



**PORTRAIT**

**Systems Design and Manufacturing Demonstration Wing Team**

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The future is here for our team. We just created the wings for Boeing airplanes that have yet to be imagined. We've been working on an exciting advanced technology wing program in conjunction with the U.S. Navy. We pooled some of the best talents of Phantom Works and the Advanced Systems unit of Integrated Defense Systems to design a hybrid demonstration wing made of advanced composites and metals. The goal was to reduce traditional manufacturing and assembly costs by 25 percent. We not only reached that objective, but we also achieved efficiency and quality breakthroughs in our autoclave fabrication of composites, additive manufacturing of metallic components, and advanced assembly technologies. We are proud to be working as a one-company team on the kind of technologies that other people only dream about. We were asked to find a way. And we did.

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*From left to right*

**Don Drouin**  
Technology Integrator,  
Advanced Systems, IDS

**Jim Pizar**  
Manufacturing Engineer, Phantom Works

**Tim Tyahla**  
Project Manager,  
Phantom Works

**Dave Heck**  
Design Engineer and Associate  
Technical Fellow, Phantom Works

**Robin Wippich-Dienhart**  
Strength Engineer,  
Phantom Works