the support facilities during an Earth orbital mission nearly 11 days in duration.

A Saturn IB will boost the Apollo into a 120-by-150-nautical-mile orbit with a mid-morning launch from Cape Kennedy Launch Complex 34.

During the second revolution, the flight crew will separate the Apollo from the rocket's upper stage and perform a transposition and simulated docking maneuver similar to the one to be performed on a mission to the Moon.

The first two Apollo service propulsion system burns will establish orbital parameters for rendezvous with the rocket's upper stage approximately 30 hours into the mission. The Apollo service module reaction control system thrusters will be used for final phases of the rendezvous.

Thirty minutes of station keeping with the rocket stage will follow the rendezvous.

Primary emphasis during the mission will be demonstration of Apollo subsystem operations. A series of five additional Apollo service propulsion system burns will be performed under various control modes.

An eighth burn will be a de-orbit maneuver, under control of Apollo's guidance and navigation subsystem.

Reentry will be controlled manually by the crew, with splashdown in the Atlantic at approximately 7 a.m. EDT on the 11th day.

Astronaut Schirra has flown two previous space missions. On October 3, 1962, Schirra piloted his Sigma 7 Mercury spacecraft on a 9-hour, 6-orbit near-perfect space flight. In mid-December 1965, Schirra teamed up with Tom Stafford to accomplish the world's first rendezvous in space. The Gemini 6 spacecraft rendezvoused and maneuvered to within one foot of Gemini 7.

This will be the first space flight for Eisele and Cunningham.

Live television from the Earth orbiting Apollo is planned. A TV camera has been flown previously aboard the Mercury flight of Astronaut Gordon Cooper.

THREE NASA astronauts (from left) Joseph Kerwin, Vance Brand, and Joe Engle, are suited in preparation to start a 7-1/2-day space flight in the Apollo spacecraft 2-TV-1 mounted in the huge vacuum chamber at the space environment simulation laboratory, Manned Spacecraft Center. The tests will check out the integrated systems operation, procedures--both normal and malfunctions--the controls, displays, and crew provisions to certify the Apollo spacecraft for the first manned Apollo space flight.

PRIMATE STUDY CONTRACTS EXTENDED

Contracts valued at more than $1 million have been awarded to two companies by Langley Research Center to build and test non-flight demonstration models for the Orbiting Primate Experiment.

The contracts are continuations of preliminary conceptual design studies conducted by the two contractors last year. For the new work the Lockheed Missiles and Space Company, Sunnyvale, California, will receive $579,000 and the Northrop Systems Laboratories, Hawthorne, California, $588,313.

The studies are part of NASA's Human Factors Systems Program to provide through research the technology required to support man during extended missions in space. Langley Research Center is managing the research contracts for the Office of Advanced Research and Technology.

Studies made under the previous contracts established that an orbiting primate experiment might be possible at some future time but left unresolved a number of questions about the adequacy of the life support design concepts suggested.

Under the new contracts, non-flight demonstration models will be built and later tested with rhesus monkeys as test subjects.

WANTED: Driving combination from Portsmouth to W.A. on 7:30 shift. Darden, 4509.

WANTED: Ride from Glen Gardens Apts. to W.A. on 8 shift. Fixx, 4561.

FOR SALE: Sailing dinghy with small trailer - $98. Smith, 851-0973.

FOR SALE: Large G.E. electric range. James, Hayes 642-4109.
ELEVEN RECEIVE HONORARY AWARDS

Eleven employees recently received Honorary Suggestion Awards under the Center's Incentive Awards Program. The award is in the form of a certificate which becomes a permanent part of the employee's personnel record. It gives recognition to an individual who has made a suggestion that has been accepted and put into use. The Honorary Suggestion Award is presented when a cash award is inappropriate because the suggestion is related to the employee's regular duties.

Awards were presented to the following:

Lewis E. Thurston Jr., Philip H. Glaude, and Joseph P. Budik, all of the Fabrication Division, were honored jointly in recognition of a suggestion relative to the employment of a dual vacuum system for efficient measuring of particle sizes exceeding 250 microns.

Edward L. Hoffman, Structures Research Division, for the elimination of parking congestion on the south side of Moffett Road near the intersection of Taylor Road.

Frank G. Read, Space Mechanics Division, for a suggestion relative to increasing Center awareness of government technical information sources which has resulted in increased distribution of the Electronics Reliability Group Bulletin by the Flight Instrumentation Division.

Jerry G. Williams, Applied Materials and Physics Division, and Hubert E. Powell Jr. and Harold R. Long, both of Research Support Division, were honored jointly for the development of variable stress and strain rate servoinstrumentation which will replace normally procured loading instruments.

George J. Magnus, Planning Control Unit, for the construction of cathodes for the 20-inch hypersonic arc-heated tunnel by means of investment casting and stamping of component parts which has resulted in increased man-hour savings.

Clarence M. Cole, Fabrication Division, for the development of a new method for securing electrodes which are used in electrical discharge machines and which concurrently provide positive alignment of the electrode with the machine spindle.

A. Edgar Barker, Research Support Division, for the adoption and use of a cable adapter box and an automatic cable checker for examining cable conductors which has resulted in significant man-hour savings over previous methods.

3 UNUSUAL AIRCRAFT ACTIVE

Three of the world's most unusual aircraft—the highest and fastest flying, the largest supersonic and the smallest wingless craft—were flown within a 24-hour period last month by NASA.

The XB-70A, X-15A, and the HL-10 lifting body were flown at Edwards, California, by four civilian pilots of NASA's Flight Research Center.

The unique aircraft are all performing vital research tasks in NASA's space and aeronautical programs.

The flight series began Tuesday morning, June 11, at 11:07 a.m. EDT, when the HL-10 was air-launched on a four-minute flight from a B-52 aircraft. It was the second check-out flight for the pilot, John A. Manke, who was recently assigned to the lifting body program.

Two hours later the huge B-70 went aloft to obtain in-flight data for use in the development of the proposed supersonic transport. The flight was cut short after 69 minutes because of a faulty hydraulic system. Pilot and co-pilot were Donald L. Mallick and Fitzhugh L. Fulton.

The X-15 was dropped from a B-52 carrier at 11:32 a.m. EDT, to carry out an experiment to measure the Earth's horizon from an altitude of 40 miles. Data obtained from the experiment will be used by NASA to define more clearly the Earth's horizon for use as a navigational reference for the Apollo spacecraft on its return flight to Earth from the moon. The pilot was William H. Dana.
KNOW YOUR CREDIT UNION

The Truth-in-Lending bill has passed the Congress and been signed into law. It will require creditors, as of July 1969, to disclose the rate of interest or service charge in both annual terms and dollar amounts. This will eliminate the addition of so-called service fees, points, credit checks, etc., after a rate is quoted as is now sometimes the case. Such charges will have to be included in the dollar cost of the loan.

With every creditor required to quote financing terms in this manner, it will become much clearer that 6% discount loans are really 12% per annum, that the 1-1/2% per month usually charged by department stores is 18% per annum, and that the 2-1/2% per month of small loan companies is 30% per annum. For the first time, users of commercial credit will have an opportunity to take simple and reliable comparisons.

Unfortunately, the value of the Truth-in-Lending bill will be only as great as the consumer’s desire to shop for credit and determine cost before financing. The number of people that will obtain bargain prices on their purchases only to lose the savings on their financing is past belief.

Don’t wait until next year; start now to ask questions about the credit cost of any purchase. Shop around. Include a check with your Credit Union before you make a commitment. It will cost nothing and may save you a worthwhile sum.

And now for two members a special bonus—provided they read this far. Will Account No. 10401 and Account No. 21710 please call extension 3606 for their reward?

PORTHOLE view shows three of four crewmen performing tasks in test chamber that was operated continuously for 28 days at the Langley Research Center. Three four-man teams worked in eight-hour shifts under normal gravity as operation of the Integrated Life Support System (ILSS) was evaluated. Primary purpose of the testing was to see how well the integrated water management and atmospheric subsystems operated, such as reprocessing water and regenerating oxygen. The ILSS will be used later to simulate aspects of long duration space missions. During the 28-day test, concluded June 17, the oxygen-nitrogen atmosphere (21% oxygen) was maintained by the chamber system at normal sea level pressure, 14.7 pounds per square inch.

NASA SOFTBALL LEAGUE

With the second round of play now underway, a close race for the championship still prevails. Ballbusters continued their winning ways on Monday with a crucial 8-6 victory over the Packers. ACD continues to hold down second place with recent 8-0 and 13-11 victories over KNADS and Packers, respectively.

The standings as of July 9 are: Ballbusters 7-0, ACD 8-1, KNADS 7-2, Marauders 5-4, Packers 4-4, Al’s Owls 4-5, Jim’s Gems 2-6, Swingers 1-8, and LTV 0-8.

ACD and Ballbusters were scheduled to meet on Wednesday of this week with first place in the league handing in the balance.
CO-OPS RECEIVE RECOGNITION

Three Center Co-operative Education Students were recently recognized for scholarship in their respective fields.

Don Amos, a junior in Aerospace Engineering from the University of Missouri in Rolla, won third prize in the Central America Region competition of the American Institute of Aeronautics and Astronautics annual student paper contest. His paper, entitled “An Investigation of Static and Dynamic Responses of Plexiglass Burst Diaphragms,” was chosen on content and on his oral presentation by a panel of technical judges in St. Louis. Students from colleges in Missouri, Indiana, Illinois, Iowa and Kansas competed in the contest. Amos is currently assigned to the Landing and Impact Branch, Dynamic Loads Division.

Dennis Nord, a Physics major from Drexel Institute of Technology, received a three-week travel grant to England and Scotland from the Philadelphia Branch of the English Speaking Union of the United States. Nord was recently assigned to the Photo-Electronic Instrument Section of IRD, and is now in his final year at Drexel.

David E. Eberle, majoring in Physics at Georgia Institute of Technology, has been inducted into Tau Beta Pi, an honorary engineering society. Eberle recently completed his final work assignment at the Center in the Materials Radiation Lab, Applied Materials and Physics Division.

EXTRA PRECAUTIONS NEEDED

During the past few weeks Government agencies all over the country have been employing people for the summer. Past experience has shown that these valued employees need extra safety supervision to prevent them from injuring themselves or other people because of their inexperience, enthusiasm, or curiosity.

The chances of these young people getting hurt can be reduced by placing a little more emphasis on safety and fire protection in the routine indoctrination procedures they receive as soon as they report to work. To insure that their employment is a pleasant and profitable one for all, a little extra time and effort may be required from their immediate supervisors in giving step-by-step job instructions and being careful to explain all the “whys” and “wherefores” of the safety precautions. After they have mastered the correct job technique, a little closer follow-up may be required. It has been shown to be dangerous to assume that they know what appears to an older timer to be common sense or obvious facts, when, by reason of their inexperience, they cannot be expected to know.

The employment of these young people for the summer can be a profitable experience for everyone, but it will take extra care, especially by the supervisor.

FOUND: Man’s light brown sweater on softball field near Bldg. 1244. Whitehurst, 4818.

FOR RENT: 4-bedroom, 1-1/2 bath, 2-story house in Hampton - partly furnished - available mid-September to mid-June. Young, 838-1632.


FOR SALE: 12 x 15-foot Bigelow wool carpet with cushion. Watkins, 595-2786 after 5 p.m.

FOR SALE: Round 9 x 9 Cabin Craft rug, green over white. Maynard, 595-2133 or 595-1590 after 5:30 p.m.

Technicians inspect the Applications Technology Satellite ATS-D scheduled for launch in late July. The spacecraft will carry TV camera and communications relay systems in a synchronous orbit about the Earth. The launch aboard an Atlas-Centaur vehicle will be conducted by KSC’s Unmanned Launch Operations Directorate. The spacecraft is similar to the ATS-III which is stationed 22,300 miles above the Earth.

SATELLITE TRACKING EARTH OBJECTS

The track of a specially equipped automobile has been located repeatedly within 1,000 feet of its actual route on the Baltimore-Washington parkway by a satellite stationed 22,300 miles above the Earth.

This test is one of several currently being conducted by Goddard Space Flight Center and the ATS-III (Applications Technology Satellite). The auto was moving 60 miles an hour and the satellite was in stationary orbit over Brazil.

In three other tests recently concluded, ATS-III tracked, and located a small boat in Chesapeake Bay, a NASA calibration airplane, and a Coast and Geodetic Survey ship, Discoverer, operating in the Caribbean.

In the OPLE (Omega Position Location Equipment) tests, Goddard engineers were able to determine the position of ships. Preliminary reviews of data indicate accuracy within one or two miles, and aircraft position accuracy within five miles of position in flight. Aircraft position accuracy varies with speed and depends on whether the plane is on a straight or turning course.

The OPLE system, designed primarily as a meteorological experiment for tracking balloons or floating buoys, can receive information from as many as 40 balloons every three minutes. Meteorologists believe that if a system such as OPLE can track several hundred balloons on a global basis, new light will be shed on wind circulation in the atmosphere and its effect on weather.

LANGLEY SPEEDWAY... Center staff members will be hosted at the Langley Speedway tomorrow evening. Trial time is 7:15 p.m. followed at 8 o'clock by two modified 10-lap heats, two hobby 10-lap heats, one 25-lap feature, one 20-lap for cadet cars, and a 100-lap feature. The cost will be held at half-price again this year at $1.50 per person with children under 12 years of age admitted free. Tickets are available from your District Representatives.

SPORTSMAN'S NIGHT... The Activities Association is sponsoring the second in a series of programs for the sportmen of NASA, their families and friends at 7:30 p.m. on July 10. A color film entitled "Unchained Goddess" will be featured. Boating equipment will be on display and a question and answer period will be conducted by personnel of the United States Coast Guard Auxiliary, Flotilla 61.

WESTERN NIGHT... The Association is sponsoring a night of music for the western music fans. Dancing will start at 7:30 p.m. to the music of the Blue Mountain Boys. The date is July 20 and the place is the Activities Building. The cost is being kept at a minimum of fifty cents per person. There will be an introduction to square dancing later in the evening. Bring the entire family. Tickets are available from representatives or at the door.

SOFTBALL... Tickets are being given to all who wish to attend the softball game between Fox Hill and Camden, North Carolina, on July 28 at 7:30 p.m. at the Fox Hill ball park. By presenting these tickets and fifty cents (half-price) at the ball park you will be admitted to a softball game that should be one of the best of the season. Bring the entire family.

LANGLEY TENNIS CLUB NEWS

The Langley Tennis Club played Hidenwood on June 29 with the following results:

Singles - W. Heath (H) over L. Kelly (L) 10-5; C. Ruhlin (L) over S. Barham (H) 10-1; R. Larsen (H) over R. Murray (L) 6-2, 6-4; R. Summerlin (L) over J. Gregory (H) 10-1; R. Turner (L) over B. Barnett (H) 10-6; and E. Goyette (L) over W. Craig (H) 10-6.

Doubles - Kelly and Ruhlin (L) defeated Barham and Larsen (H) 6-2, 6-4; Summerlin and Murray (L) defeated Messick and Hughes (H) 6-3, 6-2, and Goyette and Compton (L) over Craig and Barnett (H) 4-6, 6-1, 7-5.

Challenge matches and ladder competition results were as follows: B. Boswick over G. Kelling 6-2, 6-2; Boswick over J. Gregory 6-3, 6-2; B. Kepley over E. Anglin 6-2, 6-4; J. Muller over R. Lee 6-0, 6-0; J. Pride over Lee 6-3, 6-0; Kepley over J. Block 6-2, 2-6, 6-4; and N. Silsby over Anglin 6-2, 6-0.

A mixed doubles and men's doubles tournament will be held August 3 and 4. The men's doubles will be open only to club members. The mixed doubles must include at least one club member. For information contact Arnold Mueller, M.S. 239, or Bob Bolton, M.S. 234.

FOR SALE: 5-bedroom, 2-story house in LaSalle Acres - central air conditioning. Brown, 722-1754 after 6 p.m.

FOR SALE: 15-foot Whirlwind wood runabout, 35 hp Evinrude, trailer - $495. Sleigher, 301 N. Mallory St.

FOR Sale: 3-bedroom house with adjoining lot, summer house, pier rights, near Wormley Creek. Ray, 898-5896.

FOR RENT: 2 bedrooms with kitchen privileges in Brentwood. Goodwin, 595-4878 after 5 p.m.

THE NEWLY elected Executive Board of the Activities Association met recently to discuss plans for the coming year. Shown above are seated (from left): Ann Bell, retiring chairman of the arts and crafts committee; Sybil Coleman, incoming chairman of the arts and crafts committee; James Gardner, vice president; Patricia McLean, chairman of the children's committee; Winifred Bragg, secretary; and Joseph Siefring, chairman of the activities committee. Standing - Larry Brumfield, chairman of building and grounds; Ernest Greene, president; Herbert Bouler, social chairman; and Arnold Mueller, treasurer.
NEW RESEARCH FACILITY WILL PLAY VITAL ROLE IN ADVANCING FLIGHT

THE $3.5 million Flight Control Research Facility (left) was dedicated last week by James M. Beggs, NASA’s Associate Administrator for Advanced Research and Technology. In the right photo Edgar M. Cortright (center), Langley Director, greets Beggs on his arrival to Langley. Dr. John E. Duberg, Acting Associate Director, looks on.

SEVENTEEN CANDIDATES NAMED FOR CARNIVAL QUEEN TITLE

In separate contests held throughout the Center last week, 17 organizational units elected candidates to compete for the title of Carnival Queen. The winner will reign over the carnival which will be held August 23 and 24 on the grounds of the Activities Building.

Selection of the queen will be by vote upon purchasing a carnival ticket. Tickets may be purchased from District Representatives for one dollar each. The candidate receiving the largest number of votes will be crowned queen during the carnival events.

Pictures of the 17 candidates are shown on page 8. The candidates and the groups they represent are as follows:

Janet Campbell, Aero-Physics Division.
Patricia Hemeter, Flight Mechanics and Technology.
Ann Chambers, Full-Scale Research.
Janet Vaughan, Fabrication Division.
Sandra Dunn, Flight Vehicles and Systems.
Janice Hunt, Administrative Services.
Patricia Lester, Fiscal Division.
Nancy Johnston, Personnel Division.
Deanne Taylor, Office of Director, Office of Associate Director, Office of Engineering and Technical Service, and Office of Assistant Director for Administration.
Suzanne Ackerman, Research Reports.
Sue Nelson, Analysis and Computation.
Joan Steele, Instrument Research.
Christine Pusey, Dynamic Loads.

(Continued on page 4)

FLIGHT CONTROL RESEARCH FACILITY DEDICATED BY OART'S JAMES M. BEGGS

In his first visit to the Langley Research Center as Associate Administrator for Advanced Research and Technology, James M. Beggs dedicated a new research facility which is expected to play a significant role in the advancement of aeronautical and space flight in the United States.

The $3.5 million Flight Control Research Facility, connected to Langley’s data analysis and computation center, will be used for guidance and control research in support of future manned flight missions and in fundamental studies leading to the optimization of man’s performance in aeronautical and space systems.

Edgar M. Cortright, Director, introduced Beggs and welcomed the guests, including several staff members of the Analysis and Computation Division and the Space Mechanics Division, which will occupy the new structure.

After speaking briefly at the outdoor ceremony, Beggs joined Dr. Floyd L. Thompson, former Director and presently a Special Assistant to Administrator James E. Webb, in cutting a ribbon at the entrance to the facility. Cortright led Beggs and other guests on a tour of the building.

A feature of the facility will be the integration of Langley’s computing equipment into the aerospace simulation complex. It will provide space for the scientists, engineers, and support personnel required to conduct manned flight control and human performance research as well as the
TENPIN NOTICE... Team captains or a representative of teams planning to enter the NASA Tenpin League are requested to attend a meeting at 6:30 p.m. on August 12 at the Activities Building.

PERSONNEL CHANGE... Melvin S. Day has been designated NASA's Acting Director of the Technology Utilization Division in addition to his regular duties as Deputy Assistant Administrator for Technology Utilization. George J. Howick, Director of the Technology Utilization Division since 1966 has resigned from NASA to become the Executive Vice President for the New York Office of the International Research and Marketing Corporation.

I AM MEETING... The NASA Lodge No. 892, International Association of Machinists, will hold its monthly meeting on Tuesday, August 6 at 7 p.m. at the Central Labor Union Hall, Newport News.

NEW HEIRESS... Celebrating the birth of a daughter on June 25 is George L. Maddrea, Research Models and Facilities Division.

AFGE MEETING... The NASA Lodge 2755 American Federation of Government Employees will meet on July 31 at 7:30 p.m. at the Central Labor Union Hall.

SERVICE NOTES... Captain Thomas Harvey, formerly of the Chief Counsel, writes from Viet Nam that he plans to go to a line battalion in about a month. He has just returned from TDY in Saigon and he said he found it a fascinating place.

JOINT CAMPAIGN... A final report on the Joint Campaign showed that 716 staff members donated a total of $5131.85 to the Health Agencies and 455 employees contributed $2031.90 to the International Services.

HOLIDAY CHANGES... President Johnson signed into law legislation establishing four three-day holiday weekends and a new national holiday also to be observed on a Monday. This law goes into effect for Federal and District of Columbia Governments January 1, 1971. Washington's Birthday is moved to the third Monday in February; Memorial Day, to the last Monday in May; and Veteran's Day, to the fourth Monday in October. The new holiday--Columbus Day--will be celebrated on the second Monday in October.

Research in subsonic aerodynamics concerned with the development of advanced aircraft is conducted by scientists at Langley Research Center. Shown is a model of a heavy logistics aircraft being tested in Full-Scale Wind Tunnel to determine the low speed stability and control characteristics. These tests provide data useful for the design and construction of operational logistic transport aircraft.

CAFETERIA MENU

The following menu will be served in the cafeterias during the week of July 29:

Monday - Cream of celery soup, roast ribs of beef, breaded veal cutlet, chicken livers over rice, macaroni and wieners. Snack Bar - Soup, hot dog, veal cutlet on roll, German potato cakes.

Tuesday - Chicken-vegetable soup, barbecued pork chunks, chicken pie, liver and onions, baked hash. Snack bar - Soup, barbecued pork sandwich, hot pastrami sandwich, baked beans, French fries.

Wednesday - Cream of potato soup, Spanish pot roast, grilled ham slice, stuffed pepper, franks and beans. Snack bar - Soup, hamburger, hot roast beef on roll, French fries.

Thursday - Vegetable-beef soup, grilled steak, stuffed shrimp, Polish sausage, western omelette. Snack bar - Soup, hot dog, steak sandwich, French fries.

Friday - Manhattan clam chowder, baked Canadian bacon, Salisbury steak, fried flounder, beef ravioli. Snack bar - Soup, fish sandwich, flying saucer, baked beans, French fries.

The menu for the week of August 5 is as follows:

Monday - Cream of tomato soup, Swiss steak, pork chops, stuffed flounder, cheese omelette. Snack bar - Soup, ham and egg sandwich, hot corned beef sandwich, French fries.

Tuesday - French onion soup, beef stroganoff, baked ham, chicken croquettes, Austrian ravioli. Snack bar - Soup, hot dog, baked ham on roll, French fries.

Wednesday - Vegetable-beef soup, grilled steak, crab cakes, stuffed pepper, baked hash. Snack bar - Soup, hamburger, steak sandwich, French fries.

Thursday - Chicken-noodle soup, chopped steak, shrimp Newburg, fried chicken, Spanish omelette. Snack bar - Soup, western omelette on roll, Lou's satellite special, baked beans, French fries.

Friday - Manhattan clam chowder, roast feeb, ham and noodle casserole, broiled fish, chili con carne. Snack bar - Soup, sea dog, hot roast beef sandwich, French fries.
60 young ladies attending these training sessions were Neighborhood Youth Corps (NYC) enrollees, Youth Opportunity Campaign (YOC) employees, and Summer Student Trainees.

MYERS NAMED TO NEW POST

Boyd C. Myers, former Langley Staff member, has been named NASA Deputy Assistant Administrator for Administration.

He leaves the position of Deputy Associate Administrator for Operations in NASA's Office of Advanced Research and Technology where he has been responsible for the management of administrative activities.

In his new responsibilities, he will assist Assistant Administrator William E. Lilly in functional management responsibilities in the areas of budget, personnel management, facilities management, transportation and logistics management, property and supply management, financial management and security.

Myers brings long experience in these areas to his new position. He has been with NASA since its inception and was associated with the National Advisory Committee for Aeronautics, NASA's predecessor agency.

He is a 1946 graduate of the Virginia Polytechnic Institute where he received a B.S. degree in Aeronautical Engineering. His college studies were interrupted by two years of military service with the Army, Navy and Air Force. He also took a University of Virginia Extension course at Hampton.

Myers joined the Langley Center staff in January 1947 as an Aeronautical Engineer. In 1950 he was assigned to Headquarters as an Aeronautical Research Scientist. Eight years later he was named Chief, Operating Problems Research Division.

In 1960 he was named Technical Assistant to the Director, Office of Advanced Research Programs, with responsibility for program planning and coordination.

WANTED: Driving combination or ride from Chestnut Ave. to W.A. on 7:30 shift. Gray, 826-3551.

WANTED: Good home for 2-year old AKC registered male Cocker Spaniel. Williams, 838-3451.

FOR SALE: Mini-sail fiberglas boat. Green, 723-0687.

FOR SALE: Four-blade bronze propeller for 60 to 75 hp McCulloch or Sear's outboard motor. Whitehead, 596-9172.

A new technological survey of electromechanical transducers is now being conducted under sponsorship of NASA's Technology Utilization Division. Langley Research Center is a major participant in this state-of-the-art review of an important area of "hardware." Emphasis will be given to recent contributions of new transducer technology from NASA.

The final product of this effort will be available to industry and the public in the form of a soft-back "textbook" on the subject (NASA T.U. Special Publication in the 500 Series). Such publications receive widespread acceptance and distribution. Improved consumer items and other benefits such as biomedical applications will result from this new technology transfer.

Major Langley "inputs" to this publication will come from the Instrument Research Division and the Flight Instrumentation Division; however, if you are interested in participating in this worthwhile venture, please contact your T.U. Office. Arrangements for interviews with the author, Henry Karplus, are being made through the T.U. monitors in each of Langley's division offices. Karplus has authored numerous publications, primarily in the field of acoustics and should, with our help, provide a publication of highest quality and value.


FOR SALE: 1963 Falcon, 4-door. Wright, 868-9580.

FOR SALE: 4-bedroom, 2-1/2-bath, tri-level, brick home in Riverside - double garage, utility room, eat-in kitchen, formal dining room. Stroyan, 596-0465.
NINE AWARDS PRESENTED AT DEDICATION CEREMONY

During the dedication ceremony of the Flight Control Research Facility on July 16, one group achievement award and eight individual awards were presented to staff members.

The Langley Research Center Group Achievement Award was presented to the Digital Computer Complex Group “in recognition of the Langley Research Center Digital Computer Complex Group whose outstanding performance and dedicated efforts in combining unique concepts in computer organization and operating systems has significantly contributed to the development of one of the most outstanding research computer installations in the United States.”

Special Service Awards for Exceptional Scientific Achievement were presented to Paul F. Fuhrmeister, Chief of the Analysis and Computation Division; Thomas B. Andrews, Associate Chief of ACD; Maurice K. Morin, Head of ACD’s Program Techniques Branch; and Milner H. Eskew, Head of ACD’s Data Systems Branch.

The citations read as follows:

Fuhrmeister - “For exceptional scientific achievement in the computing, data handling, and real-time simulation activities of the Langley Research Center, as manifested by his conceptual design, and implementation of the Langley Research Center Digital Computer Complex which embodies new concepts in computer organization and operating systems having a pronounced effect in the computer industry, thereby providing the Center with one of the most outstanding research Computer installations in the country; and for his contributions as Chairman of the NASA Intercenter Committee on Automatic Data Processing.”

Andrews - “For his outstanding technical contribution in formulating the plan of acquisition for the Langley Research Center Digital Computer Complex and for his development and implementation of acceptance testing concepts which assured the reliable system operation of the project.”

Morin - “For his outstanding technical contributions to the systems design and operation systems software of the Langley Research Center Digital Computer Complex.”

Eskew - “For his outstanding technical contributions to the design of subsystems hardware for the Langley Research Center Digital Computer Complex which has had pronounced effects on current state-of-the-art developments.”

Special Service Awards for Exceptional Service were presented to Mickey G. Rowe, Elmer F. Smith, and Joseph W. Young, all of ACD. The citations read as follows:

Rowe - “For his conception and development of comprehensive plans and procedures for software integration and quality assurance testing and analysis and coordination with the operations staff of the Langley Research Center Digital Computer Complex.”

Smith - “For his outstanding effort in integrating the computer with the facility of the Langley Research Center Digital Computer complex and its services.”

Young - “For his subsystem design which considered the computational power required, the programming language, the stringent response times and the speed and accuracy necessary for continuous and realistic closed loop simulations within the Langley Research Center Digital Computer Complex.”

RECEIVING special awards at the dedication ceremony of the Flight Control Research Facility on July 16 were front row (from left): Thomas B. Andrews Jr., Joseph W. Young, Paul F. Fuhrmeister, and Maurice K. Morin. Back row - Milner H. Eskew Jr., Mickey C. Rowe, Elmer F. Smith, and Bill D. Heriford.

QUEEN CANDIDATES NAMED

(Continued from page 1)

Judy Neal, Structures Research.
Betty Branch, Procurement Division.
Anne Stahl, Space Mechanics Division.
Susan H. Holloway, Research Models and Facilities.

The portraits of the candidates were taken by William E. Frazier, Photographic Division.

TRYOUTS: The Peninsula Civic Opera Association will hold tryouts for its forthcoming production of “Oliver” on Monday, Tuesday, and Wednesday, August 5, 6, and 7, at 8 p.m. at the Opera Warehouse, 226 31st St.

FOR SALE: Victorian sofa - $70. Costen, 838-2860.
FOR SALE: 3-bedroom, 1-1/2-bath house in Bethel Park, assume 5-3/4% FHA loan. Spruill, 826-2251.
FOR SALE: Small upright piano made in Germany, also 35-foot Chris Craft cabin cruiser. Davis. 244-7285.
FOR SALE: 55-foot, 3-bedroom Troy Mobile home with air conditioning. Kahlbaum, Gloucester 642-4118.
FLIGHT CONTROL RESEARCH FACILITY
(Continued from page 1)

allied research and development work in computing techniques and advanced simulator technology.

The facility provides a high ceiling area for two 40-foot-diameter visual cue projection spheres for use in aeronautical and space research.

There will be visual cue generation and simulation control equipment, fixed base crew stations, and checkout and program preparation areas. In the fixed base facilities, the crew will remain stationary and the visual cues and simulation will provide the effect of motion during research.

A human performance laboratory will be used to study such problems as information sensing, display, interpretation and decision-making, and human characteristics in man-machine systems.

A Differential Maneuvering Simulator (DMS) will be established at the facility and is expected to go into operation in early 1970. By making beneficial use of Langley's central computer complex, it will be able to perform a vital role in manned vehicle design research.

The DMS will be compatible with research in aeronautical, spacecraft and human factors problem areas requiring human decision processes in flight. It will provide Langley with a unique capability to study problems involving operational vehicles and to accomplish the very necessary function of including human pilot inputs with vehicle performance to fulfill the objective of realistically evaluating and optimizing flying qualities.

Prime contractor for the Flight Control Research Facility was Basic Construction Company of Newport News. Work was started on the facility in 1966. The building is located in the West Area and is No. 1268-A.

During his one-day visit, Beggs received a briefing on the highlights of Langley's aeronautical and space program and inspected other research facilities before returning to Washington.
DISQUALIFICATION FOR ENGAGING IN RIOTS AND CIVIL DISORDERS

The following information is from the recently enacted Public Law 90-135 which amends title 5 of the United States Code:

Section 7313. Riots and civil disorders

"(a) An individual convicted by any Federal, State, or local court of competent jurisdiction of--

(1) inciting a riot or civil disorder;

(2) organizing, promoting, encouraging, or participating in a riot or civil disorder;

(3) aiding or abetting any person in committing any offense specified in clause (1) and (2); or

(4) any offense determined by the head of the employing agency to have been committed in furtherance of, or while participating in, a riot or civil disorder;

Shall, if the offense for which he is convicted is a felony, be ineligible to accept or hold any position in the Government of the United States or in the government of the District of Columbia for the five years immediately following the date upon which his conviction becomes final. Any such individual holding a position in the Government of the United States or the government of the District of Columbia on the date his conviction becomes final shall be removed from such position.

(b) For the purposes of this section, "Felony" means any offense for which imprisonment is authorized for a term exceeding one year."

The provisions of the new section 7313 apply only to acts committed after the date of enactment, June 19, 1968. They apply to acts of both Federal employees and applicants for Federal employment committed after that date. Acts committed on or before the date of enactment, while not subject to the new section, may, of course, be the basis of disciplinary action under an agency's regular authority.

COURSES OFFERED EMPLOYEES

At a meeting of faculty members of the School of Engineering and Applied Science of the George Washington University and Langley Research Center officials, a schedule of classes for the fall semester was proposed. Classes will start during the week of September 6. The courses offered and the instructors are as follows:

Mathematical Methods in Applied Science I, Dr. Edwin T. Kruszewski and Dr. Manuel Stein

Mathematical Methods in Applied Science II, Dr. Robert E. Fulton

Kinetic Theory of Gases, Dr. E. Carson Yates, Jr.

Analytic Mechanics, Dr. Manuel J. Queijo

Advanced Dynamics, Dr. John P. Raney

Statistical Thermodynamics, Dr. Wayne D. Erickson

Classical Thermodynamics, Dr. Andrew R. Saunders

Heat Transfer I, Dr. Walter B. Olstad

Electromagnetic Waves, Dr. William F. Croswell

Switching Networks, M. Melvin Bruce

Machine and Assembly Language Programming, Maurice K. Morin

Communication Theory I, Dr. Melvin D. Aldridge

Automatic Control Systems I, Dr. Clifford L. Fricke

Staff members interested in registering for the courses are requested to call Training Branch, telephone 2611.

FOR SALE: Mixed Collie and German Shepherd puppies - $15 each. Barbour, 723-6967 after 5 p.m.
**EARTH'S MAGNETIC TAIL**

The Earth's magnetic tail may be far shorter than some scientists have thought.

Flight of the Pioneer VIII spacecraft through the tail region at 1,750,000 miles from the Earth last January produced some surprises. Instead of having the smooth cylindrical structure expected at this distance, the tail was more like a turbulent wake.

The Pioneer Project is managed by Ames Research Center at Moffett Field, California.

The tail is the extension of the Earth's protective magnetic envelope (the magnetosphere), blown into a long, comet-like tail by the solar wind.

Studies of the tail help man to understand the relationship of the Earth's magnetic field and the solar wind. The Earth's field and the solar wind establish the magnetosphere, which protects the Earth and man from solar particle radiation.

The Earth's field is known to have undergone large changes, and currently is declining in strength. Recent measurements also indicate that solar particle bombardment, as channelled by the magnetosphere, may possibly affect the Earth's weather circulation.

The solar wind is the million-mile-an-hour flow of particles, constantly moving from the Sun's surface toward the edges of the solar system.

Certain theoretical calculations suggest that the tail could be 200 million miles long; others suggest that it is relatively short. However, when Pioneer VII flew through the tail in September 1966 at 3.5 million miles from the Earth, it found long periods when the solar wind was completely or partially blocked out. This suggested that the spacecraft had seen the end of the well-organized tail region.

While all Pioneer VIII data have not been analyzed, conditions in the tail at 1.75 million miles appear to be much the same as at 3.5 million miles, according to Dr. John Wolfe, Pioneer project scientist. He now is inclined to think the tail may have successive turbulent and smooth areas.

