News and Comment

Civilian Technology: Program To Boost Industrial Research Heavily Slashed in House

Of J. Herbert Holloman, the Assistant Secretary of Commerce for science and technology, it may be said, "What gaineth a man if he speaketh the truth and loseth his program?" For Holloman, a blunt-talking former G. E. engineer, who is now the chief apostle of the administration's quest to promote an expansion of technological competence in the civilian economy, is the latest to learn first-hand that the recitation of harsh fact is not necessarily conducive to political success; that the Executive branch only proposes; and that it is the Congress that has the final say on what is or is not to be done by the administration's planners. On the basis of a decision in the House last week, it can be said that if Holloman's program, known as Civilian Industrial Technology (CIT), were any less alive, it would be certifiably dead.

It might be thought that this poor state of health would be a source of some dismay in industry, which was intended to be the immediate beneficiary of the program, but if a charge of assault and battery were to be written out in this case, industry is the element of the American economy that would qualify as defendant, with an accompanying accessory charge for at least one major segment of organized labor. For his part, Holloman has been accused, with seemingly ample justification, of a dearth of diplomacy in telling industry that major parts of it were lagging in applying science and technology to civilian processes, materials, and production techniques; the lag had become so serious, he said in effect, that it was the responsibility of the federal government to do something that industry clearly could not or did not want to do for itself. The net effect of this blunt approach was to cause various industrial leaders to conclude that Holloman was asking successful—that is, taxpaying—industries, to pay for a program that might, as one Washington lobbyist puts it, "upset the competitive balance." And out of this reaction to the program came a House vote which cut the program's budget from a requested $7.4 million to a total of $1 million, with a strong suggestion that that's the end of the line for CIT. It should be noted, though, that other programs have risen from the ashes, and that the Senate has yet to act on the measure, but in any case, the House, especially the appropriations subcommittee that has Holloman in its jurisdiction, has made it known that it is highly suspicious of the administration's CIT intentions, and that whatever happens, smooth sailing is not to be anticipated.

The origin of CIT was in the administration's concern over the lopsided allocations of this nation's technological resources, particularly in comparison with the industrialized nations now competing for world markets. Holloman has repeatedly pointed out various statistics, as follows.

1) Of the $16 billion that the nation now spends annually for research and development, only 4 billion is spent by industry. The bulk of the remainder goes for military and space programs, which, in recent years, have provided disturbingly little "spinoff" for the civilian economy. (NASA, which has been using the spinoff argument in support of the space program, made it known that it was disturbed by Holloman's allegation, and the point has accordingly come close to disappearing from his public addresses, although its validity, at least up to the present, would be difficult to dispute.)

2) Ninety-five percent of federally supported university research is concentrated in 100 of the nation's 2000 institutions of higher learning, with only a small portion devoted to requirements for industrial technology.

3) The university concentration is paralleled in industry, where 300 companies perform 80 percent of the research and development financed by industry itself.

4) Between 1954 and 1961, three-quarters of the increase in scientists and engineers engaged in research and development was absorbed by defense and space programs.

Against this background, Holloman pointed out, the United States, in its competition for world markets, finds that "Switzerland, Sweden, Japan and West Germany each spend a larger percentage of their resources (labor force or gross national product) on R&D that aids the civilian economy than does the United States. Furthermore . . . in West Germany, the number of scientists and engineers engaged in R&D that benefits the civilian economy is a much larger fraction of the labor force than is the case in the United States."

Research Leaders

"At present," he continued, "only the largest firms in the largest industries can afford to maintain the technical capability that leads to new products, processes and improved productivity. In many other important industries, the individual firms are so small and the profit margins so limited that it is next to impossible for them to hire and support the technical staff which would be needed to develop and apply new, complex technology to their industry.

"Such segments of the economy include textiles, lumber, leather, wood and clay products, machine tools, foundries and casting, and the railroad industry. These segments have not supported or performed much R&D and, consequently, are neither well situated to participate in the advances in technology generated by the other R&D efforts (industrial as well as military), nor to maintain their relative economic strength internationally. These industries have often become vulnerable targets for foreign competition." On the purely domestic side," he further argued, the building industry, which accounts for some $80 billion of the annual gross national product, is so highly fragmented that it has never brought itself together to finance research on a scale suitable for so large and important a segment of the national economy.

When Congressmen and industry rep-

resentatives asked Holloman what precisely he would do to promote civilian technology, he was faced by a difficult tactical situation, for, to dispute the charge that his program would favor one industry or firm over another, he had to elevate it above specific products and markets and address himself to improving the "technological base." And, when he did that, he was accused of failing to define the program clearly. Industry, and its congressional representatives, were, however, directly concerned with dollar-and-cents issues of whether this or that firm might get a competitive edge through the program. And, quite understandably, those industries that are financing their own research and reaping the benefits were not eager to see the government step in to aid backward potential competitors.

