

## HAPPY NEW YEAR!

2015 began happily with Team Lawkim winning NSCI's prestigious 'Sarvashreshtha Suraksha Puraskar' - their Gold Trophy 2014 in the Manufacturing Sector, Group D - making us in effect the safest engineering shopfloor in India! This followed 3 consecutive years winning their Silver Trophy. It will be awarded in New Delhi on March 4, 2015.

Our January-end Financial numbers have remained solid on both top and bottom lines - with overall business volume standing at Rs.238 crores - 1% above plan and 27 % over last year. The team has worked well on several cost control programs to offset adverse factors in the open market for motors. Net operating surplus stood at Rs. 2.35 crores, 71 % higher than planned, despite a recent hike in asset depreciation due to legislation amounting to Rs.1.75 crores. Average net working capital turns were at 14, in line with plan.

We are confident of crossing our year-end bottom-line target even if our planned top line dips further.

We have maintained our market-leader position in Hermetics - extending our partnership for another 2 years with Emerson Climate technologies and striking a new and valued relationship with Highly Compressors of China to supply rotary compressor motor parts to them at their new, state-of-the-art plant at Ahmedabad.



With the Highly Team!

We have also begun our TPM Journey to strengthen and make more robust the ongoing programs for shop-floor operational excellence begun with our Cluster Initiatives 18 months ago.

We look to go strongly into the new financial year with new goals and aspirations to grow our business.



TPM begins!

## Lawkim calibrates for the Indian Navy!



Lawkim's Praveen Desai proudly carried out calibration services recently on the Navy's nuclear submarine for M/s. Ship-Tech, an Indian Navy contractor, at Vizag's Naval Shipyard.

Lawkim had received a work order to calibrate 35 pressure sensors of the nuclear submarine used to monitor the pressure of internal fluids (water, air and oil). These fluids are used to open and close the valves of locks.

His good execution won us a further order to calibrate 125 pressure sensors and gauges, as well as 18 Mega Ohmmeters - again through M/s Ship Tech.

This particular job was quite exacting because of the confined space in a submarine - necessitating walkie-talkies to be used for communication while carrying out the calibration!

Kudos to Praveen for his good work - as we work for the Nation!



## ENSURING EMPLOYABILITY

We also completed, as part of G&B's 'Disha' program, the 6-day certificate courses at ITI Lonand and Satara for 150 students in 6 batches. This improves their employability considerably!



# The Physics of Bicycles!

Several machines have helped Mankind develop, but for sheer simplicity few beat the **bicycle**. A great example of pure, scientific ideas harnessed in a practical piece of technology.

**The frame** - Assuming adult weights to range between 60–80 kg, it's clear the bicycle frame needs to be robust and fairly tough so as not to snap or buckle when the rider climbs on. Ordinary bicycle frames have strong, inexpensive, tubular steel (literally, hollow steel tubes containing nothing but air) or lighter alloys based on steel or aluminum. Craig Calfee (with us in September at Shindewadi) built one of his early carbon fiber bikes in 1990 for Greg LeMond, 3-time US winner of the Tour de France – but it was after seeing his part-pitbull terrier fail to gnaw through a stalk of bamboo in 1996 that Craig built a line of bike frames made from bamboo and hemp as a publicity stunt. Craig describes bamboo as "tougher than carbon fiber in terms of impact resistance", less prone to fracturing than carbon fiber, and about one pound heavier than carbon fiber frame. Bamboo also absorbs road vibrations well, allowing cyclists to ride longer without tiring.



Frames aren't designed to be 100 percent rigid, that would make for a much less comfortable ride. Virtually all frames flex and bend a little to absorb riding shocks, though other components like the saddle and tires have more effect on ride comfort.

**The gears** – you can choose from a range from three to twenty-one speeds (Shimano is a popular choice of gear maker in India), which are linked by the chain, making the bike faster along straights or easier to pedal going uphill.

