2021 NEWSLETTER

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GLBMA
Great Lakes Bay Manufacturers Association

Welcome! - Burr...it has been cold out there! We hope you are staying warm. We started up our coffee clutch meeting this month and the Quality SIG meets.

The GLBMA Casino night will be held later in the year in hopes that we will be able to gather under better conditions.

NEW MEMBER
Welcome

We are looking for new members! Do you know a manufacturer that would benefit from joining us? If, so please let us know. New members that join by February 28, 2021, receive $50 off their membership. We have lots of exciting things happening this year including more on Industry 4.0.

FEATURE ARTICLE

Industry 4.0 and ISO Quality Management

By Andy Nichols

The concept of Industry 4.0 has been gradually introduced into manufacturing facilities in recent years, bringing with it operational improvements and countless other benefits. We will explore how these exciting developments can support ISO 9001-based Quality Management Systems (QMS), as well as dive into their impact on the overall Quality department.

CENTURIES OF INNOVATION: THE JOURNEY TO INDUSTRY 4.0

Before Industry 4.0, the previous three Industrial Revolutions were powered by single, so-called "disruptive" technologies:

- **Industry 1.0** – Mechanization (Steam Power)
- **Industry 2.0** – Mass Production (Electricity)
- **Industry 3.0** – Electronics (Computing)

Our current Fourth Industrial Revolution revolves around **Digitization**.

Unlike previous Industrial Revolutions, Industry 4.0 is represented by nine distinct, but related technology trends shown in the figure to the right.

Adopting such technologies can bring substantial benefits when implemented effectively. For example, cobots can be used to perform tasks that are dull, dirty, or dangerous. Rapid prototyping of components and assemblies, accomplished with 3D printing, can generate massive savings in new product development. Placing low-cost sensors on production equipment can prevent failures through cost-effective predictive maintenance.

PREPARING FOR INDUSTRY 4.0? THE BEATLES KNEW WHAT TO DO!
A quick review of these technologies and their application is likely to flag several questions for any Quality staff person, such as:

- How will it affect the QMS?
- How will we audit it?
- Will it affect our certification audit?

One consideration is the interaction with a department not typically heavily involved in QMS maintenance: IT. Commonly, the IT department assists with the QMS by providing back-up and maintenance of the digital records (now known as "retained documented information") or by maintaining the IT infrastructure, including ERP and CRM systems. The technology trends of Industry 4.0 largely rely on IT competencies beyond traditional interfaces and therefore require effective planning. Through technology adoption, an organization's QMS processes are likely to look very different – and a clue on how Quality leaders should prepare comes from a verse in the Beatles song, "Revolution":

"You say you got a real solution
Well, you know
We'd all love to see the plan
You ask me for a contribution
Well, you know
We're doing what we can"

FAILING TO PLAN IS PLANNING TO FAIL
In the requirements of ISO 9001:2015, there are a number of references to items which must be planned for and taken into consideration within the framework of the QMS. For example, in meeting the requirements of the section entitled "The Context of the Organization," the impact of Industry 4.0 could be considered as an external issue affecting the QMS. If a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis is performed, this might be categorized as either a threat or opportunity, both of which have associated risks.

Section 6 of the standard deals with planning to address risks and opportunities (6.1) and planning changes to the processes of the QMS (6.3). It stands to reason that the adoption of sensors to detect heat, vibration, noise, etc., on machines will change the manner in which maintenance is scheduled and necessitate a change to the maintenance process. From a resources perspective, planning also should include the need for competencies to be developed (7.2), which is closely tied to the acquisition of organizational knowledge (7.1.6). In particular, how does an organization acquire the knowledge of these

technologies being adopted? Where can they get help with 3D printing product design optimization?

Closely linked to this is the need to perform internal audits (9.2.2) on changes affecting the QMS, as well as Management Review (9.3.3) outputs, which include the need for changes to the QMS and identified improvements.

The adoption of Industry 4.0 into an ISO 9001:2015-certified company should not be overwhelming with the appropriate planning and the tools your QMS provides. As the Beatles song goes on…

<div align="center">
"Don't you know it's gonna be
All right, all right, all right"
</div>

We explored Industry 4.0 technologies from the perspective of Quality professionals, highlighting the importance of planning before implementing. Taking a closer look at the impact some of these technologies might have on the world of the typical Quality department and how they can be used to support Quality initiatives.

