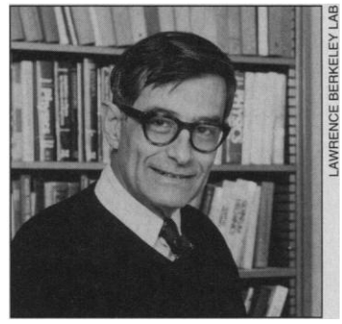
Lightning Strikes the SSC

Under election-year pressure to balance the budget, the House focused its wrath on the first big-ticket item it could find. The big losers could be physicists, who are furiously lobbying the Senate

It was to be the world's biggest physics experiment—an $8.25 billion particle accelerator that would smash together protons at unprecedented energies in a 52-mile racetrack beneath Texas farmland. But last week, the House of Representatives may have turned it into something more familiar: an expensive pile of planning documents for a federal project that will never be completed. In a stunning reversal from last year's 81-vote margin in favor of the Superconducting Super Collider (SSC), the House voted 232 to 181 to cancel the project. In approving an amendment offered on the House floor that deleted $450 million for the SSC from the 1993 energy and water appropriations bill, the House left just $34 million to terminate contracts and close down the project.

Fans of the SSC are bemoaning the potential loss to science. "I was surprised and really very depressed," says Leon Lederman, a Nobel Prize–winner in high-energy physics and director emeritus at Fermilab. "Here's a community [of scientists] that's planned this project for 12 years and is looking forward to a 20-year program...[and] then Congress by almost a whim takes it away." But the victors in last week's vote also say they acted in the best interests of science. "To me, this kind of project represents the worst way to establish federal science priorities," says Representative Howard Wolpe (D–MI), chairman of the House science oversight committee and one of the four cosponsors of the cancellation amendment. "It was such a big-ticket item, such a large portion of total science funding."

Somewhere in the tension between these diametrically opposed views lies the true dilemma of the SSC. For years the focus of intense controversy because of its cost and fears that it would squeeze out smaller science projects at the Department of Energy (DOE), the machine has nevertheless been ranked a top priority for high-energy physics by no fewer than 11 expert panels. For now, however, a looming budget crisis and other political factors have tipped the scales against the SSC. Although its story is far from over—the Senate has yet to act on the appropriations bill and the project's supporters are lobbying hard for a reprieve—the House vote leaves the project wounded badly, perhaps mortally. For even if the Senate does restore funding for the collider, given the project's demonstrably shaky political base, DOE will still find it difficult to find the $1.7 billion in foreign contributions it has promised to defray the project's cost. "A lot of our non-U.S. collaborators are correctly wondering what level of commitment the U.S. can ever bring to international science projects," says George Trilling, a University of California physicist who heads a major SSC detector collaboration. "I am sick at heart."



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"Sick at heart." George Trilling.

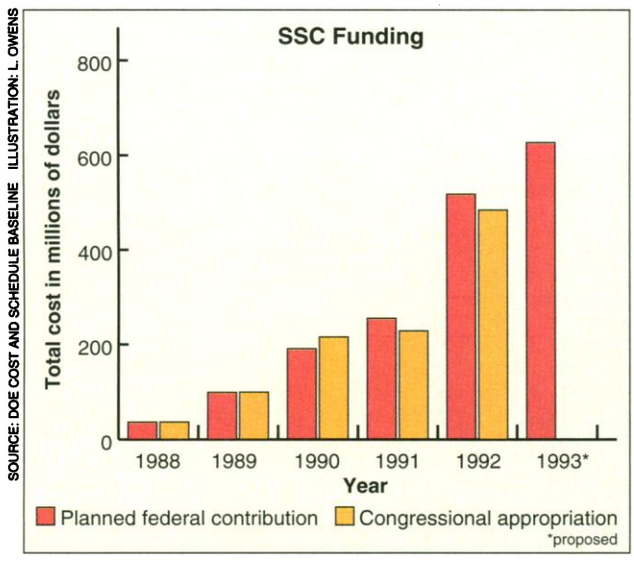
For now, the House action leaves the SSC laboratory in limbo, its employees and associated scientists uncertain whether they'll still be working on the project past September. In addition to the 2000 jobs at stake at the laboratory itself, canceling the project would also cost the United States the nearly $1 billion it has already invested and Texas the $227 million it has spent (although DOE may be under an informal obligation to repay the Texas contribution). And it could be worse: Some skeptics believe cancellation might cost more than the $35 million the House has allocated. Tom Bevill (D–AL), chairman of the House Appropriations Committee, labeled the cancellation a "disaster" and said it would cost the government closer to $180 million.

