not mean the end of the radioactive release problem. "It's a step in the right direction," says Dr. Arthur R. Tamplin, a leading critic of present-day levels. However, the Lawrence Radiation Laboratory scientist adds, to solve the problem the releases from fuel reprocessing plants will have to be cleaned up as well.

There is also the matter of boiling water reactors, which produce more radioactive waste. Because most do not have the middleman, or heat exchange system, of the pressurized water reactors, steam goes directly into generating electrical energy and so radioactivity is less amenable to control. There are ways to reduce releases, though, such as by increasing the waste storage capacity of the system. And General Electric, which makes boiling water reactors, is expected to come out with its answer to Westinghouse shortly. □

SUPERSONIC TRANSPORT

Ready for metal cutting

President Nixon breathed new life into the American supersonic transport program last year when he requested $1.3 billion for the construction of two prototype models (SN: 9/27, p. 265). This week the SST met its first major hurdle when the House Appropriations Committee voted on a $290 million bill to begin the actual metal cutting work on the prototypes. The bill is still to be debated on the House floor, where approval is expected.

The big battle, though, will come in the Senate, where a close, hard fight is expected. Debate will revolve around environmental, technical and financial issues, and all three overlap at times.

The chief environmental concern is noise: airport noise and sonic boom. Though the SST as presently conceived cannot meet existing airport noise limits or ones proposed by the Federal Aviation Administration for the aircraft, there is a technical solution: noise suppressors. But these mufflers, not yet developed, would also reduce thrust.

"Take-off field length would thus become 12,000 to 12,500 feet, well beyond even the 11,000-foot length to which the principal international airports are expected to build their runways," says IBM industrial physicist Dr. Richard L. Garwin, a member of the President's Science Advisory Committee.

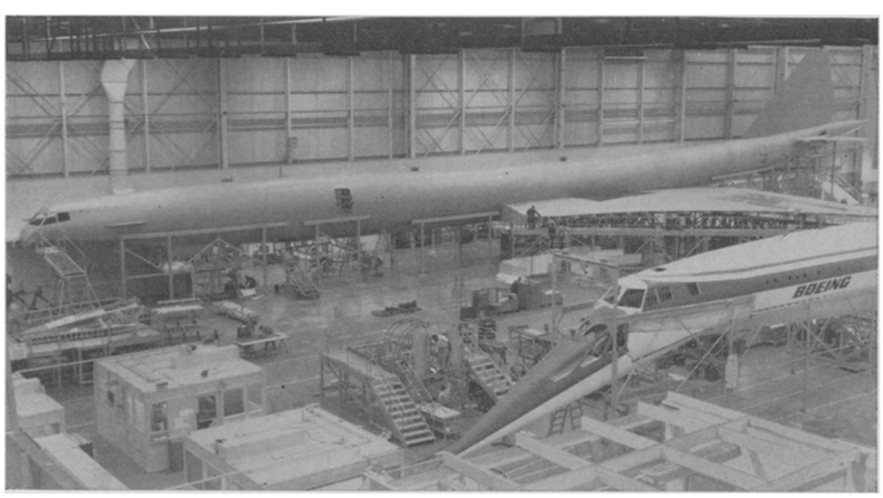
Runway extension would create problems with the environs, and estimates for redeveloping the land around airports run into the billions of dollars.

Sonic boom is another matter. At present, there is no way to control it except by reducing speed or prohibiting flights over land. The SST's supporters point to a proposed FAA rule that would do just that, but critics point out that the language leaves too many loopholes.

On the technical front, says Boeing's William Clothier, "We don't see anything like a showstopper." He says that there is still some major developmental work, such as manufacturing and testing of the large panels of brazed (soldered with an aluminum alloy) titanium structures on the wing and developing the proper fuel tank sealant. But these, he is sure, will be overcome by 1973, well before the scheduled commercial service date in 1978.

The loudest objections that will be raised to the SST will be its financing. As originally envisioned, the Government would support only prototype development and then step out of the picture when commercial production was ready to begin. But that situation has changed. H. W. Withington, vice president of Boeing's SST division, estimates that another $1.5 to $2 billion will be needed. Without Federal assistance, "It's hard to see how we can get that kind of money up," he admits.

The Senate is not expected to take kindly to the alternative. □



Boeing

Full-scale mockup of the SST nears completion; prototypes still to come.

MANSFIELD AMENDMENT

Future in doubt

Last year's Mansfield Amendment, restricting Defense Department support of basic research (SN: 12/13, p. 550), has been drawing increasing fire from academic scientists caught in the current budget squeeze. Even those who agree with its intent, to lessen the dependence of science on the military, are now concerned over its effects: a further shrinkage of sources for support of fundamental science. The expectations that the National Science Foundation would be able to pick up the tab for most of the basic science dumped by Defense have not been fulfilled.

Rep. Emilio Q. Daddario (D-Conn.) and his House Subcommittee on Science, Research and Development oppose the measure. Dr. Philip Handler, president of the National Academy of Sciences, says scientists may end up paying a high price for their silence when it was proposed.

A recent potshot came from President Nixon's science policy task force (SN: 5/16, p. 478). "It would be a great mistake for the Defense Department to avoid the bolder or imaginative and longer-range research efforts because of a myopic interpretation of their bearing on its problems," the task force said.

The House Armed Services Committee this year showed a sympathetic ear to the complaints. After hearings that saw Defense science head John S. Foster Jr. and the research chiefs for the Navy and Air Force oppose the measure, the committee has reported out and the House has passed a bill devoid of Section 203, as it is known. "This seemingly innocuous provision now appears to be fraught with danger," the committee said, "for it adversely affects research efforts involving the security of the nation 5 to 10 years from now."

Dr. Foster estimates that the total value of the projects disqualified under the measure is $8.25 million of the $368.5 million made available in 1970; nevertheless it is regarded as an important symbol of research support.

The real test of the effort to keep the Mansfield Amendment out of 1971 legislation will come in the Senate. The measure originated there, and in addition to its author, Majority Leader Michael J. Mansfield (D-Mont.), it has the strong support of such influential Senators as J. W. Fulbright (D-Ark.), Richard Russell (D-Ga.) and John Stennis (D-Miss.).

Mansfield maintains his opposition to Defense primacy in basic research funding. He is preparing testimony on the subject to submit to hearings of the Senate Armed Services Committee in June. □