OPTIMIZING CALIBRATION & MORE WITH INDUSTRY 4.0
Big Data has the potential to make the Quality department's work a lot more cost-effective. Take calibration of measuring and test equipment, for example. Controlling everything such as co-ordinate measuring machines, calipers, plug and ring gauges, micrometers, and so on can be overwhelming – especially when arranging for annual calibration. Additionally, it can be costly to have an ISO/IEC 17025-accredited laboratory come on-site to perform calibrations or to send equipment to the laboratory itself, resulting in production disruptions. This is where the use of Big Data and analytics can help in effectively organizing calibration events to save costs as much as possible.

Calibration is required in the specifications of ISO 9001:2015 and also as a means to avoid product quality rejections (internally or by customers). The control and calibration of measuring and test equipment has been the subject of much debate in technical circles and can be a monster to manage (cost) effectively. A common, almost default, approach is to assign a recall date when the item is withdrawn from use and submitted for a recalibration. Although it's common for manufacturers to use date-based equipment recalls, this fails to take into consideration the actual use of the equipment during that period. The danger is the item may go out of specification within that timeframe, with a resulting impact on product quality. Or, conversely, money is simply thrown away checking a device that has not been used significantly since its last routine calibration.

So, how can this equipment use be accurately monitored and tracked? The application of some form of digital tag – an RFID tag, for example – can track the number of times a measuring device is used and, when used in conjunction with sensors, the usage data can be logged. With this data tracked, workers can better identify when equipment is in need of checking. This helps save time, efforts and costs while lengthening the "life" of gauging considerably.

Similarly, if a process is being controlled through a technique such as Statistical Process Control and product measurements are being made at a set frequency to evaluate variation, the same equipment RFID tag data can be generated to demonstrate that the checks are being performed as required.

BOOST QUALITY REPORTING TO MINIMIZE NON-CONFORMING PRODUCTS
No one in manufacturing wants to produce non-conforming products. It's costly, disruptive, and creates extra work. The burden of reporting non-conforming products, generating rework/repair/scrap documentation, carrying out the chosen disposition, performing secondary checks, and so on can be a tortuous route to navigate – a long and winding road, in fact.
Having methods in place to detect and codify the details of non-conforming product can lead to more effective control and enables the rapid correction of problems, which saves

money. The administrative burden of dealing with non-conforming product alone can cost larger manufacturers millions each year! This only includes costs related to:

- Recording and processing the non-conforming product reports
- Evaluation for action, including correction/scrap/rework, etc.
- Disruption to the "down-stream" processing

The actual cost could be higher – when everything is on hold as the quality problem is resolved, what happens to the natural "cadence" of the work later in the processes? It becomes fractured, and that allows errors to be introduced. By using real-time reporting of quality issues, resolution tracking, and corrections, the impact on down-stream processes can be kept to a minimum and unplanned costs avoided.

The article is provided by the Michigan Manufacturing Technology Center (MMTC). If you would like more information, contact Chris Tibaudo, 989-964-2807.

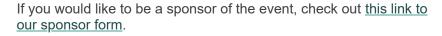## Join us for the first Coffee Clutch Meeting!

What exactly is the Coffee Clutch? It is a quick meeting to meet fellow manufacturers and start conversations that are of concern. The idea stems from my years of waitressing and every morning we had one table of the good ole boys come in. They would have a cup of coffee and talk about anything from business to the weather. The regional outreach is not conducive to in-person meetings but if you care to join us virtually on the last Tuesday of the month for a cup of coffee and some chat, we would love to have you. Zoom link: Click here to join!

Save the date!

Mark your calendar to join us for the 23rd Annual GLBMA Golf Outing! June 9, 2021, at the Maple Leaf Golf Course in Linwood. Registration opens March 1st.

If you would like to be a sponsor of the event, check out this link to our sponsor form.

The GLBMA will be highlighting one manufacturer and one associate member each month. We want everyone to know about all the wonderful opportunities in the region.

