

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 efficiency, 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 efficiency, 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 and asked IMC to provide this training.

The Rockland management team, while in consultation with IMC Business Advisor, Tim Davis, expressed concern about meeting project goals and objectives since the front-line production workers and their direct supervisors were accustomed to years of the current state workflow processes. Many organizations entering significant operational change are very good at getting the proper capital requirements and soft costs calculated and controlled, the weakest link is often underestimating the human side of change. As such, IMC proposed a Change Management training initiative that would complement the capital investment already being made.

Tim Davis expressed, “This training is essential, it is beyond the capital equipment, renovation, and other costs normally associated with significant change, it can make or break the change effort including the need to extend timelines and adjust milestones when employee teams struggle through the transition.”

The IMC team helped Rockland identify key personnel who had responsibility and direct impact on the change requirements. Additionally, the team investigated the organizational requirements compared with the current state of the supervisors and other key personnel to identify gaps and develop a program specifically designed to help the Rockland team navigate a successful transition.

A highly customized change management training initiative was deployed by the IMC. It 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. This training included interactive exercises to help the participants 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. All customized to align with the requirements for a successful transition to the new process.

Impressed with the results, the Rockland management team reported that the training provided by the IMC was successful in helping their workforce understand the need for change in their production methodology. Particularly, they pointed out

that communication about the change improved. The interactive exercises conducted by IMC 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.

"We're very pleased with the results of the training. It was a great way to break the ice regarding a systemic change in one of our oldest and most experience facilities. By training on change management, discussing the benefits of the change, and how to properly communicate the outcomes of the change, we experienced much less of the typical resistance to change that one usually experiences in any business environment. The project was done faster, with less effort, much less drama, and most importantly, we haven't had any trouble with making the change stick over time. We're now building more, more efficiently, together, than ever before." Bo Pratt, President, Rockland Manufacturing Co.



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.

Success Story: QCast Aluminum - Casting for Efficiency

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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.

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

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

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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.



Picking Area Error Reduction Efforts Successful at Diamondback Automotive Accessories

written by Lauri Moon | January 15, 2024



Diamondback Automotive Accessories, located in Philipsburg, PA with 117 employees, manufactures load-bearing pick-up truck covers and accessories used primarily by outdoor enthusiasts.

Diamondback continues at a rapid growth rate at their Phillipsburg facility, experiencing 25% growth in 2020, followed by 45% growth in 2021. As the company enjoys rapid growth, it also experienced an increase in customer complaints. The main reason for the customer dissatisfaction was errors in picking the right parts to be shipped along with the truck cover. As a percentage of orders, greater than 2% contained picking errors.

IMC's Continuous Improvement Expert, Jeff Kopenitz, facilitated a dedicated team of Diamondback employees to focus on the errors in the picking areas. Over the course of eight days of on-site facilitation plus off-site coaching, Jeff guided the team through various Lean tools such as A3 thinking, PDCA cycles, DMAIC projects, FEMAs and Coaching Katas.

As a result of these efforts, manufacturing communications were improved, key parts visualization was enhanced using shadow boards, labelling was enhanced, equipment such as scales were deployed, and processes were changed and improved. In one year, the picking errors percentage has dropped from 2.29% to 1.29%. Diamondback is well on their way to achieving their next target goal of less than 1% picking errors.

"The results of this project far exceeded my expectations. Every minute and every dollar spent with IMC has resulted in tremendous returns. With IMC's help, we are achieving our mission of being a company that people love to buy from." Gerald

Success Story: Custom Container Solutions, LLC Surpasses Production Objectives with IMC Support

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IMC has been working with Custom Container Solutions (CCS), an area manufacturer of industrial roll-offs, for several years. Past projects have included operational improvements, ERP selection, HR policies, hiring and selection practices and improved job training.



As CCS has grown, they transitioned to a larger facility and now have three production lines instead of one. Each line makes a certain type of unit.

One of the lines makes smaller roll-offs and has proved to be most challenging in terms of reaching desired throughput quotas. The company contacted IMC to provide support for their efforts to improve production results on the small roll-off production line.

IMC proposed a 3-day value stream mapping (VSM) initiative that also included the supporting fabrication area. The VSM involved workers and supervisors from both production and fabrication along with CCS management and IMC facilitators. The

VSM effort started with a map of the current state of both the fabrication support and production operations including critical facts and data on task times, wait times, throughput history and layout, sequence and flow.



A direction and quantitative goals were established, and a future state map developed. Within the initiative, numerous opportunities for improvement were identified, prioritized and structured to ensure successful implementation. Included were multiple visits to the factory floor and many coaching opportunities by IMC's VSM facilitator.

The result to date (2 months following the end of the initiative) is that the line has surpassed the production objectives and is now operating at a consistent level of 25-30% above pre-initiative throughputs. The improvements made in fabrication have also led to improved operations for the other production lines.

“IMC has played a crucial part in the success of CCS - it's like the gift that keeps on giving. IMC has helped us recognize system failures and ask the right questions of our team members without fear. Jeff, Russ and Jen spent multiple days working with our team digging deeper than we could ever dig because we needed outside eyes to see the problems. By implementing workflow processes that are cyclical, we are able to pull the work down the line versus pushing it down the line, which creates a more efficient and happier workforce which, in turn, increases productivity and reduces absenteeism significantly. As we identify areas of improvement, we utilize IMC and its expertise to improve. We are grateful for the help and we look forward to working with IMC again in the future.” Chuck Williams, General Manager, Custom Container Solutions

This project was funded, in part, by a grant made available by PennTAP.