Pioneer VIII probably has taken man's last "look" at the extended tail for five years, Pioneer Project Manager Charles F. Hall said, because no further missions through that region are planned.

Measuring the tail closer in than 1.75 million miles is difficult, he says. A spacecraft on the long elliptical orbit needed to go closer in would be near escape speed. If escape occurred, it would be lost in interplanetary space. An interplanetary spacecraft passing this close in could easily be trapped in Earth orbit.

**SPECIFICATIONS:** Effective immediately, information pertaining to or copies of the following (if required), may be obtained by submitting a memorandum or phoning the Engineering Contract Support Section, Mail Stop 228, phone 4445 or 4551: Federal Specifications, Federal Qualified Products List, Federal Standards; Military Specifications, Military Standards, Joint Army - Navy Specifications (JANS), NASA Standards, National Aerospace Standards (NAS), and AN and AND Standard Drawings.

**FOR SALE:** 16-foot fiberglass boat with 35 hp Johnson motor, water skis, tow rope, new long trailer - $750. Harris, 868-7086.

**WANTED:** Alternate drivers from Robinson Rd. and Bruton Pk. to E.A. on 8 shift. Owsley or Haynes, 2695.

**WANTED:** Fifth driver from Riverdale to W.A. on 8 shift. Howe, 4724.

**FOUND:** Pair of horn rimmed glasses. W. Cafeteria, 4475.

**WANTED:** Drive from Southampton to E.A. on 8 shift. Powell, 2553.

**WANTED:** Girl's 24-inch bicycle. Johnson, 877-0842.

**WANTED:** Driving combination from Norfolk to W.A. on 7:30 shift. Hudgins, 4842.

**WANTED:** Set of World Book Childcraft. Crumbly, 851-2002.

**LANGLEY TENNIS CLUB NEWS**

The Langley Tennis Club will hold its men's doubles tournament on August 3 and 4. The tournament is open only to club members.

The mixed doubles has been postponed until August 10 and 11. Each team must include one club member. For further information contact Dick Pincus, M.S. 254; Bob Murray, M.S. 258; or Arnold Mueller, M.S. 239.

Challenge matches and ladder competition results were as follows: Joe Pride over Bill Compton 6-4, 6-3; John Gregory over Joe Drozdowski 6-3, 2-6, 6-1; Pride over Bryce Kepley 6-4, 6-3; Kepley over Dick Layman 6-1, 6-1; and Robert Lee over John Shipp 2-6, 6-2, 6-4.

**PROFESSOR TO VISIT HERE**

Dr. Fred DeJarnette, Head of the Aerospace Department, Virginia Polytechnic Institute, will visit the Center on August 5 to discuss the graduate program at VPI.

Staff members interested in talking with Dr. DeJarnette may call Training Branch, telephone 2611, for an appointment.

**FOR SALE:** 3-speed reversible window fan. Youngblood, 877-1224.
CANDIDATES FOR LANGLEY CARNIVAL QUEEN

Suzanne Ackerman
Research Reports

Betty Branch
Procurement

Janet Campbell
Aero-Physics

Ann Chambers
Full-scale Research

Sandra Dunn
FVSD

Patricia Hemeter
FMTD

Susan Holloway
RMFD

Janice Hunt
Administrative Services

Nancy Johnston
Personnel

Patricia Lester
Fiscal

Judy Neil
Structures Research

Sue Nelson
Analysis and Computation

Christine Pusey
Dynamic Loads

Anne Stall
Space Mechanics

Joan Steele
Instrument Research

Deanna Taylor
Office of Director

Janet Vaughan
Fabrication Div.
CARNIVAL TICKETS AVAILABLE; PRIZE DRAWINGS ANNOUNCED

Tickets are available from District Representatives for the Carnival which will be held Friday and Saturday, August 23 and 24 on the grounds of the Activities Building. The tickets are one dollar each. By purchasing a ticket the buyer is eligible for the ground prizes and he may also vote for his choice for Carnival Queen.

Ground prizes will be given away every 20 minutes. The big prize on Friday night will be a Home Entertainment System and the grand prize on Saturday night will be a 15-foot Sunset Travel Trailer. Winners of the prizes must be present for all drawings except the two grand prizes.

Drawing times and the prizes to be given away are as follows:


Friday night will close with the Queen's Coronation and a dance to the music of the Lyrics.

Saturday: 2 p.m. - $100 U.S. Savings Bond, 2:20 - Motorola AM portable radio, 2:40 - Shakespeare rod and reel, 3 - Cosco folding table and chairs with serving cart, 3:20 - His and Hers Timex watches, 3:40 - 41-piece barware set, 4 - Panasonic portable TV, 4:20 - Toastmaster oven.

(Continued on page 8)
NEW ARRIVALS. Word has been received at the Center that Ann Worth, formerly of Space Mechanics Division, became the mother of an eight pound, four ounce daughter, Patricia Loraine, on July 12. Announcing the birth of a six pound, three ounce daughter, Elizabeth Nina, on July 30 are Betty, Analysis and Computation Division, and Gilbert H. Walker, Applied Materials and Physics Division.

NOTE OF THANKS. Wilma S. Betts, who recently retired from the Procurement Division, wishes to express her thanks to her many NASA friends who helped to make her retirement such a memorable occasion.

NURSERY SERVICE. Arrangements have been made with the Base Nursery so that parents may leave children there during the carnival. Reservations must be made for children under 14 months or not walking. The cost is 40¢ per hour for one child, 60¢ per hour for two children, and 10¢ for each additional child. They will also serve supper to the children at 6 p.m. For additional information or to make reservations, call 764-3449.

DUCKPIN NOTICE. Team captains or representatives of teams planning to enter the NASA Duckpin League are requested to attend a meeting at 4:30 p.m. on August 15 at the Activities Building. Interested teams who cannot be represented at the meeting should call John Moore, 4483.

GOLF TEAM. NASA defeated Sturgis Business Forms 15-9 in a recent Peninsula Industrial Golf League match held at Suffolk Golf Club. Don Robinson, IRD, was low gross winner with a 5 over par 77. Bernie Garrett, AMPD, was runner-up with a 79. Low net honors went to Walter Bresette, AMPD, with 83-12, 71 and low net runner-up was Bill Rouse, IRD, with 84-13, 71. The next NASA match will be with the Newport News Shipbuilding and Dry Dock Company on August 25 at the Newport News Municipal Course.

HENRY Klick (left), manager of the Langley Speedway, presents a $25 U.S. Savings Bond to George Poole, Research Support Division. Poole was the representative who sold the most tickets for NASA night at the speedway.

CAFETERIA MENU

The following menu will be served in the cafeterias during the week of August 12:

- Monday - Cream of celery soup, corned beef and cabbage, breaded veal steak, meat loaf, fish cakes. Snack bar - Soup, hot dog, veal cutlet on roll, French fries.
- Tuesday - Puree of bean soup, hot turkey sandwich, grilled ham, fried fish, Spanish omelette. Snack bar - Soup, ham and egg sandwich, sliced turkey on roll, French fries.
- Wednesday - Vegetable-beef soup, pot roast, grilled pork chops, fried chicken, Irish omelette. Snack bar - Soup, barbecued pork, hot roast beef on roll, French fries.
- Thursday - Chicken-noodle soup, grilled steak, chicken Chow mein, fried fish sticks, grilled cheese sandwich. Snack bar - Soup, grilled cheese, steak sandwich.
- Friday - Manhattan clam chowder, roast ribs of beef, liver and onions, fried fish, baked hash. Snack bar - Soup, hamburger, hot corned beef sandwich, French fries.
- Tuesday - Split green pea soup, baked Virginia ham, chuckwagon steak, stuffed pepper, cheese omelette. Snack bar - Soup, cheeseburger, hot pastrami, French fries.
- Wednesday - Chicken-noodle soup, chicken and dumplings, beef pan pie, stuffed flounder, macaroni and wiener. Snack bar - Soup, hot dog, chuckwagon steak on roll.
- Thursday - Vegetable-beef soup, grilled steak, baked Canadian bacon, salmon loaf, chili con carne. Snack bar - Soup, barbecued pork, steak sandwich, French fries.
- Friday - New England clam chowder, roast beef, boiled ham, fried fish, Austrian ravioli. Snack bar - Soup, sea dog, hot roast beef sandwich, French fries.

WANTED: Ride or driving combination from Old Farm Estates-Glendale area to W.A. on 8 shift. Kyle, 595-3923.
FOR SALE: Four 6.50-13 white wall tires with rims and wheel covers - will fit 1960-68 Valiant or 1963-68 Dart - $30. Posey, PA2-1324.
FOR SALE: Day-bed with cover - $12. White, 596-6764.
LINDSAY HEADS FGAA GROUP

Thomas L. Lindsay, Staff Accountant, Fiscal Division, has been elected President of the Virginia Peninsula Chapter of the Federal Government Accountant’s Association for 1968-1969.

Other officers elected are: William Ferrebee, Defense Contract Audit Agency, Vice President; Walter Ritchie, Fort Eustis, Secretary; and Ernest Eldor, Fort Monroe, Treasurer.

The Peninsula Chapter was founded in 1960. The FGAA has 50 chapters all over the world including the Canal Zone, Frankfurt, Hawaii, Paris, and Tokyo. For the past 17 years they have sponsored a national symposium annually which is recognized as an outstanding event and held in high respect by the President of the United States and the Civil Service Commission. Lindsay recently returned from the 1968 symposium held in Denver, Colorado, where over 500 Government accountants were in attendance.

Membership in the Association is open to all professional financial management employees of the Federal Government. Edward A. Howe, Chief of Fiscal Division; Eugene W. Fadely, Head of Accounting Branch; and Joseph R. Sturhar, Assistant Head of Accounting Branch, are past presidents of the local chapter.

Lindsay was born in Newport News. He graduated from Newport News High School and attended Old Dominion College in Norfolk. Before joining the Center staff, he was employed by the U.S. Army at Fort Eustis. He entered on duty at Langley on June 25, 1963.

LANGLEY TENNIS CLUB NEWS

Second-seeded Ed Riddle and Dick Pincus upset top-seeded Ed Kilgore and Jackie Butler Sunday afternoon to win the first annual NASA doubles tennis tournament. Pincus and Riddle defeated Kilgore and Butler in straight sets, 6-4, 6-4.

Other results in the tournament were as follows:
- First Round - Joe Drozdowski and Tom Foughner defeated Page Hoggard and Tony Parrot, 6-3, 6-2; Robert Lee and Dick Damato won over Gerald Egan and John Gregory, 9-7, 2-6, 6-2; Bob Shanks and Ron Summerlin defeated Jim Mueller and Bill Batght, 4-6, 6-1, 6-0; Elmer Goyette and Norm Silsby defeated Arnold Mueller and Bill Compton, 6-2, 6-2; Carl Horne and Bruce Kepley won over Milt McLaughlin and Earl Dunham, 6-0, 7-5; and Charles Ruhlin and Joe Pride defeated Lex Barker and Burnell McKissick, 6-0, 6-4.
- Second Round - Kilgore and Butler defeated Drozdowski and Foughner, 6-2, 6-2; Shanks and Summerlin won over Lee and Damato, 6-0, 6-4; Riddle and Pincus defeated Goyette and Silsby, 6-1, 6-2; and Ruhlin and Pride won over Horne and Kepley, 5-7, 6-2, 6-1.
- Semi-Finals - Kilgore and Butler defeated Shanks and Summerlin, 6-1, 6-0; and Riddle and Pincus won over Ruhlin and Pride, 6-4, 6-0.

DR. REID DIES AT AGE 72

(Continued from page 1)

in Springfield as a boy and attended the Technical High School there. He was graduated from Worcester Polytechnic Institute in 1919 with a Bachelor of Science Degree in Electrical Engineering. After graduation, he worked briefly in private industry before coming to Langley.

Dr. Reid was the author or co-author of a dozen technical reports on research he conducted before he was appointed Director. His principal field of interest in the early years was in the design and improvement of a number of basic flight research instruments. In 1930, he teamed with one of his staff members to invent and develop an instrument known as the NACA V-G Recorder, used extensively throughout the world since 1930 to yield data on two details of aircraft operation - velocities and inertial loads.

In 1929, Langley won the first of four Collier Trophy awards for outstanding research achievement. The trophy, described as America’s preeminent aviation honor, was presented for scientific research leading to the development of the cowling for radial air-cooled engines.

With the advent of World War II, Dr. Reid had a three-fold mission at Langley: (1) To provide the specialized research designed to assure Allied air superiority; (2) to direct a major expansion in facilities and personnel at Langley; and (3) to select and help train members of his staff who were destined to establish four new facilities - Ames Research Center, Moffett Field, California; Lewis Research Center, Cleveland, Ohio; Flight Research Center, Edwards, California; and Wallops Station, Wallops Island, Virginia.

Following World War II, three Collier Trophy Awards were won by Langley while Dr. Reid was Director. An award for 1947 was shared with the Air Force and the Bell Aircraft Corporation for contributions to the advancement of supersonic flight. The 1951 award was in recognition of the development of transonic wind tunnels and the 1954 award was for the discovery of the Area Rule, a revolutionary aircraft design concept considered to be the key to practical supersonic flight.

In 1946, Dr. Reid’s alma mater recognized his achievements in the field of flight by awarding him the honorary degree of Doctor of Engineering.

He is survived by his widow, Mrs. Mildred J. Woods Reid; a son, Henry J. E. Reid Jr., Head of Navigation and Guidance Research Branch of Flight Instrumentation Division; and a daughter, Mrs. Phyllis Knofl of Dayton, Ohio.

WANTED: Home for housebroken kittens. Hampton, 851-2923 after 5 p.m.

FOR SALE: Norelco Continental 401 tape recorder, stereo and mono record and playback - $250; large astronomical Selsi telescope, 454 power, with accessories, case and tripod - $150. Beckage, 596-3535.


WANTED: 10,000 btu air conditioner, 2 years old or less. Conrads, 898-2132.
A PROTOTYPE of the Radio Astronomy Satellite, the 38th in NASA's Explorer series, is shown at left. The spacecraft's receiver-antenna system is designed to monitor low frequency radio signals in space. In the right photo the antennas are shown in comparison to the Empire State Building in New York City. Operating at 450 foot lengths, the antenna arrays will be able to resolve the location of radio sources sufficient to meet the spacecraft's mission objectives. At the 750 foot length, fully extended and growing to form a 1500-foot "X", they would be taller than the Empire State Building (1472 feet high) thus doubling the value of the collected information.

RADIO ASTRONOMY SATELLITE WORKING

NASA's Radio Astronomy satellite (Explorer 38) is now fully operational. Project officials are collecting low frequency radio signals from space, many of which have never been heard on Earth.

On July 23, the final antenna was deployed from the spacecraft and the remaining radio astronomy receiving and calibration equipment was turned on. This last antenna is a 120-foot element designed to monitor strong sporadic bursts of radio signals in space. Such signals are generated by the Sun, Jupiter and possibly other sources in space.

At present, the spacecraft is stabilized and all of its support and scientific systems are turned on and functioning normally.

Explorer 38 is orbiting the globe once every three hours and 44 minutes in a circular orbit, which varies only five miles in altitude (3636 by 3641 miles above Earth). The spacecraft is inclined 120.8 degrees (59.2 degrees retrograde) to the Equator.

In this orbit, the spacecraft travels in a direction opposite to the Earth's spin. In effect, it "races the Sun" so that it will remain in sunlight for the next six months before going into the Earth's shadow for a similar period of time. In this manner, the satellite's lengthy antennas will avoid the "thermal shock" of passing into and out of the Earth's shadow daily.

On July 22, project officials at Goddard Space Flight Center extended the four lengthy antennas to a planned length of 455 feet. If the spacecraft's behavior continues satisfactory, the antennas will be extended to their full length of 750 feet each.

NASA SOFTBALL LEAGUE

In their final game of the season, ACD clinched the 1968 softball championship with an 8-3 victory over the Knads. Ballbusters, who led the league most of the season, were knocked out of first place by being defeated three times in succession by ACD, Al's Owls, and the Packers.

Highlights of the season included a triple play by ACD and the possibility of a three-way tie for first place with only a few games left to play for the top place teams. ACD eliminated that possibility by winning their last six games.

Final standings and outstanding individual performances will be published in the next Researcher.

WANTED: Driving combination from Norfolk to W.A. on 7:30 shift. Hudgins, 3071.

FOR SALE: 1965 Chevrolet Impala super sport convertible, 4-speed, new tires. Borbas, 764-4763 or 245-7570.
TEN STUDENT TRAINEES RECEIVE BACHELOR DEGREES

Richard G. Booth, Jr.
St. Joseph's College
B.S., Eng. Physics
Instrument Research

John K. Diamond
Drexel Institute of Tech.
B.S., Electrical Eng.
Flight Instrumentation

Joseph S. Heyman
Northeastern University
B.S., Physics
AMPD

William G. Johnson, Jr.
Virginia Polytechnic Institute
B.S., Aerospace Eng.
Full-scale Research

Irby W. Jones
Virginia Polytechnic Inst.
B.S., Aerospace Eng.
FVSD

Charles E. K. Morris, Jr.
Virginia Polytechnic Institute
B.S., Aerospace Eng.
Flight Mechanics and Tech.

James A. Osborn
Virginia Polytechnic Inst.
B.S., Mechanical Eng.
RMFD

Bruce K. E. Outlaw
Virginia State College
B.S., Physics
Flight Instrumentation

Timothy R. Rau
Virginia Polytechnic Institute
B.S., Aerospace Eng.
Space Mechanics

K. James Weilmuenster
Mississippi State University
B.S., Aerospace Eng.
Aero-Physics

EMPLOYEES DONATE BLOOD

The Red Cross Bloodmobile visited the Center on July 24 and staff members donated a total of 155 pints of blood.

George Kerner completed his quota for a five-gallon pin and Robert W. Mulac reached the four-gallon mark. Three-gallon donors were Thomas M. Desmett, W. W. Stalnaker, and James E. Schmeir. Reaching the two-gallon mark were Harry Compton, Vernon Saunders, Albert E. Gribble, Gordon H. Joehrig, and Francis J. Capone. One-gallon pins were presented to Lewis Burney and Artie D. Jessup.

Assisting during the visit were Dr. E. E. Peltz and Dr. S. K. Ashby.

The next visit will be on September 18. Additional donors are needed to help fill the Center’s quota. New donors may register for this program by calling East Dispensary, 2243.

WANTED: Driving combination from Norfolk to W.A. on 8 shift. Phelps, 4557.
WANTED: Ride or driving combination from Dare to E.A. on 8 shift. Mulqueen, 898-6327.

These new publications, examples of the potential utility of space age technology, may be obtained from your Technology Utilization Office, telephone 3281.
COST REDUCTION PROGRAM

On July 23 the President released a message to all Federal Executive Boards pointing out the special reasons why there should be a positive emphasis on the Cost Reduction Program at this time. The President makes the point that since so much of the Federal activity is in the field, these field operations provide a great opportunity for cost reduction.

After reviewing the President's message, T. Melvin Butler, Cost Reduction Coordinator for the Langley Research Center, commented that while the message was directed to the Federal Executive Boards, it contained some very important considerations for each member of the staff at the Center. With that thought in mind, the message is quoted:

"Three years ago, at my direction, a Government-wide program to reduce costs and improve management was initiated. The results of that program show some progress but there are special reasons why we now need to do much more.

"The resources available to the Federal Government are never unlimited. There simply is not enough to do all the things that should be done. Cost reduction is a positive force that enables us to accomplish more of our programs within the resources that are available.

"On June 28 I signed Public Law 90-364, which requires significant program readjustments. The Federal Government must reduce spending and lending by at least $6 billion below my original estimates for fiscal year 1969. It will also be necessary to restrict hiring until total civilian employment in the Executive Branch is reduced to its June 1966 level.

"I have asked the heads of the departments and agencies to make every dollar go further; to make sure every Federal employee is being used in the most effective way possible. The vast majority of the employees of the Federal Government are not in Washington. For the most part, our programs are carried out, and our costs are incurred by employees who are out in the countryside and cities. These field operations provide a great opportunity for cost reduction.

"You who are members of the Federal Executive Boards are close to the men and women in these programs and you are in a good position to spearhead positive actions to improve effectiveness and efficiency.

"I am pleased with what you have done, working together, to reduce costs. Such things as sharing data processing resources and conference rooms, libraries, reproduction facilities, and motor vehicles all have been instrumental in helping us get more program results out of our resources. Recently you have been improving your ability to act in concert to carry out joint public programs. Greater coordination among agencies in the field is essential to efficient program execution.

"More than ever before, the continued strength of this country depends upon our ability to provide for national security, to meet our international obligations, and to pursue important endeavors here at home within budget limitations that will enable us to maintain a sound and healthy economy. To do this your country is depending on you to reduce expenditures by finding better and less costly ways to accomplish what we have to do.

"We will continue to follow with great interest your achievements as reported by your Cost Reduction Committees."
UNDERGRADUATE COURSES OFFERED

Plans are being made to offer courses, sponsored by the College of William and Mary and Christopher Newport College, for the fall semester. The Christopher Newport course will start on September 17 and the William and Mary courses will begin on September 18.

The following William and Mary courses are being offered:

- **Math 103 - Algebra and Trigonometry - 48 hours.** An integrated study of the real number system, sets, functions, graphs, equations and inequalities, systems of equations, matrices and determinants. This is followed by a study of the trigonometric functions and their properties. This class is scheduled to be conducted on Mondays from 4:30 to 7:30 p.m. in Building 1149, Room 201, and will be taught by Wayne E. Carter.

- **Math 201 - Calculus with Analytic Geometry - 48 hours.** Inequalities, absolute values and analytics through conics. Sets, ordered pairs and functions leading to limits and derivatives of algebraic and transcendental functions including applications to maxima, minima, plane motion and Law of the Mean Value. Differentials and their applications. This course will meet on Wednesdays in Building 1149, Room 201, from 4:30 to 7:30 p.m. Instructor will be William C. Turner.

- **Math 202 - Calculus with Analytic Geometry - 48 hours.** The definite integral and the Fundamental Theorem of Integral Calculus and their applications to areas, volumes, work, first moments and centroids including improper integrals and solids of revolution. Techniques of integration, parametric equations, polar coordinates and vectors. This class is scheduled to meet in Building 586, Room 110, on Wednesdays from 4:30 to 7:30 p.m. Instructor will be announced later.

- **Math 203 - Calculus with Analytic Geometry - 48 hours.** Sequences and series including Taylor’s and Maclaurin’s series and convergence. Solid analytic geometry and partial differentiation with applications. L’Hospital’s Rule. This class will be held in Building 586, Room 111, on Wednesdays from 4:30 to 7:30 p.m. Instructor will be announced later.

- **Math 302 - Differential Equations - 48 hours.** Ordinary differential equations. Laplace Transform. Series solutions of legendre and Bessel equations. Solution of partial differential equations by separation of variable. Applications in geometry, physics, and engineering. John Shearin will be the instructor. The class will meet on Tuesdays in Building 1149, Room 201, from 4:30 to 7:30 p.m.

The course offered by Christopher Newport College is described as follows:

- **Physics 201- General Physics.** Lectures and recitation four hours; laboratory two and one-half hours; four credits each semester. A survey course in physics for students majoring in science, mathematics or engineering. Mechanics, heat, and sound are studied the first semester. Arrangements have been made to teach this course at Christopher Newport College. Classes will be conducted on Tuesdays and Thursdays from 7 to 10 p.m.

Application forms for enrolling are available in the Training Office, telephone 2811. Approval of the supervisor and division chief is required before the applicant may enroll. Applications must be returned to the Training Office on or before August 28.

FOR SALE: Girl’s youth bed. Boulter, 838-4773.
CARNIVAL TICKETS AVAILABLE
(Continued from page 1)
broiler, 4:40 - G.E. can opener and knife sharpener, 5 -
automatic Polaroid color camera, 5:20 - 4-quat ice
cream freezer, 5:40 - 55-piece stainless steel service
for 8, 6 - Wilson golf clubs and bag, 6:20 - AM/FM Moto-
rola portable radio, 6:40 - G.E. automatic percolator,
7 - Smith-Corona electric portable typewriter, 7:20 -
radio, table and lamp combination, 7:40 - Oster 4-speed
blender, 8 - boy's and girl's 3-speed bicycles, 8:20 -
Oster ice crusher, 8:40 - Digital clock-radio combina-
tion, 9 - bicycle built for two, 9:20 - waffle iron-griddle
combination, 9:40 - G.E. hand mixer, 10 - 15-foot Sunset
travel trailer (complete and ready to roll).
The Carnival will close on Saturday with a dance to the
music of Jerry Fisher.

GRIEVANCE PROCEDURES
The Langley Research Center recognizes and endorses
the importance of bringing to light and adjusting employee
dissatisfactions. The opportunity for consideration of dis-
satisfactions should normally be a part of the day-to-day
relationships between employees and their immediate
supervisors. Thus, an employee should first discuss his
complaint with his immediate supervisor, within ten (10)
workdays of the occurrence of the problem.
In the event the complaint involves the immediate super-
visor, the first contact may be with the next level super-
visor. A large majority of all complaints should be settled
at this informal stage. However, if the employee cannot
resolve his complaint informally through oral discussions,
or the supervisor has not made a decision within five (5)
workdays, the employee may file a written grievance which
must contain the identity of the employee, the specific
nature of the grievance, and the corrective action desired.
The following is a summary of the complain and grievance
procedures:
Informal Stage - Employee discusses problem with im-
mediate supervisor, or the next level supervisor within
ten (10) workdays of occurrence of problem. Supervisor
gives decision in five (5) workdays. Employee has ten (10)
workdays to submit his grievance, in writing, to the 1st
level of decision of the grievance procedure.
First Level of Decision - Appropriate supervisor con-
siders the written grievance, and makes positive effort to
settle it. Written decision in ten (10) workdays. Employee
has five (5) workdays to submit his grievance, in writing,
to the 2nd level of decision of the grievance procedure.
Second Level of Decision - Employee (and his representa-
tive, if he has one) makes personal presentation to Griev-
ance Review Officer. Report of finds of fact to Director.
Written decision in ten (10) workdays after report of find-
ings. Decision is final. There is no further level of appeal.
The details of the Langley Employee Grievance procedure
are contained in the Langley Management Manual, In-
struction 3700.6.

FOR SALE OR RENT: 2-bedroom house in Cherry Acres.
Link, 723-4723.
FOR SALE: 1965 Valiant 200, 4-door, automatic shift -
$600. Mittal, 839-1163.
WANTED: Auxiliary gas generator, minimum rating 1800
TWO-DAY CARNIVAL STARTS TODAY; QUEEN TO BE ANNOUNCED TONIGHT

The two-day carnival which will be held on the grounds of the Activities Building tonight and tomorrow promises to be one of the gayest, most fun-filled week-ends on record here.

One of the big attractions will be the crowning of the Carnival Queen tonight at 10 p.m. Seventeen candidates are competing for the title. The new queen will be crowned by Diane Adams, Office of Public Affairs, who was selected Carnival Queen last year. The winner will reign over the carnival and will be invited with her escort to all events throughout the coming year.

Selection of the queen will be by vote upon purchasing a carnival ticket. Tickets may be purchased from District Representatives for one dollar each. The candidate receiving the largest number of votes will be declared the winner.

The queen candidates and the groups they represent are as follows: Janet Campbell, Aero-Physics; Patricia Hemeter, Flight Mechanics and Technology; Ann Chambers, Full-Scale Research; Janet Vaughan, Fabrication Division; Sandra Dunn, Flight Vehicles and Systems; Janice Hunt, Administrative Services; Patricia Lester, Fiscal; Nancy Johnston, Personnel; Deanna Rawls, Office of the Director; Susanne Ackerman, Research Reports; Sue Nelson, Analysis and Computation; Joan Steele, Instrument Research; Christine Pusey, Dynamic Loads; Judy Neal, Structures Research; Betty Branch, Procurement; Anne Stall, Space Mechanics; and Susan Holloway, Research Models and Facilities.

Today's events will open at 5 p.m. with the first ground prize drawing for a $100 U.S. Savings Bond. Remember, you must be present to win. At 6 p.m. the grand opening will officially take place with a concert by the Continental Army Band of Fort Monroe. Immediately following the concert, the midway will reopen. Ground prizes will be given away every twenty minutes. Complete listings of the prizes were published in the last Langley Researcher.

Winners must be on the grounds to win all prizes except the two grand prizes. The grand prize tonight will be the Home Entertainment System—drawing time will be 10 p.m.

Tonight's events will close with a dance. Music will be furnished by The Lyrics.

The midway opens tomorrow at 2 p.m. to the music of the Eastern Jams Band. The first ground prize will again be a U.S. Savings Bond.

At 10 p.m. the grand prize, a 15-foot Sunset travel trailer, will be awarded.

The Coronation Ball will close the two-day celebration. Music for the dance at 10 p.m. will be furnished by Jerry Fisher and his band.

NEIHOUSE NAMED CHAIRMAN OF UNITED FUND CAMPAIGN

Anshal I. Neihouse, Technical Assistant to the Director, has been named Chairman of the Center's Combined Federal Campaign, it was announced by Edgar M. Cortright, Director.

Assisting Neihouse will be James Hamilton, Research Support Division. He will serve as Vice-Chairman.

This will be the first combined campaign conducted at the Center and it will include 31 Peninsula United Fund organizations, seven health agencies, and four international service agencies.

The one-day solicitation of staff members will be held during the first week of October. In conducting the drive, Neihouse stated that his slogan would be "Simplicity, information, and enthusiasm."

This will mark the second time Neihouse has served as chairman of the united effort. He was head of the drive in 1956 and started the one-day campaign idea.

Neihouse was born October 18, 1908, in New York City. He attended public schools in Newport News and Norfolk, graduating from Maury High School in 1926. He attended Virginia Polytechnic Institute, receiving a Bachelor of Science Degree in Electrical Engineering in 1930 with honors and a Master of Science Degree with honors the following year. After teaching physics for four years at VPI, he began his NASA career in 1935 at the Langley Research Center.

Neihouse became head of the Spin-Tunnel Section in 1944 and in 1958 was named head of the Spin-Stall Branch, Stability Research Division. With the dissolution of the Stability Research Division in 1959, this branch was re-organized as the Recovery Systems Branch and was made a part of the Aero-Space Mechanics Division. He was assigned to the Office of the Director in April 1963, where he serves as Technical Assistant to the Director.

In 1957 Neihouse received one of NACA's highest awards, the 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—resulting in great savings of life and property. The spin and recovery characteristics of virtually every United States military airplane since 1941 have been studied in the Langley Spin Tunnel.

(Continued on page 8)
ANNOUNCEMENTS

NOTE OF THANKS... Alfred M. Tankersley, who recently retired from Instrument Research Division, wishes to express his thanks to his many NASA friends who helped to make his retirement such a memorable occasion.

IAM MEETING... The NASA Lodge No. 892, International Association of Machinists, will hold its monthly meeting on Tuesday, September 3 at 7 p.m. at the Central Labor Union Hall, Newport News.

NEWLYWEDS... Deanna Taylor, Office of the Chief Counsel, and Charles Allen Rawls, Research Support Division, took their final vows on August 13 in Newport News.

TENPIN LEAGUE... Team captains are urged to register their teams in the conference so the bowling schedules may be arranged. Conference representatives will be at the Activities Building from 3:30 p.m. to 5 p.m. on Monday, August 26. The meeting scheduled for 7 p.m. on August 26 has been cancelled.

AFGE MEETING... The NASA Lodge 2755 American Federation of Government Employees will meet on August 28 at 7:30 p.m. at the Central Labor Union Hall.

NURSERY SERVICE... Staff members are reminded that arrangements have been made with the Base Nursery so that parents may leave children there during the carnival today and tomorrow. Reservations must be made for children under 14 months or not walking. The cost is 40 cents per hour for one child, 60 cents per hour for two children, and 10 cents for each additional child. They will also serve supper to the children at 6 p.m. For additional information or to make reservations, call 764-5449.

TOUCH FOOTBALL... Plans are being made to organize a NASA Touch Football League. New players and new teams are needed. Those interested should contact Floyd Howard, 4871.

FOR SALE: 21-inch, black and white console TV, $30. Wells, 596-3707.
FOR SALE: April Air humidifier, complete with controls. Brickey Hughes, 851-2429.

WILMA S. BETTS RETIRES

Wilma S. Betts, Construction Contract Assistant, Procurement Division, has retired from the Center after more than twenty-five of Federal service.

Mrs. Betts was born in Jewett, Ohio. She attended Harrison County Normal School in Scio, Ohio, and Kent State University, Kent Ohio.

From 1941 to 1943 she taught school in Tuscarawas, Ohio. She entered Government service in 1943 at the U.S. Naval Training Center in Sampson, New York. She transferred to the Center the following year. She was first assigned to the Purchase Section. She transferred to Fiscal Division in 1948 and was reassigned to Procurement in 1963.

CAFETERIA MENU

The following menu will be served in the cafeterias during the week of August 26:

Monday - Cream of tomato soup, pepper steak, chicken pie, Polish sausage, grilled spiced luncheon meat. Snack bar - Soup, hamburger, hot corned beef sandwich, French fries.

Tuesday - Cream of mushroom soup, hot turkey sandwich, baked ham, spaghetti and meat sauce, chili con carne. Snack bar - Soup, ham and egg sandwich, French fries.

Wednesday - Vegetable-beef soup, pot roast of beef, broiled smoked ham, fried fish sticks, baked hash. Snack bar - Soup, hot dog, veal cutlet on roll, German potato cakes.

Thursday - Chicken-rice soup, grilled steak, smoked pork sausage, fried chicken, tamale pie. Snack bar - Soup, fish sandwich, hot pastrami sandwich, French fries.

Friday - Manhattan clam chowder, roast beef, fried fish, Salisbury steak, Spanish omelette. Snack bar - Soup, hot roast beef, cheeseburger, French fries.

The menu for the week of September 2 is as follows:

Monday - H O L I D A Y

Tuesday - Puree of bean soup, simmered corned beef and cabbage, stuffed flounder, sauteed chicken livers over rice, western omelette. Snack bar - Soup, western omelette on roll, hot corned beef sandwich, French fries.

Wednesday - French onion soup, Spanish pot roast, baked ham, spaghetti and meat sauce, chili con carne. Snack bar - Soup, barbecue pork sandwich, flying saucer, French fries.

Thursday - Vegetable-beef soup, grilled steak, roast pork, stuffed pepper, macaroni and wiener. Snack bar - Soup, hot dog, steak sandwich, French fries.

Friday - Manhattan clam chowder, chopped steak, fried shrimp, beef stew, fish cakes. Snack bar - Soup, sea dog, Lou's satellite special, French fries.

FOR SALE: Portable TV, clock radio, floor polisher, baby crib, toaster, electric iron, folding chairs. Koopmann, 838-5441.
TWO EXPLORER SPACECRAFT
LAUNCHED BY SCOUT ROCKET

Langley Research Center scientists successfully launched two spacecraft with a single Scout vehicle from the Western Test Range on August 8. The dual satellites were launched to continue the detailed scientific study of density and radiation characteristics of Earth's upper atmosphere at a time of high solar activity.

The Air Density-Injun Explorer, now named Explorers 39 and 40, achieved nearly the precise orbit desired. The successful separation of the two spacecraft marked the second time NASA has orbited more than one satellite with a single Scout rocket.

Once in orbit, the 179-pound payload separated into a 12-foot polka-dotted sphere for air density and atmosphere heating research and a six-sided cylinder bearing 12 separate detectors to measure the bombardment of the atmosphere by energetic particles from space, as well as the intensity of very low frequency radio emissions.

