

aerospace notes

SONIC BOOMS

Hopes dim for noise reductions

Large-scale reductions of booms from supersonic aircraft don't look likely in the foreseeable future; much more research is needed if even small decreases are to be achieved by adjusting the design of the planes.

This is the conclusion, after almost a year of study, of a special subcommittee of the National Academy of Sciences, headed by Dr. Raymond L. Bisplinghoff, head of the Aeronautics and Astronautics department at the Massachusetts Institute of Technology. Such negative findings prompted the five-man study group to stress the need for investigation, by government as well as industry, of less conventional aircraft designs.

SPACE POLICY

Central European space group urged

The formation of a single European space agency to control launch vehicles, satellites and research has been recommended by the British Interplanetary Society to end Europe's "confused, unplanned and ineffectual" efforts in the space field.

A statement presented to Parliament by the Society's Council on European Policy holds that Britain has been frittering away money on disjointed individual programs and pouring cash into international programs which have not been paying off. The proposed central agency would combine the interests of ELDO (the European Launcher Development Organization), ESRO (the European Space Research Organization) and CETS (Conference Europeene des Telecommunications per Satellites).

The Society Council suggests that the proposed agency's annual budget might be from \$200 to \$250 million, of which Britain would pay one-fourth.

ELECTRONICS

Laser to track moon explorers

A laser system that could be used to track astronauts on the moon is being developed for the space agency.

An engineering model will be built to test the feasibility of pinpointing astronauts or surface vehicles by bouncing laser beams off attached reflectors. The model, using a gallium arsenide laser, will be tested in a desert environment simulating the moon, possibly in late spring or summer.

The device, being developed by RCA's Astro-electronics division in Princeton, N.J., will have an initial range of about 765 yards, with provision to extend this to about 8,750 yards. Both ranges would be greater on the moon, since there is no atmosphere to interfere with the beam.

An astronaut would carry a staff equipped with a special reflector. The laser system would lock on to the reflector, and could be equipped to guide an automatic television camera for continuous observation of the explorer.

The developmental model will measure about 18 by 14 by 10 inches and weigh about 30 pounds; the lunar model would be more compact, weighing 15 to 20 pounds on earth and one-sixth of that on the moon.

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STERILIZATION

Clean rocket test-fired

A bipropellant rocket propulsion system sterilized as though it were going to be sent to another planet has been successfully test-fired by Martin Marietta Corp., in Denver, Colo.

Though there is currently no approved program for planetary landers in the U.S. space effort, there are sterilization requirements for planet-bound hardware, which might otherwise contaminate another world with earthly microorganisms.

In the Martin design, the propellants are first loaded into the engine. Then both engine and propellants are exposed to six 29-hour treatments with ethylene oxide gas, heated to 120 degrees F. Finally the pre-loaded system is re-cycled another six times in dry heat at 275 degrees, for a total of 432 hours.

The rocket engine, a 100-pound-thrust motor supplied by Marquardt Corp., Van Nuys, Calif., was test-fired for four minutes and 40 seconds.

LUNAR EXPLORATION

Moonrock from 100 feet down

A drilling system for use on the moon by astronauts has been developed, a system that would enable a 100-foot-deep hole to be drilled and core samples collected in only 40 hours, reports the National Aeronautics and Space Administration.

The method is based on a technique called the wireline system, which has been in use on earth for many years. The advantage of wireline drilling is that once a core sample has been cut, it can be removed with the drill bit still in place, and without withdrawing and dismantling the drill rods. After a length of core is removed in a retractable core barrel, the same or an alternate barrel can be lowered into place inside the drill rod, and drilling continued.

This technique offers a large reduction in the total operating time of the drill. A sealed direct current motor and selected lubricants would permit the system to be adapted to lunar use. The concept was developed for NASA by Westinghouse Defense and Space Center, Baltimore, Md.

AIR SAFETY

Plastic to protect F-105 fuel tanks

A new plastic sheathing material is to be installed on several hundred F-105 jet fighters to protect the aircraft fuel tanks from rupture and prevent post-crash fires.

Developed by Goodyear Aerospace Corp., Litchfield Park, Ariz., the lightweight laminate has been subjected to several thousand tests including controlled crashes. All seven of the fuel tanks in each plane are to be wrapped in the plastic.

The million-dollar contract was awarded to Goodyear by the aircraft's builder, Republic Aviation division of Fairchild Hiller Corp.