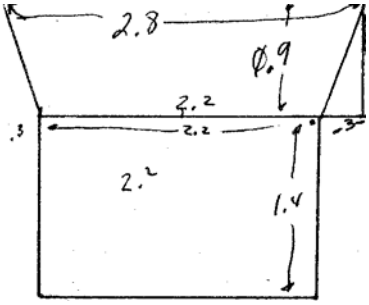
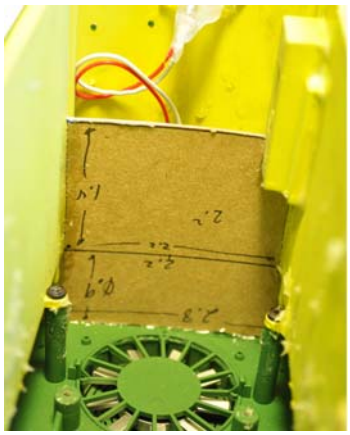
#217 Speaker Installation in Aristo SD45

The most important thing about speaker installation is making the "baffle". Air should not pass from the front side of the speaker to the rear of the speaker. This example shows how to accomplish this in the AristoCraft SD45 locomotive. Similar methods can be used in other engines. This engine has a width equal to that of this speaker making it an easier installation. We chose to leave the backside of the speaker resonate within the body (shell) of the engine since it has only a few openings. In engines that have open grills on the sides and in other places, you will have to close off the grills and other openings to achieve the best bass and maximum sound from any speaker. This installation mounted the speaker just above the screw supports that hold the fan assembly onto the engine. To mount it closer to the top would require cutting the stanchions off and gluing the fan piece onto the shell.

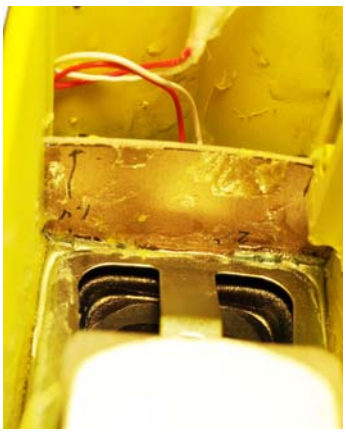


The first step is to make a rigid piece to enclose the hood end (of the engine) of the speaker. In this installation example, we used thick cardstock. This is to seal off any air leakage from the front of the speaker and shell. The template above is an exact size for doing this. You can either cut it out to glue it, or trace it, onto the piece you are using. It's important to use a thick piece since you do not want it to flex when the speaker is operating.

Second is to glue it in place. This piece doesn't have to go as low as the drawing shows, but it's never a bad idea to have more if needed. This way if the backside were to be enclosed, a piece is already present to finalize a box type enclosure. The sides are glued with a strong but flexible glue when cured ("Quick Grab", found in craft stores, works well). This is shown below. Note that the fan assembly is removed for proper placement. The picture is taken with the shell upright.



Third, install the fan assembly making sure it is securely screwed fastened and air tight. If you like, you could put some rubber based glue along the edge when assembling. Remember, you won't be able to get to the screws after the speaker is installed. This is shown in the picture on the left.



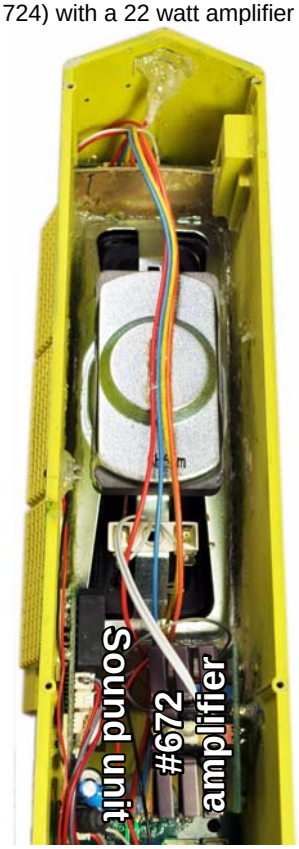
Step 4: Carefully cut the metal tabs off of each end of the speaker (item 217) leaving the ends flush and straight. Then place the speaker into the shell placed tightly against the first baffle piece. It is the perfect width for this shell as well.

Step 5: glue the sides and end piece. Make sure that there are no air leaks. Again, this baffle piece prevents air from moving between the front of the speaker and the backside, which is the inside of the shell.

Step 6: Cut another piece of stock for the other end. This piece is about 2.2" x 1". Then glue it in place at an angle as shown in the picture to the left. Again, make sure that all of the glue areas are air tight.

The speaker is now properly enclosed. When the shell is mated to the chassis, a large speaker enclosure / baffle will exist. If you would rather enclose the speaker w/o using the shell, then you would have to make the piece in step 6 longer so that a box could be made around the back side of the speaker as well.

Finished unit with the Revolution Receiver and a Dallee EMD sound unit (item 724) with a 22 watt amplifier (item 672).



AristoCraft mother board and Revolution Receiver are located here.