



American Welding Society®
DETROIT SECTION



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AWS-Detroit Ladies' Night

Saturday, April 13, 2024 • 6pm - 12am

The Atheneum, Detroit

1000 Brush Street • Detroit, Michigan 48226

2024 Ladies Night Scholarship Gala Detroit Section



WHERE: The Atheneum ***NEW VENUE***

WHEN: Saturday, April 13th, 2024 ***SAVE THE DATE***



For more information, contact awsdetroitregistration@awsdetroit.org

Cocktails	6:00 pm - 7:00 pm
Dinner and Program	7:00 pm - 9:30 pm
Afterglow Dancing	9:30 pm - 12:00 am

**FOR OVERNIGHT RESERVATIONS
AT THE ATHENEUM:
call (313) 962-2323 or online:
<https://www.atheneumsuites.com/>**

Check out the latest videos published by the American Welding Society on its YouTube page.

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



eBulletin Contributors

(Emails linked where available.)

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Chairman's Message
John Pippin

Hello AWS family and friends.

I wanted to start with a **thank you to the Ram Solutions, LLC team** on a great tech meeting in Troy on March 14th. The topic was *Vision Inspection for Mig welding and more*. The night started with a great meal coordinated by Susann DeRosia from Ram. The presentation was given by John Macdonald and Tom Thompson. I hear the beer was Mitch Yencha's idea! Thanks again

Ram Team! This was also our Patrons Night and Steve Gucciardo was able to pass out to many Patrons a big thank you! I would also like to say thank you to all the Patrons who support our scholarship program!

While we are talking about Tech Night the May Tech meeting will take place on Thursday May 16th starting 5:30pm. We will have a speaker along with food at IPG Photonics. More info to come next month. Watch the e-Bulletins and check our website often for the latest information.

Did I mention Ladies Night! This will be the last time! Hosted by Russel Webster - Ladies' Night chairperson and committee. Ladies' Night will be April 13, 2024 at The Atheneum Hotel in Detroit. Please [CLICK HERE](#) to register.

Sheet Metal Welding Conference (SMWC) will be happening October 22-24. Watch for more information on the SMWC XX in the E-bulletin and your email. If you have questions, want to submit a paper or want to help out, please [CLICK HERE](#)

As always, you can find more information about our local events, both past and upcoming at [OUR WEBSITE](#).

Please visit our site often as it is always being updated with new content. Thank you greatly for the many ways you support our AWS-Detroit Section and the industry we serve. Look for us on Facebook and Instagram.

Thanks,



John Pippin AWS
Detroit Section Chairman
2023-24



Upcoming Events

2024 Ladies' Night

April 13, 2024

The Atheneum
1000 Brush Street, Detroit

CWI Seminar:

May 5 - 10, 2024

Exam:

May 11, 2024

Detroit Metro Airport Marriott

May Technical Meeting

May 16, 2024

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- Institutional Grants (endowment based);
- Scholarships through Application (endowment based);
- Scholarships through aptitude (HSWC);
- Vocational Support (case by case but budgeted each year), Institution (e.g. supply gas and materials), Local Contest (e.g. travel expense), International Contest (e.g. travel expense);
- Student Memberships (evaluated each year); • Student Chapter (evaluated each year);
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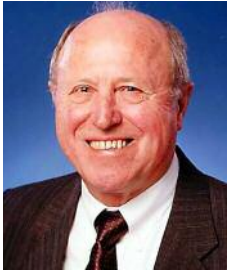
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The AWS-Detroit Section Remembers:

Amos Winsand



The welding community lost a special person when Amos Winsand left us. Throughout the course of his life, Amos Winsand had an impact on many. For those in the welding community, we saw a charm, character and grace that left an indelible mark on us all. Like most great individuals, his work is still going on. The ground work laid by Amos, notably his work to establish the Detroit section's scholarship program back in 1974, is helping folks to this day, even though they may have never known him.

Amos joined the American Welding Society (AWS) in 1961. A long-time contributor to the AWS Detroit section, his work spanned decades and touched many lives. A proud past section chairman, Amos held just about every office within the section, and helped with practically every event. Because of this hard work and dedication, his peers recognized Amos on numerous occasions, both for his contributions to the industry, and the society. Notable achievements include:

- AWS member since 1961 – 63 years dedicated service to AWS Detroit Section
- AWS Detroit Chair – 1978-79
- AWS D-11 District Meritorious Award – 1985
- AWS Detroit Section Distinguished Service Award – 1990
- AWS National Meritorious Award – 1998 & 2001



Amos was born and raised on a dairy farm in west central Wisconsin. He served with the Marine Corps during World

War II in the Pacific, including the battle for Iwo Jima. Following the war, courtesy of the GI Bill, he attended the University of Colorado, graduating with a Bachelor of Science in Electrical Engineering. It was there that he met his future wife of 66 years Marilyn, at the time a visiting student from Michigan State University.

