

# FARM Anechoic Chambers



Two Anechoic Chambers are located at the Facilities for Antenna and RCS Measurements (FARM) on the Naval Air Station Patuxent River, Maryland. The capabilities of the chambers include antenna radiation patterns, gain measurements, VSWR, and antenna-to-antenna isolation. Automated measurement equipment is used to obtain data from individual antennas or antennas mounted on scale model aircraft. The radar scattered returns are measured from targets ranging from antennas to scale model aircraft. Diagnostic test procedures are used to indicate major flare spots enabling the development of treatments to alter the scattered returns.

# *The FARM Anechoic Chambers*

## **Anechoic Chamber, Bldg. 3199**

A pyramidal chamber 90 feet by 30 feet by 30 feet with a 12 foot spherical quiet zone. Primarily used for partial mock-ups of full scale aircraft and scale model aircraft. Instrumentation capabilities include Data Acquisition Digital Source (DADS)-9, SA and Orbit receiver equipment, and analog/digital antenna pattern recording equipment. Frequency range of 100 MHz to 18 GHz plus.

## **Anechoic Chamber, Bldg. 3200**

A rectangular chamber 100 feet by 40 feet by 40 feet with a 12 foot cylindrical quiet zone at any location. Meets TEMPEST requirements. Primarily used for antenna and Radar Cross Section (RCS) measurements for full scale targets, partial mock-ups of full scale aircraft, scale model aircraft, multiple source system tests, and RCS measurements. Instrument

capabilities include SA-2095 Antenna RCS measurement system, and analog/digital antenna pattern recording equipment. Antenna pattern frequency range of 100 MHz to 18 GHz. RCS measurements with multiple format/images from 3 GHz to 18 GHz plus.

## **Model Aircraft**

P-3 1/10th scale with stores, A-6E 1/6th scale with stores, F-14 1/4th scale with stores, V-22 1/8th, SH-3H 1/8th and UH-60 1/6th scale.

## **Laboratory Equipment**

*Network Analyzer*, HP-8510C, Frequency Range 45 MHz to 40 GHz.

*Source and Test Components*, 10 MHz to 40 GHz.

*High Power Generators/Amplifiers*, 100 MHz to 18 GHz, specialized 24 GHz at 34 KW, and 30 GHz at 80 KW.

*Dielectrometer*, 1 GHz to 3 GHz and 8 GHz to 12 GHz, sample 1 inch diameter by 1/8 to 3 inch length, relative dielectric constant 1.2 to 90.0, loss tangent 0.002 to 0.05.

*Data Reduction* (IBM PC based), MILL-STD-1553 Data Extraction, Multipath prediction Analysis, Pattern plotting and gain correction, Polar/Rectangular Formatting, Pattern Digitization, Radiation Distribution Analysis, Gain Contour Analysis, Weighted Volumetric Analysis, Polarization Computation, Jam to Signal Ratio Analysis, and portable Electronic Warfare Interface Harness.

*For more information contact the FARM Anechoic Chambers, Naval Air Warfare Center Aircraft Center, Patuxent River, MD 20670 at 301-342-9152.*