SECTION OP-56: TAIL LIGHTING

NOTE: See Section 5.18 for more tips on working with the fiberglass fairing. Fiberglass will quickly dull tools. Locate and use the tools set aside for use in attaching the empennage fairings when working with the fiberglass wing tips.

Step 1: Center the R-00911B Rudder Fairing Doubler on the aft end of the R-411, R-911 or R-1011 Rudder Bottom Fairing as shown in Figure 1. Tape the rudder fairing doubler in place.

Step 2: Final-Drill #30 and cleco the holes as shown in Figure 1.

Step 3: Final-Drill #43 the holes as shown in Figure 1.

Step 4: Use a marker to trace around the opening in the rudder fairing doubler.

Step 5: Machine countersink the rudder fairing doubler to fit the head of an CS4-4 rivet. See Figure 1.

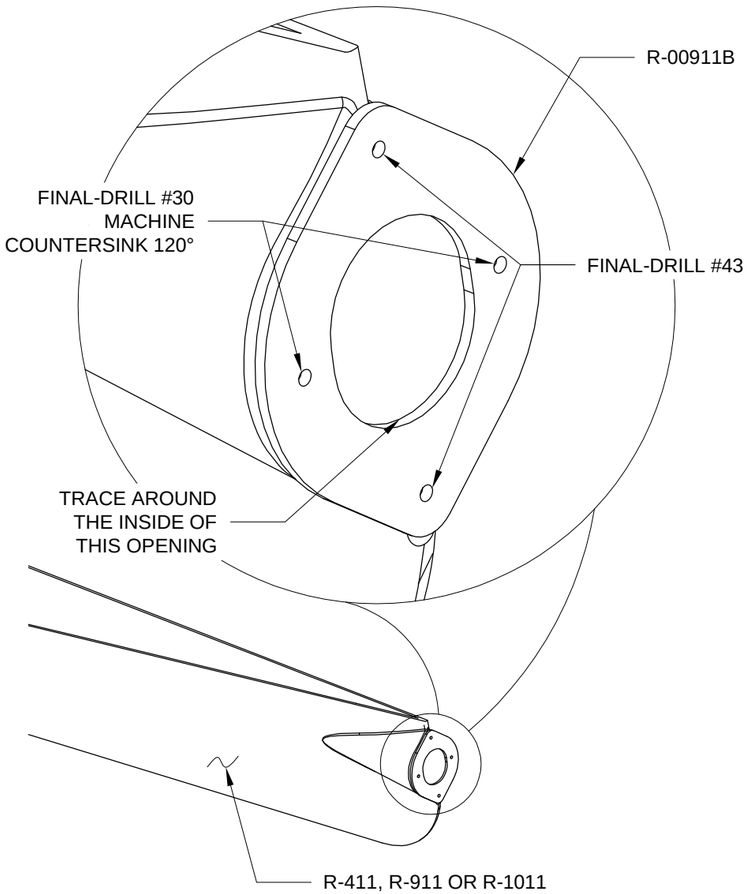

FIGURE 1: FITTING THE RUDDER FAIRING DOUBLER

Step 6: Remove the hatched area of the R-411, R-911 or R-1011 Rudder Bottom Fairing as shown in Figure 2. Drill Several holes around the inside of the traced line, but stop short of the line traced in Step 1. Finish removing the material up to the traced line with sandpaper wrapped around a round object.

Step 7: Use 60 grit sandpaper to roughen the surface of the R-411, R-911 or R-1011 Rudder Bottom Fairing and the facing surface of the R-00911B Rudder Fairing Doubler.

Step 8: Clean both surfaces well with denatured alcohol.

Step 9: Mix a small batch of epoxy resin and add flox to a smooth consistency that will not drip, but is not too stiff to sag when the mixing cup is tipped from side to side. Spread this mixture on the roughened surface of the R-411, R-911 or R-1011 Rudder BottomFairing.

