

- (1) understand and define overall system problems;
- (2) work jointly with military planners to define crucial military requirements, based upon critical assessment of existing and predicted technology;
- (3) provide, within assigned mission areas, military and technical concepts that could serve as the basis for the Department's long-range programs in research and exploratory development;
- (4) conduct sufficient technical work in-house to ensure that specifications for systems can be developed with confidence, and serve in the evaluation, assistance and day-to-day direction of the work of other organizations engaged in systems or technology development; and
- (5) furnish consulting support to project managers when a commitment is made to undertake a major program development.

Another basic change that will come during the not-too-distant future will involve the flexibility in the personnel policies for laboratory scientists and engineers. Many of us believe that, if the management of in-house laboratories could handle personnel with the same degree of flexibility as is possible in comparable industrial organizations, an immediate and substantial improvement in laboratory effectiveness would be realized.

Part of the problem may be due to the unduly restrictive interpretations of civil service policies and regulations by the Military Departments. In this connection, Dr. Foster and Mr. John Macy, Chairman of the Civil Service Commission, have joined forces to determine how to apply the full flexibilities under the civil service system to the personnel administration of the Defense laboratories. This is preliminary to a more complete examination of the legislation governing the policies that are permissible. Basic legislative changes designed to create the proper personnel environment for creative R&D organizations are expected to be the rule rather than the exception in the 1970s.

SUMMARY

The Defense laboratories of the future will play key roles with respect to shaping and administering the complex research, development, test and evaluation (RDT&E) program upon which our defense posture depends so heavily. These organizations will be completely involved in the mainstream of urgent defense needs, providing the solutions to vital problems, and offering technical judgments highly relevant to the needs of top-level planners and decision makers.

The creation of the new positions of Directors of Laboratories was a first and important step in this direction because of their close interface with the policy level. This was followed by the creation of selected new weapon centers, whose missions will provide a direct correlation with important military problems and functions, should enhance the traditional role of in-house laboratories, and should further strengthen the bond with, and the interplay between, the in-house technical community and other institutional forms.

The total number of Defense laboratories will tend to become smaller because of consolidations and the creation of new weapon centers; however, the relative balance of funding among the various institutional forms will probably remain essentially as it is today.

The emphasis for Defense laboratories will be on quality rather than quantity, and the current manning of the total structure will probably not change significantly, during the next decade, except for unforeseen deficiencies or crises. Thus it becomes even more important that our laboratories be purposefully staffed and directed and appraised critically in a timely fashion. Laboratories that have become obsolete through loss or dilution of mission, or unproductive owing to stagnation or marginal leadership, must and will be revitalized, phased down or eliminated.

An important ingredient of this will result from the optimum availability of personnel and management flexibility at the laboratory director's level. If current trends persist, broad recognition will be given to the premise that the creative work performed by scientists and engineers is quite different from that of other professions, disciplines and employees. Therefore, the management techniques and environment must be responsive to these important differences. As a result, public laws, policies and regulations within the next decade will result in new personnel and management flexibility that will minimize differences between Government laboratories and non-Government organizations.