

# Success Story: Rockland Manufacturing Invests in Training to Prepare Workforce for Change in Production Flow

written by Lauri Moon | January 15, 2024



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Rockland Manufacturing Co., located in Bedford, PA with approximately 250 employees, is a medium-sized manufacturer of bulldozer blades, loader buckets, beach cleaning equipment, and land clearing equipment. Rockland primarily serves the crushing, aggregate, and log loading markets.

Rockland was beginning to implement a major change to their long-established production methods. In fact, the current flow had been in place for well over 30 years. The major change was to create a combined production method/department from two formally standalone functions. The change required changes in supervision, ERP tracking, production planning and scheduling, and manufacturing engineering processes.

The change is driven by the need to improve efficiencies, specifically by reducing the amount of handling and transportation of certain products. By combining production functions for several of their product lines, both assembly and finish welding functions will be accomplished at the same workstation. Formally, a product would be assembled at one location in the plant, then transported by overhead crane to be staged at the second location until that department had capacity to work on it.

Rockland had already conducted experiments to prove that the change to the production flow would be successful in improving efficiencies, but since the change

had far reaching affects throughout most departments within the entire company, management felt that specific training of key stakeholders was needed to help build unified momentum for implementation.

Change Management training sessions were conducted to train key personnel in the need for change, and how to manage it in their workplace. The training also focused on how to anticipate the implications of change, how to monitor and adapt to change, how to communicate through it, and how to keep changing and improving. The goal was to prepare the workforce through education and interactive exercises to help them be more comfortable with the new changes to their workflow, break down potential barriers to implementing change by improving communication, and really focus on the importance of positive changes in production.

Management reported that the training was successful in helping their workforce understand the need for changing their production methods. Particularly, they pointed out that communication about the change improved. The interactive exercises in the training helped break down communication barriers and improved teamwork. The momentum for moving forward with the production change was achieved, and since then the new assembly/weld function is established and becoming an accepted part of the company's culture.

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# **Success Story: IMC Assists Furmano Foods with Safety Procedures**

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Furmano Foods, Inc. grows and produces canned vegetable products. It offers tomato, bean, and vegetable products; and formulates ready to use recipes for salads, stews, puffs, sauces, sliders, pizzas, bocaditos, tacos, soups, chili, appetizers, vegetarian, beef, fish, chicken, and pork products. Furmano, like other producers, provides product for others under other labels as well as occasionally runs product for small batch, specialty products. The company serves customers in various sectors, including foodservice, retail, manufacturing, export, and branded and private labels. Furmano was founded in 1921 and is based in Northumberland, Pennsylvania and employs approximately 350 people with an additional 150 seasonal workers.

Furmano proudly combines state-of-the-art agricultural and manufacturing technology with a kinship to the earth that comes from four generations of farming in this region. They grow most of their tomatoes and vegetables in the fertile Susquehanna River Valley and process millions of cases of tomatoes at their plant in Northumberland. They consider themselves stewards of the land and are sensitive to ecological concerns employing farming techniques that are environmentally friendly as well as safe for the surrounding community. Many in the Furmano organization grew up and still live in the area, so they strive to be good corporate citizens and a positive contributor.

Responding to an inquiry by Furmano regarding organizational safety assessments and establishing a new safety culture, IMC met with the company to discuss possible options. In addition to Furmano's leadership team, IMC Business Advisor Rick Terry brought in trusted IMC third-party consultant, Scott Witmer of EMS Consulting to the site visit as a subject matter expert. In addition to safety objectives, the overall business climate of the organization was discussed. While production growth wasn't the focus of this meeting, future proactive challenges and opportunities were discussed regarding organizational culture, specifically around safety. There are some issues that the leadership team wants to address before they grow into major concerns and become detrimental to production.

