

COPYWAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON 25, D. C.File Newley
30 April 1946**MEMORANDUM FOR DIRECTORS AND CHIEFS OF WAR DEPARTMENT GENERAL AND
SPECIAL STAFF DIVISIONS AND BUREAUS AND THE COMMANDING GENERALS
OF THE MAJOR COMMANDS:****SUBJECT: Scientific and Technological Resources as Military Assets**

The recent conflict has demonstrated more convincingly than ever before the strength our nation can best derive from the integration of all of our national resources in time of war. It is of the utmost importance that the lessons of this experience be not forgotten in the peacetime planning and training of the Army. The future security of the nation demands that all those civilian resources which by conversion or redirection constitute our main support in time of emergency be associated closely with the activities of the Army in time of peace.

The lessons of the last war are clear. The military effort required for victory threw upon the Army an unprecedented range of responsibilities, many of which were effectively discharged only through the invaluable assistance supplied by our cumulative resources in the natural and social sciences and the talents and experience furnished by management and labor. The armed forces could not have won the war alone. Scientists and business men contributed techniques and weapons which enabled us to outwit and overwhelm the enemy. Their understanding of the Army's needs made possible the highest degree of cooperation. This pattern of integration must be translated into a peacetime counterpart which will not merely familiarize the Army with the progress made in science and industry, but draw into our planning for national security all the civilian resources which can contribute to the defense of the country.

Success in this enterprise depends to a large degree on the cooperation which the nation as a whole is willing to contribute. However, the Army as one of the main agencies responsible for the defense of the nation has the duty to take the initiative in promoting closer relation between civilian and military interests. It must establish definite policies and administrative leadership which will make possible even greater contributions from science, technology, and management than during the last war.

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In order to ensure the full use of our national resources in case of emergency, the following general policies will be put into effect:

(1) The Army must have civilian assistance in military planning as well as for the production of weapons. Effective long-range military planning can be done only in the light of predicted developments in science and technology. As further scientific achievements accelerate the tempo and expand the area of our operations, this interrelationship will become of even greater importance. In the past we have often deprived ourselves of vital help by limiting our use of scientific and technological resources to contracts for equipment. More often than not we can find much of the talent we need for comprehensive planning in industry or universities. Proper employment of this talent requires that the civilian agency shall have the benefit of our estimates of future military problems and shall work closely with Plans and the Research and Development authorities. A most effective procedure is the letting of contracts for aid in planning. The use of such a procedure will greatly enhance the validity of our planning as well as ensure sounder strategic equipment programs.

(2) Scientists and industrialists must be given the greatest possible freedom to carry out their research. The fullest utilization by the Army of the civilian resources of the nation cannot be procured merely by prescribing the military characteristics and requirements of certain types of equipment. Scientists and industrialists are more likely to make new and unsuspected contributions to the development of the Army if detailed directions are held to a minimum. The solicitation of assistance under these conditions would not only make available to the Army talents and experience otherwise beyond our reach, but also establish mutual confidence between ourselves and civilians. It would familiarize them with our fundamental problems and strengthen greatly the foundation upon which our national security depends.

(3) The possibility of utilizing some of our industrial and technological resources as organic parts of our military structure in time of emergency should be carefully examined. The degree of cooperation with science and industry achieved during the recent war should by no means be considered the ultimate. There appears little reason for duplicating within the Army an outside organization which by its experience is better qualified than we are to carry out some of our tasks. The advantages to our nation in economy and to the Army in efficiency are compelling reasons for this procedure.

(4) Within the Army we must separate responsibility for research and development from the functions of procurement, purchase, storage and distribution. Our experience during the war and the experience of industry in time of peace indicate the need for such a policy. The inevitable gap between the scientist or technologist and the user can be bridged, as during the last war, by field experimentation with equipment still in the developmental stage. For example, restricted-visibility operations with the aid of radar, such as blind bombing and control of tactical air, were made possible largely by bringing together technologists who know the potentialities of the equipment and field commanders familiar with combat conditions and needs. Future cooperation of this type requires that research and development groups have authority to procure experimental items for similar tests.

(5) Officers of all arms and services must become fully aware of the advantages which the Army can derive from the close integration of civilian talent with military plans and developments. This end cannot be achieved merely by sending officers to universities for professional training. It is true that the Army's need for officers well trained in the natural and social sciences requires a thorough program of advanced study for selected military personnel, but in addition we must supply inducements which will encourage these men in the continued practical application of scientific and technological thought to military problems. A premium must be placed on professional attainments in the natural and social sciences as well as other branches of military science. Officers in each arm and service must familiarize themselves as much as possible with progress and plans made in other branches. Only then can the Army obtain the administrative and operative talent essential to its task and mutual understanding by the arms and services of their respective problems.

In general, the more we can achieve the objectives indicated above with respect to the cultivation, support, and direct use of outside resources, the more energy will we have left to devote to strictly military problems for which there are no outside facilities or which for special security reasons can only be handled by the military. In fact, it is our responsibility deliberately to examine all outside resources as to adequacy, diversity, and geographical distribution and to ensure their full utilization as factors of security. It is our job to take the initiative to promote the development of new resources, if our national security indicates the need. It is our duty to support broad research programs in educational institutions, in industry, and in whatever field might be of importance to the Army. Close integration of military and civilian resources will not only directly benefit the Army, but indirectly contribute to the nation's security, as civilians are prepared for their role in an emergency by the experience gained in time

of peace. The association of military and civilians in educational institutions and industry will level barriers, engender mutual understanding, and lead to the cultivation of friendships invaluable for future cooperation. The realization of our objectives places upon us, the military, the challenge to make our professional officers the equals in knowledge and training of civilians in similar fields and make our professional environment as inviting as those outside.

In the interest of cultivating to the utmost the integration of civilian and military resources and of securing the most effective unified direction of our research and development activities, this responsibility is being consolidated in a separate section on the highest War Department level. The director of this section will be directly supported by one or more civilians, thus ensuring full confidence of both the military and the civilian in this undertaking. By the rotation of civilian specialists in this capacity we should have the benefit of broad guidance and should be able to furnish science and industry with a firsthand understanding of our problems and objectives. By developing the general policies outlined above under the leadership of the Director of Research and Development the Army will demonstrate the value it places upon science and technology and further the integration of civilian and military resources.

(signed) Dwight D. Eisenhower