The amount of energy brought into the Earth's upper atmosphere by these colliding particles is not fully known, but previous experiments have yielded evidence that such energy may be one of the factors governing the atmosphere's density, temperature and composition at high altitudes.

A variety of complex and interrelated events occur in the upper atmosphere, and the two spacecraft, constituting an interdisciplinary project in the areas of aeronomy, energetic particles and fields, and inoshperes and radiophysics, will enlarge existing knowledge.

Air Density Explorer (Explorer 39) will extend upper air research in the polar regions. It will continue to acquire information on density and temperature variations at intermediate latitudes and, by comparing results with earlier similar satellites will investigate sources of atmosphere heating and the seasonal and solar cycle variations in upper air density on a global basis.

Injun Explorer (Explorer 40) carried instruments to measure charged particles reaching the upper atmosphere, and to study those trapped in Earth's magnetic field, with particular attention to their ranges of energy, distribution in space, and changes with time. It is also equipped to study very low frequency radio emissions in the ionosphere and their relations to the particle distribution.

The dual satellites are a program of NASA's Office of Space Science and Applications. The Air Density Explorer was fabricated at Langley Research Center while the Injun Explorer was built under contract by the University of Iowa, Iowa City. One of the Injun experiments was provided by the Air Force Cambridge Research Center.

Gerald M. Keating, Applied Materials and Physics Division, is one of the principal scientific investigators for the Air Density spacecraft.

Project participants from Langley include Claude W. Coffee Jr., AMPD, project manager; Charles V. Woerner, AMPD, assistant project manager and mission director; Robert E. Johnson, Flight Vehicles and Systems Division, spacecraft manager and technical project engineer; and A. O. Lupton, Flight Instrumentation Division, spacecraft electronic systems engineer.

Members of the Scout Project Office who were responsible for the launch vehicle include R. D. English, head of Scout Project Office; B. Leon Hodge, launch vehicle field director; E. Eugene Hall, mechanical system engineer; Joseph R. Palms, electronic systems engineer; E. Eugene Hall, mechanical system engineer; Joseph R. Palms, electronic systems engineer; and W. Gerald Page, propulsion manager.

USE LAWN MOWERS PROPERLY

The power lawn mower has been a boon to mankind. This grass eatin' critter takes the grunt and sweat out of lawn barbering, and leaves more time for fishing, golfing, picnicking, or just plain loafing.

However, many injuries, amputations and even deaths, have been caused by power mower use, or rather misuse. Manufacturers have done much to safeguard and minimize hazards, but a manufacturer can do just so much. The rest is up to you, the user.

Following are some of the more important pointers for safe mowing:

1. Before starting, clear lawn of rocks, broken glass, metal objects, etc., and the kids.
2. Don't set out to mow in your bare feet or open-toed sandals. If you have safety shoes, wear them.
3. Be sure you know how to disengage the clutch or stop the mower quickly in case of emergency.
4. Don't attempt to mow wet grass. It clogs the mower and also makes sure footing difficult.
5. Operate the engine at the slowest speed that will do a good cutting job. Excessive cutting speed can be dangerous.
6. Keep in step with the mower. Don't lag behind or let it pull you, and don't run.
7. Shut off the mower before moving from one level to another.
8. Keep fuel stored in an approved safety container in a well-ventilated area.
9. Cut off the motor and wait until it cools before refueling.
10. Have the mower inspected periodically and kept in good repair by a qualified serviceman.

WANTED: Drummer to play with newly formed rock group. Jim, 826-4182.
FOR SALE: Bar - $50; four stools - $45. Clark, 838-3351.

B. Talbot, payload coordinator; and V. Dean Crowder, propulsion manager.

William D. Hinshaw, LRC Mission Support Office, Western Test Range, was Langley vehicle test director for the launch operations.
NASA INSTRUMENTATION USED BY LOS ANGELES AMBULANCES

Hospital-bound ambulance patients may now have their enroute electrocardiograms (ECG) flashed ahead to the receiving room because of a simplified system developed by NASA for use in monitoring its aircraft test pilots.

Within two minutes after the patient gives his permission, the ambulance attendant can apply the NASA-developed chest electrodes and link them to a radio-telephone relay of heart measurements. When the patient arrives at the hospital there is no wait for an ECG.

This procedure provides attending doctors with advance detailed information on the coronary status of the patient, allows them to make hospital preparations prior to the patient's arrival, and to conserve potential life-saving seconds.

The system was installed by a Los Angeles ambulance service early this year on an experimental basis. Experience with its operation over the past several months has demonstrated the feasibility of the technique and the associated equipment.

Data obtained from the patient is transmitted over the ambulance's shortwave radio to the ambulance company's radio control center. It is then sent by telephone to a cooperating hospital where it is fed to a standard ECG recorder. A visual tape of the ECG measurements is displayed for the doctors awaiting the arrival of the patient.

Data from the patient is received and displayed in the hospital almost instantaneously.

The instrumentation technique was developed by NASA's Flight Research Center for use on pilots flying such experimental craft as the XB-70 and wingless lifting bodies. Because of size and weight limitations, the instrumentation had to be small and easily applied and could not hamper the movements of the pilots.

Slim bare wires replace ordinary clinical electrodes. These wires are applied to the body with a quick-drying silver-glue combination that acts also as an electrical conductor. The technique eliminates the need for shaving the chest and using bulky electrodes, and permits continuous medical monitoring while the subject engages in a variety of physical activities. When used on experimental aircraft, the data is recorded and stored in a small tape recorder that fits in a pilot's flight suit pocket or map case.

The system is presently in use by Schaefer's Ambulance Service, Los Angeles, and the University of California (Los Angeles) Center for Health Sciences. Data is received at the Center's emergency room from one of Schaefer's ambulances.

A request to participate in the program has been made to NASA from Dr. Alan M. Nahum, Director of the Trauma Research Group for UCLA, which, in conjunction with the State of California, is engaged in a three-year pilot study of emergency medical systems.

An additional receiving and recording unit will soon be installed in the Hollywood Presbyterian Hospital under the auspices of the University of Southern California's Hollywood Presbyterian Center for the critically ill.

Schaefer's learned of the new technique through NASA's Technology Utilization Program. The technique is described in NASA Tech Brief B66-10649. These briefs are issued to announce NASA inventions and innovations that are likely to have a potential use in other fields. Schaefer's contacted the T. U. representative at NASA's Flight Research Center and arrangements were made to implement the technique.

A new NASA Tech Brief, B68-10233, which describes the transmission system also has been issued.

Data collected from the feasibility study is also being utilized by the Biomedical Programs Office at NASA's Flight Research Center for use in their study of cardiovascular stress of both flying and non-flying personnel. NASA is also conducting a feasibility study for future application of the technique with other modes of transportation and medical facilities.

WIND TUNNEL TEST: As part of the cooperative efforts of the NASA with other government agencies, NASA conducted flutter tests for the Air Force using this C-5A model in the Langley Structural Dynamics Wind Tunnel. The C-5 Galaxy, a military cargo giant which is only 18 yards shorter than a football field, made its first flight on June 30.

RETIRIED EMPLOYEE DIES

Benjamin F. Murden, who retired from the Center on December 30, 1964, died August 8 in a local hospital.

Murden was born April 26, 1897 in Newport News. He served his apprenticeship as a machinist at the Newport News Shipbuilding and Dry Dock Company. Before starting his career with NASA he worked at the Norfolk Navy Yard in Portsmouth. He joined the Center staff on August 19, 1930 as a machinist. At the time of his retirement he was an Experimental Facilities Mechanics Supervisor in the Mechanical Services Division.

Surviving are his wife, Mrs. Esther Pruden Murden, and two daughter, Marjorie A. Murden and Sarah Lee Murden of Hampton.


WANTED: Ride from Jefferson Ave. and 74th St. to W.A. on 8 shift. Lockett, 3012 or 826-1979.
NASA INTERIM OPERATING PLAN

NASA has arrived at a number of decisions and program adjustments to establish a basis for an interim operating plan for Fiscal Year 1969 and to guide the studies and analyses directed at decisions on its FY 1970 Budget.

The agency will operate under the interim plan pending completion of Congressional action on the FY 1969 appropriations and the apportionment of FY 1969 funds by the Bureau of the Budget.

NASA will present its final plans to the appropriate Congressional Committees before placing them in effect.

The interim plan reflects Congressional reductions of $362 million in NASA's appropriation requests for FY 1969. It also takes into account the possibility that NASA may be required to make further reductions under the Revenue and Expenditure Control Act of 1968. If the interim plan were maintained throughout the year, about $3.85 billion of new obligatory authority would be used.

Under the interim plan, work on the Apollo program, on aeronautics, and on space applications will proceed at the levels authorized by Congress. Activities in many other areas have had to be curtailed, certain projects reduced in scope and other work deferred to future years.

The principal adjustments embodied in the interim plan:

NASA civil service personnel will be reduced by more than 1,600 and contractor support effort at NASA installations by more than 2,000. The interim plan contemplates adjustments between appropriation accounts to prevent substantially larger personnel reductions which would place in jeopardy the conduct of the Apollo and other current programs.

The Apollo Applications Program (AAP) will be funded at about $140 million, a reduction of about $300 million from the 1969 Budget request. As previously announced, production of Saturn IB launch vehicles will be terminated after Vehicle No. 214.

Saturn V production will not be continued after the first 15 launch vehicles. The AAP flight program will be delayed and limited in scope to one Saturn I Workshop and one Apollo Telescope Mount with a back up for each. Work toward post-Apollo lunar exploration and toward the Earth-orbiting Saturn V Workshop will be limited to studies.

The plan for a Mars 1973 mission is being revised to conform to sharply reduced funding in FY 1969. The instrumentation to be landed on Mars and the scientific return will be substantially less than in the program presented in the FY 1969 budget.

In the nuclear propulsion program, development of the flight weight NERVA engine will not begin in FY 1969 but a cadre of design and development personnel will be retained, thus preserving an option to initiate development of the flight weight engine in FY 1970. Advanced technology work will be continued and testing of one experimental engine will be completed.

NASA emphasized that the interim plan is being established to permit the agency to go forward with its program until such time as decisions on a final plan are possible.

SEMINAR PLANNED AUGUST 28

Dr. George H. Markstein, Principal Physicist, Cornell Aeronautical Laboratory, Inc., will present a seminar in the AMPD projection room at 10:30 a.m. on August 28.

Dr. Markstein is regarded by many of his colleagues as the foremost authority in the fundamental kinetic processes of high temperature reactions. He has published extensively in the proceedings of the Combustion Institute. Dr. Markstein's lecture will concern the "Heterogeneous Reaction Processes in Metal Combustion."

In many metal combustion processes, both the fuel and the reaction products are in the condensed state; therefore, heterogeneous reactions play an important role in the burning of metals. The talk will deal primarily with the case of vapor-phase burning, in view of its importance in practical applications. In this case, heterogeneous reaction of metal vapor and oxygen (and possibly of volatile oxide species) may take place at the surface of growing oxide smoke particles, in competition with homogeneous gas-phase reaction followed by condensation. A recently developed method for investigating surface reactions of metal vapors by means of atomic-absorption spectrophotometry will be discussed.
RADIO BLACKOUT TEST SCHEDULED

A space flight experiment to study methods for preventing the loss of radio signals from spacecraft returning to Earth was scheduled to be launched yesterday by NASA from Wallops Island.

The eight-minute ballistic flight test, RAM C-B, is a continuation of the NASA radio attenuation measurement project to study the problem of communicating through the ionized gas (plasma sheath) created when a spacecraft reenters the Earth's atmosphere at great speeds. The test is the second in the RAM C series.

Unlike the previous RAM test, in which water was ejected into the plasma stream to restore radio communications, this test was confined to measuring the amount of electrons and ions which build up around the spacecraft.

The results of the flight will be used with information from the water-ejection experiment, laboratory tests, and theoretical studies to provide a better understanding of the problem of communicating through a plasma sheath.

The all-solid propellant Scout launch vehicle was to be used to send the 264-pound RAM payload on a ballistic flight 725 miles over the Atlantic Ocean. The spacecraft was expected to come down 150 miles northeast of Bermuda. The cone-shaped spacecraft is 51 inches long, 26 inches in diameter at the base, and has a 12-inch-diameter hemisphere nose. The instrumentation includes two VHF telemetry transmitters, one of which sends data continuously in real time.

The other is used in conjunction with a continuous-loop tape recorder to provide a second transmission of the same data, delayed until after the spacecraft emerges from the blackout. The tape loop time is about 45 seconds.

Ionization measurements were to be made with microwave reflectometers and eight electrostatic probes.

The RAM spacecraft was designed and fabricated by the Langley Research Center. Theo E. Sims, Flight Instrumentation Division, is the Langley RAM Project Manager. R. D. English, head of Scout Project Office, is Project Manager for Scout. Robert T. Duffy, Wallops Station, was Test Director for countdown and launch. Joseph R. Duke, Wallops, was responsible for coordinating range and tracking operations. Jack Levine, NASA Headquarters, Office of Advanced Research and Technology, is RAM C-B Project Officer.

Other Langley staff members associated with the project are as follows:

William L. Grantham, Flight Mechanics and Technology Division, payload manager and experimenter; W. Linwood Jones Jr., Flight Instrumentation, experimenter; William L. Weaver, Applied Materials and Physics Division, analysis engineer; Louis H. Hunt Jr., FID, instrumentation engineer; James W. Cheeky, Flight Vehicles and Systems Division, systems engineer; David H. Butler, FVSD, mechanical engineer; Wayne L. Kitchen, FID, range operations engineer; Virgil L. Ball, AMPD, pyrotechnic engineer; Clyde J. May, FVSD, electrical engineer.

Also Sam Sokol, FID, X-band engineer; Stewart H. Irwin, FID, X-band technician; Aubrey E. Cross, FID, electronic technician; Kenneth W. Crocker, Fabrication Division, mechanic; Charles Fuchs, FD, mechanic; Dale M. Rodman, FD, electrician; and Robert Young, FID, X-band engineer.

MOON OVERSHOES: These shoes are made for walking on the lunar surface by astronauts in NASA's Apollo program. Retaining flexibility in components such as gloves and these boots over a 550 degree temperature range was one of the problems designers had to deal with. These overshoes await final assembly.

DENSE MATERIAL LUNAR DEPOSITS

Mass concentrations of dense material have been discovered beneath the surface of the moon by two researchers at the NASA's Jet Propulsion Laboratory, Pasadena.

Reported by Paul M. Muller and William L. Sjogren, the mass concentrations caused noticeable variations of speed on the Lunar Orbiter V spacecraft as it circled the moon at low altitude.

The mass concentration areas were found to be centered below all five large ringed seas on the near face of the moon.

Discovery of the phenomena is expected to shed new light on questions of the moon's origin and evolution. Lunar Orbiter V was the last spacecraft in the five-mission project managed by Langley Research Center. Launched August 1, 1967, it orbited the moon until January 31, 1968.

Using tracking data from the Lunar Orbiter V mission, Muller and Sjogren plotted the spacecraft accelerations on a moon map and found that the speed increased each time the vehicle overflew one of the five maria (seas) - Imbrium, Serenitatis, Crisium, Mectaris and Humorum.

The two JPL mathematicians learned that the irregular seas, such as Oceanus Procellarum, Mare Tranquillitatis and Mare Fecunditatis, had only small effects on the orbital velocity of the lunar satellite.

Only one other mass concentration area appears in the data. It is located between Sinus Aestuum and Sinus Medii near the center of the moon as seen from Earth and may represent an ancient, now obliterated, circular impact mare.

Source and nature of the mass concentrations are not known, but the presence of large concentrations under the approximate geometrical centers of all the large circular seas suggests a relationship between the two.

Among theories apparently supported is one which presents the possibility that large objects collided with the moon to form the lunar ringed seas. It is also possible that the energy dissipation at impact could have resulted, as suggested by Professor Harold C. Urey and the late G. K. Gilbert, in intense heat causing the surface lava flows and formation of local high density concentrations.
INTERNATIONAL SCIENCE FAIR WINNER

Dennis L. Marcella, a 19th International Science Fair winner from Waialua Oahu, Hawaii, and his mother, Mrs. John S. Marcella, were guests of the Langley Research Center last month.

This trip was an award for his outstanding achievements in scientific research. While at the Center, they were guests of the Training Branch.

In describing his project Marcella stated, "I have conducted extensive wind tunnel studies to investigate the effects of heat rates on the re-entry body in a supersonic-plasma arc tunnel operating at Mach 1.4-3.0 and have found new methods of flights for vehicles through the atmosphere. The total operating temperature is about 2500 degrees F. Tunnel design is able to handle the integrated heat load. The burn-off of the ablation material reduces the vehicle mass 10-20 percent. This tends to move the center of gravity rearward, whereas the expenditure of Control fuel usually moves it forward."

"For the three vehicles tested, re-entry was made at a small angle while the vehicle itself was initially attached at about 35 degrees. As the re-entry begins and the vehicle altitude decreases, the dynamic pressure rises. The vehicle angle of attack is progressively decreased. As for wind tunnel tests, maneuvering re-entry vehicles must be tested at high speed since no sharp breaks in the coefficients are common."

"Testing is done in a 45-second interval. Testing utilizes high dynamic pressures and hence high decelerations and heat rates. Heat transfer depends on the difference in temperature of the body in the stagnation temperature of the air stream. Studies in the tunnel are conducted by using a refrigerated model and an air stream during the time flow."

During his tour of the Center, Marcella talked with engineers and scientists and visited a number of wind tunnels and research facilities.

In an effort to help promote interest in science among high school students, NASA awarded special prizes to exhibitors at the annual fair. The winners were invited to visit NASA centers.

TECHNOLOGY UTILIZATION NEWS

New materials are constantly being developed to meet the special requirements of our space missions both in structural and nonstructural applications. Among the nonstructural materials are dielectric wire insulations, electrical contact materials, potting compounds, conformal coatings, gaskets, lubricants and adhesives. The Technology Utilization Division of NASA informs industry and the public of these developments by means of Tech Briefs and Special Publications.

Some of our "best sellers" covering these materials are: SP-5066, Adhesives, Selants and Gaskets; SP-5059, Solid Lubricants; SP-5014, Inorganic Coatings; SP-5016, Joining and Sealing Dissimilar Metals; SP-5901(01), Synthesis of Flourinated Hydrocarbons; and SP-5905(01), Seals and Sealing Techniques.

Contact your Technology Utilization Office for these publications which may be of value to you in selecting the best materials for your next task.

WANTED: Driving combination from Eastwood to W.A. on 8 shift. Huffman, 3326.
TWO NASA NIGHTS. . . The Activities Association is sponsoring two games on August 28 and August 29 when the Peninsula Grays will play host to Winston-Salem. It will be recognition night for NASA employees and their friends who want to attend on either or both nights. Both games are single games that start at 7:45 p.m. Simply tear the ticket (below) from the Researcher, present it at the box office at the stadium with 50 cents for each adult member of the group. Remember, the ticket may be used for all the family for both nights.

"TWO NASA NIGHTS"
WAR MEMORIAL STADIUM
Peninsula Grays vs Winston Salem
Wed. & Thurs., Aug. 28 & 29, 1968
WITH THIS TICKET ONLY
Adult entire family for 50 cents for each adult on either or both nights

KIWANIS BOWL...Tickets are now available at the Activities Building for the Kiwanis Bowl. The game will be played September 7 at 8:30 p.m. at Foreman Field in Norfolk. The price of the ticket and transportation will be $6.25 each. Arrangements will be made for the bus to leave the Activities Building at 7:15 p.m. The game will feature the Washington Redskins and the Pittsburgh Steelers.

SPACE ROCKET: These tall, slim Super Loki Dart rockets will be used in high altitude atmospheric research at Kennedy Space Center. They will replace the larger, more costly Cajun Dart sounding rockets.

ACD won the 1968 NASA Softball Championship with a record of 14 wins and 2 losses. Members of the championship team are (from left): Mickey Rowe, Robert Ward, Jim Rogers, Terry Straeter, John Bowen, Billy Haigler, Joe Nolan, manager, Jim Harris, Jay Lambiotte, Art Gooden, Ron DeGrote, Jim Gardner, and Joe Drozdowski. Absent when the picture was taken were Weldon Staton, Bob Reynolds, and Jerry Creedon.

NEIHOUSE HEADS FUND DRIVE
(Continued from page 1)
Neihouse has gained recognition as an international authority on the subject of the large motion problems of flight vehicles. He has developed novel testing techniques and unique methods of analysis in solving the problems of the airplane spin, an extremely involved aerodynamic maneuver.

In 1954, he was a NACA representative at a meeting of the Advisory Group for Aeronautical Research and Development of the North Atlantic Treaty Organization in Paris, where he delivered a technical paper on "Design and Operating Techniques of Vertical Spin Tunnels." In 1959 he was a lecturer at Brussels, Belgium NATO University (Training Center for Experimental Aerodynamics).

In 1958 Neihouse was among 22 alumni of VPI who were initiated into the Tau Beta Pi, National Engineering Honor Society, for outstanding ability in their specific fields.

Neihouse is a past President of the Engineers’ Club of the Virginia Peninsula; past President of the Mental Health Association of the lower Peninsula; and is on the Board of Governors for the Crippled Children Association. He is also a member of the Board of Directors of Mary Immaculate Hospital.

He is past exalted ruler of the Newport News Elks, past president of Adath Jeshurun Synagogue, and a member of the Masonic Lodge. During 1964-1965, he was District Deputy Grand Exalted Ruler for the Virginia Southeast District of Elks.

FOR SALE: 1965 24-foot Columbia Challenger sailboat with engine - ready to sail - $4500. Smith, 826-1979 after 5 p.m.
FOR SALE: 1957 Oldsmobile - 4-door sedan. Swart, 723-7687 after 5 p.m.
COMBINED FEDERAL CAMPAIGN
SCHEDULED FOR OCTOBER 3
Anshal I. Neihouse, Chairman of the Center's Combined Federal Campaign, announced that final plans are being made to conduct the one-drive effort in early October. This will be the first combined campaign conducted at the Center and it will include the Peninsula United Fund organizations, National Health Agencies, and International Service Agencies.

Neihouse stated that in addition to the new one-drive effort, another new feature of the campaign will be payroll deduction. He pointed out that the withholding plan should make it relatively painless for staff members to increase their contributions this year.

A kick-off meeting will be held on September 27. Attending will be the director, division chiefs, and about 400 campaign workers. The one-day intensive drive will be held on Thursday, October 3.

Assisting Neihouse in the drive are the following: James Hamilton, vice-chairman; Helen Willey, East financial chairman; Eleanor Cole, West financial chairman; Patrick Clark and John Witherspoon, co-op and graduate school chairmen; Ruth Verell, publicity; Richard Braig, service contractors chairman; Lester Rose, plant representatives; Elva Rollins, employees on travel; Dorothy Moore, location of personnel; Vera Huckel, Dennis Martin, and Edward Maher, general advisors; Edward Howe, A. M. Askew, and A. F. Waynick, fiscal advisors; and Anne Suit, general information chairman.

THE TWO-DAY Carnival, sponsored by the Activities Association, was climaxed by the crowning of Sue Nelson (second from left), Analysis and Computation Division, as the new Carnival Queen. Janet Vaughan (center), Fabrication Division, was first runner up and Ann Chambers, Full-Scale Research Division, was second runner up. The Queen was crowned by Dr. John E. Duberg, Associate Director. He was assisted by retiring Queen Dianne Adams (right), Office of Public Affairs. Additional photographs are shown on Page 8. --Photos by Bob Nye and Fred Jones.

DIRECTOR'S MESSAGE TO STAFF
In support of this year's Combined Federal Campaign, Edgar M. Cortright, Center Director, has issued the following message to staff members:

"This year the Combined Federal Campaign (CFC) at the Langley Research Center offers several features of great convenience to all of us who desire to give our support to the charitable and civic needs of this community. These include the convenience of a single solicitation, as well as the added convenience of a payroll deduction plan, both of which have been shown to facilitate the process of giving. Mr. Neihouse is going to head this campaign at Langley, and he is planning to inject the further conveniences of a single meeting of key personnel and a single one-day drive. You will be hearing more about this during the month of September.

"I am writing this message to all the employees at the Langley Research Center in advance of the formal initiation of the drive because of several thoughts I would like to share with you and have you think about in preparation for the drive.

"This is a year in which the entire nation is taking a hard look at its social conscience. Somehow over the years, our material progress in some areas has far outstripped that in others. Something clearly must be done about the many social ills that afflict the country today. It seems that the leaders in the free enterprise environment have lagged far behind in adequately assisting our less fortunate members of society, who have found themselves unable to compete for a host of reasons. One approach is that of big government providing the leadership and the money. A far more attractive approach, I believe, is for communities themselves to respond to the cries of their own consciences and rise up to meet their own needs insofar as possible. The funds raised by the CFC probably constitute the single greatest source of private funds for charitable and civic purposes on the Peninsula.

"Since we at LRC accepted the fact that this campaign is eminently worthwhile, then we must examine whether our level of giving is sufficient to meet the needs of the times and, if not, whether we have the capability of further giving. The total revenue from the two campaigns at Langley last year (which are now being combined in this campaign) was $80,000. The current community goal for PUF only is approximately $1,187,500. I think it fair to say that the real needs of the community considerably exceed this amount but that the campaign leaders must place some realistic limit on the goal.

"A study of giving at this center indicates an average annual gift of about $18 per employee or less than 2/10 of 1 percent of the average gross income. This, for example, is about 1/2 the level of giving at the Lewis Research Center and Washington Headquarters where the average (Continued on page 3)
The following menu will be served in the cafeterias during the week of September 9:

**Monday** - Cream of potato soup, Swiss steak, grilled pork chops, chicken chow mein, baked hash. Snack bar - Soup, hamburger, steak sandwich, French fries.

**Tuesday** - Corn chowder, roast ribs of beef, smoked pigs in pone, fried chicken, Spanish omelette. Snack bar - Soup, ham and egg sandwich, hot roast beef sandwich, French fries.

**Wednesday** - Minestrone soup, braised lamb shank, fried oysters, liver and onions, grilled luncheon meat. Snack bar - Soup, barbecued pork sandwich, hot pastrami sandwich, French fries.

**Thursday** - Vegetable-beef soup, grilled steak, shrimp Newburg, chicken croquettes, tamale pie. Snack bar - Soup, hot dog, flying saucer, French fries.

**Friday** - Manhattan clam chowder, corned beef and cabbage, chicken pie, fried fish, cheese omelette. Snack bar - Soup, sea dog, hot turkey sandwich, French fries.

The menu for the week of September 16 is as follows:

**Monday** - Cream of tomato soup, barbecued spare ribs, fried scallops, salisbury steak, chili con carne. Snack bar - Soup, barbecued pork sandwich, Lou's satellite special, French fries.

**Tuesday** - French onion soup, braised beef tips, grilled pork steak, liver and onions, stuffed flounder, cheese ravioli. Snack bar - Soup, fish sandwich, veal cutlet on roll, French fries.

**Wednesday** - Minestrone soup, braised lamb shank, fried oysters, liver and onions, grilled luncheon meat. Snack bar - Soup, barbecued pork sandwich, hot pastrami sandwich, French fries.

**Thursday** - Vegetable-beef soup, grilled steak, shrimp Newburg, chicken croquettes, tamale pie. Snack bar - Soup, hot dog, flying saucer, French fries.

**Friday** - Manhattan clam chowder, corned beef and cabbage, chicken pie, fried fish, cheese omelette. Snack bar - Soup, sea dog, hot turkey sandwich, French fries.
DIRECTOR'S MESSAGE TO STAFF
(Continued from page 1)

salaries are comparable to, or only slightly higher than Langley's. At the same time, the cost of living in the Tide-water area is somewhat less, all of which would indicate that we have the potential for greater giving, if we are so motivated.

"I have asked myself whether we lack motivation and have come to the conclusion that this is probably not the problem. However, since our level of giving these past few years has remained somewhat static, whereas several other groups on the Peninsula have pulled ahead of us, including some groups of only average income, it would appear that we can no longer rest on our laurels. Accordingly, I would like to propose that we set a goal of increasing our average gift this year by 50%. This would require only a small increase per pay check, and may not be unreasonable. The withholding plan would make this relatively painless, and if we achieve this goal, we would suddenly again find ourselves leaders in giving on the Peninsula.

"I would respectfully suggest that we view this not as carrying more than our share, but rather, I think as Government employees showing their good citizenship in setting an example for the rest of the Peninsula to emulate.

"Langley has always set an example in good citizenship in community advances, in community government, in educational improvement (including government education) and in charitable giving, I have a deep feeling that we can rise to the occasion in this campaign, and I am appealing to you personally to give the needs of this campaign your most careful consideration."

KNOW YOUR CREDIT UNION

Good news! A new, better, more rewarding Fly-the-Flag contest is underway. New because it is the third annual contest; better because the decals are genuine 3M Scotch-lite and are removable; more rewarding because more people win larger prizes.

Older members know that to qualify you must have a Credit Union decal on the rear bumper of your automobile. Then if your account number is one of those chosen at random, you win. This year, six numbers will be listed in each issue of Langley Researcher beginning September 20. The first five entitle each associated, qualified member to $5 cash. The sixth is a bonus number. It entitles the associated member, if qualified, to $5 cash PLUS one month's payment on his car loan provided it is financed with the Credit Union. If his loan has been paid-off, he is entitled to $50 cash. Contest ends when the grand total of $500 in prize money has been distributed.

So fly-the-flag! Show you are proud to be a member and, at the same time, make yourself eligible for a bonus jackpot. Then, come new-car time, look ahead. See your Credit Union and put that 1969 model in the running with a loan and a decal good in the years-to-come as well as this one. Besides, where else is the interest rate so low, amount financed so high, loan insurance so free, and service so quick and convenient?

Decals are available at your Credit Union Office or extension 3606. We will be glad to send you yours plus any requested for interested co-workers. Do it now!

LOCAL ENGINEERS' CLUB TO HEAR GREENE AT SEPTEMBER MEETING

Lawrence P. Greene, Assistant to the President and Senior Washington, D.C., Representative of North American Rockwell Corporation, will be guest speaker at a meeting of the Engineers' Club of the Virginia Peninsula on Thursday, September 19 at 8 p.m. at Thomas Eaton Junior High School, 151 Marcella Road, Hampton.

Greene will speak on "General Aviation Development Opportunities in the 1970's." The market in general aviation is dynamic, diverse and demanding. To the business-man, it is rapid transportation. To the farmer it is crop fertilization and pest control. To the sportsman or personal pilot it is a means of transportation to remote areas.

To the airlines it is a connecting link for long distance passengers. Greene will attempt to provide a better understanding of what general aviation is, why it is a vital part of the nation's economic and social growth, and what challenges are incorporated in that role.

Greene joined North American in 1943 and has played a key role in the design of the F51-H, F-86 Sabre Jet, F-100 Super Sabre Airplanes, the X-15 rocket research plane, XB-70A triple-sonic plane and the Sabreliner business jet aircraft. In addition, he has supervised the operation of wind tunnels and for two years was chairman of the NASA Advisory Committee for Aircraft Aerodynamics.

A dinner will be served at Eli's Restaurant on East Mercury Blvd., Hampton, at 6:45 p.m. The social preceding the dinner will begin at 6 o'clock. The meal will be steak at a cost of four dollars per plate.

Reservations for dinner may be made by calling Paul Fournier, 596-0758.

TECHNOLOGY UTILIZATION NEWS

Explosive forming of metals is a fabrication technique which is gaining widespread interest and use in industry. The space program is providing impetus to this new technology because it makes possible the fabrication of hardware items formerly unobtainable. The older methods of fabrication have also proven to be more expensive and time consuming with less uniformity and reliability.

Dwight McSmith, Research Support Division, has recently innovated an explosive device to swage joints on tubing or pipe. Further development of the device in the fabrication and machine shops has provided an effective joint for sealing pressures up to 2000 psi, using 3/8-inch OD aluminum tubing. This inherently high production tool described in Tech Brief 68-10235 will also provide structural joints in tubing or pipe used for mechanical applications.

Nationwide circulation of this Tech Brief via T.U.'s "pipeline to industry" is causing a flood of inquiries directed to the Langley T.U. Office. For further details of this innovation, contact the T.U. Office, extension 3281.

FOR SALE: Seahawk class, 15-foot fiberglass sailboat and trailer - $850. Hubble, 4691.

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FOR SALE: Seahawk class, 15-foot fiberglass sailboat and trailer - $850. Hubble, 4691.
This summer the Center was host to the largest number of disadvantaged youths under the Neighborhood Youth Corps (NYC) and Youth Opportunity Campaign (YOC) programs.

A total of 132 youths were enrolled in these two programs, as compared with a total of 74 during the summer of 1967. Sixty were Neighborhood Youth Corps enrollees who were paid by their sponsoring agencies, the Newport News Office of Economic Opportunity (50 positions) and the Hampton Community Action Agency (10 positions). Seventy-two were Youth Opportunity Campaign employees, who filled summer temporary positions authorized by the President’s Youth Opportunity Campaign.

Both youth groups received orientation briefings upon arrival and later attended a mission briefing and tour of selected research facilities. A short course in Secretarial Practices and Office Procedures was conducted by Eloise McGehee for summer employees occupying clerical positions. A “Career Opportunities for Youth” program was held for the entire group to advise them of various federal jobs available and to explain how to apply.

A final recognition program was held August 20 which featured the Center Director, Edgar M. Cortright, as the principal speaker. The youth also heard talks by T. Melvin Butler, William B. Mayo, YOC employee Andrea J. Queen, and NYC enrollee Tyrone O. Ellis during this program, which was concluded with refreshments.

Other Center personnel heard during the various training programs included Henry A. Fedziuk, William L. Williams, J. Norwood Evans, S. Walter Hixon, Jr., John J. Cox, and James W. Norris, Jr. John Witherspoon, Training Branch, Personnel Division, coordinated the training programs for the two groups.

Most of the training received by the youths was in the form of on-job-training conducted by the supervisors and Center employees to which they were assigned. A total of 57 youths were assigned to Engineering and Technical Services, 50 were in Administration Divisions, and 25 were in Research Divisions and Project Offices. Many Center employees, through their interests and efforts, contributed to making this summer a meaningful work experience for their NYC’s and YOC’s.
Youth groups receive LRC mission briefing prior to tour of selected research facilities.

YOC Sandra C. Wright, Dynamic Loads Division, determines aircraft wing area utilizing planimeter.

YOC Joseph D. Woodson, Research Support Division, assists Rodney Wyatt (left) and Edgar Yarrington (right) in installation of ram air inflatable tests device.

YOC Wade K. Butler (left), Research Support Division, assembles breach block on light gas gun. Wilhelmina D. Boone, YOC assigned to Dynamic Loads Division, reviews typing assignment with Fernette Mahaffey.

YOC Russell L. Oakley, Dynamic Loads Division, plots dynamic pressure points for parachute deployment test. YOC Gayle L. Mansfield (right), Full-Scale Research Division, maintains branch files.

NYC's James Guy and Floyd Tucker in Special Storage Area of Building 1155.

