

LeTourneau, Inc. Breaks New Ground with the Theory of Constraints

Longview, Texas – An icon in American manufacturing is undergoing a large internal transformation. LeTourneau, Inc., maker of log stackers for the forestry industry, jack-up rigs for offshore drilling and the world's largest wheel loaders, has decided to implement the Theory of Constraints throughout its largest vertically integrated business groups.



Founded by R.G. LeTourneau in 1920, LeTourneau, Inc. pioneered and practically invented the modern earth moving business. In fact, 70% of all Allied earth moving equipment during WWII was supplied by LeTourneau. Throughout its rich history, LeTourneau has specialized in large scale and high load bearing equipment for a number of industrial applications. Today, LeTourneau services several distinct and diverse core markets; oil and gas, steel, mining and forestry products.

LeTourneau supplies these markets primarily through three major facilities; a shipyard located in Vicksburg, Mississippi, a large facility in Longview, Texas that features its own specialized steel mill, heavy fabrication and assembly facilities with 28 acres under roof, and a new facility in Houston, Texas.



The LeTourneau wheel loaders, the largest in the world.

LeTourneau is looking to take advantage of heightened demand using the Theory of Constraints to better synchronize and manage its five Longview based business groups. This direction was identified in an intense strategic planning session attended by LeTourneau senior management in August 2004. One challenge the participants immediately identified was the inability to effectively capacity plan and then execute across all business groups. Every major end item that LeTourneau sells requires the interaction of at least three business groups. They concluded that LeTourneau had to create an integrated, coherent, and prioritized system of management that balances and maximizes opportunities in all business groups and core markets for the best ROI for the company as a whole.



35%+ Of All Jack-Up Rigs Bear The LeTourneau Name.

Standing squarely in the way of achieving this objective were two major obstacles. The first obstacle was a series of old-world cost accounting based policies and practices such as transfer pricing and localized artificial batching at the business group and resource center level that, among other things, expanded lead times, inflated inventories, decreased responsiveness in time sensitive markets and increased unnecessary expenditures.

The second obstacle was the lack of visibility across the enterprise. Despite having a well recognized ERP package, LeTourneau found it nearly impossible to plan and control from a company perspective because delays and disruptions cascaded throughout the organization passing between the various business groups creating massive misalignments in priorities, waste and finger pointing.

Applying this solution appeared to be a daunting task due to the number of interdependencies and diverse markets involved in the LeTourneau business that compete for the supply chain's capacity.

LeTourneau's vertically integrated supply chain begins with its Steel Group that supplies specialized, custom plate directly to its Component Group and Marine Group. In addition to supplying its sister business groups, the Steel Group also sells direct to outside customers looking for high strength alloys, unusually thick plates, small batches and quick response. The Component Group then assembles major components for the Equipment Group, maker of wheel loaders and log-stackers, the Marine Group, maker of jack-up kits for offshore rigs, and the Drive Systems Group, maker of heavy duty electric drives for both the Equipment and Marine Groups. The Component Group increasingly supplies products to LeTourneau's newest business, the Drilling Products Group in Houston.

The Theory of Constraints (TOC) seemed to be a perfect fit for managing the complexities throughout this supply chain. TOC is the brain child of Israeli physicist Dr. Eliyahu Goldratt, who is probably best known for writing the best selling business novel, *The Goal*. TOC's primary tenet is that all complex systems are governed by inherent simplicity – that, at any one time, there are very few factors that actually dictate the outcome of a system. Chad Smith, Managing Partner of Constraints Management Group, a leading TOC service provider says, “The trap that most businesses and managers fall into is a tendency to try to control everything and everywhere. The fact is that, no matter how complex you think your system is, there is almost always, a reasonable and far simpler way to control and execute based on identifying and managing a few key areas or leverage points.”

What does the Theory of Constraints mean at LeTourneau? Just ask Dan Eckermann, President and CEO of LeTourneau, Inc. “The promise (of TOC) is to achieve our company strategic vision – ‘We will be a world class problem solver via our large scale, steel intensive, high-load bearing, highly sophisticated *products, projects and services*, with happy stakeholders.”

The Steel Group was chosen to implement the TOC concepts first due to the fact that they represent the beginning of the supply chain and alternative steel sources simply do not exist in one of the hottest steel markets in the last 30 years. “The Steel Group was critical to start with because by stabilizing the source of steel for the LeTourneau business groups there will be an immediate and positive impact on the amount of disruption experienced by the other business groups,” say Smith whose firm is helping LeTourneau implement TOC. “There is also another advantage. By applying these concepts at the steel mill, LeTourneau can not only improve service internally, it can also immediately take advantage of servicing a hot market.”



LeTourneau Steel Mill pouring huge steel ingots.

The results are proving him right. In just three months, the Steel Group reported an increase of 14% more volume with no additional staffing and 5% LESS overtime. Average lead times were reduced 50%. Reliability improvements went from 67% on time to 87% and are steadily improving. As of this press release they had just completed four straight weeks at 90+%. Dave Blazek, Vice President and General Manager of the Steel Group, says, “The most significant improvement for the Steel Group that TOC has given us is **total** visibility of our facility from one end to the other end. And its visibility is not just limited to a few select individuals, but every employee in the Steel Group. We now manage from a proactive style rather than a reactive style due to the increased visibility.”

Blazek points to a recent example of how this change has increased flexibility. “Recently, we had one area go down for three days, but the visibility provided by DBR+ (a TOC compliant software package) allowed us to effectively manage our resources, and recover very rapidly. Before TOC/DBR+, we would have just sunk in the quagmire of stacked product and confusion.”

According to Eckermann, there is still a lot of work to do. TOC is currently rolling out to the rest of the Longview based business groups and will soon be integrated through a Central Planning and Control function. In addition to manufacturing and supply chain improvements, LeTourneau is also implementing Critical Chain, a new way to manage development and large scale projects based on TOC principles.



LeTourneau executives in their August 2004 strategy session.



“TOC is a common sense, holistic approach that allows the company to identify the few physical and logical leverage points where improvement can quickly cause quantum improvement for the organization as a whole.”

Rudy Harris
Vice President, Company Improvement

For more information on LeTourneau, Inc. visit www.letourneau-inc.com

For more information on TOC or Constraints Management Group, LLC visit www.thoughtwarepeople.com