After FABTECH, but before Thanksgiving, please come out to learn and earn (PDHs) from one of Detroit’s very own RW practitioners: Don Maatz. Hard on the heels of last April’s successful Education Night [RW Maintenance War Stories with Bruce Kelly] we will now build upon the related principles of RSW and PW quality. This promises to be a unique and energetic session designed to make you think about the quality standards associated with two very common forms of resistance welding.

A concise session illustrating the fundamentals of RW standards/codes and terminology, including quality attributes (both DT and NDE), and discontinuities and defects will be discussed. After this presentation, it is very possible that you will never look or think about a resistance weld the same way again. Please bring and ask your questions to challenge the night’s forum.

November Education Night
Thursday, November 16, 2017
Resistance Spot and Projection Welding Standards & Quality

Ukrainian Cultural Center
26601 Ryan Rd., Warren, MI 48091
Map/Directions

Technical Liaison: Nate Miller

AGENDA
5:30 – 6:00pm  Welcome Reception & Networking
6:00 – 6:15pm  Opening Remarks
6:15 – 6:45pm  Dinner
6:45 – 8:15pm  Educational Presentation

Email & phone RSVP by Nov. 6th Amanda Davis via email at amanda.davis@fcagroup.com or by phone @ (248) 512-1803. A $10 scholarship donation welcomed at the door.
A chill is in the air as we move into November, but things are just heating up at AWS. The largest annual AWS event is this month as thousands of welding industry professionals descend on Chicago for the AWS Fabtech event November 6th thru 9th. The show in Chicago is much more than a trade show, it is a week packed with education seminars, meetings and luncheons where companies and individuals are recognized for their contributions to our organization. If you have never attended the show I encourage you to visit. You don’t even need to drive or stay overnight as the daily round trip Amtrak schedule can bring you to and from Chicago via train - I hope to see you there. The Detroit Section has been working hard to bring Technical and Education seminars to our over 1000’s members locally in the Detroit Metro area. We are always looking for seminars and professionals who would like to engage with us to bring more value to our organization and at the same time educate local people and companies. If you have an interest in contributing please contact me directly. I will put you in touch with the correct Executive Committee member. As we get closer to closing out 2017, the holidays are fast approaching. I hope everyone is able to get a break from their busy schedules and spend time with family and friends during Thanksgiving. Have a safe and Happy Thanksgiving.

Wes

Wes Doneth
Chairman’s Message

Donald F. Maatz, Jr. has over 35 years’ of experience in the welding industry. He is presently associated with R&E Engineering Services (RES), a subsidiary of R&E Automated Systems, LLC, and serves in the capacity of Laboratory Manager. Prior to joining RES he worked with RoMan Engineering Services, Tailor Welded Blank, and the Ford Motor Company. He is also a veteran of the U.S. Navy’s Silent Service.

An AWS member for 24 years, Mr. Maatz is past-chairman of the AWS-Detroit Section and the recipient of the Elihu Thomson Resistance Welding Award. He serves on the D8 and D8.D Automotive Welding Committees, the D8.1 and D8.9 Automotive Welding Sub-Committees, and is an advisor to the C1 Resistance Welding Committee. Additionally he is an AWS endorsed Certified Welding Inspector (CWI), an instructor for the RWMA Welding School, and Vice-Chairman of the Certified Resistance Welding Technician working group. He also serves on several committees of the Auto/Steel Partnership.

Mr. Maatz is a co-author for the 2011 edition of ASM Metals Handbook on Welding and Brazing (Vol. 6A, Resistance Welding Power Supplies and Controls). In addition, he has authored or co-authored feature columns and peer-reviewed papers for the American Welding Society and the Society of Automotive Engineers. He has given presentations at the Advances in Resistance Welding International Seminar, International Autobody Congress, and the AWS-Detroit Section Sheet metal Welding Conference. Mr. Maatz is a graduate of Ohio State with a BS in Welding Engineering.
Another month has flown by, and I feel as though I’ve let some of you down. So, this month, I’m reaching out to all of you, young and old, students, teachers, engineers, welders, instructors, etc.

