

Lehigh Heavy Forge Corp.

lssue #1 I

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BUSINESS OUTLOOK

Lehigh Heavy Forge continues to explore new opportunities for growth and diversification. Sales efforts include the hiring of a General Manager of International Sales, Volker Schaffer, who is charged with developing new business worldwide in heavy forge products. Also, a North American Sales Manager for Forged Rolls, Matt Fleig, is charged with coordinating roll sales in North America. Both men bring with them extensive experience in their respective areas of responsibility.

Lehigh Heavy Forge is committed to growing our product base. Currently, the general economic conditions have reduced demand across most product lines. Our focus now must be on cost control and improvement in quality. This is extremely important, in light of slow markets and aggressive competition. Recent quality issues are being investigated and will be solved.

Looking toward the future, Lehigh is developing investment plans that will allow us to be competitive in new market segments; however, as I have said before, investments in plant and equipment are important—but our greatest asset is the skill, loyalty and determination of our employees.

As we move forward with plans to develop new business, let's keep in mind that satisfying our customers is the key to long-term success. Again, I want to thank everyone for their efforts and dedication.

Jim Romeo

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New Olson Hardening Furnace at SRS For hardened steel rolls

Shop Talk

COMPLETED LEAN 5S EVENTS in #I MACHINE SHOP

Lean is a process improvement methodology that looks at eliminating waste from processes and improving cycle time. It's not about squeezing budgets, reducing defective product or cost reductions. One of the basic tools of Lean is called "5S" and makes decisions about how items are stored, establishes a new order for the items and maintains it. The five S's are: Sorting (keeping at hand only what is essential to do the immediate work), Straightening (setting in order, everything has its place), Shining (sweeping and cleaning the work area), Standardizing (consistent work practices and areas), and Sustaining (discipline to maintain the new way of operating). LHF has run 5S teams in the past and is looking forward to them in the future. Here are some examples and before & after results.

BEFORE

AFTER





The first Lean 5S Event was at the 10" HBM John Deere. This project improved the layout of equipment and reduced clutter from the working area.





The second Lean 5S Event was in the shipping area in southwest corner of the shop. Needed shipping items were organized and properly identified to ensure ease of use and reduce the span of time spent searching for needed parts.





The most recent phase of Lean 5S events took place in the northeast section of the shop particularly around the HBM machines. A total of more than 12,000 pounds of scrap steel was removed over the course of this project.

SAFETY IS EVERYONE'S BUSINESS

In 2012, there were a total of 16 job related accidental injuries at Lehigh Heavy Forge Corp. Of these, six were lost time accidents. The overwhelming majority of these injuries fell into two general categories: 1) strains/sprains, and 2) cuts and lacerations. We must strive to improve this record. Our goal has always to be zero accidents. It is our responsibility as employees to insure that each of us does our part to make our work environment as safe as possible for ourselves and our fellow workers.

One of the simplest ways to accomplish this is to wear all the personal protective equipment available to us, and to perform our jobs as safely as possible. Personal protective equipment should be inspected for proper fit and function EVERY TIME IT IS USED. Never alter personal protective equipment, except to use the adjustments provided by the manufacturer for proper fit.

REMEMBER: personal protective equipment, when properly used, minimizes the risk of injuries from accidents. It is up to every person to do whatever they can to prevent the accidents themselves.

WORK SAFELY!

LIFE...CHALLENGES...TEAMWORK

Life is filled with challenges and so too is work. Sometimes these work challenges are created by our customers and sometimes we create them ourselves, but it is often not the challenge but what we do because of it that sets us apart in the eyes of our customers and gives us pride in our own eyes when we look back on our accomplishments.

In the recent past, LHF was producing a "one of a kind" disc forging and through various circumstances, we lost 6 weeks against our promised delivery to the customer. Needless to say, our customer was very unhappy and asked for not only a delivery recovery plan, but also a root cause and corrective action plan to prevent similar occurrences. This article addresses not the root causes (and there were many), but what we as a team did to recover all, and more, of the 6 week delivery setback.

