

SPACE

Space-Life Study Lags

The U.S. is urged by scientists to spend much more effort and money on the question of life on other planets in an extensive National Academy of Sciences report.

► U. S. SUCCESS in flinging satellites and probes into space is falling down on discovering whether or not life exists on other planets.

The most extensive study of U. S. space science ever made, a National Academy of Sciences report of a quarter million words by 100 scientists, urges much more effort and money be spent on finding whether earth is unique in having any kind of life, including creatures of high intelligence.

The scientists' recommendations are being followed through with the planned launching this year of several biological satellites designed to determine the effects of space on living organisms. Each of the biological satellites is expected to contain about a dozen experiments involving monkeys, plants, bacteria and other forms of life.

The satellites will be recovered and the contents examined carefully for any changes due to weightlessness or radiation or other space effects.

If another recommendation is followed, there will be increased emphasis on the search for extraterrestrial life. This can be done from high-flying balloons scooping up samples of air, from the X-15 research airplane that zooms to 50 miles above the earth's surface and by recovering satellites from orbit, as well as the more direct method of landing probes on the moon and planets.

Sterilized exports to other planets were strongly recommended. All probes sent spaceward to land on other solar system objects should be sterilized so that no contaminating material from earth is carried with them, the Academy committee urged.

They also urged action to save some of the lunar material first obtained for studies to be made several years later. By that time, it is likely there would not be any virginal material left on the moon.

A disaster to mankind could occur if destructive alien organisms were introduced on earth by returning lunar or planetary probes. To reduce the danger of so-called "back-contamination," quarantine procedures are recommended.

The search for life beyond earth has obvious fascination for peoples of all nations. Not since Darwin, and Copernicus before him, have scientists had the opportunity for so great an impact on man's understanding of man, the scientists reported.

The emphasis on experiments to detect life on other planets is linked in the report with recommendations that man himself, particularly trained scientist-observers, be assigned an even more important role in future U. S. space missions.

The scientists therefore asked the National Aeronautics and Space Administration, for which the study was made by

the National Academy of Sciences' Space Science Board, to take immediate steps to train scientists for active participation in space investigations, in order that:

1. A scientist-astronaut will be a member of the crew of each Project Apollo lunar mission.

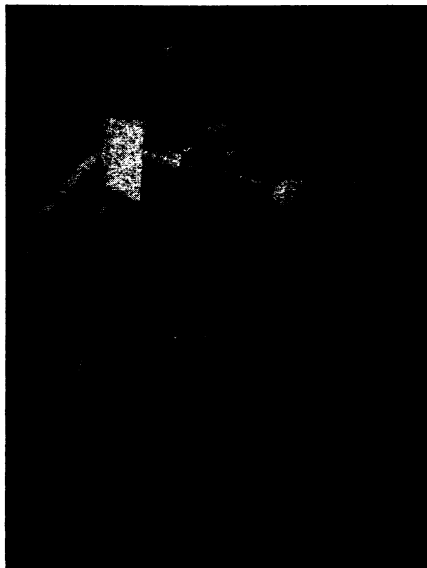
2. Meteorologists can co-pilot future manned orbiting space observatories, beginning with the two-man Gemini flights in 1964, making direct observations.

3. Biologists will be available for the first manned flight to Mars, where conditions are more favorable for finding life than on the moon or Venus.

4. Astronomers will be prepared for the advent of space observatories and for maintenance and modification of these major astronomical facilities.

On various administrative and policy questions, the Space Science Board, whose chairman is Dr. Harry H. Hess of Princeton University, approved the idea of allocating payload space on satellites without requiring a detailed description of the proposed experiment; flexibility through the use of small satellites; and a concentrated effort to use for scientific investigations in space the large number of reliable space vehicles that soon will be outdated for military programs.

• Science News Letter, 83:38 January 19, 1963



Raytheon

LIGHT SPEARS—This range-finding device fires lances of laser light to determine distances to targets. In space it could be used to gauge distance to satellites or vehicles and on the ground to define trajectory for artillery fire.

AERONAUTICS

British and French Make Supersonic Airliner Pact

► THE BRITISH and French Governments have come to an agreement for the joint development of a 1,450-miles-per-hour (Mach 2.2) supersonic airliner and a pact covering the development has been signed in London.

The new airliner will cost between \$400 million and \$475 million, shared equally by the two countries. Most of the money will come from the Governments, but the companies involved—British Aircraft Corporation, Sud Aviation, Bristol Siddeley Engines and Societe Nationale d'Etudes et de Construction de Moteurs d'Aviation (Sneema)—will also make contributions.

These funds cover development, jiggling and tooling for production, and prototype construction. Further funds will be needed for quantity production but these will come from airline buyers.

Britain will build a long-range version, and France a medium-range version, with common engines, systems and components. Britain will do about two-thirds of the engine development work, and 40 per cent of the airframe. First flight is set for 1966, and airline service by 1970.

Both British Overseas Airways Corporation and Air France, the two countries' flag airlines, will be associated with the venture. BOAC will at first give its experience as an operator in settling aspects of the detailed design. When these meet the airline's requirements—around 1964—it will enter into a "production commitment" for an initial batch, probably about four aircraft.

When flight trials occur, in 1966, BOAC will decide finally whether to "go firm" on its production commitment.

The size of the potential market for the supersonic airliner has been estimated at several hundreds of aircraft, with break-even production point set at around 130. The first cost is not expected to be substantially in excess of the \$7 million currently needed for a Boeing 707 or Douglas DC-8.

Finally, there is the biggest imponderable of all—noise. The designers claim that their aircraft is being built taking into account the knowledge gained in the U. S. and Europe through research into the "sonic boom."

• Science News Letter, 83:38 January 19, 1963

TECHNOLOGY

Light Shots Fired Measure Distance

► LONG SPEARS of light from a new device, known as a laser, are now being used to measure distances to targets. Intended as a range-finding device for rifles and aircraft, it shoots a 20-foot lance of light which is reflected back. Automatic computation tells the distance to the target. Developed for military use by Raytheon, Santa Barbara, Calif., it will be available for surveying and mapping over waters and chasms.

• Science News Letter, 83:38 January 19, 1963