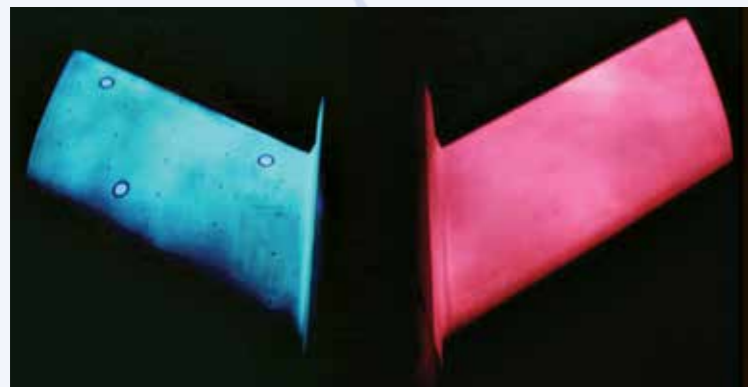
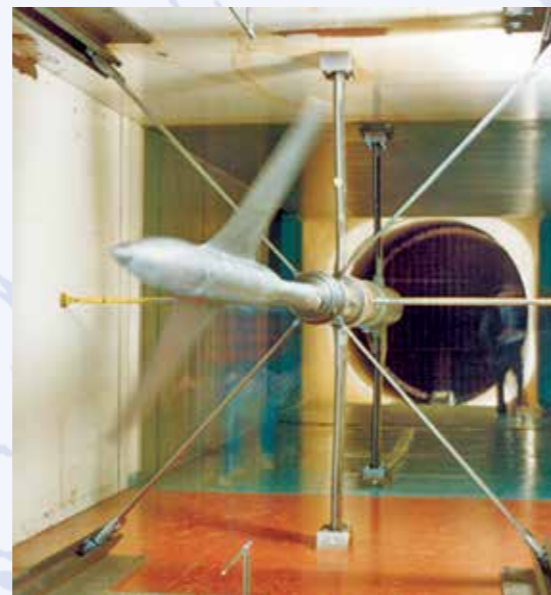
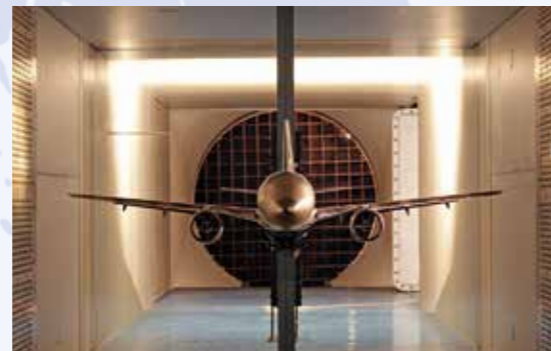
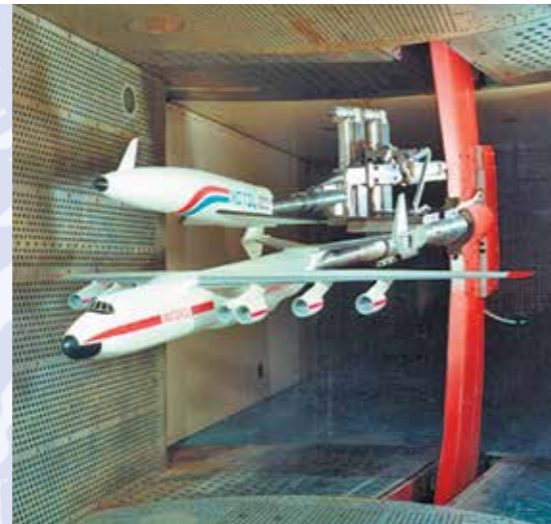


Technological Advantages

- Adjustable perforation of the test section walls enables the minimization of the flow boundary interference, increase in Re number due to greater model size and widening the angle of attack range.
- The accuracy of Mach number control in subsonic velocity range is $\Delta M = \pm 0.001$.
- Interchangeable test sections with different suspension systems enable the wide range of investigations.
- Model preparation set is equipped with precision measuring system (accuracy degree is 0.0025 %, 0.03 %).

