Home Flight

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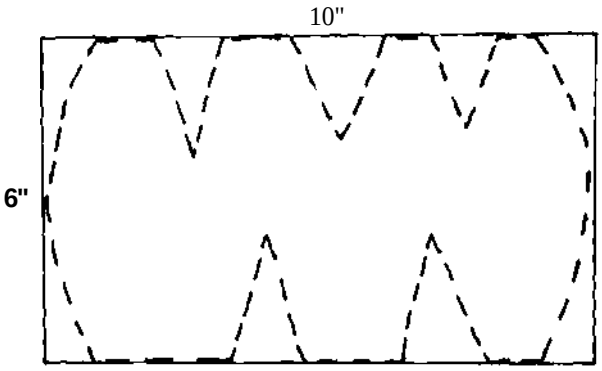
Body:

Materials:

1 Piece Steel Plate, <⁄8" x 6" x 10" (Body)
1 Piece Steel Plate, *Vs"* x *2Vi"* x 8" (Neck)
1 Piece Steel Plate, V x 3" x 3" (Head)
1 Piece Steel Plate, '/ x 4" x 8" (Tail)
2 Pieces Steel Plate, ' x 3" x 4" (Legs)

Step I Cut with Beverly Shears outside edge and triangles to form body. Follow the drawing below.



Body Pattern

Forging:

Step I Heat the cut metal in the forge until a cherry red color is obtained. Grasp the body with the metal tongs. Form the body by folding all edges together.

Safety: Wear eye and clothing protection while working with hot metal on the forge.

Step II Cool formed metal. Arc weld all seams with E 6013 electrodes together at 100 amps. Reheat circular body to cherry red in forge. Round out square or rough edges with ball peen hammer as pictured below.

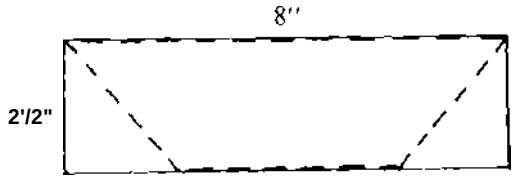
Step III Cut tail piece out as patterned below.

Tail Pattern

Step IV Using the same process as before, heat tail until cherry red. Form theeight inch section to match rear part of body. Cool tail section. Weld the circular tail piece together, then weld tail to rear section of body,

Step V Put body and tail in forge. Again, smooth out rough edges and form tail by using a screwdriver pictured below.

Step VI The neck can be formed after cutting the pattern below.

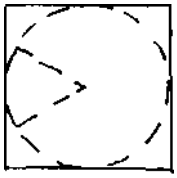


Neck Pattern

Step VII After cutting metal, place in forge until cherry red. Bend until the two angled edges meet. Cool the neck and weld seam together at 100 amps.

Step VIII Weld neck's widest section to the front part of the body.

Step IX Cut out a three inch diameter piece of eighth inch steel plate.



Head Pattern

StepX Heat head piece in the forge. Form until the metal is thimble-shaped. Cool head, weld the cone together, then weld head to neck section as pictured below.

Step XI With all four sections of the body welded together, surfacing of the entire body with welding beads can begin. Eighth inch steel plate is used so the welding beads won't burn through the material. Weld beads at 100 amps along the length of the body. Continue until entire surface is covered with beads.

Safety: Wear eye protection when chipping slag from welded body.

Step XII Place body in forge. Heat up the body to a cherry red condition. Mold body to final desired shape. The body should appear like the picture below.

Step XIII Cut out the two leg patterns as drawn below.

Note: Reverse Paper Pattern for Right Leg

Left Leg Pattern

Step XIV Heat both leg parts in the forge until cherry red. Shape left leg (pattern above) first by folding the widest section together until circular. Repeat for right leg. Cool both legs, then weld each leg together at the seam.

Step XV Weld, at lOOamps, legs to body in thisposition as pictured below.

Step XVI Weld all surfaces of the two legs to match with the body. On the bottom of each leg, cut a round piece of steel plate to seal the opening. Drill a 14" hole in the middle of the round piece of metal. This provides an opening for the legs later on.

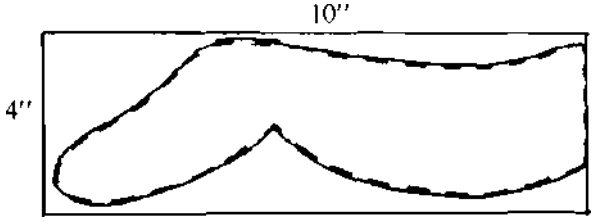
Wings:

Materials:

4 Pieces Steel Plate, *Vs"* x 4" x 10" (Wings)

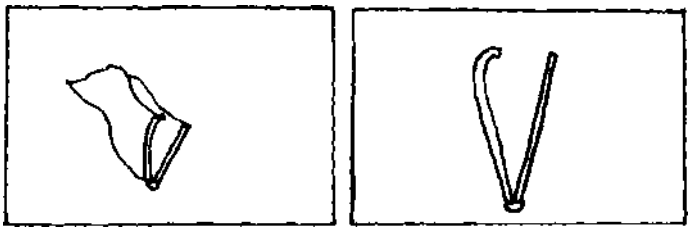
Step XVII The wings were cut eight inches long in the beginning. The wings were found to be too short. A two inch tip was added so the wings would be in proportion.

