Message from Christopher Haslinger, Director of Education and Training

We’ve had a really successful year so far, and I couldn’t be more proud of the way our department has responded to the initiatives and challenges we’ve addressed. The Instructor Training Program had record-breaking attendance this year and continues to ensure that our members and apprentices receive the very best training available. With that said, we are busy preparing for the Pipe Trades Training and Technology Conference, which will be held February 19-21, 2019, in San Diego, CA. Registration opens next month in November, and I want to encourage all training directors/coordinators and labor and management JATC trustees to attend.

Our theme for this year’s conference is Transforming the Piping Industry through Training & Technology. This theme reflects our recognition that in the workplace environment of today, a well-trained workforce and effective use of technology are viewed as having a major influence on the successful completion of projects. The productivity and safe practices of that workforce are also seen as strong influencers. We know that the path...
Moving Forward with the UA's Plastic Piping Installer Certification Program

by Phillip F. Martin, UA Special Representative

A few years ago, the UA developed a new certification program to train and qualify its members in the techniques for installing and bonding plastic piping. In the execution of the UA Plastic Piping Installer Certification Program, the UA idealizes the concept that plastic piping installers/bonders qualify under an organization's recognized quality control system and will be interchangeable between the organization's members, such as the employing contractor. In many areas of the industry, the current and past practice of industry participants has resulted in incomplete installer/bonder qualifications, which include the lack of covering the full range of pipe diameters, pipe wall thicknesses, and the specific bonding processes.

The UA wants to make clear the potential benefits of this program. This program promotes self-regulation and establishes a uniformity that will assist state and local governments in installer qualification and certification regulations, which will protect the interests and responsibilities of the contractor and the owner/user. Benefits such as installation quality and consistency, installer competence, plant safety, and workforce flexibility and availability, as well as the economic benefits that can be realized through the acceptance of this program.

Within the last year, the UA has qualified Local Union 412 in Albuquerque, NM, as an approved facility for the testing of plastic piping bonded joints used for qualifying members in accordance with requirements of Section B31.3 of the ASME Process Piping Code. This is a great step forward in the certification program's overall ability to properly qualify and test our members. The following text provided by Local 412 explains the measures the local established to become a bonded joint testing facility.

The Local 412 Bonder Training and Certification Program was initiated in 2017 on the order to certify journeymen and apprentices to work on the proposed Facebook complex construction project. Since that time, it has been our most heavily attended class (often filled to capacity) and has provided 213 members with their bonder qualifications. When TCM Corporation set the criteria for working on the Facebook project, we knew that we needed to be able to certify and test our members in-house, rather than sending out the coupons to out-of-state labs for testing. Brother Kris Gillham jumped on this project quickly and made it a priority to get a plastic coupon testing rig setup and validated. In a matter of a few short months, Brother Gillham had his prototype built and conducted some preliminary testing.

The first problem arose when we found that the glued caps at the end of the testing assemblies were not able to withstand the required water pressure of 748 psi. The caps blew off, so we had to find an immediate solution to that situation. After trying multiple methods, the answer came in the use of Victaulic Aquamine® plain-
end PVC pipe to groove transition couplings set up as a cap with a drain valve. These fittings gave us the “bite” we needed to test the bonded coupling joint without blowing the ends of the coupons off. This method worked perfectly until a coupon failed, and we had the lower coupon section blow off and hit the floor. To solve this issue, Brother Gillham used cabling that attached the Aquamine fitting itself on the lower part of the manifold, so in the case of a joint failure, we did not have a heavy fitting bouncing on the concrete floor (see photo below).

One of the final problems to solve was water on the floor when a coupon failed the test. We solved this with a simple livestock water tank that stretched the length of the manifold to act as a catch basin. A standard garden hose was then attached to the bottom of the tank to drain water outside of the building.

Brother Justin Forni acted as the liaison with the UA Certification Department to get the whole testing process and facilities validated and approved for in-house testing of plastic piping bonded test couplings. By doing all of this, we were able to turn around certifications in a quick and timely manner to get our people out on the jobsite.

Very Respectfully,
Ray Trujillo, Local Union 412 Training Director

Bottom Line: The Plastic Piping Installer Certification program is a continuation of the UA’s commitment to ensure that the best trained and qualified personnel are available for all future installation projects in the plastic piping industry.

