

Steering Position for Swing Cat

Version 2 Dated 28th June 2017¹

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The Problem

Swing Cat has no wheel steering. Two tiller extensions enable steering from either side of the cockpit, or from the middle

There is no place, in or out of the cockpit, to sit comfortably and hand steer while being able to see for'ard over the decks or coach roof. Standing to steer is fine but, when it is rough, this is difficult to do as there are not adequate hand holds. Standing, whilst steering, runs the risk of one being thrown off ones feet. Sitting in the cockpit to hand steer only gives a view of the bridgedeck bulkhead and the instrumentation – which makes it more difficult to steer in a straight line and is sick making. A seated view to the horizon is essential to have.

Proposed Solution

A suitable solution, I think, is a stainless steel steering bench (900mm by 420mm) on top of the aft cockpit lockers, centrally positioned. See Figure 1. A bench, rather than a single seat, gives a person the ability to shift either side of the centerline, depending upon the tack perhaps, and affords different views forward. Two people could sit side by side making steering more sociable!

¹ This version replaces the earlier one distributed on 6th June. The main difference is the style of the arms shown in Figure 1, Figure 2 & Figure 4.

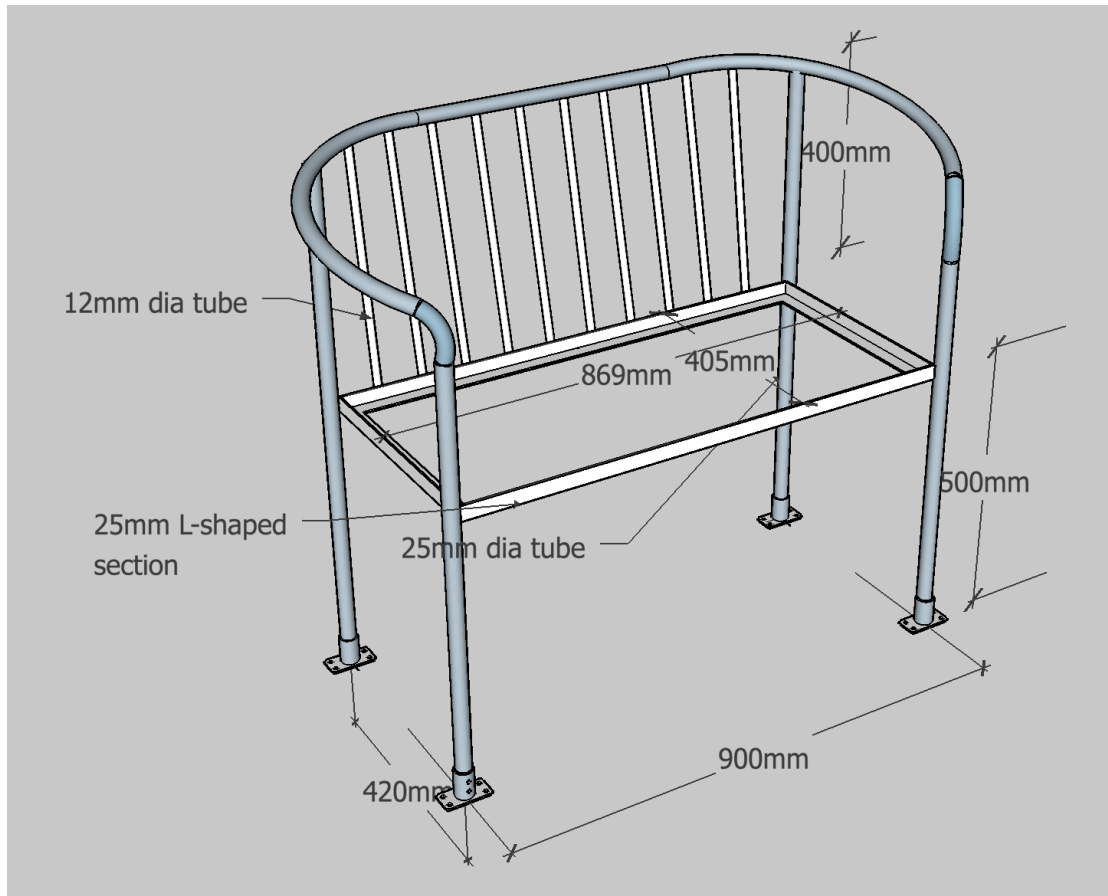


Figure 1: Steering Bench – Front View

The seat is composed of an L-shaped section (25mm angle stainless steel) deep enough to take some 12mm thick marine plywood with a covered, waterproof, cushion on top. The height of the seat (500mm) is designed to give a sitting person at least as good a view as a 187cm person (e.g. me) gets when standing in the cockpit while, at the same time making sure their head is well below the boom.

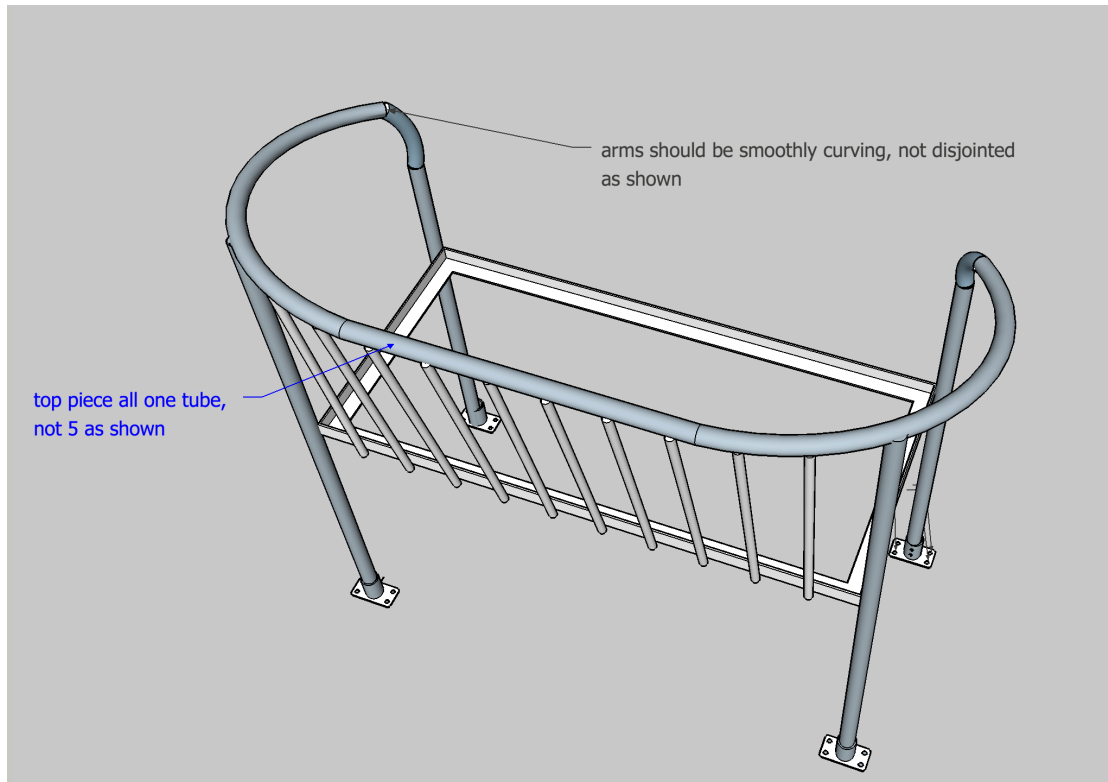


Figure 2: A Back View of the Seating Bench

Technical Specification

Steel Requirements

All steel is 316 stainless. The tubing is 25mm diameter, except for the back rods which are 12mm. The seat support is 25mm angle. The feet are bolted through the deck using M8 bolts with reinforced pads underneath. The legs are through bolted into the feet using M6 bolts – see Figure 3. This means the seat can be detached and stored separately, or used as further seating on the floor of the very spacious cockpit.

