

V-22 Plugs & Covers



★ CLIENT PROFILE

Naval Air Station Patuxent River, also known as NAS Pax River, is a United States Naval Air Station located in St. Mary's County, Maryland on the Chesapeake Bay near the mouth of the Patuxent River. It is home to the U.S. Naval Test Pilot School, and serves as a center for test and evaluation and systems acquisition relating to naval aviation.

NAS Patuxent River is home to the Naval Air Systems Command (NAVAIR) Headquarters, the Air Test Wing Atlantic, and the Naval Air Warfare Center Aircraft Division (NAWCAD) Commands.



THE CHALLENGE

The U.S. Navy identified the need for improved, environmentally safe, and user-friendly ground service plugs & covers. The V-22 had been grounded due to unsafe flight and was under evaluation.

The client identified the following problems:

- There were so many aircraft plugs & covers needed that it required a large tote to carry them, which took up additional space inside the troop cabin of aircraft and prevented personnel from performing efficiently
- Existing aircraft plugs & cover materials became saturated with aircraft hydraulic oil and jet fuel
- Several plugs did not fit properly
- Pitot tube covers were being destroyed by heat
- Engine inlet cover was made out of hard plastic, was difficult to install, and dangerously unsafe as it became like a sail when personnel went to install or remove due to high winds typical of flight line and naval vessel environments
- APU exhaust cover was made out of heavy metal, which easily came loose and became a potential projectile, creating danger to both aircraft composite and foremost, to human beings
- No cover existed for mid-wing opening when aircraft was in stow position, exposing sensitive area to potential contamination
- The current contractor (Bell Boeing) charged more than \$50,000 per plug set, and would not sell one piece at a time

AND THEN SOME...

Within 24 hours of first meeting with the client, FSM proposed a design of a full nacelle *system*, which addressed each of the problems identified above *and* simplified the cover application and removal process. The new system now fully enclosed the nacelle from exhaust and allowed for maintenance without the need to remove the cover, creating both ease and efficiency. Additionally, the full Nacelle cover could be applied or removed in three minutes or less. And FSM was able to offer all of this at less than half the cost of the previous contractor, meaning the client received everything they requested...and then some.

