

As a part of the reorganization of the Air Force's exploratory development program a "Bioastronautics" category was created embracing the Air Force's effort in the life sciences, aviation medicine, and machine-environmental systems support for aircraft and space activities. The funds requested for this category will support the activities of the seven Aerospace Medical Division laboratories as well as development of the life-support systems for the Manned Orbiting Laboratory.

The closely related areas of communications, electronics and avionics account for about one-third of the Air Force's program, while only a relatively small effort is conducted in the area of conventional ordnance. With respect to "materials," the Air Force is exploring new composites having enhanced radiation and blast, and X-ray resistance; metals with improved strength and stiffness; and sealant and elastic materials formed from the new polymers.

Advanced Research Projects Agency (ARPA)

ARPA operates as a small research and development management team, supervising its service-conducted programs by overall financial control and technical direction. A total of \$215 million is included in the fiscal year 1968 budget for ARPA's projects in exploratory development, compared with \$231 million in fiscal year 1967 and \$225 million in fiscal year 1966.

Project Defender. The Defender program is the principal exploratory development effort designed specifically to provide the missile and reentry technology associated with strategic defensive and offensive systems, and to develop concepts for advanced defensive systems against ballistic missile attacks. In fiscal year 1968, a substantial portion of the \$118 million requested for this project will be devoted to missile reentry and midcourse phenomenology.

Project Vela. Project Vela has already been discussed in connection with the test ban safeguards program. For fiscal year 1968, \$50 million is requested, slightly more than in the current fiscal year.

Project Agile. For fiscal year 1968, \$27 million is requested for Project Agile, about the same as fiscal year 1967. This is our basic research and development effort oriented to the special problems of remote area conflict with particular reference to the requirements of insurgency warfare.

ADVANCED DEVELOPMENT

This category includes projects which have advanced to a point where the development of experimental hardware for technical or operational demonstration is required prior to the determination of whether the item should be designed or engineered for eventual service use. In contrast to engineering development where design specifications are employed, advanced development permits the use of performance specifications which allow the engineer greater latitude in meeting operational needs, thereby encouraging innovation. A total of \$1,250 million is requested for advanced development in fiscal year 1968 compared with \$922 million in fiscal year 1967 and \$807 million in fiscal year 1966. The sharp increase in fiscal year 1968 reflects the growth of a few major projects, most notably MOL.

V/STOL developments

The first two items under Army "Advanced development" are related to the Defense Department's total V/STOL effort in which all