

money, whether research and development work is being competently managed, or how to select the more competent from the less competent as between research and development establishments.

When inadequate technical criteria exist, there is a tendency to substitute conformity with administrative and fiscal procedures for evaluation of substantive performance. What is required is more exchange of information between agencies on their practices in contractor evaluation and on their experience with these practices. A continuing forum should be provided for such exchange. It is possible also that some central and fairly formal means of reporting methods and experience and recording them permanently should be established. We recommend that the Director of the new Office of Science and Technology, when established, be asked to study the possibility of establishing such a forum and the best means for providing information regarding evaluation practices.

3. With the tremendous proliferation of research and development operations and associated facilities in recent years, it has become difficult for the Government officials who arrange for such work to be done to be aware of all the facilities and manpower that are available. To maintain a complete and continuous roster of manpower, equipment and organizations, sensitive to month-by-month changes, would undoubtedly be too costly in terms of its value.

Nevertheless, we believe that an organized attempt should be made to improve the current inventory of information on the scientific and technical resources of the country. We recommend that the National Science Foundation consider ways and means of improving the availability of such information for use by all concerned in public and private activities.

4. In addition, the expansion of the Nation's research and development effort has multiplied the difficulties of communication among researchers engaged on related projects at separate facilities, both public and private. It is clear that additional steps should be taken to further efforts to improve the system for the exchange of information in the field of science and technology.

At present a Panel on Scientific Information of the President's Science Advisory Committee is at work on this subject. We expect that its report will be followed by full-scale planning for the establishment of a more effective technical information exchange system, to support the needs of the operating scientists and the engineer.

Improving arrangements with the private sector types of contracts

The principal type of contract for research and development work which is made with private industry is the cost-plus-fixed-fee contract. Such contracts have been used in this area because of the inherent difficulty of establishing precise objectives for the work to be done and of making costs estimates ahead of time.

At the same time, this type of contract has well-known disadvantages. It provides little or no incentive for private managers to reduce costs or otherwise increase efficiency. Indeed, the cost-plus-fixed-fee contract, in combination with strong pressures from governmental managers to accomplish work on a rapid time schedule, probably provides incentives for raising rather than for reducing costs. If a corporation is judged in terms of whether it accomplishes a result by a given deadline rather than by whether it accomplishes that result at minimum