News and Comment

Military Research: Congress Generally Goes along with RDT&E Requests, but Adds Qualifications

At a time when there are signs that "emergency" boosts will be requested for the defense budget to meet new commitments, particularly in Viet-Nam, it appears that funds for research, development, test, and evaluation (RDT & E) will be little affected. The Department of Defense seems likely to get most of what it has asked for in its RDT & E estimates, and relations between Congress and DOD seem largely free of the acrimony generated in years past by disagreements over such things as plans for manned aircraft. Hearings on RDT & E activities this year, however, continued to reflect the mixture of respect and exasperation with which Congress views Defense Secretary Robert McNamara's general management of his department.

The House has passed an appropriations bill providing some $6.6 billion for military RDT & E. This is $114 million less that DOD requested but represents an increase of $145 million over the 1965 fiscal year, which has just ended. The Senate defense appropriations subcommittee now is considering its own bill, which, when it emerges, is not expected to differ drastically from the House bill.

As usual, the Defense Department would have the largest agency total in a federal R & D budget of an estimated $15.5 billion. But Defense R & D expenditures would again increase at a rate slower than that of the total budget. In the past 10 years, DOD spending on research and development has increased threefold while total federal expenditures for R & D have increased fivefold.

In testimony before the House Armed Services Committee earlier this year McNamara discussed the trajectory of both the military and general R & D expenditures in these terms.

"The high rate of increase experienced during the fiscal years 1958–64 period is now leveling off and this was to be expected. If the fivefold rate of increase per decade were to continue, total R & D expenditures would exceed $75 billion a year by 1975 and $375 billion a year by 1985. Obviously, this rate of growth could hardly be sustained indefinitely and a slow down of the rate of increase was inevitable at some point. It is occurring at this particular time because we have completed many of the huge and unprecedentedly costly Defense development projects undertaken during the last 10 years and because the new national space program is now reaching the level off point at about $5 billion plus per year. Moreover, the ballistic missile, space and nuclear research programs have required very expensive, essentially one-time investments in test complexes and other special facilities. For the moment, the bulk of these expenditures, too, seems to be behind us and our effort can be directed in a more balanced fashion to a variety of problems.

Manhattan for $2 Billion

"We have, during the last decade, spent well over $10 billion on the development of ballistic missiles, including $2.3 billion on Atlas, $2.6 billion on Titan, $2.5 billion on Polaris, and $2.1 billion on Minuteman I. To appreciate the magnitude of these expenditures, one has only to recall that the cost of developing the atomic bomb during World War II has been variously estimated at $1½ to $2 billion. But, as a result of these great investments, the initial development of a new family of strategic weapons has now been substantially completed. While similar vast R & D expenditures do not need to be repeated, at least during the next few years, we intend to continue to spend substantial amounts to insure the invulnerability of our weapons and improve their accuracy and effectiveness."

Of the nearly $7 billion earmarked for defense RDT & E, it must be noted, a relatively small portion is devoted to basic and applied research. DOD divides its research and development program into five parts which correspond to progressive steps lying between basic research and the production of military hardware. DOD calls these categories research, exploratory developments, advanced developments, engineering developments, and operational systems developments. In general, costs are greater at each step.

Discussing his views on research in the same hearings, McNamara had this to say:

"In addition to its own in-house laboratories, the Department of Defense supports nearly half of all the academic research in the physical sciences and engineering now being done in American universities and colleges. As the size of the faculty and number of graduate students in these institutions increase, their research potential will expand. We believe that in the interest of the Nation this potential should be fully exploited, not only for military purposes, but for the benefits of our society as a whole. Accordingly, the Government as a whole should each year increase its support of research in these institutions and the Defense Department should carry its share of that increase. From the point of view of the Defense Department itself, it is extremely important that we maintain our contacts with the creative research people who staff these institutions. These are the people who, in the past, have been responsible for some of the most important technical improvements in the equipment now being used by our military forces and we should not deprive our national defense of the benefits of their creativity. We have therefore included in our fiscal year 1966 request a total of $387 million for research, about 10 percent more than the amount provided for the current fiscal year. A large part of this increase is required to offset the rise in research costs, which have been moving up at a rate of about 5 percent a year.

"In order to increase the effectiveness of our research expenditures (and our exploratory development expenditures as well), we are examining the missions and management practices of our in-house laboratories, which spend about one-third of these funds. A general upgrading of both the quality and utilization of these laboratories, together with a reduction in administra-

tive restrictions on the details of their technical operations is urgently needed. Furthermore, to reduce unnecessary duplication in research and exploratory development, we have initiated a new automated system, the research and technology résumé, for reporting progress on current projects. These reports are prepared in a standard digital language which permits their rapid and proficient interchange among the military services and Defense agencies and, by special agreement, with NASA. Finally, to make full use of the research potential of universities in all parts of the United States, the executive branch under the leadership of the President's Office of Science and Technology is formulating a program to develop centers of technological excellence in all parts of the country, for both civilian and military purposes."

