Manpower for Space: Too Much or Too Little?

Critics of the space program often charge that NASA absorbs an excessive proportion of the nation's scientists and engineers; supporters assert that the proportion represents a reasonable share of the manpower available for various purposes. Whether NASA's share is a lot or a little depends on one's view of the political, economic, and technical significance of the space effort. In any case, some pertinent figures were offered last week by NASA Administrator James E. Webb, in an address to the Military Electronics Convention in Los Angeles.

NASA, according to Webb, now utilizes the equivalent full-time services of 5.4 percent of the nation's approximately 1.5 million scientists and engineers. Within this total figure, it utilizes about 10 percent of the "sub-group" that is characterized as "research and development scientists and engineers." During the past 3 years, NASA has absorbed 27 percent of the increase in the overall pool of scientists and engineers. In the R&D subgroup, it has absorbed 39 percent of the increase. It is anticipated that, during the next 3 years, NASA will require only 1.5 percent of the overall growth and only 2.3 percent of the growth in the R&D subgroup. It is also expected that, during the next 3-year period, utilization of the overall manpower pool will drop from 5.4 to 4.8 percent, and utilization of the R&D subgroup, from 10 to 9 percent.

change program. Both these cases involve complex international sensitivities that seemed best handled by a prestigious scientific organization that is remote from the conduct of hostilities.)

But as Seitz noted in the July-August issue of the Academy's *News Report*, the Academy "has stood steadfastly by . . . two goals." These are, "to provide the Federal Government with a source of reasonably reliable advice formulated under the guidance of a body of outstanding scientists and engineers with a diversity of interests in technology," and "to foster basic science in our country much more officially than had previously been the case . . . by giving recognition to good scientists and their work. . . ."

Strict adherence to these goals isn't likely to help dissipate the feeling of exasperation that many persons in the science-government area display when they discuss the Academy. A typical comment from this quarter is, "All that prestige sitting there and they never *do* anything with it!" And even from within the high councils of the Academy one hears comments such as, "Every time there has been a national crisis that required the mobilization of science and technology, the White House has chosen to bypass the Academy. When sputnik came," the critic continued, "the White House didn't look to the Academy; instead it revitalized the President's Science Advisory Committee and acquired a full-time science adviser."

The relevance of these observations is subject to debate, since they rest on the assumption that it would be advantageous for the Academy to trade its sheltered redoubt for a place on the front lines of science and government. At this point it is not certain that such a shift would be advantageous or even possible. Because of its position above the fray, the Academy is assured that, when it speaks, people will at least listen. In its population report, it literally said nothing that hadn't been said for 10 years by the veterans of the population planning campaign, but when the Academy spoke, the press and Congress reacted as though basic truth was being unveiled. The same impact is clearly beyond the attainment of the many science-related organizations that regularly produce policy studies and recommendations. Their reports often hit the public area, only to disappear without a splash.

Furthermore, at this point it is even doubtful that the Academy could move into an activist role without precipitating a great row. During the past 6 or 7 years, an influential science advisory apparatus has developed within the executive branch, and it has gone on to form alliances with the legislative branch and the scientific community at large. Desirable or not, it is a little late for the Academy to offer itself as the principal representative of the scientific community in relations with the federal government. At one time, members of the scientific community looked upon the Academy as their Washington embassy, but now they have found many friends to look after their needs in the Capital. Executive agencies still ask the Academy for advice, and it is the task of fulfilling these requests that occupies the Academy staff and their consultants. But the executive agencies feel increasingly confident of their own scientific abilities, and it is not uncommon for them to use the Academy for only routine purposes or to seek its imprimatur when they want to acquire some insulation for a politically controversial move. NASA, for example, can tell its critics that the space program has been developed in consultation with the National Academy of Sciences. But NASA has goals and responsibilities that go beyond mere scientific research, and it seeks the advice of lots of organizations, and understandably uses its discretion in choosing the advice it will follow.

Against this background, what can the Academy do if it desires to exert greater influence? Obviously, it cannot do anything that will be immediately forceful. But it is sitting on a vast amount of prestige, and if this rare commodity is skillfully exploited, the Academy can become an increasingly influential force. When it speaks, the country listens. The questions now are, What will it choose to speak about, and how vigorously? Many high-ranking Academy members are, for example, extremely displeased with the space program, but they rarely reveal their views publicly. Many are distressed by the pork-barrel influence that is seeping into the decisions of federal research and development agencies, but they don't often talk about it in the open. Whether they want to invoke the Academy's prestige on these and other issues—and possibly lose some of it in the hostilities that are sure to ensue—remains to be seen.—D. S. GREENBERG

Lysenko: Soviet Science Writes Finis to Geneticist's Domination of Nation's Biological Research

During the past few weeks the Soviet scientific community has been performing the last administrative rites in the long and baleful Lysenko affair.

