AWS Technical Nights are open to everyone! We encourage that members bring students and non-members to learn more about our organization and industry.

AWS Detroit Section
2017 Christmas Party

Come One Come All
Join us for food, fun and festivities~

Saturday, December 9, 2017
6 pm to 10:30 pm

Western Golf & Country Club
14600 Kinloch,
Redford MI 48239

Register Online
Click Here
Well, we are closing out 2017 and it has been a good year. The Detroit Section has a great annual social event planned with our Christmas Party – Saturday, December 9th, at the Western Golf and Country Club in Redford. I know the committee is working hard to make this a great event! Please consider attending and take your spouse out for a wonderful evening. You can contact Brian Peterson for more information at peterson.brian@fronius.com.

I was able to attend the AWS Fabtech show in Chicago and over the 4 days met with fellow AWS members, customers, old friends, and students. This year I attended the AWS Section Luncheon and it seems like the groups of people being awarded 25 Year, 35 Year Life and 50 year Gold awards grow larger every year. The photos had to be split into 3 groups for the 25 and 35 year awards so it is great to see so many with such long years of membership attend and be recognized.

As great as it was to see so many honored for years of membership the young faces I saw at each table were also encouraging. If you have a 35 year life membership and no longer have to pay for your dues consider buying a membership for a student or person who may be interested in our industry. If you have a stack of Welding Journals drop them off at a local vocational school, introduce yourself to the welding instructor. Maybe they would be interested in a current or retired professional sharing their experiences.

Well, I would like to wish you a Merry Christmas, Happy Hanukkah and a Happy New Year. See you in 2018! Please have a safe holiday season and enjoy time relaxing with family and friends.

Wes
AWS Detroit Section Members honored at FABTECH 2017

Each year at FABTECH WEMCO presents their annual Excellence in Welding Awards. These awards were established to recognize individuals and organizations that are instrumental in raising the image of welding and strengthening the industry, having shown exemplary dedication to promoting the image of welding in their communities. These are peer nominated awards which provide members of the welding industry with the opportunity to acknowledge those around them who elect to donate their time and efforts to this worthy cause.

Ray Roberts
Individual Excellence in Welding Award
Ray’s welding career began as a co-op student with the Fisher Body Division of General Motors in 1971. Over the next 40 years Ray held various positions including Senior Manufacturing Project Engineer, Welding and Equipment Engineer and Maintenance Crew Coordinator for the Saturn Corporation in Troy Michigan and Spring Hill Tennessee. Ray has been an active part of the Detroit Section and its Executive Committee for over 20 years, most notably serving as the Section Chairman in 2006/2007. Having recently retired from GM, Ray continues his involvement with the Detroit Section taking an active role with the Scouts program – helping many students to acquire their Welding Merit Badges and with the Golightly Weld Advisory Committee - a part of the Detroit Public School system.

AET Integration Inc.
Small Business Excellence in Welding Award
AET is based out of Troy Michigan and offers services for welding research and development, material qualification testing and failure analysis. They serve a wide variety of industries including automotive, heavy manufacturing, aerospace, oil and gas and even government. The company has earned several distinguished awards including the 2014 USCAR Research Partner Award, the 2013 Chrysler Technology Innovation Award and the 2007 Henry Ford Technology Award. In addition to the recognition they have received through other organizations, AET’s support of the AWS Detroit Section certainly stands out as being exemplary. AET is involved in social activities with the section and has helped raise funds for the Section’s scholarship program. AET recently volunteered their facility for the Lightweight Material Joining Workshop component of the AWS Detroit Section Sheet Metal Welding Conference.

In addition to the WEMCO Awards, AWS National also takes time at FABTECH each year to recognize men and women in the industrial, education and research communities who have made exceptional contributions to advance the science, technology and application of welding and allied processes. This year, Detroit Section member Glen A. Night received the National Meritorious Award. This award is given in recognition of the candidate’s counsel, loyalty and devotion to the affairs of the Society, assistance in promoting cordial relations with industry and other organizations, and for the contribution of time and effort on behalf of the Society.