Our MFG Member Spotlight is International Engineering and Manufacturing also known as Woody's Traction, located in Hope. We're a name synonymous with quality in snowmobile accessories and are recognizable as the snowmobile Original Equipment Manufacturers where people ride snowmobiles. Woody's is the choice worldwide of motorsports accessory distributors, snowmobile and track manufacturers, off-road vehicles, racing champions, sportsmen and snowmobilers who want the very best in traction performance and safety. Thank you Rob and crew for all you do for the snowmobile industry.

Our Associate Member Highlight is The Great Lakes Safety Training Center. The GLSTC is a 501(c)(3) non-profit charitable organization located in Midland, Michigan. We provide a full array of safety services including training, audits, background checks and more. GLSTC helps promote and create safe communities through strategic partnerships with businesses and local high schools. Our vision, we are the recognized leader in safety education and related services, empowering our members and the community to prevent injuries, save lives and achieve a culture of safety excellence. Thank you, Kelly and Jill for making our communities safer.

February is CTE Month

Governor Gretchen Whitmer has proclaimed February as Career and Technical Education (CTE) Month. CTE programs offer high school and college students critical hands-on training for high-demand, high-skill, high-wage career opportunities in industries like manufacturing.
According to the Michigan Department of Education, over 97,000 Michigan high school students participated in CTE in the 2019-2020 school year despite the challenges presented by the global pandemic. More than 95 percent of students who concentrated in CTE go on to attend a postsecondary educational institution, seek advanced career and technical education training, sign up for military service, participate in national volunteer service or find employment within a year of graduation.

The Michigan House also acted to acknowledge the importance of CTE to students, employers, and the economy. House Resolution 29 (Representative David Martin, R-Davidson) was passed on 2/4/21 urging continued awareness of CTE and its ability to bolster Michigan's workforce.

For more information feel free to reach out to Mike Johnson with the MMA, 517-487-8551 or johnston@mimfg.org.

Michigan's Most Influential Manufacturing Leaders Honored at the Virtual MFG Excellence Awards

Michigan manufacturing's most prestigious honors were bestowed yesterday during the Virtual MFG Excellence Awards, the Michigan Manufacturers Association's annual celebration recognizing Michigan manufacturing's lifelong and emerging leaders and the outstanding businesses that thrive throughout the state.

Read the complete details here!

Congratulations to Hemlock Semiconductor for the "Coolest Item Made in Michigan" winner. As well as all the local GLBMA winners!

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Check out what is new from the National Institute of Standards and Technology (NIST) with their blog site.

Check out the latest issue of the MiMfg Magazine.

MMA Michigan Manufacturers Association

Great Lakes Safety Training Center offers

Lockout/Tagout for Managers

Why should I take Lockout/Tagout Managers?

This course is for any manager who is responsible for safety and health issues on the job, including the management and oversight of a lockout/tagout program.

Learn
- The basic elements of an Energy Control Program to 1910.147 (c)1
- How to perform an inspection on a LOTO Procedure
- How to prepare a procedure for the LOTO of a machine
- Be able to summarize the major points of OSHA's 1910.147
- Hands-on skill practice

Class to be held on each of these dates in 2021:
- February 18
- March 23
- April 15
- May 11
- September 16

Class time: 7:30 am - 11:30 am

Where: Great Lakes Safety Training Center, 1900 Ridgewood Drive, Midland, MI

Pricing: This class is provided due to a grant from MIOSHA CET Division. Please contact GLSTC for more details.

Contact: 989-837-2332 | www.glstc.org | enrollment@glstc.org

OSHA Final Rule Issued to Improve Tracking of Workplace Injuries and Illnesses
Impacts Manufacturers 20 - 249 employees

OSHA published a **Final Rule** to amend its recordkeeping regulation to remove the requirement to electronically submit to OSHA information from the OSHA Form 300 (Log of Work-Related Injuries and Illnesses) and OSHA Form 301 (Injury and Illness Incident Report) for establishments with 250 or more employees that are required to routinely keep injury and illness records. Covered establishments are only required to electronically submit information from the OSHA Form 300A (Summary of Work-Related Injuries and Illnesses). The requirement to keep and maintain OSHA Forms 300, 300A, and 301 for five years is not changed by this Final Rule.