Another problem was that Holloman was slow to acquire the skill of obfuscation, which is an immensely useful one for a government official who is trying to sell a controversial program. Now 44 years old, and formerly general manager of GE's general engineering laboratory, he has been variously accused of arrogance and of thinking that his background has equipped him for developing quick solutions for the complex problems of economic growth. There is no doubt that Holloman is a man who is very sure of himself, and he is impatient to put CIT into operation. But, as for the charge of arrogance, it would seem to be closer to the mark to say that, at least at first, he was not at all inhibited about expressing his thoughts on just why industry and congress should support CIT. This boiled down to the contention that important parts of the American economy were not doing what they should be doing, something that can easily be supported by figures, but which some businessmen found hard to take without sugarcoating.

Early in his quest for industry support, Holloman was saying such things as, "In our society, innovation is often first introduced by industries and enterprises that can afford the high costs of modern technical resources and can appreciate and exploit the results of new science and the opportunities provided by advancing technology. But the society generally benefits only when these technological improvements diffuse rapidly to the less efficient firms."

A few months later, as it became apparent that major industry was hardening against this line of thinking, Holloman's argument shifted away from the differences between the rich and the poor and was directed almost exclusively at high-level, fairly imprecise goals.

"This program," he told the House appropriations committee, "is designed to contribute to increasing the basic technical work important to industry and to encourage a more rapid translation of technical information to industry. It is not intended within this program to support the development of proprietary products or the activities of a single industrial or commercial firm. Rather, the purpose is to increase the technical activities related to industrial science and technology, to stimulate local industries and governments to increase their support for technical work leading to economic growth, and to provide a more effective means of dissemination of basic technical information and techniques."

The program, he explained, would be carried out with grants and contracts to various research institutions, "but not [those] organized for the manufacture or distribution of products," and by the establishment of a university-industry extension service, similar to the agricultural extension service.

Opposition Develops

On the face of it, this would seem to be a program that could arouse few enemies, and Holloman quickly managed to achieve a good press, including a few articles that carried the implication that he was already in business and moving along. However, within major industry—especially the building industry—the conclusion was developing that something dangerous was being proposed by the administration and that as far as CIT was concerned, it would be easier to prevent its conception than to have to grapple with it once it was alive. An effort by Holloman to enlist the support of the National Association of Manufacturers drew a cool response; the Committee on Science and Technology of the United States Chamber of Commerce voted to endorse the nonbuilding part of the CIT program, but the Chamber's board turned down this proposal. It later tabled a motion to oppose the entire CIT program, leaving the issue formally unresolved, but also demonstrating that whatever else can be said, the Chamber is not enthusiastic about CIT. And, in an editorial in its May issue, *Fortune* magazine came out against the program, stating that "nothing in the record suggests that government can organize research more efficiently than industry can do it. . . . If the administration wants to get balance into industrial R&D, it might make greater efforts to cut down, if only a trifle, expenditures on defense and space research. . . . The way to right a listing vessel is not always to add more cargo to the upside. Sometimes the job can be done by jettisoning some junk from the downside. We recommend that Commerce forget about the Civil Industrial Technology program while NASA and Defense get going on the cuts. Thus balance can be improved while saving money, instead of blowing some more of it."

Meanwhile, less visible but even more effective efforts were being directed against CIT, principally by a figure virtually unknown outside of the capital, Douglas Whitlock, the Washington representative of the Structural Clay Products Institute. If any one man deserves credit for having hit the vital artery, it is Whitlock. He could probably get by on charm and keen insight into the legislative process, but he also has going for him the fact that he is an old and close friend of Frank T. Bow of Ohio, the ranking Republican on CIT's House appropriations subcommittee. As the man charged with looking after the legislative well-being of the $260 million clay products industry, Whitlock did not warm to the argument that the government should take a hand in promoting the development of new products and techniques for the building industry, nor did some officials of the building trades unions, who equated research with automation and, hence, with less labor. It can be argued, of course, that clay products might benefit as much as any industry from CIT's research, but with clay hard pressed by such fruits of building research as aluminum and plastics, its appetite for promoting still further competition is understandably small. Shortly after Whitlock became interested in CIT, Bow took to the floor to denounce the program. Referring to "conversations with members of the industry," he said, "they point out that this program would penalize the most efficient producer by expanding research funds, to bring the laggards within a group closer to the most advanced technological practices of the leaders, and stimulate research and innovation

in those industrial groups that have been relatively inactive or stagnant technologically. In effect, these most efficient producers would be taxed to pay for the technological advancement of their most inefficient competitors. This comes about as close to destruction of the free-enterprise concept as anything can get."

