



Improving efficiency for landing gear component assembly

A Boeing Distribution Services and Middlesex Aerospace Case Study

Company overview

Middlesex Aerospace is a strategic market leading British aerospace manufacturer and global aerospace engineering company. With over 75 years in the industry, they are an innovator, leader and strategic manufacturer of aerospace engineering components.

The challenge

Middlesex Aerospace manufactures the damper units for landing gears. During taxiing and landing there is propensity for the landing gear to "shimmy" and this unit prevents this from occurring.

Initially Middlesex Aerospace wanted to have a more competitive solution for their hardware parts for their damper unit together with direct line feed to provide parts into a two bin system to ensure peace of mind through having stock on site and ease of access.

Middlesex Aerospace wanted to find a partner who could help streamline their supply chain and help them to reduce the overall cost of supply. As part of our continuous improvement program with Middlesex Aerospace we wanted to identify further opportunities to reduce and simplify the supply chain

for their machine parts. These were being sourced through a number of European manufacturers and again wanted to see if improvements could be made.

The program has evolved over the years from individual parts in line side bins through to a fully managed kitting service at point of use for hardware and also more complex machined parts. By consolidating their supply chain we were able to offer not only a more competitive solution but also helped Middlesex Aerospace reduce their overall cost of managing supply.

Our solution

Our relationship with Middlesex Aerospace began with providing hardware parts in lineside bins for their A320 damper units. Six months after the initial contract we conducted a joint kaizen event and were able to make recommendations to move to a kitting solution to save valuable production time for the customer.

Through collaboration with a cross functional team from management to assembly floor, we created a fully build sequenced bill of material for us to create the kits. The company wanted to minimise the amount of time the engineers visited to the stockroom per day in order to maximise production hours.

With the addition of complex machine parts to the kits, Boeing Distribution Services took over the full management of the supply chain and integrated them into the kits along with the existing hardware already provided.

In 2020, we offered additional value to the customer as an operational solutions partner by providing Customer Managed Inventory for kit requirements. Through this bin management solution for the kits, we provided a scanner, necessary software, and training. This allowed Middlesex Aerospace to scan kits they wanted to replenish in line with their build requirements and only calling kits when needed therefore minimising further their inventory holding.

How we helped

Through our effective collaboration with Middlesex Aerospace we have been able to provide:

- Streamlined administration - Middlesex Aerospace used to procure 46 individual part numbers but through our assembled kits this has reduced from 46 to a single part number
- Each kit now gives the fitter all the parts needed at point of use, providing significant operational efficiencies
- Consolidation of kits through one single company improved overall delivery adherence and reduced the burden of managing multiple suppliers
- The ability to pull the kits in line with build requirements – eliminating over stocking and improving cash flow
- Accurate stock levels also ensures better utilization of valuable production floor space
- Boeing Distribution Services holds a buffer stock of finished kits, in line with customer forecast to protect production and guarantee ability to respond quickly to changes in production schedules

Middlesex Aerospace
were able to increase
their production
capacity by

20%

Benefits

Through the benefits of consolidation and the kits being available at point use, Middlesex Aerospace were able to increase their production capacity by 20%, reduced their inventory holding whilst streamlining the supply chain and administrative burden. With the added enhancements to availability and accurate stocking, the company were able to leverage the additional capacity for growth opportunities within their existing production footprint without the need for expansion.

- Forty-six separate part numbers reduced to one
- Booking in/out time reduced from 4 hours per batch to 30 minutes
- Operation sequenced part layout, mistake-proofing, integration of assembly instructions
- 60% Reduction in CofCs
- Build time saved equivalent to 1 day per week
- Administration time reduced in finance, purchasing, saving 15% of workload
- Measured cost saving - 1 skilled engineer from assembly redeployed for new business growth
- Helped retention of 100% of their business with Middlesex Aerospace's end customer

“ Elimination of waste and adding value to production lines is a deep-rooted focus of the Middlesex Aerospace continuous improvement effort. Through joint lean events and project coordination with Boeing Distribution Services, jointly resourced service teams have provided a best fit kitting solution to enable clear visibility within the supply chain. ”

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