NYC Vivian Langford receives instructions from Joseph Braig in Small Business and Industry Assistance Office.
Eight staff members recently received cash awards for suggestions under the NASA Incentive Awards Program. Top left - Allan C. Hanrahan (left), Fabrication Division, receives a check for $210 from Frank L. Plotz for his suggestion concerning the design of a ceramic substrate scribe which will reduce the standard size of ceramic substrate and eliminate delays and cost incurred from normal acquisition procedures. Top right - Mickey R. Gardner, Research Support Division, received $50 for the development of an improved method of conducting fatigue tests at elevated temperatures of 550 degrees F. Looking at the object is Fred F. Eichenbrenner. Center left - John J. Nettles (left), Procurement Division, receives $15 from John Munick for suggesting a more efficient method of pre-determining the mode of transportation of material to be shipped from LRC to outlying destinations. Center right - Young V. Houston (right), Flight Mechanics and Technology Division, receives $15 from G. L. Elliott for the use of a modified C-clamp for reworking C-47 cowlings thus reducing the number of man-hours required to perform cowl flap removal. Lower left - Charles A. Rogers (left) and Joe C. Woolsey, Research Support Division, receive congratulations from Eichenbrenner. They shared a $30 award for the design of a special tool for separating plugs from a vacuum system thus eliminating flange separation, flange leak tests and seal replacement in a vacuum chamber. Lower right - George M. Walker (second from left) and William E. Robbins (second from right), Fabrication Division, shared a $35 award for the use of a portable electronic device which exhibits high frequency sounds when electrodes approach within .0002 inches of machined pieces thus indicating the distance between machined pieces which save both material and time. Making the presentation are Plotz (left) and Daniel R. Hayes.
APOLLO PROGRAM CHANGES

NASA Acting Administrator Thomas O. Paine announced today that Lunar Module operations will be dropped from the first manned Apollo-Saturn flight, Apollo 8.

Dr. Paine also stated that the NASA's Office of Manned Space Flight will begin planning for an alternate manned Command and Service Module mission for launch in December.

Dr. Paine emphasized that no final decision will be made on the precise mission plan for the alternate flight until after the first manned Apollo flight (Apollo 7) this fall. Apollo 7 is a mission of up to 10 days' duration to complete flight qualification of the Command and Service Modules.

To assure greatest value from the mission, planning and training for Apollo 8 must begin in the period before the Apollo 7 mission is flown but the final content of the mission plan will be selected only after Apollo 7 mission results are evaluated.

Lunar Module 3, which has been delayed in checkout, will be flown next year on the fourth Saturn V (AS 504) with Command and Service Modules No. 104. This decision is based on preliminary studies which indicate that many Apollo program objectives scheduled for later flights can be attained by utilizing the Apollo 8 Command Service Module mission.

Lt. Gen. Samuel Phillips, Apollo Program Director, said one very important advantage of flying Apollo 8 this year is the opportunity for earlier experience in the operation of the Saturn V and Command and Service Modules than can otherwise be obtained.

Two problems previously experienced in the Saturn Apollo systems -- vertical oscillation or "POGO effect" in the first stage of the Saturn V and the rupture of small propellant lines in the upper stages -- have been corrected and the solutions verified in extensive ground tests.

APPRENTICE SCHOOL NOTICE

The fall semester of the Apprentice School will start on Monday, September 9 and classes will be held in the Apprentice classrooms located in Building 586.

The courses offered, instructors, and class meeting days are as follows:

- Algebra, J. L. McCarty, Monday and Wednesday; Blueprint Reading and Sketching, M. A. Weiner, Monday and Wednesday; Analytic Geometry, B. A. Conway, Tuesday and Thursday; Analytic Geometry, J. S. Heyman, Tuesday and Thursday; Engineering Drawing II, C. W. Osborn, Wednesday and Thursday; Fundamentals of DC, A. L. Jones, Tuesday and Thursday; College Physics III, V. G. Collins, Tuesday and Thursday; Engineering Drawing I, W. M. Cooke, Tuesday and Thursday; College Physics III, V. G. Collins, Tuesday and Thursday; Strength of Materials I, G. W. Ivey, Wednesday and Friday; and Trade Fundamentals, J. B. Davenport, Friday.


FOR SALE: 26-foot Chris Craft Cavalier with inboard engine. Bell, 596-4885 after 6 p.m.

TWO SATURN V rocket stages have undergone acceptance firings at the Marshall Space Flight Center's Mississippi Test Facility. This picture is of a second stage (S-II-5), which was fired for more than six minutes last month. Later a booster stage (S-IC-6) was fired for 125 seconds. Both units were fired for the planned durations and both performances were satisfactory. The two stages were modified slightly to overcome problems that arose in the last launching of a Saturn V. The tests of these modifications, which are being incorporated in the next Saturn V vehicle (SA-503), were successful.

IEEE CHAPTER MEETS SEPT. 18

The Hampton Roads Section of the Institute of Electrical and Electronic Engineers will meet on Wednesday, September 18 at Sikes Inn in Smithfield.

The meeting will be preceded by a social period at 6:30 p.m., a Smithfield ham and roast beef dinner at 7:15, and the program at 8:30.

The program will consist of a tour of Vepco Nuclear Power Station in Surry. This is Virginia's first commercial nuclear station. Working models, animated displays, teaching machines, slides, lectures, and movies will be used to make the tour enjoyable as well as informative.

Guests are invited to attend. For reservations call Frank Senft, extension 3461, by Tuesday noon, September 17.

LANGLEY TENNIS CLUB NEWS

Arnold Mueller and Phyllis Shakshober won the LRC Tennis Club's mixed doubles tournament by defeating Bill Weaver and Betty Baker, 6-1, 6-2. Other results of the matches were as follows:

- First round: Robert and Helen Lee defeated Jim Gardner and Barbara Hixon 6-4, 7-5; Mueller and Shakshober over Richard and Joan D'Amato 6-2, 6-0; Weaver and Baker over Joe and Marion Block 6-6, 6-4; and Tom Foughner and Frances Taylor defeated Tony Parrott and Carolyn Grantham 6-1, 6-4.

- Semi-finals: Mueller and Shakshober defeated Lee and Lee 6-2, 6-1; and Weaver and Baker defeated Foughner and Taylor 6-0, 6-2.

TWO-DAY CARNIVAL HAILED AS SUCCESSFUL CELEBRATION

SUE Nelson (top left), the newly elected Langley Research Center Carnival Queen, received a diamond necklace from the Activities Association. Placing the gift around her neck is her escort, Rusty Norton. Retiring Queen Dianne Adams (top center) dances with her father, M. G. Adams. Betty and Thayer Sheets (top right) get into the swing of things. Winner of the 15-foot Sunset travel trailer was Ralph E. Moscater (center left photo), Fabrication Division. He is congratulated by Axel T. Mattson (left). Carnival fans (center right) were entertained by continuous games. Plenty of entertainment was also provided for the younger group (lower left). Axel Mattson (lower right) presents gifts to Sue Nelson, new Queen; Janet Vaughan, first runner up; and Ann Chambers, second runner up. Watching the presentation ceremonies is Ernest Greene, President of the Activities Association.
WEBB TO RETIRE AS NASA HEAD; DR. PAINE ACTING ADMINISTRATOR

James E. Webb, Administrator of the National Aeronautics and Space Administration for nearly eight years, will retire next month. Webb announced Monday after a meeting with President Johnson that he will retire October 7 on his 62nd birthday. The President announced that he would name Dr. Thomas O. Paine, now Deputy Administrator, to be Acting Administrator.

President John F. Kennedy appointed Webb NASA Administrator in February 1961. Two and a half months later Mercury Astronaut Alan Shepard was launched on the first U.S. 302-mile-long space mission, a sub-orbital rocket flight to an altitude of 116 miles.

NASA completed the Mercury series of six one-man space flights—four of them orbital—and then accomplished 10 two-man Gemini missions, with a perfect safety record.

In January 1967, the first three-man Apollo team perished in a launch-pad fire. After a long period of analysis and readjustment, NASA is on the verge of resuming manned space flight. Three astronauts are preparing for a blast-off on top of a Saturn booster October 11.

A former executive of the General Electric Corporation, Dr. Paine was named Deputy Administrator early this year to replace Dr. Robert C. Seamans, who resigned after serving seven years with the space agency.

Born in Berkeley, California, November 9, 1921, Dr. Paine received his bachelor's degree in Engineering from Brown University in 1941. After wartime service as a naval officer aboard submarines, he earned his Master of Science degree in 1947 and a Doctorate in Physical Metallurgy in 1949, both from Stanford University.

At the time of his NASA appointment, Dr. Paine was Director of TEMPO, General Electric's Center for Advanced Studies, Santa Barbara, California.
Langley Researcher, an official publication of the Langley Research Center, National Aeronautics and Space Administration, Langley Station, Hampton, Virginia 23685, is published biweekly in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 3116.

Editor..................Ruth Angel Verell
Staff Photographer............Bob Nye
Reporters.............Langley Employees

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised herein must be offered for sale or rent without regard to race, creed, color or national origin.

ANNOUNCEMENTS

CO-OPS CONGRATULATED. . .Carol Mathews, an aerospace engineering co-op student from VPI currently assigned to the Full-Scale Research Division, and Walter Wilser, a physics co-op student from Northeastern University assigned to Applied Materials and Physics Division, recently became engaged. Congratulations to these very cooperative co-ops.

HOME LIFE NOTICE. . .Home Life Insurance Company has advised the Center that the rates for the Group Travel Accident Policy will be renewed on the policy anniversary date of November 1, 1968, with no change. The rates of 30¢ per year per $1,000 for Plan 1, 65¢ per year per $1,000 for Plan 2, and 45¢ per year per $1,000 for spouse insurance will be continued until November 1, 1969. There are no changes in benefits or in any contract provisions.

DIAPER LINE. . .Announcing the birth of an eight pound, three ounce daughter, Louise Anne, on September 7 is Joseph Drewry, Aero-Physics Division. . .Weighing in at nine pounds, two ounces on September 8 was Keith Scott, son of Herbert F. Thornton, Flight Instrumentation Division.

AFGE MEETING. . .The NASA Lodge 2755 American Federation of Government Employees will meet on September 25 at 7:30 p.m. at the Central Labor Union Hall.

COURSES OFFERED. . .The York County Adult Education evening program will hold registration for classes at 7 p.m. on September 23 at York High School. The following courses will be offered: mathematics for electronics, D.C. fundamentals, A.C. fundamentals, vacuum tubes and semiconductors, electronic circuitry, pulse and digital circuits, industrial electronics, microwaves, transistors, mathematics for engineering technicians, introduction to digital computer programming, typing, bookkeeping, business machines, and shorthand. Classes will start September 25 and meet on Monday and Thursday evenings for a period of 10 weeks. Registration fee is $10. For further information call the Adult Education Office, 898-5937.

TOUCH FOOTBALL. . .Play has started in the NASA Touch Football League. Scores for the two-week period were: Boozers 52 - IRD 6, ACD 18 - KNADS 14, Misfits 7 - Bombers 6, Boozers 24 - Bombers 12, ACD 26 - IRD 12, KNADS 19 - Misfits 19.

CAFETERIA MENU

The following menu will be served in the cafeterias during the week of September 23:

Monday - Cream of potato soup, pepper steak, roast pork, Polish sausage, macaroni and weiners. Snack bar - Soup, hot dog, steak sandwich, French fries.

Tuesday - Puree of bean soup, beef stroganoff, broiled slice of smoked ham, liver and onions, fish cakes. Snack bar - Soup, ham and egg sandwich, hot pastrami on rye, French fries.

Wednesday - Cream of mushroom soup, Spanish pot roast, breaded veal cutlet, broiled fish, western omelet. Snack bar - Soup, hamburger, hot roast beef, French fries.

Thursday - Vegetable-beef soup, grilled steak, smoked pork sausage, fried chicken, grilled spiced luncheon meat. Snack bar - Soup, barbecued pork, breaded veal cutlet on roll, French fries.

Friday - New England clam chowder, baked Virginia ham, fried oysters, Salisbury steak, cheese ravioli. Snack bar - Soup, fish sandwich, flying saucer, French fries.

The menu for the week of September 30 is as follows:

Monday - Cream of tomato soup, roast ribs of beef, grilled pork chops, beef stew, baked hash. Snack bar - Soup, grilled cheese and bacon, roast beef sandwich.

Tuesday - Chicken-noodle soup, chicken and dumplings, friedfantail shrimp, meat loaf, chili con carne. Snack bar - Soup, hamburger, hot turkey sandwich, French fries.

Wednesday - Split green pea soup, braised beef tips, baked ham, stuffed flounder, franks and beans. Snack bar - Soup, hot dog, baked ham on roll, French fries.

Thursday - Vegetable-beef soup, grilled steak, ham and macaroni loaf, fried chicken, Austrian ravioli. Snack bar - Soup, barbecued beef sandwich, steak sandwich.

Friday - Manhattan clam chowder, chicken pie, liver and onions, fried flounder, knockwurst, Spanish omelette. Snack bar - Soup, fish sandwich, hot corned beef, French fries.

WANTED: Fifth driver from Windsor Great Park to W.A. on 8 shift. Cooper, 4840.

WANTED: Passengers from Seaford to W.A. on 8 shift. Childs, 4557.
COMBINED FEDERAL CAMPAIGN

(Continued from page 1)

The single meeting planned for this year has been called by Edgar M. Corrhtght, Center Director, for Friday, September 27 at 10 a.m. in the Activities Building. Approximately 480 supervisors are being notified personally of this meeting. The Center is composed of 26 divisional groups and the divisional leaders are as follows:

Peter F. Korycinski, Office of Director, Associate Director, Assistant Directors (Research): Henry A. Fedziuk, Research Reports; James S. Martin, Advanced Space Projects and Lunar Orbiter; William N. Gardner, MORL; Roland D. English, Scout; Herbert A. Wilson, AMPD; Paul F. Fuhrmeister, ACD; George B. Graves, FID; Howard B. Edwards, IRD; William H. Phillips, SMD; I. Edward Garrick, DLD; Richard R. Heldenfels, SRD; John V. Becker, APD; Philip Donely, FMTD; Mark R. Nichols, FSRD; Marion B. Seyffert, Fabrication; E. Barton Geer, FVSD; Harold I. Maxwell, RMFD; Earl F. Stahl, Research Support; Edward T. Maher, Administrative Services; Edward A. Howe, Fiscal; Charles F. Barnett, Personnel; Harry H. Hamilton, Photography; Sherwood Butler, Procurement; James H. Parks, Office of Eng. Tech. Service; and William L. Williams, Office of Assistant Director for Administration.

Special highlights of the September 27 meeting will be provided staff members.

Neihouse stated he felt that the Center is at a point of maturity as regards this annual campaign and it is ready for a simplified plan including the 26 divisional leaders and their representatives.

The Director has indicated that if we respond to the voice of our consciences, we will rise to the occasion of this campaign and again become the leaders in giving on the Peninsula.

This year’s campaign slogan of “simplicity, information, enthusiasm” is working out well and people seem to be receiving enthusiastically the simplified procedures and plans for providing desired information to the staff. The drive is scheduled for Thursday, October 3 and “clean-up” day will be Friday, October 4.

Keep in mind that for the first time a feature of this year’s Federal Campaign is the convenience of a single roll deduction plan is provided. A deduction of one dollar per payday would provide an average gift per agency of 50 cents per year.

FOR SALE: 1958 Chevrolet Bel Air 4-door hardtop - 348 engine. Wilson, 596-1344.

FOR SALE: Winchester Model 61 pump .22 cal. rifle with 2x weaver scope mounted and leather gun case - $50. Match grade Remington ammo also available. Hansbrough, 851-5369 after 5 p.m.

FOR SALE: Early American sofa and two maple end tables. Stanfield, 596-1833 after 5 p.m.

FOR SALE: 17-1/2-foot fiberglass boat with 95 hp Mercury engine and Cox trailer - full canvas. Evans, 898-5004.

EXPERIMENTAL AIRCRAFT: The XV-5B aircraft made its first vertical and hovering flight this summer at Ames Research Center. The NASA center will use the plane to study vertical operations and transitions to horizontal flight by such fan-in-wing aircraft. The semi-circular doors that cover the fans in horizontal or cruise flight can be seen above the wings. Two jet engines, mounted high on the fuselage, provide thrust that can be diverted to wing fans for vertical lift or directed out tail pipes for conventional wing-supported flight.

BROOKS ASSISTANT DIRECTOR

(Continued from page 1)

1949. His early research was devoted to the dynamics of rotary and fixed wing aircraft. Current areas of research include various phases of the dynamics of launch vehicles and spacecraft, the environments in which they operate, and facilities for simulating and studying those environments. Areas of specific interest include the development of techniques for measuring the physical properties of lunar and planetary surfaces, simulation and analysis of the stability of lunar spacecraft during landing, and the dynamics of aircraft and automotive vehicle operations on wet pavements.

Dr. Brooks was appointed head of the Vibration and Dynamics Branch in August 1964, and became Assistant Chief of the Dynamic Loads Division in February 1965. A nationally recognized authority on the vibration problems of spacecraft, launch vehicles, and helicopters, Dr. Brooks received a NASA Sustained Superior Performance Award in 1963. In the same year he was the recipient of NASA’s Incentive Award for two inventions-- an impact simulator and a lunar penetrometer system for measuring hardness of lunar and planetary surfaces.

Dr. Brooks is author or co-author of over 40 published technical reports on dynamics of aircraft, space vehicles, spacecraft and lunar technology.

He is a member of Phi Beta Kappa, the American Institute of Aeronautics and Astronautics, the American Association for Advancement of Science, and the Engineers' Club of the Virginia Peninsula. He held a Legendre Fellowship while studying at Princeton.

He served in the United States Navy from 1941 until 1945.

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<tr>
<th>Name</th>
<th>Degree</th>
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<tbody>
<tr>
<td>Melvin D. Aldridge</td>
<td>D.Sc., E.E. Eng.</td>
<td>University of Virginia</td>
<td>Flight Instrumentation</td>
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<td>John D. Buckley</td>
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<td>Iowa State University</td>
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<td>John R. Davidson</td>
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<td>Deene J. Westman</td>
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<td>William and Mary</td>
<td>Space Mechanics</td>
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<td>Harold R. Compton</td>
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<td>Arthur R. Friend</td>
<td>M.S., Public Administration</td>
<td>Indiana University</td>
<td>Program Control Analysis</td>
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<td>Chris Gross</td>
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<tr>
<td>Joseph H. Goad</td>
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<td>Instrument Research</td>
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<td>Robert F. Greene</td>
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<td>University of Nebraska</td>
<td>FVSD</td>
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<tr>
<td>Kenneth V. Haggard</td>
<td>M.S., Physics</td>
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<td>Aero-Physics</td>
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KOZMETSKY NAMED CONSULTANT

Dr. George Kozmetsky, dean of the College of Business Administration and of the Graduate School of Business, the University of Texas at Austin, has been sworn in by Dr. Thomas O. Paine, Deputy Administrator, as a consultant to James E. Webb, NASA Administrator.

He will serve on the Management Advisory Panel which advises on questions of organization and management of NASA.

A native of Seattle, Washington, Dr. Kozmetsky received his bachelor's degree from the University of Washington and a Master of Business Administration and Doctor of Commercial Science degrees from Harvard University.

In addition to the deanships at Austin, he is executive associate for economic analysis for the University of Texas System which has nine component institutions in seven cities.

He was a founder of and now is a director of and consultant to Teledyne, Inc., which manufactures electronic control devices for the aviation industry. Previously he had been associated with Litton Industries and Hughes Aircraft Company.

His professional specialties are system analysis, organization theory, quantitative methods, information handling, application of digital computing techniques and system management.

ISA SECTION MEETS SEPT. 26

The Tidewater Section of the Instrument Society of America will meet on Thursday, September 26 at the Plantation Inn, Sinclair Circle, Hampton.

The meeting will be preceded by a social hour at 6:30 p.m., a "meet the speaker" dinner of roast beef at 7:30, and the meeting at 8:30.

The program will feature a talk by Trafford Leland, an aerospace engineer in Landing and Impact Branch, Dynamic Loads Division. He will discuss some research problems dealing with aircraft landing and ground handling. An example of technological fallout will be shown with the film "Automobile Dual Breaking."

Guests are invited to attend. For reservations call Warren Thomas, extension 3492, by Thursday noon, Sept. 26.

ISA is a non-profit technical, scientific, educational organization of individuals interested in the theory, design, manufacture, and use of instrumentation. The scope of ISA activities embraces the science and technology of measurement, information acquisition, telemetry, data processing and display, and automatic control. It further includes measurement standards, precision calibration, and systems engineering. The society is concerned with the application of all aspects of instrumentation to industrial, laboratory, biophysical, geophysical, marine and space environments.

WANTED: Driving combination from Norfolk to W.A. on 7:30 shift. Hudgins, 3071.


WANTED: Alternate driver to complete combination from Southern Shopping Center, Norfolk, to W.A. on 7:30 shift. Heiner, 3735.

FOR SALE: 5-piece dinette set with formica top, 2 portable TV sets - Zenith and Emerson. Pease, 851-0181 after 5.

How to get a nice red, white and blue feeling—and pocket a little green

U. S. SAVINGS BONDS AND NEW FREEDOM SHARES

ELTON MILLER DIES AT AGE 87

Elton W. Miller, who retired from the Center in June 1948 as Executive Assistant to the Director, died September 8 at the age of 87.

Miller was born June 9, 1881 in McPherson, Kansas. He attended Carnegie Institute of Technology and received a B.S. degree in Mechanical Engineering from George Washington University in 1905.

He entered on duty at the Center on January 3, 1922, and was assigned to the design of the Variable Density Wind Tunnel and later placed in charge of the operations of the tunnel. In May 1925 he was placed in charge of the design and construction of the Propeller Research Tunnel and remained in charge of the section until July 1927 when he was made Chief of the Aerodynamics Division. Later the Center was divided into departments and in October 1943 he was made head of the Administration Department. In November 1945 he was relieved of his duties as department head and made Executive Assistant to the Director and Consultant to the Department Heads.

He is survived by his widow, Mrs. Nellie Miller; and two sons, Willard H. Miller, Instrument Research Division, and J. Kenneth Miller, Norfolk.

FOUND: Man's prescription glasses in case - ear piece taped. Leiffer, 4881.


FOR SALE: Akai Model 7 tape recorder with portable stereo speakers - same as Roberts Model 770X - all accessories including manual - $250. Staton, 838-4405.
Ten staff members have received cash awards for suggestions under the NASA Incentive Awards Program. Top left - Charles A. Rogers (left) and John H. Crosby, Research Support Division, received $30 for a suggestion relative to purchasing quartz lamps with short leads and silver soldering surplus leads obtained from broken or burned out lamps thus eliminating the added cost of purchasing quartz lamps with long leads. Top center - Evangeline S. Fox, Procurement, receives $20 from William E. Rew for her suggestion relative to changing the letter designation on invitation for bids so as to easily identify the individual who handles a particular procurement solicitation. Top right - Daniel H. Biermann (left), Photographic Division, receives a check for $30 from Harris B. Pate for the development and utilization of a continuous film loop transport system for use in printing numerous 16 mm original negatives thus resulting in significant man-hour savings. Center left - Roland W. Lee (left) and Charlton W. Mann (center), Research Support Division, shared a $100 award for the unique repair of a pneumatic air compressor which allowed continuous operation of Langley's 20-inch Mach 10 LTP tunnels. Making the presentation is John R. Denton. Center right - Richard B. Prince (right), Instrument Research, presents a check for $60 to William E. Fox for the conversion of self-balancing potentiometers to millivolt potentiometers which will save substantial costs in the purchasing of new records for LRC research facilities. Lower left - Boyd L. Williams (center) and Robert M. Stewart (right), Research Support, shared an $80 award for the development of a better method for illuminating a specimen during manipulation in an electron probe X-ray microanalyzer which allows the operator more freedom in manipulating the machine controls. Making the presentation is Fred R. Eichenbrenner. Lower right - Daniel R. Hayes (right), Fabrication Division, presents a check for $20 to Quinton C. Davis for improving the design of film viewers used by the Lunar Orbiter Project which provided an enlarged viewing surface, controlled film speed, a more satisfactory means of reinspecting film, and a reduction of operator fatigue.
Magnetomotive forming of metals is another high-energy fabrication technique being advanced by the space program. Instead of using explosive charges (as mentioned in the last T.U. News article) magnetomotive forming employs powerful magnetic impulses to force metals into desired shapes. Powered by banks of capacitors, shaped coils produce the necessary forces in a most predictable way.

Magnetomotive forming methods, like explosive forming methods, are particularly well suited for high production and produce metallurgical effects quite different from conventional methods since the deformation velocity is at least one order of magnitude greater.

Many of the recent developments in the field of magnetomotive forming have been accomplished at MSFC. In order to effectively convey this new technology to industry, the T.U. Office there has prepared a 16 mm movie, in sound and color, introduced by Wernher von Braun. A copy of this film is available at the Langley T.U. Office. Also available are the following publications which cover the subject: SP 5062 High Velocity Metalworking; SP 5034 The Electromagnetic Hammer, and SP 5017 Metal Forming Techniques.

KNOW YOUR CREDIT UNION

The flags are really flying! Member response to the Credit Union’s annual Fly-the-Flag contest has been terrific. We like to think, though, that it is not just the cash prizes or the bonus of one month’s payment on a car loan that accounts for all those decals showing up on rear bumpers. Sure the decal has to be there to qualify for a prize but there is more to it than that.

Part of the sales pitch is “show you are proud to be a member.” And that, hopefully, is truly a good part of it. If the Credit Union’s image is as it should be and as the Credit Union tries to have it with courteous, efficient service, low interest rates, and substantial dividends, members should be glad to identify with it. And the bumper decal does that. Try a little test. When you, as a member, see a decal on the car ahead of you don’t you feel a sort of kinship with the driver, a little less need to zip around or blow your horn, and a little more inclination to extend the courtesies of the road or a helping hand? Sure you do. It is human nature. So let the man behind you enjoy the same sense of belonging. Call extension 3606 today for your personal flag. And may you win a prize.

As for specifics, if the decal is there, these lucky members win $5 cash: 2568, 3819, 5148, 10249, and 20843. This even luckier member, 25796, not only wins $5 but if his car is financed by the Credit Union he wins one month’s payment on his loan. If it was financed but the loan is paid-off, he wins $50 cash. A new list of winners in two weeks—be ready.

WANTED: Driving combination from Runnymede area to W.A. on 7:30 shift. Lambiotte, 3543.
WANTED: Driving combination from Runnymede area to W.A. on 8 shift. Harvey, 3313.
FOR SALE: 2-story, 3-bedroom, 1-1/2-bath house with garage and work shop. Collinsworth, 868-5861.

ASME TO HEAR PANEL DISCUSSION ON JUVENILE DELINQUENCY SEPT. 26

Captain H. C. Mapes, Youth Bureau of Newport News Police Department; David Piercy, Superintendent of Newport News Detention Home; and R. Bowen Ault, Chief Probation Officer for Williamsburg, York and James City Counties, will be members of a panel discussing juvenile delinquency on the Peninsula at a meeting of the Eastern Virginia Section of the American Society of Mechanical Engineers on Thursday, September 26 at 8 p.m. in the Virginia Room, Giant Open Air Market.

Introductory comments by members of the panel will be followed by a discussion and questions from the audience. David Chestnutt, Dynamic Loads Division, will be the moderator.

A social period will be held at 6:15 p.m. followed by dinner at 6:45. The meal will be buffet style at a cost of $3.60 per plate.

Reservations for dinner may be made by calling Ted Phillips, 877-5637, or Lana Couch, 877-5858.

WANTED: Driving combination from Runnymede area to W.A. on 7:30 shift. Lambiotte, 3544.
WANTED: Driving combination from Northampton/Whealton Heights to E.A. on 8 shift. Ruhlin 2661 or 826-1574.
LOST: Hewlett-Packard digital volt meter, Inventory No. 140932, Model 2401C. Batten, 3448.

Edgar M. Cortright

Edgar M. Cortright, Director of the Langley Research Center, will be the guest speaker for the 1968-1969 inaugural meeting of the Hampton Roads Section of the American Institute of Aeronautics and Astronautics. The meeting will be held on October 3, the month of the NASA’s tenth anniversary. The subject of Cortright’s talk will be “The Outlook for Space and Aeronautics.” The AIAA will have as co-sponsoring organizations the Engineers’ Club of the Virginia Peninsula, Virginia Society of Professional Engineers, and the American Society of Mechanical Engineers.

The meeting will be held in the NASA West Cafeteria with a social hour starting at 6:30 p.m., followed by a steak dinner at 7:30 and the meeting at 8:30. The price of the dinner will be $3.50. Reservations may be made by contacting Bernard Spencer, 722-6478; Bob Greens, 838-3160; K. A. Weis, 838-5331; or Dennis Dicus, 595-4734.

William H. Michael, Space Mechanics Division, is chairman of the Hampton Roads Section of the AIAA. Other officers are E. M. Russell, local representative for LTV, vice-chairman; J. T. Foughner, Dynamic Loads, secretary; and R. O. Schade, Flight Mechanics and Technology Division, treasurer.
The time is now! This week, each of us at Langley Research Center will have the opportunity to participate in the Combined Federal Campaign, to make an investment in a better community and in a better nation.

You are probably asking yourself how this campaign has already reached the point of solicitation when you have heard so little about it. You will recall that when I was appointed Chairman, I mentioned that the theme of the campaign this year would be "Simplicity, Information, and Enthusiasm."

In other words, we have tried to keep the preliminary work to a minimum and, yet, keep you informed as to the purpose and aims of the drive. The simplicity has already paid off; the information is available; and the enthusiasm is now up to you.

During the past week, Mr. E. M. Cortright, Director, met with all Center supervisors to discuss the campaign. He asked each supervisor to support the drive and to let each member of the staff know that he is behind this effort. Mr. Cortright pointed out that this is a special year and should not be considered as just another campaign. It is special because it is a combined drive, and features a payroll deduction plan. It is designed to provide a single opportunity to assist the worthwhile service agencies of the local community and those on a national scale which are working to improve health and the image of the nation throughout the world. It is special too because never have the needs been so pressing and so great.

In his talk to the supervisors, Mr. Cortright said there is a great potential for increased giving at this Center. "The average giving," he stated, "has not been high in recent years." Mr. Cortright continued, "I think it was some years back, but it has held level while the needs have gone up and the giving of other groups has gone up. I think my suggestion of
a 50-percent increase is realistic - and I base this on the fact that the average gift at the Center is about $18.00 a year."

Langley Research Center has always met any challenge which has come its way - be it the accomplishment of vast and important research effort or in the pioneering of new concepts of community action. Once again, we are called upon to meet a new challenge. I know I can count on each staff member to give this campaign the careful consideration it deserves. I ask that you take the time to read the literature before signing your pledge card.

When the results are finally tallied, I have confidence that Langley Research Center will once again stand very tall in the community as a leader, and each of us will feel better for the service rendered the community and the nation.

A. I. Neihouse,
Campaign Chairman

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<tr>
<th>Financial Chairmen</th>
<th>Phone</th>
<th>M.S. Bldg.</th>
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<tr>
<td>Helen Willey (East Area)</td>
<td>2631</td>
<td>359 641</td>
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<td>Eleanor Cole (West Area)</td>
<td>4765</td>
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NASA CELEBRATES ITS TENTH ANNIVERSARY THIS MONTH

"The Congress hereby declares that it is the policy of the United States that activities in space should be devoted to peaceful purposes for the benefit of all mankind...the general welfare and security of the United States require that adequate provision be made for aeronautical and space activities."

These opening words of the National Aeronautics and Space Act of 1958 set the policy for the nation's new space agency.

It is a policy which in a single decade has brought the National Aeronautics and Space Administration to the threshold of a major national goal -- a manned landing on the moon.

The first manned launch in the Apollo program is scheduled this month, NASA's anniversary month, and the agency still hopes to achieve the manned lunar landing before 1970.

Apollo is the follow-on to the successful manned Mercury and Gemini projects during which the world followed countdowns, blastoffs and recoveries of astronauts at sea, saw pictures of American space walks and photography from Earth orbit -- much of this as it actually was going on.

An industry work force of over 400,000 was built up and used to apply NASA's accumulation of aeronautical know-

(Continued on page 3)

A DECADE OF PROGRESS: Representative spacecraft are shown in this artist's conception, symbolic of NASA's 10 years of space exploration since its establishment on October 1, 1958. NASA's research has broadened man's knowledge of space, other planets and even Earth. Satellites in the above drawing include those for manned missions such as Mercury, Gemini and Apollo, deep space probes, lunar exploration and communications, navigation, weather and life science missions.

ANNUAL AWARDS CEREMONY PLANNED FOR OCTOBER 11

The Center's Annual Awards Ceremony will be held on Friday, October 11 at 1:30 p.m. in the Activities Building, Building No. 1222. This ceremony is one of Langley's highlights of the year. It is an occasion for making service award presentations to employees and for recognizing individuals and groups of Langley personnel for their particular achievements in helping to realize the mission of the Center and of the NASA.

This year the ceremony is especially significant in that it recognizes the 10th anniversary of the NASA. Edgar M. Cortright, Director, and Dr. John E. Duberg, Associate Director, will make the awards presentations.

The Fort Monroe Band, recipients of a number of musical awards in the past several years, will play several selections for employees and invited guests. The invocation will be given by the Reverend Elmer F. Bosserman of Trinity Lutheran Church, and the retirement of the colors will be performed by the U.S. Marine Color Guard, Marine Barracks, Naval Weapons Station, Yorktown.

The Center will present a diamond 40-year service pin Ferdinand E. Hartman, Research Support Division. Fritz, as he is affectionately known to his fellow employees, accumulated 20 years of service with the U.S. Army and 20 years with NASA.

Thirty-year service pins will be presented to the following:


Langley Researcher, an official publication of the Langley Research Center, National Aeronautics and Space Administration, Langley Station, Hampton, Virginia 23685, is published biweekly in the interest of its employees. Address contributions to the Editor, Mail Stop 154, telephone 3116.

Editor.............. Ruth Angel Verell
Staff Photographer......... Bob Nye
Reporters............Langley Employees

The privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised herein must be offered for sale or rent without regard to race, creed, color or national origin.

ANNOUNCEMENTS

PARTY PLANNED. . . The Activities Association will give a party for all carnival workers at 7 p.m. on Saturday, October 19 in the Activities Building. For further information and for reservations call the Activities Building, 4583, by Tuesday, October 15.

BABY DERBY. . . Announcing the birth of a son, Stuart Allan on September 24 is Aaron J. Ostroff, Flight Instrumentation Division. The new heir weighed eight pounds, twelve ounces. . . Celebrating the birth of an eight pound, two ounce son, James Andrew, on September 24 is Roy A. Heath, Fabrication Division. . . Weighing in at eight pounds, nine ounces on September 11 was Karen Lee, new daughter of Rodney Duncan, Dynamic Loads Division. . . Walking the floor nights is Larry L. Harvey, Fabrication Division. He became the father of a six pound, one ounce son, David Michael, on September 20. . . Announcing the arrival of a seven pound, nine ounce daughter, Jennifer Lane, is S. Eugene Sutton, Flight Instrumentation Division.

ENGAGED. . . Making plans to desert the bachelor ranks is Earl H. Arrowood, Research Support Division. He is engaged to Judith L. Owens, Hampton, and plans call for a December 7 wedding.

SAFE BOATING. . . U.S. Coast Guard Auxiliary Flotilla 61 in Hampton will start an 8-lesson Safe Boating Course on October 8 at 7 p.m. The classes will be held in the clubhouse at 523 Bridge Street, Hampton. This course is a public service provided by the Coast Guard Auxiliary to promote safe boating upon our waters. Newcomers to the boating world will find the classes valuable in learning about the boat, rules and regulations, chart reading, and other phases of boating. Experienced boatmen will learn the latest in equipment, ventilation, and other parts of boating that change periodically to keep up with the modern age. First mates are welcome to the course - boating is a family affair.

NEWLYWEDS. . . Nancy Marie Hopkins, Structures Research Division, took her final vows with John T. White on September 21 in Poquoson.

FOR SALE: 1964 Pontiac Catalina, 4-door sedan, air conditioning, power steering. Dickens, 826-1844.

FOR SALE: Disillusioned camper wishes to sell Vactioneer camping trailer - $350. Collins, UN8-9213.

