

Spirit AeroSystems

Based in Wichita, KS, Spirit AeroSystems employs about 14,000 people and is the world's largest first-tier aerostructures manufacturer.

Customers/Programs Include:

- Boeing – 737 (entire fuselage), 747, 767, 777, 787 Dreamliner
- Gulfstream – G650, G250
- Airbus – A350, A380
- Hawker, Mitsubishi, Bombardier, Sikorsky, P-8A Poseidon

Primarily Manufacture:

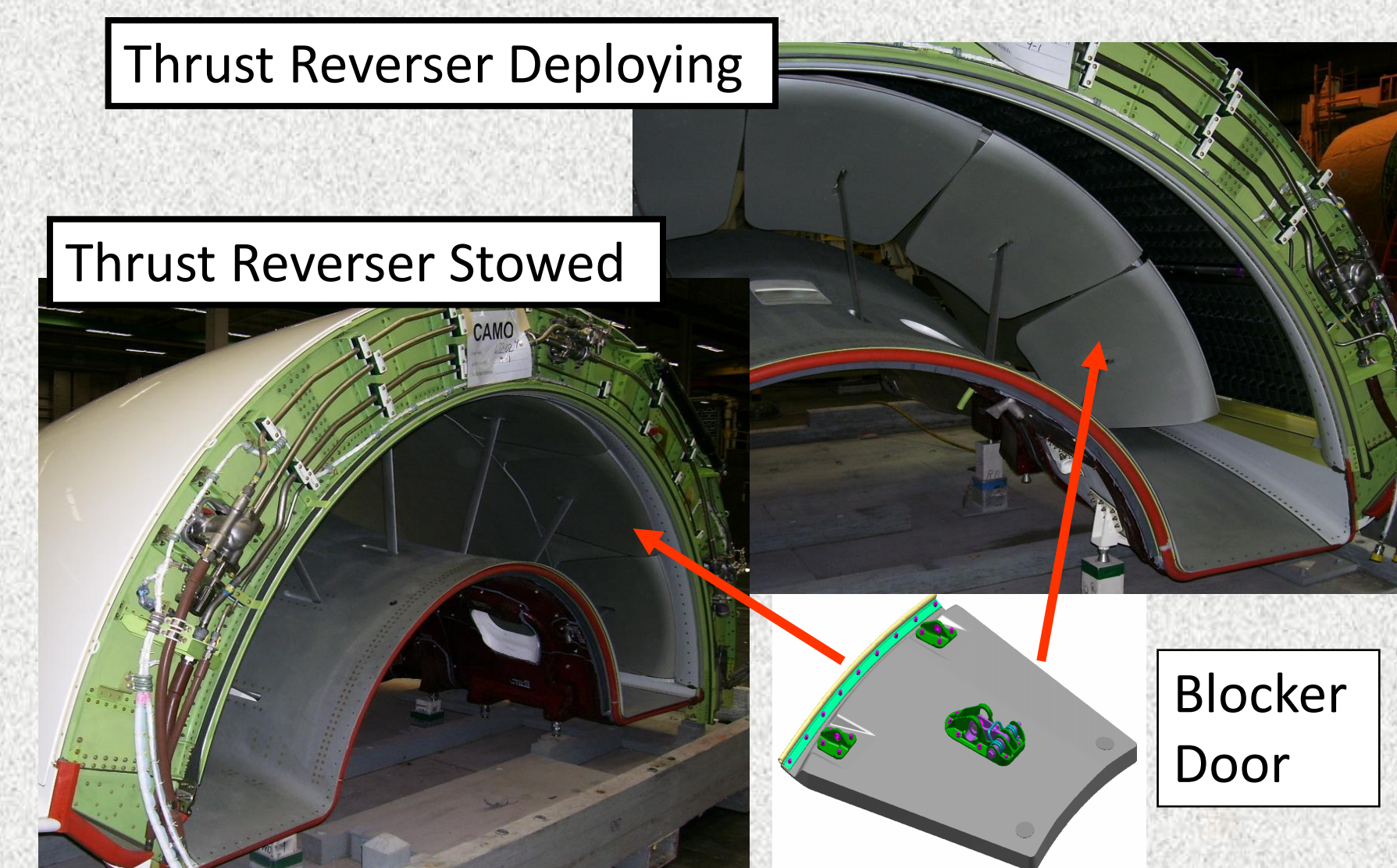
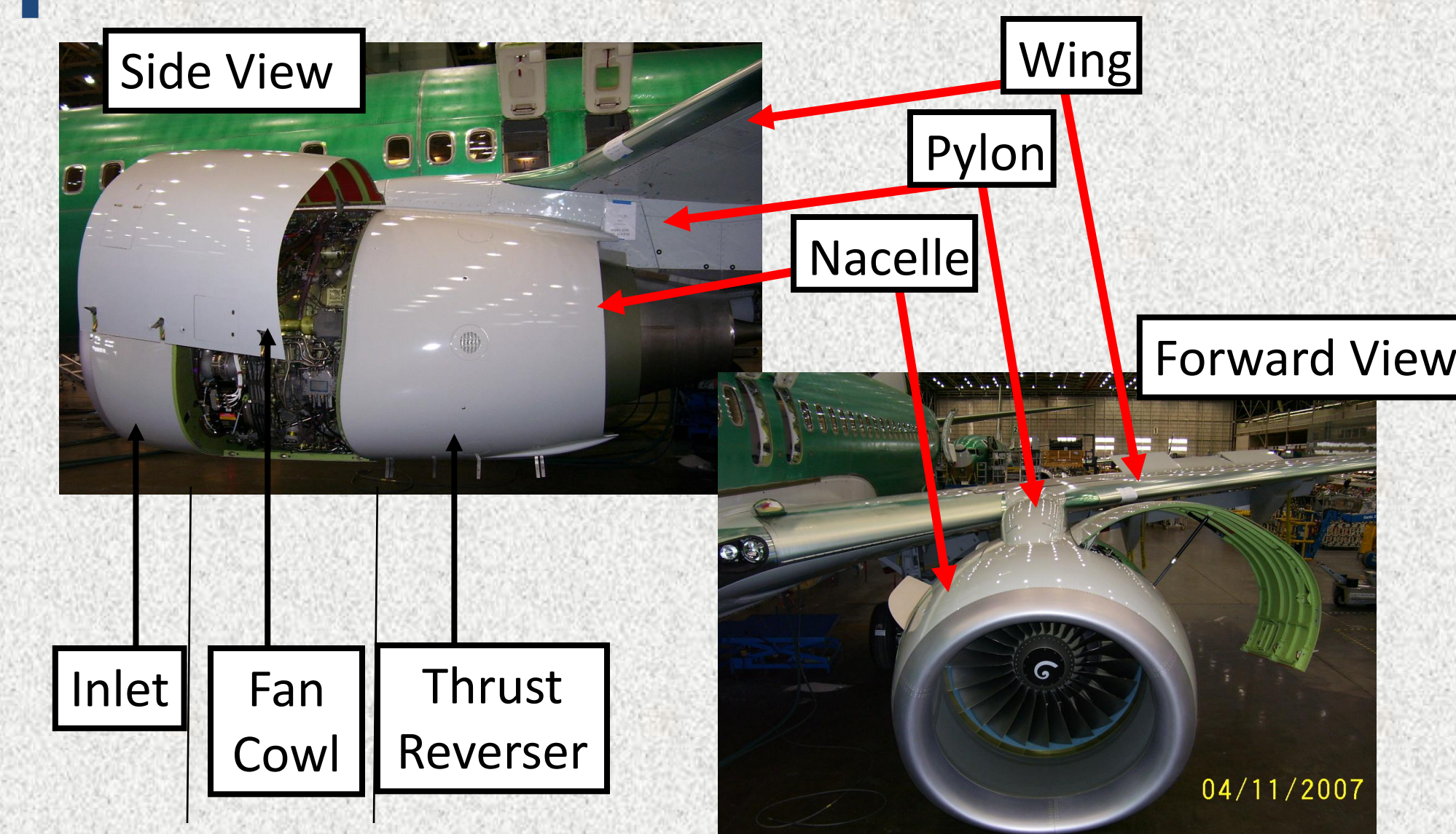
- Strut/Nacelle
- Wing leading Edge
- Fuselage sections