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The Success of the UA Veterans in Piping Program

by Micheal Hazard, UA Training Specialist

According to the Department of Defense (DoD), nearly 200,000 service members transition from the military each year. This equates to roughly 1,000 service members, including their families, entering the civilian workforce on a daily basis. Upon leaving the service, despite being a disciplined and highly trainable population, military members face an exceedingly high unemployment rate. This is certainly not a new trend for today’s generation of veterans or the civilian workforce. Not only have organizations from around the country come forward to help ease the challenges service members face upon transition, the DoD has completely restructured the transition process from the military in an effort to better prepare service members for civilian life.

Shortly after the passing of Public Law 112-56 VOW to Hire Heroes Act of 2011, the Department of Defense Skillbridge program was born, linking transitioning service members with civilian training opportunities. The UA Veterans in Piping® program is proud to be the very first Skillbridge program that existed and continues to keep its promise to the men and women in uniform.
The UA VIP program was one of the most professionally run courses I have attended to date, and I have had the fortunate opportunity to attend many military schools throughout all of the DoD. The VIP program gave me the opportunity to step out of one career and directly into another with essentially a seamless transition. Not only did that do a lot for providing for my family (i.e. purchasing a home, health insurance, financial stability, etc.), but it did a lot mentally for me too. My job in the military was nothing like that of a pipefitter in terms of skills, but very similar in regards to the hardworking individuals I am surrounded by. I went from one brotherhood directly into another. I knew one of the biggest things I would miss about my time in the service was the guys I worked around. I have found that all over again with the United Association.

– USMC VIP Graduate Local 9 Apprentice Sgt Josef Conerty

The UA VIP program is currently operating nine programs on seven military installations serving all branches of the military. The UA Accelerated Welder Training Program is offered at Camp Pendleton, CA; Joint Base Lewis-McChord, Washington State; Fort Carson, CO; Fort Hood, TX; Fort Campbell, KY; and Camp Lejeune, NC. The UA Accelerated HVACR Training Program is offered at Naval Station Norfolk, VA. Lastly, the UA Accelerated Fire Sprinkler Fitter Training Program is currently relocating from Fort Sill, OK, to Fort Campbell, KY, and is projected to resume training in January 2019. Roughly 350 service members graduate from the UA VIP program annually. To date, 1,916 transitioning service members and veterans have been trained by the UA VIP program. All VIPs who successfully complete the program are afforded direct entry into a UA appren-
In closing, I’d like to ask everyone to please take the time to thank all military veterans for their service and sacrifice to our great nations and then for those who have chosen to affiliate with the UA. Let’s do what we do best and give them the additional training and mentorship that they need to ensure their success as a member of our UA Family!

Looking to the Future: Augmented Reality

by Lauren Friedman, Online Learning Resource Coordinator

Twenty apprentices are working on a line of chillers in their training center when one realizes that he is helplessly confused by the problem in front of him. Instead of raising his hand, he taps the side of his glasses, and a menu appears in front of his eyes. He can now choose—should he initiate a call with his instructor? Should he open a manual that was uploaded to the system for him? Or, should he access the “hints” app, which labels parts of the chiller in front of him?

This is augmented reality, and it is going to change the way we train.

Augmented reality (AR) is any kind of computer overlay imposed on the real world. Probably the best-known example shows up every Sunday when televised football games have the line of scrimmage enhanced by a yellow line. You may also have used our Interactive Curriculum app to explore the UA’s books, or your car might have a backup camera with some kind of diagram that shows how close you are to objects.

Right now many AR experiences are for niche consumers, but this is changing. Learning companies like Vuforia and Scope AR have created apps that allow one person to call someone remotely and share the view through their camera. The person called would then be able to interact with what their friend sees, drawing on the screen, or adding documents to help. This kind of see-what-I-see technology will be invaluable in both training and field work, allowing users to avoid miscommunication issues.

All of the examples so far have one common flaw; they require you to look at a screen. Be it your television, your phone, or your car’s console, right now there is very little AR that appears in front of your face and allows for a seamless interaction. But that’s not to say there won’t be. There are already smart glasses on the market; options such as the Microsoft HoloLens and the Daqri have been available for a while, and there are rumors that Apple will be releasing a pair of smart glasses in the next five years. The ones on the market now have their drawbacks. They’re heavy, they’re expensive, and the technology has not yet advanced to the point where they can do all the things they’re promising. Still, in a few years, we may well have glasses that can scan a room and create a BIM model that could be used to design a retrofit or allow a see-what-I-see interface to appear seamlessly before your eyes.

