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SENATE

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ACTION Remarks by Mr. Stevenson

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SCIENCE AND TECHNOLOGY RESEARCH AND DEVELOPMENT UTILIZATION POLICY ACT (S. 1215)

● Mr. STEVENSON. Mr. President, America's leadership in technology has often resulted from the Government's role as supporter of research and development and purchaser of its results. As distasteful as the notion may be to believers in the omnipotence of free enterprise and the irrelevance of Government, our most innovative and competitive industries are those which have benefited most from Government involvement—aerospace, electronics, telecommunications, and agriculture.

Now with productivity stagnating, inflation accelerating, our competitive position in world markets eroding, and the need for energy development pressing, the Government shrinks from new technological initiatives and continues to impose barriers to Government-industry collaboration.

Dan Greenberg observed in a recent Washington Post column that the skeptics allow facile analogies between moon landings and technological solutions to social problems have succeeded in creating a cynicism toward public research and development with the result that "the governance of science and technology is permeated with a distrust of Goliath undertakings, a craving for penny-pinching accountability, and an obsession with difficulties rather than opportunities."

For a rich and resourceful country to be infected with what Greenberg calls "technological timidity" is understandable in a period of awareness of natural resource limitations and environmental and health hazards; but spread too far the infection is self-defeating. If the United States is to prosper, serve the needs of its citizens and restore its authority in the world, it must maintain a preeminent capacity to push ahead the frontiers of knowledge and apply the results.

Greenberg concludes:

Now that we have worn the hair shor for the past abuses of science and technology, it's time to act on an important reality: The United States has an immense powerhouse in its scientific and technological enterprise and while prudence and thrift should not be foresaken, this enterprise could do nicely without the shackles of doubt and parsimony that have burdened it for so long.

In May I introduced, with Senator CANNON and other Members, the National Technology Innovation Act and joined Senator SCHMITT and Senator CANNON in sponsoring the Science and Technology Research and Development Utilization Policy Act, to establish a uniform policy for determining the rights of the Government, its contractors, and employees to exploit publicly financed inventions. Today I want to discuss the latter legislation.

Last year's Federal research budget of $28 billion represented half of the Nation's total investment in research and development. Three-quarters of Government R. & D. is performed in industry, university, and other non-Federal laboratories. Between 1970 and 1975, Government-sponsored R. & D. generated 53,000 invention disclosures, 70 percent of them by contractors and grantees, the remainder by Federal employees. The Government acquired title to more than 80 percent of the inventions whose ownership and usage rights were determined. Less than 10 percent of the Government's patent portfolio has been licensed to private producers. Less than 5 percent of Government-owned inventions are used commercially.

In order for the public to benefit from inventions derived from Government-supported research and development, they must be developed, marketed, and used. The Government can provide assured markets for some inventions by purchasing new products and services for its own use, primarily in defense and space programs. In other cases, Government regulations effectively require all producers to use an invention. But for energy development, health care, and transportation improvements, civilian applications of military and space R. & D., and a variety of other domestic purposes, the Government depends largely on private markets to commercialize the technology it develops. For obvious reasons, private investors run much greater risks in turning these inventions into marketable products. The risks are especially high if competitors can legally copy an invention because the Government refuses to allow a producer exclusive rights for the period necessary to recoup his investment in development and marketing. The principle of granting exclusivity in return for public disclosure of an invention is the foundation of the

patent system, but it is not recognized in most Government R. & D. grants and contracts.

A series of statutes, regulations, and Presidential policy statements has produced a hodge podge of policies concerning rights to Government-financed inventions. Even though its R. & D. is intended for Government use, the Defense Department generally follows a "license policy" of conveying title to contractors while retaining rights to free use of inventions for Government purposes. On the other hand, many domestic agencies as well as the National Aeronautics and Space Administration have a title-in-Government policy with provision for case-by-case waivers upon application by contractors. Waiver conditions can be enormously complex, the process time-consuming, and the outcome unpredictable. Uncertainties at the time of contracting may discourage the most qualified performers from participating in Government contracts or encourage them to separate Government-sponsored and proprietary research activities.

The bill we have introduced requires disclosure of inventions made in the course of Government-sponsored research and development. It reserves title to the Government in certain narrow circumstances where the public interest in full access supersedes the public interest in private exploitation. These cases include contracts for the operation of Government research and production facilities, for classified work, or for results required for compliance with Government regulations. In most other instances, a contractor may elect to take title to his invention provided that the Government retains free use of it for its own purposes. The Government may "march-in" to resume title or require licensing to third parties in order to alleviate a serious threat to the public welfare or national security, prevent undue market concentration, or serve regulatory purposes, or if the contractor fails within a reasonable time to apply the invention. The Government may grant exclusive or partially exclusive licenses to Government-owned inventions if that is necessary to encourage private investment and commercial use. The bill also addresses the respective rights of the Government and Federal employee inventors.

I have advised Senator SCHMITT that, while I fully support the principles of S. 1215, I want to consider two changes in the interests of equity and administrative simplicity.

First, I believe that the public's contribution to a federally-assisted invention subsequently generates private returns justifies requiring a payment back to the Government over and above corporate and individual income taxes. I recognize the difficulty of administering such a requirement and, in particular, the difficulty of determining the precise contribution of a single invention to the returns on a product or process incorporating it and perhaps other inventions. Moreover, the payback requirement should not itself deter private commercialization of inventions.

