

A GUIDE TO FITTING
GUNWALES, DECKS,
HANDLES, YOKE AND
SEATS TO A
16 FOOT
APACHE CANOE
(WITHOUT SCUPPERS)

Start by countersinking and pre-drilling outer gunwales with a pillar drill. Use a pattern to space the holes about 4.75 inches apart and countersink to between 1/8 and 1/4 inches depth. Leave the last 18 inches undrilled.



Cut starting end of outer gunwale at a 45 degree angle and sand to finish.



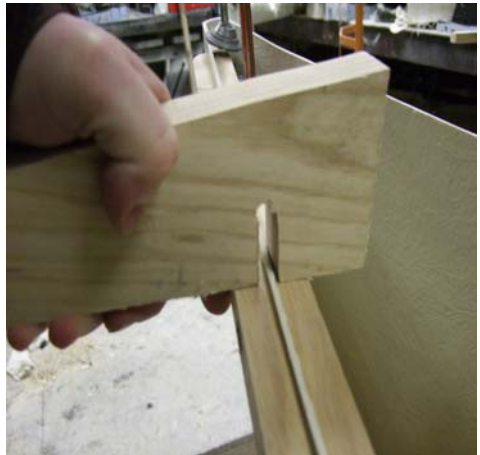
Clamp inner gunwale to hull.



Cut end of inner gunwale slightly longer than boat then cut along the centreline of the boat and sand to fit.



Position outer gunwale then clamp inner, hull and outer together. Starting about 8 inches from end of boat match inner and outer, tapping into place and using pattern for about 1 ft.



Pre-drill through outer gunwale, hull and just over half way through inner gunwale using a 1/8 drill bit. Now screw in place, remembering to keep torque setting very low (a sheared screw is not fatal but time consuming).



Continue along hull in 2 to 3ft sections to as near to the end as possible.



Cut end of inner gunwale and then along the centreline. Sand to fit and finish.



Cut outer gunwale at 45 degrees and sand to finish.



Clamp last section of gunwales to hull in position, use pattern to align.



Mark final hole at end of outer gunwale then mark remaining hole positions as appropriate. The best pattern is to continue from starting end at same spacing until the second to last hole. This hole is halfway between last and third to last holes!

Countersink and pre-drill then screw into place the remaining gunwale.

You should now have finished fitting the gunwales to one side.

Position and clamp inner gunwale along other side and cut to fit with the fitted gunwale at the starting end. Cut along centreline first then cut end. Sand to match and fit side.



Clamp vertically to match other side.



Cut outer gunwale at 45 degrees then sand to finish.

