# Space Plane to the Moon

THE U.S. AIR FORCE is reported consdering the possibility of building a plane that could fly to the moon and back—by scooping up tons of oxygen in preliminary flight fifty to seventy miles above the earth.

Aviation Week magazine said the Air Force is asking for the fiscal year ending June 30, 1962, for the project, called "Space Plane" planned as a follow-on for the Dyna-Soar boost-glide space craft now being built.

The Air Force has released nothing on the project and declined comment. An Air Force research officer said, however, that the service has, under active consideration, three or four different ways of getting into and out of space without the terrific expense of using a large booster rocket each time.

"Our present technique of launching satellites and space capsules with huge boosters that cost millions is like using a DC 8 jet to fly a load from Texas to Baltimore and then throwing the plane into the ocean," the officer said.

Larry Booda, Aviation week military writer, said the funds asked would cover studies for a vehicle weighing 500,000 pounds for flight testing in the 1966-1968 period.

"Space plane would be the first maned space vehicle that could propel itself from earth into orbit and return to earth under its own power, requiring no large rocket booster..." Booda said.

THE MOST unusual feature of this vehicle is that it would almost double its half-million-pound take-off weight as it flew through the upper atmosphere because it would collect oxygen for its engines as it flew..."

The magazine described the vehicle as follows:

1. It would have a large scoop to gather the very lightly associated molecules of oxygen nitrogen as it flew through the fringes of the atmosphere at about 13,000 miles an hour.

2. It would take off from the earth by engines possibly of the standard turbine type, with rocket boosters.

3. In the fringes of the atmosphere, from fifty to seventy miles above the earth, propulsion would be by the turbine engines fueled with hydrogen, or by hydrogen-fueled ramjet engines.

The oxygen, scooped up, would be run through a ram system to compress it to a normal gas fluid state, where it would pass over a liquid hydrogen cooling device to liquify the air and pass it into storage tank. The liquid would pass through a fractional distilation process to separate the nitrogen, after which the liquid oxygen would be kept in a storage chamber until needed for propulsion.

Propulsion in space would be, by means of a conventional rocket system, burning liquid hydrogen and the liquid oxygen collected during atmosphere flight.

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## Tribute to Mother

*"With a single stroke of the brush," said the school teacher who was taking her class through the art gallery, "Joshua Reynolds could change a smiling face into a frowning one."*

*Come the vioce of one small boy, "So can my mother."*

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