The most exciting news comes out of Apple. At this year’s Keynote, the CEO of Directive Games, Atli Mar Sveinsdson, demoed a game in which three users shared a simultaneous AR game. This opens up the world even more, suggesting that there could soon be training courses that revolve around an AR object, and everyone wearing the glasses or holding a phone would be able to watch the interaction and allow a seamless experience.

AR will never fully replace the value of touching physical objects with your hands. There are things that cannot be replicated by technology. But as we advance, we are finding more and more opportunities to expose our apprentices to dangerous situations without risk, allowing them to make costly mistakes before they get to the jobsite. AR is another tool towards this end, and we are all excited to see where it will take us in the near future.
Free Recruitment Resources for Your Use
by Laura Biggie, UA Training Specialist

When it comes to recruitment, we are all responsible to help promote the programs and job opportunities available through the UA. By sharing your own success stories, you help inspire others to join. Twenty years ago, word-of-mouth was the best way to reach out to new members. Family and friends talking up the UA worked great. But things have changed. In today’s world, word-of-mouth has been replaced by social media and the internet. We must let our voices be heard beyond our immediate circle of friends and family, and we must use these new social media platforms and the internet to let the world know what a great place the United Association is to get training, an education, and a rock-solid career! Help us, help you, to make a stronger UA! By using the free resources outlined below you will be able to reach out to the next generation of UA members.

New UA Virtual Reality Career Experience App for iPhone, Android, and Oculus

In a perfect world, the best option would be to bring every potential applicant to one of our UA training centers. But thanks to virtual reality, we can bring the UA training centers to them! With our new Virtual Reality Career Experience app, we can put the tools of the trade in their hands, wherever they may be. With this app, they will be immersed in the world of the United Association and learn first-hand about the different career options and benefits available to them through the UA.

The same recruitment questions are often asked, “At a career fair, how can I help students decide which school or skill interests them? How can I attract students to my booth by means other than the usual free trinkets? What type of learning and career research experience can I provide them? How can I help them visualize our classrooms, teaching methods, and technology?” Well, the New UA 360° Virtual Reality Career Experience is the answer to these questions and more!

By using a virtual reality headset, a prospective apprentice is immersed in the experience of being in a real, fully functioning, UA training center. Similar to a first-person video game, gaze detection allows the recruit to choose from one of five different doors—HVACR service technician, plumber, pipefitter/steamfitter, sprinkler fitter, and welder. After opening the door of their choice, the user enters a 360° virtual reality experience where they see firsthand the type of training they will receive in each of the trades.

Potential apprenticeship applicants will be able to download the UA Virtual Reality Career Experience from the app store on their cell phones for use with their VR headsets at home. This allows them the opportunity to share the experience with parents, friends, and other key influencers when choosing a career path with the UA.

The app is free and can be downloaded to any cell phone. To use it, simply download the app to a cell phone, place the phone inside a $10 to $20 virtual reality headset (that can be purchased online or anywhere electronics are sold) and you are ready to go! The app can also be used with other virtual reality equipment that costs roughly $200 (the virtual reality equipment is not grantable). See the following link located on the UAOLR.org https://uaolr.org/gateway/recruitment for VR headset options and the app store links to download directly to your phone or Oculus Virtual Reality headset. Be sure to share far and wide the career opportunities with the UA that can be discovered by downloading the United Association’s Virtual Reality Career Experience!

New Videos Added for Training Center Customization

We have recently added a new title to the videos available for customization. There are now four titles: Earn While You Learn with the United Association, I AM: Women in Piping Careers, Alumni: Earn and Learn for Free, and Apprenticeship: The Other Four Year Degree.

The ITF will pay to customize videos with an end card that includes your local training center’s information. These videos can be used for social media campaigns, commercials for tv and movie theatres, as well as shown at career fair booths.
View the customizable video options using the following link: http://bit.ly/RecruitUA and request a video for your training center by using the following form: www.uajoin/commercial

New Photos Added to UA Join Materials with New Ordering Portal for Training Coordinators

The new and improved UA Join website and recruitment brochure ordering portal is available for training coordinators at UAJOIN.ORG. Recent updates include:

- Ability to save and reorder prior orders
- Multitude of new photos with more variety of women and people of color
- Intuitive interface and brochure proof review options throughout the ordering process
- Improved website speed

Training coordinators with a UA Join account prior to August 1, 2018, will need to re-register on the new website. The UA Join sign on is unique to each user, and a new registration must be requested and approved prior to ordering new materials. Anyone who is not a training coordinator would need their training coordinator to send an email to kivas@uanet.org authorizing the representative on behalf of the training center to request brochures. Upon registration and approval, you will be sent customization guidelines to help expedite the approval process. After placing an order, your training center can expect to receive these brochures in a few short weeks at no cost to you!

