

# **Australian Vintage Radio Society Inc.**

(Incorporated in Victoria – A0050003S)

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## **Cabinet assembly instructions for the AVRS 10<sup>th</sup> Anniversary construction project.**

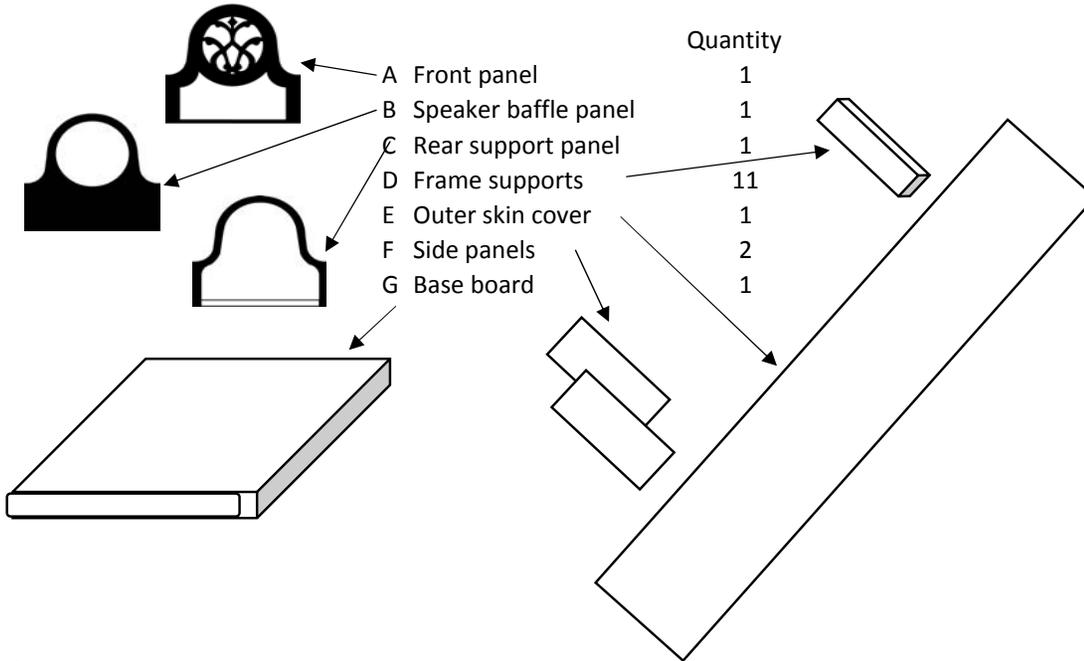
Reference is made within these instructions to three jigs that can be used to assist with assembly and they are available on loan on a ‘first in’ basis.

Since there is only one set of these jigs it is the responsibility of the user to promptly pass them on to the next Member so that he/she can assemble their cabinet.

Version 2 of 6.6.17

## Cabinet Assembly Guide AVRS Radio Construction project

### 1 Identifying the cabinet components



### 2 Component clean up

Clean up the cut edges of panels A,B&C  
(try not to round the corners)

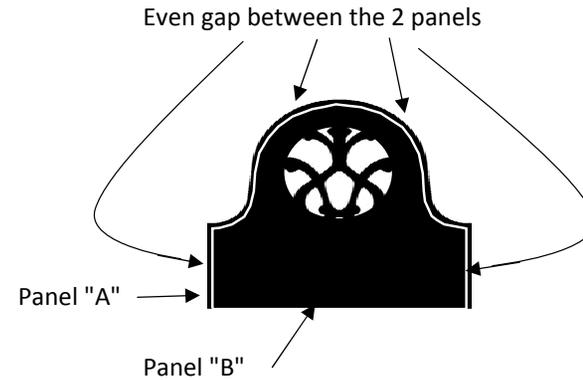
Use folded sandpaper to clean up the inside edges of the engraved shape on the front panel.

I found that a small oval shaped needle file worked best in cleaning up around the speaker grill.

When sanding , sand along the wood grain never across the grain.

**3 Aligning and identifying the orientation of the panels**

Identify the front of Panel "A" by the engraved outline, below the speaker grill.  
Take the speaker baffle "B" and place it onto the back of Panel "A",  
select the correct orientation so that there is an even gap between  
the outer edges of panel "A" and "B" and mark with a pencil  
which is the back of the speaker baffle panel "B"  
The bottom edges of all panels should be flush with each other.