EMS Consulting worked with Furmano to address safety culture and procedures. Scott presented his experiences regarding organizational development and safety

protocols to the team as well as the challenges of establishing a new culture of safety in an existing organization. Scott engaged Furmano leadership in the various areas of safety and safety management to begin to gauge the current state of the organization and where they wanted to go with it. The objective was to ensure that Furmano's maintenance personnel and, where applicable, operators, have appropriate, accurate, written procedures to ensure their safety when cleaning, prepping, or maintaining each machine. The IMC proposed to do this by understanding the hazards, the procedures to be used to avoid those hazards and how to remove locks and / or tags to ensure their safety and those nearby. Also, clearly documenting this information in a Furmano approved format so the procedures can be used effectively to ensure worker safety and OSHA compliance.

The deliverables to achieve the project objectives included:

- appropriately documenting each LOTO procedure for effective use by Furmano's personnel
- evaluation of these procedures to ensure they are clear, effective representations of the procedure to follow to be safe when working on the machine.
- providing onsite advice utilizing IMC's SME during the assessment of the current state of safety protocols
- written procedures, including photographs finalized for use by Furmano personnel

Assessment of the plant equipment and existing LOTO procedures began in early December 2022 and culminated with final documentation submitted to Furmano leadership in June 2023. Based on both a walkthrough of the facility and a review of the existing LOTO records, EMS estimated what equipment in each section of the production facility would require review and procedural documentation. Furmano leadership selected the main production area, approximately 32 LOTO procedures, as the first area to address.

During the work assessing and developing the LOTO procedures, it became evident to the IMC team and Furmano that equipment labeling and posting of LOTO procedures were nearly non-existent. IMC worked with onsite Furmano maintenance support to make sure they concurred on the procedures as the best solutions for the

equipment. Trouble spots were identified by missing or broken handles, and other signs of required Preventative Maintenance (PM) were noted throughout the process. The response by Furmano to repair or replace any deficiencies was handled with diligence and completed prior to the end of the project. The overall project resulted in visibility of the LOTO procedures through equipment labeling and posting of the procedures at each location, safer overall environment for all employees, and better coordination between safety and the PM departments. In addition, the established procedures enabled better training resources for safety and PM training in the future.

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# Success Story: QCast Aluminum - Casting for Efficiency

written by Lauri Moon | January 15, 2024

## IMC Facilitates a Value Stream Map for QCast Production Process Improvement



Located in New Berlin PA, (approximately 30 miles south of Williamsport, PA) QCast Aluminum Co. is a family owned, high-quality manufacturer of aluminum sand castings for commercial industries. QCast manufactures all their products in the USA and can

produce excellent finishes and sizes of parts, including prototypes and small to large production runs from 1 oz. to 300 lbs. They work with customers to develop a mutually beneficial long-term relationship and have a strong commitment focused on service, quality, deliverability and affordability. They have grown to become one of

the highest quality sandcasting companies at the most competitive price.

### **Situation:**

Working with our strategic partner PennTAP, who sponsored an E3 project (Economy, Energy & Environment), the Innovative Manufacturers' Center (IMC) was engaged to facilitate a Value Stream Map (VSM) to determine why QCast's production was unable to meet desired delivery times for their customers. The scope of the value stream map began with the core preparation area of production and ended at the finishing area. The VSM continued to track the various operations that included saw, belt sand, blast, drilling and inspection in the finish area.

The Work In Process (WIP) materials for the finishing area were stored in scattered locations causing some delays in finding them for finishing. In addition, the molding process continued to run at a faster pace than finishing could respond, creating a bottleneck in production flow. An accurate inventory was taken of the WIP at the finishing stage, and it was learned that 3x the original estimate of pieces was there. The mindset within the facility is one that is grounded upon 'keep the molders running', which caused overproduction and a choke point in finishing customer orders.

Adding to production flow delays, finishing operators performed excessive amounts of searching, stretching, reaching and bending for the parts resulting in additional non-value added efficiency losses. It was evident that in addition to the overproduction of parts, their multiple locations in the finishing area took time away from actual finishing work thus contributing to not meeting the delivery times promised to their customers.

### **Solutions:**

At the completion of the 'Current State' VSM the project team, facilitated by the IMC, determined the 'Future State', which led the company to define several objectives. QCast wanted to exceed customer expectations by utilizing an effective pull system that would generate a 7-day throughput with a 4-week lead time, 99% on time delivery and a 100% quality level by September 1, 2023. Through the input of the QCast team, the IMC generated a series of challenges for the company to tackle

and record the results over the next several weeks. The first two target conditions were designing a 'supermarket' that would visually control the work in progress inventory levels to 3-5 days and to improve the efficiency of the belt sanding area to 85%. The QCast VSM team conducted various experiments to see how best to meet their first target conditions.