And One More Thing: How Do We Recruit More Women?

This question was asked many times over the course of this year’s Office Professional training and Instructor Training Program week. How do we find women who might be interested in working in the piping trades? There are numerous resources provided both locally and nationally to assist training centers in attracting women to their programs. Partnering with these organizations can help increase the number of women applicants. The Department of Labor has a Women’s Bureau to assist you, and there are regional pre-apprenticeship programs and women’s organizations that can extend their services to remote areas. Be sure to create opportunities for existing UA women members to participate in this recruitment process.

I challenge every member to tell women workers they meet in customer service, retail, and other professions about the benefits, pay, and careers in the piping trades. So many of the women I meet wish someone had told them sooner about their options in the trades. To help you get started in finding women who are looking for a skilled trade, see the following link and list of organizations working to attract more women to the trades at: http://bit.ly/Womenlink

For additional information on Recruitment Materials, go to the e-Resource Guide on uao1r.org.
Circuit Builder 3 Phase Released

by Richard Benkowski, UA Training Specialist

Once we realize that proper use of appropriate technology accelerates UA students out of the classroom and into the hands-on labs, then these resources cannot be implemented fast enough. Another digital tool in the ITF technology collection is now ready for your local training efforts. A new version of Circuit Builder is now available on Blackboard for UA instructors to utilize in the classroom. This software is a companion to the Basic Electricity manual and can help every craft to understand and troubleshoot electrical circuits. It is important that all UA crafts gain a comfort level with understanding how electricity flows and operates our plumbing, mechanical, and fire protection systems.

The original form was limited to single phase circuits due to the multi-layered intricacy of building, analyzing, and troubleshooting three phase applications. Circuit Builder 2.0 allows the user to explore complicated power and control sequences related to the piping industry.

About a year ago, Mosaic Learning was engaged to investigate the nuances of adding three phase options to the current version. Last December, DJ Berger, LU 60 and ITP Instructor for 6001, continued his role as the subject matter expert (SME) for the project. DJ describes the challenge in this way, “From the start of the project, the programming team had to develop a strategy to deal with the complexity of calculating the mathematical and physical reactions within three phase circuits. With the goal of providing the essential components to build practical circuits, with consistent realistic results, the team focused on using a three-wire delta configuration offered in 240 and 480 volts.”

Some new features have been added and a couple of fixes were made to the program. DJ adds, “From the feedback of instructors using the original Circuit Builder, several items have been addressed in the development of Circuit Builder 2.0, such as the labeling of components, the ability to place virtual multimeters into the circuit, the snap connection of wiring, and additional configuration options for new and existing components. Another issue that had to be addressed was the ever-changing support of plug-ins within different web browsers. Using an open format Web Graphics Library, Circuit Builder 2.0 has been designed and tested to operate with the most popular web browsers for personal computers, tablets, and iPads.”

Circuit Builder 2.0 can be implemented into your program very easily. UA Coordinator of Online Resources Lauren Friedman offers these simple steps to acquiring this technology. Circuit Builder 2.0 is available in the Basic Electricity Master course and in a new Interactive Module course on Blackboard. The Master Course contains all the things you need to teach basic electricity—a syllabus, PowerPoints, tests, and assignments. In contrast, the Interactive Module site contains both the new and the previous circuit builder applications.

To request a Master or Interactive Module course, first go to the UAOLR and log in. Once you are in the library, you can click “Blackboard” on the upper left-hand side, and then select “Request a Course Site” to be taken to the request form. On the request form, fill in your information and then select that you would like “A copy of an ITF Master Course” to see the list of Master Courses and Interactive Module sites. Select the ones you would like copies of, and when you are done with the form, hit “submit.”

If you have questions about Blackboard or Blackboard courses, you can contact Arista Metler at arista@wccnet.edu or 734.477.8908.

All local UA instructors should be informed of this release in order to insert this platform into every appropriate application and course curriculum.

