

and development of conventional ammunition, weapons, and explosives.

In the materials category, the Army is concerned with the development of new metals, ceramics, plastics, and composite materials which can improve its firepower, mobility, armor, and communications, with particular emphasis on high strength, lightweight materials for use in the field.

Navy

The Navy's exploratory development effort in fiscal year 1968 will require \$272 million, compared with \$283 million now estimated for fiscal year 1967. Approximately one-third of the Navy's program is devoted to improving the design of ships, aircraft and other "sea-based" warfare systems, including: higher performance, lower cost nuclear propulsion systems for surface ships and submarines; sea-based countermeasures to help protect ships against mines, torpedoes, air-to-surface missiles, and nuclear attack; and better shipboard radar and sonar equipment to improve target acquisition, surveillance, and navigation. A large number of projects are directed toward developing new or improved materials, equipment, and designs for ships; in the past, these efforts have produced the "captured air bubble" craft, hydrofoil craft, and ship hulls for penetrating heavy ice formations.

Another large share of the Navy's program is concerned with electronics and communications, in particular with improving the performance and reliability of complex sea-based electronic systems which are subject to extreme variations in temperature, humidity and shock. New surveillance, navigation, and communications equipment for Navy aircraft is also of major interest.

A third major area, "Ordnance," comprises a large number of projects in such areas as antisubmarine warfare, mine warfare, air- and shipboard-launched ordnance as well as component work in propulsion, fuzes, explosives, pyrotechnics, ballistics, and infrared and laser devices.

Air Force

Previously the Air Force had budgeted separately for the supporting laboratory expenses associated with the exploratory development program. As part of an overall restructuring of its exploratory development program, these expenses have been prorated to the over 200 individual projects which the laboratories support. The other services have been prorating their laboratory costs for a number of years.

A portion of the Air Force's exploratory development program, for which \$285 million is requested in fiscal year 1968, will again be devoted to space investigations and space-related projects. Each of the categories, except for ordnance, includes some space-related projects. For example, a large share of the funds for "Chemical technology" will be devoted to the development of propellants and propulsion systems for missiles and rockets, and hence for space boosters. "Aeronautics" includes projects which cover the entire speed/altitude regime from V/STOL flight to space and reentry technology. These projects are directed toward developing the technology and understanding for extending Air Force operations into new operational environments such as hypersonic flight, for improving the capabilities of present aircraft, and for reducing the cost of future aircraft developments.