Amos began his career at Kirkhof in Grand Rapids, MI. While in Grand Rapids, Amos and Marilyn started their family with the birth of three children. They then moved to Birmingham, MI where Amos became a Managing Partner at Dollar Electric, an automated welding machine designer and tool builder. During this time, Dollar expanded with the purchase of X-mation Tool, another automated welding house. While in Birmingham, they had two more children.



As a team, Amos and Marilyn volunteered significant time and effort to the AWS beginning in 1961. Their efforts focused on the Detroit Section and later at the National level. They had a special focus on promoting educational opportunities to advance America's leadership in the science, technology, and application of welding worldwide. To that end, they established the Amos & Marilyn Winsand Endowed Scholarship Fund

in 2001. Their generosity marked the first-time individuals had endowed an award, as all prior scholarships were funded by corporations or foundations. In 2016, Amos was inducted into the Welding Engineering Hall of Fame at Ferris State University.

Amos exemplified an AWS success story; someone who entered our business with lifelong ambitions and paid back AWS repeatedly for many years with time, talent and treasure. He was truly "one of ours."



There will be a celebration of life memorial service at Lutheran Church of the Master (3333 Coolidge Hwy Troy, MI) on Thursday, April 18th at 11:00am. The family will receive guests starting at 10:30am. For those unable to attend, the service will also be livestreamed on YouTube from the church's website. A casual luncheon will be served at the church immediately following the service. In lieu of flowers, charitable donations can be made to:

- American Welding Society (Amos & Marilyn Winsand Scholarship): weld.ng/amoswinsandmemorial
- Lutheran Church of the Master (Troy, MI): lutheranchurchtroy.org

Ask the Welding Engineer

By Donald F. Maatz, Jr.

Q: “Do you know of a strategy one can use in an attempt to reduce resistance spot welding expulsion? We have been fighting this issue for a while, with varying degrees of success, and are looking for some fresh ideas. Our shop utilizes predominantly robot mounted welding guns, but have some fixture tools as well.”

A: “In our previous columns regarding expulsion (ATWE Dec-23 thru Mar-24) we discussed the phenomenon as it pertains to the Resistance Spot Welding (RSW) process. The items discussed included relevant definitions, a generic path towards expulsion reduction/elimination, an outline of a robust generic welding condition (to include the function of both weld force and current), and presented the relationship between the main elements of a weld schedule and effective heat (the Rules of 2-1-1/2). We now continue with a look at other process

variables and see how they can relate to both effective heat, and subsequently expulsion.

From our previous column (ATWE Mar-24) we detailed how the basic fundamentals of an RSW schedule relate to effective heat. The rank order for our fundamental scheduling elements, with regard to effective heat, is current, time, and force. We will now see how we might, for lack of a better term, indirectly impact their contribution to the RSW process. To start the conversation, let’s assume we have established a robust RSW condition on steel. Our baseline schedule has the following parameters:

Weld Current (kA)	Weld Time (cyc / ms)	Weld Force (lbf / kN)	Contact Face Diam (mm)
10.0	12 / 200	680 / 3.0	6.0

To illustrate one (of many) other potential process variables, we will focus on just the electrode contact face diameter, and nothing else. And we will make only two (2) ‘small’ changes. The first has the electrode face growing just a bit, and the second has the contact face becoming a bit smaller. As an aside, for those not sure

how these changes can be realistic in a manufacturing environment, one possible option is detailed in the ISO-5821. The type B0-16 and F1-16 geometries cover the three (3) face diameters detailed below, and all have the same taper, so everything is interchangeable.

Weld Current:

From the Rules of 2-1-1/2, we understand how any change in weld current has a rather profound effect on the effective heat. And this change can happen with the value of the current either increasing or decreasing. From our example, if we decrease the contact face by just 0.5 mm

(got to love the word ‘just’), we can increase the apparent current (It is actually a current concentration calculation, also known as current density, as shown in the table below) the weld sees by close to 20%, and we never touched the weld control.

ASK THE WELDING ENGINEER
continued on page 10

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Jordan Martz
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Engineering management
Detroit Section Scholarship
District 11 - 011-Detroit

Dear AWS Detroit Section Scholarship Committee:

I want to personally thank you for awarding me the AWS Detroit Section Scholarship for Fall 2023 and Spring 2024 semesters.

