

# Laitram Machine Shop, Inc.— Growing a Machine Shop Around an Inventor's Ideas

Like many machine shops and similar businesses, the Laitram Machine Shop, Inc. was developed in response to specific customer needs, growing along with its customers. Unlike some machine shops or similar businesses, the drivers for growth were essentially the ideas and inventions of J. M. Lapeyre, founder of the Laitram Corporation. Early in Laitram's development, management saw the benefit of having a machinery function "inside the building", and available to engineers and designers.

The Laitram Corporation is now a worldwide organization with more than 1,200 employees. The Laitram Machine Shop, Inc. remains the company's resource for prototyping-to-manufacturing machining needs. In 1999, the Laitram Machine Shop began partnerships with companies outside of the Laitram Corporation. The expanding product list currently includes components for the oil and gas, and biomedical industries and government defense agencies.

The Laitram Machine Shop combines the newest machining and digital technologies with an ingrained continuous improvement culture, and a sense of craftsmanship. Located in suburban New Orleans, The Laitram Machine Shop is thought to be one of a handful of shops in the Texas, Louisiana, Mississippi region fully EDI capable and ISO9001 compliant.

"Laitram's equipment roster, facilities and expertise with digital information qualify us as a high-end machine shop," said a company spokesperson. What makes their output interesting is the wide range of products they turn out, and their frequent involvement in early product development.

Pat Horchoff, Technical Advisor, says that many of the components they machine "fit in the palm of your hand", like the complex housings for sensitive digital equipment. But on any given day, the work produced by The Laitram Machine Shop runs from



*Two-spindle horizontal machining cell, with RGV and 32 pallet stoker system, optimizes spindle time.*

one-off engineering prototypes to lot sizes of a thousand or more. The product list includes: parts for automated seafood processing equipment and digital marine seismic instruments, sprockets and shafts for modular plastic conveyor belts and parts for alternating tread stairs, as well as components for the oil and gas and biomedical industries and government defense agencies.

Work in the shop falls into several categories, beginning with engineering development - a critical part of new product development.

A second category of work consists of manufacturing production parts. These are for stock in a few cases, but are generally produced on demand. In addition to the machining process itself, Laitram machinists frequently fill the role of consultant at the prototyping and early manufacturing phases of a product. This collaboration between shop personnel and design engineer is designed to produce high quality parts that are efficient and cost effective to manufacture.

Part designs come to the Laitram Machine Shop in formats ranging from paper napkin sketches to electronic files. The technical staff and machinists are proficient in CAD/CAM and use ProE, Solidworks,

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*Closed-loop manufacturing is accomplished by using customer's electronic file to program, machine and inspect parts.*

CADKey, AutoCAD and Master Cam daily. All designs are evaluated by a team for ease of manufacturing and cost effectiveness. Possible revisions to reduce cost while meeting fit/form/function requirements are discussed with the designers. This communication between shop and customer can enhance value and improve market introduction of new products.

In order to perform the wide variety of work Laitram's machinists are asked to do, their equipment list is extensive. Their 8 CNC lathes range in size from a pair of Hitachi Seiki HT23Js with 2-1/2" bar capacity and 24.8" between centers to a Hitachi Seiki HT40G with a 39.4" swing and 63 inches between centers. Their HiCELL II has an automatic bar feed, parts catcher, full C and Y-axis, live tooling and a tool

changer allowing up to 21 tools to run on a single set-up. The 11 vertical machining centers are sized up to 63" X 25.6" table travels, RPM up to 15,000, allow for full 3, 4 and 5 axis machining, and include machines with integrated pallet shuttles. Horizontal machining centers include an Enshu 630H with 35.4" X 31.5" X 29.5" travels and a 20 HP 6,000 rpm spindle, and 3 Hitachi Seiki HG400s with 12,000-rpm spindles and 22" X 23" X 20" travels. Two of the HG400s are set up in a cell configuration with an RGV Pallet handler and a 32-pallet stocker system. Manual lathes and mills along with 3 axis Bridgeport CNC mills are placed throughout the shop to allow for prototype work and secondary operations.

The Quality Assurance (QA) department has a

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complete metrology lab for gage certification, an optical comparator and two CMMs, one with full CNC controlled scanning capability. Equally as important as any of the equipment are the 40 full-time machinists and technical personnel, and the support staff of 12.

The Laitram Machine Shop has grown in capacity and expertise to match the continuing growth and demands of its customers. Demanding schedules and exacting quality standards have provided difficult but rewarding goals for the shop personnel and management.

Andre Olivier, Senior Mechanical Engineer, Input/Output (formerly DigiCOURSE) has worked with the machine shop directing product engineering development on some of his company's more complex digital instruments. When those projects are in the works, parts of the shop have virtually become an extension of the DigiCOURSE engineering department, supporting the entire process.

To Andre, the production development process is looking for manufacturing refinement of the components, evaluating their manufacturing ease, and reducing part design costs. The goal is to reduce the time from concept to market. The Laitram Machine Shop commits to the project at a management level. Being able to receive binary data and use it to procure material, program the parts, and then inspect the final product against the original design creates a true "closed loop" manufacturing system.

Each work center in the Laitram shop has experienced technicians with 10 years-plus experience. That is a significant resource all in one location and comes with a mature shop, experienced in this high-end process. When Andre talks with a machine shop he wants to talk with the craftsmen, not with an order taker.

When Glen Donovan, purchasing agent, Intralox, Inc. places an order with the Laitram Machine Shop, it is frequently an emergency. This modular plastic conveyor belt manufacturer provides its customers with

the industry's strongest written guarantees, including emergency shipping options, and has an outstanding on-time shipping record. Glen says, "For us to deliver, our suppliers have to deliver. The Shop's ability to react to same-day emergency orders is what makes them most valuable to Intralox."

Glen says, "They handle a lot of different types of parts for Intralox; they do an excellent job of scheduling beyond the priorities of a specific job. There are so many shops out there who basically give it to the guy who yells the loudest, and that just does not make it in today's world."

When Laitram Machine Shop Manager, Barbara Waller, talks about the shop, its capabilities, equipment, software and facilities she discusses them in terms of capacity and the most current technological advances. Barbara will quickly point to the machinists, technicians and support staff as the real core of the shop's competency and ability to produce superior work for its customers. The goal is to create an interesting and challenging atmosphere.

While building over the years, the Laitram Machine Shop has retained the original focus - which is to provide outstanding support for new product development as well as cost-effective production quantities of machined parts. "The result is an efficient, expert staff of problem-solvers, working on exceptional equipment, who enjoy doing their jobs," said Ms. Waller.

To request a quote, review a complete equipment list or for contact information, visit their web site at <http://www.laitrammachineshop.com>. Or call 504-733-6000.

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