FOR SALE: Small upright German-made piano, also 35-foot Chris Craft cruiser with twin engines. Davis, CH4-7285.

FOR SALE: 6-piece solid walnut Stereo Entertainment Center, can include 2 electro-voice 12TRXB speakers, Knight 40 watt amplifier and Heath record player. Darnell, 877-4822.

The following menu will be served in the cafeterias during the week of October 7:

- Monday - Puree of bean soup, roast fresh ham, breaded veal cutlet, stuffed pepper, grilled cheese sandwich. Snack bar - Soup, ham and egg sandwich, veal cutlet on jumbo roll, French fries.
- Tuesday - Cream of mushroom soup, pot roast of beef, stuffed shrimp, spaghetti and meat sauce, tamale pie. Snack bar - Soup, hamburger, hot roast beef sandwich, German potato cakes, baked beans.
- Wednesday - Chicken-vegetable soup, half-pound chopped steak, chicken shortcake, Polish sausage, fish cakes and cole slaw. Snack bar - Soup, sea dog, Lou's satellite special, French fries.
- Thursday - Beef broth with barley, Swiss steak, fried scallops, salmon loaf, western omelette. Snack bar - Soup, hot dog, steak sandwich, French fries.
- Friday - Manhattan clam chowder, roast beef, grilled slice of smoked ham, fried fish, chili mac. Snack bar - Soup, fish sandwich, hot roast beef, French fries.

The menu for the week of October 14 is as follows:

- Monday - Cream of tomato soup, simmered corned beef and cabbage, grilled pork chops, sauteed chicken livers over rice, grilled spiced luncheon meat. Snack bar - Soup, barbecued pork sandwich, hot corned beef, French fries.
- Tuesday - French onion soup, pepper steak, chicken pan pie, liver and onions, Spanish omelette. Snack bar - Soup, hamburger, steak sandwich, French fries.
- Wednesday - Chicken-noodle soup, Spanish pot roast, baked ham, chicken chow mein with rice and noodles, franks and beans. Snack bar - Soup, hot dog, sliced barbecued beef, French fries.
- Thursday - Split green pea soup, chuckwagon steak, meat loaf, pork chopette, baked hash. Snack bar - Soup, ham and egg sandwich, hot pastrami sandwich, French fries.
- Friday - Clam chowder, grilled steak, broiled fish, fish cakes, barbecued chicken. Snack bar - Soup, fish sandwich, steak sandwich, French fries.

FOR SALE: Only Americans can invest in U.S. SAVINGS BONDS, NEW FREEDOM SHARES - ASK WHERE YOU WORK OR BANK

CAFEETERIA MENU

The following menu will be served in the cafeterias during the week of October 7:

- Monday - Puree of bean soup, roast fresh ham, breaded veal cutlet, stuffed pepper, grilled cheese sandwich. Snack bar - Soup, ham and egg sandwich, veal cutlet on jumbo roll, French fries.
- Tuesday - Cream of mushroom soup, pot roast of beef, stuffed shrimp, spaghetti and meat sauce, tamale pie. Snack bar - Soup, hamburger, hot roast beef sandwich, German potato cakes, baked beans.
- Wednesday - Chicken-vegetable soup, half-pound chopped steak, chicken shortcake, Polish sausage, fish cakes and cole slaw. Snack bar - Soup, sea dog, Lou's satellite special, French fries.
- Thursday - Beef broth with barley, Swiss steak, fried scallops, salmon loaf, western omelette. Snack bar - Soup, hot dog, steak sandwich, French fries.
- Friday - Manhattan clam chowder, roast beef, grilled slice of smoked ham, fried fish, chili mac. Snack bar - Soup, fish sandwich, hot roast beef, French fries.

The menu for the week of October 14 is as follows:

- Monday - Cream of tomato soup, simmered corned beef and cabbage, grilled pork chops, sauteed chicken livers over rice, grilled spiced luncheon meat. Snack bar - Soup, barbecued pork sandwich, hot corned beef, French fries.
- Tuesday - French onion soup, pepper steak, chicken pan pie, liver and onions, Spanish omelette. Snack bar - Soup, hamburger, steak sandwich, French fries.
- Wednesday - Chicken-noodle soup, Spanish pot roast, baked ham, chicken chow mein with rice and noodles, franks and beans. Snack bar - Soup, hot dog, sliced barbecued beef, French fries.
- Thursday - Split green pea soup, chuckwagon steak, meat loaf, pork chopette, baked hash. Snack bar - Soup, ham and egg sandwich, hot pastrami sandwich, French fries.
- Friday - Clam chowder, grilled steak, broiled fish, fish cakes, barbecued chicken. Snack bar - Soup, fish sandwich, steak sandwich, French fries.

FOR SALE: Disillusioned camper wishes to sell Vactioneer camping trailer - $350. Collins, UN8-9213.

FOR SALE: Small upright German-made piano, also 35-foot Chris Craft cruiser with twin engines. Davis, CH4-7285.

FOR SALE: 6-piece solid walnut Stereo Entertainment Center, can include 2 electro-voice 12TRXB speakers, Knight 40 watt amplifier and Heath record player. Darnell, 877-4822.
KNOW YOUR CREDIT UNION

Well, as the ads say, "The beautiful '69s are here!" Chryslers, Fords, Dodges, Americans, Chevrolets, and Cadillacs...one for every taste and pocketbook. It is hard to make a choice and, then, it is even harder to choose a dealer, or, at least, it should be! The wrong one can cost you several hundred unnecessary dollars.

Let your Credit Union help. Pick up a "Car Buyer's Cost Comparison Guide" at the office or call extension 3606 and ask that one be sent you. Later, when you decide on make and model, you will have it handy. Follow its money-saving suggestions and study its nine tips on how to buy an automobile. Then compare and compare again. This should bring you to the rock-bottom price for the car of your choice.

Next, keep on cutting costs and come to your Credit Union for pain-free financing. You will find professional, courteous, one-day service; loans up to 85% of the sales price; payments as low as $31.63 per month per $1000; loan insurance at no out-of-pocket cost; and the right to pay-on or pay-off at any time without penalty. Get a decal with your check and fly-the-flag. Your car will be qualified for the many worthwhile prizes of the current contest as well as those of future years. Finally, relax and enjoy pride-of-ownership. You are entitled. You have just completed the best possible deal!

Bonus number announced in the last issue was that of Barbara Newton, General Files. Thanks to her pride in being a member and that little decal, she is one payment closer to a clear title on her sporty Volks. This week's Fly-the-Flag winners of $5 are 3004, 4837, 8054, 11865 and 13396. The bonus winner of $5 plus one payment on his car loan or $50 cash is 6830. Let us hope he is flying-the-flag.

OPEN HOUSE: In observance of International Credit Union Day your Credit Union will hold open house from 10 a.m. to 3 p.m. on October 17. Valuable prizes will be given away. Refreshments will be served and everyone will receive a favor. All interested persons are invited to attend.

IEEE GROUP MEETS OCT. 15

The Hampton Roads Section of the Institute of Electrical and Electronics Engineers will meet on October 15 at the Lake Wright Motel, Virginia Beach.

Francis P. McCourt, Chief of Safety and Survivability Division, U.S. Army Aviation Material Laboratories, will speak on "Safety and Survivability in Military Aircraft."

A social hour will be held at 6:30 p.m., followed by dinner at 7:30 and the meeting at 8:30.

For reservations call Frank Senft, 3461, by noon on Monday, October 14.

LOST: Kistler accelerometer pickup, Inventory No. 123334, Model No. 204M10, Beasely, 4685.


FOR SALE: Black Scottie puppies, AKC registered - $100. Leiss, 877-3535.

FOR SALE: 4-bedroom, 2-1/2-bath Colonial house, all electric kitchen - $36,250. Hockney, 22 Executive Drive, 595-4798.

FOR SALE: 16-foot sailboat - Comet class, including trailer - $495. Bavuso, 838-0606.


Edward T. Maher, Chief of Administrative Services Division, gets double service from Dusty Fuller and Mary Virginia Bunting of the Credit Union staff. The occasion was the installation of the 500th bumper decal by these young ladies in a two-day intensive drive to persuade members to "fly-the-flag." Maher, of course, needed very little persuasion. His record as a strong supporter of the Credit Union goes back to 1956.

NASA TENTH ANNIVERSARY

(Continued from page 1)

ledge to space work, to expand the nation's base of space competence and then feed back much of the resulting know-how into aeronautics.

One fourth of this work force has been disbanded as projects such as Ranger, Lunar Orbiter, Surveyor, Mercury and Gemini were completed.

By the end of fiscal 1969, this will be down to just over 200,000 but there remains a hard-core national capability in aeronautical and space related science and engineering to carry out the Space Act's mandate.

During its 10 years, NASA has completed 234 major U.S. and international launches and over a thousand sounding rocket launches. Of these 234, there were 189 launch vehicle successes and 174 spacecraft or mission successes, with two missions still under evaluation.

For these launches NASA developed rockets ranging from the workhorse Scout with a thrust of 88,000 pounds to the Saturn V lunar rocket with 7.5 million pounds of thrust which will send a payload of almost 100,000 pounds to the moon.

James E. Webb, NASA Administrator said recently: "Ten years ago we were looking forward hopefully to space applications in meteorology, communications, navigation and geodesy.

"The full impact of all the technology and knowledge gained from the nation's space research will not be felt perhaps for many years. But already, medicine, industry and many other fields are deriving practical benefits from space studies."

ECHO I - A WORLD FAVORITE: The first passive reflector communications satellite, Echo I, a gleaming 100-foot globe of aluminum-coated mylar plastic, travelled more than a billion miles during its almost eight years in space. Launched Aug. 12, 1960, its long career ended on May 28, 1968. Easily visible to the unaided eye over most of the Earth, Echo I was believed to have been seen by more people than any other man-made object.

SPACE RENDEZVOUS: Gemini 6 maneuvered to within a few feet of Gemini 7 to accomplish the world's first rendezvous in space on Dec. 15, 1965. This photograph showing Gemini 7 was taken through the hatch window of Gemini 6 during the rendezvous and station keeping, which lasted about five and a half hours at an altitude of 160 miles.

DIGGING ON THE MOON: Surveyor III's lunar sampling device scooped up lunar material, dumped it on the white surface of its footpad to enable close examination under good viewing conditions.

THEN AND NOW: Pioneer, one of the first satellites launched by NASA following its establishment on Oct. 1, 1958, carried aloft a payload of only 84 pounds. Today's Apollo/Saturn V propels into Earth orbit a payload of 280,000 pounds.

GEMINI PHOTOGRAPHY: Among the more than 2,000 pictures of Earth taken from space during the Gemini program is this view of India and Ceylon, photographed from 540 nautical miles above Earth by Gemini 11, launched on Sept. 12, 1966.
ASTRONAUT RECOVERY: Alan B. Shepard Jr. was picked up by a U.S. Marine helicopter team following his successful suborbital flight, the first in the Project Mercury program on May 5, 1961.

EXPANDED KNOWLEDGE OF MOON: Ten years ago the moon was still pretty much of a mystery. But after a decade of space exploration we now know the composition of the lunar soil (similar to some types of Earth soil), have determined geographic features of the moon and photographed virtually the entire lunar surface. The small box on left shows a picture of the moon's surface taken by telescope from Earth in 1958. The 1968 photo to the right, taken in the Lunar Orbiter program, shows fine details of the same area.

FIRST ASTRONAUT TEAM: Project Mercury astronauts, whose selection was announced on April 9, 1959 only six months after the NASA was formally established, included: front row (from left) Walter M. Schirra Jr., Donald K. Slayton, John H. Glenn Jr., and M. Scott Carpenter. Back row - Alan B. Shepard Jr., Virgil I. Grissom, and L. Gordon Cooper.

A WALK IN SPACE: Astronaut Edward H. White floated into space secured to the Gemini 4 spacecraft by combined umbilical and tether lines, the first American astronaut to leave his spacecraft while in orbit. His 21-minute stay outside the spacecraft on June 3, 1965 was one of the milestones in the manned flight program.
TECHNOLOGY UTILIZATION NEWS

Technological progress is generally made in small increments which are often difficult to measure or assess. New technology is mostly made up of “bits and pieces” and includes new or improved devices, materials, processes, computer programs, techniques or tools, considered as reportable items. The transfer of these reportable items from one industry to another, from one discipline to another, or from one region to another is a complex process. Numerous incentives and barriers exist in this transfer process about which much is yet to be learned. The Technology Utilization Program is designed to hasten this process by overcoming the known barriers and providing necessary incentives.

The nation's wealth, our increasingly high standards of living, our international prestige and military posture, as well as our achievements in space, are indeed dependent on the effective transfer of our new technology.

As a NASA employee you can participate in this important progress by submitting your reportable items, including inventions, as potential Tech Brief items. Each reportable item which qualifies for Tech Brief publication receives a $25 award automatically with prospects for much higher awards. The real satisfaction, however, is not in the monetary awards but in knowing that you have made a real contribution to our nation's success.

BYRON M. JAQUET DIES

Byron M. Jaquet, Aero-Space Engineer in the Space Analysis Branch of Space Mechanics Division, died unexpectedly on Monday, September 23.

Jaquet was born November 30, 1922 in Juneau, Wisconsin. He received a Bachelor of Science degree in Aeronautical Engineering from Tri-State College, Angola, Indiana, August 1946.

Since joining the Langley staff in September 1946, he had conducted analytical and theoretical wind tunnel and laboratory investigations of airplane and missile aerodynamics, dynamic characteristics of reentry bodies, and trajectory computations.

He was the author or co-author of more than 40 technical reports on research he conducted at Langley.

Surviving are his wife, Mrs. Eleanor Jaquet; a son, Brent M. Jaquet, a student at Belmont Abbey College; two daughters, Janice Lynn Jaquet and Mary Valerie Jaquet of Hampton; and his parents, Mr. and Mrs. Emil Jaquet of Waukesha, Wisconsin.


FOR SALE: Rat Terrier puppy. Buckley, 877-3619.

FOR SALE: 12-foot aluminum boat. Walter, 877-6866.

WANTED: Ride or driving combination from Eastwood to W.A. on 8 shift. Huffman, 3326.

WANTED: Driving combination from Richmond on 7:30 shift. N. L. Brown, 2392.

WANTED: Alternate drivers from Wards Corner and Johnson Square areas in Norfolk to W.A. on 8 shift. Johnston, 4861.

WANTED: Service manuals (both chassis and body) for 1963 Pontiac. Trimpi, 596-1282.

FOR SALE: Small pony with saddle and bridle - $75. Price, 826-1447.

FOR SALE: 1958 Chevrolet Impala, 2-door sport coupe - $175. Culotta, 723-6142 after 5 p.m.


FOR SALE: 9 x 9-foot umbrella tent with outside frames. Tompkins, 877-3134.


FOR SALE: 3-bedroom, 1-1/2-bath brick rancher with den, assume 5-1/4% loan. Zoby, 596-6097.
SIX staff members have received cash awards for suggestions under the NASA Incentive Awards Program. Top left - William R. Motley (left), Instrument Research Division, receives a check for $20 from Richard B. Prince for his suggestion relative to the use of laminated lead glass in cutting port windows for vacuum deposition equipment which results in a significant cost savings over present methods. Top right - Fred F. Eichenbrenner (right), Research Support Division, presents $55 to Boyd L. Williams for suggesting the development of an adjustable aperture and light meter for correctly exposing photographs of metals, coatings, platings, and propellants on the first attempt which results in significant monetary savings. Center left - Sanford D. Saunders (left), Procurement, receives $15 from David Buchanan for his suggestion relative to increased safety awareness by erecting yield signs at the intersection at Building 1154. Center right - Maxwell F. McNear (left), Flight Instrumentation Division, receives $25 for suggesting the use of an alternate method for transferring liquid nitrogen from a supply dewar to an optical research dewar thus ensuring a more efficient operation. Making the presentation is Duncan E. McIver. Lower left - George L. Meidinger (left), Fabrication Division, presents $15 to George T. King for suggesting increasing employee safety and efficiency in transferring liquid nitrogen by means of a transfer nozzle. Lower right - Robert J. Davis (right), Fabrication Division, received $20 for suggesting using a simpler and better method for improving the reliability of electrical connectors. Making the presentation is Charles King.
PICKING UP THE LOOSE ENDS

HEY BOSS!
JUST AS SOON AS WE
PICK UP THESE LAST FEW
PLEDGES—WE’LL HAVE IT
IN THE BAG

LRC
COMBINED
FEDERAL
CAMPAIGN
WOODY HERMAN ORCHESTRA TO PLAY HERE NOVEMBER 23

The Activities Association will feature Woody Herman and his orchestra at their fall dance on Saturday, November 23 at the Activities Building. Dancing will be from 9 p.m. until 1 a.m.

Only a limited number of tickets will be sold and admission will be $10 per couple including free setups. Tickets may be purchased at the Activities Building. Reservations may be made by calling Bruce Amole 4583. No reservations will be held after 10 p.m.

Herman's band is not an imitation of his past bands, though many tunes that he made famous remain in the book. But there is little catering to sentimentality for the past.

STAFF URGED TO SEND CHRISTMAS GIFTS TO SERVICEMEN IN VIETNAM

Christmas packages for our servicemen in Vietnam can be mailed during the period October 21 through November 23.

Last year the Activities Association arranged for government transportation for packages provided by the Langley staff. This year all available government transportation is being used for the movement of combat cargo to Vietnam and therefore the Christmas packages cannot be accommodated in this manner.

It is hoped that the staff will continue its generous gift mailing to servicemen in Vietnam through the regular postal services. Special postage rates are available for these packages (designated SAM packages) as follows: minimum - 80¢, maximum - $1.45, maximum weight - five pounds, maximum size - 60 inches in length and girth combined.

Suggested gift items include; razor, razor blades, toothbrush, toothpaste, paper back novels, playing cards, cribbage board, pocket game sets, darning kit, nail clippers, wallet, nail file, small pocket knife, cigars, cigarettes, candy, key ring, chewing gum, fruit cake, note paper, pencil, pen, airmail envelopes, Kool-Ade, or crossword puzzles.

The addressed mailing labels to each branch of the Armed Forces may be obtained from District Representatives or by calling Sybil Coleman, extension 3313.

CONGRATULATIONS OFFERED STAFF FOR OUTSTANDING CONTRIBUTIONS

Langley Research Center staff members broke all previous records by contributing over $108,000 to the Combined Federal Campaign.

In a letter to staff members, Edgar M. Cortright, Center Director, stated:

"As you now know the Langley Research Center exceeded its official commitment to the CFC by 37%! You did this by exceeding your personal goal of a 50% increase over last year's gifts! What can I say but congratulations and thanks. The results tell the story. Thousands of sick, needy, and neglected people will benefit from your generosity, and not just from your gifts alone. Langley went over-the-top at a time when the CFC and PUF drives are seriously lagging.

"The initial reaction of other groups on the Peninsula was tremendous, if a little incredulous. The example you set could provide the shot-in-the-arm required to get the whole area moving. At least we can hope so. In any event, I know we'll be back next year, and the year after that, and as long as necessary to help the Tidewater communities solve the many perplexing problems they face."

Anshal I. Neihouse, Campaign Chairman at the Center, said, "The letter from our Director speaks for itself. But I'd like to add my thanks for your making the Langley Re-

(Continued on page 8)
LANGLEY RESEARCHER, October 18, 1968

ANNOUNCEMENTS

TIME CHANGE...Effective at 2 a.m. on Sunday, October 27, Daylight Saving Time will end in this area. Accordingly, at 2 a.m. on October 27, all clocks will be moved back one hour to conform to Eastern Standard Time.

BABY DERBY...Word has been received at the Center that Mary "Molly" Coburn, Scout Office, became the mother of an eight pound, two ounce son, Michael Jr., on Sept. 21. Lemuel E. Meetze, Analysis and Computation, became the father of an eight pound, ten ounce son, Alan Ernest, on October 1. Celebrating the birth of a nine pound son, Steven Delos, on September 20 is William H. Clarke, Full-Scale Research. Weighing in at seven pounds, thirteen ounces on October 5 was Lisa Beth, daughter of Stuart G. Flechner, Full-Scale Research. Announcing the birth of an eight pound daughter, Linda Ann, on September 23 are Carol, formerly of Fiscal, and Owen Schrader, Research Models and Facilities. Cliff Schroeder, Flight Instrumentation, became the father of a six pound, eleven ounce daughter, Karen Leigh, on October 8. Passing out cigars and candy is Charles Morris, Flight Mechanics and Technology. He became the father of a seven pound, four ounce son, John David, on September 22. John Wilkey, Flight Vehicles and Systems, is the proud grandfather. Walking on air is James L. Raper, Applied Materials and Physics. He became the father of an adopted daughter, Le Elyn Lindsay, on September 31. The young lady was born September 15 and weighed eight pounds, three ounces.

NEW INSURANCE CERTIFICATES...New Federal Employee Group Life Insurance certificates (both regular and optional) have been distributed to staff members who are covered by the plan. When employees receive the new certificates, they should destroy the old ones.

AFGE MEETING...The NASA Lodge 2755 American Federation of Government Employees will meet on October 30 at 7:30 p.m. at the Central Labor Union Hall.

SKI CLUB...The Peninsula Ski Club will hold its first meeting of the 1968-69 ski season at 6 p.m. on October 24 in the Holiday Room, Holiday Inn. All inexperienced skiers as well as the pros are invited. Plans will be discussed for the club's coming ski trips. The Peninsula Ski Club has grown from seven members in 1966 to 122 members last year. The group hopes to have an even bigger club this year. All interested persons are urged to join.

The following menu will be served in the cafeterias during the week of October 21:

- Monday - Vegetable-beef soup, roast beef, grilled pork steak, beef stew, cheese omelette, Snack bar - Soup, hot dog, hot roast beef on roll, French fries.
- Tuesday - Puree of bean soup, beef stroganoff, fried oysters, Salisbury steak, tamale pie, Snack bar - Soup, hamburger, steak sandwich, German potato cakes.
- Wednesday - Cream of mushroom soup, half-pound chopped steak, beef pie, stuffed flounder, chili con carne, Snack bar - Soup, western omelette, Lout's satellite special.
- Thursday - Chicken-rice soup, hot roast beef sandwich, broiled halibut steak, fried chicken, Austrian ravioli, Snack bar - Soup, sea dog, hot corned beef sandwich, French fries.
- Friday - Manhattan clam chowder, pot roast of beef, broiled Canadian bacon, fried flounder, grilled cheese sandwich, Snack bar - Soup, hot roast beef on roll, grilled cheese sandwich, French fries.

The menu for the week of October 28 is as follows:
- Monday - Split green pea soup, braised lamb Shank, meat loaf, grilled pork chops, franks and beans, Snack bar - Soup, cheeseburger, hot parstrami sandwich, French fries.
- Tuesday - Cream of potato soup, sliced barbecued beef, grilled smoked ham, stuffed pepper, fish cakes, Snack bar - Soup, hot dog, cmili dog, sliced barbecued beef on roll.
- Wednesday - Cream of tomato soup, baked Virginia ham, shrimp creole, Salisbury steak, baked hash, Snack bar - Soup, ham and egg sandwich, flying saucer, French fries.
- Thursday - Vegetable-beef soup, grilled steak, roast pork, spaghetti and meat sauce, Spanish omelette, Snack bar - Soup, barbecued meat sandwich, steak sandwich, French fries.
- Friday - Manhattan clam chowder, Swiss steak, chicken pie, broiled fish, macaroni and wiener, Snack bar - Soup, hamburger, hot corned beef sandwich, French fries.

APOLLO 7 PRIME CREW: Assigned by NASA to the 11-day, Earth orbital Apollo 7 flight are (from left): Donn F. Eisele, command module pilot; Walter M. Schirra Jr., command; and Walter Cunningham, lunar module pilot. Apollo 7, the first manned flight in the lunar landing program, was launched into an Earth orbit October 11 from Cape Kennedy. Landing is planned early Tuesday morning in the Atlantic Ocean about 200 nautical miles south-southwest of Bermuda at the end of the 164th revolution. The aircraft carrier U.S.S. Essex will be the prime recovery ship.
NOISE CONFERENCE HELD AT LANGLEY

A conference on Progress of NASA Research Relating to Noise Alleviation of Large Subsonic Jet Aircraft was held at the Center October 8, 9, and 10. Robert W. Boswinkle Jr., Technical Assistant, Office of Assistant Director, was General Chairman.

The purpose of the conference was to present a report on the progress of in-house and contractor research sponsored by NASA in the field of aircraft noise alleviation. The results presented had particular application to large subsonic jet aircraft. The subjects covered in the 35 technical papers included studies of nacelle acoustic treatment, noise generation and reduction at the source, operational and environmental factors, and the subjective reaction of people to noise. Excluded from the scope of this particular conference were noise from V/STOL aircraft, military aircraft noise considerations, sonic boom, and land use planning.

The conference had an attendance of about 300 persons during each day of the two and a half day meeting. Attendees were from all the major U.S. airlines and aircraft companies as well as a large number of other companies and universities. Various segments of government were represented including municipal, state, and federal aircraft planning and regulatory organizations; military groups; research establishments; various departments of the Cabinet, and the Congress. A number of industry-related organizations were also represented. Foreign representation included several persons from the United Kingdom.

The conferences were welcomed by Edgar M. Cortright, Director of the Langley Research Center. The history of NASA noise research was described in a following talk by Charles W. Harper, Deputy Associate Administrator (Aeronautics), Office of Advanced Research and Technology, NASA Headquarters. He said that the importance of research to alleviate the airport community noise problem has been stressed emphatically by the Congress, the President, the airline industry, and many of the communities affected. The relation of the NASA research to the National Aircraft Noise Abatement Program was explained by Charles R. Foster, Director, Office of Noise Abatement, Department of Transportation.

Serving as chairmen of the various sessions were the following: I. E. Garrick, Chief of Dynamic Loads Division, chairman of the session on Nacelle Acoustic Treatment Technology; John G. Lowry, Special Assistant, Full-Scale Research Division, Nacelle Acoustic Treatment Application - Session II; Newell D. Sanders, Lewis Research Center, Noise Generation and Reduction at Source; Bradford H. Wick, Ames Research Center, Operational and Environmental Considerations; and Harvey H. Hubbard, Head of Acoustics Branch, Dynamic Loads Division, Subjective Reaction.

NOTICE: Received by mistake a note containing air mail stamps to Norma and signed by Marguerette. Will sender please call Catherine Bryan, 3725.

WANTED: Driving combination from Richmond on 7:30 shift. Brown, 3492.

WANTED: Ride from Todd’s Lane to E.A. on 8 shift. Butler, 2553.

WANTED: Alternate driver from Seaford to W.A. on 8 shift. Boyden, 3711.

TECHNOLOGY UTILIZATION NEWS

The Langley Technology Utilization Office is currently planning a technology conference here early next spring. The primary objective will be to transfer our new space-age technology to private enterprise in a dynamic way by directly bringing together the people who have potential industrial applications of the new knowledge with the people who have generated it.

A capacity crowd of representatives from small business and from manufacturing concerns throughout Virginia and several surrounding states is expected to participate in this interesting and challenging operation. Sponsorship will be by NASA-Langley in conjunction with Old Dominion College, Virginia State Technical Services, and the Small Business Administration.

This conference will provide an opportunity for the creative technical people here at Langley to show their "wares" to local industry, to let them see at first hand new materials, tools, processes, and techniques developed here. New and better products should result by effectively channeling this know-how into promising new directions.

Please submit immediately the items to be presented at this conference. The Technology Utilization Office, extension 3281, will be very receptive to your ideas to help promote this conference.
LANGLEY DIRECTOR TO ADDRESS APPRENTICE GRADUATES TODAY

Edgar M. Cortright, Center Director, will be the principal speaker at the 26th graduation ceremony of the NASA Apprentice School at 1:30 p.m. today in the Activities Building.

Dr. John E. Duberg, Associate Director, will introduce Cortright and preside at the ceremony. Dr. Paul K. Buckles (ret.), First Presbyterian Church, Newport News, will give the invocation.

Wesley R. Cofer III, who will receive a journeyman completion certificate as an experimental facilities mechanic, was selected by the graduates to represent them as the class speaker.

Musical selections will be provided by the Tactical Air Command Band under the direction of Major Richard E. Thurston.

Presentation of journeyman certificates will be made by S. Walter Hixon, Supervisory Employee Development Specialist, Personnel Division.

CALENDAR OF EVENTS

TURKEY SHOOT...The Activities Association will sponsor its annual Turkey Shoot on Saturday, November 2 on the grounds of the Activities Building. Matches will be held from 9 a.m. until 5 p.m. No admission will be charged other than a nominal fee for each shot. Contestants must furnish their own fire-arms but the Association will supply the ammunition. All ammunition will be handled by the person designated by the Range Officer. All matches will be conducted under the supervision of the Range Safety Officer. Sandwiches and other refreshments will be available for lunch. Tickets may be purchased from District Representatives for the turkey drawings.

TALENT SHOW...The Activities Association is looking for staff members who are willing to participate in a talent show which will be presented in January. Persons are also needed to serve on various committees. Persons interested are requested to call Jim Gardner, 4469, or Joe Siefing, 3483, within the next two weeks.

FOOTBALL GAME...Peninsula Night, sponsored by the Chesapeake Lions Club, will be held October 26 when the Norfolk Neptunes meet the Detroit Arrows in Norfolk. A block of tickets has been purchased and admission is $3.50 and $4.50. If a sufficient number of persons are interested in transportation, bus service will be furnished for $1.25 round trip. Persons interested may contact Herb Boulter, 3492, or Lloyd Scott, 3333.

LANGLEY TENNIS CLUB NEWS

The LRC Tennis Club saw a field of 26 entries take to the courts the week-end of September 28 to vie for the men’s singles championship. Seeded players Ed Riddle #1, Dick Pincus #2, Jim Mueeller #3, and Bob Murray #4, all advanced as expected with the championship won by Dick Pincus over Ed Riddle 5-7, 6-3, 6-2. Pincus, Research Models and Facilities, has won the club championship twice in a row.

The ladies’ tennis class held their championship tournament September 7 with Joan D’Amato winning the finals match over Belinda Adams 6-0, 6-1.

THIRTY-TWO LANGLEY APPRENTICES GRADUATE TODAY

George W. Adkins Jr.
Newport News, Va.
Experimental Facilities Mechanic
Magnetohydrodynamics Section

Roger K. Arnold
Hampton, Va.
Experimental Electronics Mechanic
Instrument Construction Shop

Robert D. Ashen
Hampton, Va.
Experimental Facilities Mechanic
Low Speed Vehicle Branch

Richard W. Bennett
Colonial, Va.
Aerospace Materials Processor
Materials Processing and Development

Robert A. Barn Jr.
Bristol, Ohio
Experimental Electronics Mechanic
Instrument Application Section

Ralph W. Brown
Leaksville, N.C.
Experimental Facilities Mechanic
LANEP - Old Dominion College

James L. Cerronick Jr.
Newport News, Va.
Experimental Electronics Mechanic
Gas Parameters Measurements

Weber R. Eber III
B. Joseph, Massachusetts
Experimental Facilities Mechanic
Rocket Combustion Research

Thomas Dornett
Clarksfield, Md.
Dynamic Modelmaker
Dynamic Model Development Section

William W. Fernald
Port Haywood, Va.
Engineering Craftsmen
Sparcraft Structures Section

Ralph W. Brown
Leaksville, N.C.
Experimental Facilities Mechanic
LANEP - Old Dominion College

James E. Cerronick Jr.
Newport News, Va.
Experimental Electronics Mechanic
Gas Parameters Measurements

William K. Gerdes
New York, New York
Aerospace Materials Processor
Materials Processing and Development

Wayne R. Gerbes
Newark, N.J.
Aerospace Materials Processor
Materials Processing and Dev.

William E. Gold
Newport News, Va.
Experimental Facilities Mechanic
Magnetohydrodynamics Section

Kenneth W. Hall
Baltimore, Maryland
Aerospace Materials Processor
Materials Processing and Dev.

Beverly C. Marlin Jr.
Hampton, Va.
Experimental Facilities Mechanic
Sparcraft Research Branch

Roy A. Poole Jr.
Green Cove, N. C.
Dynamic Modelmaker
Composite Model Development

George W. Insley Jr.
Hampton, Va.
Experimental Metal Worker
Fabrication Shop

Raymond V. Leiberman
Bay, New Mexico
Experimental Facilities Mechanic
8-Foot High Temp. Structures Tunnel

David L. Lyons
Newport News, Va.
Experimental Electronics Mechanic
Field Instrumentation

John L. Miller Jr.
Portsmouth, Va.
Experimental Facilities Mechanic
Fabrication Shop

Warren B. Nichols
Mayville, New Jersey
Experimental Facilities Mechanic
8-Foot Transonic Pressure Tunnel

Bordie D. Poole Jr.
New Brittain, Georgia
Experimental Electronics Mechanic
Instrument Application Section

Frederick S. Reed
Swansea, N.C.
Experimental Machinist
Experimental Machine Shop

Nelson L. Rohlit
Richmond, West Va.
Experimental Facilities Mechanic
Guidance and Control Branch

Cecil C. Smith Jr.
Hampton, Va.
Experimental Metal Worker
Fabrication Shop

H. Michael Spears
Baltimore, Maryland
Experimental Facilities Mechanic
Applied Rocket Research Section

Dallas C. Schubert
Oak Hill, West Va.
Dynamic Modelmaker
Composite Model Dev. Section
FIVE staff members have received cash awards from the NASA Inventions and Contributions Board. M. Leroy Spearman (top left), Full-Scale Research Division, received $200 for his invention entitled “Translating Horizontal Tail.” Dr. George F. Pezdirtz and Vernon L. Bell (top right), Applied Materials and Physics Division, shared a

$200 award for “Imidazopyrrolone/Imide Copolymers.”

Richard F. Hellbaum (lower left), Flight Instrumentation Division, received a $300 award for his “Logic and Gate for Fluid Circuits.” Bruce Flagge (lower right), Instrument Research Division, received $200 for “Vibrating Structure Displacement Measuring Instrument.”

FRANK HART DIES AT AGE 61

Frank T. Hart, former Laboratory Engineering Technician in the Instrument Support Section, Instrument Research Division, died October 4 at his home following an illness of five months.

Hart was born April 5, 1907 in Bellcenter, Ohio. He graduated from Chillicothe High School in Ohio and served in the U.S. Army. Following his discharge in 1944 he joined the Center staff. He retired from the Center in August.

He was a life member of the Board of Directors of the Hampton Roads Bowling Association, an instructor since 1955 in the Junior Bowling Program of the Peninsula, and administrator since 1966 of District 7 of the Little League. He was named GEX bowler of the year in 1963 and was Bowler’s Man of the year in 1961-62. He was elected to the Hampton Roads Hall of Fame in 1967.

