Supersonic Transport

Research SST. McLean, left; Vince Mascitti discuss NASA model of research SST.

SST Development Not Forgotten By NASA Engineers

By ROBERT GRAVES Staff Reporter

If American airlines are to stay competitive with foreign carriers, NASA engineers believe, they will soon have to start flying passengers in supersonic aircraft such as the Concorde. When an American aircraft manufacturer decides to produce a supersonic transport, NASA is expected to provide the technology to do it. It is financed by Congress to do the research, but the project may wind down in another year. If we advise them in about a year to either begin a program of development, or shut down the project," McLean said.

That's when the decision must be made. Air get into the supersonic passenger travel business, or possibly lose the chance to other nations.

McLean believes the market is there and that in the future a solution such as the SST will be needed to fly all of the people who need to go from one place to another.

"Travel in the air is becoming critical, the skies are getting full," he said.

To carry all of the passengers 10 years from now, planes will either have to be much bigger and faster, or many people will not be able to travel by air, he said.

He said the SST would solve this situation. Congress cancelled the American SST program in 1971, but funded continued research in the technology so this country would not fall behind in the knowledge necessary for development of such an aircraft.

Research at NASA has found ways to apply technology to many of the problems of SST flight, such as noise, pollution, fuel consumption, range and the airplane's own construction.

As answers to many of the original objections are found, it is possible there will be a change in congressional attitude.

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R. Edward McLean, head of Langley Research Center's advanced supersonic technology office, says this country could be locked out of supersonic air travel within a year or so if it does not move to develop an American version of the SST.

Whether supersonic aircraft travel is possible in this country in view of the problems associated with is remains to be proven to those who object to SST flights to New York's Kennedy Airport and Washington's Dulles Airport.

Transatlantic flights of the Anglo-French Concorde to New York start today on a regular basis, although protestors are still demonstrating against what they consider an intrusion of noise and pollution.

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NASA has already taken the position that the greatest affect on long-range travel will come from the introduction of an efficient, environmentally acceptable supersonic transport.

When will an American SST emerge, if a start is not made too late for entry in the supersonic sweepstakes? When competition from the Concorde gets too rough, is McLean's answer.

That will be the time when airlines in this country put the pressure on American manufacturers for competitive SSTs. The large 747 aircraft will begin to wear out in 10 years and this would be the logical time to have an advanced replacement available.

But even if U. S. manufacturers started to build SSTs today, it would be 1990 before they would start coming out of the factories, McLean said.

This is one good reason why the success or failure of Concorde flights to Kennedy are important. British Airways and Air France are now limited in use of their expensive SSTs, and claim this is even more costly.

If New York flights are successful, the Concorde might operate to other American airports already endorsed by American government officials, and thus take first class air travel away from this country's airlines.

NASA's technology assistance program is keeping the three major aircraft manufacturers in the U. S. knowledgeable on SST research developments.

Researchers are excited about new engine ideas and about titanium structures which would reduce costs of building and operating a supersonic transport.

Modified engines promise development of an SST not only much quieter than the Concorde but equal to the noise levels of existing planes, McLean said.

This could be improved, if people are willing to pay the price, he said.

An American SST would probably be much larger than the British-French aircraft, which can carry about 100 passengers, McLean said.

"Such a plane with 225 to 230 passengers, utilizing advanced research, would burn half of the fuel used by the Concorde," he said. He estimates market potential would range between 200 and 400 such aircraft during this century's last 20 years. Transpacific flights would provide a great part of the market, with an SST cutting down flying time from San Francisco to Tokyo from 13 to four hours, he said.

Use of NASA technology would cut the costs for American manufacturers to produce an SST, but it still would be too much for private enterprise. The Concorde was developed with heavy financial backing from two world powers, McLean said.

Research has indicated SST pollution levels are much less than originally feared. With reduced noise levels, higher speeds and more efficient engines, objections to supersonic travel could subside. And when the world runs short of oil, the SST can operate on virtually unlimited amounts of hydrogen.