When, then, is research the answer in improving the performance or realizing the aims of an organization? The answer is: when such research is good research, and when effective use can be made of the understanding and inventions which good research provides.

The effective application of understanding and invention requires the effective and interrelated carrying out of many functions other than research, including development, trial, production, distribution, and continual evaluation and improvement. Good research may —or may not—find use through various fortuitous mechanisms of society. But unless the other functions necessary for its exploitation are provided and organized in a satisfactory way, even good research is unlikely to be the answer to the problems of an organization.

Indeed, unless these other essential functions are satisfactory, research carried out by or for an organization is not only unlikely to be effective, it is unlikely to be good research. Under unfavorable circumstances, research is a distraction from the urgent problems of an organization rather than a solution to them.

NEWS AND COMMENT

Scientists' Travel Abroad: 25 Percent Cutback in Federal Funds Imminent

Federal funds for scientific travel abroad will be cut back sharply—perhaps by 25 percent—as a result of President Johnson's drive to curtail foreign travel as a means of reducing the U.S. balance-of-payments deficit. The pinch will be felt by scientists who work directly for the government, by persons who hold federal grants and contracts that involve funds for overseas travel, and by some holders of federal fellowships. As a result of the cutback, future applicants for federal support will find it more difficult to obtain travel money, while persons who have already been awarded travel funds but have not yet expended them may find that their awards are canceled.

The cutbacks are being made in accord with a presidential memorandum, issued 18 January, that directed all federal departments and agencies to "reduce U.S. official travel overseas to the minimum consistent with the orderly conduct of the government's business abroad." The directive particularly stressed the need to reduce travel to international conferences held overseas. It did not specify how much of a cutback was necessary, nor did it define precisely what was meant by "official travel overseas." But on 14 February the Bureau of the Budget issued amplifying instructions that established a 25-percent reduction in employee travel as the "objective" for each agency, and that further directed agency heads to "take additional appropriate steps to restrict overseas travel by persons under contracts with or grants from their agencies."

No percentage reduction was specified for travel by grantees and contractors, but a Budget Bureau official told *Science* that the "spirit of the directive" is that agency heads should "come as close to 25 percent as they can" in reducing such travel. The reduction is to be made from the dollar amounts budgeted for overseas travel for the second half of fiscal year 1968 and the whole of fiscal year 1969. Overseas travel is defined as "all travel outside the United States and its territories, including travel to and from Canada and Mexico," with the exception of travel that can be financed from available excess foreign currencies. Countries whose currencies have been designated as excess are: Burma, Ceylon, Congo (Kinshasa) (1968 only), Guinea, India, Israel, Pakistan, Poland, Tunisia, United Arab Republic, and Yugoslavia.

The problem of determining how to make the cuts will be resolved at the agency level. At this writing agency plans are by no means firm, but it appears that there will be some significant differences in approach, particularly with respect to the treatment accorded grantees, contractors, and fellowship holders. All agencies say they plan to apply at least a 25 percent cut to overseas travel by their own employees.

The Department of Health, Education, and Welfare (HEW) has directed its constituent agencies, including the Office of Education and the Public Health Service (PHS), to withdraw all authorizations for foreign travel, whether granted on a "blanket" basis or included as part of an individual grant or contract. Prior approval will be needed before any further overseas travel is allowed. The PHS is already notifying all grantees and fellowship holders that all authorizations previously granted for foreign travel are canceled as of 11 March. If the principal investigator believes foreign travel is "urgently required for the successful prosecution of a project," he is invited to seek reapproval by submitting a special justification that will be reviewed by a central committee in the Surgeon General's office. However, PHS officials expect the initial notice to discourage most grantees from even submitting a request for reconsideration.

Though no precise figures indicating how many recipients of PHS funds will be affected by the new travel restrictions are available, it appears that the number will be substantial. The National Institutes of Health (NIH), a constituent part of PHS, gives a "very rough estimate" that travel funds are included in perhaps 1500 research grants, 75 training grants, and 225 fellowships. Before the cutback was imposed, NIH anticipated spending roughly $2.75 million on travel by grantees and fellowship holders in the current fiscal year.

The National Science Foundation (NSF), another source of travel funds, is pursuing a slightly different policy. NSF is not withdrawing any travel authorizations previously granted. But the agency does intend to cut its grants for travel to international meetings by about 25 percent from the previously budgeted annual levels of $595,000 in fiscal years 1968 and 1969. The cut for the remainder of fiscal 1968 will total about $120,000, while

the cut next year is projected at $150,000. The reductions will mean that some 500 to 700 scientists who would ordinarily have received an NSF travel grant will either have to stay home or dig up the money someplace else. NSF does not anticipate any change in its policies toward travel by holders of research grants or fellowships.

