Message from Chris Haslinger  
Director of Training

In the past, due to the Instructor Training Program (ITP), we did not release an August issue of the Training Newsletter, however this year with the variety of new programs being offered, we feel it is very important to try and get this information out to you as soon as it becomes available. In this issue, Training Specialist Rich Benkowski has submitted an article entitled: The Return of Natural Refrigerants and Variable Refrigerant Flow Update, as well as an overview of an HVACR Concentrated Pilot Program that was held at Washtenaw Community College prior to ITP week. Administrator of UA Certification Programs Phil Martin gives an overview of the upcoming Pipe Welding Industry Conference also being held at Washtenaw Community College in October.

This issue is a great reminder that we often utilize Washtenaw Community College throughout the year for additional programs other than just the Instructor Training Program. Additionally, remember that there is equipment you can request in order to assist you in teaching classes in your home locals. You just need to ask. Case in point is the new CO2 trainer developed with industry partner Emerson. This trainer was introduced during the 2015 ITP week.
and there is a picture of it in Rich’s article, The Return of Natural Refrigerants. Also, the Variable Refrigerant Flow (VRF) training initiative has expanded to include Daikin training in addition to the training that we are already doing on the Mitsubishi variable refrigerant flow systems. All local Training Directors are welcome to contact the Training Department to schedule factory-led VRF courses at their local training centers. The Mitsubishi and Daikin mobile trainers are available to ship to the local prior to the beginning of the VRF course. Arrangements can be made now for Fall 2015 VRF courses. If you are interested, please contact Rich Benkowski.

If there is anything that the department can help you with in any of your training endeavors, please just reach out.

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Pipe Welding Industry Conference

From Phil Martin, Administrator of UA Certification Programs

There has been tremendous growth in industrial projects over the past two years. Multiple new projects in the gas and oil industry, petrochemical and nuclear industry have started and more are in the works. As these projects begin construction, they are not only utilizing new welding technology, but they are also incorporating new welding procedures and materials. This industrial growth has not only driven up the demand for qualified welders, but it has also presented some changes and challenges. We view these changes and challenges as an opportunity to showcase how our industry-leading educational program is able to adapt and react to meet the needs of the construction industry. To that end, the United Association is pleased to announce that we will be holding a conference to address these changes in the welding industry. This two-day conference will include presentations by industry experts on emerging welding technologies and equipment being used in the piping industry today.

Presentations will include information on topics such as: how new technologies and processes can affect productivity, quality, and safety in the pipe welding industry; how new materials are being developed for increased strength and durability; regulations and their effect on welding equipment and processes; the evolution of gas tungsten arc welding; orbital welding of piping systems; how phased array UT inspection of piping is being utilized to confirm weld quality versus traditional X-Ray (non-destructive testing); changes in fume extraction methods; and a presentation on the variety of training offered to UA locals and members. The conference will focus on these topics, incorporating not only real-world examples of successes and challenges, but also on how to properly train personnel in these areas.

The conference dates are October 6 - 7 and will take place on the campus of Washtenaw Community College in Ann Arbor, Michigan. Recommended attendees include welding instructors, UA Authorized Testing Representatives, CWI’s, individuals with responsibilities in welding quality control, individuals working on establishing weld procedures, and field-level personnel working in the pipe welding industry. The event is limited to 200 attendees. To register for the event click on the following link and enter the password “UAWELDING”: https://www.eventbrite.com/e/changes-and-challenges-in-the-pipe-welding-industry-registration-17444902172. There is no cost to attendees associated with the United Association or UA signatory contractors. In addition, the Ann Arbor Area Convention and Visitors Bureau has created a hotel Preferred Rate Program for 2015. For participating hotel partners go to: http://www.ua.org/preferredrate.