Over the next several months the improvement in excess production was moving in the right direction; however, the team was still finding difficulty in addressing the finishing department's challenges, which were defining standard work and overcoming a shortage of labor.

### **Results:**

Actual inventory being produced was tracked on a weekly basis, which resulted in the reduction of WIP sitting at the finishing stage by 54%. The finishing department continued to see challenges to meet the target condition until a member of the VSM team tried an experiment with the finishing of parts by running them through a tumbler; a process used in their sister company's metal fabrication process. The results were very promising. After continued experimentation with various aspects of the tumbling process including time, media and actual parts to be finished, the company has calculated that they could increase finishing productivity by up to 300%. Because of the IMC's VSM facilitation, the members of the QCast team were able to implement a series of experiments and apply the continuous improvement culture that enables them to find a solution far beyond the original expectations. The company is planning on investing in the appropriate equipment during the first quarter of 2024 that will include the tumbling stage in their finishing process enabling them to reduce overall throughput and meet the delivery times their customers expect.



### **Testimonial:**

"The Value Stream Mapping exercise conducted by the IMC enabled us to visually see the overall production process and the areas we needed to target for improvement. Without this process, QCast may not have identified the key areas needed to meet our overall objectives. We look forward to continuing to work with

the IMC in the future.” Terry Arnold, General Manager, QCast Aluminum

**Contact IMC:**

To learn how IMC can assist your Central PA manufacturing company with process improvement, contact us at 800-326-9467 or [info@imcpa.com](mailto:info@imcpa.com).

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# **Success Story: Prysmian Expands Frontline Development Skills and Employee Engagement with Onsite Training**

written by Lauri Moon | January 15, 2024



Prysmian Group, the world leader in the energy and telecom cable industry, engaged with the IMC with interest in various areas of improvement including communication and leadership skills as well as job instruction training.

To address this need, the IMC provided content and expertise for Frontline Development Essentials as well as Training Within Industry (TWI) Job Instruction, a dynamic and proven method of hands-on training, learning and coaching for



supervisors, team leaders and workers.

The Frontline Development Essentials program included theory, activities and small group interactions designed to foster learning and growth while also solidifying knowledge transfer and retention. Twelve frontline supervisors completed the three-day Frontline Essentials program. Through instruction, hands-on simulations and coaching, they demonstrated new skills to make them more effective and improve morale in their areas.

An IMC Business Advisor, who is TWI Job Instruction certified, delivered a ten-hour TWI program to Prysmian. The TWI program provides a proven and reliable system for elevating employee engagement that advances ongoing and planned continuous improvement, kaizen, lean and operational excellence initiatives. Ten employees completed the TWI JI program and demonstrated mastery of the 4-step How to Instruct model. They also demonstrated the ability to effectively Get Ready to Instruct with a focus on the Job Breakdown. These employees then successfully implemented this model within their own areas, resulting in consistent training and reduced training time.

“The attendees of both training programs came away energized and eager to apply their new skills in training, coaching and communications. There is broad consensus that these skills should continue to be developed throughout the company.” Jeanette Wragg, Training Manager, Prysmian Group

Prysmian Group will expand Williamsport facility, bringing jobs to area | News | [northcentralpa.com](http://northcentralpa.com)

Prysmian Group Hosts Beam Signing Ceremony on \$22.5M Williamsport Facility Expansion Project | Prysmian Group

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# Success Story: Nittany Paper Invests in Training Ahead of New Equipment Investment

written by Lauri Moon | January 15, 2024

Marcal Paper aka Nittany Paper Mills, LLC, is owned by Atlas Holdings, LLC. Atlas was founded in 2002 and is headquartered in Greenwich, Connecticut. Atlas and its affiliates own 16 companies employing nearly

20,000 associates. With more than 100 facilities across the globe, Atlas generates an estimated \$4 billion in annual revenue. Nittany Paper Mills in Lewistown, PA manufactures and provides recycled tissue and towels for use in homes, schools, restaurants, hotels and hospitals.



