Employees Devise Lean Way to Assemble Super Hornet

Boeing employees working on the Super Hornet's forward fuselage have given assembly a new twist that they call the "wagon wheel." The new concept supports lean manufacturing initiatives already in place and helps workers do their jobs more efficiently.

Instead of arranging the fuselage sections in a straight line one after another, the wagon wheel design positions fuselage sections in a circle, each facing a center setup and supply area. The result is a more economical installation line that takes up less floor space and, for the employees, the travel distance for parts, tools, equipment and supplies is the same from all installation line positions.

Kent Beran, director of F/A-18E/F assembly, expects the wagon wheel concept to yield favorable results. "This is going to reduce our cost and cycle time and improve the quality of our product, because it's going to enhance communication," he says. "Everyone will be working side by side, and be in each other's line of sight. People who see each other are more likely to discuss and resolve problems."

The idea for the wagon wheel came from members of three High Performance Work Organization teams who install electrical, hydraulics, fuel and avionics systems into the forward fuselage section of the Super Hornet. As they looked ahead to full-rate production of the Super Hornet when there will be as many as eight forward fuselage sections in the installation line, they identified improvements to the traditional straight-line concept.

Distance and communication were the biggest problems. If someone working on the first fuselage section in the line needed to talk with someone working on the last one they would have to walk the entire length of the assembly building. Getting parts and supplies would also be a short walk for some teams and a long walk for others.

"No matter where any of us might be, this concept will save on the distance we have to go to get materials and parts," says Jurl Claude Jr., foreman and team leader on the E/F forward fuselage installation line. "It's a modular structure that's designed for ease of tooling and manufacturing. It will really change the way we do business."

The HPWO teams determined that the traditional straight-line concept would result in increased cycle time and labor hours. So they proposed the wagon wheel arrangement. Where eight forward fuselage sections would be placed in a circle around the setup and supply area, which would contain panstock, tools, equipment, parts, as well as personnel from the engineering, support and quality organizations.

Initial setup of the wheel has started in Boeing facilities in St. Louis where the Super Hornet is assembled. As this takes place, E/F forward fuselage installation teams will transition gradually from the current straight-line arrangement to the new, circular pattern. By midyear, there will be five forward fuselage sections in the wheel.

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