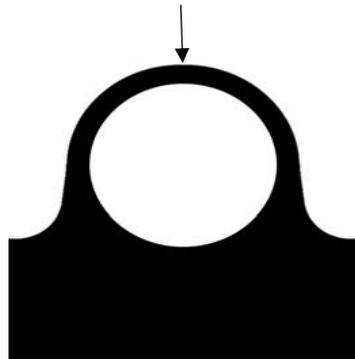


Take Rear support panel "C" and align it to the back of panel "B"  
(it will fit better one-way better than the other)

Panel "B" and "C" outer edges should match perfectly to each other once the orientation is correct.  
Mark with a pencil the inside of panel "C" so that it is easily identified later.

**4 Marking Panel "B" for future frame support "D" placement.**

Mark the top centre point of panel "B" and transfer it to the top of panel "C"



## 5 Fitting Frames "B" and "C" To Assembly Jig



Assembly Jig.

Fit Speaker baffle "B" and Rear support panel "C" to either side of the two raised blocks on top of the assembly jig and clamp into position.

Ensure that both frames are level with one end of the Jig.



## 6 Fitting the Frame supports "D" to the Inner panels "B" and "C"

Glue each end of a frame support and fit it into the position at the top of the frame. Use the pencil marks identifying the centre of the frame to judge the correct location of the frame support. Fit clamp but don't tighten.



Take a piece of wood and rock it back and forth on the edge of the frame and frame support to make sure that the frame support does not protrude above the frame edge.

Repeat this operation on the other side, once satisfied that all is OK tighten the clamp.



### 7 Fitting The Corner Frame Supports

Glue each end of a frame support and fit it into the corner, it is essential that the cross support fits perfectly into the corner at the top edge and flush with the vertical side of the frames, Check with a straight edge.

Clamp into place.



Repeat for opposite end.



### 8 Fitting The Upper Frame Supports

Mark a pencil line onto the outer surface of the Frames "B" & "C" 70mm down from the edge of the top frame support.

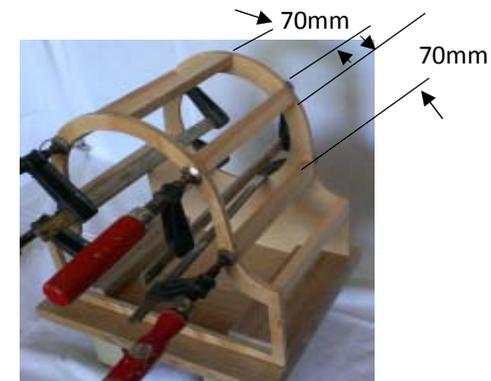
Glue and clamp frame support into place, check with the rocking method as in paragraph 6. once all is OK tighten clamp.

Repeat this operation for the next frame support down.

Mark the frame 70mm down from the frame support above.

Glue and fit the frame support making sure that none of it protrudes above the edges of the frames.

I found that I could perform all these operations with only 4 clamps and the glue was dry enough to move from one operation to the next and reuse the clamp from the longest cured glue joint. The daytime temperature was about 25deg.C at the time.



## 9 Fitting The Lower Two Frame Supports

The lower frame support sits onto the top of the wooden block in the jig.

To protect the block from getting glue onto it place a piece of neat fitting waxed baking paper between the frame support and the block.

Glue and clamp into place, repeat for the other side.

Giving time for the glue to set, remove all clamps and remove the finished frame from the jig.

Let the glue full cure overnight.



## 10 Preparing the frame for the application of the outer skin cover

Just to be sure that there are no protruding parts beyond the outer edges of Frame "B" & "C" Run a straight edge over it and file or sand down anything the straight edge hits.



Finished frame assembly

## 11 Speaker Fitment

It is beneficial to fit the speaker to the baffle and drill the screw mounting holes at this point as the holes can be drilled through the speaker baffle. These holes will not be seen as they will be covered by the front panel. Any interference between the speaker and the frame supports can be corrected at this time, the frame supports can be notched to gain extra clearance for the speaker frame.

## 12 Customising

Screws or nails could be fitted to each of the ends of the frame supports for added strength. For me I am going to rely on the glue strength.

### 13 Attaching the outer Skin

Now that Frame Glue is fully cured and that you have fitted the screws or nails in place its time to fit the outer skin.

This is not an easy task and is probably better performed with a second pair of hands at the ready. Have a practice of fitting the skin to the frame not using any glue , centre the skin on top of the frame and mark the centre with a pencil for later referencing.

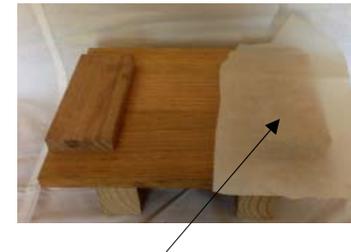
#### The assembly aid Kit

Mounting and clamping Jig.