IMC Supports Shop-Vac in Williamsport Plant Reopening

written by Lauri Moon | January 15, 2024



Photo Credit: Williamsport Sun-Gazette

Shop-Vac is the brand leader in wet / dry vacuum systems for consumer and commercial use. In 2020, the company abruptly shut down, but was recently purchased by Great Star Industrial, Inc. Shop-Vac rehired many previous employees and is currently operating with about 150 people. Given the shutdown, the company's emphasis at this time is to increase sales quickly by re-establishing relationships with customers that range from big box retailers such as Lowe's and Home Depot to smaller sellers and industrial purchasers. Additionally, Great Star acquired the well-established SK Hand Tools. As part of the SK acquisition strategy, SK tool-making equipment has been relocated from Chicago to the Shop-Vac facility on Reach Road in Williamsport. With the equipment onsite and ready to start production, Shop Vac is hiring and training about 15 additional people to produce SK Tools.

To support the re-establishment of customer relationships for Shop-Vac products and to begin selling and supporting the SK brand locally, Shop-Vac is working with

IMC to make improvements in their Customer Service operations. IMC will be working with the Customer Service team to perform a three-day value stream mapping (VSM) initiative that will include training in continuous improvement principles and practices to enable the group to work on improvement opportunities, defining the current state of operations, identifying opportunities for improvement, creating a future / desired state, and then continuous work towards the future state.

To support the implementation of the value stream initiative, IMC and PennTAP are also working together to implement an E3 (energy, environmental, efficiency) initiative that will both support the of the VSM as well as provide energy reduction and environmental improvement opportunities.



Sandy Fox assembles a Shop-Vac vacuum cleaner on the company's assembly line in Williamsport, Pa. Photo credit: Steven M. Falk, Williamsport Sun-Gazette

Success Story: IMC Client Achieves

Highest Safe Quality Food 9.0 Certification Rating of “Excellent”

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Founded in 2006, Lang’s Chocolates LLC is a family owned and operated manufacturer of handcrafted fine chocolate confections sold at their retail location in downtown Williamsport, PA, as well as, sold and shipped to a worldwide customer base via their online storefront. Father and son, Robert and William Lang (Master Chocolatier) create and oversee the gourmet products, ensuring the highest quality ingredients are used in production.



Over the past two years, the company has been expanding into providing their own products, such as chocolate chips, as ingredients to other manufacturers of food products. This led to a substantial opportunity to increase company revenues by opening new markets in the US and worldwide as an ingredient manufacturer/supplier.

Due to regulations and standards that are required and requested as conditions of doing business with this market and to fully develop and execute on this substantial new market opportunity, Lang’s Chocolates was required to develop a Hazard Analysis and Critical Control Point Plan (HACCP) and become SQF (Safe Quality Food) trained and certified, as recognized by the Global Food Safety Initiative (GFSI), and ultimately required by the Food & Drug Administration’s (FDA) Food Safety Modernization Act (FSMA) by 2021.

The company reached out to IMC, who was able to partner with Lang’s and an exceptional third-party consultant to successfully prepare them for the audit, ultimately resulting in the highest SQF 9.0 certification rating of “Excellent”. The company is currently 1 of only 37 confectionary companies to achieve this level of certification in Pennsylvania. This also allowed the company to execute a planned

6300 square foot expansion into a new manufacturing facility and resulted in more than \$500,000 in new ingredient market sales (and growing), as well as the creation of several new jobs.

Robert Lang enthusiastically credits the skill and experience of the SQF consultant, Martin Ziegler, with their successful certification efforts. “His background and knowledge were so relevant, and his delivery set a solid foundation upon which we could build for our re-certification as well.”

Kwik-Care, LLC Readies for Launch

written by Lauri Moon | January 15, 2024

An Unconventional Approach to Lean Manufacturing



Laurie Fontaine Jenkins, Owner with husband Bingo Jenkins

Located in Muncy, PA, Kwik-Care LLC was founded in 2019 as a start-up manufacturer of a patent pending line of “feel better convenience kits”, which are

designed to provide consumers with a cost-effective, comprehensive approach to the treatment of minor illnesses.

The owner has been working with IMC on several initiatives since starting the business, including business planning, financial forecasting, product development, supply chain sourcing, and market and sales development planning. As the official product test launch was unfolding in spring of 2021, the company was beginning to secure initial orders across the country; however, the Kwik-Care team was struggling to efficiently set up an assembly process, as the kits contain over a dozen components that must be placed in a specific way to properly fit within the packaging.

With the goal to maximize assembly time and layout to determine labor needs and scalability of production while meeting the specific assembly placement of products within the retail package for visual and space needs, the IMC team incorporated a creative in-field approach to tackling the client's challenges. An onsite, class field project was arranged with IMC's in-progress Lean Manufacturing Level One Certification class. The class spent an afternoon at the Kwik-Care production facility and tackled different challenges for each workflow and job breakdown.

The real-time results produced by the class efforts were outstanding, which included: decreasing assembly time by 45% resulting in significant labor cost savings and the proven scalability of production to the target goal and beyond; addition of a simple label machine and digital scale to allow for package design simplification and greater quality control, resulting in additional cost and time savings.

It was an extremely successful experience for Kwik-Care, the Lean Manufacturing Certification class and the IMC team and will be used as a model for future projects.

Laurie Fontaine Jenkins, Owner of Kwik-Care LLC says, "Working with IMC has afforded us great insight into areas that we were lacking knowledge for our business to move forward and do it with efficiency. The value and resources that IMC has brought to our new company has played an integral part in our business launch and getting to market this past spring. We are now in retail locations, vacation/campground stores and university bookstores across the country and we

would not be here without IMC.”