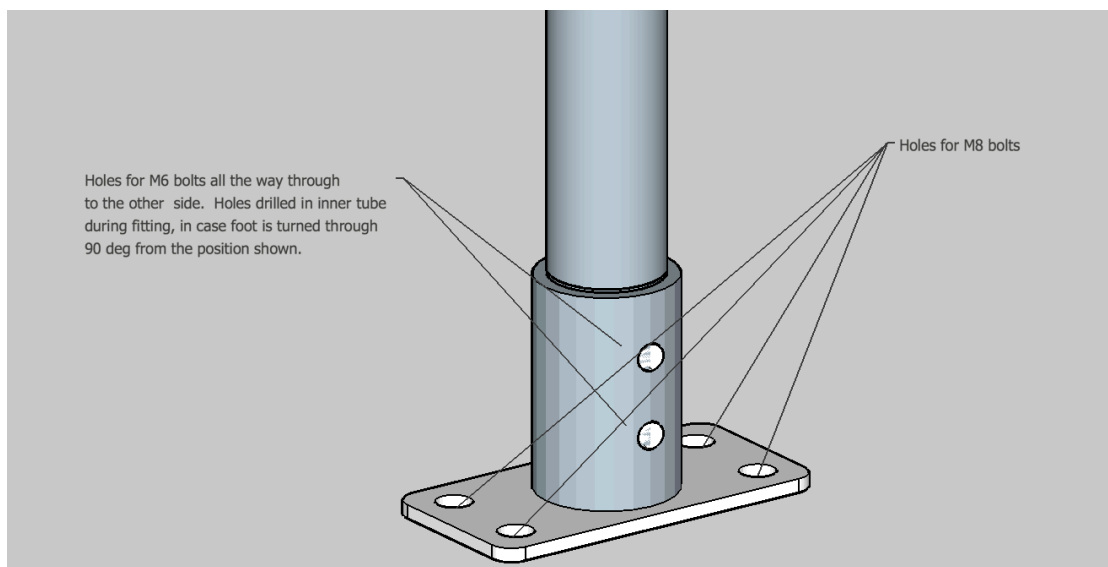


Figure 3: Foot Detail

Feet

Note that the feet have rectangular plates, rather than round ones. This is to give more options when fitting the steering bench. All illustrations show the feet orientated across the boat, but it might be better to have one pair at a different angle. For this reason the through holes in the leg tubing should be drilled when fitting.

Arm Rest & Back Rest

The top tube, which forms the arm rest and back rest, is shown, in Figure 2, in 5 pieces due, not to design, but to either the limitations of the tool (SketchUp) or my ability to use it properly. It should be one piece, of course. It is also shown as a disjointed curve and should be a smooth curve.

The top tube overhangs the back of the seat by about 40mm, as shown in Figure 4.