Second, I believe that we should simplify the "march-in" procedure whereby the Government reacquires title to an invention or demands that it be licensed if the contractor fails to commercialize it. In view of the Government's poor record in promoting use of Government-owned inventions, I see little to be gained in having the Government resume title. At least through 1975, moreover, the Government had never once exercised its right to require licensing under the Presidential policy statements of 1963 and 1971. Most Federal agencies have failed to monitor commercial use even though, ostensibly, they are required to do so. As an alternative, we should consider a self-enforcing licensing requirement that would become effective automatically after a reasonable time.

We will explore these issues, among others, in hearings before the Subcommittee on Science, Technology, and Space and in cooperation with the Committee on Governmental Affairs.

The delicate balancing of interests we are seeking will not be helped by the rhetoric that has plagued this issue for 30 years and prevented achievement of the uniform Government patent policy that numerous commissions, studies, and members of Congress have recommended.

We intend no giveaway of public property to private monopolists but rather a prudent use of private interests for the public good.

With the support of business, labor, public interest groups, and academia for that objective, we can make an important contribution, not to innovation for innovation's sake, but to a revival of America's growth, productivity and competitiveness.

Mr. President, I ask that Mr. Greenberg's article be printed in the RECORD.

The article follows:

TECHNOLOGICAL TIMIDITY

(By Daniel S. Greenberg)

It is commonly recited that those supreme examples of big technology, the bomb-building Manhattan Project and the Apollo moon landing are poor models for dealing with mundane problems—so commonly, in fact, that what is no more than a useful historical insight has been turned into a deadening rule.

The issue deserves attention because large-scale technological mobilization does make sense in certain circumstances, some of which now exist, most conspicuously in energy-related matters. But the arbiters of scientific and technological fashion—having long scoffed at the naive question. "If we can land a man on the moon, why can't we . . .?" have succeeded all too well. And the result is that the governance of science and technology is now permeated with a distrust of goliath undertakings, a craving for penny-pinching accountability, and an obsession with difficulties rather than opportunities. The blame for this can be justly spread around: A space program conceived as a public circus was bound to lose its audience; like space, the "war on cancer" was oversold and contributed to the distrust of grandiose schemes, and, finally, money for big ventures is now politically difficult to obtain—especially when memories of technological debacles remain fresh.

The net effect is technological timidity in a country that is teeming with technological strength. And nowhere is it more apparent—or ironic for being there—than in the public pronouncements of Engineer-President Jimmy Carter, who has subtly combined loudly proclaimed generosity for university-based science with an intense frugality toward research of direct commercial value. The rationale is that government alone is the financial mainstay for academic science, while industry ought to tend to research that can make money. The reality, however, is that American industry—with a few exceptions—is not awash with technological adventurism, and if government doesn't get out there and put big resources into lagging areas of public importance, the research just isn't going to get done, at least in the United States.

One of Mr. Carter's reactions to the current gasoline shortage invites attention to the excess of caution that dominates his administration's attitudes toward research and development. Meeting last week with leaders of the big four automobile manufacturers, the president announced a study aimed at establishing a program of government and industry research collaboration on greater fuel efficiency. "This is a very exciting prospect for me," Mr. Carter said.

For the rest of us, however, it ought to be regarded as a very depressing one, because what this pending government-industry research compact clearly establishes is that, six years after the OPEC embargo clearly spelled out the energy perils of the Western world, research that ought to be well underway is yet to be started. Given the fact that the Department of Energy does not lack research money, it is appalling to find that any reasonable possibilities for fuel-efficiency research are not being exploited. But, since Mr. Carter and the automobile industry are talking about just that sort of research, the only conclusion is that it just hasn't been done.

A quest for why this is so can profitably look to the "Science and Technology Report" that the President sent to Congress last year. It is one of the gloomiest, put-down documents that any government has ever issued on the subject: "The experience of recent decades suggests that too often too much has been expected of our scientific and technological breakthroughs. . . . Failure of our technology to meet our expectations is, in part, a reflection of the fact that each new advance serves not only to satisfy old needs, but also to create new needs almost simultaneously."

And it goes on with similarly dour observations: "The most significant thing we have learned may be that technological solutions are unlikely to be permanent or complete solutions. . . . Each advance seems to generate new problems as it solves old ones. . . . We are coming to realize that science and technology by themselves are often inadequate to ensure enhanced social welfare." And so forth.

What has to be recognized is the great strength that the U.S. possesses in science and technology and in the ability to use them. The Soviets covet our computers; we have no interest in the museum pieces that they produce. Foreign potentates come here to have their hearts rebuilt, and China is mainly counting on our universities to bring its youth abreast of modern science and technology.

Now that we have worn the hair shirt for the past abuses of science and technology, it's time to act on an important reality: The United States has an immense powerhouse in its scientific and technological enterprise, and while prudence and thrift should not be forsaken, this enterprise could do nicely without the shackles of doubt and parsimony they have burdened it for so long.●

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● Mr. METZENBAUM. Mr. President, it was with great interest that I read an article in the June 18, 1979, edition