# Understanding a Work Order

Crew Leader

Learning Objectives

By attending this session, participants will be able to:

* List basic work order components.
* Discuss simple materials procurement methods.
* Give examples of how to correct work order errors and oversights.
* Demonstrate planning job flow to execute a work order.

Key Terminology

Community action agency (CAA)

Work order

Supplemental Materials

Handouts & Resources

Airseal and Insulation Diagram Knee Wall House.

“Consumer Education Series: Lighting 101.” WxTV. Montana Weatherization Training Center. <www.wxtvonline.org>.

Gill, Tony. “Expanded Material Procurement Lists.”

Gill, Tony. “Expanded Task List and Answer Sheet.”

Gill, Tony. “Math for Cellulose Volume Calculation.”

Gill, Tony. “Sample Work Order.”

Gill, Tony. “Walk-Through Discoveries.”

Gill, Tony. “Walk-Through Discoveries Answer Sheet.”

 “Heating Basics: A Tour of 9 Systems.” WxTV. Montana Weatherization Training Center. <www.wxtvonline.org>.

Lugano, Fred. “First Step in Cellulose Sealing: Spot the Style.” *Home Energy* May/June 1998. <www.homeenergy.org>.

**Online Platform Lessons**

Use these online interactive training modules as prerequisites before students attend the course, or as in-class computer lab sessions. Users must first create an account at [www.nterlearning.org](http://www.nterlearning.org) to access the lesson.

a- 2.1 Exterior Walkaround <https://www.nterlearning.org/web/guest/course-details?cid=248>

a- 2.2 Interior Walkaround <https://www.nterlearning.org/web/guest/course-details?cid=248>

a- 2.3 Attic Assessment <https://www.nterlearning.org/web/guest/course-details?cid=248>

a- 2.7 Building Measurements <https://www.nterlearning.org/web/guest/course-details?cid=248>

c- 5.1 Understanding Effective R-Value <https://www.nterlearning.org/web/guest/course-details?cid=247>

c- 10.1 Identifying Heating Equipment <https://www.nterlearning.org/web/guest/course-details?cid=247>

c- 10.2 Identifying Hot Water Systems <https://www.nterlearning.org/web/guest/course-details?cid=247>

c- 10.3 Identifying Combustion Exhaust <https://www.nterlearning.org/web/guest/course-details?cid=247>

c- 10.4 Identifying Cooling Equipment <https://www.nterlearning.org/web/guest/course-details?cid=247>

i- 3.4 Building Envelope, Thermal Envelope, Pressure Boundary & Conditioned Space <https://www.nterlearning.org/web/guest/course-details?cid=249>

**Relevant Standard Work Specifications**

1.700 Occupant Education & Access

3.000 Air Sealing

4.0000 Insulation

5.3002 Equipment Installation

5.3003 Forced Air: Equipment Maintenance, Testing, and Repair

5.3103 Hydronic Heating: Equipment Maintenance, Testing, and Repair

6.6002 Ventilation: Components

6.6003 Ventilation: Fans

6.6004 Ventilation: Appliance Exhaust Vents

6.6102 Supply: Components

6.6103 Supply: Fans

6.6188 Supply: Special Considerations

6.6202 Whole Building Ventilation: Components

6.6203 Whole Building Ventilation: Dehumidifiers

7.0000 Baseload

Classroom Props & Activities

**Exercise #1 − Pre-Job Planning (1 hour)**

Divide the class into small groups. Give each group a copy of the Sample Work Order and the Expanded Task List. Have each group:

* List any measures/instructions that might need clarification.
* Identify any measures that may have been overlooked.
* Determine materials needed for all measures and where to get them.
* Calculate the number of bags of cellulose needed.
* Fill in the hours in the expanded task list.

After about 15 minutes, distribute the Expanded Material Procurement Lists and Math for Cellulose Volume Calculation handouts before groups report on each issue.

Create a class consensus response list for each issue. (See listed suggestions.) The class will most likely raise other valid points that require resolution. See the Project Typical Work Order, Floor Plan, and Task List slides to clarify points of discussion.

1. Measure #4 – What about air sealing the ceiling penetration of the chimney in the ell? Should either chimney be air sealed at the basement/crawl ceiling/first floor penetration? How about damming to keep insulation away from chimneys?
2. Measure #11 – Will replacement clapboards be available?
3. Measure #13 – Should the plywood be pressure treated?
4. Measure #14 – Will personal protective equipment (e.g., Tyvek suit, respirator, positive-pressure air machine) be necessary?
5. Different Community Action Agencies (CAAs) will have different inventory/procurement systems. Hand out the lists and ask students to describe their systems. Lead a discussion of the advantages and disadvantages of the systems described.
6. Students who correctly calculate the wall area will discover that the work order overlooked the wall between the kitchen and shed. Add it to the total square footage. To convert cubic feet into a bag count, survey students about how many cubic feet of cellulose per bag from local providers and calculate the number of bags as a class.

As a group, determine how to handle each situation. Possibilities:

* Make a phone call to the auditor.
* Issue a change order.
* Just do whatever is necessary! Resolve paperwork on return to shop.
* Other solutions?

Conclude Exercise #1 by completing the Expanded Task List as a group. This can get very interesting. Students may volunteer optimistically short task times, rather than more realistic times that reflect adequate work time and breaks. Use this opportunity to lead a discussion on equitable workloads, reasonable break and lunch times, smoking policies, and pacing yourself and your crew so the work is done when the day ends.

**Exercise #2 - Site-Discovered Issues**

Divide the class into small groups, and pass out copies of Walk-Through Discoveries.

Have each group discuss and answer the questions and then present their solutions to the class. Stress that there may be more than one acceptable solution to any given problem. The crew leader’s responsibility is always to determine the most practical course of action and guide the crew through it.

**Class Overview**

* Field staff members can grow restless in a lecture setting. Make the class as interactive as possible by integrating workshop/exercise sessions with the lecture. For the exercises, divide the class into groups of four or so using a count-off system to group people who normally don’t work together.