Step XVIII Cut pattern below in duplicate for each wing. Each wing consists of two pieces.



Wing Pattern

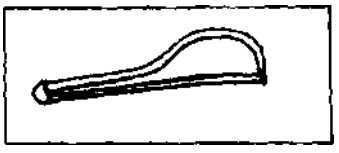
Step XIX Weld the two pieces of each wing together in a " V" arrangement. Shown on next page,



"V" Arrangement Side View

Step XX Place wing in the forge.

Step XXI Shape unwelded side thicker than welded side as shown in the drawing and the picture.



Side View

Step XXII After the thick section is formed, weld (a 100 Amps) together the wing edges. Covei wing with welding beads in a pattern tc simulate rows of feathers as diagrammed below.

Welding Pattern

Step XXIII Repeat for right wing,

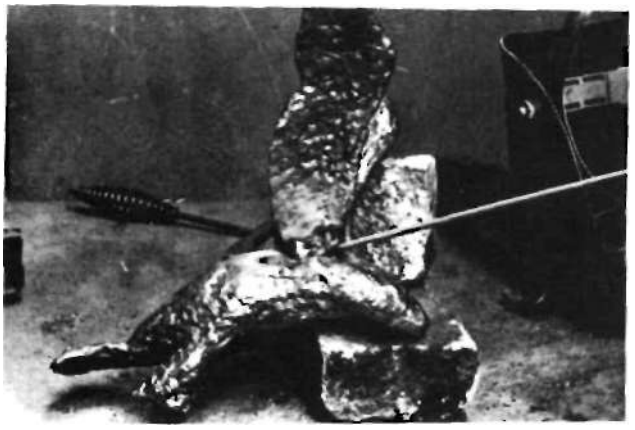
Step XXIV After both wings are shaped and welded, heat in forge until metal is cherry red. Shape each wing to desired thickness (about *VA"* thick on the back of the wing, *Vi"* thick on the front of the wing).

Step XXV In the picture above, the left wing is being bent outward to simulate flight on the finished project.

Step XXVI While the project is being built, wire brushing helps keep the pieces clean during construction.

Safety: Wear eye protection because little bits of slag come off the project during wire brushing.

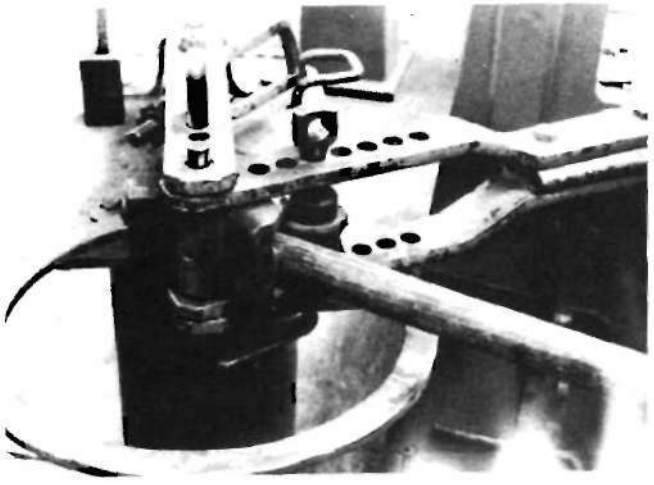
Step XXVII Weld, at 120 amps, finished wings to the body in the position show on next page.



Construction of Tree:

Materials: 1 *Vi"* Pipe. . . . 23" (Trunk and Limb)
5/.6" Steel Plate. . . . 6" x 20" (Base)
Vi" Steel Plate. . . . 2" x 2" (Claws)
'A" Round Steel. . . . 8 Inches (Legs)

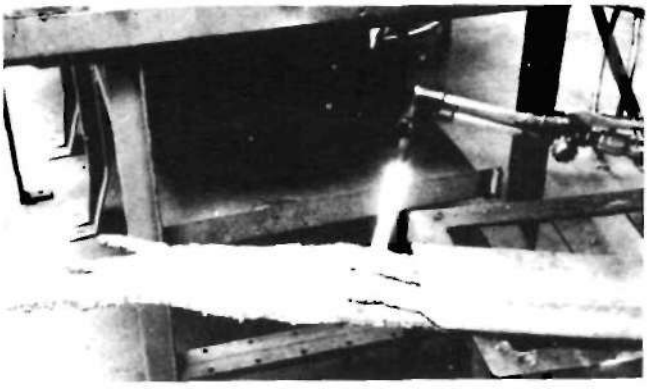
Step I Cut one *Vi"* pipe twenty-three inches long. Insert one end of pipe in the Hossfeld Bender.