The other major agencies that make scientific grants are taking various approaches to carrying out the President's directive. The National Aeronautics and Space Administration (NASA) intends to reconsider travel authorizations already granted and will probably impose roughly the same 25-percent cut on grantees and contractors that it imposes on its own employees. "Everybody's in danger. Everybody's going to suffer about the same," says a NASA spokesman. The Atomic Energy Commission (AEC) also plans to clamp down hard on grantees and contractors. However, one AEC operating head doubted that he would have to renege on any travel authorizations already granted.

Within the Defense Department, the Office of Naval Research, which deals primarily in contracts rather than grants, plans to review travel requests by contractors "more closely" than before. An Air Force spokesman predicted there would be "no significant change" in his agency's handling of travel by grantees and contractors.

What effect the travel restrictions will have on the international exchange of scientific information is not clear. Who can assess the difference between sending six scientists to an international conference and sending eight? Some will argue that any reduction in scientific travel abroad will hinder the free flow of information. Others have told *Science* that chopping off the least-qualified quarter of American scientists attending international meetings would do no great damage to U.S. science and might even enhance America's scientific posture in foreign eyes. Unfortunately, however, there is no guarantee that the bottom quarter will be eliminated, since federal grants tend to go to the top end of the ability spectrum. The most likely casualties of the new travel restrictions are the younger investigators, who will find it harder than ever to beat out their senior colleagues for the limited travel funds available.

—PHILIP M. BOFFEY

NEWS IN BRIEF

● **COLUMBIA AND THE FILTER:** On 28 February, Columbia University issued a brief statement announcing that it was turning over the patent rights to the Strickman Filter to a charitable foundation not related to the university. The announcement lacked the fanfare of the July 1967 press conference in which Columbia said that it had been given the rights to a cigarette filter, then termed "revolutionary" (*Science*, 4 August). In divorcing itself from the filter, the university stated that it owed "it to the public to state candidly that it made a well-intentioned mistake in entering a highly controversial and competitive commercial field." Columbia also turned over the results of tests it had commissioned on the filter to Senator Warren G. Magnuson (D–Wash.), chairman of the Senate Commerce Committee. Magnuson stated that the report led him to conclude "that the filter is *not*, by any stretch of the imagination, the 'revolutionary' development which Columbia first heralded. . . . In fact, the filter is not as efficient in removing tar and nicotine as certain filters readily available to cigarette manufacturers." Magnuson further chastised Columbia for its "earlier injudicious endorsement" of the filter.

● **LBJ'S HEALTH MESSAGE:** In his 1968 health message to Congress, delivered on 4 March, President Johnson asked Congress to appropriate $15.6 billion for health programs in fiscal 1969 (a $1.6-billion increase over fiscal 1968) and asked for passage of a new Health Manpower Act. The President urged Congress to authorize the government to establish a "reasonable cost range" limiting payment for prescription drugs in federally supported programs, and to approve publication of a *U.S. Compendium of Drugs*. He proclaimed the establishment of a Center for Population Studies and Human Reproduction and requested a $61 million appropriation for family planning services. The long-awaited announcement of the reorganization of federal health services was not mentioned in the President's message.

● **PHYSICIAN DRAFT:** The Army has announced it will draft the lowest number of physicians and osteopaths in 1968 that it has taken in 3 years. The call is set at 1126 physicians and osteopaths compared with 2229 in 1967. Neither the Navy nor the Air Force will draft medical officers this year. Currently there are 1458 medical officers in Vietnam and on hospital ships near Da Nang. As of mid-February, 15 U.S. medical officers in the U.S. military services had been killed during the war in Vietnam, the Department of Defense said.

● **JUNIOR COLLEGE DEFERMENTS:** Junior college students, who were not mentioned in the draft law passed by Congress last year, are eligible to receive student or occupational deferments—depending on their course of study—Selective Service Director Lieutenant General Lewis B. Hershey announced on 26 February. The deferments are subject to the approval of local draft boards.

● **SONIC BOOM PHYSICAL EFFECTS:** A subcommittee of the National Academy of Sciences (NAS) states in a new report that current knowledge of the effects of sonic booms on building materials and structures is insufficient to assess accurately the kinds of damage that might be produced from a supersonic transport plane. The report is the second of four reports to be issued by NAS subcommittees on the sonic boom–SST problem. Although the committee said the probability of structural damage from sonic booms produced by "aircraft operating in a safe, normal manner is *very* small," the committee noted that its study was hampered by a lack of data on such subjects as the variance of sonic boom intensities under different climatic and geographic conditions, the exact nature of the response of damage-susceptible materials to sonic booms, and the extent to which sonic boom pressures contribute to naturally occurring stresses such as wind gusts. The committee recommended the construction of two types of sonic boom simulators for the testing of damage-susceptible materials including glass. The committee also advocated the formation of an interdisciplinary group "to study legal-structural considerations of commerical SST operations." Everett F. Cox, senior research scientist at the Whirlpool Corporation, headed the subcommittee.