Survivors include his wife, Mrs. Catherine P. Hart, Technical Editing Section, Research Reports Division, and a son, John T. Hart of Hampton.
EIGHT staff members have received cash awards for suggestions under the NASA Incentive Awards Program. Top left - Julia F. Bray, Analysis and Computation, received a check for $25 for her suggestion relative to increasing safety awareness behind the West Cafeteria by painting the sidewalk to indicate an existing step. Top right - Joseph T. Guy (left) and Viggo G. Dereng, Fabrication, shared a $300 award for the design and development of a film trimmer assembly which was one of two systems developed for use by the Lunar Orbiter Project. Making the presentation is Ralph E. Waagner. Center left - Carl A. Trexler (left), Aero-Physics, receives $20 from John R. Henry for a suggestion relative to placing a map of the LRC area in the NASA-Langley telephone directory which will aid visitors, contractors, and new employees in traveling to and from the East and West areas. Center right - Ogie L. Hayes (left), Research Support, presents $20 to Charles B. Karpa for the development of a better method for achieving the required vacuum pressure of the 13-foot high-vacuum facility thus eliminating feedthroughs for maintaining a high vacuum. Lower left - Thomas J. Gear (right), Fabrication, receives $25 from Charles B. King for a suggestion relative to revising the Langley Research Center work order forms so as to increase efficiency and communication for Center employees. Lower right - Duval A. Hudson Jr. (second from left), Planning Control Unit, and Quinton C. Davis (second from right), Fabrication, shared a $300 award for the design and development of a film trimmer assembly which was one of two systems developed for use by the Lunar Orbiter Project. Making the presentations are Raymond A. Kenney (left) and Ralph E. Waagner (right).
"EXPLORING SPACE WITH A CAMERA"
AVAILABLE TO STAFF AT REDUCTION

"Exploring Space With a Camera," a 214-page scientific album of representative photographs made by NASA, is now available to staff members at a reduced rate.

The book contains approximately 270 photographs and composites ranging from color views of the whole Earth to close-ups of the Moon and Mars. The book was compiled and edited by Edgar M. Cortright, Director of the Langley Research Center, who headed the initial planning of the United States' meteorological programs.

The book contains a foreword by James E. Webb, former NASA Administrator, and the photographs are explained and interpreted by scientists, engineers, astronauts and other NASA personnel connected with taking the individual photos. Langley contributors included Sidney A. Batter­son, William J. Boyer, Norman L. Crabill, Eugene C. Draley, James S. Martin, Clifford H. Nelson, Israel Ta­back, Dr. Floyd L. Thompson, Kenneth L. Wadlin, and A. Thomas Young.

In anticipation of the fact that Center staff members might wish to obtain a copy of the book, arrangements have been made through the Activities Association and the Langley Training Branch for a limited number of copies to be placed on sale at a price of $3.25 per copy. The regular price of the book through the Government Printing Office is $4.25. It has been suggested that the book would make an ideal Christmas gift for interested friends. Anyone interested in seeing a copy of the book may do so at the Activities Building, Langley Training Office in Building 587, or at the Technical Library.

KNOW YOUR CREDIT UNION

There is good news this week! The dollar limit on unsecured personal loans has been raised from $750 to $2500 and their term from 3 to 5 years. The dollar limit on secured loans remains, for practical purposes, unlimited but their term has been increased to 10 years in the case of real estate, mobile homes, sizable FHA home improvements, etc. All members can take pride and pleasure in the promptness with which their board acted to make these benefits available once the enabling legislation was passed.

Big as the jump is, the new $2500 limit is merely realistic in terms of today's economy. It was necessary if members are to be offered a reasonable opportunity to conduct the business-at-hand without the necessity of a co-maker or back-up financing. In short, the $2500 figure will enable us to serve many more of our responsible members for whom $750 just did not get the job done.

It must be pointed out, however, that not everyone will automatically qualify for a loan of this size. Certainly no reflection is intended, but the Credit Committee must still take into consideration such things as length of service, credit rating, ability to repay, etc. And, finally, the time-extension of an additional 5 years has necessitated a review of our insurance program. In the future, there will be no disability coverage on loans made on and after Oct. 15, 1968. The board regrets this fact and took implementing action only when the economics of the situation plus fairness to the membership-as-a-whole left little choice.

In the wind-up of the current Fly-the-Flag contest, members 1031, 19150, 16531, 1855, and 8566 were $5 winners. The bonus winner of $5 plus a car payment, if qualified, was 5264.

Anshal I. Neihouse (third from right), Chairman of the Center's Combined Federal Campaign, poses with members of his Advisory Committee by the sign which shows the Center went over the top in its community effort. Members of the committee are (from left): Vera Huckel, Helen Willey, Patrick Clark, Anne Sutt, Richard Braig, Eleanor Cole, Dorothy Moore, John Witherspoon, Elva Rollins, Joe Martin, A. F. Waynick, Ruth Verell, James Hamilton, E. T. Mahler, Neihouse, A. M. Askew, and Cecil Burtner. Absent when the picture was taken was Edward A. Howe.

COMBINED FEDERAL CAMPAIGN

(Continued from page 1)

search Center CFC drive such a complete success. Thank you, contributors; thank you, division chiefs, project managers, divisional leaders, and their representatives; and thank you, members of my team.

"Nearly complete results indicate that over $108,000 has been contributed by 3690 employees for an average gift of $29.25. All I can say is that is was a tremendous Center effort."

Congressman Thomas N. Downing, Chairman of the Federal Division of CFC, sent the following message to staff members: "I have just read the wonderful news about the CFC's success at LRC. This was a great job. My sincerest congratulations and thanks."

CORTRIGHT NAMED AIAA FELLOW

Edgar M. Cortright, Director, has been named a fellow of the American Institute of Aeronautics and Astronautics. He was one of 29 men honored by AIAA as "persons of distinction in aeronautics and astronautics who have made notable and valuable contributions to the arts, sciences or technology thereof." They are nominated and elected by the fellows residing in the United States.

Three honorary fellows were also named by AIAA, including H. Julian Allen, Director of Ames Research Center and former Langley staff member; James S. McDonnell, Chairman of the Board, McDonnell Douglas Corp.; and Sir Frank Whittle, an aeronautical consultant from Devon, England.

The AIAA 5th Annual Meeting and Technical Display will be held October 21-24 in the Philadelphia Civic Center and the fellows will be honored at the Honors and Awards Banquet on October 23.

During the meeting Cortright will also serve as Chairman of Session 1 - Apollo Progress Report.
H. JUMLAN ALLEN TO RETIRE AS DIRECTOR OF AMES CENTER

H. Julian Allen, Director of the Ames Research Center and former member of the Langley Research Center staff, will retire on November 15. He is credited with laying much of the basic groundwork for space flight.

In 1952, Allen originated the concept of bluntness for re-entry shapes which assisted in providing a solution of the aerodynamic heating problem. This has since meant that every U.S. manned vehicle sent into space and designed to return to earth has had the characteristic blunt heat shield, first developed by Allen. The extremely blunt reentry heat shields used on the Apollo spacecraft are examples of Allen reentry shapes.

John F. Parsons, Ames Associate Director, will serve as Acting Director of the Ames Center after Allen’s retirement.

Allen, 58, also is one of the world’s leading authorities on design of supersonic and hypersonic wind tunnels. He has discovered an important theory for predicting forces on bodies at supersonic speeds, and has developed a variety of original and ingenious research techniques for studying flight at supersonic and hypersonic speeds.

He was the first to recognize that entry into planet atmospheres or returns to earth at faster than escape speed (25,000 mph) will require a modification of his blunt entry shape. Spacecraft for these missions will be shaped like wide-angle cones and will enter point first.

Recently Allen found a way to study entry into the atmosphere at speeds up to 100,000 mph by measurements of light from entering meteors.

(Ticketed on page 8)

TICKETS AVAILABLE TO FALL DANCE

A number of tickets are still available to the Activities Association’s fall dance featuring Woody Herman and his orchestra. The informal affair will be held Saturday, November 23 at the Activities Building and dancing will be from 9 p.m. until 1 a.m.

Only a limited number of tickets will be sold and admission will be $10 per couple including free setups. Tickets may be purchased at the Activities Building. Reservations may be made by calling Bruce Amole, 4583. No reservations will be held after 10 p.m.

Herman’s band is not an imitation of his past bands but many tunes that he made famous remain in the book. There is little catering to sentimentality for the past.

Woody's new band was formed around 1962 and was built on a nucleus of excellent young musicians--most members of the present band are in their early twenties. As young as the band is and as contemporary as its sound may be, it maintains a definite continuity of spirit with the previous Herman bands.

(Continued on page 8)

LANGLEY SCIENTIST RECEIVES AIAA LAWRENCE SPERRY AWARD

Roy V. Harris Jr., an aerospace engineer in the Supersonic Analysis Section of the Full-Scale Research Division, has received the Lawrence Sperry Award of the American Institute of Aeronautics and Astronautics.

The Sperry Award, one of the distinguished honors presented annually by the principal national technical society in aerospace science, is given for "a notable contribution made by a young man to the advancement of aerospace." Nominees for the award must be under 35 years of age.

Presentation of the award, which consists of a certificate and an honorarium of $500, was made last month at the Honors Night Dinner of AIAA's 5th Annual Meeting and Technical Display at Philadelphia. Harris was the 32nd recipient of the honor, which was established in 1936.

Harris was cited for "perceptive experimental and theoretical research in supersonic aerodynamics which has established a significant technological foundation for the development of advanced supersonic aircraft."

Harris, who was born in Augusta, Georgia in 1935, is a graduate of the Academy of Richmond County, Georgia, and of the Georgia Institute of Technology, where he received the degree of Bachelor of Science in Aeronautical Engineering in 1958. He joined the Langley Research Center in July, 1958.

He is engaged in both theoretical and experimental research projects in supersonic aerodynamics, including the definition of major problem areas, the development of experimental and analytical methods for arriving at solutions, and documentation of results. He has made original contributions in aerodynamics of vehicles intended to operate in the transonic, supersonic and hypersonic speed ranges, and is very active in the application of advanced (Continued on page 8)
WEDDING BELLS... Betty Jeanne Branch, Procurement, has returned from Honolulu, Hawaii, where she took her final vows with Johnny Robert Walker, Hampton, in the Fort DeRussy Chapel.

FUND DRIVE... The latest total in the Combined Federal Campaign shows that staff members have donated $109,216 for an average contribution of $29.12.

TURKEY SHOOT... Center sharpshooters are reminded that the Activities Association's annual Turkey Shoot will be held tomorrow at the Activities Building. Matches will be held from 9 a.m. until 5 p.m.

EMPLOYEES URGED TO VOTE
The Civil Service Commission has informed the Center that the President urges all employees to exercise their rights and responsibilities as citizens by voting in the forthcoming general election on Tuesday, November 5.

In accordance with Langley Management Manual Instruction 3600.1, employees may be granted leave for voting where the polls are not open at least three hours either before or after an employee’s regular hours of work, for an amount which will permit him to report for work three hours after the polls open or leave work three hours before the polls close, whichever requires the lesser amount of time off.

HIGH ALTITUDE PARACHUTE TEST
NASA successfully tested the deployment of a parachute at supersonic speed in the thin atmosphere above the White Sands (N.M.) Missile Range on October 23. Another rocket-powered test in Project SHAPE (Supersonic High Altitude Parachute Experiments) is scheduled to take place this month.

The project is managed by Langley Research Center. NASA is testing the 40-foot-diameter parachute for possible use as an aerodynamic deceleration device in future planetary entry missions.

A three-stage rocket was launched at 11:31 a.m., EDT and propelled a five-foot-long canister 33 miles high where a parachute was ejected while the unit was speeding at Mach 3.5 (three and one-half times the speed of sound or 22,000 mph).

All events occurred as scheduled and the parachute deployed with the predicted dynamic pressure of 10 pounds-per-cubic-foot.

FOR RENT: 3-bedroom house with garage - stove, washing machine and refrigerator furnished. Stilley, 244-3326.
FOR SALE: Gentle pony. Topping, 868-6163.
COST REDUCTION REPORT

T. Melvin Butler, LRC Cost Reduction Program Representative, announced that the Center’s First Quarter FY 69 Cost Reduction Report has been forwarded to NASA Headquarters. This report documented total savings of $828,404.

Butler acknowledges with appreciation the individual reports originated by the following Center employees:

M. Arnold Emmons, APD - pilot section used in construction of a Mach 11 throat for Continuous Flow Hypersonic Tunnel, $13,500.

Thomas A. Blackstock and M. Arnold Emmond, APD - oil flow studies at Continuous Flow Hypersonic Tunnel, $1,470.

Dorothy A. Hicks, APD - new copy machine for Building 1247-A, $1,180.

Simeon R. Hunnicutt, RSD, Building 1195 - air conditioner compressors, $520.

Fred N. Rector, TIUD - mailing of documents, $42,576.

H. B. Tolleson, DLD, and H. T. Baber, AMPD - meteorological rockets, $581,080.

C. N. Brooke, FMTD - engine change - YHC-1A helicopter, $118,068.

Garland N. Rollins, IRD - installation of cable between facilities, $16,840.

Frank E. Mershon, FVSD - SPED II flight project payload drop (helicopter) and recovery tests at Wallops Island, $6,400.

John F. Bryant, FID - prefabrication of aircraft instrument installation, $10,000.

Henry Elksnin, FVSD - Project SHAPE parachute development, $33,000.

For the Center to meet its Fiscal Year 1969 Cost Reduction goal, reports of $1.4 million per quarter must be submitted.

IEEE GROUP TO HEAR FOOTE

Lawrence R. Foote, Applied Electronics Department, Ford Motor Company, will be guest speaker at a meeting of the Hampton Roads Section of the Institute of Electrical and Electronics Engineers on November 14 at Eli’s Restaurant, Hampton.

Foote will speak on “Are Electric Cars a Better Idea?” He will review the present state of the art and discuss power requirements, possible motors, controls, and possible hybrids.

A native of Hartford, Connecticut, Foote is a graduate of Yale University. During World War II he worked for the Lawrence Radiation Lab, University of California, on the Manhattan District Project - better known as Atomic Bomb project. He worked several years with General Electric Company both in development and applications. He joined the Ford Motor Company in 1966.

The meeting will be preceded by a social hour at 6:30 p.m., dinner at 7:30, and the speech at 8:30. Reservations may be made by calling Frank Senft, 3461, by noon on Wednesday, November 13.


FOR SALE: 1966 Renault R-8 - will consider older model car in trade. Satterthwaite, 838-1632.

FOR SALE: Vibratory belt with variable speed control - $40; portable TV stand on rollers - $5; man’s clothing valet with seat - $6. Tynan, 877-2642.


QUIET ENGINE PROGRAM

A major step in the program to develop a "Quiet Engine" for airplanes has been taken with the release of a request for proposals by NASA.

The proposals, to be submitted to Lewis Research Center by November 18, will result in a program to build two experimental turbofan jet engines and to conduct an intensive test program.

The goal of the quiet engine program is to produce a turbofan demonstrator engine which could operate at a noise level at least 15-20 decibels below present engines powering such commercial aircraft as the DC-8 and 707.

The specifications for the experimental engines were developed at Lewis with assistance on contract from two aircraft engine manufacturers, Allison Division of General Motors and Pratt and Whitney Division of United Aircraft Corp.

At the same time, McDonnell-Douglas Corp. has been conducting studies under contract to Lewis on the feasibility of integrating the quiet engine with the DC-8. Wind tunnel tests are presently underway and the integration study program is expected to be concluded early next year.

Objective of the program is to reduce two major sources of engine noise - the interaction of the jet exhaust with the outside air and the noise created by the fan.

By virtue of high by-pass ratio of the engine, the velocity of the exhaust can be reduced without reducing the amount of thrust. The velocity of the engine exhaust is directly related to the noise created by its interaction with outside air.

Once noise from the jet exhaust stream is reduced, the dominant noise - a whining sound - comes from the fan. This sound can be reduced by increasing the spacing between the rotor and stator blades, reducing the fan tip speed and by proper selection of blade numbers.

Studies are continuing at Lewis to gain a better understanding of how noise is produced by the fan. By designing the experimental engine with the fan mounted on a separate shaft it will be possible to modify the fan in accordance with new knowledge without disturbing other elements of the engine. Lewis engineers said the entire engine is well within the present state of technology, with advances made only in those areas concerned with the production of noise.

At the end of the test program conducted by the contractor one of the engines will be refurbished and shipped to Lewis for further testing. These tests will include operation of an engine in an acoustically-designed nacelle to assess its performance as installed in an airplane. The contract for the experimental engine program is expected to be awarded sometime early next year.

FOR SALE: Remington - Model 760-35 cal. - standard grade extra clip and shoulder sling - $75; Remington - Model 760-244 cal. - deluxe grade 4X scope, shoulder sling - $130; new golf clubs - 8 irons, 3 woods (Sam Snead Blue Grass), Pennsylvania bag - $125, 1 dozen Hol-Hi balls (Wilson), Bragg, 826-7068 after 4 p.m.

FOR SALE: 2-story, 3-bedroom, 1-1/2-bath house on Chesapeake Ave., assume 5-1/4% loan. MacConochie, 723-0844.

WANTED: Driving combination from Runnymede-Nicewood area to W.A. on 7:30 shift. Lambiotte, 3544.

WANTED: Driving combination from Eastwood in Denbigh to W.A. on 8 shift. Huffman, 3326.

FOR SALE: 2-story, 3-bedroom, 1-1/2-bath house on Chesapeake Ave., assume 5-1/4% loan. MacConochie, 723-0844.

LOST: Dymo labeling machine - Inventory Number 129232. Wise, 3370.

WANTED: Driving combination from Runnymede to W.A. on 8 shift. Chang, 3331.
CARNIVAL FINANCIAL REPORT

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TOTAL CARNIVAL INCOME $4,085.03

NASA TOUCH FOOTBALL LEAGUE

ACD continues to lead the NASA Touch Football League but has two crucial games coming - one with Boozers and one with Misfits.

Scores for the past two weeks were: ACD 32 - IRD 18, Boozers 32 - Bombers 14, Misfits 41 - KNADS 12, ACD 12 - Bombers 6, KNADS 21 - IRD 18, Boozers 26 - Misfits 6.

STANDINGS

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NASA-UNIVERSITY PROGRAM

A report evaluating the results of a decade of cooperation between the nation's universities and NASA has been published by a special task force.

Titled, "A Study of NASA University Program," the 79-page booklet contains an assessment of the programs and how it has benefited the academic community as well as the agency. The booklet suggests means to improve the NASA-university relationship. NASA has dealt with about 250 universities, including several foreign ones.

The report was made by a 16-man task force appointed by Francis B. Smith, NASA's Assistant Administrator for University Affairs. The task force, under Chairman Homer G. Morgan, Langley Research Center, contained representatives of two universities as well as of NASA program offices and field centers.

Published as SP-185 by NASA's Office of Technology Utilization, the booklet is available at $3 from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Va. 22151.

FOR SALE: 2 boy's 26-inch Schwinn bicycles - $10 each; large dog house - $10; Webcor wire recorder - best offer. Scheiman, 851-2117.

WANTED TO TRADE: Remington-Peters plastic 12-gauge shotgun shells cases for Winchester-Western cases. Yeager, 877-9063.

FOR SALE: 15 round M-1 carbine clips, used, 3 for $1. Breen, PA3-8929.


FOR SALE: 1967 Volkswagen Squareback with many extras- $1900. Koopmann, 838-1940 after 5 p.m.
TINY DEVICE SENDS OUT SIGNALS

UNDERWATER RECOVERY: This artist's concept shows how a diver could "home in" on a pinging sound from a small underwater recovery device attached to a rocket section even on the ocean's floor. The device was developed by engineers at Langley Research Center.

A finger-size cylinder may someday guide recovery teams through the ocean depths to the precise location of a submerged vehicle.

The tiny underwater detection device was developed by engineers at Langley Research Center.

Many of the vehicles and rockets launched by NASA fall to the bottom of the ocean when they have completed their flight. But often these had to be located and recovered for postflight analysis.

Dye markers, smoke bombs and, in some cases, buoys helped mark the impact areas but recovery could be a difficult and tedious operation. On occasion, salvage operations were unsuccessful wasting both time and effort.

A self-contained 12-ounce cylinder only three and three-quarters inches long may reduce search time underwater to a minimum.

The device is the end product of more than three years of research at Langley. Engineers began with a Navy-developed locator used in mines.

But to be of real value in space, the location device had to be miniaturized -- scaled down from its original weight of three pounds.

The cylinder is a water-actuated transmitter that can be mounted either internally in a payload or externally on a rocket motor, camera pod or instrument package.

When it hits the water it begins to emit a constant pinging sound. With receivers, recovery teams can zero in on the pinging to the submerged object.

In one test, an aircraft crash recorder with the tiny transmitter attached was dropped from a helicopter at an altitude of 5,000 feet.

The recovery team moved in by boat for the search armed only with receivers and coordinates of the 100-square-mile impact area.

Approximately every 2,000 yards the boat would stop.

SATELLITE RETREES ATMOSPHERE

The Explorer 24 satellite, built and launched by Langley Research Center, reentered the atmosphere over the North Atlantic Ocean at approximately 5:46 a.m. EDT on Oct. 18. Since its launch on November 21, 1964, into a near polar orbit, it had travelled over 500 million miles. Explorer 24, the second of the series of Air Density Explorer satellites, had been used to measure the density of the atmosphere at satellite altitudes.

Using this satellite, NASA scientists discovered a remarkable feature in the earth's upper atmosphere-- the existence of the "winter helium bulge." Gerald M. Keating and Edwin J. Prior, both scientists in Applied Materials and Physics Division, discovered the bulge from studies of changes in the orbits of the Air Density Explorer satellites. They found that 350 miles above the earth the atmosphere bulges above the North Pole near December, and above the South Pole near June. This bulge is produced by an abundance of helium. These findings have now been confirmed by other scientists in the United States, West Germany, and the Soviet Union.

At the recent Ninth International Space Science Symposium held in Tokyo, Japan, Gerald M. Keating described additional findings resulting from studies of the motion of the Explorer 24 satellite. Long-term atmospheric variations occurring near 100 miles altitude were linked for the first time to long-term variations above 350 miles. Other systematic variations in the atmosphere such as a September anomaly, a semi-annual variation and variations with the increased activity of the Sun were also reported.

The Air Density Explorer satellites are designed and fabricated at the Langley Research Center specifically for measurements in earth orbit of atmospheric densities at satellite altitudes. The latest such satellite, Explorer 39, was launched August 8, 1968, into a near polar orbit from the Western Test Range.

THERMAL MEASUREMENT SEMINAR

The Fourth Thermal Measurements Techniques Seminar will be held in the 7 x 10 Conference Room on Monday, November 4 starting at 9 a.m. As usual this is an informal in-house type seminar in which speakers from various divisions describe the present status of current thermal measurement projects or relate measurement experience in recently completed studies.

Topics will be discussed in the areas of heat transfer measurements, gas temperature probes, and spectroscopic techniques.

Anyone working or interested in any of these areas is invited to attend. For further information call Bob Babcock, extension 3234.

The receivers were placed in the water and swept in a circle in an attempt to pick up the signal which has a range of more than 4,000 yards.

The boat continued this sweeping operation every 2,000 yards to overlap the search pattern. With this method, the entire 100-square-mile area could be covered in two hours.

Once the signal was picked up, divers, guided by the receivers, made the final search and retrieval.

Underwater location aids like this may have a broader role than just the recovery of rocket and spacecraft parts for analysis. Strategically placed devices on aircraft could someday speed the recovery of planes lost over land or sea.
TEN staff members have received cash awards for suggestions under the NASA Incentive Awards Program. Top left - Ronald F. Hoyt (right), Instrument Research, received $25 for his suggestion relative to the replacement of burned out filaments on ionization gauges thus eliminating the purchase of new gauges. Making the presentation is Paul R. Yeager. Top right - Elsie F. Olive (center), Fiscal; Sallie M. Harvey, Administrative Services; and Humbert E. Rockey (absent), Flight Instrumentation, shared a $75 award for their suggestion relative to listing the room number of each Langley employee in the LRC telephone directory. Jess G. Ross, Assistant Chief of Administrative Services, made the presentation. Center left - Ira S. Hoffman (left), Instrument Research, presents a check for $170 to Earl G. Popp for the design and machining of a universal fixture for an automatic calibrating machine which can accommodate up to 40 different balances by means of fitting the balance with a simple adapter sleeve. Center right - Billy B. Dancy (left), Fabrication, and Max Tongier (right), Instrument Research, shared a $75 award with Russell W. Loop, who has resigned, for a suggestion relative to the design and use of a filament shaping device for fabricating superior heating elements. Making the presentation is Clarence D. Cone. Lower left - George Meidinger (right), Fabrication, presents a $20 check to W. Richard Burks for suggesting an improved method of obtaining teflon gaskets for use in Langley's CO-2 Concentrator and Waste Management System. Lower right - Dorothy H. Moore (left), Fiscal, presents a $15 check to Loretta H. Dabney for suggesting the implementation of a more economical method of filing travel authority letters for Langley personnel traveling to Wallops Station.
LOCAL AIAA PLANS FIELD TRIP

The Hampton Roads Section of the American Institute of Aeronautics and Astronautics will have a field trip to the Virginia Institute of Marine Science, Gloucester Point, on November 14. The Institute is involved in biological, chemical, geological, and physical studies of the marine environment as well as a teaching program in Oceanography affiliated with institutes of higher learning within Virginia. The Institute has a program planned for the field trip which will give insight into the various areas of marine science in which they are active.

Transportation for the trip will be provided by buses which will leave the Langley West Gate at 12 noon. The program at VIMS will begin at about 12:30 p.m. and last until 3:30 p.m. The program will be followed by an oyster roast at the VIMS beach club. Busses will return to the point of departure following the oyster roast.

Reservations may be made by contacting Dennis Dicus, 595-4734; Bill Woods, 851-5331; or Bernard Spencer, 722-6478.

JULIAN ALLEN TO RETIRE
(Continued from page 1)

For his heat shield work, Allen received the Distinguished Service Medal, highest honor of the NASA. He is an Honorary Fellow of the American Institute of Aeronautics and Astronautics and a member of the National Academy of Engineering. He is a Fellow of the Royal Aeronautical Society, London; the Meteoritical Society; and the American Astronautical Society.

He has received the NASA Medal for Exceptional Scientific Achievement, the AIAA Reed Award, the Air Force Association's Air Power Trophy, and has given the annual AIAA Wright Brothers Lecture.

Born in Maywood, Illinois, Allen graduated from Stanford University with a B.A. degree in Engineering in 1932 and received the advanced engineer's degree from Stanford in 1935. He joined the Langley staff in 1936.

GOLF TOURNAMENT PLANNED

The Second Annual NASA Open Golf Tournament will be held on November 7, and 8 at the Langley Golf Course. Golfers may play one round on either day.

Before playing golfers are requested to sign up in the Pro Shop and write their current handicap and score card sheet. Rules and regulations sheets will be on the counter with one provided for each foursome. The blind bogie for a one dollar fee is optional. Players without an established handicap should send all scores since May 1 to Frank Lawrence, M.S. 216, or Bob Turner, M.S. 222A. Any golf association or league handicap will be accepted.

The low net winner will have his name engraved on a permanent trophy which is on display in the Activities Building.

When round is completed turn the score card in at the Pro Shop. The card must be signed by one player and attested by another.

WANTED: Alternate drivers from Ivy Farms to W.A. on 8 shift. Jarrett, 3226.

WANTED: Alternate drivers from Wythe area to E.A. on 8 shift. Hathaway, 2594, or Horrocks, 2614.

WANTED: Alternate drivers from Wythe area to W.A. on 8 shift. Hathaway, 2594, or Horrocks, 2614.

WANTED: Alternate drivers from Ivy Farms to W.A. on 8 shift. Jarrett, 3226.

WANTED: Alternate drivers from Wythe area to W.A. on 8 shift. Hathaway, 2594, or Horrocks, 2614.

WANTED: Alternate drivers from Ivy Farms to W.A. on 8 shift. Jarrett, 3226.

WANTED: Alternate drivers from Wythe area to W.A. on 8 shift. Hathaway, 2594, or Horrocks, 2614.

Some 800 members enjoyed the refreshments served at an Open House honoring Credit Union Day. Pleased with the attendance and the interest shown are (from left): Larry Brumfield, Education Committee; Al Braslow, Director; Bob Girouard, President; Jean Yokum, Assistant Manager; Mike Pickens, Manager; and Fred Schmidt, Credit Union Day Chairman.

KNOW YOUR CREDIT UNION

So much has happened recently in the loan area as regards limits and insurance that an overall review of the situation is very much in order.

The most exciting news, of course, is the increase in the unsecured personal loan limit from $750 to $2500 provided the past record and credit rating of the members so warrants. This new figure should allow service to many longtime Credit Union supporters for whom $750 did not cover the particular purpose they had in mind. Term is still 5 years.

Home improvement loads are now $5000 and 7 years as opposed to $3500 and 5 years. And, while the limit on loans secured by real estate, for instance, is still $3/4 of the appraised value, the term of such loans has doubled. It is now 10 years instead of 5 with the consequent significant reduction in monthly payments.

All in all, the new regulations seem to be more in keeping with the current economic facts-of-life and so of more benefit to more members. Remember, too, that at the Credit Union 'co-existence' is more than just a dream. Where justified, a member's personal loan rubs shoulders, amicably, with a home improvement loan and/or a car loan and/or a real estate loan and/or a boat loan and so on. Finally, all these types of loans are covered by life insurance at no out-of-pocket cost to the member provided he is under 70. The total insurance on any one debtor is $10,000. Total and permanent disability coverage has been discontinued.

LAWRENCE SPERRY AWARD
(Continued from page 1)

computer techniques to the study and evaluation of aero dynamic shapes.

Harr is a member of the American Institute of Aeronautics and Astronautics, Sigma Gamma Tau honor society, and is the author or co-author of numerous scientific reports. Between 1959 and 1962 he served as an officer in the U.S. Air Force assigned to duty at Langley Research Center. He holds a commercial pilot's license and is a licensed flight instructor.
WOODY HERMAN'S ORCHESTRA TO PLAY FOR FALL DANCE

The Activities Association will open its fall social season with a dance featuring Woody Herman and his orchestra on Saturday, November 23 at the Activities Building. Dancing will be from 9 p.m. until 1 a.m.

A number of tickets are still available and admission price is $10 per couple including free setups. Tickets may be purchased at the Activities Building and a few will be available at the door. Reservations may be made by calling Bruce Amole, 4583. No reservations will be held after 10 p.m.

Herman's band is not an imitation of his past bands, though of course many tunes that he made famous, such as "Caldonia," "Apple Honey," and "Sidewalks of Cuba," remain in the book. But there is little catering to sentiment for the past.

Herman's new band was formed around 1962 and was built on a nucleus of excellent young musicians - most members of the present band are in their early twenties. Yet as young as the band is and as contemporary as its sound may be (some of its members have never heard the classic Herman records of the 1940's), it maintains a definite continuity of spirit with the previous Herman bands.

The current success of the Herman band comes, coincidentally, during Woody's silver anniversary as a band leader. It was 25 years ago that he took over the Isham Jones band when its leader retired.

XC-142 VTOL TEST FLIGHTS PLANNED AT LANGLEY CENTER

The nation's largest research aircraft capable of taking off and landing vertically will soon begin a series of test flights for NASA simulating flight operations in airport terminal areas.

The XC-142 tilt-wing VTOL (vertical take-off and landing) aircraft, on loan to NASA from the U.S. Air Force, will be tested at Langley Research Center. The study centers on operational problems of VTOL aircraft in airport terminal areas during periods of poor visibility.

The propeller-driven airplane is the latest aircraft to be obtained by NASA in its program of research and technology aimed at accelerating VTOL development. Ling-Temco-Vought, Inc., Dallas, is the prime contractor for the XC-142.

The XC-142, which achieves vertical flight by tilting its wings and engines skyward while the fuselage remains horizontal, was developed from aircraft models tested in NASA wind tunnels beginning in 1956. After vertical lift-off, the wing and engines are tilted forward, the aircraft then gains forward speed and operates as a conventional airplane. The procedure is reversed for a vertical landing. Intermediate wing settings may be used for short take-offs.

The airplane is powered by four General Electric turbo shaft engines. These drive four Hamilton Standard propellers.

(Continued on page 8)
BASKETBALL NOTICE... Anyone interested in entering a team in the NASA Basketball League is requested to contact Jim Gardner, 4469 or 4835, Mail Stop 188-A.

ENGAGEMENT... Jeanette Saunders, Aero-Physics, has announced her engagement to Lt. David Mullenix, Laredo Air Force Base, Texas. The wedding will take place on December 22. Making plans to desert the bachelor ranks is Joseph Heyman, Applied Materials and Physics. He is engaged to Berna Levine, Chicago, Illinois, and the wedding will be held on November 23.

AFGE MEETING... The NASA Lodge 2755 American Federation of Government Employees will meet on November 27 at 7:30 p.m. at the Central Labor Union Hall.

WEDDING BELLS... Randolph J. Robinette, a Co-op student from Tennessee Technological University, was married on November 2 to Diane Davis, Hampton. Randy is currently assigned to the Automatic Control Section, Navigation and Guidance Research Branch, Flight Instrumentation.

STORK CLUB... Lee Dawson, Analysis and Computation Division, is the proud father of twins - a son, David Lee who weighed seven pounds, two ounces and a daughter, Deborah Lee who weighed seven pounds, thirteen ounces. Grandfathers are John R. Dawson, Structures Research, and Otto F. Trout, Applied Materials and Physics. An- nouncing the birth of a seven pound, six ounce daughter, Jennifer Ann, on October 30 is Richard A. Langhans, Full-Scale Research Division. Celebrating the birth of a son on November 9 is Colon R. McMath, Administrative Services Division.

SKI CLUB... The Peninsula Ski Club met recently and made final plans for future ski trips. Trips scheduled for the coming ski season are as follows: November 27 to December 1 - Killington, Vermont; December 27-29 - Homestead, Va.; January 9 - Bryce’s Mountain, Bayse, Va.; January 17-19 - Seven Springs, Pennsylvania; February 2-7 - Mt. Snow, Vermont; February 14-16 - Camelback, Pa.; and February 28 to March 2 - Blue Knob, Pa. The club now has 145 members and is in its third year of operation. The club is open to all interested persons - skiers and non-skiers.

Harriet Hines (center), new Public Relations Director of the Langley Federal Credit Union, presents $25 U.S. Savings Bonds to four members who won the bonds during the observance of International Credit Union Day. The happy recipients are (from left): Sgt. Ronald R. Bryant, Linell Quinn, Colon R. McMath, and SM/Sgt. Stephen J. Rovank.

CAFETERIA MENU

The following menu will be served in the cafeterias during the week of November 18:

Monday - Puree of bean soup, roast veal, fried oysters, beef stew, chili con carne. Snack bar - Soup, barbecued pork, veal cutlet, French fries.

Tuesday - Beef broth with barley, roast beef, stuffed flounder, chicken livers, cheese-tomato rarebit. Snack bar - Soup, hot dog, hot roast beef, French fries.

Wednesday - Cream of mushroom soup, breaded veal cutlet, grilled ham, meat loaf, macaroni and wiens. Snack bar - Soup, ham and egg sandwich, hot corned beef.

Thursday - Vegetable-beef soup, grilled steak, beef pie, fried chicken, western omelette. Snack bar - Soup, hamburger, steak sandwich, French fries.

Friday - Clam chowder, pot roast, broiled Canadian bacon, fried fish, tamale pie. Snack bar - Soup, fish sandwich, hot roast beef, French fries.

The menu for the week of November 25 is as follows:

Monday - French onion soup, fried shrimp, grilled pork steak, spaghetti and meat sauce, cheese omelette. Snack bar - Soup, cheeseburger, hot pastrami, French fries.

Tuesday - Thanksgiving Dinner - $1.00 - chilled tomato juice, Waldorf salad, roast turkey, oyster dressing, cranberry sauce, baked Smithfield ham, candied yams, whipped potatoes, giblet gravy, buttered peas, hot rolls, butter, pumpkin or mince pie, coffee or tea, olives and pickles. Snack bar - (West Area) - hot dog, hot turkey sandwich, pie.

Wednesday - Cream of tomato soup, chopped steak, stuffed shrimp, Polish sausage, chili-mac. Snack bar - Soup, sea dog, Lou’s satellite special, French fries.

Thursday - H O L I D A Y

Friday - Chicken-rice soup, grilled steak, broiled fish, knockwurst, grilled cheese sandwich. Snack bar - Soup, grilled cheese, steak sandwich, French fries.