We look forward to seeing you at the event and providing a rewarding experience for all attendees.
HVACR Concentrated Pilot Program

From Rich Benkowski, Training Specialist

In 2015, the International Training Fund launched several new training opportunities for the UA HVACR program that took place at the Instructor Training Program (ITP) held annually at Washtenaw Community College in Ann Arbor, Michigan:

- **240 Basic Electricity**  
  Instructor: Alan Fala

- **243 HVACR Basic Electricity**  
  Instructor: DJ Berger

- **282 Ammonia Piping, Service and Maintenance**  
  Instructor: Anthony Panetta, Kevin Wyngaard

- **318 Daikin VRF Systems**  
  Instructor: Chuck Graham

- **327 VFD Fundamentals and Commissioning**  
  Instructor: James Balderson

- **329 Pump Service and Maintenance**  
  Instructor: John Hopkins

- **330 Cooling Tower Service and Maintenance**  
  Instructor: Philip Rodin

- **335 Absorption Chillers**  
  Instructor: Jorge Sanchez

Pictured, from left to right, top row are DJ Berger, LU 60; Alan Fala, LU 189; Rich Benkowski, ITF Training Specialist; Phil Rodin, LU 725; Anthony Panetta, LU 787; and John Hopkins, LU 393. Bottom row, left to right, are Kevin Wyngaard, LU 400; Chuck Graham, LU 502; James Balderson, LU 602; and Steve Marquez, Gem Energy. Photo credit: Rod Jara

In the past, development of a new class would include a pilot program for every new launch. Typically, two months before ITP, the instructor would present the new course materials to a select group of participants. Due to the amount of new classes being launched in 2015, a concentrated pilot program to preview the new courses and receive comments on content, timing, learning outcomes, etc. happened this past June at the Great Lakes Regional Training Center. Each instructor presented a snapshot of his or her lesson plans and course objectives to the group and received encouraging comments. In addition, the new instructors met with Tony Esposito to discuss resources and set up for enhancing the hands-on experiences for the new HVACR courses.

During the pilot program, Rod Jara led the instructors through a knowledgeable discussion on setting up each new course on Blackboard. Anthea Shroeder and Arista Metler helped the instructors populate their Blackboard classes with relevant course materials.

On the last day of the program, Steve Marquez with Gem Energy, gave the instructors a tour of the Combined Cooling Heat and Power system that was installed on the WCC campus last year. Pictured is the cooling tower that will be used to illustrate service and maintenance procedures in course 330.

The ITF wishes to thank Gem Energy, WCC, and the staff at the Great Lakes Training Center for their support during the HVACR Concentrated Pilot Program.

OSHA 10/30 Hour Card Renewal Requirements Changed

As of June 10, 2015, OSHA 10/30 hour construction refresher training is no longer required.

The Nevada State legislature passed SB 233, which removes the requirement for a 10/30 hour refresher course for those holding 10- or 30-hour construction cards. The Governor signed this bill, and it became law as of June 10, 2015.

This means that if a person has the 10- or 30-hour OSHA construction card, Nevada no longer requires that they have refresher training, and the card is considered valid regardless of the date of issue.

It is still required that a person has an OSHA 10- or 30-hour construction card in order to work on a construction site in the state of Nevada.

If a person loses their card, they can get a replacement card if the card is less than 3 years old by contacting the trainer that issued the card originally. If a card is lost and is over 3 years old, the OSHA Training Institute will not replace it. The person will have to retake the class to obtain a new one.
The Return of Natural Refrigerants

From Rich Benkowski, Training Specialist

Natural refrigerants are chemicals that occur in nature’s bio-chemical processes. They do not deplete the ozone layer and make a negligible, or zero contribution to global warming. The high efficiency of natural refrigerants also means that they make a lower, indirect contribution to global warming.

These products were used as refrigerants prior to the 1950s, before fluorocarbon refrigerants became commonplace. They are now being used more extensively due to their low impact on the environment.

In the ASHRAE position document “Natural Refrigerants” a useful definition is given as: “Natural refrigerants occur in nature’s biological and chemical cycles without human intervention. These materials include ammonia, carbon dioxide, natural hydrocarbons, water and air.”

Two courses are available to promote better understanding of ammonia and CO2. Systems that utilize these natural refrigerants incorporate complex piping systems that support the primary heat transfer of the refrigerant. Understanding of the fundamentals of ammonia and CO2 give UA craftsmen the best opportunity to capture the man-hours associated with natural refrigerant systems.