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New Regulations Reflect UA Input on Content and Exams Under Clean Air Act

by Richard Benkowski, UA Training Specialist

Section 608 of the Clean Air Act prohibits the knowing release of refrigerant during the maintenance, service, repair, or disposal of refrigeration and air conditioning equipment. The EPA requires proper refrigerant management practices by service technicians and owners of mechanical systems. In the fall of 2016, the EPA updated the existing requirements related to CFCs and HCFCs, and extended them to HFCs. EPA regulations (40 CFR Part 82, Subpart F) under Section 608 of the Clean Air Act define a “technician” as an individual who attaches or detaches hoses and gauges to and from an appliance to measure pressure within the appliance or adds/removes refrigerant from an HVACR system.

As a stakeholder, the UA was able to support the revised language by having two UA instructors, Dana Shanower and Don Howerter, participate on the EPA committee that reviewed and updated the test bank for the technician exam. Changes to the regulations include more stringent requirements for repairing leaks in larger systems, new record-keeping for the disposal of appliances, and new reporting guidelines for leakage in large mechanical systems.

These revised provisions have now been implemented. In response to the new requirements, the Conservation and Safe Handling of Refrigerants manual has been revised with the help of Eugene Silberstein from HVAC Excellence. In August, Eugene also presented ITP Course 6022, which explores the world of new refrigerants as it relates to safe handling and proper management for the air conditioning and refrigeration markets served by all UA locals. According to Eugene Silberstein, “The response to the revised materials has been very positive, and instructors were happy with the manner in which the new materials were prepared and written. They were also delighted to see that the new EPA exam now reflects more of what service technicians need to know about actually handling and working with regulated refrigerants. Most of the date-related content, although important, has been removed from the active test bank.

The new manual accurately and completely reflects the new regulations and the material covered on the EPA Section 608 examination.”

Additionally, a new exam from the EPA has been loaded by UA Education and Training Department Certification Manager Carrie King. Previously, the EPA 608 exam was the last certification offered in paper form. Carrie and the UA IT Department have partnered with ASSE to administrate the latest version. According to Carrie, the change from paper to computer will streamline the CFC Certification process.

Carrie offers these simple steps to arrange for an exam for your local. The new online EPA 608 certification exam will be requested the same as all UA online certification exams through uanet.org. On the certification drop down menu, select EPA 608 Technician Certification. For your convenience, here is the direct link https://uanet.org/cert_cfc_intro.asp. ALL EXAMS MUST BE ORDERED TWO WEEKS PRIOR TO THE EXAM.

- On the EPA 608 technician certification page, you will click the blue hotlink “Request Section 608 EPA Certification Exam”
- Complete the entire form by adding your member’s information and indicating which exam type they will be taking
- Click send

The certification request will be forwarded to the certification staff via email. An email with your student’s username and password will be sent to you from the certification staff one week prior to your scheduled exam. This email will include the following:

- Steps on the ASSE testing platform QuestionMark. These steps are also available on uanet.org at the link: https://uanet.org/pdf/cert/online%20testing/online_certification_testing.pdf
- Copy of the certification letter from the EPA that must be posted prior to the exam
- Proctor requirements/responsibilities
- Challenge Sheet

UA members who already carry an EPA certification do not have to retest.
Adding an individual to the original list of members requested to take the online exam needs to be submitted no later than three (3) business days before the scheduled exam date.

If you are holding any unused paper exams, please return them to the UA Education and Training Department as soon as possible.

The EPA will also implement more procedures starting January 1, 2019. Leak inspections are required for appliances that have exceeded the applicable leak rate and verification tests of leak repairs are required for appliances that exceed applicable leak rates. Available in October 2018 from the UA Bookstore, the new Conservation and Safe Handling of Refrigerants manual will help UA instructors and technicians to navigate the new EPA final rule in order to be compliant when working in the field.

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Save the DATES

The following are important upcoming training events.

Pipe Trades Training and Technology Conference
February 19 - 21, 2019 • San Diego, CA

Instructor Training Program (ITP)
August 10 - 16, 2019 • Ann Arbor, MI

Mark your Calendar!

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Education and Training Department Office Professionals

Administrative Assistants
Debbie Walburn
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Nicole Jeup

Certification Department
Carrie King, Office Manager
Kristyn Ivey
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Cathy Merkel, Registrar
Susan Fogg, Assistant Registrar
Tracey O’Leary