This scholarship will help me pursue my education goal of a Masters of Science in Engineering Management from University of Michigan. When I started my long education path almost 10 years ago, I would never have anticipated completing a Masters from U of M. I cannot thank AWS and the generous donors enough for helping me make this dream a reality.

Again, I just want to extend my gratitude for choosing me as the recent recipient of the Detroit Section Scholarship.

Sincerely,
Jordan Martz

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Thank you for your support!

ONE HUNDRED PERCENT of the Patron's Fund Donations are directed to scholarships for students who are pursuing careers in Welding Engineering and Welding Technology. To become a Patron, contact Steve Gucciardo, AWS Detroit Section-Patron's Committee Chair, 810-623-6508 or email gucciardos@shapecorp.com

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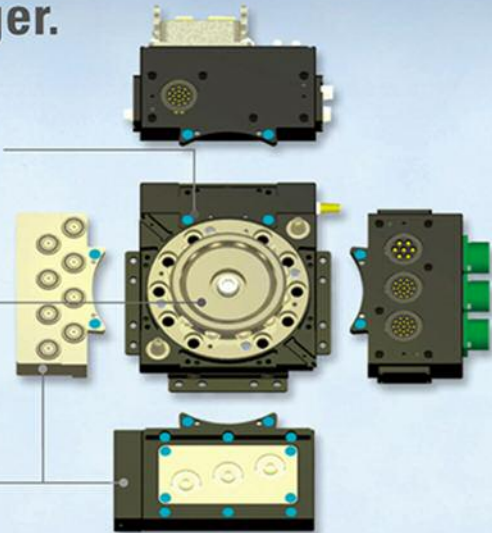
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ASK THE WELDING ENGINEER *cont'd from pg 5*

In a word – Wow! One guess as to what a change of this magnitude might have on the potential for expulsion from the weld.

Conversely, the same 0.5 mm diameter change in the other direction has the potential to decrease the effective heat (current concentration) by almost 15%. While the resultant weld may not be chilly enough to keep your beverage of choice cold, the available current might struggle to create the needed heat to produce an acceptable weld.

For completeness, it is this increase in contact face diameter, which occurs as a normal part of the RSW process, that drives the need for proper electrode maintenance (think dressing, replacement, etc.) and possibly the need for a current stepper (see ATWE Oct-15).

With the aforementioned in mind, we can also visualize how important electrode cap alignment (also called concentricity) is with regard to the concentration of current. Once the electrode faces start to drift from center, the resultant 'convex lens' contact pattern gets small quickly, with sometimes stunning results:

Contact Face Diam (mm)	Diam% Change (From 6.0)	Electrode Contact Area (mm ²)	Area% Change (From 6.0)	Current Concentration (CC) (A/mm ²)	CC% Change (From 6.0)
5.5	-8.3	23.8	-15.9	420	+19.0
6.0	~	28.3	~	353	~
6.5	+8.3	33.2	+17.3	301	-14.7

Donald F. Maatz, Jr. is with R&E Automated Systems and serves in the capacity of Laboratory Manager. He is past-chairman of the AWS-Detroit Section, serves on the D8 and D8.9 Automotive Welding Committees, is chair of the D8D, and an advisor to the C1 Resistance Welding Committee, is an AWS endorsed CWI and an instructor for the RWMA School. He is a graduate of Ohio State with a BS in Welding Engineering.

Weld Time:

The various other process elements associated with a weld do not typically have a direct impact on weld time. Still, as all of these variables change, one may be forced to alter the programmed value of weld time to account for the evolution of the welding condition. For example, as the electrode face grows, in addition to adding current, there may be some circumstances where additional weld time may be beneficial.

That being said, we stand by our earlier assessment of weld time: A shorter than optimal weld time has little/no tolerance for current, resistance, or other process variations. A longer than optimal weld time at lower current wastes energy, can lead to thermal duty cycle issues and does not necessarily give you fusion.

Weld Force:

Just as with weld current, the altering of the electrode contact area has an impact of the apparent force the weld sees (it is really a pressure calculation). However, as predicted by the Rules of 2-1-1/2, this increase or decrease is not nearly enough to alter the effect of the change in current. In other words, the increase in heat due

to a reduction in contact face geometry is much greater than the decrease in heat due to the increase of apparent weld force.

Other Possible Issues:

There are also other process variables to consider, and all of them, to a certain extent, have an effect on the potential for expulsion from a weld.

Insufficient Edge Distance – The weld is too close to or on the edge of the part (ATWE Sep-18).