Step 10: Rivet the R-00911B Rudder Fairing Doubler to the R-411, R-911 or R-1011 Rudder Bottom Fairing as shown in Figure 2. There should be just enough of the epoxy resin and flox mixture between the parts to come up to, or just beyond the adjacent edges of the parts. Sand these edges to a smooth finish after curing.

Step 11: Run a #43 drill bit through the top and bottom holes. See Figure 1. Clean the drill bit before the epoxy cures. Wait until the resin is fully cured before proceeding.

Step 12: Tap 4-40 the screw holes indicated in Figure 2.

Step 13: (RV-3,4,6,7,8,9) Drill the aft systems hole as in the VS-410PP Bracket, vertical stab spar, and bulkheads as called out in Figure 3.
For reference, see also Page OP56-2, Figure 1.

Step 14: (RV-10) Drill the aft systems hole into the vertical stab spar and bulkheads as called out in Figure 4.

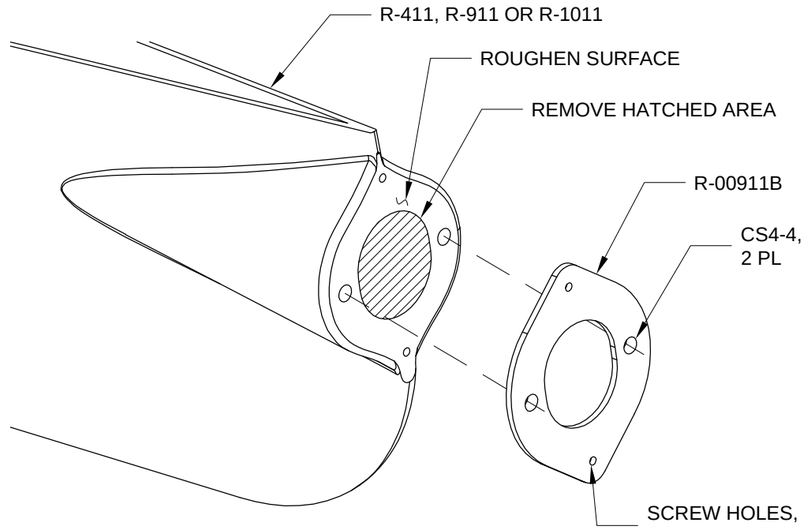

FIGURE 2: RUDDER FAIRING DOUBLER INSTALLATION

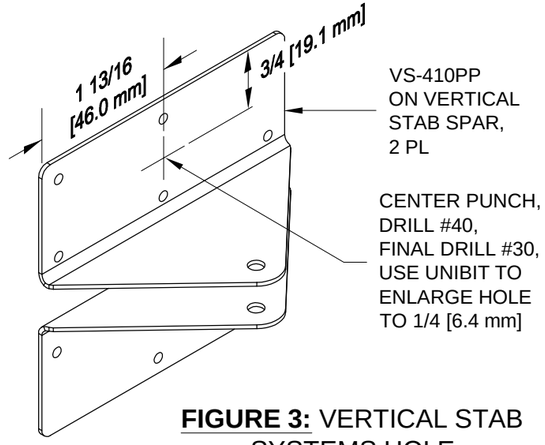

FIGURE 3: VERTICAL STAB SYSTEMS HOLE
(RV-3,4,6,7,8,9)