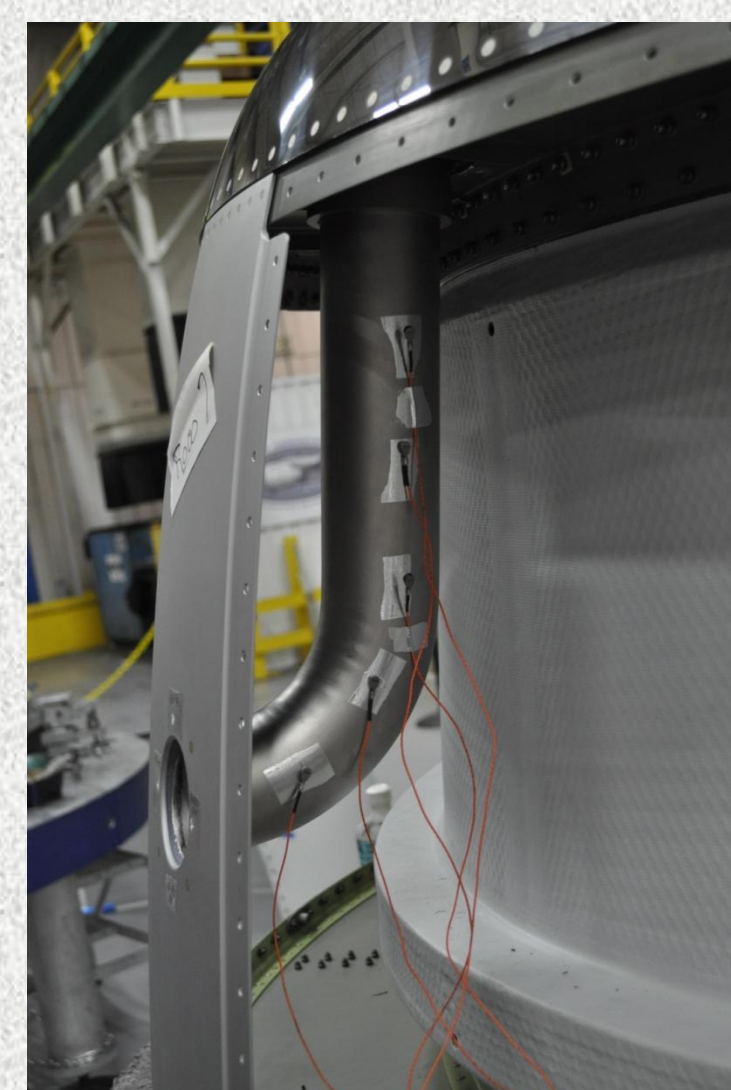
787 COMPOSITES



737 TRADITIONAL METALS

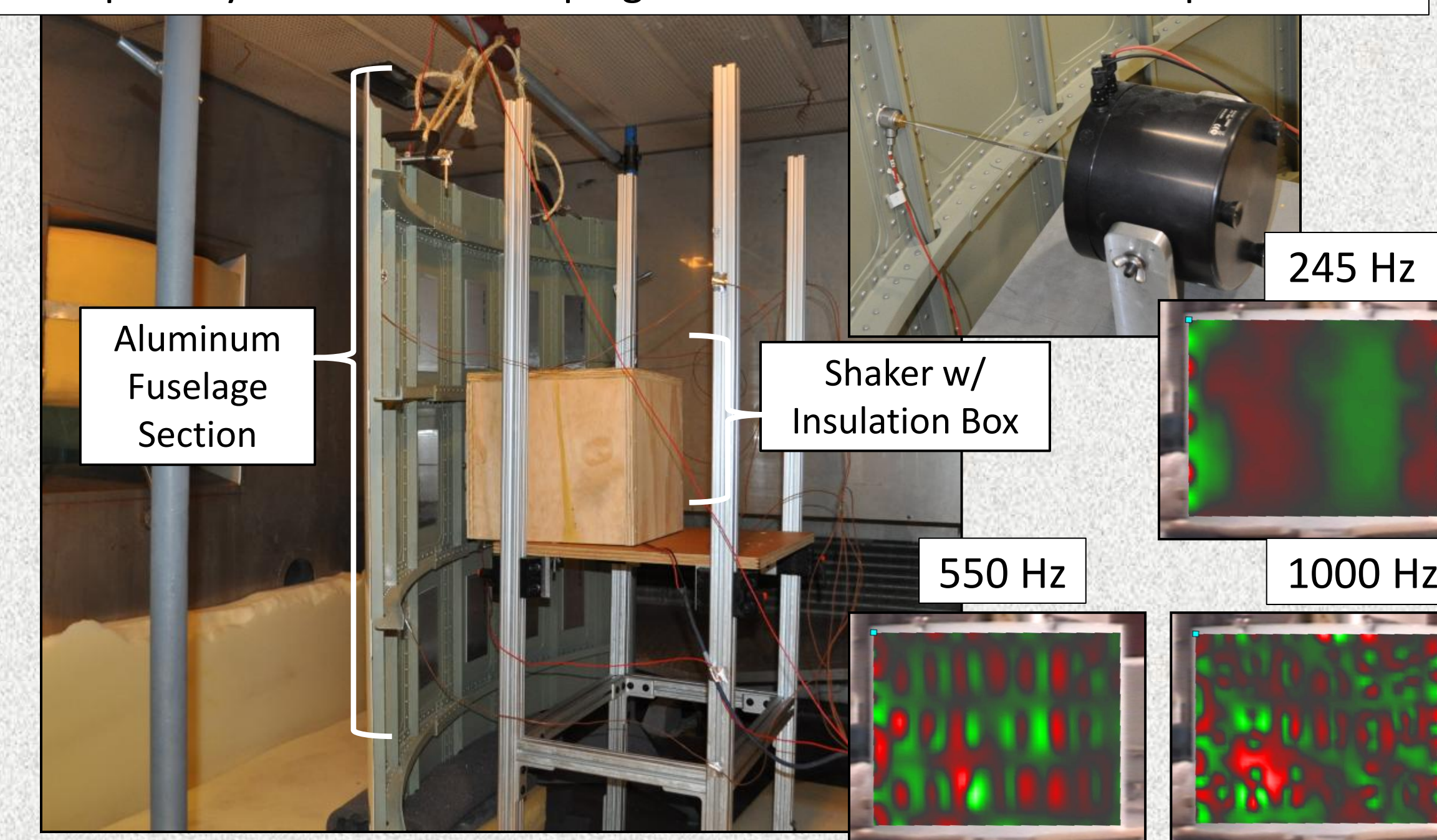


Tap tests were performed on the exhaust pipe for the anti-icing system on a nacelle. We were checking for resonances below 2000 Hz.

