



GE Aviation Icing Test Services: Precision, control, & experience.

GE Aviation has extensive and unique test facilities capable of icing and ice cloud testing, supported by a diverse and experienced staff. Normally used for engineering and certification icing tests for GE Aviation products, they are also useful for wherever continuous, repeatable icing and ice cloud conditions are needed. Our Winnipeg Testing, Research, and Development Centre can test the largest aircraft engines ever developed in an open loop, freejet system. With a long and consistent winter climate, icing conditions can be simulated for over 5 months per year. A similar capability exists in our Peebles, Ohio facility providing additional test capacity, and a transportable smaller-scale, single-fan rig is also available.

In addition, Cell A1 in Evendale, Ohio is a very flexible altitude test facility capable of altitude simulation to 70,000 ft. A high-flow central airflow facility provides inlet air and vacuum exhaust capability, and moisture can be precisely controlled for low temperature applications to below -40 deg-F. This year-round capability has been used for icing and ice cloud testing of turboshaft and turboprop engines and is sized for many other similar applications.

High-speed imaging with dedicated lighting systems are available to document ice accretion and shedding phenomena, and high- and low-speed data systems display and record a full range of instrumentation. All facilities conform to SAE ARP 5905 "Calibration and Acceptance of Icing Wind Tunnels".

Test Capabilities

Altitude Icing

Icing & Ice Crystal Certification

Cold Soak/Cold Start

Facilities

- Core Engine
- Full Engine
- Module/Component
- Turbofan, Turboprop, & Turboshaft



GE has commercially available open loop icing test facilities that are unmatched. Our flexible capabilities and depth of experience can provide a wide range of testing for aviation and other industrial testing.

Facilities

Winnipeg TRDC Facility	
Maximum Wind Tunnel Air Flow Rate	4200 pps
Maximum Water Flow	72 gpm
Liquid Water Content Controllable Range	0-3 gm ⁻³
Droplet Size Controllable Range	15-40 mic
Peebles Site 6A Facility	
Maximum Wind Tunnel Air Flow Rate	6000 pps
Maximum Water Flow	70 gpm
Liquid Water Content Controllable Range	0-3 gm ⁻³
Droplet Size Controllable Range	15-40 mic
Cell A1 Facility (Ice Crystal Mode)	
Maximum Wind Tunnel Air Flow Rate	11 pps
Maximum Water Flow	20 gpm
Liquid Water Content Controllable Range	0-25 gm ⁻³
Droplet Size Controllable Range	15-40 mic
Pressure Altitude Capability	35,000 ft

Support Capabilities

GE has extensive capabilities for a turnkey test solution to meet your needs:

Rig assembly & teardown in segregated facilities

Instrumentation design, application, leadout, and checkout

Design and build of test rigs & support hardware

Remote near-real-time test monitoring

Full customer data segregation



From J-47 testing at the top of Mount Washington, NH 70 years ago to icing facilities in Canada and Ohio today



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