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NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

TECHNICAL MEMORANDUM

No. 1103

CALIBRATION TUNNEL FOR HIGH SPEED

By J. Pretsch

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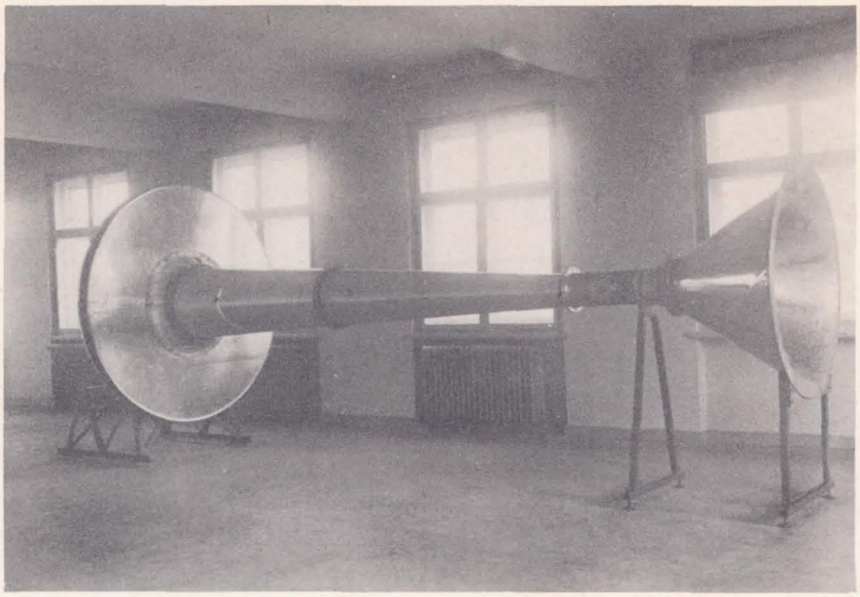
For the investigation of measuring instruments at higher speeds up to a Mach number 0.7 a tunnel with closed test section was built in 1942 which was as simple and cheap as possible. (See fig. 1.) The blower was a radial blower (4) with straight sheet vanes of 800-millimeter diameter the tips of which were bent backward a little. The blower sucks the air through a honeycomb of diameter 1.2 meter (1) with wide meshes. The air is then accelerated in a sheet cone with smooth transition to the test section. The cylindrical test section (2) of 200-millimeter diameter has two windows (3) which are displaced 180° from each other. The instruments may be introduced and observed through these windows. The cross section is then enlarged by a straight diffuser 3.5 meter long and reaches the nine-fold cross section. The air flows back into the room through a disk diffuser of 2-meter diameter. The maximum speed in the jet is 250 m/s for a drive power of 35 kW, if there are no installations in the jet. The velocity is determined by pressure holes along the test section.

Translator unknown

*AVA Gottingen.



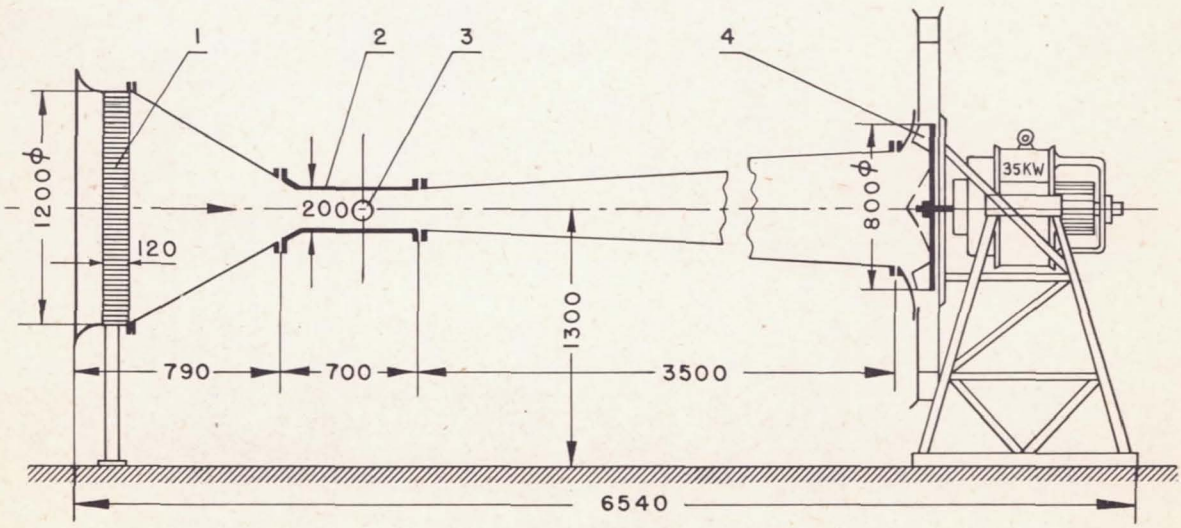


Figure 1. Windtunnel