LIST OF PARTICIPANTS

POMS Membership

Mr. F. W. Burnett, U.S. Weather Bureau
Mr. E. M. Cottright, NASA Headquarters, Chairman
Mr. S. K. Green, OACSI, Department of the Army
Capt. J. W. Hinkelmann, Jr., Federal Aviation Agency
Mr. David S. Johnson, U.S. Weather Bureau
Colonel C. E. Roache, USAF, Air Weather Service
Capt. R. W. Sanborn, USN, Office of the Naval Weather Service
Mr. W. G. Stroud, NASA, Goddard Space Flight Center
Dr. Morris Tepper, NASA Headquarters, Secretary
Mr. Jack C. Thompson, U.S. Weather Bureau

Other Participants

Mr. Albert Brown, Federal Aviation Agency
Captain W. R. Franklin, USN, Office of the Naval Weather Service
Lt. Colonel Jerry C. Glover, USAF, Air Weather Service
Mr. William Haggard, U.S. Weather Bureau
Mr. David Holmes, U.S. Weather Bureau
Major James B. Jones, USAF, Air Weather Service
Lt. Colonel M. M. Lawson, Department of the Army
Mr. Ernest Neil, NASA, Goddard Space Flight Center
Major S. E. Pears, USAF, Air Weather Service
Dr. William K. Widger, Jr., NASA Headquarters
ABSTRACT

This report of the Panel on Operational Meteorological Satellites, a working group of the National Coordinating Committee for Aviation Meteorology, describes and recommends a plan for the implementation of a National Operational Meteorological Satellite System. The proposed system is designed to phase into operation at the earliest date consistent with the requirements of the various U.S. weather services and the current state of technology. It has a progressively increasing capability to serve the needs of both the United States and the international meteorological community.

During the period from mid-1962 through 1963, the system will make maximum practical application of the data to be obtained from an augmentation of the NASA Nimbus research and development program to provide an expanded operational capability. Independent operational status would be attained by the beginning of 1964. By 1966, the system contemplates two Nimbus-type satellites continuously in polar orbits and operational application of the data from the NASA R & D Aeros-type stationary equatorial satellites.

The initial capability would include both day and night cloud cover observations, heat balance measurements and direct transmission of local cloud cover data to local weather stations. The observational potential of the system would be increased in accordance with the progress of the supporting NASA research program.

The system plan includes command and data acquisition stations in northern latitudes and communications for relaying the data to the National Meteorological Center. At this center the data would be processed, analyzed and disseminated over both domestic and international weather circuits.

Overall management of the system would be assigned to the U.S. Weather Bureau, which would be directly responsible for data acquisition, communications, processing, analysis, and dissemination. Development and procurement of spacecraft and launch vehicles, including the actual conduct of launch operations, would be delegated to NASA. It is contemplated that NASA would also participate in spacecraft control and programming and in data acquisition. Participation of the military services and other user agencies, as required, is expected.
CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. Continuous worldwide meteorological coverage is now within the grasp of any nation, or group of nations, possessing the necessary interest, skills, and resources to develop an operational meteorological satellite system.

2. Based on the solid accomplishments of its research and development program, the United States could now undertake the establishment of an operational meteorological satellite system with every confidence of success. The system could become fully operational before the middle of this decade, evolving from the flight hardware developed by the NASA R. & D. program.

3. An operational meteorological satellite system would constitute an extremely powerful complement to the present observational networks. It would provide coverage of important geographic areas not now adequately observed. Furthermore, it would make available new types of meteorological observations which would improve our understanding of meteorological events.

4. Weather exerts a tremendous influence on all mankind. From its careful observation and study can come untold benefits, including improved weather analyses and forecasts over the entire earth. The potential savings in life, property, produce, natural resources, and even in personal convenience are difficult to assess. That a meteorological satellite system can make a major contribution is beyond doubt.

5. It is both possible, and clearly in the national interest, to satisfy the requirements of all the U.S. weather services for meteorological satellite observations with a single, national system. This same system could provide major services to the international community of nations.

Recommendations

1. That the United States undertake to develop a National Operational Meteorological Satellite System at the earliest possible date.

2. That this document be accepted as the basis for initial planning and implementation of such a system.

3. That funds be made available in early fiscal year 1962 to begin implementation of the system.

4. That assignment of management responsibility for the National Operational Meteorological Satellite System be made at the earliest possible date, and that this responsibility be placed with the U.S. Weather Bureau of the Department of Commerce. That appropriate legislative changes be made to permit the Department of Commerce to effectively carry out this responsibility.

5. That the U.S. Weather Bureau create a new organizational segment to manage the operational satellite system.

6. That the Department of Commerce contract with the National Aeronautics and Space Administration to develop and/or procure for the U.S. Weather Bureau the spacecraft, launch vehicles, and ground support equipment and to accomplish the launchings. Further, that the NASA shall participate in such post-launch activities as command and data acquisition, as required by the interrelationship of ground equipment and spacecraft.

These recommendations are designed to support a national policy which centralizes certain types of space flight activities within the NASA and the USAF without precluding operational use of satellite observations by other organizations.

7. That the satellite data users participate in the staffing of the operational system organization through assignment of appropriate personnel.

8. That the operational system evolve from the NASA R. & D. program, initially making use of the Nimbus satellite now under development, and continue to draw on new developments resulting from the R. & D. program. That the Aeros satellite be supported for eventual incorporation into the operational system.
9. That the TIROS program be extended to provide some measure of operational capability prior to the first Nimbus launch.

10. That consideration be given to the eventual replacement of ground communications by satellite data relay.

11. That immediate engineering attention be directed to the following long-range problem areas:

(a) Possible replacements for the Thor-Agena B launch vehicle if it is to be made unavailable by early Thor phase-out.

(b) Optimum number and location of command and data acquisition stations.

12. That foreign countries be phased into the program at an early enough date to allow them adequate time to develop their roles.