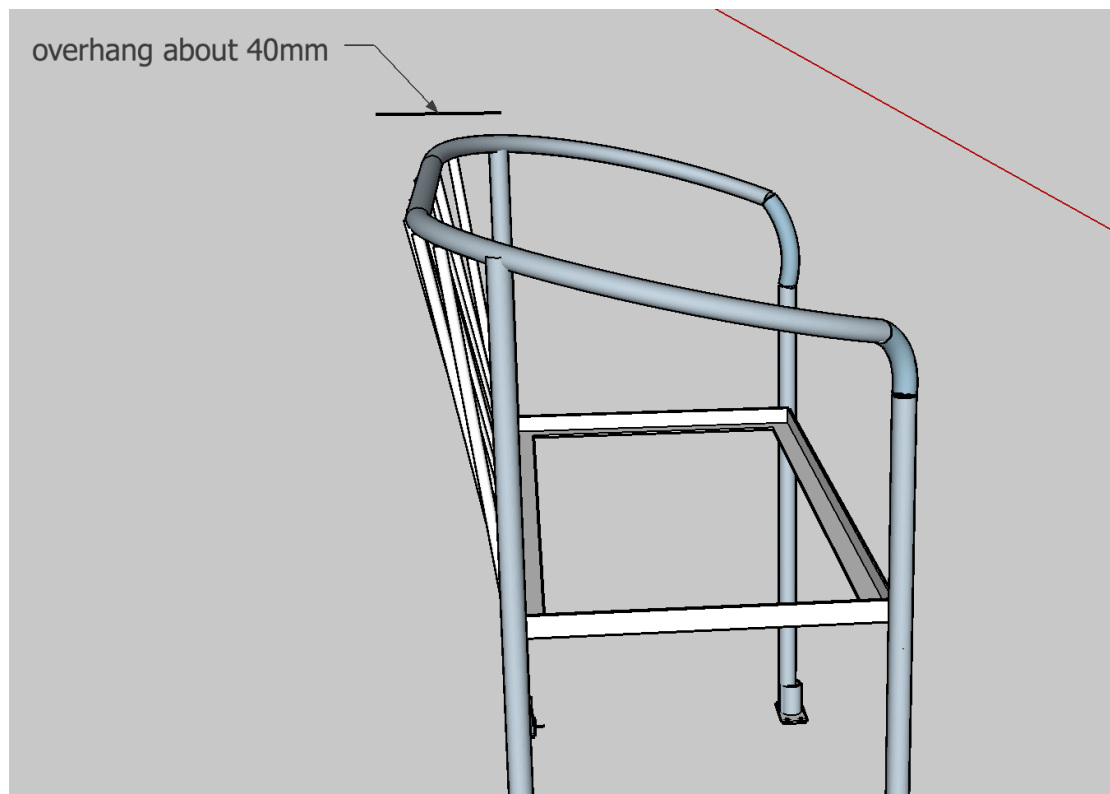
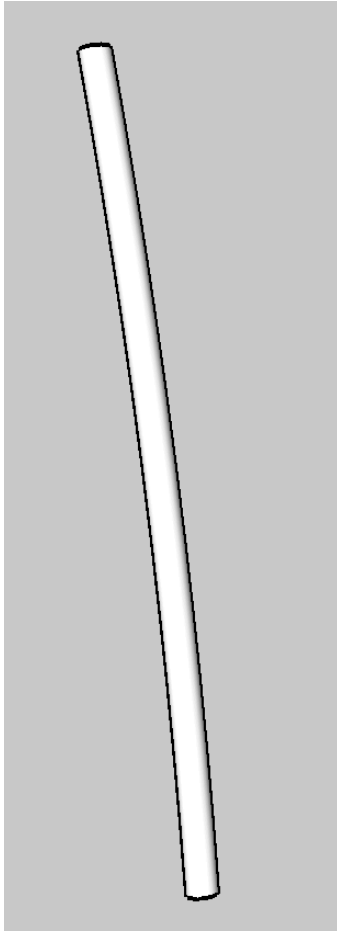


Figure 4: Overhang of Top Tube, Over Back of Seat

The arms slope downwards from aft to for'ard and are welded to the aft legs and the fore legs. The bench therefore gives extra useful handholds when moving around the cockpit in a seaway.

Key Dimensions

The dimensions are shown in Figure 1. Both the overall footprint (900mm by 420mm) and the internal area for the seat (869mm by 405mm) are fairly critical. The former can be a few mm different but the seat dimensions must be adhered to since I will be making the seat in parallel with the bench being constructed – and I only want to do that once!



Back Rods

The 12mm dia steel tubing, which forms the back rods for the bench is shown as being completely straight. However, it would be more comfortable if they were slightly arched forwards to fit the shape of people's backs – see Figure 5.

The 12mm tubing should be spaced about 80mm apart – this is sufficiently close to make it comfortable, I think – giving 10 back rods in total.

Figure 5: Example of a Bent Back Rod