The showdown

For SSC supporters, the vote couldn't have been scheduled at a worse time. With a $400 billion federal deficit looming large in electoral politics this year, the House had just a week earlier narrowly failed to pass a constitutional balanced-budget amendment by the necessary two-thirds majority. The aftermath of that vote seemed to linger in the air like a charge of static electricity. According to the conventional wisdom rapidly crystallizing on Capitol Hill, so much talk about making "tough decisions" on the budget made the first big project to come along—in this case, the SSC—a "lightning rod" for fiscal discontent.

But while the SSC's supporters might be tempted to blame their woes on timing, a few grudgingly admit they were simply outhustled. "My boss was saying we were a little bit scooped," says an aide to Jim Chapman (D–TX), one of the leaders in the fight on the House floor to save the collider. The four legislators who led the cancellation fight—Wolpe, Dennis Eckart (D–OH), Jim Slattery (D–KS), and Sherwood Boehlert (R–NY)—began their campaign in May by mailing short, biting "Dear Colleague" letters to other members nearly a week before the supporters got organized. They had the advantage of a clear, easily delivered message, says an aide to Boehlert. "We told [other members] that DOE has blown the $5 billion budget cap [voted by the House in 1990], that we're not going to see the $1.7 billion in foreign contributions, and that they wanted to balance the budget," says the aide. "It's an easy case to make in 15 or 20 seconds."

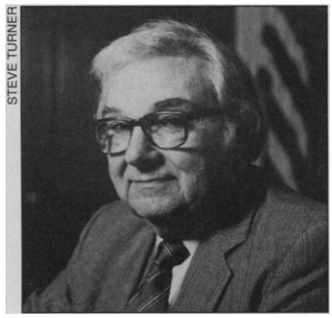
As the 17 June vote on the appropriations bill drew near, it became clear to anyone who could count votes that the opponents' message was getting through, forcing SSC supporters led by science committee chairman George Brown (D–CA) to mobilize in an attempt to head off a major defeat. Believing that most legislators were concerned about



SOURCE: DOE COST AND SCHEDULE BASELINE ILLUSTRATION: L. OWENS

Billion-dollar investment. Until this year, Congress has provided close to the sum requested.

the lack of foreign contributions to the project, Brown and Robert Walker (R–PA), the ranking Republican on the science committee, drafted an amendment designed to take the wind out of the opponents' sails. Their measure would have cut off SSC funding by June 1993 unless the president certified that the United States had received foreign commitments of at least $650 million—some $570 million more than DOE has so far reported.


STEVE TURNER

By and large, however, SSC opponents remained unconvinced by Brown's argument. Boehlert, for instance, derided the Brown-Walker measure as a "make-me-feel-better" amendment without any real substance, noting that it could open the door to "creative financing" in the executive branch. Eckart, too, complained that DOE was already playing a "shell game" with foreign pledges in counting as contributions the money saved by allowing other nations such as Russia to manufacture equipment at a lower cost than U.S. firms could manage. "The reality is that [DOE] is spending U.S. taxpayers' dollars to solicit sole-source government contracts in foreign countries to do away with American jobs," he charged on the House floor. Although the Brown-Walker amendment won approval in a voice vote, it had little apparent effect on the subsequent debate over cancellation. Brown now characterizes his attempt to swim against the tide as "a futile gesture."

