

Government-generated physical science and engineering information to industry;

Development of criteria of performance for industrial products so as to lead to the development of performance-based codes and standards, and thus aid technical innovation;

Development of criteria of performance for Federal purchases of systems (such as hospitals, transportation, waste disposal), so as to encourage the use of these purchases to stimulate technical innovation.

It should be noted that both NASA and AEC have active information dissemination programs through which the research and the development from these agencies' programs are made available to the public for industrial application. Unclassified scientific and technical information from the Defense Department is made public through the clearinghouse, as stated above.

To the extent that capabilities for basic research are released from defense-oriented activities, it should be possible for Federal agencies that perform or fund basic research to increase their activity on advantageous terms. Enlarged support through the National Science Foundation would appear to be one effective tool in this area. *The President has recommended enlarged support for basic scientific research, and the Committee strongly supports this recommendation.*

FURTHER ASSISTANCE TO INDUSTRIAL RESEARCH AND DEVELOPMENT

Many proposals have been made for the Federal Government to increase the incentive of private companies to conduct R. & D. projects. These proposals are aimed both at expanding the market for nondefense R. & D. work which might be performed by specialized defense contractors and at creating new R. & D. jobs elsewhere in the economy. The suggestions include (1) permitting firms to charge off as a current expense for tax purposes the purchase of new equipment for R. & D. work (a proposal included in the administration's 1963 tax bill); (2) a partial tax credit for all R. & D. costs; (3) an aid program analogous to the mining exploration program of the Department of the Interior, under which the Government would pay part of the cost of civilian R. & D. work, but would be reimbursed out of the proceeds if the R. & D. should lead to profitable production; (4) loans or loan guarantees for R. & D. costs; (5) sale or lease of Government-owned plant and equipment on attractive terms for commercial R. & D. work; and (6) direct technical assistance to companies not familiar with the uses of R. & D. work.

The Committee intends to study intensively these and similar proposals for special incentives for private research and development.

PROPOSALS FOR EXPANDED GOVERNMENT R. & D. ON NATIONAL PROBLEMS

The considerable efforts of the past decades to develop means of understanding and dealing with complex technical problems have led to modern systems engineering. Many who are seeking solutions to nondefense problems have seen possible applications in their field of interest of systems engineering skills now largely centered in the