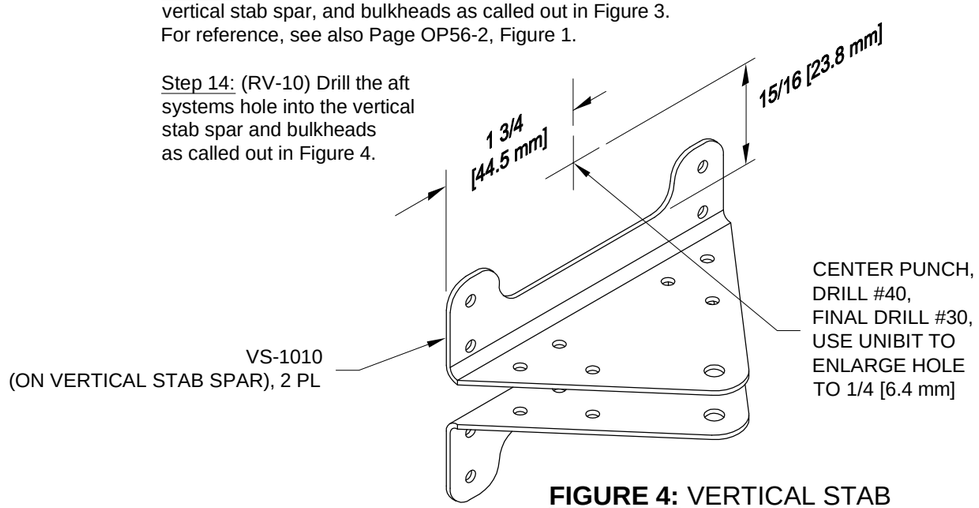

FIGURE 4: VERTICAL STAB SYSTEMS HOLE
(RV-10 ONLY)

NOTE: RV-14 wiring shown. Refer to the Aero LEDs instructions for more information.
For all steps on this page, refer to Figure 1.

Step 1: Slide an 18" Length of heatshrink over the L1082 (WHT) and L729 (BLK) wires as shown. Do not activate the heat shrink yet.

Step 2: Strip the end of the L729 (BLK) wire. See Section 5.21 for more information on wire stripping.

Step 3: (RV-14 Excluded) Crimp the ring terminal on to the L729 (BLK) wire.

NOTE: Van's Aircraft recommends 3M tape (product number F9460PC VHB).

Step 4: Cut a small rectangle of double sided tape to match the of the bottom of an HW-00004 Tie-Wrap Clip. Apply the tape to the bottom of the clip.

Step 5: Position a clip on the Rudder Spar Assembly as shown in the detail view. The RV-14 will already have a hole in this location. Position the clip over the hole.

Step 6: (RV-14 excluded) match-drill #30 the hole in the clip into the Rudder Spar Assembly.

Step 7: Rivet the clip to the Rudder Spar Assembly using an LP4-5 Rivet.

Step 8: Route the the L1082 (WHT) Wire as shown. Keep the wire moderately taught forward of the Vertical Stabilizer Rear Spar and angled slightly downward as it passes aft through the Vertical Stabilizer systems hole as shown.

Secure the wire in the Vertical Stabilizer systems hole using RTV sealant.

Step 9: After the sealant has cured, route the L1082 (WHT) Wire through the center of the HW-00004 Tie-Wrap Clip.

Find the point along the L1082 (WHT) wire where there is enough slack to allow the wire to rotate through the full range of Rudder deflection without stretching or excessive drooping.

Wrap this point on the L1082 (WHT) wire in Friction Tape to seat it in the tie-wrap clip as shown.

Use a tie-wrap to secure secure the friction tape in the clip.

Step 10: Ensure the L729 (BLK) wire has enough slack to allow the wire to rotate through the full range of Rudder deflection without stretching or excessive drooping.

Step 11: Use a heat gun to activate the heat shrink.

Step 12: Strip the ends four wires from the WH-00057 Wiring Harness and the LN-210-1 Rear Position Light.

Step 13: Crimp the Molex sockets and plugs onto the wires.

Step 14: Install the Molex sockets and plugs into the Molex receptacle and plug.

Step 15: Label the Molex receptacle and plug.

Step 16: Position a HW-00004 Tie-Wrap Clip on the centerline of the Rudder Assembly where shown.

Step 17: Match-drill #30 the hole in the clip into the Rudder Spar Assembly.

Step 18: Rivet the clip to the Rudder Spar Assembly as shown.

Step 19: Install the LN-210-1 Rear Position Light into the rudder bottom fairing.

Step 20: Connect C408J and C408P.

Step 21: Use a tie-wrap to secure secure the L1082 wire in the clip.

Step 22: Install the rudder bottom fairing.