Dirty/Scaley Material – The surface contaminants wreak havoc with faying surface resistivity.

Poor Part Fit Up – The force required to bring things together can lead to insufficient apparent force at the weld.

Alignment to Metal – In addition to interfacial expulsion, the resultant 'hot & cold' zones created by things not being normal to the part can lead to uneven indentation, or even surface expulsion.

Short Squeeze Time – The proper force does not have time to build up.

Next month we will talk about ideas of quantifying expulsion, and hopefully utilizing what we have learned to keep it at bay."

If you have more questions about this topic, contact Don Maatz at:

R&E Automated Systems
70701 Powell Road
Bruce Township, MI 48065
Office: (586) 228-1900;
Direct: (734) 793-2304

dmaatz@reautomated.com

Contact Face Diam (mm)	Diam% Change (From 6.0)	Electrode Contact Area (mm ²)	Area% Change (From 6.0)	Force Concentration (FC) (Lbf or kN/mm ²)	FC% Change (From 6.0)
5.5	-8.3	23.8	-15.9	28.5 / 0.13	+19.0
6.0	~	28.3	~	24.0 / 0.11	~
6.5	+8.3	33.2	+17.3	20.5 / 0.09	-14.7



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April Hotline

The AWS Foundation proudly awards over 1,500 scholarships annually, ranging from \$1,000 to \$6,000 to students at technical schools, two-year colleges, and four-year universities.

Educator Scholarships Now Open - AWS

The AWS Educator Professional Development Scholarships provide up to \$5,000 for welding educators to advance their skills and impact in teaching. Deadline to apply is April 1, 2024. [CLICK HERE TO APPLY](#)

WSU Receives Fanuc R-2000iA Robot



Great News! R&E Automated Systems has been working closely with WSU's Welding & Metallurgical Engineering Technology program to help enhance their lab capabilities for their resistance spot welding courses. WSU was a recent recipient of a Fanuc R-2000iA robot, complete with resistance spot weld gun, dress pack, water saver & WTC weld controller. This donation was facilitated by Mike Remer (R&E Joining Engineering Manager) along with the help of WSU Assistant Professor and Program Director, Mark Jager.



CenterLine Appoints Darryl Beneteau to Chief Operating Officer

WINDSOR, CANADA – CenterLine (Windsor) Limited is very pleased to announce that Darryl Beneteau has been appointed to the role of Chief Operating Officer.

In this new role, Darryl will provide operational leadership for the CenterLine (Windsor) Limited team.

"We are positioning CenterLine for the future, creating the framework necessary to transition the company to the next generation of leaders," said Michael Beneteau, CEO of CenterLine (Windsor) Limited. "Darryl is a proven leader, and he will drive this strategic initiative with the mentorship of the senior leadership team, ensuring a deliberate generational transition while upholding our company values."

Darryl has cultivated extensive business management expertise through a range of roles at CenterLine since rejoining the company in 2009. He returned to CenterLine upon earning his bachelor's degree in mechanical engineering from Kettering University in Flint, Michigan. His journey at CenterLine has encompassed diverse positions, including General Manager, Plant Manager, Project Manager, and Product Designer, allowing him to develop a comprehensive skill set.

For additional details, please contact Phil Campbell, VP Global Sales and Marketing, at (519) 734-8464 ext. 4432.

Reflecting On Days Gone By... Ladies' Night 1993!

L to R:
Lee Mollica,
Paul & Moni
Shaughnessy,
Jim & Lois Goode,
Walt & Louise
Dilay, Tom &
Jayne Shearer,
Dick Mollica



L to R: Chuck & Myrna Padden, Karl & Betty Lis, Jim & Marge Mitchell, Beverly & Carl Hildebrand, Buzz & Dawn Veldheer



L to R: Janet & Paul D'Angelo, Chuck & Myrna Padden, Maureen Delphia, Dave Dickinson, Tom & Marcy Sparschu, Marilyn & Amos Winsand