ISA TO HEAR HELLAUB

Richard F. Hellbaum, a member of the Flight Instrumentation Division, will present a talk on "Concepts and Phenomena of Fluidics" at the November 27 meeting of the Instrument Society of America. The program will include a discussion of the fluidic development effort at Langley and a demonstration of some application techniques using the fluidic elements.

Hellbaum received his degree in Physics from Kansas State Teachers College in 1962 and attended graduate school at the University of Oklahoma. He has worked at Langley since March 1964 and is responsible for the research and development of fluidic technology in the Automatic Control Section of FID. His experiments have led to patent applications for fluidic wall attachment and gate, and a low cost fabrication process for fluidic devices.

The meeting will be held at the Longhorn Steak House on Mercury Blvd., Hampton. A social period will be held at 6:15 p.m., followed by a steak dinner at 7 and the talk at 7:45.

Reservations for dinner ($3.50) may be made with Dick Boole, 3492, by noon on Wednesday, November 27. Guests are invited to attend.


Among the many distinguished visitors to the Center last week was Dr. Homer E. Newell, NASA Associate Administrator. Shown with him are front row (from left): Dr. John E. Duberg, Langley Associate Director; Dr. Newell; Bruce T. Lundin and J. Allen Crocker, NASA Headquarters; and Eugene C. Draley, Assistant Director; Back row: Dr. DeMarquis D. Wyatt, NASA Headquarters; and Clifford H. Nelson, Laurence K. Loftin, and Dr. George W. Brooks, Langley Assistant Directors.

LANGLEY CAMERA CLUB

The Langley Camera Club has formulated the following tentative schedule for the coming year:

November 20 - Election of officers and color slide contest.
December 12 - Banquet and installation of officers.
January 18 - Black and white pictorial contest and color slide contest.
February 14 - Christmas theme contest in color and black and white.
March 16 - Model night
April 20 - Banquet and slide contest.
May 16 - Model night contest.
June 20 - Night photography contest plus other Tidewater guest night.
July 28 - Picnic meeting and field project.
September 19 - Table top photography, black and white and color, contest.
October 17 - Travel slide contest.
November 21 - Election of officers and award of trophies.
December 14 - Installation of officers - banquet.
A color slide contest was held at the October 30 meeting with Billy Hall winning first place, Sidney Hall second place, and Abraham Leiss won third.


WANTED: Go-cart for pre-teenager. Britt, 596-1498.
WANTED: Fifth driver from Windsor Great Pk. to W.A. on 8 shift. Weaver, 4643.
WANTED: Ride or driving combination from Eastwood to W.A. on 8 shift. Huffman, 3326 or 877-3545.
STAFF MEMBERS HONORED AT AWARDS CEREMONY

At the Annual Awards Ceremony Ferdinand E. Hartman (left) receives a 40-year service emblem from Edgar M. Cortright, Director. The recipients of the 30-year service pins are seated on the stage.

Clarence L. Gillis receives a Special Service Award for Exceptional Service and accepts the Group Achievement Award for Planetary Entry Parachute Program.

Howard J. Curfman receives a Special Service Award for Exceptional Service and accepts the Group Achievement Award for SCANNER.

William N. Gardner receives a Special Service Award for Exceptional Scientific Achievement.

Harvey H. Hubbard receives a Special Service Award for Exceptional Scientific Achievement.

Philip Donely - Special Service Award for Outstanding Leadership

Eugene C. Draley - Special Service Award for Outstanding Leadership.

Harry H. Hamilton - Special Service Award for Outstanding Leadership.

John D. Bird - Special Service Award for Exceptional Service.

William C. Dixon - Special Service Award for Exceptional Service.
John A. Dodgen - Special Service Award for Exceptional Service.

Henry Elksmin - Special Service Award for Exceptional Service.

Roy V. Harris - Special Service Award for Exceptional Service.

Paul Kuhn - Special Service Award for Exceptional Service.

John C. McFall - Special Service Award for Exceptional Service.

Marion O. McKinney - Special Service Award for Exceptional Service.

A. Warner Robins - Special Service Award for Exceptional Service.

Tilford R. Crandol - Special Service Award for Achievement.

Charles H. Whitlock - Special Service Award for Achievement.

Special music for the annual ceremony was furnished by the Continental U.S. Army Band, Fort Monroe, Virginia.
RUBY HEADS LUNAR INSTITUTE

Dr. William W. Ruby, Professor of Geology and Geophysics at the University of California, Los Angeles, has been named Director of the Lunar Science Institute in Houston, Dr. Frederick Seitz, President of the National Academy of Sciences, announced.

The Academy has accepted interim responsibility for operation of the Institute until a consortium of universities can be formed to take over its direction. The formation of the Lunar Science Institute was announced by President Johnson in Houston on March 1.

The chief objective of the Institute is to provide a base for academic scientists participating in the lunar exploration program or who will be working in the Lunar Receiving Laboratory or using other facilities of the Manned Spacecraft Center devoted to study of the moon.

Lunar samples gathered by U.S. astronauts will be brought first to the Lunar Receiving Laboratory. The Institute will also serve as a center for the analysis and study of lunar data obtained as a result of NASA's unmanned missions, such as Surveyor and Orbiter.

As director, Ruby will be responsible for the day-to-day scientific management of the Institute. A national board of governors, appointed by the President of the Academy as broadly representative of academic institutions interested in lunar science, will establish policy and review operations at stated meetings. All managerial responsibilities will be subcontracted to Rice University.

The Institute will eventually be established in a converted residence adjoining Rice University property. Until these facilities are ready (in about a year), the Institute will occupy space in or near the Manned Spacecraft Center. Dr. Ruby went to UCLA after 38 years with the U.S. Geological Survey. He also served as Chairman of the Division of Geology and Geography of the National Research Council, 1943-56, as well as Chairman of the NRC, 1951-54. He has twice been elected to the Council of the Academy for three-year terms, in 1951 and 1958. He was a member of the National Science Board from 1960 to 1966. The President of the United States awarded him the National Medal of Science in 1965. During his tenure as Director of the Lunar Science Institute, he will also serve as adjunct Professor of Geology at Rice.

CAFETERIAS AUDITED ANNUALLY

The Center's cafeteria financial account is audited annually by a certified public accountant under contract. The financial position of the Center's cafeterias on June 30, 1968, resulting from such an audit indicates sales and revenue totaled $347,986.37. The cost of goods sold amounted to $201,478.91, leaving a gross profit on sales of $146,507.46. Operating expenses of $157,738.26 deducted from the gross profit resulted in a net loss of $11,230.80 on the operation.

Income from vending machines amounting to $15,054.37 was transferred to the cafeteria account to offset this loss and also to provide $3,823.57 for operating capital and new equipment required in Fiscal Year 1969.

EXAMS OPEN FOR SUMMER JOBS

The federal government now is accepting applications to take the 1969 test required for certain summer jobs. Passing the examination will qualify students for office jobs that pay $75 to $99 a week.

The Civil Service Commission pointed out that summer employees will be hired under six different programs, and that passing the examination is necessary for only one of them.

Four nationwide examinations are being given for summer employment in Federal installations. Filing date for the first exam has passed. Filing dates still open and the scheduled date for examination are as follows: December 6 with exam scheduled January 11; January 3 with exam set for February 8; and January 30 with the exam on March 8.

Applicants rated eligible in 1968 will not have to take the 1969 test. They will receive forms to be used in updating their qualifications.

Candidates who want to take the test should ask for a copy of announcement No. 414 "Summer Jobs in Federal Agencies," which may be obtained from high school counselors, college placement offices, major post offices, and federal job information centers.

The announcement contains complete information about the jobs to be filled, as well as an application blank on which the applicant may indicate the place where he wishes to be tested.
SIMULATED HAILSTONES PROJECT

The speed at which hailstones fall to Earth and its effects on their size and growth rate in the atmosphere have been studied in a series of simulation tests conducted by NASA at Wallops Station.

Simulated hailstones dropped from aircraft during the tests were fabricated from a plastic material (Althon) in a variety of sizes and surface textures. Each of these plastic hailstones approximates the weight of actual frozen hailstones of similar size and surface characteristics.

NASA conducted the tests for the U.S. Air Force Cambridge Research Laboratories, Bedford, Mass. The individual plastic hailstone models were dropped from an Air Force C-130 and a Wallops Queenair airplane. Drop altitudes ranged from 20,000 to 25,000 feet in an area over the Atlantic Ocean six miles east of Wallops where the tests are conducted.

The plastic hailstones are of varying density, weight, volume and shape, simulating their frozen counterparts which form a natural phenomenon associated with severe storms over the Earth’s surface.

Sizes vary from 2.4 centimeters (.99 inches) to 9.86 centimeters (3.75 inches). Some of the artificial hailstones are spheroids, some are smooth surfaced and some are rough surfaced spheres.

A series of wind tunnel tests had confirmed theories that the size and weight to which naturally-formed hailstones will grow is related to the speed at which they fall and thus the length of time they spend in storm clouds.

As late as 1949 it was generally believed that for hail to grow in excess of one or two centimeters in diameter, the growing stone had to encounter updraft velocities in excess of their fall speed, thus making it possible for the stone to recirculate several times within the cloud. For the larger stones (exceeding 5 centimeters) this updraft velocity had to exceed 100 miles per hour.

Recently, wind tunnel studies have shown that shape and surface roughness affect the fall speed of an object by changing its drag characteristics.

Tests demonstrated that a sphere with a thin coat of water (therefore smooth) will fall much slower than an ice sphere which is dry and slightly rough. Because the fall speed of the hailstone has a direct bearing on its final size, the roughness and shape of the stone are important parameters which determine how rapidly it might grow.

Investigators reasoned that a hail nucleus can be held within an updraft where it grows by collecting super-cooled water droplets until its fall speed exceeds the updraft velocity.

Its descent through the cloud brings it through regions of differing water contents and updraft velocities. It is the passage of the hailstone through the varying regions which probably gives it the characteristic onion-like layered structure. The final size of the hailstone depends on the vertical extent of the cloud and the length of time the stone remains within it.

Series of wind tunnel tests on spheres of differing characteristics have shown that there are two ranges of terminal fall speeds for a sphere—the higher range being as much as three times greater than the lower range. A roughened sphere might fall at a variety of speeds during its formation and descent to Earth.

To check tunnel results in the free atmosphere, the Cambridge Research Laboratories arranged to use Wallops Station radar to track a series of plastic spheres of varying degrees of roughness and measure their fall speeds accurately. Detailed data obtained from the tests will be applied in understanding and predicting the growth of real hailstones.

Project coordinators for the Wallops tests are Dick Landry of ARCRL and Gene Godwin of Wallops Station.
TECHNOLOGY UTILIZATION NEWS

Thermocouple instrumentation provides an effective means of accurate temperature measurement, particularly in difficult or inaccessible areas such as are required in aerospace equipment. This technology has played a vital role in the development of spacecraft and the achievement of our space program goals. In order to effectively convey to industry the numerous improvements and new techniques in this important technology which have been prompted by the space age, the Technology Utilization Division has compiled a treatise entitled "NASA Contributions to the Development of Special Purpose Thermocouples," SP-5050. Numerous potential applications of the new technique are cited and the publication also includes extensive references.

Langley Research Center was a major contributor to this technological survey, in addition to other NASA centers and their contractors. It was prepared by Midwest Research Institute under contract to NASA. Reserve your copy of this valuable publication by calling the Technology Utilization Office, extension 3281. A limited number of copies are available now but more are on order.

XC-142 VTOL TEST FLIGHTS

(Continued from page 1)

TURKEY SHOOT WINNERS NAMED

A total of 110 turkeys were given away at the annual turkey shoot held Nov. 2 at the Activities Building. Winners of turkeys may pick them up after 3:30 p.m. on Tuesday, November 26 at the Activities Building.

Winners in the shoot were as follows: A. C. Beasley, B. W. Beasley, Bruce Beaver, J. P. Smith, H. B. Topping, E. Manester, C. N. Robeson, Chuck Walker, Barry Ferguson, Jim Cross, H. Brooks, Robert Phelps, G. Beaver, M. Birdsong, R. L. White, R. Speight, E. Dempsey, R. McCormick, Fred Hines, Pete Carmine, R. Davis, and M. Beasley. Winner of the drawing for volunteer workers was Ron Krodez.

NOTICE: Staff members are reminded that November 23 is the deadline for mailing Christmas packages to our servicemen in Vietnam. The addressed mailing labels to each branch of the Armed Forces may be obtained from Sybil Coleman, extension 3313.

WANTED: Fifth driver from Windsor Great Pk. to W.A. on 8 shift. Cooper, 4840.
WANTED: Ride from Todds Lane to E.A. on 8 shift. Butler, 2553.
WANTED: Ride or driving combination from Williamsburg to W.A. on any shift. Heyman, 3418.

The three Apollo Seven astronauts, who died in a flash fire last year, were honored by the City of Hampton during special ceremonies last month at the Aerospace Park. A sculpture entitled "Space Sphere One" was unveiled in honor of Virgil I. Grissom and his late companions, Roger B. Chaffee and Edward H. White. Viewing the sculpture are (from left): Mayor Ann H. Kilgore, Charles Donlan, former Associate Director of Langley and now Deputy Associate Administrator for Manned Space Flight; and Victor Pickett, Old Dominion College Assistant Professor who created the sculpture.

COMBINED FEDERAL CAMPAIGN

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LOST: Cigarette lighter with inscription "From Cape Canaveral to U.S.S.Kearsarge - MA-7". Nye, 4591.
DR. SILVERSTEIN NAMED ROCKEFELLER
PUBLIC SERVICE AWARD RECIPIENT

Dr. Abe Silverstein, Director of the Lewis Research Center and former Langley staff member, has been named as one of six winners of 1968 Rockefeller Public Service Awards.

Conceived and financed by John D. Rockefeller III, and administered by Princeton University's Woodrow Wilson School of Public and International Affairs as a public trust, the awards are the highest privately sustained honor for the nation’s career services in existence. Each is represented by a $10,000 cash grant.

Dr. Silverstein, who is completing his 40th year of government service, was selected for the award in the science, technology, or engineering category. He will be honored at a presentation luncheon in Washington on December 4.

He is the second NASA official to receive the Award. In 1962 the late Hugh L. Dryden, then Deputy Administrator, was a recipient.

During his career Silverstein has made important contributions in the fields of aeronautics and astronautics and of jet engine propulsion for aircraft and rocket engine propulsion for spacecraft.

Both the Lunar Orbiter and the Surveyor spacecraft (which accomplished the first soft landing on the moon) were powered by rockets developed at the Lewis Research Center. Dr. Silverstein was also responsible for advances

(Continued on page 3)

NASA HONORS STAFF MEMBERS AT CEREMONY IN WASHINGTON

Four Langley Staff members and one research team were honored at NASA’s annual awards ceremony in Washington November 14. The awards were presented by Dr. Thomas O. Paine, Acting NASA Administrator, at the Department of Health, Education and Welfare Headquarters Building.

Mark R. Nichols, Chief of Full-Scale Research Division, received the NASA Medal for Exceptional Scientific Achievement "For pioneering achievements in the field of aeronautical research as related to the conception and development of advanced civil and military aircraft, and for his technical leadership in advancing this nation's military preparedness and commercial posture."

Philip Donely, Chief of Flight Mechanics and Technology Division; Paul E. Fuhrmeister, Chief of Analysis and Computation Division, and Harry H. Hamilton, Associate Chief of Technical Information and Utilization Division, received the NASA Exceptional Service Medal.

The individual citations for the Exceptional Service Medals were as follows:

Donely - "For his outstanding leadership in the conception and direction of definitive aircraft flight research programs and for his valuable consultations to the civil and military organizations on vital airworthiness problems of aircraft."

Fuhrmeister - "For exceptional achievement in the computing, data handling, and real-time simulation activities of the Langley Research Center, as manifested by his conceptual design, and implementation of the Langley Research Center Digital Computer Complex, and for his contributions as Chairman of the NASA Inter-Center Committee on Automatic Data Processing."

Hamilton - "For his outstanding achievements in or-

(Continued on page 3)
NEW ARRIVAL... Announcing the birth of a six pound, thirteen ounce daughter, Mary Teresa, on October 18 is G. J. Jursacaga, Fabrication Division. The mother, Teresa, formerly worked at the Langley Federal Credit Union.

SKYWATCHERS... The Langley Skywatchers Club will meet on Thursday, December 5 at 7:30 p.m. at the Peninsula Nature Museum and Planetarium located just off of J. Clyde Morris Boulevard. This will be the first in a series of lecture/work sessions on techniques for making various astronomical measurements. The sessions will be conducted by Dorothy E. Beetle, Planetarium Director.

CHANGE ANNOUNCED... A recent change has been made in the booklet Standards of Conduct for NASA Employees. Effective September 20, 1969, paragraph 306 "Special Conditions Applicable to Teaching" on page 14 was deleted.

BLOODMOBILE... The Red Cross Bloodmobile will make its final visit for 1968 to the Center on December 18. Those who have not registered to donate blood and wish to do so may call East Dispensary, telephone 2243.

IAM MEETING NOTICE... The NASA Lodge No. 892, International Association of Machinists, will hold its monthly meeting on Tuesday, December 3 at 7 p.m. at the Central Labor Union Hall.

REPRESENTATIVE TO VISIT HERE... Rollin Slinger, Field Representative of the Indemnity Benefit Plan, will visit the Center on December 11 from 9 a.m. to 10 a.m. Employees having problems or questions concerning the plan may call Lois Taylor, 2605, for an appointment.

APPRENTICE HONOR ROLL

The apprentices completed the fall semester with an average of 93 or better. Members of the honor roll are as follows:

Robert A. Baals, 22-Inch Helium Tunnel; Robert W. Bourgeois, Plant Electrical Section; John W. Cox, Spacecraft Structures; Alton C. Hall, Simulator Development Section; Robert H. Huffman, Entry Structures; Michael A. Klebitz, Research Aircraft Support Section; George J. Link, Composite Model Development Section; Barry D. Meredith, Instrument Physics Research; William O. Moore, Reentry Physics; and Homer F. Rush, Research Equipment.


ROCKEFELLER PUBLIC SERVICE AWARD  
(Continued from page 1)  
in the design of supersonic propulsion experiments.  
As NASA's first director of space flight programs he  
provided the leadership and top level management of the  
nation's first manned space flight program, Project  
Mercury, and the many successful unmanned satellites  
during the first three years of the space program.  
The 60-year-old native of Terre Haute, Indiana, also is  
extremely active in a broad range of professional and  
civic affairs, with emphasis in the areas of education,  
scouting, and employment of minority groups.  
He joined the Langley staff in 1929 as an aerodynamic  
research engineer. In 1940 he was named head of Langley's  
Full-Scale Wind Tunnel. Three years later he moved to  
the Lewis Research Center. He became Chief of the Wind  
Tunnel and Flight Research Division there in 1945.  
Dr. Silverstein was appointed Chief of Research at the  
Cleveland facility in 1949; and in 1952 he became Associate  
Director of the center.  
Transferred to Washington in 1958, he helped plan the  
an organization and programs of NASA and subsequently was  
named Director of the Office of Space Flight Programs when  
that agency was established by NASA. Here he directed  
misson planning, spacecraft design and development,  
launch operations, and in-flight research for unmanned  
scientific space probes and satellites and for unmanned  
space flight.  
In 1961 he assumed the directorship of the Lewis Research  
Center, where, heading a staff of 4,800, he is guiding the  
research and development of advanced propulsion systems  
for supersonic aircraft and space vehicles, and space power  
generating systems.  
He received his B.S. degree in Mechanical Engineering  
from Rose Polytechnic Institute in 1929 and earned the  
professional M.E. degree from the same school five years  
later. He has since been honored with degrees from Case  
Institute of Technology (1958), Rose Polytechnic (1959),  
Yeshiva University (1960), Fenn College (1964), and John  
Carroll University (1967).  
Dr. Silverstein was presented the Air Force Exceptional  
Civilian Service Award in 1960, the NASA Medal for Out­ 
standing Leadership in 1961, and the National Civil Service  
League's Career Service Award in 1962. The American  
Institute of Aeronautics and Astronautics honored him with  
the Sylvanus Albert Reed Award in 1964 and with the  
Louis W. Hill Space Transportation Award in 1967.  
WANTED: Ride from Westminster Dr. to W.A. on 7:30  
shift. Gibson, 3541 or 838-2483.  
FOR SALE: Christmas puppies - AKC registered German  
Shepherds, ready to go Dec. 2 will hold until Christmas  
Eve. Hoyt, 868-9380.  
FOUND: Necklace near Bldg. 1192. Anastasio, 4567.  
WANTED: Ride from Jenkins School to W.A. on 7:30 shift.  
Wilson, 4664.  
FOR SALE: 1965 Falcon Futura, 2-door - $895. Callis,  
826-5384.  
Jordan, 868-9655.  
FOR SALE: Hammond electric chord organ with bench and  
music - $300. James, 642-4109.  
ACD won the Touch Football Championship with a record  
of 8 wins and 2 losses. Members of the team are (from  
left): Joe Drozdowski, Henry Good, John Bowen, Jim Gard­ 
ner, Bob Reynolds, Jim Harris, H. P. Lucas, Bob Ward,  
Dennie Foster, and Weldon Staton. Missing is Dave Bailey.

ACD WINS TOUCH FOOTBALL TITLE
ACD clinched the NASA Touch Football League champion­ 
ship as they defeated Boozers 20-12. Other scores were:  
Bombers 22 - KNADS 6; IRD 24 - Misfits 19; Misfits 37 -  
ACD 32; Boozers 13 - KNADS 12; and Bombers 28 - IRD  
27.  
Selected to the All-Star team were the following: Jim  
Gardner, Bob Ward, and Weldon Staton, ACD; Del Hodges  
and Jerry Creedon, Misfits; Bill Ashworth, KNADS; Ed  
Phillips, George Lawrence, and Charles Miller, Boozers;  
Mitch Tohao and Alan Whitehead, Bombers; and Pat Mc­ 
Cormick, IRD.  

FINAL STANDINGS  

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NASA HONORS STAFF MEMBERS  
(Continued from page 1)  
organizing, developing, administering, and managing the  
NASA Central Printing Plant and particularly for the out­ 
standing guidance and direction that he has given other  
NASA Centers and government agencies in developing  
their printing operations and services."

The NASA Group Achievement Award was presented to  
the Sonic Boom Investigation Team "For outstanding con­ 
tributions to the fundamental understanding of the sonic  
boom phenomenon through analysis and experiment lead­ 
ing to a clear definition of its generation and propagation  
and of the effects of exposure to it." Members of the team  
are Harvey H. Hubbard and Domenic J. Maglieri, Dynamic  
Loads Division, and Harry W. Carlson and F. E. McLean,  
Full-Scale Research Division. The award was accepted on  
behalf of the team by Hubbard.  
FOR SALE: G.E. portable dishwasher - $50. Lansing,  
877-7192.

NINE RECEIVE HONORARY AWARDS

Nine employees recently received Honorary Suggestion Awards under the Center's Incentive Awards Program. The award is in the form of a certificate which becomes a permanent part of the employee's personnel record. It gives recognition to an individual who has made a suggestion that has been accepted and put into use. The Honorary Suggestion Award is presented when a cash award is inappropriate because the suggestion is related to the employee's regular duties.

Awards were presented to the following:

William M. Rollins, Fabrication Division, in recognition of a suggestion relative to the design of a protective guard which will eliminate the damage to model tips being tested in Langley's 9- by 6-foot thermal structures tunnel.

O. Earl Shortt, Research Support Division, for a suggestion relative to modifying procedures which allow more efficient means for checking force balance calibration and model sting deflection.

William H. Osborne and Viggo G. Dereng, Fabrication Division, were honored for an improved method of forming and setting electrode holding fixtures for the electrical discharge machining of exotic metal specimens.

William E. Rew, Procurement Division, for a suggestion relative to eliminating the Procurement Division's military and federal specification files which provide more efficient operations.

Wilbur C. Heier, Fabrication Division, for suggesting the replacement of the back pressure valve on a 30-ton Ram 6-ton transfer ram by using a Vickers relief valve, thus improving machine performance and working conditions of the operator.

Arthur L. Newcomb Jr., Flight Vehicles and Systems Division, for preparing substandard printed circuits for breadboard construction of electronic circuits which are used for less critical applications.

James E. Rammell and Emanuel Rind, Instrument Research Division, were honored jointly for the development of a device for locating the exact level of liquid nitrogen in cryostats and dewars.
APOLLO 8 MOON ORBITAL FLIGHT

NASA announced that the Apollo 8 mission would be prepared for an orbital flight around the Moon.

This decision was reached following a thorough review of the Apollo Program and NASA's overall readiness to undertake the next step toward the national objective of a manned lunar landing next year.

Apollo 8 will be launched from Cape Kennedy no earlier than December 21. Timing of the "launch window" is solely dependent on technical considerations. Among these are the Moon's monthly swing around the Earth, launch restrictions at Cape Kennedy, daylight conditions in the launch and recovery areas, and preferred photographic lighting for sites of interest on the Moon.

Crewmen for the Apollo 8 mission are Commander Frank Borman, Command Module Pilot James A. Lovell, and Lunar Module Pilot William A. Anders. There will be no Lunar Module on this mission, but Anders will fly in the position reserved for the Lunar Module pilot on fully configured Apollo missions.

The Apollo 8 mission will be an "open-ended" mission conducted in steps referred to as "plateaus" or "commit points." Conducting the mission in this manner provides both maximum crew safety and maximum benefit through alternate flight mission selection as the flight proceeds.

Each plateau includes a thorough check of crew, system and equipment operations. Only when all conditions are satisfactory will the decision be made to commit to the next plateau. The commit points in the Apollo 8 mission are:
- Prelaunch check out, terminating in launch.
- Earth parking orbit, which ends with translunar injection.
- Translunar coast, preceding lunar orbit injection.

Conducting Apollo 8 in this manner provides for various alternate missions, which include a low Earth orbit flight, a high apogee mission up to 60,000 miles, or a circumlunar operation.

Launch will be from Complex 39A at Kennedy Space Center on an easterly azimuth between 72 and 108 degrees. The Saturn V launch vehicle will place the spacecraft and the SIVB third stage into a 115-statute-mile high parking orbit around the Earth during which third stage and spacecraft checkout will be accomplished.

The third stage will then be reignited during the second or third parking orbit to inject the space vehicle into a translunar trajectory. The injection will provide a circumlunar "free return" to Earth if the decision is later made not to insert the spacecraft into lunar orbit.

Within two hours after translunar injection, the command and service module will separate from the rocket's third stage. Midcourse corrections may be made using the spacecraft's reaction control system. The translunar coast will take about 66 hours from Earth orbit to the Moon.

At translunar injection from Earth orbit the spacecraft speed will be increased from approximately 17,500 to about 24,200 miles per hour. During coast to the Moon the speed will decrease to about 1,210 mph when the spacecraft is about 30,000 miles from the Moon. At this point lunar gravity will cause the spacecraft to accelerate as it approaches the Moon.

PERFORMANCE AWARDS PRESENTED

Alverta H. Barnes, Procurement Division, and Burt E. Emerson, Research Support Division, have received letters of commendation and cash awards from the Langley Incentive Awards Committee for sustained superior performance.

Mrs. Barnes received her award for "her outstanding effort in establishing an efficient system for processing stores stock requisitions."

Emerson earned his award for "his overall excellence in the performance of duties and for his contributions towards the development of an improved ion gun and a Hulcher movie camera control device."

HUFFMAN WINS GOLF TITLE

Bob Huffman successfully defended his title as NASA Open Champion with an 83-16-67 at the Langley Golf Course. Runners-up were A.R. Heath with 87-19-68 and Ed Zavada with 85-17-68. Blindbogey winners were Roy Farmer, Jim Jones, Jim Whitten, and Sid Pauls.

The winner's name will be engraved on a permanent trophy on display in the Activities Building. The tournament, sponsored by the Activities Association, has 29 entries.

FOR SALE: Two 15-inch full range speakers and cabinets, 70-watt EICO stereo amp. and FM receiver. Rhinehart, 898-6596.
FOR SALE: Sofa, kitchen table and 4 chairs. White, 596-6764 after 5 p.m.
KNOW YOUR CREDIT UNION

New, New, New -- Your Langley Federal Credit Union has timely news for the holiday borrower: a fresh, convenient, yet-untitled, personal loan service that gets away from old, last century requirements on paper work and personal appearances. The introduction of up-to-the-minute loan procedures makes this possible. The key is a one-time application which can cover a succession of loans over a period of years. Members may borrow, repay, and borrow again without ever coming near the Credit Union. However, it must be emphasized that this service is not, let's face it, for everyone. There is no benefit as the loan limit goes. The only advantage is the added convenience: the ability to call at any time and request for an immediate check for an amount approved earlier. And, unfortunately, this very fact disqualifies members with continuing problems. It will only work if the member's income, credit rating, past record, etc., is such as to warrant almost automatic approval of his application and the belief that there will be no major change. The program takes nothing away from any member; it merely makes matters a little bit simpler for some.

Under these new procedures, a member simply applies for some specific amount which may run as high as $2500 plus unpledged shareholdings. When approved by the Credit Committee, the borrower signs a note-loan agreement and, during its two-year life, need never put in a personal appearance again. As a matter of fact, even the submission of the application and of the original note can be handled by mail. Of course, there is no necessity to borrow immediately; the first loan may be time-phased to suit the member. The important thing is to have an approved application for the maximum amount, within reason, on file. It costs nothing and makes a very satisfying ready reserve.

Subsequent loans are disbursed based on a "Request for Advance." If the original loan is less than the credit ceiling or if repayment has reduced the loan balance to a point reasonably below the ceiling, the member may come in, write in, or telephone in and immediately receive a check for the extra cash needed. He also receives his copy of the completed request form which gives the details of the transaction. A stamped statement on the check, when endorsed by the member, testifies as to the receipt of both check and request. That endorsement, incidentally, is all the paper work required of the borrower.

To insure a simple but eye/ear catching name for this new personal loan service, the board has approved a $25 award for the title chosen from among those submitted. Other unions have used such designations as "Kwik Cash" or "Porta-Credit." Here, one a little less commercial, a little more imaginative, and tied in with this particular credit union is preferred. Do your best thinking and drop in, or telephone in and immediately receive a check for the extra cash needed. He also receives his copy of the completed request form which gives the details of the transaction. A stamped statement on the check, when endorsed by the member, testifies as to the receipt of both check and request. That endorsement, incidentally, is all the paper work required of the borrower.

To insure a simple but eye/ear catching name for this new personal loan service, the board has approved a $25 award for the title chosen from among those submitted. Other unions have used such designations as "Kwik Cash" or "Porta-Credit." Here, one a little less commercial, a little more imaginative, and tied in with this particular credit union is preferred. Do your best thinking and drop the result in one of the Suggestion Boxes in the main lobby or just mail it in. Be sure to show your name and account number.

Or better yet, ask today for a loan application form. See how smoothly and effortlessly matters progress and then come up with the name that best fits the service. Good luck!

WANTED: Alternate drivers from Southampton to W.A. on 7:30 shift. Rackley, 3544.
WANTED: Ride from Warwick Gardens to W.A. on 8 shift. Nuttall, 3221.

IDEAS THAT PAY-OFF

HEALTH BENEFIT CHANGES

Benefit changes (most of them minor) will be made in many of the health benefit plans, and many plans will increase their premiums for the contract term which begins in January 1969. To inform you of the changes, if any, in your plan, the Civil Service Commission has prepared pamphlet BRI 41-117, Information About Plan Changes Effective January 1969, which will be distributed to all employees around the end of the year. Check the information in the pamphlet regarding your plan to see if it is making any changes, and, if so, in what respect. Keep the BRI 41-117 with your brochure.

If the premium of your plan is being increased, the effective date for the increased deductions from your salary will be January 12, 1969. Rate increases are necessary primarily because of increasing costs of hospital and medical care and, in some plans, because of needed improvements in benefits.

Under the Federal Employees Health Benefits Regulations, open seasons must be held at least once every three years. The last open season was held in November 1966, and the next open season will be held during the period November 10 to 28, 1969. There will not be an open season in 1968. The 1969 open season will apply to employees only; it will not apply to annuitants.

FOR SALE: 10-room, 2-bath house on 100 x 100-foot corner. Clark, 503 N. Mallory, 722-6445 after 5 p.m.
FOR SALE: 35 mm Kodak camera. Nelms, 877-9675.
FOR SALE: 2 24-inch bicycles - boy's - $20, girl's - $10. Ashe, 826-1014.
AWARDS PRESENTED FOR TECHNOLOGY

In ceremonies held last week Edgar M. Cortright, Director, presented cash awards to 18 staff members for Tech Briefs.

Tech Briefs summarize new inventions, innovations, discoveries, or improvements having potential industrial applications and are published through NASA’s Technology Utilization Program for nationwide distribution. At least 10,000 private companies subscribe to this service which provides a rapid means of incorporating new materials, techniques, manufacturing processes or products generated through space research.

An award of $25 was presented to the recipients; however, all items may be considered for higher awards, ranging from $250 to several thousand dollars. If the item is processed to the point of application for U.S. Patent, it is also eligible for a $50 (minimum) award.

The Langley Tech Briefs for which the awards were presented are as follows:

67-10489 - Computer Program Calculates Sonic-Boom Pressure Signatures by Charlotte B. Craidon and H. W. Carlson
67-10530 - Program Computes Zero Lift Wave Drag of Entire Aircraft by Charlotte B. Craidon and R. V. Harris.
67-10601 - Analytical Drafting Curves Provide Exact Equations for Plotted Data by Roger B. Stewart.
68-10042 - Suspended Chains Damp Wind-Induced Oscillations of Tall Flexible Structures by Wilmer Reed.


FOR SALE: 1956 Chevrolet Bel-Air, 2-door hardtop, also stroller, high chair, youth crib and mattress. Burton, 826-6418 after 4:30 p.m.

FOR SALE: 1966 Renault R8 - will consider older car in trade. Sleigher, 826-6418.

FOR SALE OR TRADE: American Browning 12 gauge raised rib 25-inch cylinder bore barrel - want 30-inch full choke, plain barrel to suit or will take same for Remington Model 11 shotgun. Slear, 722-4935.
Dr. Thomas O. Paine (top left), NASA Acting Administrator, visited the Center Nov. 14 to address the NASA Procurement Officers Conference. Greeting him as he arrived at Langley (top right) are T. Melvin Butler (left), Assistant Director for Administration, and Dr. John E. Duberg, Associate Director. Center left - Eldon E. Mathauser (second from right) and Roger A. Anderson (right) take the group on a tour of the Structures Laboratory. Center right - Donald D. Baals, Full-Scale Research Division, shows a model of a supersonic transport to the visitors. Dr. Floyd L. Thompson (left), Special Assistant to the NASA Administrator, accompanied the guest on his tour. Lower left - Joseph F. Guarino, Instrument Research, explains a display to Dr. Duberg and Dr. Paine. Lower right - Dr. George W. Brooks, Assistant Director, and Dr. Paine inspect an Atlas model in the Dynamics Research Laboratory.
Each year during the winter holiday season we traditionally celebrate three special days. On Thanksgiving we give thanks for the good things we have. On Christmas we find new hope for the future. And on New Year’s Day we resolve to lend personal action to these hopes.

The process is one of renewal, and it is one well suited to groups of people, and even to nations, as well as to individuals. And while we normally think of such renewal in a spiritual and very personal way, we can also think of it in terms of the great team effort of which we are all a part.