The delivery recovery was a 'team effort' because truly many people and most functions, on the heavy forging side of the business, were involved in designing and executing a recovery plan. The Sales department had to communicate calmly with a very irate customer and assure him (again and again) that we had a plan "with teeth" for recovery. The Technology and Treatment departments assessed the risk of proceeding with machining while the forging's mechanical acceptance properties were being developed as minimal. The Planning, Programming and Scheduling functions made room in the machine schedules to accommodate processing of this piece and quickly wrote programs for the machines without error. In #1 MS Operations, the machine operators executed these accelerated and prioritized machining operations flawlessly. They even utilized new tooling to machine an angular hole that is so uncommon that many in the planning and machining areas could not remember when, if at all, such an angular hole was machined. To make matters more challenging, machining of this angular hole was one of the last machining operations to be done; therefore, there was no room for error and no means of recovery if an error did occur. All this final machining was being performed while

the acceptance properties were being developed. Although the risk was minimal, the Technology and Treatment departments were uneasy nonetheless until testing was successfully completed. Through it all, the inspection department personnel were timely, yet thorough in their inspections so that there was no delay to the machining schedule. The original 'recovery plan' called for recovering at least 4 of the 6 weeks lost. Ultimately, the forging shipped to the customer 9 days ahead of the originally promised delivery date – a recovery of 8 weeks - A COMPLETE RECOV-ERY!

In the end, all the assessments, plans, programs, machining, use of new tooling, dimensional and nondestructive testing, and handling went without incident because of the team effort that was put forth. I am reminded in situations like this of the statement that "it's all about the people", and when we focus and function as a team there is little we can't accomplish!

JOINT EFFORTS

In September of 2012, ArcelorMittal Steelton, Lehigh Heavy Forge and Siemens Energy kicked off a project to advance the quality of large diameter vacuum poured ingots due to previous issues with inclusions in the forgings. These ingots are produced by Arcelor-Mittal Steelton, forged by Lehigh Heavy Forge, and finish machined then assembled into generator rotors by Siemens Energy. In September of 2012, representatives from all three companies met at Steelton to kickoff this effort. The parties involved agreed to use the Kepner-Tregoe root cause analysis tool that Siemens had used with great success in previous quality related projects.

Siemens provided an experienced Quality Engineer to facilitate the process and maintain organization of activities, commitments, and results. Over the course of the next few months, there were bi-weekly update meetings to discuss results of the work being performed. The majority of the investigation and analysis was completed by the ArcelorMittal's Research and Development team located in East Chicago, Indiana. Many process variables were analyzed, as well as computer based fluid transfer modeling performed to identify the potential areas for improvement and control. Through the many efforts of all parties involved, we can proudly say that we found several

LITTLE KNOWN FACTS OF WWII

- The first German serviceman killed in WWII was killed by the Japanese (China, 1937). The first American serviceman was killed by the Russians (Finland, 1940).
- The youngest US serviceman was 12 year old, Calvin Graham, USN. He was wounded and given a Dishonorable Discharge for lying about his age. (His benefits were later restored by act of Congress.)
- At the time of Pearl Harbor, the top US Navy command was called CINCUS, the shoulder patch of the US Army's 45th Infantry Division was the Swastika, and Hitler's private train was named Amerika. All 3 names

were soon changed for PR purposes.

- More US servicemen died in the US Army Air Corps than in the Marine Corps. While completing the required 25 missions, your chance of being killed was 71%.
- There was no such thing as an average fighter pilot. You were either an ace or a target. For instance, Japanese ace, Hiroyoshi Nishizawa, shot down over 80 planes. He died while a passenger on a cargo plane.
- The German submarine U-120 was sunk by a malfunctioning toilet.
- Among the 1st captured at Nor-

root causes and identified the related corrective actions so we can achieve the goal we had set out at the beginning to "improve quality of large diameter vacuum poured ingots." These areas for improved quality spanned both the ingot production operation at ArcelorMittal Steelton and the forging operation at LHF. Together, we have been able to bring this investigation to a close, and ArcelorMittal has supplied an ingot under a new process for LHF to forge and evaluate. Potentially, Siemens Energy as well as other customers who require high quality materials for their products will benefit from this improved process. Thank you to everyone who participated in this project.

> "Shop Talk" is a periodic publication by, and for, the employees of Lehigh Heavy Forge Corporation, a member of the WHEMCO family of companies

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mandy were several Koreans. They were forced to fight for the Japanese Army until they were captured by the Russians, then forced to fight for the Russian Army, until they were captured by the Germans and further forced to fight for the German Army until they were captured by the US Army.

Following a massive naval bombardment, 35,000 US and Canadian troops stormed ashore at Kiska, in the Aleutian Islands. 21 troops were killed in the firefight. It would've been worse if there were any Japanese soldiers on the island.