



## Main Technical Parameters

Maximum sound pressure level ..... up to 164 dB  
 Test section volume ..... 1504 m<sup>3</sup>  
 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 insonation system  
 (for 4 zones of a structure) ..... 4 channels  
 Pressure blowdown system in some  
 tanks and cockpits of a tested structure



## General Description

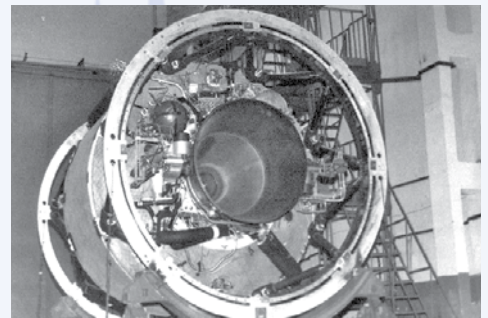
Acoustic reverberation chamber RK-1500 is used for investigation of aircraft strength and fatigue characteristics under acoustic loads in a wide range of adjusted spectral density. Test section dimensions and volume allow testing of real-scale and full-scale units. Sound pressure field is generated by sound generation system connected with a test section via horns. There is a possibility of insonation 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 of insonation 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.