What do YOU want to see and read in YOUR e-bulletin? What types of articles make you want to scroll through the pages when you get the email blast saying that the bulletin is in?

That being said, I’m expecting to hear something from you, our readers, letting us know what you value in this e-bulletin, and even what you’d like to see disappear from our bulletin.

With FabTech this month, as well as the beginning of the Holiday season, I know that time is of value. So please drop me an email and/or stop me when you come to one of the technical meetings.

Until next month, Keep on Welding…

Robin M. Michon – ebulletin editor
rmichon@gmail.com
ICR Celebrates 25 Years of Bringing Excellence to Automation

On Friday, September 29, 2017, ICR (formerly known as Industrial Control Repair) held an open house for its customer base to commemorate a diverse, minority-owned business that’s supported manufacturers large and small since 1992. Helping ICR celebrate the occasion was Mobsteel, a design/build company that manufactures automotive aftermarket products and builds custom cars in Detroit.

Adam Genei, Owner of Mobsteel, and his crew can be seen locally at their shop, events around Metro Detroit or on their TV show Detroit Steel, which airs on History. ICR developed a relationship with the company that lead to a few highlights of our robotics facility on the debut episode of their series.

A few of ICR’s repair and OEM partners stopped by our event to showcase their service offerings. We were very fortunate to have Atlas Copco, Dengensha America, GTI Spindle and Threadcraft on hand to celebrate a momentous occasion.

We’ve posted a video recap of the event and an image gallery here.

Left to right: Glenn Dantes, ICR VP - Automation Division; Adam Genei, Owner of Mobsteel / Detroit Steel Wheel Co.
October Technical Meeting Recap

The AWS-Detroit section hosted its October Technical meeting at Easom Automation in Madison Heights, Michigan. Mr. Frank Wennberg, the Sales Manager of Lincoln Electric Automation Solutions at Easom Automation Division, gave a presentation on modular arc welding cell advancements on coated material regarding various auto equipment. His presentation detailed how Lincoln Electric Automation Solutions innovatively designed the arc welding cell in a modular fashion for less maintenance effort, short down time, and flexible upgrade/interchange of some portion of the cell for multiple welding applications. There were about 30 attendees in the meeting. A shop tour of Easom automation was given after Mr. Wennberg’s presentation.

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Q: “We are resistance spot welding on galvanized coated parts and experiencing what we consider to be short electrode life. We start each production run with welds that barely meet their size requirements but finish with expulsion so severe we end up destroying the electrode face. We are hesitant to change the weld schedule due to the small initial weld size and have instead focused on the current stepper, to little effect. The water flow, electrode cap size, weld force, secondary current and weld time are all in line with RWMA and AWS C1.1 guidelines. Any ideas would be appreciated.”

A: “This question intrigues me. If it is assumed that all other aspects of your Resistance Spot Welding (RSW) application are within acceptable industry norms, and that you are welding parts with a coating that is not too detrimental (they all are to a certain extent) to the electrode caps, you may actually have a current stepper boost issue. However, as I hope to illustrate, this boost issue may be of a very different kind than one would typically encounter. But, before we move forward, the following caveat must be understood: This discussion is really relevant only for automotive grade coated steel products, with the assumption that you are referring to hot-dipped galvanized parts for your application. I say this as other automotive grade coatings (electro-galvanized, galvanneal, etc.) do exhibit this behavior but typically to a much lesser degree. The welding of any other material substrate (stainless, etc.), or grade of galvanized coating (i.e. commercial, military, etc.) on steel, falls outside of the realm of this article’s applicability. Also, please note that for this discussion all aspects of the RSW process are correct for the application being discussed. The important elements of material weldability, part presentation, weld gun capability, configuration and condition, electrode alignment, cooling, stack-up ratio, plus the actual weld schedule itself, are suitable for the application. If this were not the case, we would not be able to correctly evaluate the application for electrode wear and weld performance over the course of a production run.