Glen A. Knight
AWS National Meritorious Award
Glen is a Life Member of the AWS. He became an AWS Certified Welding Inspector in 1979 and is a former AWS Detroit Section Chairman (1991/1992). He has served as both contributor and chapter chair for the Welding Hand Book, Materials and Applications for Tool & Die Welding. He is currently serving as the Detroit Section AWS CWI Test Supervisor and co-chairs the annual Detroit Section High School Welding Contest. Glen attended Lawrence Institute of Technology and Central Michigan University. He started his career with Chrysler Corporation in 1976 in Detroit Michigan where he held various positions in management and served as Chief Instructor and AWS Certified Instructor. Later in life, Glen was employed as Manager of WeldTech Welding Education Center as a part of Chrysler Learning Inc. This was an accredited, licensed vocational school. His last position with Chrysler was in the manufacturing training group. He was responsible for production and skilled trades welder training, workmanship, qualification, testing and certification. After retiring from Chrysler he continued to perform welder training and qualification at Baker College. In addition to his volunteer work with the AWS Detroit Section, Glen has also been an active part of the Skills USA High School Welding competition at the State Level.

In an oftentimes thankless industry, please help us to take the time to recognize these individuals for all that they’ve done and continue to do to help the welding industry, both locally and on a national front.
AWS Detroit Section Career Moves

Congratulations and Best Wishes to Brian Hanhold as he leaves Michigan, Ford Motor Company and the AWS Detroit section for sunny California and a new career opportunity.

Hosting Opportunities

The AWS Detroit section is looking for companies willing to host a technical night at their location. Perhaps you have someone who is willing to speak about your company, product or industry and show our group your capabilities and performance on a tour of your building? We are always looking for host companies, so please contact John Sutter at 248-915-865 or email him at jsutter@ABICORUSA.com.

November Educational Night Re-cap

The Detroit Section continued its Welding Education Series by hosting a session on “Resistance Spot and Projection Welding Standards & Quality” November 16, 2017 at the Ukrainian Cultural Center in Warren, Michigan. The presenter, Mr. Don Maatz, started the talk with various welding standards for spot welding and projection welding commonly used in automotive industry. He then laid out the details, different quality issues and failure modes regarding those two welding processes. He wrapped up the talk with an introduction of quality inspection methods including both DT and NDE methods. The session was attended by over 30 attendees, and lasted about 2.5 hours.
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**Ask the Welding Engineer**

**By Donald F. Maatz, Jr.**

**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:** “With our last column (Nov-17 ATWE) we attempted to help determine why a particular Resistance Spot Welding (RSW) application was behaving in a rather dynamic manner. One possible idea that merited further discussion was the relationship between the current stepper boost profile and the base weld schedule. This column continues in that direction.

An examination of the application reveals that you may be dealing with, at least for the first portion of your production run, a large variance with your electrode contact face resistance. I say this based on your statement that the welds initially were almost unacceptably small at the start of a production run but eventually grew so hot over time that expulsion ensued. This is a phenomenon that we have seen frequently and have illustrated with an additional data point in a weld lobe plot (See Figure-1). What is unique about this particular weld lobe plot is that it details the secondary current value when a new set of electrodes produces a weld that meets the requirements of Minimum Weld Size (MWS). However, once the electrodes had been conditioned (See Reference-1), the secondary current required to achieve a weld at MWS (I-Min) was substantially lower. Additionally, the new electrode MWS current is only slightly lower than the conditioned electrode expulsion current (I-Max).