Nittany Paper Mills is investing in new equipment and technologies to become even more competitive. These include new production lines, new packing lines, robotics and more. Such new technologies are disruptive as they change how work is done. In an effort to ensure the successful implementation of these investments, Marcal sought training for its managers to prepare them to manage change. Specifically, training to help managers understand the psychology of change and how to accelerate change. In other words, they wanted to help their managers to further develop their skills to be more effective at leading change. Without these skills, investments on this level may not have the desired impacts.

After the training, with these skills now developed in their managers, Nittany Paper Mills was confident that the implementation of the new equipment and technologies would be successful, driving confidence to make the investment of more than \$500 million.

“We make investments where and when our workforce is skilled and ready. The training was a solid foundation for supervisor development”

Steve Prentiss, Vice President of Human Resources, Marcal Paper

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# **Success Story: IMC Helps Metal Integrity Implement Advanced Robotics & Automation Technology**

written by Lauri Moon | January 15, 2024



**Metal Integrity, a sheet metal fabricator and machine shop in State College PA, was having continued workforce issues, leading to challenges to meet customer orders. Through a national**

**Advanced Manufacturing Technology Solutions grant, IMC helped the company implement advanced robotics & automation technology. They quickly realized production improvements with the first job run on the automated system of 200-250%, seeing an increase in production from 180 parts per week to 475 parts per week.**

After attending an AMTS sales training program in Fall 2022, knowing of Metal Integrity's interest in automation, IMC's Dana Gordon reached out to Metal Integrity directly to discuss. The sheet metal fabricator and machine shop was having continued workforce issues, leading to challenges to meet customer orders.

### **Support provided; tools utilized**

Upon meeting with Metal Integrity, IMC helped them refine their automation strategy, which consisted not only of robotic machine tending, but also an investment in a new lathe with a bar feeder along with sheet metal quoting automation software. As the client was already progressing down the path toward machine tending, there was no need to complete a full assessment; IMC and the AMTS lead for Pennsylvania instead met with client to validate their robotic machine tending approach.



### **Lessons Learned**

Overall, the project was a success, however the timeline was longer than anticipated. The project hit various challenges during the implementation phase, leading to a longer than desired learning curve. These challenges were primarily related to the inexperience of both the integrator and the robot manufacturer.

The first challenge dealt with the performance of the Productive Robotics OB7 robot once a dual gripper was added. The robot motion became very erratic and was unable to perform the programmed tasks. It was later discovered that the robot programming interface was inadequate for making the needed adjustments for the higher weight of the end effector and the extended tool center point (TCP). It took weeks of troubleshooting by both the integrator, Exact Machine Tool, and the manufacturer, Productive Robotics to make this discovery, further delaying production implementation.

The next major challenge involved the workholding setup. As is common in mill machine tending systems, Exact Machine Tool installed a Airvise AV-T-4 pneumatic vice that was integrated into the robot controller. However, the pneumatic vice was unable to hold the tight tolerances required of the target part. In the end, Metal Integrity found a solution that allowed them to automate their standard Kurt workholding system that already held needed tolerances with a Rapid Design Solutions CNC vise actuator.

An ROI of 4 months was expected prior to launching the project and that will be exceeded, depending on upcoming parts volumes. Metal Integrity has already realized production improvements on the first job run on the automated system of 200-250%, seeing an increase in production rate from 180 parts/week to 475 parts per week. For this part, based on reallocated labor alone, they will see an ROI of 6 months. When the increase in production for parts run off-shift with a conservative value applied to machine runtime is considered, it surpasses a 3-month ROI.

In hindsight, going with an experienced system integrator may have reduced the implementation difficulties experienced in working with an equipment distributor. However, the low price point of the system and the fact that they are now in operation, makes it challenging to determine if that would have been advantageous. Even considering the delays and additional time required of Metal Integrity personnel, the ROI is in an acceptable range.

This project made possible through MEP AMTS grant funds.

