

Tour – Lincoln Flight and Antenna Test Range Facility

Personnel selecting this option will be based on to Hanscom Air Force Base.

Flight Facility

Lincoln Laboratory's Flight Test Facility operates seven aircraft that are used to flight-test prototype systems for diverse airborne applications. Researchers from across the Laboratory routinely schedule flight time to evaluate new antennas, imagers for air surveillance, aircraft collision-avoidance tools, and long-range RF and laser communication systems. To obtain real-world measurements for the continued development of the antennas and systems, Laboratory researchers also commission these aircraft for data collection sorties. Lincoln's multipurpose fleet of aircraft is housed in Hangar 1715 on Hanscom Air Force Base, just over a mile from the main Lincoln Laboratory complex. A Cessna 206 single-engine aircraft is used for testing small systems and for acting as a "cooperative target" vehicle. The Twin Otter, an unpressurized twin-engine turboprop with short runway requirements for takeoffs and landings, can be flown at small, local airfields. A Falcon 20 business jet can carry systems mounted in pods beneath the fuselage or wings. Lincoln's three high-speed, long-range Gulfstream jets can accommodate up to seven pods and a nose-cone-mounted sensor. The highly instrumented Boeing 707 is well-suited for large antenna test and development.

Antenna Test Range

The antenna and radar cross-section measurements facility, constructed at MIT Lincoln Laboratory on Hanscom Air Force Base, was designed with a rapid prototyping focus for radar and communications systems development. There are five indoor test ranges: a small shielded chamber for EMI measurements; two small utility ranges consisting of a tapered anechoic chamber covering the 225 MHz to 18 GHz band and a millimeter-wave anechoic chamber covering the 4 to 100 GHz band; a compact range covering the 400 MHz to 100 GHz band; and a systems development chamber that covers the approximate 150 MHz to 20 GHz band and that works in conjunction with an instrumentation laboratory. In addition to the chambers, multipurpose signal generation, data acquisition, and control and recording instrumentation in a systems integration laboratory provide a supporting role in the rapid prototyping of RF systems. A high-bay staging area and machine shop are used in supporting the development of rapid prototype antennas. The smaller utility chambers are used in developing antennas and subsystems that can be tested in an integrated RF system in the larger compact range and system test chambers.