Now, back to the matter at hand, your question. To help answer it one must first understand what would occur if we were using the RSW process and did not have a current stepper boost feature on our weld control. As each weld is made, the act of applying the scheduled weld time and secondary current, combined with the application of the needed weld force, physically degrades the condition of the electrode contact face. Some in the industry refer to this as mushrooming. This degradation may be subtle and barely noticeable even after many welds, or it may be dramatic, occurring very quickly in the production run. As an example, when the RSW process is used on bare steel and the parts are free of dirt and lightly coated with a known benign oil, it may be possible to make many thousands of welds before the electrode caps are no longer able to produce a weld of acceptable quality. On the other hand, I have seen coatings that acted so aggressively as a wear agent that the electrode caps were essentially ruined and required maintenance after less than a few dozen welds. The most common electrode maintenance activity involves renewing the contact face geometry either by dressing the electrode cap, or replacing it.

The current stepper is a feature of the weld control and was created as a means to help increase the number of welds between electrode maintenance cycles. It accomplishes this by the adjusting the secondary current in a programmed manner so that the current density (amps/unit area) remains relatively consistent as the electrode cap contact face area increases with every weld. The early weld controls only permitted for the addition of current at discrete intervals and a plot of their profile over time looked like a set of steps, hence the name. A more modern weld control permits for a customized profile plot (e.g. boost of 1 amp/weld). However, despite the fact that the profile is a sloped line and no longer looks like set of stairs, the name has stuck. As an aside, there has been movement at the OEM level away from utilizing the boost feature of current steppers and strictly using them as a counter to trigger a maintenance activity. This no-boost (or minimal boost), dress early, dress often philosophy has merit but really needs to be the subject of a separate discussion. For context, we last took a look at the current stepper in an earlier column (Oct-
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Hi Brian and Welcome to the Column! I’d also like to welcome you to the AWS Detroit Executive committee! This is the first time, I’ve been able to interview one of our members who is actually the new columnist for this section of the e-bulletin.

Brian, why don’t you tell us a little bit about yourself?
Hi, my name is Brian Hanhold and I’m a Joining Engineer, Body Construction Engineer at Ford Motor Company.

Brian, tell us a little bit about your position, what do like or even dislike about your position.
I enjoy my fellow colleagues and collaboration we have not only within Ford, but with the supply base as well. I enjoy the feeling of watching F-Series driving down the road and knowing I was critical in making that product available. (I also like pointing out tidbits of information about it to anyone that will listen!) The one thing I dislike is the sheer number of hours that launching vehicles can consume. But that feeling of seeing all those long hours become something tangible and people love, makes it worth it.

Why did you join AWS?
In 2008, I joined the student chapter at The Ohio State University. I have continued paying dues because the Society and local chapters have been worth investing in for continued pursuit of welding excellence by supporting training on technical knowledge, providing scholarship assistance for future generations of welders/engineers, and a great network to be involved with for my career.

What’s your favorite AWS event?
National level I enjoy FABTECH and locally, I enjoy the Technical Series and Ladies’ Night.

What kind of things do you enjoy outside of work?
I play beer league hockey, softball, and volleyball, ride bikes, visit new breweries, and travel to wherever peaks my interest (usually involves hiking/kayaking, or one of the previously mentioned interests)

I always like to ask our guests if they have a funny moment or story that they don’t mind sharing.
Forgetting to turn the water back on a RSW test bench when I interned at GM. The sound of the electrode caps blowing was quite the shocker. I am glad no one got hurt considering how far the electrode traveled from where I was working. Needless to say, I didn’t forget to turn the water back on after that.