We can be thankful that we have come through the first decade in space with flying colors, with nearly all stated goals achieved and about to launch our astronauts on their first voyage to the moon. We can find hope for the next decade in the stated determination of the new Administration to keep our country first in space and aeronautics. And we can resolve to put our most creative efforts into the emerging series of new high performance aircraft for the 1970’s; to successfully execute the Mars landings in 1973; to develop needed technology for the forthcoming manned orbiting research laboratory; and to continue to conduct the broad basic research which has made these advancements possible and which will make the 1980’s even more exciting and productive.

Appreciation -- hope -- resolve. This is a powerful combination, whether applied on our jobs, or to the problems of our homes, our communities, or our country.

In a more personal vein, I want to thank you not only for your outstanding performance and many achievements of the past year, but also for the wholehearted support which you have given me. The warm and helpful manner in which you accepted me into your midst has meant a great deal.

Please accept my sincere wishes for a Merry Christmas and a Happy New Year.

Edgar M. Cortright
Director
NASA recently announced additional plans for landing scientific payloads on the planet Mars in 1973, Project Viking.

NASA had indicated previously in its Fiscal 1969 operating plan that the agency intends to proceed with the Mars 1973 landing missions authorized by Congress.

Langley Research Center has overall project management and direct responsibility for managing the lander portion of the project.

The following staff members are assigned to the Viking Project Office in the capacities as indicated: James S. Martin, Project Manager; Israel Taback, Deputy Project Manager; Dr. G. A. Soffen, Project Scientist; William J. Boyer, Operations Manager; Israel Taback, Engineering Manager; Angelo Gustafredo, Executive Engineer; Robert L. Girouard, Space Vehicle Manager; William L. Watson, Test Manager; Edmund A. Brummer, Spacecraft Manager; Royce H. Sproull and Frank E. Mershon, Assistant Spacecraft Managers; and Norman L. Crabill, Mission Analysis Manager.

While specific science instruments for the missions will not be selected until the results of the scheduled Mariner 1969 missions are known, the mission objectives place particular emphasis on providing information relevant to life on the planet.

Dr. John E. Naugle, NASA's Associate Administrator for Space Science and Applications, said that NASA plans to use the Titan III/Centaur as the launch vehicle for the two 6,000 pound spacecraft.

"These will be dual launches. Each spacecraft will consist of a Surveyor-type soft lander mated to a Mariner 1971" (Continued on page 7)

Dr. Floyd L. Thompson, who reached NASA's mandatory retirement age of 70 last month, was honored by his Langley associates at a luncheon on November 27 and by the Activities Association at a reception that evening.

Dr. Thompson retired May 1 as Director of Langley Research Center but he will continue to serve NASA as a special consultant to NASA's Administrator.

James M. Beggs, Associate Administrator of NASA's Office of Advanced Research and Technology, was guest speaker at the luncheon. He termed Dr. Thompson's career unique because "he has made significant contributions to almost every aspect of flight."

It was like an early Christmas as gifts flowed to Dr. Thompson from other NASA centers, including Lewis Research Center, Wallops Station, Manned Spacecraft Center, and Ames Research Center.

In addition, three gifts were presented from Langley by Edgar M. Cortright, Director, as "official tokens of esteem."

The Center gave Dr. Thompson a fishing reel, space clock and desk pen set. The latter was a miniature space museum constructed at Langley and including miniaturization of every aspect of work conducted at Langley.

It was noted that six of NASA's present centers trace their direct inception to Langley.

A series of slides - some humorous and some serious - backed up a brief summation of Dr. Thompson's career by Dr. John E. Duberg, Associate Director.

In expressing his appreciation, Dr. Thompson recently sent the following letter to Cortright:

(Continued on page 7)
ANNOUNCEMENTS

CALENDAR NOTICE. . Officials of the Stock Section announced that requests for 1969 desk and wall calendars should be submitted by Monday, December 16. Sections are asked to take an inventory as to the number of calendars needed and report it to their division office. The division office will forward the order to the Stock Section.

AFGE NOTICE. . AFGE Lodge 2755 will not have a December meeting.

WEDDING BELLS. . Walt Wilser, co-operative education student from northeastern University, and Carol Mathews, former co-op student from VPI, were married November 30. Walt was recently assigned to the Materials Radiation Lab of the Chemistry and Physics Branch, AMPD.

NEW ARRIVALS. . Robert R. McWithey, Structures Research Division, recently became the father of a seven pound, eleven ounce son, James Brian. . Otis Childress, Flight Vehicles and Systems Division, became the father of a two-year-old adopted son, Steven Martin, on Dec. 5.

CAMERA CLUB. . The Langley Camera Club will hold its annual dinner meeting tomorrow at 7 p.m. at Shoney’s in Warwick Shopping Center. New officers will be installed as follows: Abraham Leiss, president; William Conkling, vice president; Russell Parr, secretary; Sidney Hall, treasurer; and Clyde Hayes, contest chairman. There will be a color slide contest to decide the best slide of the year with the following special rules: 1. Four new slides will be permitted. 2. An unlimited number of past winners qualify to enter.

KEEP THE MAIL MOVING. . The Postmaster General has requested all government agencies to send their mail to the Post Office throughout the day, not to hold it until the end of the day. Even though the amount of mail from an individual office may be small, the accumulation of mail from Government agencies and private industry places an enormous workload on the Post Office each night. The mail from the Center is dispatched from the central mail room to the Base Post Office at 8:30 a.m., 11 a.m., 2:30 p.m., and 4:30 p.m. All offices are requested to dispatch mail when it is prepared to help ensure a continuous flow throughout the day.

WANTED: Ride from Fairland Avenue, Hampton, to W.A. on 8 shift. Ramsey, 3001.

CAFETERIA MENU

The following menu will be served in the cafeterias during the week of December 16:

Monday - Beef broth with barley, pot roast of beef, salmon loaf, grilled smoked ham, cheese-tomato rarebit. Snack bar - Soup, cheeseburger, sliced barbecued beef on roll, corn fritters.

Tuesday - French onion soup, baked Virginia ham, fried oysters, beef stew, grilled pork loaf. Snack bar - Soup, grilled pork loaf, hot corned beef sandwich, French fries.

Wednesday - Puree of bean soup, chopped steak, roast pork, broiled fish, fish cakes. Snack bar - Soup, sea dog, Lou’s satellite special, German potato cakes.

Thursday - Vegetable-beef soup, grilled rib eye steak, chicken pie, stuffed pepper, western omelette. Snack bar - Soup, hamburger, steak sandwich, French fries.

Friday - Minestrone soup, braised beef tips, stuffed flounder, Salisbury steak, franks and beans. Snack bar - Soup, fish sandwich, hot pastrami, French fries.

The menu for the week of December 23 is as follows:

Monday - Cream of celery soup, roast beef, fried shrimp, spaghetti and meat sauce, cheese omelette. Snack bar - Soup, hot dog, hot roast beef sandwich, French fries.

Tuesday - Chicken rice soup, chicken and dumplings, broiled ham slice, liver and onions, chili con carne. Snack bar - Soup, barbecued meat sandwich, grilled ham.

Wednesday - H O L I D A Y

Thursday - Cream of potato soup, veal cutlet, broiled Canadian bacon, meat loaf, macaroni and wiener. Snack bar - Soup, hamburger, hot pastrami, French fries.

Friday - Clam chowder, crab cakes, boiled ham, Polish sausage, grilled pork loaf. Snack bar - Soup, grilled pork loaf, boiled ham, French fries.

FOR SALE: Stelber 20-inch converter bicycle, kick stand, basket - $10. Ezell, 838-3801 after 5 p.m.

WANTED: Boy’s and girl’s 26-inch bicycles. Ezell, 838-3801 after 5 p.m.


FOR SALE: Lear Jet 8 track stereo tape cartridge music system with matching speakers - $80; wardrobe with double doors, mirror, large drawer - $20. Maynard, 595-2133.
The Pussycat Puppet Theatre will be featured at the Annual Children's Christmas Party on Sunday at the Activities Building. Two shows will be held.

CHILDREN'S CHRISTMAS PARTY

The Activities Association's Annual Children's Christmas Party will be held Sunday, December 15, with shows at 1:30 p.m. and 3:15 p.m. in the Activities Building.

Featured will be the Pussycat Puppet Theatre and Santa will arrive in time for the party.

Tickets are 50 cents and may be purchased from District Representatives or the Activities Building. Adults must also have tickets in order to be admitted. If available, a limited number of tickets will be sold at the door.

TECHNOLOGY UTILIZATION NEWS

NASA's space efforts draw from and contribute to almost every conceivable science or discipline. Many new sciences are being developed which most people would hardly associate with the space program. Biogeochemistry, for example, is an amalgamated science which is being enhanced by satellites equipped with delicate remote sensing gear. This instrumentation detects minute changes in plant life related to various minerals (through processes of plant nutrition). Mineral prospectors are thus enabled to select the most promising areas of mineral yields.

The full story is explained in the latest Technological Survey publication entitled "Application of Biogeochemistry to Mineral Prospecting" SP-5056. Call 3281 for your copy of this interesting 135-page treatise.

NEW YEAR'S DANCE DEC. 31

The Activities Association will present its New Year's Eve Dance on Tuesday, December 31. Dancing at the Activities Building will be from 9 p.m. until 1 a.m. Music will be furnished by the Los Morocoo's Band.

Tickets are eight dollars per couple including set-ups and favors. Tickets will go on sale Monday at the Activities Building on a first come basis. Reservations may be made only with ticket purchase. No reservations will be held past 10 p.m. and there will be no refunds.

Tickets are limited to the available seating capacity.

ISA TO HEAR RAMON WALKER

Ramon R. Walker, Head of the Instrument Development Section of the Naval Ship Research and Development Center of Portsmouth, will discuss research instrumentation for determining underwater explosion effects at a meeting of the Tidewater Section of the Instrument Society of America on Wednesday, December 18.

Walker, a registered professional engineer, received a B.S. degree in Electrical Engineering from Virginia Polytechnic Institute in 1950 and assumed his present position after many years as a radar engineer at the Norfolk Naval Shipyard. He has specialized in the instrumentation, measurement and analysis of underwater explosions phenomena and their effects on ships, and has authored several reports and papers on these subjects.

The meeting place is Bennetts Creek Farm Restaurant located on Route 17 between Driver and Chesapeake City limits. The 8 p.m. talk will be preceded by a dinner at 7.

Arrangements for dinner ($3.50) and ride may be made with Tom Carpini, 3482, by noon on December 18. Guests are invited.

Ruth Zane, Administrative Assistant for Langley Research Center's Mission Support Office at the Western Test Range, was honored recently for her many years of federal service when William D. Hinshaw, Head of the local office, presented her with a 25-year certificate and service pin during ceremonies held at South Vandenberg Air Force Base. Mrs. Zane's federal service career began August 1943 when she was employed as a secretary for the U.S. Maritime Commission in Alameda, California.
UNDERGRADUATE COURSES OFFERED

Plans are being formulated to offer courses, sponsored by the College of William and Mary and Christopher Newport College, for the spring semester. The William and Mary courses will begin on February 3, and the Christopher Newport course will start on February 4.

The following William and Mary courses are being offered:
- Math 103 - Algebra and Trigonometry - 48 hours. This course will meet on Mondays in Building 1149, Room 201 from 4:30 to 7:30 p.m. The instructor will be Mr. William C. Turner.
- Math 201 - Calculus with Analytic Geometry - 48 hours. This class is scheduled to be conducted on Tuesdays in Building 1149, Room 201 from 4:30 to 7:30 p.m., and will be taught by Mr. Wayne E. Carter.
- Math 203 - Calculus with Analytic Geometry - 48 hours. This class is scheduled to meet on Wednesdays in Building 1149, Room 201 from 4:30 to 7:30 p.m., and will be taught by Mr. Harold R. Compton.

The course offered by Christopher Newport College is described below:
- Physics 202 - (Continuation of Physics 201) - General Physics. Arrangements have been made to teach this course at Christopher Newport College. Classes will be conducted on Tuesdays and Thursdays from 7 to 10 p.m.

Application forms for enrolling are available in the Training Office, telephone 2611. Approval of the supervisor and division chief is required before the applicant may enroll. Applications must be returned to the Training Office on or before January 6, 1969.

WANTED: Ride from Presidential Park to E.A. on 8 shift. Hicks, 2686.
WANTED: Ride or driving combination from Winterhaven Dr. to W.A. on 8 shift. Lockett, 3012 or 826-1979.

So who wants a gift that’s guaranteed, pre-assembled and doesn’t require wrapping? . . . Everybody.

Jack Schmidt, Vice President of Pilot Life Insurance Company, presents C. S. Hudgens (right), Treasurer of the Langley Federal Credit Union, with a premium refund check for the sixth straight year. Credit Union management and members alike may take pleasure in the favorable premium rates enjoyed and the promptness with which claims are settled. In the policy year just passed, loan balances of $21,913 were paid-in-full on the death of the borrower while $13,332 in shares was matched dollar for dollar in insurance. A far cry from 1963 when all claims totaled just over $6000.

ELECTRICAL ENGINES TESTED

Two low-thrust space engines, which produce a thrust equivalent to the weight of one-half of an office staple, were operated in orbit successfully for the first time on the NASA’s Application Technology Satellite (ATS).

Five separate tests were conducted during the two-month lifetime of the ATS 4 spacecraft. The ion, or electrical, engines were fired for a total of 23 hours.

Both engines, which produce a thrust of less than 20 micro-pounds, performed perfectly according to Dr. Robert E. Hunter, the ion engine experimenter from NASA’s Goddard Space Flight Center, Greenbelt, Maryland.

Unlike chemically propelled engines, ion engines have controllable thrust level and direction (with no movable parts), higher fuel efficiency and longer fuel life. This combination makes them ideal for keeping gravity gradient, synchronous orbiting spacecraft at a precise point above Earth.

Synchronous orbiting satellites move slowly in orbit because of gravitational attraction between the spacecraft, the Moon and Sun, and the elliptical equatorial section.

Ion engines, for future spacecraft, are an ideal system for countering these forces and keeping the satellite precisely stationary for conducting communications, meteorological and navigation experiments.

WANTED: Ride or driving combination from Eastwood to W.A. on 8 shift. Huffman, 3326 or 877-3545.
DR. THOMPSON HONORED
(Continued from page 1)

"I am indeed grateful for the luncheon and reception held in my honor last week, and I want to express my personal thanks to you for your part in making the day so memorable. Please convey my sincere appreciation to the Center staff for the luncheon and reception, the generous statements, and gifts of that occasion. The gifts received from Langley represented an overwhelming display of thoughtfulness, ingenuity in concept, and skill in execution and as such, defy proper acknowledgement. Jean joins me in expressing our gratitude for the many honors received.

"I look forward to my continued association with you and the Center in whatever capacity I may serve."

SCIENTIFIC PAYLOAD FOR MARS
(Continued from page 1)

class Mars orbiter. Two spacecraft will be launched in mid-1973 about ten days apart, with an arrival time about seven months later, also about ten days apart. The Mariner orbiters will provide power and communications support to the landers during the cruise periods.

"Upon arrival at Mars, the orbiter propulsion systems will be used to place both the orbiters and landers into Mars orbit.

"After suitable reconnaissance of potential landing sites by the orbiters, the landers will be detached and will soft land using the techniques developed for Surveyor and the Apollo Lunar Module. The orbiters will then provide broad area surveillance in support of the landers in the same way that Lunar Orbiter and Surveyor spacecraft worked as a team in exploring the Moon."

GERMAN SOCIETY HONORS X-15 TEAM

The German Rocket and Spaceflight Society has awarded its Eugen Sanger medal to the X-15 research airplane team for its contributions to reusable space systems. The award was presented at the annual meeting of the Society in Bonn, West Germany, on December 4, 1968.

Accepting the award on behalf of the interagency X-15 team was John V. Becker, Chief of the Aero-Physics Division. In 1954, Becker headed a Langley study group that established the basic features of the X-15 and the general plan for its operation.

The X-15 project was initiated jointly by the NACA and the military services in 1955. It was the first major investment of the United States in hypersonic and manned space flight technology. The X-15 airplanes have flown successfully to speeds as high as 4500 miles per hour and to altitudes of 67 miles, providing new technology that contributed importantly to the nation's first manned orbital vehicles and to other advanced aerospace systems.

The general scheme of operation of the X-15 system and the basic features of the airplane were established in 1954 by a Langley study group headed by Mr. Becker. The Langley group has continued to play a major role throughout the flight program. Some 200 flights have been made by 12 pilots drawn from the Air Force, Navy, Marine Corps, and NASA.

Professor Eugen Sanger was one of the best-known and most active scientists behind the dramatic development of German Rocketry in the period from 1930 to 1945.
LIFE AT LANGLEY RESEARCH CENTER DURING 1968

As we approach the end of another eventful year which saw many outstanding advancements in the aerospace field, we pause from meeting deadlines to glance back over the headlines which will be recorded as NASA history for 1968.

January - Dr. Thompson Elected AIAA President... John Reeder Receives Burroughs Award... Dr. R. C. Seamans Named NASA Consultant... Servicemen Thank Staff for Christmas Gifts... T. A. Harris Retires After 40 Years of Service... Dr. R. M. Head Named Chief Scientist at ERC... Sir Frank Whittle Visits Center.

February - Dr. Thomas O. Paine Named NASA Deputy Administrator... Lunar Orbiter Photographed from Earth... Crash of Lunar Orbiter V Officially Ends Program... Dr. George F. Pezdzitz Receives Arthur Flemming Award... Lunar Sites Selected... Peninsula Telephone Directory Features Langley on Cover... Credit Union Holds Annual Meeting... Margery Hannah Honored by Alma Mater.

March - Dr. Thompson Receives Special NASA Assignment... Edgar M. Cortright Named New Langley Director... Emergency Leave Policy Cited... Sportsman's Night Features Charley Johnson... Science Congress Held Here.

April - Cortright Visits Center Before Assuming Director's Post May 1... Dr. John E. Duberg Named Acting Associate Director... Echo 1 Ends Eight Years in Space... Dr. Thompson Elected Fellow of Royal Aeronautical Society... Retirement Annuities Increased... Letters Prove Space Inspires Kids... Activities Association Sponsors Emblem Contest... Oxygen-Nitrogen Mixture Picked for Apollo on Launch Pad.

May - Cortright Assumes Duties as New Langley Director... New Tunnel Vital Facility in V/STOL Flight Progress... Reentry F Vehicle Launched Successfully from Wallops... Thirty Staff Members Retire... Helicopter Society Honors J. P. Campbell... Langley Conducting Runway Grooving Studies... Dr. Mac Adams Resigns, Beggs and Lundin Named.

June - Summer Faculty Fellowship Programs Started at Langley... Staff Reaches 90 Per Cent Mark in Savings Bond Drive... Industrial Education Program Underway at Center... Charles Bohlen and State Department Officials Visit Langley... Pearl Young Dies... Summer Employees Join Staff.

July - Pacemaker Materials Technology Experiment Conducted at Wallops... Activities Association Plans Carnival... Flight Control Research Facility Dedicated... Prime Study Contracts Extended... Seventeen Candidates Named for Carnival Queen.

August - Dr. H. J. E. Reid, Former Director, Dies... Two-Day Carnival Proves Successful... Sue Nelson Named Carnival Queen... Two Explorer Spacecraft Launched by Scout Rocket... A. I. Neihouse Named Chairman of Combined Federal Campaign... Ten Student Trainees Receive Bachelor Degrees... NASA Interim Operating Plan Cited.

September - Director Urges Staff to Support Combined Federal Campaign... Dr. George W. Brooks Named Assistant Director... James Webb Retires as NASA Head; Dr. Paine Named Acting Administrator... Staff Members Receive Advanced Degrees.

October - NASA Celebrates Tenth Anniversary... Annual Awards Ceremony Held... Staff Receives Congratulations for Outstanding Contributions to CFC... Apollo 7 Makes Successful Flight... Staff Urged to Send Gifts to Servicemen... Thirty-two Apprentices Graduate... Noise Conference Held at Langley.

November - Roy V. Harris Receives AIAA Lawrence Sperry Award... H. Julian Allen Retires as Ames Director... XC-142 VTOL Test Flights Planned at Langley... Abe Silverstein Receives Rockefeller Public Service Award... "Space Sphere One" Honoring Apollo Astronauts, Unveiled at Aerospace Park... Staff Members Honored at Headquarters Ceremony... James Webb Visits Center... Woody Herman Plays for Fall Dance... Awards Presented for Technology.

December - Dr. Thompson Honored by Staff at Retirement Party... German Society Honors X-15 Team... Activities Association Holds New Year's Eve Dance.
HIGHER HEALTH BENEFIT RATES
WILL AFFECT MOST SUBSCRIBERS

Effective with the first pay period in January, premiums will be increased in many of the plans participating in the Federal Employees Health Benefits program, the Civil Service Commission has announced. Some benefit changes are also being made in many of the plans.

The Civil Service Commission has prepared a new pamphlet, Information About Plan Changes Effective January 1969, which describes the new changes. The pamphlets will be distributed to employees.

Changes in benefits of the participating plans are primarily improvements made to close gaps in coverage and to increase benefits to keep pace with the higher costs of medical care. Many plans which formerly provided no coverage for the treatment of alcoholism are removing this exclusion, and beginning in 1969, practically all plans will provide coverage for hospital and doctor’s care of alcoholism.

The following premium increases will affect Center employees:

Service Benefit Plan (Blue Cross) - Self only, high option, will increase from $3.89 to $4.98; self and family, high option, an increase from $9.50 to $12.16; self only, low option, an increase from $1.68 to $1.76; and self and family, low option, an increase from $4.10 to $4.24.

Indemnity Benefit Plan (Aetna) - Self only, high option, an increase from $3.72 to $5.34; self and family, high option, an increase from $9.30 to $13.31; self only, low option, an increase from $1.46 to $2.11; and self and family, low option, an increase from $3.50 to $4.99.

Part of the premium increases for the low options of the Indemnity Benefit Plan and the AFGE Health Benefit Plan, as well as of two other smaller plans, will be borne by the Government. The Government pays 50 percent of the premium until the maximum Government contribution permitted by law has been reached. In all other cases where the Government is already making the maximum contribution, premium increases must be borne entirely by the employee or annuitant.

Premium increases are due mostly to the continued sharply rising costs of hospital and medical care. Hospital and medical costs still are rising more rapidly than costs of other items. During the 12-month period which ended June 30, 1969, the Consumer Price Index for hospital care went up 12.2 percent, and the Index for doctors’ care went up 5.5 percent. For the same period, the CPI for all items rose by 4.2 percent.

The Commission has kept the premium increases under this program at the minimum necessary to maintain the financial soundness of the plans.

There will be no open season for changing enrollments this year. The next open season will be held in November.

FIRST MANNED LUNAR ORBIT MISSION LAUNCHED BY NASA

The United States launched its first mission designed to orbit men around the Moon on December 21 from Kennedy Space Center. If all goes according to schedule, the spacecraft is due to return this morning from its six-day, half-million-mile trip to the Moon and back. Splashdown will be in the Pacific.

The mission, designated Apollo 8, was the second manned flight in the Apollo program and the first manned flight aboard the powerful Saturn V launch vehicle, which develops a 7,500,000-pound thrust at liftoff.

Crewmen for Apollo are Spacecraft Commander Frank Borman, Command Module Pilot James A. Lovell Jr. and Lunar Module Pilot William A. Anders.

Apollo 8 was scheduled as an open-ended mission with the objective of proving the capability of the Apollo command and service modules and the crew to operate at lunar distances. A lunar module was not carried on Apollo 8 but Lunar Test Article (LTA-B) which is equivalent in weight to a lunar module was carried as ballast.

The mission was scheduled to be carried out on a step-by-

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ANNOUNCEMENTS

THANKS STAFF... Major General C. A. Youngdale, Commander of the 1st Marine Division sent the following message to staff members: "Please accept my heartfelt thanks for the gifts you sent for delivery to Marines of this Command. Your package arrived on Nov. 28 and I have forwarded it to one of our commanders in the field and asked that he present the gifts to his Marines and Navy Corpsmen. Your kindness and thoughtfulness are indeed in keeping with the true American spirit. Gestures such as yours, I assure you, contribute immeasurably to the morale of the personnel of the division. They serve to reassure us that the people back home will be thinking of us at Christmas time and this makes the separation from our families a little easier for us. On behalf of the officers and men of the 1st Marine Division, I extend to you our very best wishes for a happy holiday season and our deep appreciation for your gifts."

WEDDING BELLS... Jeanette Saunders, Aero-Physics Division, took her final vows with Lt. David Earl Mullenix, Bossier City, La., on December 22 at the First Baptist Church, Newport News. The bride was given in marriage by her father, Marvin W. Saunders of Technical Information and Utilization Division. Mary Lou Staton, APD, was a bridesmaid.

PROFESSOR TO VISIT... Dr. Robert W. Truitt, Head of the Mechanical and Aerospace Engineering Department, N.C. State University, will visit the Center on December 31 to discuss graduate work in this field. Employees interested in meeting with Dr. Truitt may make an appointment by calling Training Office, telephone 2611.

SECTION MOVES... West Reproduction has moved from Building 1192 to Building 1152. The new telephone number is 3337.

FOR SALE: 1968 Chevelle, Bland, 595-3194.
FOR SALE: Two single channel model airplane radio control sets and assorted model equipment. Boyle, 723-3400.
WANTED: 14 to 16-foot Canoe. Schmidt, 245-1714 after 5.
FOR SALE: 2 BFG Trailmaker Silvertown snow tires - 6.85 x 15. Morris, 826-8905.
WANTED: Alternate driver from Bethel Park-Glenn Gardens Apt. area to W.A. on 8 shift. Soper, 3326, Dickens, 3784, Loa Chang, 3331, or Hudson, 3171.

CAFETERIA MENU

The following menu will be served in the cafeterias during the week of December 30:

Monday - Purée of bean soup, sliced barbecued beef, fried scallops, chicken chop suey, grilled pork loin. Snack bar - Soup, grilled pork loin on roll, sliced barbecued beef sandwich, French fries.
Tuesday - Cream of tomato soup, pot roast of beef, fried flounder, chicken livers, Spanish omelette. Snack bar - Soup, roast beef, barbecued sandwich, French fries.
Wednesday - H O L I D AY
Thursday - Vegetable-beef soup, corned beef and cabbage, fried oysters, Salisbury steak, baked hash. Snack bar - Soup, hamburger, cheeseburger, corned beef sandwich, French fries.
Friday - Manhattan clam chowder, roast veal, stuffed flounder, beef stew, franks and beans. Snack bar - Soup, hot dog, veal cutlet on roll, French fries.
The menu for the week of January 6 is as follows:

Monday - Cream of mushroom soup, braised short ribs of beef, broiled Canadian bacon, Polish sausage, Irish omelette. Snack bar - Soup, fish sandwich, grilled ham sandwich, French fries.
Tuesday - Cream of potato soup, chuckwagon steak, liver and onions, chicken pie, chili con carne. Snack bar - Soup, hamburger, cheeseburger, hot pastrami, French fries.
Wednesday - Vegetable-beef soup, roast beef, shrimp creole, smoked pork sausage, western omelette. Snack bar - Soup, western omelette, roast beef, fried egg plant.
Thursday - Split green pea soup, grilled rib eye steak, baked ham, fried chicken, macaroni and wiener. Snack bar - Soup, hot dog, steak sandwich, French fries.
Friday - New England clam chowder, Swiss steak, fried shrimp, grilled pork chopette, fish cakes. Snack bar - Soup, sea dog, pork chopette on roll, French fries.

FOR SALE: Black German built piano. Davis, CH4-7285.
FOR SALE: Garrard 60MK II automatic changer - $45. Morris, 826-8905.
FOR SALE: AKC registered Bassett pups - $95. Cope, 826-4705 after 4 p.m.
FOR SALE: 3-bedroom, 2-bathroom with garage in Hampton. Farrar, 851-1520.
MAGLIERI ELECTED TO SOCIETY

Domenic J. Maglieri, head of the Aircraft Noise Control Section of the Acoustics Branch, Dynamic Loads Division, has been elected a Fellow of the Acoustical Society of America.

Maglieri has been active in sonic boom research and experimental investigations for more than ten years and was recently cited for exceptional service and was presented a special service award and two group achievement awards in consonance with sonic boom research.

As head of the Aircraft Noise Control Section, he plans and supervises research programs in the areas of physical acoustics. He is responsible for studies of noise problems associated with jet engine fans, compressor and exhaust noise, V/STOL propeller noise, and boundary-layer noise in addition to the problems of sonic boom.

He has authored or co-authored more than 50 technical papers on research conducted at Langley.

Maglieri received his Bachelor of Science degree in Mechanical Engineering from the University of Pittsburgh in June 1951. He is a member of the Acoustical Society of America and the Engineers’ Club of the Virginia Peninsula.

MANNED LUNAR ORBIT MISSION

(Continued from page 1)

step “commit point” basis. This means that decisions whether to continue the mission or to return to Earth or to change to an alternate mission would be made before each major maneuver based on the status of the spacecraft systems and crew.

Launched from Complex 39A at Kennedy Space Center, the Saturn V placed the spacecraft and rocket’s third stage into a 103-mile orbit around the Earth. Both the spacecraft and third stage were checked out during this orbit.

On the second Earth orbit, the third stage reignited to boost the spacecraft onto a course that would swing around the moon and back to Earth if no further engines were fired.

Within two hours, the spacecraft separated from the rocket’s third stage and began its 66-hour journey to the moon. The spacecraft’s reaction control engines can make any midcourse corrections needed.

When it left Earth orbit, the spacecraft’s speed was increased from about 17,500 to about 25,000 miles per hour.

As it coasted toward the moon, the speed decreased to a low point of about 2,120 miles per hour when the spacecraft was about 29,000 miles from the moon. At this point, lunar gravity accelerated the spacecraft, pulling it toward the moon.

As they orbited the moon, crew activities included navigation and landmark sightings and photography.

The flight plan called for the spacecraft to make 10 trips around the moon, each of which lasted about two hours.

KNOW YOUR CREDIT UNION

The insurance program inaugurated in October 1962 is an example of the progressive, member-oriented thinking that the membership has come to expect of its Board of Directors. It is doubtful if any other action has had as widespread an impact or contributed more to the peace-of-mind of borrowers and savers alike than the share-life/loan-life policies underwritten by the Pilot Life Insurance Company.

Last year, loan balances of $21,913 were paid-in-full on the death of the borrower while $13,332 in shares was matched dollar for dollar by insurance. Or measuring the contribution made by this coverage in another way, it has helped significantly in the record growth of both share and loan balances. Shares on October 1, 1962, totaled some $2,150,000; today the figure is $7,900,000. During the same period, loans have jumped from $1,800,000 to $6,050,000.

Constantly updated to meet new developments, the loan-life policy now provides coverage for as long as 10 years or until the borrower reaches 70, whichever is sooner. Dollar ceiling is $10,000 for any one loan or combination thereof. There is no disability insurance on loans made after October 15, 1968.

The share-life policy now provides coverage based on age at date-of-deposit rather than age at date-of-death. Shares purchased between the ages of 6 months and 55 years are covered dollar for dollar by insurance as long as they remain on deposit provided member was in good health at time of purchase or subsequently returned to duty. After 55, the percent of deposits which are covered begins to decline and reaches zero at age 70. However, coverage in effect at 70 continues until death provided shares associated therewith are not withdrawn. Note that if a member were 70 or older on October 1, 1965, the date of change, he has no coverage. Under age at date-of-death criteria, he was over 70 and coverage had ceased; under age at date-of-deposit, he was over 70 and coverage never started (i.e., no deposits count before the effective date of the policy).

One other item. Members should carefully consider the matter of joint accounts. A possible disadvantage is the fact that joint owners have equal rights with the owner to withdraw shares or to borrow against them. This can also be an advantage. From an insurance point of view there is no contest; it is joint ownership all the way. The joint owner has the right of survivorship (i.e., immediate access to all shares) and is the direct beneficiary of the share-life insurance. If there is no joint owner and over a few hundred dollars involved, both shares and insurance go to the member’s estate and can only be released to a legally appointed Administrator with the attendant expense and delay. For those interested in changing, just bring the proposed joint owner by the Credit Union or take a new membership card home for signature.


The main propulsion engine was fired again to boost the spacecraft out of lunar orbit onto a course back to Earth. The return flight from the moon to Earth will take about 58 hours, a little shorter than the outbound trip.

The spacecraft command module will be separated from the service module before reentry into the Earth’s atmosphere and splashdown in the Pacific.
ASSOCIATION PLANS ANNUAL NEW YEAR'S DANCE DEC. 31

The outstanding social event of the year will be held on Tuesday, December 31 when the Activities Association sponsors its annual New Year's Eve Dance at the Activities Building.

The affair will be semi-formal which means the ladies may wear long or short dresses and their escorts may wear business suits, tuxedoes, or tails.

Music will be furnished by the Los Morocco Band.

The evening events will start at 9 p.m. and continue until the New Year is an hour old. At the stroke of midnight Father Time will make his exit and the New Year will arrive on the scene.

Tickets are eight dollars per couple including set-ups and favors. They may be purchased at the Activities Building. Only a limited number will be sold. Reservations may be made only with ticket purchase. No reservations will be held past 10 p.m. and there will be no refunds.

ANNUAL LEAVE NOTICE

As the 1968 leave year comes to a close, staff members are reminded that they have until January 11, 1969, to use the annual leave they earned this year.

For those who started this year with more than 30 days of accumulated annual leave, all the annual leave they earned during 1968 must be used by January 11 or they will lose the unused portion. In other words, they may keep all the accumulated annual leave they had at the beginning of the year but cannot increase it.

Those who had less than 30 days of accumulated leave at the start of the year may end the leave year with 30 days leave, but no more. This means that they must use all of this year's earned leave in excess of 30 days. If the excess leave is not used, they will lose the unused portion.

Unused sick leave may be carried over from year to year with no restrictions and there is no limit on the amount of sick leave which may be accumulated.

ALL LINED UP: Shown here are three of NASA's fleet of eight Apollo/Range Instrumentation Aircraft which will monitor critical phases of the Apollo lunar missions and serve as a vital air-to-ground voice relay links between the Apollo mission control center and the astronauts on board the spacecraft.

Dr. W. Brian Littler (second from left), British Minister for Defence Research and Development, visited the Center recently and toured a number of research facilities. Shown in the NASA Hangar are (from left): Donald L. Loving, Research Staff Office; Dr. Littler; John P. Reeder, Assistant Chief of Flight Mechanics and Technology Division; Air Commodore Charles T. Nance, Assistant Defence Research and Development Attaché; and Robert J. Tapscott, Head of VTOL Branch, Flight Mechanics and Technology.

ADS MUST BE SUBMITTED IN WRITING

Effective Friday, January 10, all advertisements for publication in Langley Researcher must be submitted in writing. No ads will be taken over the telephone.

All for sale and for rent ads must have the employee's name and home telephone number. The number of the Center telephone extension may be used on ads concerning rides or driving combinations to and from work.

As stated in the staff box of Langley Researcher "the privilege of advertising articles in this publication is restricted to employees of Langley Research Center. Articles advertised must be offered for sale or rent without regard to race, creed, color or national origin."

Articles should be addressed to Langley Researcher, Mail Stop 154.

NOTICE: Will the person who borrowed "An Introduction to the Theory of Molecular Structure" by Charette, please return it to D. I. Sebacher, M.S. 130, or call 3772.

FOR SALE: 16-foot camping trailer. Insley, 868-6203.


FOR SALE: Gibson Skylark amplifier, 2 inputs, on-off volume control, pilot light, 10-inch speaker - $30. Osborne, 596-7866.

FOR SALE: Four 12-inch wheels and tires for Fiat 600 or Simca 1000. Bryan, 838-1237 after 5 p.m.

FOR SALE: 110 x 200-foot wooded lot in Edgehill. Turner, 723-6428.