



ACOUSTIC REVERBERATION CHAMBER RK-1500

MAIN TECHNICAL PARAMETERS

Maximum sound pressure level	up to 164 dB
Test section volume	1504 m ³
Test section dimensions	14.6×9.2×11.2 m
Operational frequency range	45...10000 Hz
Power of sound generators	up to 1200 kW
Data acquisition-processing system	
Number of channels	256
Data processing rate	up to 200 kHz per a channel

Automatic control system	
Sound pressure spectral density control	
Load reproduction accuracy	-3 dB
Dynamic control range	-20 dB
Additional systems	
Local resonance system (for 4 zones of a structure)	4 channels
Pressure blowdown system in some tanks and cockpits of a tested structure	

GENERAL DESCRIPTION

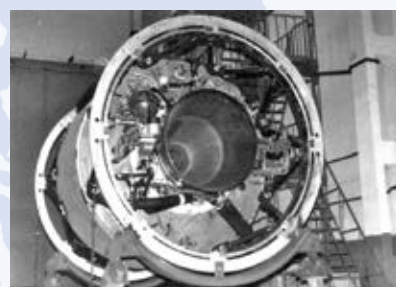
Acoustic reverberation chamber RK-1500 is used for investigation of aircraft strength and fatigue characteristics under acoustic loads in a wide range of adjusted spectral density. Test section dimensions and volume allow testing of real-scale and full-scale units. Sound pressure field is generated by sound generation system connected with a test section via horns. There is a possibility ofinsonation of the separate structural parts and pressure blowdown in separate closed tanks and cockpits. There is a special preparatory hall equipped with hoisting cranes for assembling operations, gages installation, defectoscopy etc. Reverberation chamber is equipped with automatic data acquisition-processing system and control complex for functional-technological control of experiment rate.



CAPABILITIES

The following types of tests are performed in reverberation chamber:

- strength, fatigue and certification tests of aviation and space units in intensive acoustic field
- investigation of electronic and mechanical systems checking their functionality
- exploration of sound insulation methods and means as well as noise impact on human and natural environment.



TECHNOLOGICAL ADVANTAGES

- Tests of large-scale samples with linear dimension up to 11 m under acoustic load in wide frequency range;
- Automatic control of sound spectral concentration in a rate of experiment;
- Possibility ofinsonation of the separate structural parts;
- Automatic data acquisition and processing through multi-channel digital information-measurement system in a rate of experiment.

RK-1500 is a unique experimental facility because acoustic power and sound pressure level for existing test section 3.4 times exceeds the parameters of analog facilities of the same class in Europe and USA.



APPLICATION

Acoustical tests of large-scale structural elements and additional equipment of air- and spacecraft.