



Technical Documentation - Wind Tunnel



Wind Tunnel 2009



Wind Tunnel 1934/35

1. General Information

Year of construction: 1934/35

This wind tunnel outdoors is the first completely preserved wide span wind tunnel in the world made in the reinforced thin shell concrete construction method with a diameter of 6m (1.8 ft). It is officially regarded as a historical monument and has been given to the custody of the Association of the Technical Museum "Hugo Junkers". Due to damage inflicted during the WW II the object has not survived complete, but further preservation is under way.

2. Purpose of a Wind Tunnel

The aerodynamic features of an aircraft (for wind tunnel testing reduced in size) or parts of an aircraft (wings, flaps, rudders etc.) were tested and analysed in order to achieve an aerodynamically clean surface for drag reduction. Several important scientific findings were made during wind tunnel experiments as for example the investigation of various wing profiles, concerning the camber of the wings.

3. The shape of a Wind Tunnel

After the first straight wind tunnels had come into use in 1914, the circular wind tunnels as a closed circuit system prevailed more and more, as they prevented external disturbances.

4. Function of Wind Tunnels

The airstream generated by large ventilators was lined up by movable forming elements which were situated in concrete pipes conducting the airstream on the test objects (models or parts of aircraft).

Threads fixed on the test objects made the flow of air visible during testing, while cameras were filming or taking pictures of the experiment for later evaluation.

Flue gas was used to make turbulences visible and several measuring instruments came into operation.