What does the rule require?
The rule requires certain employers to electronically submit injury and illness data that they are already required to record on their onsite OSHA Injury and Illness forms.

Why is OSHA collecting these data?
Collection of these injury and illness data will improve OSHA's ability to identify establishments that experience high rates of occupational injuries and illnesses. OSHA will use the data to interact with these establishments, through both outreach and enforcement initiatives, with the goal of reducing injuries and illnesses. This regulation will improve the accuracy of this data by ensuring that workers will not fear retaliation for reporting injuries or illnesses.

How will electronic submission work?
OSHA has provided a secure website that offers three options for data submission. First, users are able to manually enter data into a webform. Second, users are able to upload a CSV file to process single or multiple establishments at the same time. Last, users of automated recordkeeping systems will have the ability to transmit data electronically via an API (application programming interface). The Injury Tracking Application (ITA) is accessible from the ITA launch page, where you are able to provide the Agency your OSHA Form 300A information. The date by which covered employers are required to submit to OSHA the information from their completed Form 300A is March 2nd of the year after the calendar year covered by the form.

Anti-retaliation protections
The rule also prohibits employers from discouraging workers from reporting an injury or illness. The final rule requires employers to inform employees of their right to report work-related injuries and illnesses free from retaliation, which can be satisfied by posting the already-required OSHA workplace poster. It also clarifies the existing implicit requirement that an employer's procedure for reporting work-related injuries and illnesses must be reasonable and not deter or discourage employees from reporting and incorporates the existing statutory prohibition on retaliating against employees for reporting work-related injuries or illnesses. These provisions became effective on August 10, 2016, but OSHA delayed their enforcement until Dec. 1, 2016.

Compliance schedule
The anti-retaliation provisions become effective on August 10, 2016, but OSHA delayed their enforcement until Dec. 1, 2016.

For complete details see the OSHA webpage.

February
18 Quality SIG meeting
23 Coffee Clutch
March
30 Coffee Clutch
April
13 Plant Tour - TBD
14 Hot Topic Discussion -
15 Quality SIG Meeting
27 Coffee Clutch
May
25 Coffee Clutch
June
9 23rd Annual Golf Outing
17 Quality SIG Meeting
29 Coffee Clutch

July
14 Hot Topic Discussion
27 Coffee Clutch
August
19 Quality SIG Meeting
24 Coffee Clutch
September
21 Coffee Clutch
30 7th Annual Casino Night
October
1 National MFG Day
5 Plant Tour
13 Hot Topic Discussion
21 Quality SIG Meeting
26 Coffee Clutch
29 MI Career Quest
November
4 Tentative Annual Dinner
30 Coffee Clutch
December
16 Quality SIG Meeting

Our next Quality Special Interest Group Meeting

Topic: Is it the right time for us to get ISO9001, AS9100, or IATF16949 certified?

Date: Thursday, February 18, 2021

Time: 8:00 am to 9:30 pm

Location: Virtual - TEAMS Meeting (link provided one week prior to the meeting)

Register Link: Click to register now!

The Quality Special Interest Group (SIG) is a professionally facilitated group of the Great Lakes Bay Manufacturers Association (GLBMA). This SIG focuses on providing a forum to discuss and review quality systems, validate the need, and discuss industry updates, new regulations. It will also serve as a place where Quality employees can discuss issues in a confidential setting.

We will continue to meet via Teams until we are allowed to meet in person again.

Is it the right time for us to get ISO9001, AS9100, or IATF16949 certified?
Join us for an open conversation about adding additional Quality Management Systems. Does it make sense to add another certification for your business model? Is your client asking, or do you think it will help attain more market share? What are the myths about quality systems and what is the reality? These questions and more will be answered by Chris Tibaudo with the Michigan Manufacturing Technology Center and Drew Dysinger with AVU Registrations

MFG CHAMPIONS

Learn how to become an MFG Champion!
Support the GLBMA for years to come.
Call Tanya at 989-964-2881 or email tlblehm@svsu.edu

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