

LYCOMING

2005-2010

“The journey to premier is not about the end-state. It’s about the path we choose and impact we make!”
- Ian Walsh, SVP & GM, 2005-2009

“Management change does not change Lycoming’s vision, our principles of premier or our pursuit of excellence. Relentless Improvement is at the very core of success.”

Michael Kraft, SVP & GM, 2009-

Lycoming’s world turned upside down in 2002-2004. Major quality issues led to aircraft groundings and crippling increases in product liability costs. No significant product development had been conducted in over a decade. Sales were dwindling. Customers were walking away. The physical plant had not been renovated in years. The supply chain was faltering. A strike and more than eight years of stalled negotiations with the UAW had hourly and salaried labor pitched against each other in daily battle. The ongoing viability of the business was in serious doubt.

*With new leadership in place on January 1, 2005, the Lycoming team started on a great **Transformation** built on the foundation of Lean Principles.*

The Transformation started with a clear Vision and fundamental behavioral Principles.

New Lycoming Vision:

To be the premier aviation engine company recognized for our products, innovation and customer service.

ACHIEVEMENTS (2005-2010)

Safety (EH&S): Environment of Prevention

- Logged 1.8 million hours without an LTIR
- Textron Safety Award in 2006
- Created Near Miss Index as Leading Indicator-
Textron Best Practice

Quality: Six Sigma Performance

- AS-9100 certification achieved and maintained
- Created new VSIP (Value Stream Improvement Process) – *Textron Best Practice*
- Developed new QIP (Quality Improvement Process) - *Textron Best Practice*
- Created Quality Impact Score measuring entire product life-cycle – *Textron Best Practice*
- Created new QSV (Quality, Speed, & Value) supplier performance process and award
- Trained all Lycoming Employees to use Lean tools through Practical Problem Solving

Delivery: Top Supplier Status

- Became its first engine supplier to achieve “top supplier status” for 12 months of perfect delivery, quality and cost
- Measuring Customer Response Time; delta of actual ship date days VS requested ship date

Cost: Plan for Profit

- Developed new PFP (Plan for Profit) process resulting in multi-million dollar hard savings – *Textron Best Practice*
- Instituted all employee suggestion system to collect employee improvement ideas
- Instituted cross-functional Inventory Management Process (IMP) resulting in inventory reduction without sacrificing on-time delivery

Leadership & Teamwork: Journey to Premier

- Created an Integrated Approach to Deploy Six Sigma Resources
- Instituted new RBO (Relationship by Objective) process with UAW leadership committee – *Textron Best Practice*
- Shingo Silver Medallion Recipient 2008
- Employer of the Year Award from Dept. of Pennsylvania Veterans 2007
- Featured on Discovery Channel: “How It’s Made” (2008)
- Voice of the customer used as the basis for our multi-generational new product development planning and launch via our PLCP (Product Lifecycle Process) and DFSS (Design for Six Sigma) gated processes.

PEOPLE: Empowered and Aligned

The most profound transformation over the last several years is the mindset, culture and behavior of Lycoming’s employees. We have third and fourth generation workers. The beginning of our transformation started with a rapid infusion of training at all levels. Practical Problem Solving continues to be taught to every employee. Basic lean tools such as 5S, materials & tools at point of utilization, standard work and kaizen (under the guidance of Shingijutsu Global consultants) were foundational efforts and are now part of our employees’ daily mindset and behavior.

LYCOMING

PROCESS: *Value Stream Oriented*

Lycoming is the leading designer and manufacturer of general aviation piston aircraft engines around the world. We created and instituted our Value Stream Improvement Process (VSIP) as part of our Leadership Standard Work. VSIP is designed to measure "flow" through our process, by measuring every single disruption from our supply chain, manufacturing, assembly, test and delivery to our customer. Our business process starts with robust VOC collection which drives our New Product and Service Introduction (NP&SI). We manage daily operations through a Textron best practice SIOp (Sales Inventory & Operations Planning) process. Our Quality Improvement Process (QIP) is another major part of our operations focusing on continuous quality improvement.

PRODUCTS: *65% Market Share*

Lycoming currently builds 4,000-5,000 FAA certified new, rebuilt, and overhauled engines yearly and delivers these along with spare parts to a global market. In addition, the Thunderbolt product line was created for special applications of experimental non-certified engines. Over 750 different customer variations are contained with the product portfolio serving more than 60 different aircraft manufacturers. Lycoming's strong focus on relentless improvement have allowed it to our its cost-savings back into new product developments like the iE2 integrated electronic engine and 233 Light Sport Aircraft engines.

PLANT: *Factory of the Future*

Lycoming Engines was founded in 1929. The Williamsport, PA facility comprises 700,000 square feet of workspace. In 2005, the Lycoming Leadership Team deployed a master facilities plan aligned with Lycoming's new "Art of the Possible" facilities vision. This vision was developed to achieve a state-of-the-art manufacturing, assembly, and test environment based on lean principles. Also included in the vision was a broader view of the creation of an industrial campus that, in partnership with city government and the local Chamber of Commerce, would assist in the revitalization of the surrounding neighborhood.

CORPORATION: *Global Premier Brand*

Lycoming Engines is an operating unit of Avco, a wholly owned subsidiary of Textron Inc. Lycoming Engines is part of the Textron family of business totaling \$10.8B in revenue.

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