Clearly, other issues played a major role in the SSC's defeat. Many opponents complained during the debate that the SSC's increasingly large share of DOE's research budget and the department's management of the project made it a poor investment. Several legislators cited documents unearthed by Wolpe's probes—especially an internal analysis from DOE's Office of Policy that suggested "de-emphasizing" the SSC because the office rated it 10th out of 11 major science programs in the department according to such criteria as maintaining a "diverse and balanced" research portfolio and supporting DOE's environmental, energy, and economic objectives—as support for their votes against the project. Perhaps for this reason, majorities of the House delegations from California and Illinois—home to the threatened Stanford Linear Accelerator Laboratory and Fermilab, respectively—voted against the SSC.

But other political factors having little to do with the project itself also influenced the House's decision. Liberal Democrats relished an opportunity to retaliate against the Texas lawmakers who had sponsored the balanced-budget amendment: Larry Smith (D–FL) even took to the House floor to label SSC supporter Joe Barton (R–TX), one of the balanced-budget amendment's cosponsors, a "contortionist" for "being on two opposite sides of fiscal policy at the same time." Some Republicans, too, had reason to send Texans a message. Jerry Lewis (R–CA), currently the number three Republican in the House, is under challenge by Dick Armey (R–TX), a four-term lawmaker who is seeking to unseat Lewis as chairman of the Republican Leadership Conference. Lewis was one of 79 Republicans who voted to cancel the project.

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–George Brown

High-energy dismay

To SSC supporters such as George Brown, the vote suggests that far more than the SSC itself is at stake in this fight. "Both the vote and the speeches on the floor gave me some serious concerns about the strength of support for fundamental research," he says. "There's a very real concern [in Congress] about cutting the budget, but not so much concern about how you do it, whether constructively or by shooting yourself in the foot.... Cutting the SSC falls in the 'shooting yourself in the foot' category."

Brown's argument is echoed by many physicists—even those who have long been critical of the project. "I do not believe that the SSC deserves the highest priority in science," says Daniel Kleppner, an experimental atomic physicist at MIT. "Nevertheless, to turn back now from one of the most important areas of physics would send a message to the scientific community and to the world that the United States no longer aspires to scientific leadership." Fermilab's Lederman strikes a similar theme, pointing out that canceling the SSC may well amount to ceding leadership in high-energy physics to Europe, whose nuclear laboratory CERN is still on track to build a rival accelerator by 1999.

"It baffles me," adds Barry Barish, a Caltech physicist and cochairman of the Gammas, Electrons, and Muons (GEM) collaboration, which is building one of the SSC's two main detectors. "In the past year there has been tremendous progress on the SSC. The machine design is proceeding on schedule and budget. The major technical milestone, the magnets, have been demonstrated to work, and technology transfer to industry is proceeding."

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The future

The SSC's fate now rests with the Senate, which may take up its own version of the energy appropriations bill by the end of next month. At this point, it's far too early to predict the outcome, although both sides are clearly gearing up for a grueling fight. Dale Bumpers (D–AR), who last year gathered 37 votes in an unsuccessful attempt to kill the project, said in a statement that the House vote improves the odds that the Senate will also defeat the SSC. On the other side, the project's Senate backers appeared somewhat unnerved by the House vote. Bennett Johnston (D–LA), chairman of the energy appropriations subcommittee, said his panel would "try" to restore funding for the SSC but noted that it will be an "uphill fight." And some key senators, such as Appropriations Committee chairman Robert Byrd (D–WV), are sending signals that they might vote with SSC opponents. Byrd has said he has "deep concerns" about the project, although an aide says Byrd hasn't yet made up his mind.

If the Senate does reverse the House decision, the project's supporters are optimistic that the collider will get at least a stay of execution. One reason for hope: After the Senate votes, the appropriations bill will go to a House-Senate conference committee whose House representatives will be members of the original subcommittee that voted for SSC funding. The project would be unlikely to emerge with all its funds intact, however. That would cause the construction timetable to be stretched out, which would drive up the total cost estimates, and that, in turn, would make the project more vulnerable when it comes up for a vote next year. As one House aide puts it: "It's just reading tea leaves to predict that far ahead." It promises to be a long, hot summer of political hardball.

–David P. Hamilton