



COLLEGE OF  
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## Welding Technology

### MINUTES

## Advisory Committee Meeting

Wednesday, October 21, 2020

4 to 5:30 pm PST

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### Attended:

Derek Wilson, College of Marin (COM), Instructor

Chris Donnelly, Ironworkers Local 377 San Francisco, Business Representative

Chris Lago, Onspot Welding & Design, Inc., Structural Steel/Ornamental Iron

Fred Bjorge, Onspot Welding & Design, Inc., Structural Steel/Ornamental Iron

Randy Thomas, Boilermakers Local 549, Apprenticeship Coordinator

Che Rocchild, Boilermakers Local 549, Apprenticeship Instructor/Outreach

Dominic Lucero, Boilermakers Local 549, Advanced Welding Instructor

Josh Taylor, Turner and Taylor Metal Works, Partner

Ethan Turner, Turner and Taylor Metal Works, Partner

Steve Peterson, COM, Instructor, Welding

Padraig McGee, COM Instructor, Metal Fabrication and Welding

Alina Varona, COM, Dean, Workforce Development and Career Education

Ron Palmer, COM, Department Chair for Career Education

Heather Rahman, Workforce Development and Partnership Specialist

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- **Welcome and Introductions** (10 minutes, Dean, Chair and/or Lead Instructor to welcome guests.)
    - Announce your role and affiliation
  - **Open discussion: skills workers need today in the industry** (25 minutes; Group)
    - Where do you find your candidates?
    - What are the skills required? For which levels?
    - Any emerging technology skills that should be considered?
  - **Overview of program curriculum** (20 minutes)
    - Review: current and proposed WELD Courses/Certificate
      - Are the skills relevant
      - Are there skills that are missing? If so, what are they.
    - Open discussion: any program/class recommendations?
  - **Consider updating equipment (What would help the students best to learn?)** (15 – 20 minutes)
  - **Conclusions and discuss a possible Spring meeting to reconvene** (10 minutes; Dean)
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Alina welcomed everyone and explained College of Marin (COM) is asking our local industry representatives, from their perspective, to inform us what to teach our students, how to train our students and prepare them with what they need to be competitive candidates in the job market. We want to gear our curriculum and program so industry folks can be confident in hiring students trained at COM. (5:07)

The committee answered questions, as follows:

#### **What are the needs of the current welding industry?**

Chris D. responded that 232 wire welding primarily and 305 wire welding skills are needed most for structural steel work. San Jose has a strong program to train students with 232. 232 vertical and overhead certifications will help students get employment. D18 and Rebar welding certification is a plus, but 232 wire welding has been the biggest demand.

Fred agreed. 7018 is somewhat an antiquated way for welding. Procedures for dual shield and 232 are very similar. Teaching basics ideas for stick welding is great, but it's not the way people function. (minute 7:22)

#### **How much training is required for a student to be ready for employment other than an apprenticeship which would have prescribed hours?**

For structural steel/ornamental iron work, someone would need to know the basics in welding and knowledge of modern equipment and plan-reading skills. At Onspot, they would train someone. Knowing wire-feed, MIG and TIG welding is good.

In the Ironworkers Union, if a person has the 232-wire vertical and overhead certification, then they can start with entry level jobs to gain experience. After a while in the entry level positions, welders would be able to gain more certifications and take more advanced jobs.

According to Fred, all jobs are different from old homes to commercial, modern buildings. However, 232 wire welding is consistent with all the jobs.

**On job sites, how big are the machines used for 232?** LN-25 wire source is standard, various generators are used out in the field. However, Invertec electric source inverter for 232 would work for the shop. (minute 11:45)

Dominic Lucero explained that for entry level entry into the training program at Boilermakers Union, the basic qualifier would be 3-position plate test, 7018 rod or dual-shield 045 as absolute base employable skills. Preferred skills are tube or pipe certification in TIG welding. Training on Regulated Metal Deposition (RMD) MIG welding or STD is desirable. Many new alloys are emerging in technology. (minute 13:30)

**What does it take to get into the apprenticeship program? How long is the programs and how many students do you accept? Are you currently partnered with any other college?**

Randy Thomas answered for the Boilermakers Union:

- No aptitude test is given, but a skills test is required
- All 3 positions plate test with MIG or TIG (wire, tube, dual shield stick) welding types is required
- Tube or pipe welding certification is accepted
- Apprenticeships consist of 6000 hours on-the-job working and 600 hours of in-class training
- Currently working with Hayward and have worked with Chabot and Laney

Chris Donnelly answered for the Ironmakers Union:

- It's a 4-year program with all training aspects available
- Having a sponsor or holding a 232-wire certification will qualify someone instantly
- High School diploma or GED and a picture i.d.
- With passing a drug test, job employment can be within 1 week

**What are the top 3 – 5 skills needed?**

Several responded with the following:

- Blue print reading
- Basic understanding and use of tools: drilling, tape measure, grinding, caliber
- Welding (1/8" stick and wire) in all positions, maybe second semester
- Basic math and measuring
- Metals
- Logic/problem solving to build something along with welding

- Grinding and finishing
- TIG welding

It was suggested by Josh and Chris students should be able to build something to become well rounded in skills. Perhaps in the second semester, students could have the opportunity to explore specific welding categories to get a sense of what type of jobs they want to do. (minute 46:00)

Randy suggested we consider offering a Multi-Craft Core Curriculum (MC3) program as a pre-apprenticeship training program incorporating welding to the construction, electrical and other skills. No one currently offers this type of program with welding, so it could be beneficial for College of Marin students. We could offer also advanced welding training using orbital machine which is highly unusual at college level. (minute 49:40)

Alina reiterated the point of the program is to get students ready for work. The students wouldn't obtain the 6000 exhaustive work hours, but industry people can give us feed back of how we shape the program to ensure our students are ready to begin entry level work. Also, industry can gain confidence that our students are gaining the correct skills and are deemed employable.

She shared the COM catalogue listing of current class requirements. Some of the classes touch upon the skills listed, but faculty will shape the curriculum and classes to be more relevant in response to industry feedback.

Derek explained that the Welding program will be a separate program from Machine and Metals Technology to concentrate on the skill sets more broadly for each. COM will recognize students will have some crossover with classes between the two programs.

Ethan stated how important covering the basics. Even though Turner and Taylor Metal Works does a lot TIG welding, they also have projects requiring brazing. Oxy-acetylene is important to know. He believes it will be difficult for COM to cover all the needs the panel has mentioned through this meeting, but covering basics will get students to a certain standard for getting jobs. (minute 55:00) He suggested to cover all the different fields the welding students can aim toward so they can decide on a broad spectrum of career paths. His advice also was not to buy an expensive machine which will be outdated after 10 years. It's not really worth it. It's important to note that for structural metal work, overhead wire welding isn't a skill or certification you need. So, the student will need to determine what they really want to do. But the common denominator for pipe welding or ornamental metals would be the math and measurement/tools knowledge.

**What can we offer the students who are 25 – 34 in age looking to upskill? Where does the worker who wants to upskill go to for additional training?**

Chris Lago suggest putting in place a qualifier to gear their education at the second semester level. Offer CAD (Fusion), CAM and machining for the future. Turner and Taylor will train their employees, but they do not teach software. Boilermakers do not offer CAD or CAM trainings.

Josh made the point that it's beneficial for students to gain awareness beyond what they are trained to do in order to handle their jobs better and to recognize potential problems. Also, workers are better if they can be open for others to always check their work.

**What age group are you hiring now? At what ages are ready to step into Boilermakers or Ironworkers apprenticeships?**

All ages are needed. Young ages are beneficial to shape and train them. The ages coming to Boilermakers is late teens to mid-30's, and same for Ironworkers and Turner and Taylor. Chris Donnelley said Ironworkers has a good female presence and diversified representation.

**Last thoughts?**

Our industry guests responded they would be open to train our faculty.

Oxy-acetylene and safety is important. These skills are used everywhere, but you do not need a full semester dedicated to it. Maybe one or two evenings teaching and training plus a test could be dedicated to it.

South Bay, San Jose, and Salinas has good welding programs. Also, COM should explore the American Welding Society.

The meeting adjourned at 5:35 p.m.