When the appropriations subcommittee issued its report, it was apparent that Bow's doubts had infected his colleagues. The textile industry, which has been so severely hit by foreign competition that it is not averse to accepting any helping hand, had strongly identified itself with the CIT program, and a new appropriation of $1 million, plus $625,000 from an earlier supplemental appropriation, was made available "for the *completion* of the textile research program." The subcommittee stated explicity, though, that the rest of the CIT program was dead. "No funds," it reported, "have been allowed for any other purpose," thus writing off—unless a reversal comes about—programs on building and machine-tool technology, and a broad program covering leather, lumber, and foundries and castings. In explaining its action, the subcommittee stated that "this request would be but the beginning of another large and costly research program" (which CIT officials privately admit is exactly their intention); and that when the post of assistant secretary for science and technology was authorized for the Commerce Department, "it is doubtful that such a program as this, including the technology of building which is being condemned both by labor and industry, was then contemplated."

At the moment, the best that can be said about the CIT program is that it is still breathing. Holloman's office is currently working to obtain a favorable reception in the Senate. The Senate and House versions would then be brought together for compromise, and out of this, they hope, something better than $1 million will result. CIT officials concede, however, that a realistic appraisal of the situation does not produce grounds for very much optimism. A program of this sort obviously cannot be rammed down industry's throat, and until it is recast to assure prosperous firms that they are not being asked to finance trouble for themselves, it is unlikely that they will feel any more warmly toward CIT.

—D. S. GREENBERG

AMA: Convention Accents Positive by Announcing Research Institute, Reshaping Scientific Sections

The American Medical Association, which in recent years has most often made the news as a political action group opposing medical care under Social Security, last week chose the forum of its national convention to call the attention of its members and the public to organized medicine's relation to science.

At the convention in Atlantic City, the AMA's Education and Research Foundation announced plans to establish and operate a new Institute for Biomedical Research. The governing House of Delegates also took steps intended to improve the AMA's own scientific program, which is based primarily on scientific sections organized according to medical specialties, and which, by most accounts, has been in the doldrums.

The proposed research institute would be located, initially at least, in a new building the AMA plans to complete in 1965 in Chicago, its headquarters city. The institute would be devoted to basic research in the field of biomedicine and would provide neither clinical service to patients nor formal graduate training leading to degrees.

The institute is to be financed and administered under the association's Education and Research Foundation, whose main activities now are to conduct the AMA's programs of financial support for medical schools, loan guarantees for medical students, research grants, and support for research in medical journalism.

In a statement accompanying the announcement of plans to establish the institute, Raymond McKeown, president of the AMA–ERF and secretary-treasurer of the AMA board of trustees, said, "The institute will concern itself with intensive and fundamental study of life processes particularly as related to intracellular mechanisms. The institute will be composed of dedicated, imaginative workers who are capable of significant achievements through the interaction of their intellects and experiences, with unmatched facilities and maximum freedom from external pressures."

Plans call for the eventual establishment of about five basic research units in such fields as molecular biology, immunology, biochemistry, neurology, and physiology. Each group would form around six or more "eminent researchers," who would be permanent members of the staff, while qualified physicians and other scientists would be eligible for "prestige post-doctoral fellowships." The first research unit is scheduled to be in action by 1966, but the AMA has hedged a bit about committing itself irrevocably to the institute project. The reservation reads, "development of the institute is contingent upon the successful recruiting of outstanding medical scientists."

The potential pitfall in the path of the institute organizers is the difficulty of recruiting "dedicated and imaginative workers" in a field toward which foundation and, particularly, government funds have been directed so enthusiastically that it is hardly an exaggeration to say that money pursues the first-class investigator rather than the reverse. But the AMA is apparently counting on competing successfully by obtaining adequate funds and offering "maximum freedom."

Motives Set Forth

On the question of whether or not the new institute should accept federal research funds, an uncertainty which appeared to exist at the beginning of the convention was dispelled by sentiment in the House of Delegates in favor of a policy to accept funds only from private sources—AMA members, industry, and other individuals.

The AMA's official motives in launching the institute at this time were outlined by McKeown as follows.

"Through the history of medicine, improved diagnostic and therapeutic tools have been fathered by basic investigation. America's physicians have a responsibility to advance scientific knowledge. The AMA, because of its traditional leadership role in medicine, has both the responsibility and the opportunity to make a unique contribution to medical research."

Since the AMA has never had a research arm of its own (although it once operated a "seal of approval" drug-testing service), it has been suggested that the association is seeking to alter a public image of the AMA as an organization keyed to a particular line of action on legislative and socioeconomic matters.

McKeown was quoted as having told reporters at a news conference, "The AMA has been too strongly associated in the public mind with social and economic issues and not enough with sci-