



# ASC ENGINEERING FACT SHEET

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## C-17 Main Landing Gear Pod



### DESCRIPTION

The main landing gear pod assembly of the C-17 aircraft is a very complicated structure that encloses the main landing gear and other systems such as the APU and ram air turbine (RAT). The original design was adequate in service but was very hard to manufacture. The C-17 program was suffering from highly excessive production costs associated with this assembly in the form of increased span time, high touch labor, and excessive rework and

### SUMMARY

#### PROBLEM:

- The C-17 program was experiencing excessive production costs associated with the main landing gear pod assembly. The span time as well as the touch labor hours was over 5 times the amount of standard time allocated to this particular assembly. In addition, the MLG pod was incurring an enormous amount of rework and repair costs with each aircraft assembled.

#### SOLUTION:

- A team from the company, SPO, and DCMC was put together to study the root causes of the problem. The team identified many design-related manufacturing features of the pod that were the primary cause of the problems in production.
- The team was augmented with design engineers and began the task of redesigning the MLG pod using "design for manufacturing/assembly" (DFMA) techniques. The result was a new design that greatly reduced the costs of manufacturing the MLG pod for the C-17 aircraft.

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repair with each aircraft. The team assembled to study the problem revealed most of the cost drivers to be poor design from a manufacturing standpoint. A redesign effort was begun and approximately nine months later the MLG pod was completely redesigned through the "DFMA" format. The results have been nothing short of spectacular:

- 47% reduction in the number of fasteners required to assemble
- 53% reduction in the number of parts required
- 10 days eliminated in the Pod assembly span time
- 70% reduction in the amount of time to install assembly to aircraft
- 85% reduction in the Pod rework/repair costs per aircraft
- \$1.3M total cost savings estimated per aircraft



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