

consistent with current discharge plans, for ordering those who remain in uniform, as soon as militarily possible, to duty at institutions here and overseas where they can continue their scientific education. Moreover, the Services should see that those who study overseas have the benefit of the latest scientific information resulting from research during the war.

Lid Must Be Lifted

While most of the war research has involved the application of existing scientific knowledge to the problems of war, rather than basic research, there has been accumulated a vast amount of information relating to the application of science to particular problems. Much of this can be used by industry. It is also needed for teaching in the colleges and universities here and in the Armed Forces Institutes overseas. Some of this information must remain secret, but most of it should be made public as soon as there is ground for belief that the enemy will not be able to turn it against us in this war. To select that portion which should be made public, to coordinate its release, and definitely to encourage its publication, a Board composed of Army, Navy, and civilian scientific members should be promptly established.

Program for Action

The Government should accept new responsibilities for promoting the flow of new scientific knowledge and the development of scientific talent in our youth. These responsibilities are the proper concern of the Government, for they vitally affect our health, our jobs, and our national security. It is in keeping also with basic United States policy that the Government should foster the opening of new frontiers and this is the modern way to do it. For many years the Government has wisely supported research in the agricultural colleges and the benefits have been great. The time has come when such support should be extended to other fields.

The effective discharge of these new responsibilities will require the full attention of some over-all agency devoted to that purpose. There is not now in the permanent Governmental structure receiving its funds from Congress an agency adapted to supplementing the support of basic research in the colleges, universities, and research institutes, both in medicine and the natural sciences, adapted to supporting research on new weapons for both Services, or adapted to administer-

ing a program of science scholarships and fellowships.

Therefore I recommend that a new agency for these purposes be established. Such an agency should be composed of persons of broad interest and experience, having an understanding of the peculiarities of scientific research and scientific education. It should have stability of funds so that long-range programs may be undertaken. It should recognize that freedom of inquiry must be preserved and should leave internal control of policy, personnel, and the method and

scope of research to the institutions in which it is carried on. It should be fully responsible to the President and through him to the Congress for its program.

Early action on these recommendations is imperative if this nation is to meet the challenge of science in the crucial years ahead. On the wisdom with which we bring science to bear in the war against disease, in the creation of new industries, and in the strengthening of our Armed Forces depends in large measure our future as a nation.

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ORDNANCE

Kickless Cannon

Secret of the recoilless operation lies in construction of breech and of cartridge case. It is very accurate and so light that it can be carried by hand.

See Front Cover

► A ONE-MAN cannon, which fires without recoil, and enables the front-line infantryman to hurl regular artillery-type shells at enemy tanks and pillboxes with the accuracy of a sniper's rifle, is the newest weapon to be put into the hands of American fighters, the War Department has disclosed. It has already been combat-tested, with highly satisfactory results.

Secret of the recoilless operation lies in the construction of the breech, and of the cartridge case that fits into it. The breech, instead of being tightly closed to prevent the backward leakage of gases when the gun is fired, is purposely left partly open, with a series of tubes to guide the back-flash when it comes. The wall of the cartridge case is perforated, permitting part of the gases to flow outward and then back. The force of this purposely arranged back-flash is just suf-



LIFE MASK—This air soldier, just surfacing out of the depths of a Marianas' lagoon, demonstrates how crew members in ditched B-29's use their high altitude oxygen masks and "bail out" bottles to fight free of their submerged ship and get to surface. Air Technical Service Command photograph.