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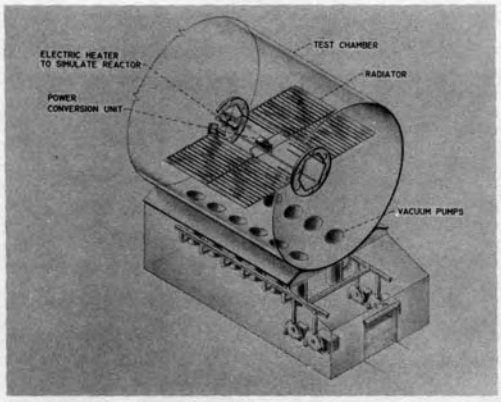
AWT GETS NEW ASSIGNMENT

Since its construction in 1942, the AWT has played a major role in aeronautical and space research. The test section has seen B-29 engines, jet engines, and ramjets mounted in its chamber along with the mercury capsule and escape tower. During these years, the tunnel has been modified from time to time, striving for higher speeds and altitudes. Originally designed to simulate aerial conditions at 50,000 feet and at speeds of 500 miles an hour, modifications resulted in the tunnel's reaching an altitude of 100,000 feet.



Sketch showing the Snap-8 installed in the AWT vacuum chamber. The chamber is about 30 feet in diameter and 100 feet long.

Now the AWT is undergoing a major change -- it is being converted into a large vacuum chamber. Full-scale power conversion systems that take nuclear power will be tested in the chamber, with an electric heater simulating the reactor. As shown in the diagram, the Snap-8 will be able to be mounted in the chamber.

The outer skin and insulation of the tunnel are being removed so a leak check can be made. The tunnel has also been completely stripped of its equipment -- the pumping system, heat exchangers, driving fan, and faring have all been removed.

Two large bulkheads were installed to isolate the small end of the tunnel where the vacuum chamber will be located. In order to install these bulkheads, a section of the top half of the tunnel had to be cut out and removed and the bulkheads lowered into place. The one bulkhead contains a 15-foot diameter door to furnish access to the chamber.

A new pumping system, using oil diffusion pumps, has been installed. This system will reduce the pressure in the vacuum chamber to 10^{-3} mm of mercury.

This is a prime example of how existing facilities at Lewis are being adapted to space research. And the AWT, rather than becoming an obsolete, unused facility, will continue to serve this nation's efforts in the space age.

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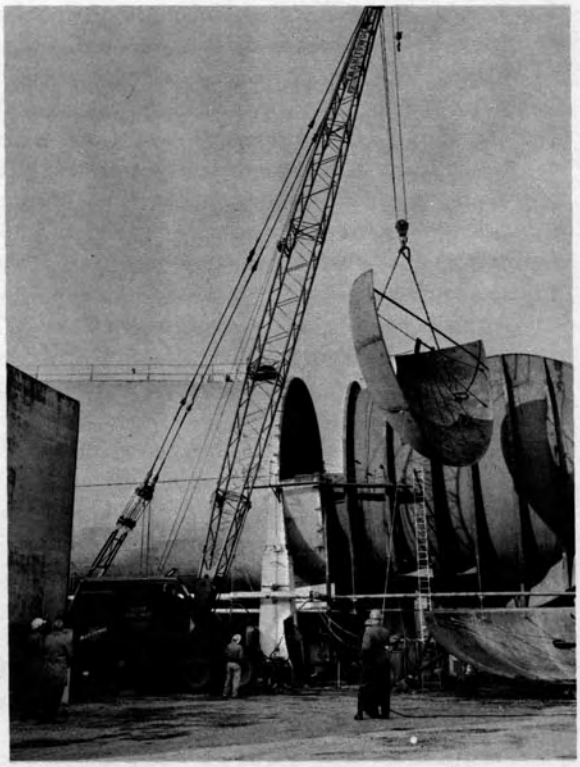
Since every effort is made to keep the same initials when re-naming a building, there's some speculation that the Altitude Wind Tunnel may be called the "Aerospace Wacuum tank."

(Editor's note: Written with the technical assistance of J. Elmo Farmer, Advanced Development and Evaluation Division.)



A section of the tunnel was cut out so the bulkheads could be put in place.