According to press reports, Trofim

D. Lysenko, the geneticist who came to dominate Soviet biology under Stalin and who managed to hang on through the Khrushchev era, has been ousted as director of the Institute of Genetics of the Academy of Sciences. The ouster reportedly took place 27 January at a meeting of the Academy's department of biological sciences. According to the New York *Times*, the Institute, which Lysenko had headed since 1940, is to be reorganized as the Institute of General Genetics, and additional laboratories for genetics are to be set up in other institutes of the Academy. A new journal of genetics is to be published, and a new professional society of geneticists is to be established. Pending the reorganization, Khila F. Kushner, identified as an animal geneticist, will serve as acting director of the Institute.

According to a statement by M. V. Keldysh, president of the Academy of Sciences, guidelines for coordinating applied and basic work in biology will soon be planned at a conference of the Academy of Sciences, the Academy of Medicine, and the Ministries of Agriculture, Higher Education, and Public Health. Absent from the list of participants was the Academy of Agriculture. Lysenko and his disciples have dominated the Academy of Agriculture since 1938, and have used it to propagate their theory that heredity is governed by environment rather than by the transmission of genetic material.

Under Khrushchev, Lysenko never received the political support that enabled him to dominate Soviet biology in the Stalin era, but a sort of scientific coexistence developed, and he retained considerable influence. Almost immediately following Khrushchev's forced retirement last October, the Soviet press, which had once been a vehicle for Lysenko's views, turned on him and carried attacks from other scientists. Later, it was announced that Soviet biology texts would be rewritten to eliminate Lysenko's imprint.

The public obituary to the Lysenko affair was delivered by Keldysh at the Academy's annual meeting last week. A summary, published in *Pravda*, stated that "the exclusive position held by Academician Lysenko must not continue. His theories must be submitted to free discussion and normal verification. If we create in biology the same normal scientific atmosphere that exists in other fields, we will exclude any possibility of repeating the bad situation we witnessed in the past."—D.S.G.

School Aid Bill: Attention to Controversial Issues Overshadows Discussion of Educational R&D

As if to discomfit its critics, Congress has abandoned its leisurely early-session ways of other years and is behaving as though it were Columbus Day of an election year rather than Lincoln's Birthday of a first session.

This unaccustomed activity is evident both in the committee room and on the floor and includes work on science, health, and education measures which often in the past have been given deferred status on the congressional agenda.

The Senate has passed a measure to amend the Water Pollution Control Act in order to bolster, in various ways, federal assistance to the states in enforcing the law, and has completed hearings on two routine Public Health Service authorization bills. Hearings on an extension of the national saline-water conversion program were scheduled for this week, and also 2 days of hearings on the President's proposal for a national commission on heart disease, stroke, and cancer.

In the House, the Ways and Means Committee has been meeting in executive session on medicare, and the Commerce Committee has held hearings on dangerous drug legislation (*Science*, 25 Sept. 1964). And these are only examples.

This galvanic change in congressional habits is being widely attributed to President Johnson's invoking his November mandate while "reasoning together" with congressional leaders, and to his promptness in dispatching to Capitol Hill a sheaf of politically negotiable measures. It should be noted that the barbs hurled by critics of Congress—particularly 2 years ago—drew blood, and that many rank-and-file members have been disgruntled in recent years over what appeared to be dawdling and needless delay.

The most striking example of acceleration in the 1965-model Congress is provided by the case of the President's education program. Hearings began on 22 January on the Elementary and Secondary Education Act, before the House general education subcommittee, chaired by Representative Carl Perkins (D–Ky.), and a week later, before the counterpart subcommittee in the Senate, headed by Oregon Senator Wayne Morse. Hearings in the House on the President's proposals for higher education commenced on 1 February before Oregon Congresswoman Edith Green's education subcommittee.

In 10 days of hearings the Perkins subcommittee compiled a very bulky record by meeting afternoons as well as mornings and, on a few occasions, into the night, a rather unusual performance so early in the session. The subcommittee, in the middle of last week, went into closed session to "mark up" the bill—that is, revise it in the light of the testimony—and last Friday it completed work on the measure.

This handling of the school bill drew protests from Republican members of the subcommittee—at one point Representative Charles Goodell (R–N.Y.) objected that the hearings were being conducted in "unholy haste." And the three Republican members of the subcommittee failed to appear at executive sessions in what appeared to be a boycott.

Perkins, in fact, was more hospitable than many chairmen about scheduling those who wished to testify, and there were no complaints that he was cutting off discussion (one witness hostile to the bill was in the chair for 3 hours). But the hearings were conducted under conditions which did resemble a marathon.

A Diversion

Education and Labor Committee chairman Adam Clayton Powell (D–N.Y.) is said to have intended to bring out the bill with a minimum of delay, and observers say one major reason for the dispatch is that the administration wants action on the bill before the disputes endemic to school-aid legislation break out seriously.

Full committee sessions on the bill were scheduled to begin on Monday, but Powell canceled them, apparently for reasons which had little to do with the legislation. Powell and some other House committee chairmen became involved in a skirmish over control of committee budgets by the Rules Committee. Special restrictions were put on Powell last year, particularly on control of investigation and travel funds, and he made common cause with some other committee chairmen to oppose the Rules Committee, which this year seemed to be seeking to impose similar restraints. This and the Lincoln's Birthday exodus of Republicans interrupted the headlong pace and, in the hiatus, criticism of the school bill in the same key as in other years has been mounting.

As testimony unfolded in the House