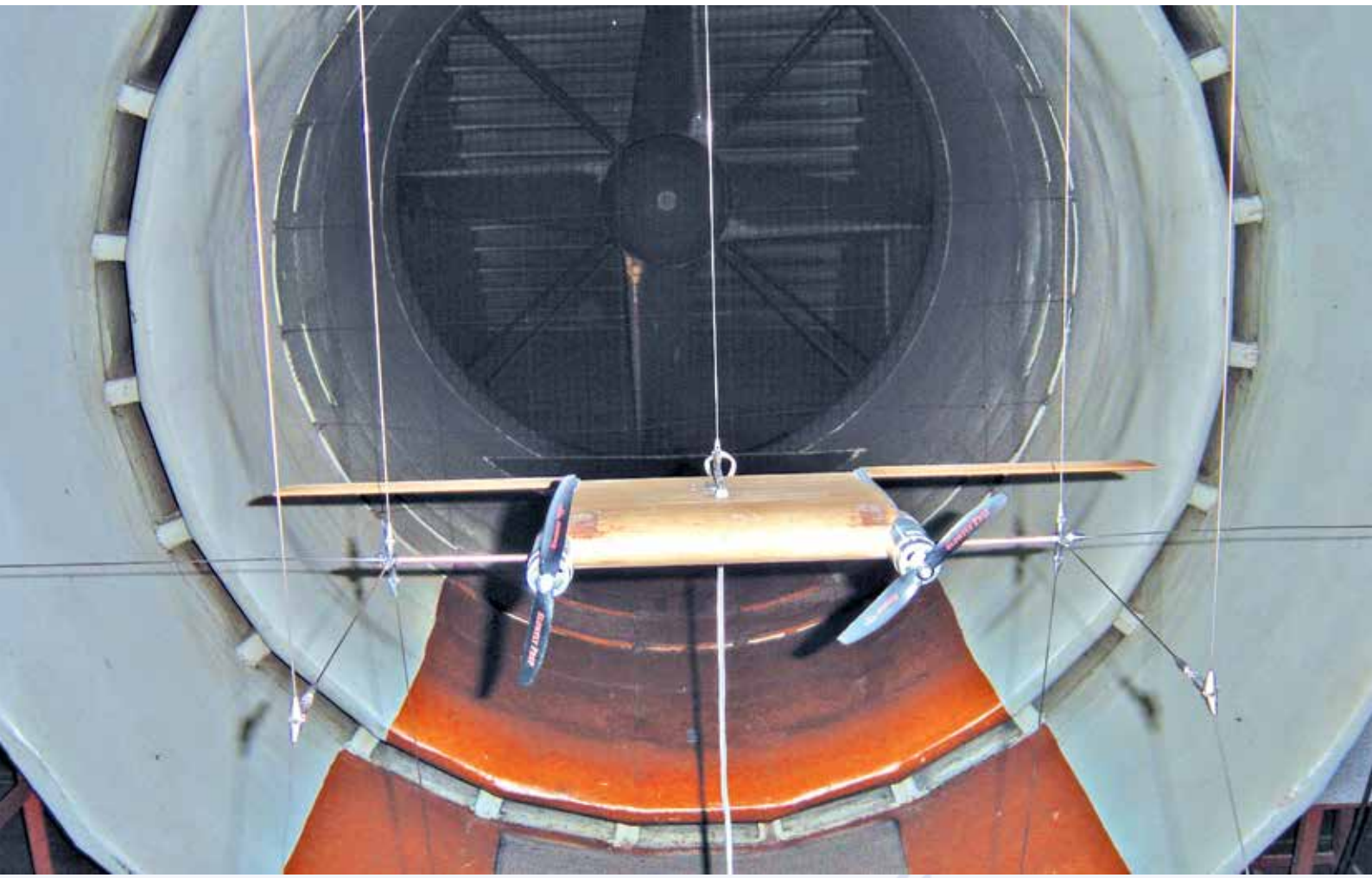
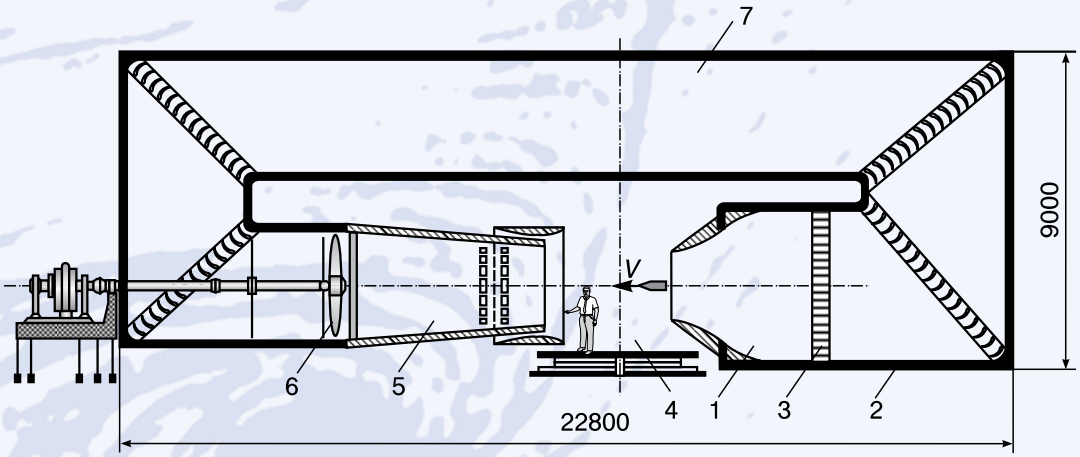
T-5 WIND TUNNEL



