



AEROSTRUCTURES TESTING CAPABILITIES

TESTING IS OUR STRENGTH

Meeting your aircraft systems testing needs

At Collins Aerospace, we have been testing aircraft systems and structures for over 60 years at our Chula Vista, California facility. Our testing ensures that critical aircraft systems and components can withstand some of the harshest conditions and environments that can occur on the ground or in flight.

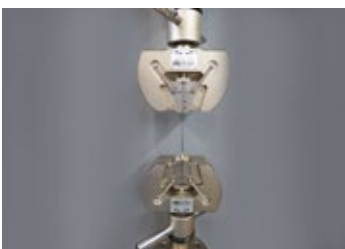
CAPABILITIES

- Structural and mechanical loading tests
- Fire/lightning/vibration testing
- Environmental exposure
- Acoustic impedance and flow resistance
- Optical measurement and inspection
- Sensor installations for ground and flight test hardware
- Failure analysis



STRUCTURAL TESTING

Aircraft systems can require a variety of structural tests in order to be certified, including static, dynamic, wear, fatigue and crack growth tests. We can perform multi-axis loading tests from the component level to full-scale aircraft structures. Our hydraulic control systems have the capacity to perform multi-actuator loading tests using up to 62 actuators/load channels per controller at up to 110K lbs of force per actuator and a 960+ channels capacity of data acquisition.



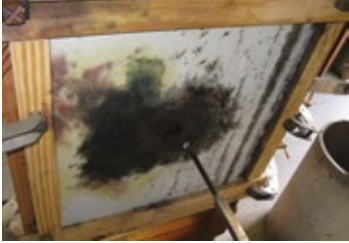
MECHANICAL TESTING

We have a variety of material testing systems available to evaluate material performance under static and dynamic test conditions. Our testing capability includes universal test machines for single-axis tension and compression loading with six independent load frames rated 5K - 50K lbs of force. We have static and fatigue test capabilities with environmental chambers, enabling test temperatures from - 80° F to 2000° F. We're here to ensure your aircraft meets all strength, resistance, fracture and fatigue requirements.



AIR TESTING

We offer a variety of flow testing capabilities to meet your testing needs. Our compressed air flow stand is capable of flow rates up to 4.5 lbs/sec and 100 psig and elevated temperature to 1000° F at up to 2 lbs/sec. We also offer sonic fatigue testing in a progressive wave tube (PWT) rated for 30,000 acoustic watts, OASPL of 168 dB and up to 1800° F.



LIGHTNING DIRECT EFFECTS

We've been performing lightning direct effects testing since the 1980's with the incorporation of composite materials in our nacelle system products. We provide simulated lightning direct attachment tests to 200kA peak current. Our direct effects testing facility meets all test requirements of aviation authorities including those contained in EUROCAE ED-84/SAE ARP 5412B and EUROCAE ED-105/SAE ARP 5416A.



VIBRATION

Demonstrating compliance to vibration test requirements is critical to aircraft system suppliers and is an area where we have significant capability to meet your testing needs. Our vibration test systems utilize electro-dynamic shaker systems with slip tables rated to 20K lbs of force. Test temperatures up to 1200° F are achievable. Testing standards include RTCA DO-160 Section 7 and 8 test applications.



FIRE RESISTANCE/PROOF

Our team of experts offer fire resistance and fire proof testing with application of static pressure, air flow, vibratory and static loading. We use both kerosene and propane fire burners. All of our test standards meet test requirements contained in FAA AC 20-135, EASA Part 25.1191, Part 25.1193, ISO 2685.



FAILURE ANALYSIS

At Collins Aerospace, we perform extensive testing to predict and reduce aircraft systems failures. Our failure analysis capabilities include microscopic, metallurgical analysis and metallography of test articles to 20,000X magnification. We use a scanning electron microscope (SEM) with Energy Dispersive X-Ray Spectroscopy (EDS) for chemical microanalysis.

Specifications subject to change without notice.



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