

Aircraft Manufacturing Capacity Increase and Cost Reduction Case Study

Tactical Engineering Solutions (TES) provides practitioner-based consulting and training services that deliver measurable results for our clients. We work with our clients to understand their objectives, identify solutions that are capable of execution, and develop appropriate plans to achieve, validate, and sustain the intended benefits.

SERVICES:

**Operations
Performance
Lean
Six Sigma
Rapid Improvement
Logistics
Quality Management
Program Management
Change Management
Collaboration and Time
Data Management
Training &
Certification**



Opportunity: : An aviation manufacturer of piston driven aircraft which are manufactured using state of the art Fiberglass Reinforced plastic bodies, contacted TES to help them develop a more efficient manufacturing process. The customer had heard of the successful aviation projects that TES has performed in applying automotive manufacturing techniques to the aviation industry.

Project Goal: The project goal was to improve the throughput to achieve the production improvements of 30% more aircraft utilizing the same manufacturing space and less headcount, and a 25% reduction in WIP inventory.

TES has the depth of skill sets and experience to expand an organization's ability to change and improve, and was contracted to support the customer and deliver tangible results. TES was contracted for a dual role: to provide Industrial Engineering support for a throughput increase of 30% more planes while reducing the plant's number of operators required for production. The opportunities for manpower reduction had to be engineered and implemented within three months. The opportunities for productivity improvement also had to be implemented with zero impact to quality or ergonomics. Approximately 250 process maps were developed across the entire manufacturing and supporting departments including Final Assembly, Body Construction, Paint Shop and Supply Chain Management. TES provided the plant engineers with the specific skills in Value Stream analysis and line balancing analysis needed to complete this project. The project methodology was as follows:

- Process and Value Stream Mapping
- Standard Work Definition and Documentation
- Supply Chain Management
- Integration of Supply Chain into current ERP infrastructure
- Implementation of Bar coded warehouse logistics with traceability requirements
- Operator Instructions
- Identify constraints and bottleneck areas
- Provide a work leveling study and line balance solution
- 5s Implementation

TES provided Excel-based software that was used to develop the Work Leveling Charts, and worked with internal customer staff and ERP software consultants to integrate the required traceability issues necessary in the aviation industry.

Following the implementation of the project recommendations, TES delivered on its required cost targets and surpassed its productivity improvement targets.

Benefits of Project:

33% throughput improvement in aircraft
Inventory accuracy improvement of 20%
Reduction of WIP in excess of \$3.2 Million



Tactical Engineering Solutions Overview

SOLUTIONS:

Continuous Monitoring
Process Flow Mapping
Workstation Layout
(5S)
Material Movement
Problem Solving
Workgroup Development
End User Training
Supplier Development
Value Stream Mapping
Standard Work
Workload Optimization
Simulation
Six Sigma
Facility Layout
Visual Factory (Andon)
Pull Systems
Enterprise Performance

For more information on any of our products or services please visit us on the Web at:
www.tacteng.com

TES is a Manufacturing Engineering services firm focused on helping our clients develop **and implement** sustainable operational improvements that deliver measurable results. We work in a collaborative manner with you and your team through the difficulties of the implementation phase and we can ensure that changes deliver and sustain improvements for your customers and staff.

Our transformation work focuses on three elements:

- Developing new operating systems to improve productivity and flow using Lean Six Sigma techniques, with limited capital investments
- Creating the performance management system for leaders to monitor and improve performance
- Building realistic, practical capabilities and confidence that our clients will need to continuously improve

Our specialists in Lean Six Sigma can help clients deliver performance by:

- Developing transformation programs (e.g. labor and manufacturing efficiency improvements, process improvements)
- Supporting existing change initiative
- Conducting performance diagnostics
- On site facilitation for Value Stream Analysis and Kaizen events
- Creating performance management systems (e.g., tracking tools, accountability programs)
- Building organizational capabilities
- Executive leadership and coaching
- Zero cost productivity improvements

We bring best practices from leading manufacturers from around the world and a broad base of industries. We measure our success by the sustainability of our impact and the capability we transfer to clients.

About Us

Tactical Engineering Solutions is a veteran-owned/women owned disadvantaged small business, serving the business needs of both private and public sectors. Headquartered in Michigan, our roots originate in the manufacturing industry and as we have grown, our portfolio of resources continues to expand upon this foundation into other industries, to include Transportation, Electronics, Aviation, Aerospace, Healthcare, Power, Department of Defense, and more.

It is this rich heritage that allows Tactical Engineering Solutions to support our clients with a first-hand understanding of the challenges that businesses face.

Tactical Engineering Solutions is registered with Dunn & Bradstreet and the Federal Government's Central

VISION

TES executes programs that are on-time, on-budget and technically accurate to help our clients reduce overall cost and improve throughput while increasing customer satisfaction.



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