

NTS Market Spotlight: Aerospace & Defense Services

Specialists in Engineering and Evaluation



Electromagnetic shielding and susceptibility tests are critical to the survival and performance of communication, fire control and guidance systems on modern military aircraft and vehicles.



Today's military aircraft and vehicles require sophisticated testing under induced environments to assure reliable performance under battlefield conditions.



Weapon and ordnance test and evaluation is conducted under safe conditions by the technical experts at NTS Camden operations.

Engineering Services and Technical Resources

For over 50 years NTS has provided engineering and technical resources to the aerospace/defense industry. Making our technical expertise and experience available to our clients, when and where you need it, is our differentiator. From managing and operating government test labs to providing on-site engineers and testing at U.S. Military bases, NTS can be your single source for engineering and technical resources.

National Ordnance and Ballistic Test Center

NTS owns and operates the National Ordnance and Ballistic Test Center situated in the Highland Industrial Park in Camden, Arkansas. Established within the original 68,000-acre Shumaker Naval Ammunition Depot and a portion of Highland Industrial Park, the complex is equipped to conduct a wide array of severe and dangerous tests on weapon systems, ordnance, rocket motors, hazardous materials and commercial products. One of the most complete ordnance test facilities in the country, it was developed by NTS to satisfy the weapons industry manufacturing and testing needs well into the future.

Aircraft, Rocket and Satellite Test Technology

With advanced test capabilities, NTS has participated in every major space project since the inception of manned space exploration. We perform research and development, test and system evaluation on a wide range of military aircraft, vehicles, systems and components. Test capabilities include dynamic response, acoustic intensity and modal analysis on aircraft structures and systems; evaluation of electronic and hydraulic systems for advanced military aircraft and vehicles; severe environment and hazardous flow tests at temperatures to -300°F to 500°F; and hydrogen flow at 5000 psi. We also conduct FAA and private aircraft industry development and evaluation programs.

NTS leads the industry in testing associated with satellite engineering. For fuel cells, solar panels, composite antennas, batteries and various mechanical and electronic devices, NTS can custom engineer chambers and fixtures to conduct a complete range of space related phenomena. Capabilities include: vacuum, space simulation, vibration, shock, acoustic noise, acceleration, bakeout, thermal cycling in drive-in chambers (including photogrammetry and low oxygen capability) and aging at 125°C/ minute transition rate, structural, pressure, helium leak and EMC.

About NTS

NTS is a world leader in assisting organizations to access domestic and international markets. We are a single source for a full range of integrated engineering solutions, product testing, standards compliance, project management staffing solutions, engineering and managed services. Globally accredited by leading regulatory agencies, NTS can provide cost-effective programs to meet your requirements at one of our many U.S. or international facilities, or we can provide on-site solutions. NTS is the nation's largest independent standards compliance and product testing company serving companies within the aerospace, defense, automotive, telecommunications, electronics, power, medical device, computer, software and financial markets.



Special test environments are required to simulate space conditions in order to evaluate the life expectancy of today's communications and military satellites.



NTS's full spectrum test and research facilities are capable of managing your environmental test requirements, including MIL-S-901 high impact, heavyweight shock testing.



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Highlights and Primary Test Capabilities

Dynamics

- ▶ Shakers up to 3.0" stroke, 45,000 force/lbs, dual shakers up to 70,000 force/lbs, 4-3,000Hz
- ▶ Hydraulic system with 12" stroke, 100,000 force/lbs, 0.6Hz to 500Hz.
- ▶ Acceleration up to 750g's, up to 25' radius, up to 70 channels
- ▶ Shock, 7 foot unit up to 750g, Pyro-shock
- ▶ Acoustic noise

Primary Specifications: MIL-STD-810, MIL-STD-202, MIL-STD-883, MIL-STD-167, MIL-S-901, RTCA/ DO-160, ISTA, ASTM

EMI/EMC

- ▶ Radiated susceptibility with 200V/m and HIRF capability, 10kHz to 40GHz
- ▶ Lightning-multiple stroke, multiple burst, and indirect RF emissions and immunity, AC power fault, surge, ESD and EFT
- ▶ Anechoic rooms up to 40' x 40' x 20'

Primary Specifications: MIL-STD 461/462, MIL-STD 1275, MIL-STD 704A, RTCA DO 160

Fiber Optics

- ▶ Optical performance evaluation during shock & vibration testing
- ▶ Optical performance testing with temperature/humidity conditioning

Primary Specifications: MIL-C-28876, MIL-PRF-85045, MIL-C-83522, MIL-T-29504, MIL-I-24728, MIL-PRF-24623

Environmental

- ▶ Multiple temperature/humidity chambers from 2' x 2' x 2' to 25' x 25' x 15'
- ▶ Temperature/humidity/altitude chambers, explosive atmosphere
- ▶ Salt fog, sand/dust, solar radiation, Mix Flowing Gas (MFG), space simulation

Primary Specifications: MIL-STD-810, MIL-STD-202, ASTM

Fluids, Fuels and Cryogenics

- ▶ Hydraulic/pneumatic - static/dynamic
- ▶ Flow - gas, liquid, fuel, propellant, oxidizer, chemical, hazardous, water, steam
- ▶ Temperature - high/low gas flows
- ▶ Cryogenic - liquid oxygen, liquid nitrogen, liquid hydrogen, LNG
- ▶ Functional/qualification testing
- ▶ Efficiency - filters, flow components
- ▶ Leak detection - helium mass spectrometer
- ▶ Proof/burst, pulse/burst, thermal shock

Primary Specifications: ARP 603, ARP 1383, ISO 6772

Mechanical

- ▶ Fire resistance, fire spread, needle-flame
- ▶ Hydraulic/pneumatics pressure impulse, flow, proof, burst
- ▶ Load test, tensile fatigue, flexural testing

Primary Specifications: FAA AC-20, FAR 25, GR-63-CORE, ISO 2685, ISO 6772, ARP 603, ARP 1383, AS 4265, AS 18280

National Ordnance and Ballistic Test Center Highlights

- ▶ 3000 meter large caliber range
- ▶ 35,000 square feet enclosed climatic conditioning
- ▶ Warhead arena test areas
- ▶ Shoulder-fired rocket range
- ▶ Multiple indoor and outdoor medium ranges
- ▶ Shakers in remote areas, up to 34,000 force pounds

Primary Specifications: MIL-STD-2105 Insensitive Munitions, MIL-STD 810