



2018 Team Competition

FACT SHEET

Project Manager

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For questions related specifically to the team competition, contact Dan Barrow, 2016 team competition project manager, (210) 588-5898 or barrowd@zachrygroup.com. All event questions, contact Lisa Nardone, National Craft Championships director, (202) 595-1789 or nardone@abc.org.

About the Team Competition

Five craft journey-level professionals work as a team to complete a series of craft-specific tasks focused on electrical, pipefitting, millwright, carpentry and insulation in a six-hour period. Journey-level professionals may NOT have competed in a prior NCC team competition/demonstration; this includes competing in the same or different craft that make up the NCC team competition. Journey-level professionals who competed as an apprentice in the National Craft Championships ARE eligible to compete, one-time only, in the team competition. Team competitors also will be required to take a written assessment, see the individual craft fact sheets for more information on the written exam content. Controlled copies of the craft specifications and drawings will be given to the teams during the Tuesday afternoon Q&A session. These documents will be taken back and distributed again Wednesday morning at the beginning of the competition. No copies of these documents will be allowed to leave the competition area.

Competition Objectives

- Demonstrate safety along with craft interdependency and teamwork;
- Simulate working conditions where planning is critical to success; and
- Highlight individual leadership and workmanship skills as the project is assembled and completed.

Tools

The following tool lists will need to be provided by the team craftsmen.

Carpentry Tools

- Claw hammer
- Nail bags
- Utility knife with self-retracting blades
- Cat's paw/nail puller
- 1-inch wood chisel
- Framing square
- 25' measuring tape
- Carpenter's pencils (2)
- Chalk line/chalk
- Handsaw
- Side cutters
- Coping saw
- Speed square
- Nail set
- Two locking c-clips (6R or equivalent)
- Flat pry bar
- Work Gloves (**Fingerless gloves prohibited**)

Insulation Tools

- Boning knife
- Steel tape measure
- Dividers
- 1/4-inch nut driver
- Hand bander
- Cut-resistant gloves

- Pruning saw
- Right-hand aviation snips
- Left-hand aviation snips
- Channel-lock pliers
- Key hole saw
- Long-sleeve shirt

Millwright Tools

- ¼- to at least 15/16-inch combination wrenches
- Two indicator jigs for shaft alignment
- Two dial indicators to fit jigs
- Small ball-peen hammer
- Small pry bar
- Feeler gauges
- Telescoping (Snap) gauges
- Center punch
- Non-programmable scientific calculator
- Pencil and paper
- Outside micrometers from 0-4 inch range, larger sets are acceptable
- 12-inch and 6-inch scales, 64th inch graduations
- Machinist level (98 Series)
- Scribe
- One or two magnetic bases with indicators (at least one)
- Dividers
- Inspection mirror
- Competitors may bring their own work gloves

Pipefitting Tools

- Pencil
- Minimum of 12' measuring tape. 25' is acceptable.
- Non-programmable construction calculator (such as Calculated Industries available at Lowes or Home Depot. **No Texas Instrument calculators of any type are allowed.**)
- Leather work gloves
- Torpedo level
- 2 hole pins
- 2 Speed Square/combination squares/small framing squares
- 7/8" combo wrench (2 each)
- 1-1/16" combo wrench (2 each)
- Channel locks
- Long sleeve work whirt (for grinding and tacking)

Electrical Tools

Hand tools for the electrician on each team will be supplied by

NCC. Other Tools Supplied By NCC

- Portable band saw
- Cordless 3/8" drill motor
- Threading machine
- Skill saw

Judging Criteria

The teams will be judged based on the following criteria:

- Practical evaluation by subject matter experts;
- 75% of the team's overall scores will be based on evaluations in the following areas:
- Safety (individual and team);
- Individual craft mastery;
- Teamwork; and
- Leadership.

- Communication
- 25% of the team's score will be based on their collective individual scores in a craft-specific written assessment test.

Specific Competition Eligibility

The team competition has no competition-specific eligibility requirements. Please refer to overall eligibility requirements listed on page 3 of the guidebook.

Written Exam

Every competitor should have a thorough understanding of the craft in which he/she is registered, ie. pipefitting, electrical, millwright, insulation and carpentry. All exams/tests are based on the standardized craft training process. In addition to the knowledge and skills required for each competition, all competitors should have completed the NCCER Contren® Learning Series Core Curriculum modules. A non-programmable calculator will be provided for the written exam, but no reference materials are permitted.

Knowledge and Skills Required

The knowledge and skills for this competition are based on the NCCER Contren® Learning Series for millwright, carpentry, electrical, insulation and pipefitting in an industrial application.

Scope of Work by Craft

Pipefitting Scope: Welded Pipe Fabrication

Each Pipefitter team competitor will be given a scope of work and isometric drawings from which to work and be required to use their math skills to calculate material take offs and cut lengths of pipe. There will be various types of fittings involved, such as welded fittings, valves, and gaskets that must be installed. The pipe will then be cut, cleaned and fabricated to the drawing specifications. Various hand tools and power tools will be used for this project. Utilizing a provided tack welder, the project will be tacked together.

Millwright Scope: Set and Align a Pump and Motor

Each Millwright team competitor will be given a scope of work QC forms, specifications, and a set of drawings from which to work. They will be expected to move the pump to its proper location and elevation, set the associated motor, and achieve a preliminary alignment. A final alignment must be verified after all piping and electrical connections have been made.

Electrical Scope: Industrial Construction

Each Electrical team competitor will be issued a written scope of work and drawings. In accordance with the drawings, the competitor will dress out and mount a junction box enclosure with lamps, lamp holders and motor control devices. The competitor may install rigid metal conduit, liquid tight flexible metal conduit, and area light. Raceways will be bent, cut, threaded, connected and secured as appropriate. Circuit conductors will be pulled, identified, and terminated per the design drawings. **All hand tools will be provided.**

Insulation Scope: Install Vessel Insulation and Lagging

Each insulation team competitor will be issued a written scope, drawings, and specifications for the insulation of a vertical vessel. Competitors will select the proper material (by size and type) to be installed, fabricated and formed. All insulation will be installed on the vertical vessel before

any jacket can be applied. Competitors will then install jacketing and caulking to provide weather protection. Jacketing will be fastened with materials provided.

Carpentry Scope: Concrete Forms with Imbeds

Each carpenter team competitor will be issued a written scope of work and drawings for the completion of a pedestal and pier simulating a monolithic concrete pour. No reinforcing iron is included in this competition. Imbedded anchor bolts are to be installed in such a manner as to minimize movement during concrete placement. All details and dimensions of the drawings must be adhered to strictly.