

1. It is generally recognized that having significant and challenging work to do is the most important element in establishing a successful research and development organization. It is suggested that responsibility should be assigned in each department and agency to the Assistant Secretary for Research and Development or his equivalent to make sure that assignments to governmental research facilities are such as to attract and hold first-class men. Furthermore, arrangements should be made to call on Government laboratory and development center personnel to a larger extent for technical advice and participation in broad program and management decisions—in contrast to the predominant use of outside advisers.

2. The evidence is compelling that managerial arrangements for many Government-operated research and development facilities are cumbersome and awkward. Several improvements are needed in many instances, including

- delegating to research laboratory directors more authority to make program and personnel decisions, to control funds, and otherwise to command the resources which are necessary to carry out the mission of the installation.
- providing the research laboratory director a discretionary allotment of funds, to be available for projects of his choosing, and for the results of which he is to be responsible;
- eliminating where possible excess layers or echelons of supervisory management, and insuring that technical, administrative, and fiscal reviews be conducted concurrently and in coordinated fashion; and
- making laboratory research assignments in the form of a few major items with a reasonable degree of continuity rather than a multiplicity of small narrowly specified tasks; this will put responsibility for detailed definition of the work to be done at the laboratory level where it belongs.

To carry out these improvements will require careful and detailed analysis of the different situations in different agencies. Above all, it will require the energetic direction of top officials in each agency.

Plans have already been developed for joint teams of Civil Service Commission and Department of Defense research and manpower personnel to visit nine Defense laboratories during April and May 1962, in order to analyze precisely what administrative restrictions exist that hamper research effectiveness. In this fashion, those unwarranted limitations that can be eliminated by executive action can be identified as distinguished from those that may require legislative change.

3. Salary limitations, as already mentioned, in our opinion play a major role in preventing the Government from obtaining or retaining highly competent men and women. Largely because of the lack of comparable salaries, the Government is not now and has not for at least the past 10 years been able to attract or retain its share of such critically necessary people as: recently graduated, highly recommended Ph.D's in mathematics and physics; recent B.S./M.S. scientific and engineering graduates in the upper 25 percent of their classes at top-ranked universities; good experienced, weapons systems engineers and missile, space, and electronic specialists at intermediate and senior levels; and senior-level laboratory directors, scientific managers, and administrators. This obstacle will be substantially overcome if the Congress ap-