# **Success Story: IMC Assists Lycoming Engines in Realizing Significant Cost Savings with Lean**

written by admin | January 15, 2024

**Lycoming Engines is the leader in the piston aviation market, producing more piston engines for general aviation manufacturers than any other company in the world.**

Headquartered in Williamsport, Pennsylvania, Lycoming is a global operating division of Textron's Avco Corporation subsidiary, and an operating unit of Textron Systems, specializing in the engineering, manufacturing, assembly, test and support of piston aircraft engines. The company employs 470 people.

## **SITUATION**

Lycoming Engines realized that remaining competitive in a downturned economy requires ongoing innovation, enhanced efficiencies and involvement from all

members of an organization to be alert and focused on continuous improvement and opportunity. Lycoming Engines began what would be the underpinnings of an aggressive initiative to have all levels of the organization undergo training in Lean manufacturing.

According to Gary Naculich, Manager, Transition to Production, **Lean training was an integral part of the organization's growth strategy.**

“Identifying ways to remove waste from our processes is a significant component of keeping Lycoming Engines a thriving business. Our approach is always to have an eye on the future and to be prepared. Our hope was that LEAN would help us to cut back on waste, be more efficient and remain optimally productive,” said Naculich.

Naculich reached out to IMC-PA, a NIST MEP network affiliate, to assist in building a strategy to accommodate an aggressive schedule, variety of skill sets and potentially diverse feelings about the initiative.

*As a result of IMC's assistance, Lycoming Engines was recognized as the global premier award process for operational excellence, has twice gone 1 million hours without a lost time injury, and was recognized as one of Cessna's 'Top Suppliers' by earning their STARS supplier award three consecutive times.*

## **SOLUTION**

IMC business advisors and Lycoming management developed a master plan to engage the entire organization in Lean. The first step was to send several employees to IMC Lean 101 training in order to better familiarize them with the principles and help them determine the merits of a full-scale training initiative for the company.

To achieve buy-in from Lycoming's union workforce, management sent several union members to Lean 101 training to evaluate its worth for the company. Union members returned from the training enthusiastic about Lean and fully engaged.

IMC planned a variety of training scenarios, including employee participation in scheduled workshops as well as IMC training sessions conducted directly in Lycoming Engines facilities.

Lycoming Engines Manager of Proposals and Contracts, Mary Fourney, said, “A key factor in the success of the program was IMC’s ability to work with employees at all levels and build trust. Some of our folks had the perception that Lean meant losing their jobs. Their fears were alleviated, though, due in large part to how IMC engaged them in the process and the obvious positive benefits that Lean could potentially have for Lycoming Engines.”

## RESULTS

- Realized \$50M in cost savings
  - Improved safety by 30%
  - Improved on-time delivery from 40% to 98%
  - Awarded Shingo Silver Medallion in Shingo Prize program
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# Success Story: Northway Industries, Inc., Implements Web-Based Solution with IMC’s Assistance

written by admin | January 15, 2024

**Northway Industries, Inc. is a privately held company employing 120 people that provides quality contract manufacturing services to a variety of clients.**

The company was founded in 1966 and utilizes high-pressure laminates, melamine, vinyl, paper, and wood veneer products to produce cabinets, countertops, work



surfaces, fixtures, and more. Operations consist of CNC controlled machining, milling, routing, and banding. Primary markets served include OEM suppliers, retailers, schools, and institutions.

## SITUATION

Beginning in 2005, Northway partnered with IMC, a NIST MEP affiliate, to engage in lean and cellular manufacturing consultation and implementation. **The company was re-engineered from a mass-production shop to a mass-customization shop, allowing Northway to be more responsive to its market which needed more small-batch custom orders.**

As a result of the implementation, the company saw an increase in small batch orders and single piece flow orders. This significantly boosted the volume of information necessary to initiate and complete work. It became apparent that Northway's legacy systems were becoming less effective and less accurate with this changing business model.

While the changes implemented during the first IMC project allowed Northway to expand capabilities and machine and fabricate at faster rates, the delays caused by managing an increased volume of critical information were hampering true growth.