L to R:
Janet &
Paul
D'Angelo,
Mr. & Mrs.
Robert
Watz, Mr.
& Mrs.
Joseph Doa



Paul D'Angelo and
Tom Sparschu

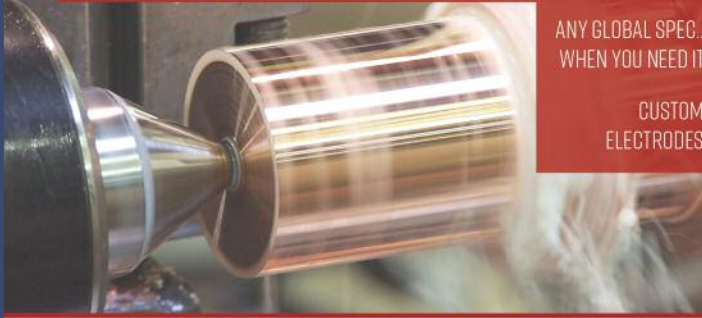

L to R: Mardell &
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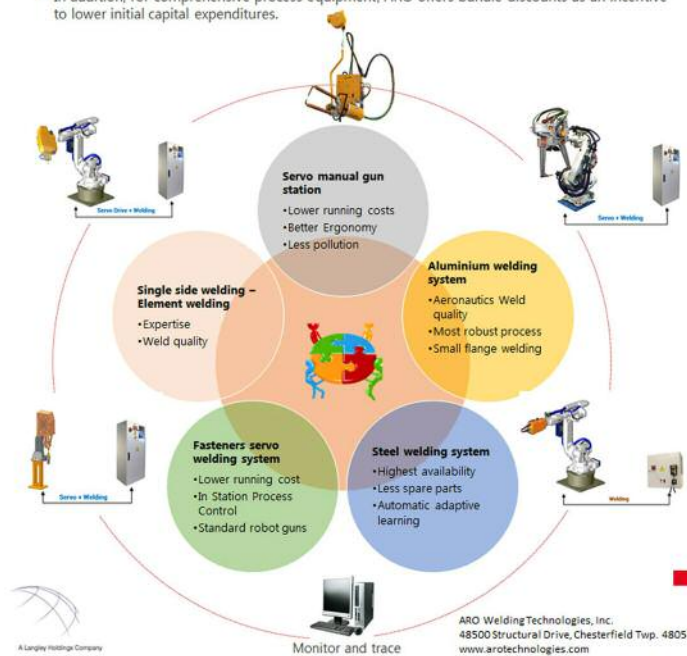
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Thank You

AMERICAN WELDING SOCIETY



Anthony Proffer

Grand Blanc, MI

Ferris State University

Welding and Fabrication Engineering Technology

Detroit Section Scholarship

District 11 - 061-Saginaw Valley

Dear Detroit Section Scholarships Donor,

My name is Anthony Proffer, and I am honored to be one of this year's recipients of one of the Detroit Section Scholarships. I would like to personally thank you for your generosity in funding the Detroit Section Scholarships. Thanks to your donation, I can continue pursuing my bachelor's degree in Welding Engineering at Ferris State University in Big Rapids, Michigan.

I am currently in my Senior year of the Welding Engineering program at Ferris State University. My passion and commitment for Welding Engineering has allowed me to achieve a GPA of 2.93/4.0. In addition to my academic studies, I have participated in several Ferris State University/American Welding Society activities including Adopt a Highway cleanup activities and food drives. I continue to be actively involved in these activities.

After I complete my bachelor's degree in Welding Engineering at Ferris State University, scheduled for May 2024, I plan to obtain a welding fabrication position to gain welding fabrication experience. My long-term career goal is to pursue my dream of opening a welding fabricating shop. Completion of my bachelor's degree in Welding Engineering would have been difficult without your generous donation to the Detroit Section Scholarships. Thank you for supporting me in reaching my goal of obtaining a bachelor's degree in Welding Engineering from Ferris State University. This will allow me to reach my fullest personal and professional potential.

Sincerely,

Anthony Proffer

Thank You

AMERICAN WELDING SOCIETY



Ian McArthur

Gould City, MI

Ferris State University

Welding Engineering Technology

Detroit Section Scholarship

Detroit Roth - Resistance Welding - District 11 Scholarship

District 11 - 051-West Michigan

To Detroit Section,

I would like to begin this letter by saying thank you for choosing me to receive this scholarship. This money will allow me to better focus on my schooling rather than worry about how I am going to pay for such schooling. This coming semester I will be entering my Junior year in the Welding Engineering Technology Program at Ferris State University. This means a lot to me as I held the role of Sophomore Class Representative in the AWS Student Chapter this past year and have been elected to be the Treasurer for the 2023-24 school year. I plan to stay very involved in the American Welding Society throughout the rest of my schooling and into my career. In my time at school, I have learned more than I could've imagined, and I don't plan on slowing down the next two years. Currently, I am putting the skills that I have obtained to use as I am interning at Pierce Manufacturing - which manufactures fire apparatus. What an experience it has been this summer! I would not be in the great scenario that I am in without scholarships like this. I look forward to continuing my education for the next two years in school and furthermore as I advance through my career. Again, thank you for choosing me to receive this scholarship!

Best,

Ian McArthur