Japan and the SSC: Congress Raises a Flag

Ever since the Superconducting Super Collider (SSC) was first endorsed by the Reagan Administration in 1987, the project's backers have assured Congress that foreign collaboration would be sought to hold down costs. But this strategy is running into trouble.

Some congressional leaders and even officials within the Department of Energy (DOE) are wondering whether extensive foreign participation in the project is a good idea.

The House and Senate appropriations committees declared this summer that they will review any deals with other nations. And the House Science, Space and Technology Committee is preparing a bill to control foreign participation in the project. At issue is whether such collaboration will result in a technology giveaway, delay the SSC, and deprive American companies of lucrative contracts to produce high-technology components.

But with Japan waiting in the wings as the only major contributor to the SSC, some Administration officials wonder whether all the drumbeating in Congress is just an extension of the trade fight with that country. Alvin W. Trivelpiece, who sold President Reagan on the project when he was director of DOE's Office of Energy Research, says that efforts to restrict foreign contributions may be nothing more than "Japan-bashing." And one State Department official told *Science* that "there is no question that American industry is concerned about Japanese competition."

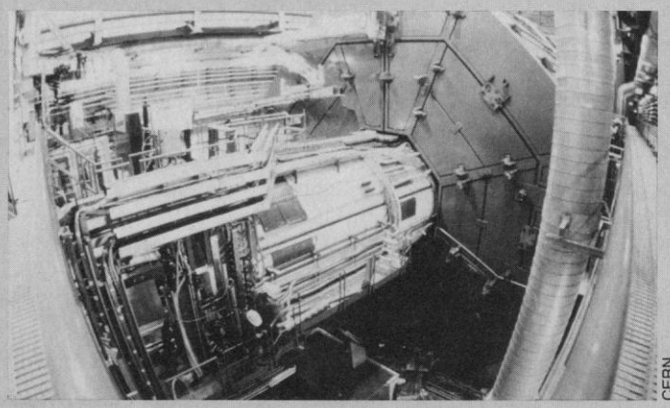
The Bush Administration, for now, is holding fast to its goal of paying for one-third of the $6-billion supercollider with non-federal funds. The Administration, in fact, is putting the finishing touches on a strategy for a new drive to obtain international assistance in erecting the SSC.

In theory, international scientific cooperation is a good idea. It has been standard operating procedure for particle physicists around the world who routinely cooperate in the building and running of each other's accelerators. In practice, however, difficulties often arise. Transportation requirements, labor problems, and cultural factors all can affect the pace of a project.

Moreover, foreign assistance for the SSC is not likely to come as cash that can be spent in the United States, but as "in-kind" help—chiefly finished materials and manufactured items such as superconducting magnets, cryogenic systems, computers, or other electronic components. Thus, it is not surprising that in spite of the official pronouncements, there is a lot of ambivalence among key project officials about the desirability of extensive collaboration on a collider the scale of the SSC.

Legislators such as Senator Bennett Johnston (D–LA), the chairman of the Senate appropriations subcommittee on energy and water, are equally concerned about lost opportunities for U.S. industry. "It is learning to make key parts of the collider such as the magnets that is valuable. We should not give [other countries] that sort of valuable work," says Johnston, who denies that his "buy American" stance is directed at Japan.

The Senate appropriations committee as a whole has also expressed concern about unfettered collaboration on the SSC. In a report issued in July, the committee noted that "significant benefits in science and technology and industrial benefits would accrue to foreign nations . . . to the detriment of the United States." Moreover, both the House and Senate forbade DOE from entering into any pacts with other nations without first reporting to Congress.



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Foreign collaboration. *U.S. physicists helped build the L-3 particle detector at the Large Electron Positron collider in Europe.*

So far legislators are confronted with only one firm pledge of in-kind support—$50 million from the government of India. Canada, Italy, South Korea, and other nations also are cited as potential contributors but have not yet signed on. Western European governments have not made any commitments to the SSC, because they may back a competing machine.

Although Japan has as yet made no formal commitment to the supercollider, almost 2 years ago DOE officials were advised that it might provide $400 million in hardware. Privately, officials say that figure could go as high as $1 billion—an amount equal to the funding provided by the state of Texas. Meanwhile, SSC Laboratory officials in Texas report receiving a stream of Japanese visitors representing companies such as Nippon Electric Corporation and Hitachi, which want to build SSC magnets.

That prospect worries officials of American companies such as Grumman, General Dynamics, and Westinghouse, who anticipate that a group of Japanese companies will be given a major chunk of the magnet production. This would dilute the value of manufacturing contracts that could be worth more than $1.5 billion if all of the SSC magnets are made here.

Trivelpiece does not buy that argument. If the Japanese supply a portion of the SSC magnets, he argues, "it really is not competition, but a contribution to the project."

With the SSC price expected to be revised upward early next year, perhaps to as much as $7.5 billion, the argument over international collaboration is certain to get stickier. Two key House leaders, Representatives Robert Roe (D–NJ), chairman of the House science committee, and Tom Bevill (D–AL), chairman of the appropriations subcommittee on energy and water, continue to support foreign participation, albeit guardedly.

Roe plans to introduce a bill authorizing the SSC's construction in several weeks, but he says it will contain limits on foreign participation "so we can keep control of the technology." Also in the wind may be other legislative proposals to steer foreign contributors to supply mundane hardware to the projects rather than high-technology components. Just what restrictions on collaboration actually will be imposed may not be known for some time, but what is clear is that some congressional leaders aim to make sure that the United States gains more technically from the project than other countries. Says Bevill, "We are not just going to be digging holes in the ground and pouring concrete. You can be sure of that." ■ **MARK CRAWFORD**