RIFE INTERNATIONAL

PROJECT OVERVIEW

Smithsonian Institution
National Air & Space Museum
Washington, DC

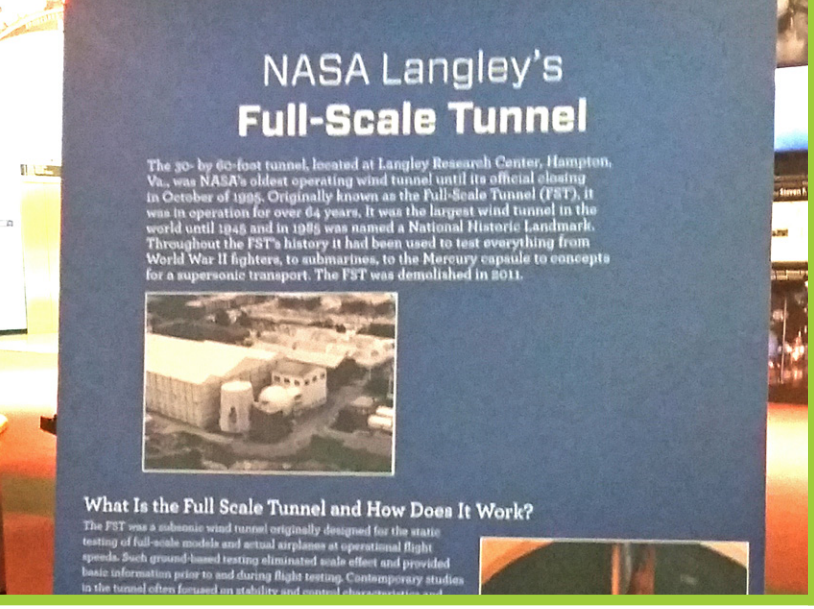
PROJECT TYPE

- Construction
- Tunnel Fan Installation

PROJECT SPECS

- Rigging and installation of 30’ x 60’ wind tunnel fan artifact in Gallery 100 of National Air & Space Museum
- Artifact weighed more than 8 tons; required gantry hoisting system to rig into position
- Cable suspension system anchored 60 feet above gallery floor to building rafters
- Extensive site protection around exhibit staging area and surrounding artifacts

The Smithsonian Institution partnered with Rife International to furnish all supervision, labor, and custom materials to install the NASA Langley Research Center Full-Scale Tunnel Fan artifact at the National Air & Space Museum. As the only artifact of its kind remaining in the world, Rife International approached the performance of this task diligently, treating each project element with extreme caution and precision. The RIFE team was responsible for fabricating a custom back plate for the artifact and lifting lugs used during a test hang procedure conducted at the Udvar-Hazy Center in Chantilly, Virginia.



CHALLENGES

- Due to the complexity of the risks involved with the project, Smithsonian's in-house engineers were reluctant to perform this scope of work by themselves.
- Site protection included the carpet floor surrounding the artifact exhibit as well as surrounding artifacts with customized protection materials.
- The custom back plate required multiple measurements in order to line up with the tunnel fan's front plate. Because of the time period in which the fan was constructed, there were variances between the distances of each of the holes made for the bolts. This made lining up the front and back plate very difficult.
- Other existing conditions, such as the curvature of the fan blades due to spinning in one direction for multiple years, created a whole new range of complexity.
- Each hanging lug required custom, deep impact welding in order to obtain the proper offset needed for hanging cables to miss the fan blades.
- Cranes couldn't be used because of weight distribution issues and the fumes produced by the crane, so RIFE International employed the use of a gantry system along the supports below the floor to satisfy the cautioned weight limit and protect other artifacts in the area.

RESULTS

Despite multiple challenges, RIFE International completed the project within the contract budget and on deadline. Strong coordination with the Smithsonian staff and project subcontractors was critical to the overall success of completing this unique project.