Step II Bend first 13 inches of pipe into a gentle curve. After bending the curve, cut 10 inches off the straight end (this will be the tree limb).

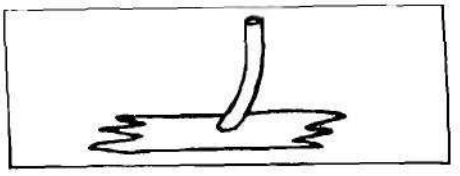
Step III Use cutting torch to make irregular edge on top of the trunk and end of limb. Cut base of trunk with the power hacksaw to even up edge for base contact.

Step IV Chalk 5/16" steel plate as a guide for the cutting torch.



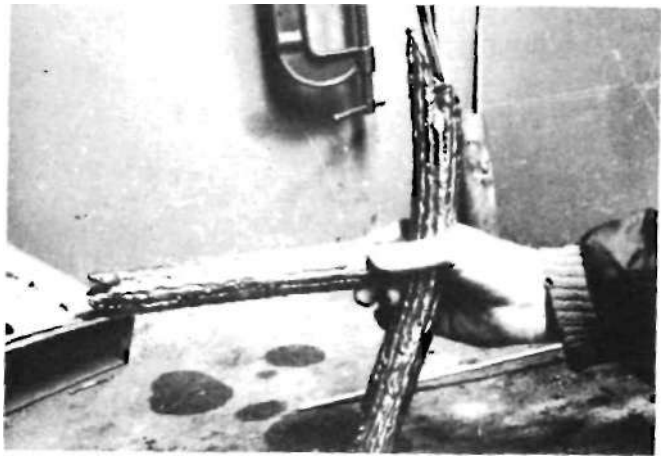
Step V Weld, at 100 amps, beads parallel with the pipe. Cover entire surface of trunk and limb with beads to simulate bark.

Step VI Weld, at 130 amps, the trunk to the base as drawn below.



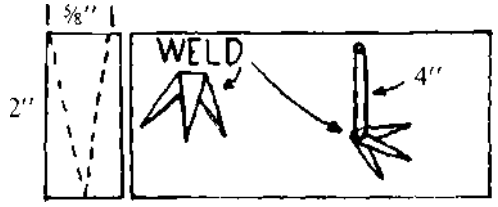
Trunk Position

Step VII Weld, at 100 amps, limb to trunk nine inches above the base. Weld in a manner to blend the trunk and limb together.



Step VIII Weld, at 120 amps, welding beads to act as exposed roots. Weld on top of old welds to build roots higher. Run roots to all edges of the base.

Step IX Cut out claws and legs as drawn below.



Claws and Legs

Step X Weld, at 80 amps, each claw together in two groups of three. Weld ¼" legs at junction of claws. Insert the two legs into the two holes provided in the leg stumps of the body. Place bird, with legs inserted, on tree branch. Lean bird in desired position so it won't fall. Weld claws to the limb. With a hammer, bend claws to conform with the limb. Lift bird off tree for final wire brushing. The claws stay on the tree so that the bird may be removed for future cleaning or moving.

Step XI With the bird removed, use a portable drill *(VA")* to drill the eyes in the head. Cut two small triangles out of *Vs"* steel plate, about %" long, for the beak. Form and place the beak below the eyes. Cool the bird completely with cold water. Dry and wire brush finished bird and tree to a bright luster. Spray with clear lacquer.

Materials:

1 Piece Steel Plate, ⅛" x 6" x 10" (Body)
1 Piece Steel Plate, ⅛" x 2½" x 8" (Neck)
1 Piece Steel Plate, ⅛" x 3" x 3" (Head)
1 Piece Steel Plate, ⅛" x 4" x 8" (Tail)
2 Pieces Steel Plate, ⅛" x 3" x 4" (Legs)
4 Pieces Steel Plate, ⅛" x 4" x 10" (Wings)
1 Piece Steel Plate, ⅛" x 2" x 2" (Claws)
1 Piece Steel Plate, ⅛" x 1" x 1" (Beak)
1 Piece Steel Rod, ¼" x 8" (Lower Legs)
1 Piece 1½" Pipe, 23 inches long (Trunk and Limb)
1 Piece Steel Plate, 5/16" x 6" x 20" (Base)