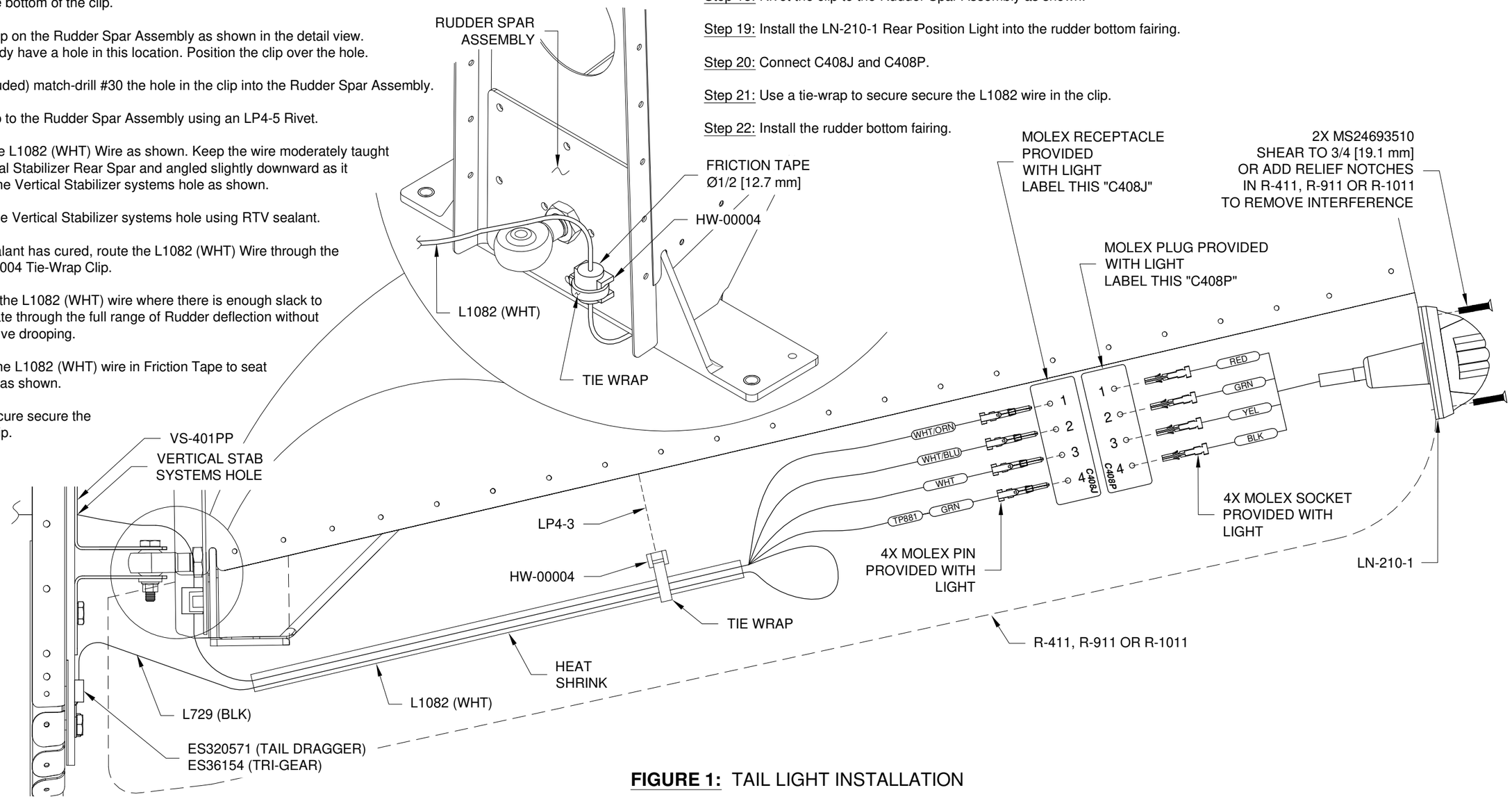

FIGURE 1: TAIL LIGHT INSTALLATION