Main Technical Parameters

Flow velocity	5...55 m/s
Re number per m	up to $3.4 \cdot 10^6$
Velocity pressure	up to 1.85 kPa
Dynamic pressure	up to 1.5 kPa
Stagnation temperature	environmental
Angle of attack (α)	–20°...40°
Side slip angle (β)	±20°
Test section sizes:	
Nozzle diameter	2.25 m
Test section length	3.15 m
Turbulence level	0.3 %



1. Nozzle
2. Settling chamber
3. Honeycomb
4. Test section
5. Diffuser
6. Fan
7. Reverse channel

General Description

T-5 WT is a continuously-operating closed layout test facility with one reverse channel, open test section designed for testing model aerodynamic properties. The model airflows parameters are determined; the model airflow peculiarities are investigated through flow visualization techniques.

Fan driven by 315 kW DC electromotor generates the flow inside the wind tunnel. The models with wing area up to 0.5 m^2, wing span of up to 1.5 m and length of 2.5 m are possible to be tested through six-component electro-mechanical balance.

Capabilities

The following main types of experiments are possible to be performed in wind tunnel T-5:

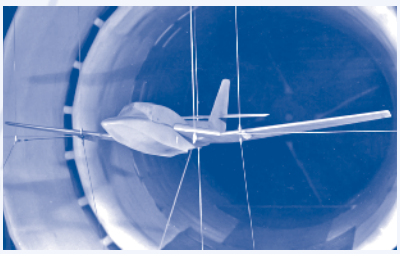
- determination of total aerodynamic characteristics through electro-mechanical balance with/without the screen;
- determination of model airflow parameters;
- visualization of flow through silk streamer, oil and water vapor.

Technological Advantages

Low turbulence level in test section (0.3 %) enables studying physically the flows in boundary layer and in wake, as well as determining the laminar flow parameters under low Re numbers, as it is required for testing the superlight micro-UAV.

Application

All the above mentioned capabilities serve to test and optimize the take-off and landing regimes of various flying vehicles: low-speed aircraft, airships and micro-UAVs, the sea vessels and oil platforms, industrial objects and so on.



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