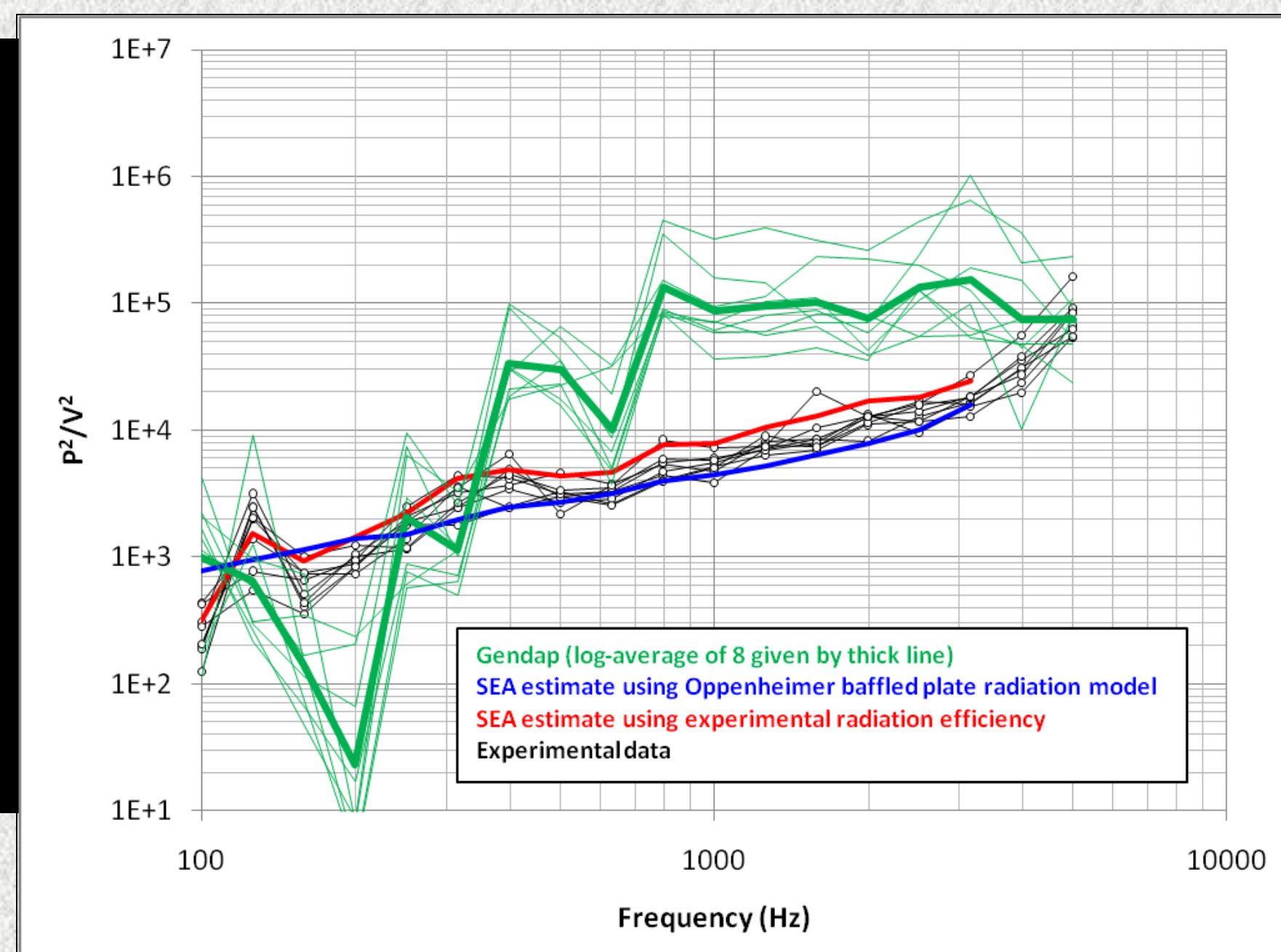
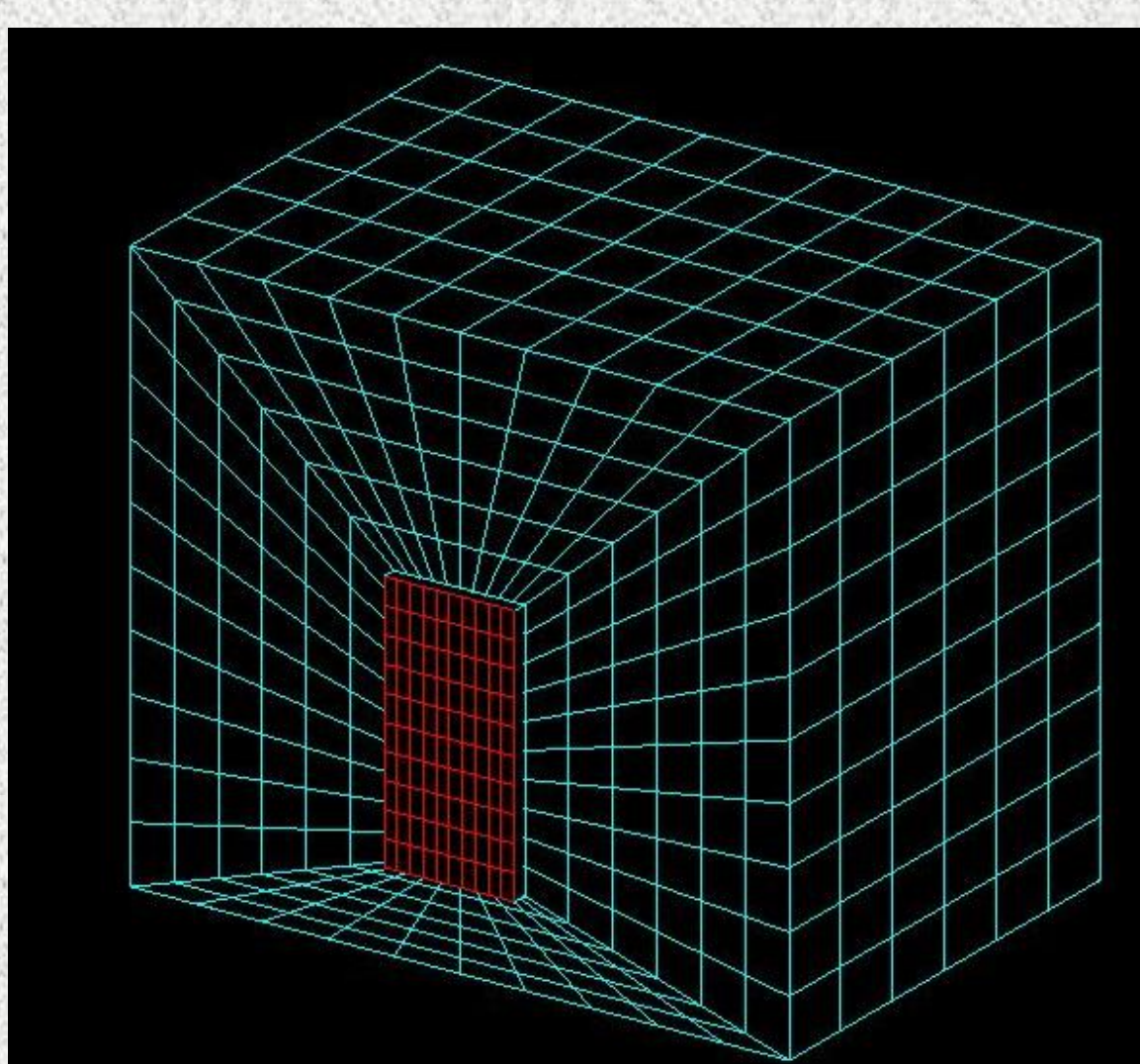


Summer Work Acoustics Lab

An aluminum panel, aluminum panel with 50% damping, and a composite panel were tested in an environmental chamber to develop testing capability to measure damping tile effectiveness at low temperature.



An excited composite panel was modeled in Patran and the panel coupled with an acoustic reverberation chamber was analyzed via Gendap. Results showed that Gendap modeled the room as under-damped, providing input for code modifications.



Other Projects:

- Calculating Engine Sound Pressure Levels
- Characterize Environmental Chamber's damping characteristics
- Assist in impedance test of Nacelle acoustic lining

Software Education:

- Patran (Finite Element Modeling program)
- Matlab (for post-process data analysis)
- CATIAv5 (3D modeling program)
- LabVIEW (setting up and running various filters)



CALVIN
MINDS IN THE MAKING

The temperature dependence of the damping tiles had a strong effect on the modal characteristics.

