FINISHING UP – UNIT 4

Classes:

H911003 - *Woodworking Article #1 - Item made using skills learned in the Finishing It Up Project. Examples include: dovetailing, making a pen using lathe, overlays, using a router, etc. Items should be entered with construction plans.

H911013 - Woodworking Article #2 - Item made using skills learned in the Finishing It Up Project. Examples include: dovetailing, making a pen using lathe, overlays, using a router, etc. Items should be entered with construction plans.

H911004 - *Woodworking Display #1 - Display exemplifying one of the principles learned in the Finishing It Up Project. Examples include: career opportunities, types of finishes, or dovetailing. Items should be entered with construction plans.

H911014 - Woodworking Display #2 - Display exemplifying one of the principles learned in the Finishing It Up Project. Examples include: career opportunities, types of finishes, or dovetailing. Items should be entered with construction plans.

H911006 - Recycled Woodworking Display - Article made from recycled, reclaimed or composite wood. Article must be sanded and sealed and utilize one or more woodworking techniques from page 2 of the Unit 3 manual. Exhibit must include the woodworking plan and a minimum one page report of how the engineering design process was used to develop the woodworking plan.

Engineering Design Process

1) State the problem (Why did you need this item?)
2) Generate possible solutions (How have others solved the problem? What other alternative or designs were considered?)
3) Select a solution (How does your solution compare on the basis of cost, availability, and functionality?)
4) Build the item (What was your woodworking plan, and what processes did you use to build your item?)
5) Evaluate (How does your item solve the original need?)
6) Present results (How would you do this better next time?)

H911010 - *Careers Interview - Interview someone who is working in the field of woodworking and research that career. Interviews can either be written or in a multimedia format (CD/DVD). Written interviews should be in a notebook. Written reports should be 3 to 5 pages, double spaced, 12 point font, and 1" margins. Multimedia reports should be between 3 to 5 minutes in length.

DEPARTMENT WELDING

PREMIUMS: Purple-$4.50, Blue-$4.00, Red-$3.50, White-$2.50

(All metal welding processes accepted.)

●All welds exhibited in class 1 or 2 must be mounted on a 12" high x 15" long display board of thickness not to exceed 3/8". Attach each weld on a wire loop hinge or equivalent, so the judge can look at the bottom side of the weld when necessary. Each weld should be labeled with information stated 1) type of welding process (stick, MIG, TIG, OTY-Acetylene, etc.) 2) kind of weld, 3) welder setting, 4) electrode/wire/rod size, and 5) electrode/wire/rod ID numbers. Attach a wire to display board so it can be hung like a picture frame.

Class 1

♦All welds should be made with the same electrode/wire/rod size and number

♦Welds should be made on one side of metal so penetration can be judged.

Welds should be cleaned with chipping hammer and wire brush. Apply a coat of light oil (penetrating oil) to the metal to prevent rusting. Wipe off excess oil.

♦It is suggested that all welds be on the same size and thickness of metal. These pieces, referred to as coupons, should be 1.5 to 2 inches wide and 3.5 to 4 inches long. A good way to get this size is to buy new cold rolled strap iron and cut to length. The extra width is needed to provide enough metal to absorb the heat from the welding process and prevent the coupons from becoming too hot before the bead is completed. Narrower coupons will become very hot, making an average welder setting too cold at the bead start, just about right in the middle, and too hot at the enc. The correct way to weld narrow strips is to make short beads and allow time to cool, however this project requires a full length bead.

● Stick welding
- Suggested coupon thickness - 1/4" if using 1/8" rod
- Suggested rod-AC and DC straight or reverse polarity-first E-7014, second E-6013

● MIG welding
- Suggested coupon thickness - ¼" if using .035 wire and 1/8" if using .023 wire

● Oxy-Acetylene
- Suggested coupon thickness - 1/8"
- Suggested rod-1/8" mild steel rod

Class 2

♦It is suggested that all welds be on same size and thickness of metal. These pieces are referred to as coupons. The welds can be on one coupon that is about 4" x 4" or on individual coupons that are about 2" x 4" and ¼" thick. Suggested rods for this class of position welds for AC and DC straight or reverse polarity is, first E-6013, second E-7014 and E-6010 for DC reverse polarity only.

♦Welds should be cleaned with a chipping hammer and wire brush. Apply a coat of light oil (penetrating oil) to the metal to prevent rusting. Wipe off excess oil.

Class 3

♦All welds should be cleaned and protected from rust with paint or light oil. Plans are to be complete enough that if they were given to a welding shop, the item could be made without further instructions. Bill of materials should include a cost for all items used including steel, electrodes, paint, wheels, etc.

DIVISION 920 - ARCS AND SPARKS

Classes:

H920001 - *Welding Joints - a display of one butt, one lap and one fillet weld.

H920002 - *Position Welds - a display showing three beads welded in the vertical down, horizontal and overhead positions.

H920003 - *Welding Article - any shop article or piece of furniture where welding is used in the construction. All plans and bill of materials must be attached to the article. Protect plans with a cover.

H920004 -*Welding Furniture - Any furniture with 75% welding is used in construction. 69% of item must be completed by 4-Her and notes regarding laser welding or machine welding must be included. All plans, plan alternations, dimensions and a bill for materials must be attached to the article. Protect plans with a cover. May be displayed outside.

H920005 - *Careers Interview - Interview someone who is working in the field of welding and research that career. Interviews can either be written or in a multimedia format (CD/DVD). Written interviews should be in a notebook. Written reports should be 3 to 5 pages, double spaced, 12 point font, and 1" margins. Multimedia reports should be between 3 to 5 minutes in length.