Rear support plate



Mark centre with a pencil

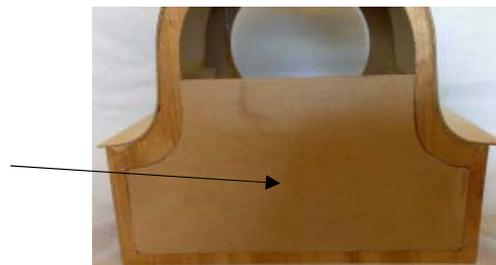


Before fitting the frame to the mounting Jig cover the raised blocks with waxed baking paper as shown repeat for the other block. This will prevent the frame from being glued to the jig should any glue get on to these components during the gluing procedure.

#### Practice run continued:-

Take a piece of wood and fit it to the under side of the top centre cross support  
Take a second piece of wood and fit it to the top centre sandwiching the outer skin Ply and fit a clamp securing the assembly, don't fully tighten the clamp.

Fit the rear support plate into place  
Note it may fit better one way better that the other



Align the marked centre points

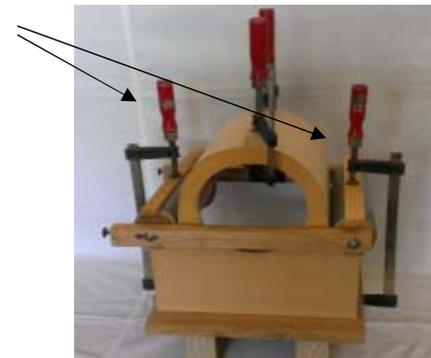
Now fit the rollers over the clamp as shown



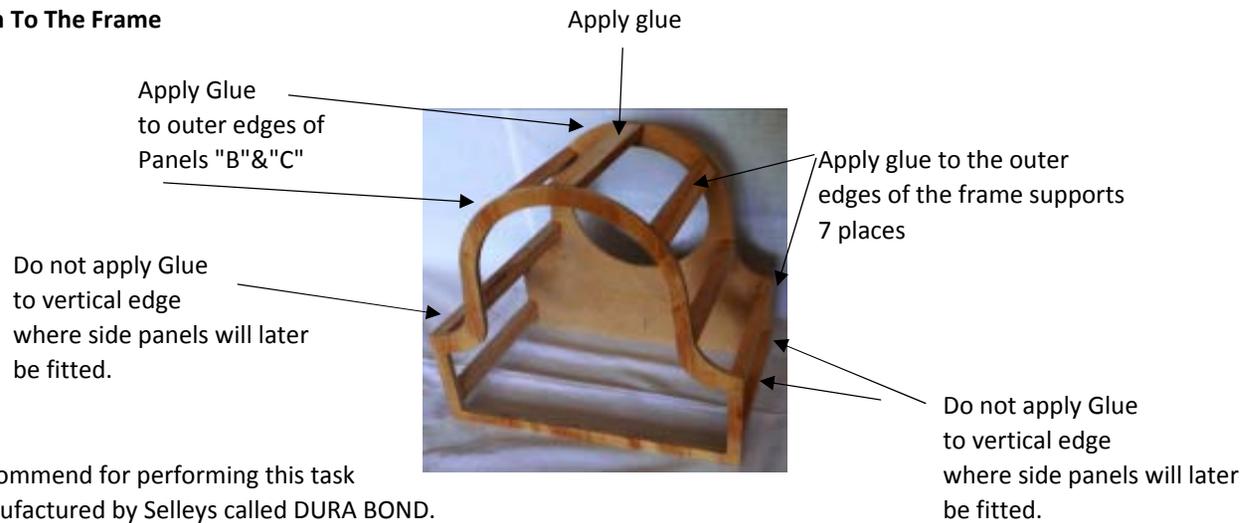
Slide the rollers down until the ends of the skin touch the corners of the frame. Make sure that the skin overhang is evenly placed on front and rear surfaces and at both ends of the skin. Once you are happy with the alignment tighten the clamp, place a second clamp through the hole in the speaker baffle and tighten.



Place two pieces of wood one on top of each roller and fit two clamps as shown. Fit a second pair of clamps at one end of the rollers and then move the two original clamps to the other end of the rollers, so now you have 4 clamps fitted to the rollers, one at each end. Slowly tighten each of the clamp a bit at a time bringing down the rollers and forming the outer skin to the frame. Once you are satisfied with the result, remove all the clamps and roller assembly and place within easy reach.



**NOTE:- AN ABSOLUTE MINIMUM AMOUNT OF GLUE SHOULD BE USED IN PERFORMING THIS OPERATION,**  
14 **Gluing The Outer Skin To The Frame**



The Type of glue I recommend for performing this task is a foaming glue manufactured by Selleys called DURA BOND. It foams and expands to fill any small gaps and has a working time of around 10 minutes.

Wrap the piece of wood that sits beneath the top centre frame support in waxed baking paper so that any glue that escapes does not glue it to the cross support.