Casting a Cold Eye

The House defense appropriations subcommittee in past years has sometimes been critical of Defense Department practices in supporting research in universities, objecting, for example, to the concentration of funds in a few institutions. Hearings and the report on the appropriations bill this year seemed to reflect a general acceptance of McNamara's policies on university research.

As was noted last week (*Science*, 16 July), however, the committee did question the assumption that yearly increases in the research budget necessarily added to the sum total of scientific knowledge. The committee called for a curbing of budget increases, better management of research programs, and better coordination among agencies.

The committee also took pointed exception to research in one particular area—the behavioral sciences—directing a reduction in funds. (Developments in DOD support of research in the behavioral sciences will be discussed in another article in this space.)

Emphasis in the RDT & E section of the committee report is given primarily to problems of management. There is more than a slight irony in this, since McNamara's forte is management, but the defense appropriations chairman, George H. Mahon, has also displayed a continuing interest in management problems. The committee's comments gain added weight from the fact that Mahon succeeded to the chairmanship of the full Appropriations Committee last year on the death of Repre-

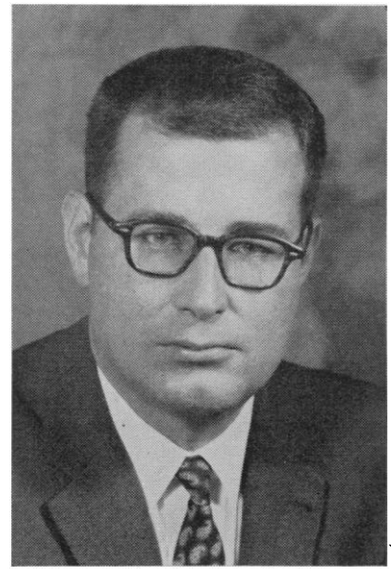
New Air Force Secretary Has A Scientific Background

The nominee for next Secretary of the Air Force, Harold Brown, bears credentials quite different from those of his predecessors. Most service secretaries have been corporation executives or lawyers who combined ability with political acceptability. Brown, who holds a Ph.D. in physics, spent the 1950's in a series of jobs of increasing responsibility at the Radiation Laboratory at Berkeley and Livermore and in 1961 was appointed Director of Defense Research and Engineering (DDR & E) by President Kennedy. Brown is scheduled to take over the Air Force secretaryship on 1 October, and at 38, Congress confirming, will be the youngest man to have held the office.

In his present job Brown is principal adviser to the Secretary of Defense on scientific and technical matters, with particular responsibility for selection and development of new weapons systems. The director ranks as the third highest civilian in the Department of Defense, so, while the secretaryship will give Brown more formal subcabinet standing, it provides no particular ascent in the Defense hierarchy.

The chief significance of the appointment appears to be the placing of a technically trained man who is closely identified with Secretary McNamara's policies in the top operational civilian job in the Air Force.

Brown's office figured in the decisions to clip the wings of the B-70 program, cancel development of the Skybolt missile, and scrap the Dyna-Soar project air-space plane and in other acts which brought no joy to the Air Force. Brown's appointment has been greeted in the aerospace trade press—which is sensitive to sentiment in the upper echelons of the military and industry—with some expressions of anxiety over Brown's loyalty to McNamara policies balanced by hopes that the Air Force case will profit from Brown's technical competence and personal influence.



Harold Brown

Brown was born in New York City in 1927 and educated in the public schools there and at Columbia University, where he received an A.B. in 1945 and his Ph.D. in physics 4 years later.

After a postdoctoral year at Columbia he joined the University of California Radiation Laboratory at Berkeley. His Pentagon official biography notes that at Berkeley he worked on a "project aimed at using high intensity beams of particles from nuclear accelerators to produce isotopes in large quantities. In the course of this work he did research on neutron physics and expanded his activities in nuclear reactor designs."

When the Livermore branch of the Radiation Laboratory was established in 1952, Brown joined the staff of the laboratory which has emphasized nuclear weapons research. He rose through a series of promotions to become deputy director, and director in 1960.

From 1956 on he served DOD as an adviser on a number of high-level technical committees. He was appointed by President Kennedy to the President's Science Advisory Committee in 1961.

Brown succeeds Eugene M. Zuckert, an attorney, who was an original Kennedy appointee.—J.W.

sentative Clarence Cannon of Missouri.

In the report, the committee says "significant improvements have been made in the areas of research and development management," but it is of the opinion "that there are other areas which require the introduction of improved management concepts."

Credit is given the McNamara regime particularly for improving the management of large weapons systems programs, but the report seconds critics of McNamara about a lack of new weapons and equipment.