Bigger wheels on City Bikes help you go faster on straights, but Mountain Bikes have smaller wheels than racing bicycles. It's not just the gears on a bicycle that help to magnify your pedaling power when you go uphill: the pedals are fastened to the main gear wheel by a pair of cranks: two short levers that also magnify the force you can exert with your legs.

**The brakes** - No matter how fast you go, there comes a time when you need to stop! Brakes on a bicycle work by using **friction** - pressing the brake levers clamps a pair of rubber shoes onto the metal inner surface of the front and back wheels turning your kinetic energy into heat that slows you down.

Our Bamboo Bikes use Disc brakes that generate amazing stopping power even in extreme conditions as they utilize rotors to the wheel hubs and calipers to the frame containing specially designed pads (also called "brake shoes"). Unlike the softer pads used on rim brakes, discs use hard metallic- or ceramic-based pads less affected by water, mud and heat to achieve consistent braking power.



Craig in Shindewadi

## **BROCKHAUS GERMANY UPGRADES OUR DESIGNING EFFECTIVENESS!**

Since Lawkim consumes 15000 MT of steel every year and are called upon to develop new motor designs with higher efficiency at optimum cost, a high degree of accurate knowledge regarding the electrical and magnetic qualities of the steel that we convert into motors is necessary.

In fact, being able to test sample strips for all required properties helps us to design in better performance to our motors faster. Particularly because there are many steel grades available and several steel mills around the world and in India from whom we can purchase.

Today's newer generation of motors, and designing them in an optimum time-frame, places greater importance on selecting the right steel grade quickly than ever before. So that our designers have all relevant data before expensive prototypes are built.

### **What we require to measure :**

- Determination of the magnetic properties of electrical steel and other soft magnetic materials
- Freely configurable with specific measuring coil systems
- Simultaneous connection of up to 12 parallel measuring coil systems
- Fully digitized data documentation
- Very fast measurements
- Measuring coil systems and evaluation according to IEC 60404 ff. and ASTM for measurement with Epstein frame and sheet measuring coil
- Module for measurement of rings, ring strip cores etc.
- MPG Expert software for measurement, display and integration into QM systems
- Extensive diagnostic functions
- Software options: free curves, DC bias offset, pulse-width modulation signals, higher harmonics

### **We are now able to :**

Right from the time we installed our Brockhaus Tester in November 2014, we have been able to upgrade how we assess, and even eliminate the phenomenon of 'white noise' (i.e. the inefficiency of the manufacturing process) to an appreciable extent. In fact, within a month of installation we were able to improve the magnetic properties of the stator stacks through optimizing the annealing cycle in our annealing plant without incurring any additional cost. We are also now able to do design of experiments, and are in the process of conducting these to gain valuable insights into the relationship between the furnace process parameters and magnetic properties of the steel we use. We are sure this adds a very valuable dimension to our technical capabilities that our customers will be able to appreciate through the value we will now add!

**STEEL STRIP TESTING**



**STATOR CORE TESTING**





## *From the Editor's Desk....*

Dear Friends,

Its good to receive awards that actually mean something! Here, CN hands over the Best Kaizen Award for the 4th consecutive year at the 7th National Cluster Summit 2014 Trophy to our Vijay Kusale and Somnath Bhosale.



CII delegates from 15 companies visited Lawkim to understand Lawkim's successful Kaizen story. Lawkim was the first G&B Division to achieve 100% Kaizen participation in December 2014!

Congratulations also to all our shopfloor associates for completing our first year of QC initiatives - achieving 100% participation with 101 Quality Circles with 120 completed projects!

Finally, congratulations to our new Six Sigma Black Belts Nimish Morey, Rasik Khavnekar, Vijay Gore, Parikshit Patil, Sopan Jagdale, Nandan Sawant and Manoj Patki, Green Belts Sumedh Karnik, Ravindra Salunke and Dadaso Patil, and CQIA qualifiers Santosh Khopade, Vivek Chopada and Kamlesh Shirsath for succeeding in the ASQ Six Sigma examinations held in 2014.

*Warmly,  
Vijay Krishna*