**NOTE:- AN ABSOLUTE MINIMUM AMOUNT OF GLUE SHOULD BE USED IN PERFORMING THIS OPERATION,**

You have had the practice run now repeat all those same operations on the real task. A few extra clamps cannot go astray use them if needed.

Make sure that no glue gets onto the rear support plate or it will become a permanent feature of the structure.

Wipe off any excess glue that appears on the front or rear panels.



### 15 Cleaning Up

Remove all clamps, the roller assembly, rear support panel and the inner clamp support.

File the excess timber off the protruding edges of the outer skin panel, file towards the frames to prevent any splintering of the outer skin Ply wood. Do not file down the over hanging edges of the side panels.



Hint:- apply some tape around the end of the file to prevent it from scoring the timber if it comes into contact.

Bastard grade file was used.

### 16 Attachment of side panels

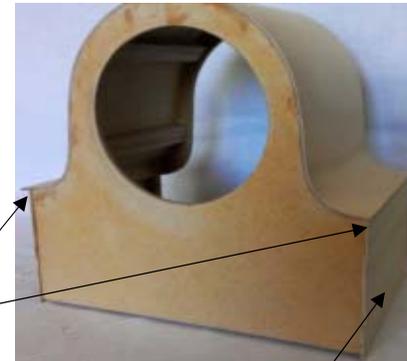
Clean up end frames ensuring that any glue over run is removed.

Apply a thin coat of wood glue around outer edges and across the frame supports.

Attach the side panels under and neat fitting to the outer skin Ply over hang.

Clamp side panels in place while glue dry's.

When glue is cured remove all clamps and file or sand down all over hanging or protruding edges.



Over hang of outer skin

Side panel

### 17 Fitting the base to the frame

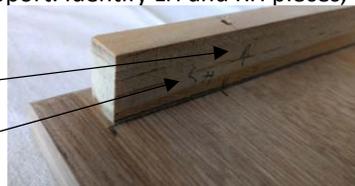
Locate the frame onto the centre of the base board, allow extra space at the front to accommodate the front panel.

Locate the two remaining frame supports into the spaces remaining in the bottom of the cabinet.

Draw a pencil line on the base along the length of the frame support. Identify LH and RH pieces, mark up with an arrow.

Up arrow

L.H. side



Mark out where to drill the mounting holes and drill out with a suitable drill size.



Reposition the frame support against pencil marks and mark where to drill base board with a nail and a light hammer tap.



Drill holes in the base board at such a size to clear the diameter of the screw to be used.



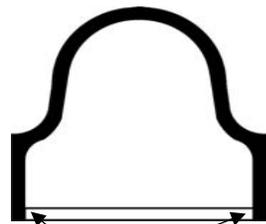
Counter sink the screw holes on the underside of the base board.



Attach the drilled frame support to the frame, glue and clamp into place.



Remove the cross support on the bottom of the rear frame with a wood saw.



Remove

**Note:-** Now is the time to fit the chassis and drill the holes for the volume control, tuning condenser or (station selector control shaft), tone control and gain control etc. and the escutcheon. Once the exact positions for these components has been established, the locations can be transferred to the front panel before it is glued into position.

Attach the frame assembly to the base board using four wood screws

**Note:-** I would strongly recommend that the front panel be the last thing that is fitted to the cabinet. The chassis should be constructed and fitted to the cabinet before attaching the front panel, any incorrect hole positions will be hidden by the front panel once fitted.

## 18 Attaching the front panel

The front panel is several millimetres larger on the sides and the top to allow for any discrepancy in the attachment of the outer skin to the frame. The bottom edge of the front panel is correct and has nothing to be removed from it.

Place the front panel onto the base board resting against the frame assembly in the correct orientation.

Centre the front panel making sure that none of the speaker hole in the speaker baffle panel can be seen, if any of the speaker hole is visible mark with a pencil and then file that section away so that the hole is clear of the grill.

Once you are satisfied with the positioning of the front panel scribe a line around the back side of the front panel using the frame assembly as the guide. The front panel can now be filed or sanded down to the marked line making sure not to remove the pencil line as this is your safety margin.

Remove the frame assembly from the base board.

Apply PVA glue to the speaker baffle panel in an even thin coat all over and reposition the front panel into its centralised place, ensuring the bottom edge is level with the speaker baffle bottom edge.

Clamp the front panel to the frame and base assembly ensuring that some wood scrap pieces are placed between the jaws of the clamps and the cabinet assembly as to prevent any bruising of the finished cabinet.

Once the glue is cured remove clamps and re-attach the frame assembly to the base, the edges of the front panel can now be filed down to the exact to the exact shape of the outer skin making sure that you file toward the skin to prevent any wood splintering of the front panel.



The cabinet construction is now completed.