In Ammonia Piping, Service, and Maintenance (UAT 282), the UA member is introduced to ammonia refrigeration systems used in supermarkets or food processing plants. A discussion of piping layout is provided for a fuller understanding of the systems for the craftsman who may be dispatched to an ammonia installation project. Furthermore, a comparison of the refrigeration cycle will demonstrate the difference between traditional systems and ammonia systems.

In course 261, Principles of Carbon Dioxide Refrigeration Systems, participants receive the latest information and materials on the CO2 systems installed in new supermarkets. The safety, tools, and equipment required to practice in the CO2 industry are demonstrated during the course. Also included is a lab with an operational CO2 system.

Both classes prepare UA members to meet the challenges of installing and servicing high performance systems using natural refrigerants. UAT 282 and 261 are now available to schedule in any UA local. Contact the ITF for further information.

New CO2 trainer developed with our industry partner, Emerson. The trainer was introduced during the 2015 Instructor Training Program in Ann Arbor, MI.
Variable Refrigerant Flow Update

From Rich Benkowski, Training Specialist

Mechanical heating and cooling systems that manipulate the flow of refrigerant in the piping of split systems are termed “variable refrigerant flow” or VRF. VRF systems are enhanced versions of ductless, multi-split systems, permitting more indoor units to be connected to each outdoor unit and offer additional features, such as simultaneous heating and cooling and heat recovery. Many manufacturers make these units, and each manufacturer designs its units to have unique intrinsic qualities.

Mitsubishi has lead the industry for the past few years in innovation and market share. Much of the work in the VRF industry is installation of the refrigerant piping between the outdoor unit and multiple indoor units. In addition to a unique design, which may lead to a proprietary specification by the consulting engineer, manufacturers have also required start up and programming of the systems to be accomplished in the field by a “factory authorized technician.” In order to satisfy the project and manufacturer specifications, the ITF commissioned Pioneer Pipe to fabricate five Mitsubishi mobile trainers that are wired, piped, charged, and ready to be used for UA technicians to earn the Mitsubishi factory-authorized certificate.

In the fall of 2014, the Mitsubishi VRF Training program was successfully launched. UA craftsmen in 16 locals attended a three-day class that was taught by Mitsubishi instructors. Additionally, two UA instructors, Seamus Wharry (LU 787) and Chuck Graham (LU 502), have been certified by Mitsubishi to award the factory-authorized certificate to UA technicians.

This year, the ITF partnered with another major VRF manufacturer—Daikin. During the 2015 International Training Program in Ann Arbor, the Daikin Variable Refrigerant Flow course was offered and the Daikin factory-authorized technician certificates were awarded. One mobile training unit with Daikin equipment is being built by LU 502 and will be used during the course.

Mitsubishi (UAT 317) and Daikin (UAT 318) classes are now available to schedule in any UA local. Contact the ITF for further information.
test your knowledge

ACROSS
5. Innovative technology based on jet engines that use rotational energy to generate power.
6. A virtual learning environment and course management system.
8. A standard method used to copy large architectural and construction drawings.
11. Heat derived from the earth.
13. Use of water to move heat from where it is produced to where it is needed.
14. A process of making certain that an individual is qualified in terms of particular knowledge or skill.
15. Used as a refrigerant gas, for purification of water supplies.

DOWN
1. Monitoring atmospheric and environmental changes in industrial areas and buildings.
2. A pump used to increase the low pressure of air to a greater pressure.
3. The branch of science and technology concerned with the properties of metals and their production and purification.
4. The system of ropes, cables, or chains to support.
7. Technologies that deal with automated machines that can take the place of humans.
9. The application of scientific knowledge for practical purposes, especially in industry.
10. An action or process of manufacturing or inventing something.
12. A welding process used to join two different pieces of a thermoplastic.
14. A large, tall machine used for moving heavy objects, typically by suspending them from a projecting arm or beam.