Northway continued to work with IMC to tackle the new problem and develop an information system that would allow project data to be managed more effectively.

*The robust, scalable information system that was developed with IMCs assistance is capable of pulling together details about a wide range of business operations.*

## SOLUTION

The project began with an objective of creating a web-based project scheduling system. **The initiative soon grew to be a complete information system that linked all aspects of the project and client relationship into one centralized, online location.**

The system includes a project-based scheduling system, contract documents, customer purchase orders, production documents, a materials database, RFID

(radio-frequency identification) order tracking, company policy and procedure documents, quality control information, and sales-related communications. The new system allows both employees and customers to log in and see relevant project-specific data.

## RESULTS

- \$2 million in increased sales
- \$100,000 in cost savings
- \$75,000 in new investment

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# Success Story: IMC Enables Railroad Company to Lay Tracks for Continued Success

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**ORX Railway Corp. is a manufacturer of rail wheel sets. The roots of ORX are buried deeply in the railroad industry, planted over a century ago by co-founder and president Glenn Brandimarte's grandfather - an Italian immigrant who found**

# **employment quickly on the tracks and dedicated his life to his work.**

The tracks for ORX's success were set by nearly a century of experience, dedication, and innovation which still drives the company today.

## **SITUATION**

ORX was required to carry out internal quality audits to verify compliance with the Association of American Railroads, Specification M-1003, and their own current quality assurance practices. IMC, a NIST MEP affiliate, was contacted to perform the audit. IMC contracted with a third-party consultant and former employee who performed previous audits in order to help with the latest one.

*The company was able to use the audit process and results to develop an action plan to strengthen their processes and make the entire system more efficient and effective.*

## **SOLUTION**

IMC and its third party consultant conducted a two-day internal audit of ORX's quality management system to verify compliance with stated requirements. The Quality Assurance System Evaluation Checklist provided by the Association of American Railroads (AAR) was used to conduct this audit. Afterwards, a written report was prepared with any non-conformances identified and the findings reviewed with the company.

ORX was able to identify and implement corrective action for nonconformances and successfully pass the AAR audit of their system. The IMC provided additional continuous improvement coaching as well.

## **RESULTS**

- \$500,000 capital investment
- \$10 million in retained sales
- \$10,000 in cost savings

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# **Success Story: Pik Rite Prepares for New Leadership Roles and Increased Production with IMC's Guidance**

written by admin | January 15, 2024

**Pik Rite Inc. designs and manufactures innovative, quality-built vegetable harvesting equipment, agricultural manure spreaders, commercial waste-handling equipment and hydroseeding units for a growing national and international market.**

The company and its 50 employees are located in Lewisburg, Pennsylvania.

## **SITUATION**

Pik Rite was in challenging, yet highly positive circumstances — production was in the process of doubling. That situation meant that the company needed to fill several production leadership roles quickly. General Manager Randy Beiler turned to the IMC, a NIST MEP affiliate, for their experience and expertise.

*I often recommend IMC to other manufacturers as an innovative source in solving problems and eliminating bottlenecks. - Randy Beiler*

## **SOLUTION**

Training current employees for their new leadership roles became a top priority, along with executive coaching. IMC developed a project to work with management on strategic topics and train supervisors on the fundamentals of being an effective manufacturing floor leader. The training program for those in new supervisor roles was held over a 10-week period, consisting of weekly three-hour sessions.

Training covered a spectrum of leadership fundamentals, including topics such as : introduction to supervision; managing and measuring team performance; basic communication skills; teamwork for supervisors and group leaders. The sessions were split between two separate groups of employees taking classes on different days of the week.

Beiler deems the initiative a complete success. “The project improved leadership capabilities of existing management, helped to build more leaders, and educated employees on the basics of economics and expanded their business sense.”

The project fulfilled the main objective of preparing employees for new leadership roles in order to manage increasing production requirements. According to Beiler, “We promoted from within, gave our employees an opportunity to grow, and doubled our production in a two year period.”

## **RESULTS**

- \$2M in increased sales
- 20 jobs created
- Cost savings of \$250,000
- More than \$700,000 in new capital and workforce investments