The committee goes on to suggest that, "under existing procedures, the personnel of the Office of the Director of Defense Research and Engineering (DDR and E) must assume too often a primarily negative role in their review of proposals of the military services. Perhaps more of the negative role could be vested in the Comptroller's office and DDR and E could undertake a more active part in expediting the successful completion of approved development programs."

The committee thinks DDR & E also has a more active part to play in applying tighter management and getting more mileage out of the military sciences program.

While not a new target, federal contract research centers—specialized nonprofit organizations formed to do specific research, analysis, and systems development work for the military services—came under the committee guns. The committee concedes an original need for such organizations but takes the view that, since the services have had time to develop "in-house capabilities" and Congress has voted federal salary increases for in-house specialists, it is questionable whether contracting with the nonprofits should be continued at its present levels. "When next year's budget is presented," the report notes, "the Committee will require more extensive data and justification for the Federal Contract Research Centers."

Citing the gold outflow problem and its concern over the management of research grants and contracts as a whole, the committee also called for reductions in research grants and contracts with foreign colleges, universities, and nonprofit institutions. In doing so it referred to a staff report which noted that the work of the separate research contracts offices maintained by the military services in different cities in Western Europe was poorly coordinated, and it directed that no grant should be made abroad unless a specific requirement for the Defense Department is involved.

The House Appropriations Committee has traditionally been the economizer among congressional committees, even in the freewheeling field of defense spending. But while Congress may reduce or increase appropriations beyond amounts requested, its effective power to direct in detail how the money appropriated shall be spent is limited, particularly when such strong-minded administrators as President Johnson and Secretary McNamara are in office. The bark, so to speak, is therefore likely to be worse than the bite.—JOHN WALSH

Stamler vs. HUAC: Heart Specialist, Called by Committee, Responds by Challenging HUAC's Legality

Encounters between scientists and congressional committees investigating alleged subversion—common in the 1950's when McCarthy and McCarthyism seared university campuses—have today become something of a rarity. One exception is the case of Jeremiah Stamler, M.D., whose current involvement with the House Committee on Un-American Activities or, as it is commonly called, HUAC, is part of a new chapter in the committee's history.

Stamler, 45, is a well-known heart specialist with impressive professional credentials. He is currently an employee of the Chicago Board of Health, where he is director of the Heart Disease Control Program and the Division of Adult Health and Aging, and executive director of the Chicago Health Research Foundation, the Board's research arm. He is also an assistant professor in the department of medicine at Northwestern University Medical School, and Western Hemisphere editor of the *Journal of Atherosclerosis Research*. Since 1949, the year after he was licensed to practice medicine, Stamler has published over 150 articles on diseases of the heart and blood vessels, and he is also the author of several books. He is currently the principal investigator on three research grants awarded by the National Heart Institute of the National Institutes of Health, where his activities are very highly regarded, and is at work on a number of other projects as well.

Early in May 1965, on the same day that he was named winner of the Albert Lasker Award in Medical Journalism for his co-authorship of a series of articles on the prevention of heart disease, Stamler was subpoenaed to appear before HUAC during the committee's planned stint in Chicago to investigate an alleged resurgence of Communist activities there. Mrs. Yolanda F. Hall, a research nutritionist associated with Stamler at the Board of Health, was also ordered to appear. The committee never revealed why the two had been called. Their lawyers claim that the committee was attempting to deter Mrs. Hall from involvement in civil rights activities in her community, by harassing both her and Stamler, a close professional associate. The names of the subpoenaed witnesses were released to the Chicago press, and Stamler, the most eminent of those called, was immediately engulfed in headlines announcing "City Doctor Gets Red Quiz Subpoena," "Heart Expert Subpoenaed in Red Quiz," and so forth. Most newspapers featured Stamler's name in the lead paragraphs of their stories; at least one ran his photograph as well. (In response to the publicity—and the concern of his employers—Stamler signed what amounted to a loyalty oath for the Chicago Board of Health. Subsequently—after the hearings—the Board in effect gave him a vote of confidence and voted to retain his services.)

Such jolts to individual lives have not been uncommon in the years that HUAC has been at work. What was uncommon was Stamler's response to it. He and Mrs. Hall, after conferring with many people, decided neither to go along with the committee nor, as often occurs in such cases, to avoid testifying by taking the Fifth Amendment. Instead they chose to attempt a counteroffensive, and they brought a suit challenging the committee's constitutionality. In this action they had the support and counsel of one of Chicago's best-known lawyers, Albert E. Jenner, Jr. Jenner, who is a Republican, is, among other honors and offices, a past president of the Illinois Bar Association. He was also a senior counsel to the Warren Commission.

The day before the hearings were to begin, Jenner brought a motion before the Chicago federal court asking that the committee be declared unconstitutional and that it be enjoined from holding hearings. The petition was overruled—chiefly on the ground that it was premature—and the hearings began as scheduled. The case is now pending before the U.S. Court of Appeals,