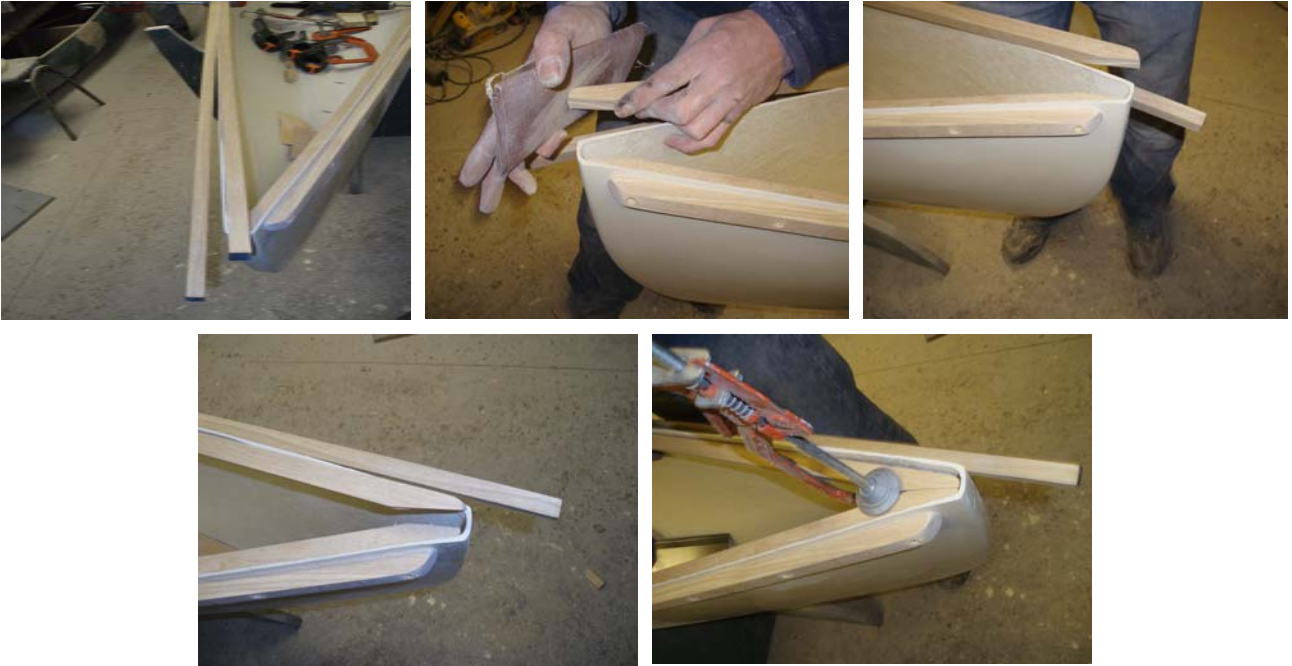


Position starting end of outer gunwale to match other side then clamp inner gunwale, hull and outer gunwale together. When aligning outer gunwale it is best to position slightly short and tap from far end to avoid damaging shaped end. Use pattern to match inner and outer.



Pre-drill and screw the first 8 to 12 inches. Now continue along 2 to 3 ft at a time as before.

Trim end of inner gunwale to about one to two inches long, hold in position then cut along centre-line with saw. Trim end and sand to fit and finish. Clamp vertically to align with other side as shown.



Clamp hull and gunwales together using pattern to align. Pre-drill hull and inner gunwale, through outer gunwale, and screw together leaving the last 18 inches or so.



Cut end of outer gunwale at 45 degrees then sand to finish. Clamp last span of hull, inner and outer gunwales together, using pattern to align, and mark the last holes as for the first side. Pre-drill and countersink the holes then screw together to finish the gunwales.



Using belt sander, sand hull and gunwales flat.



DECKS:

Mark out decks (best from below) then cut out and round off with router.



Sand to fit.



Mark handle positions on gunwales using a measure from ends of hull to ensure perpendicular to centreline.



Fitting handles at this stage provides support for gunwales whilst fitting decks.

Check deck fit then drill holes in inner gunwales for handles taking care to avoid gunwale screws (start straight then tilt drill out to allow for curve of hull and allow bolt clearance).

Countersink holes then fit bolts. (Use one bolt on either side).

Remove outer gunwale screws on one side only, far enough back to allow fitting of the deck. (The gunwale can be held out of the way by placing screws in holes in hull as shown).



Mark deck screws between gunwale screws. Align with existing holes in hull for correct depth. Countersink hull for deck screw head.



Position deck then pilot drill and screw into place.



Refit outer gunwale.



Repeat for gunwale on the other side and then fit handle and deck at the other end in the same way.

YOKE:

Position yoke at middle of the canoe (concave facing to bow). Measure along both sides and from both ends to ensure central and perpendicular to centreline. (Err towards the front if necessary to avoid gunwale screws as it is easier to carry a boat with the stern down rather than the bow). Mark position then mark width required, stretching the gunwales apart. Width should be between 31 and 33 inches. Drill and countersink two holes on each side and secure with bolts as shown. Remember to angle the holes to allow clearance from the hull.



FINISHING:

Fill any problem areas or gaps with two part wood filler at this stage and allow to set. Small wooden pegs may also be used to fill gaps. For example, there may be a small gap between the two inner gunwales at the apex of the deck. Cut a small peg to fit this, glue into place, then sand flat.

Use the belt sander over the gunwales to tidy up any excess filler or pegs then sand to finish other areas by hand.

Use a router to profile upper and lower edges of inner and outer gunwales (hold router perpendicular to hull for outer to avoid “falling” into screw holes when routing outer gunwale upper edge).



It will be necessary to profile the last foot or so of inner gunwales at both ends by hand due to lack of room for router.

Sand all wood fittings to finish using 120 then 240 gauge paper.

SEATS:

Position seats. Bow seat centred 5 ft from bow. Stern seat centred 4 ft from stern.



Mark positions on gunwales using a measure to ensure perpendicular to centreline, as for handles



For seat width mark seat level with outer surface of hull then cut to this.

Slide seat into position under gunwales from middle of canoe, trimming in steps as necessary, put seat hangers in place then drill and countersink. (May help to use clamps to hold things in place). Fit bolts.



Repeat for other seat remembering different positions for bow and stern.

TREATING WOOD:

Apply several coats of Danish oil to all wood, stippling seat covers, then buff when dry. Drips are best removed with acetone on a cloth (I used nail varnish remover).

TOP TIPS

Angle all cuts to ensure visible surfaces/edges meet.

Keep screwdriver torque low.

Think twice before making any cuts or drilling any holes.

Use a length of wood clamped to the gunwales to steady the boat.



TOOLS

Saw, drill, 1/8 bit, countersink, screwdriver, clamps, router and bit, belt sander, off-cuts, measure/pencil, mallet, sandpaper (120 & 240 gauge), wood glue, Danish oil & brush.