The situation detailed in our example weld lobe is a result of the electrode cap surface contact resistance changing rapidly over the initial 30-100 welds of their life cycle. Once the weld-to-weld variability of the surface contact resistance has been greatly reduced, the effect of electrode face geometry (See Mar-14 ATWE) becomes the dominant driving force for the weld lobe results. A potential fallout from this dynamic behavior is that the published results for this weld lobe would be of minimal value unless they were confirmed by a Weld Lobe Point Verification. The Weld Lobe Point Verification test validates a specific set of welding parameters as to its ability to consistently produce welds of acceptable quality. The test is conducted by establishing the weld point within the lobe that is to be validated. For typical automotive grade materials, the validation point is usually 500-1000 amps beneath the expulsion current for a given weld time and utilizes electrodes configured to mimic a production environment (i.e. out of the box without conditioning or stabilization). The welding portion of the validation consists of a series of peel coupons (typically 30 or more) at the desired validation point. All peeled test welds should be greater than Minimum Weld Size, and ideally exhibit no expulsion. While the creation of a true weld lobe can be just this side of impossible to accomplish in a production environment, there are some possible weld schedule and/or stepper boost profile changes that we can suggest to help with this situation. These will be detailed these in our next column.

If you have more questions about this topic, Contact Don Maatz at: R&E Engineering Services A subsidiary of R&E Automated Systems, LLC 70701 Powell Road, Bruce Township, MI 48065 (586) 228-1900 – Office (734) 793-2304 – Direct dmaatz@reautomated.com

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**References:**
1) AWS D8.9M-2012 Material Characterization
3) AWS C1.1M/C1.1:2012, Recommended Practices for Resistance Welding

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**Figure-1:** A resistance spot weld lobe
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First off, I’d like to thank Kuka Robotics and Andre Young for making this happen and for being a great host for the event. The Kuka staff was very informative and pleasant with their presentation and instructions on the robot operations and capabilities. After a very informative tour of the facility Kuka staff instructed the students on the basic operation of their robotic systems, and then they took them out and let them operate the robots for themselves! All the students had a chance to work with the robot training cells and try and perform basic robotic functions and maneuvers. This was the first time most have had their hands on this type of equipment and it was obvious that they truly enjoyed being part of the Kuka experience. I would be amiss if I didn’t mention some of the students did seem to have a knack for the robot and showed talent and interest. That is what we all like to see in our young adults.

AWS Detroit has been working with Golightly now for over 4 years and with the efforts of the welding instructors Juan Whiting [retired] and the current instructor, Jeffery Samuels, have had success in students choosing to work toward a welding degree. This is currently the first and only student chapter within the city of Detroit. Golightly is also a full time high school and career center that also houses the Davis Aerospace program. That program actually had 4 students graduate with their pilot's license.

Neal Morrison, the Superintendent that oversees all this has done a wonderful job! More of our educators could take a lesson from Neal. He is dedicated to the students and the school with a passion I haven’t seen in a long time. I would also like to mention Patricia Bell who handles student affairs as she has been dedicated to our efforts with the welding program.

As chairman of the Golightly Weld Advisory committee I would like to take the time to thank all who sit on the Weld Advisory Committee with me at Golightly. They all have been supportive of this program and volunteer their time to help support the school and its students.

Tom Sparschu
Ray Roberts
Andre young
Juan Whiting
Levan Hoskins
Jeffery Samuels
Neal Morrison
Patricia Bell

And the entire Detroit section AWS for its continued support of our efforts with the school.

I would like to thank you all, and I hope to continue to be part of the Golightly team for years to come.

Golightly Field Trip to Kuka Robotics

Submitted by Jeffry Hill Vocational Liaison AWS Detroit
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- Abstract Submission: By March 30, 2018
- Notification of Acceptance: By April 27, 2018
- Full Paper Submission: By August 1, 2018

Please complete the online Author Application Form and submit it along with a 100-300 word paper abstract by **March 30, 2018**. If you have any questions related to submission, please contact:

Jerry Gould, Technical Chair
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The Author Online Application form is available via [www.awsdetroit.org/smwc.html](http://www.awsdetroit.org/smwc.html)

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