What is your most memorable moment?
Back in school, I captained a student project, making a human-powered “Moonbuggy” we tested the night before we had the competition in Huntsville, AL and somehow broke a control arm going over a curb. Needless to say, we pulled an all-nighter to fabricate another and were still able to finish with the 2nd best time in the competition.

What do you see as the biggest challenge for welders in the future?
The age gap between veterans in the industry and newcomers. The knowledge and experience are not easily replaceable. Another tough challenge is increasingly more difficult materials to weld in all industries. This requires a constant need for education and training that makes our occupation very exciting, yet challenging.

Have you ever used your welding skills outside the workplace?
I have made a couple minor home projects including an INCONEL spatula, some sheet metal “art,” and some repairs to old bicycle frames.

What would you tell someone who may be “on the fence” about getting into welding as a career?
There are great opportunities in various industries that aren’t going away anytime soon. Even if you are local and it only seems like automotive options are available, there are still numerous companies within the Detroit section that do fabrication for automotive or are in aerospace, military, oil &gas, and numerous other industries.

If you weren’t involved in the welding industry, what would be your dream job?
Growing up, depending on the week, I wanted to be a professional baseball player, FBI agent, or an astronaut. Now, I’d probably like to start my own brewery, even though I think that market is oversaturated.

Would you encourage more schools (high schools and junior high) to encourage more young people to look into technical schools and jobs and not just degreeed positions? Explain your answer.
Yes, I think we are at a loss for skilled positions, not only welding, but electricians, millwrights, pipefitters, mechanics, you name it. These are still highly regarded and well-paying jobs, but there isn’t a focus on it anymore. I wish I had taken more trade/technical courses to be more self-reliant (i.e. wood/metal working, plumbing, home construction projects, etc.). So, I either learn from online videos or paying someone to do something I should be able to do myself.

Thank you, Brian, for being our November featured member. And, thank you as well for taking over this column.

If you’re interested in being featured in our monthly e-bulletin as a AWS Detroit Section member, please contact Brian Hanhold at bhanhold@ford.com for more information and/or to set up an interview opportunity!
Call for Papers

The Sheet Metal Welding Conference (SMWC) is the premier technical conference dedicated to bringing experts together to discuss state of the art welding and joining technologies for the automotive, transportation, and light manufacturing industries. SMWC also provides important opportunities for engineers and researchers from manufacturers, suppliers, universities and research institutes to network and meet experts in the field of welding.

SMWC XVIII will emphasize recent developments in welding and joining solutions that enable lightweight vehicle design and construction. You are invited to submit technical papers for presentation at this conference.

Topics of interest include, but are not limited to:

• Fusion Welding and Brazing (Resistance, Arc, Laser and others)
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• Welding and Joining Process Simulation
• Vehicle Performance Simulation and Assessment
• Joining of Advanced Steels
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• Joining of Dissimilar Materials
• Materials and Weldability
• Non-sheet-metal Automotive Joining
• Joining Tooling & Equipment
• Welding Process Monitoring & Control

Note: the conference will be preceded by a one-day workshop on 10/16/18

Please complete the Author Application Form (below or available at aws.detroit.org) and submit it along with a 100–300 word paper abstract to smwcpaper@awsdetroit.org by April 27, 2018. If you have any questions related to submission, please contact: Jerry Gould, Technical Chair, Edison Welding Institute, jgould@ewi.org

A single complimentary admission to the conference is available for each presented paper.

Author Application Form

Complete and email the electronic version of this form together with a technical abstract to smwcpaper@awsdetroit.org.

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By submitting a paper for presentation at the Sheet Metal Welding Conference, the author(s) grant a non-exclusive license to the American Welding Society-Detroit Section to publish and distribute the paper as part of the Conference Proceedings.

Please type your technical abstract in a double-spaced format and limit it to no more than 300 words. The abstract file should be sent together with the author application form to smwcpaper@awsdetroit.org.