Application

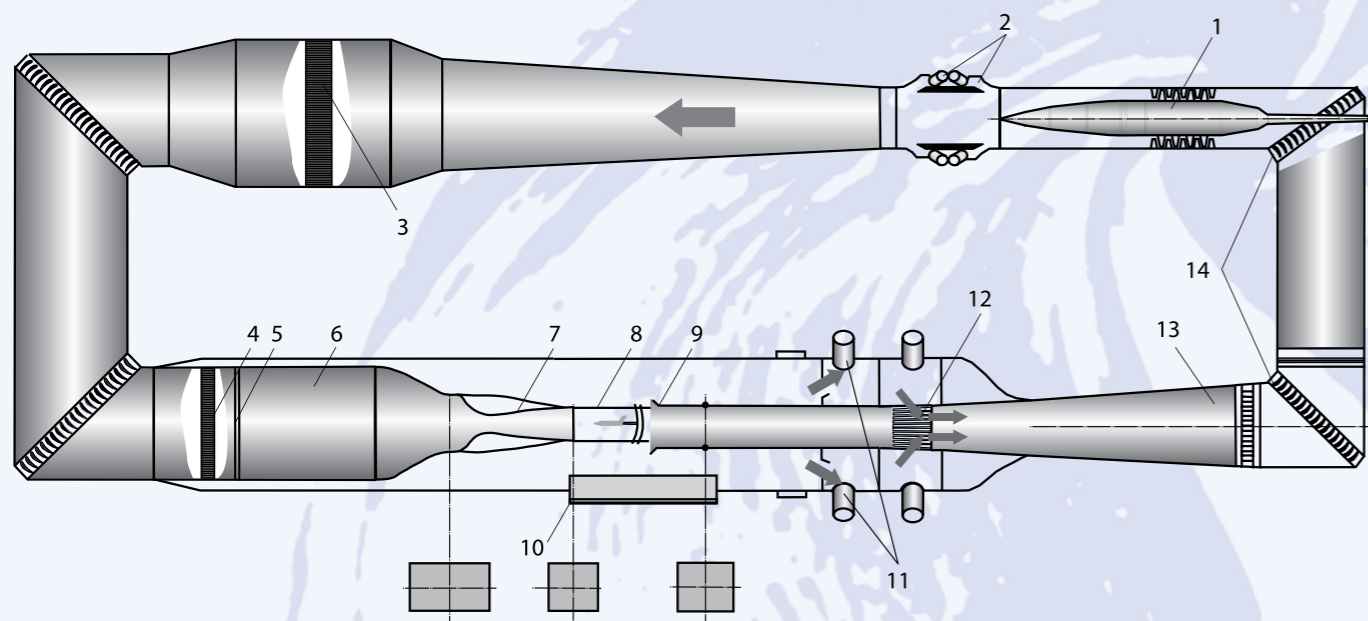
The above-mentioned capabilities of T-128 wind tunnel are widely used to investigate different models of airspace vehicles, rockets, as well as aircraft of various purposes.



Main Technical Parameters

Flow M number	0.15...1.7
Re number per 1 m	up to $41 \cdot 10^6$
Total pressure	20...400 kPa
Dynamic pressure	up to 80 kPa
Stagnation temperature	293...323 K
Run duration	continuous
Angle of attack (α) range	$-30^\circ \dots 55^\circ$
Side slip angle (β) range	$\pm 15^\circ$

Test section sizes:	
Cross section area	2.75×2.75 m
Length	12 m
Tested object sizes:	
Length	up to 3 m
Wing span	up to 2.2 m



- | | |
|--------------------------------------------|----------------------------------|
| 1. Compressor | 8. Test section |
| 2. Inflation and evacuation system chamber | 9. Adjustable flaps |
| 3. Cooler | 10. Hatch to change test section |
| 4. Honeycomb | 11. Plenum chamber suction |
| 5. Deturbulising screens | 12. Suction system intake valves |
| 6. Settling chamber | 13. Diffuser |
| 7. Adjustable nozzle | 14. Adjustable guide blades |

Interchangeable test sections



General Description

T-128 Wind Tunnel is a continuous-running, variable density test facility designed to investigate aircraft models at subsonic, transonic and supersonic velocities. The main compressor with electric drive of 100 MW generates the flow.

The wind tunnel is equipped with four interchangeable test sections, three of which have variable wall perforation (up to 128 independently controlled panels with perforation ratio varying from 0 to 18% according to the computer program). The fourth test section has slotted walls with 0...14% permeability level.

The test sections are equipped with suspension systems of all basic types (rigid strut with rear and fin stings, belt suspension; the model is mounted on the side wall and the half-model is mounted on the upper wall), device to mount the "endless" wingspan and the "swept" wing and facility to investigate the separation process.

The wind tunnel is also equipped with a set of internal and external strain-gauge balance to measure aerodynamic forces and moments of the models and their structural elements, automated computational measuring and controlling complex.



Capabilities

T-128 WT is designed to carry out the following experimental investigations:

- Determination of total aerodynamic characteristics of aircraft models and their elements;
- Measuring the steady and unsteady pressure distribution on the model surface;
- Research of load and carrier separation interference;
- Determination of characteristics of aircraft models with flow duct through the nacelle internal channels;
- Study of static and dynamic characteristics of aeroelasticity of aircraft models;
- Study of damping derivatives;
- Study of Re number effect on aircraft models aerodynamic characteristics;
- Study of flutter;
- Physical research of models (visualization of flows on model surface).

