HEXTA TRANSPORTER

by David Stewart and Peter Smith

Large closed frame targets are heavy and awkward to move, store and setup for shooting, yet these are really the only type of e-target that can deliver serious competition accuracy at very long distances.

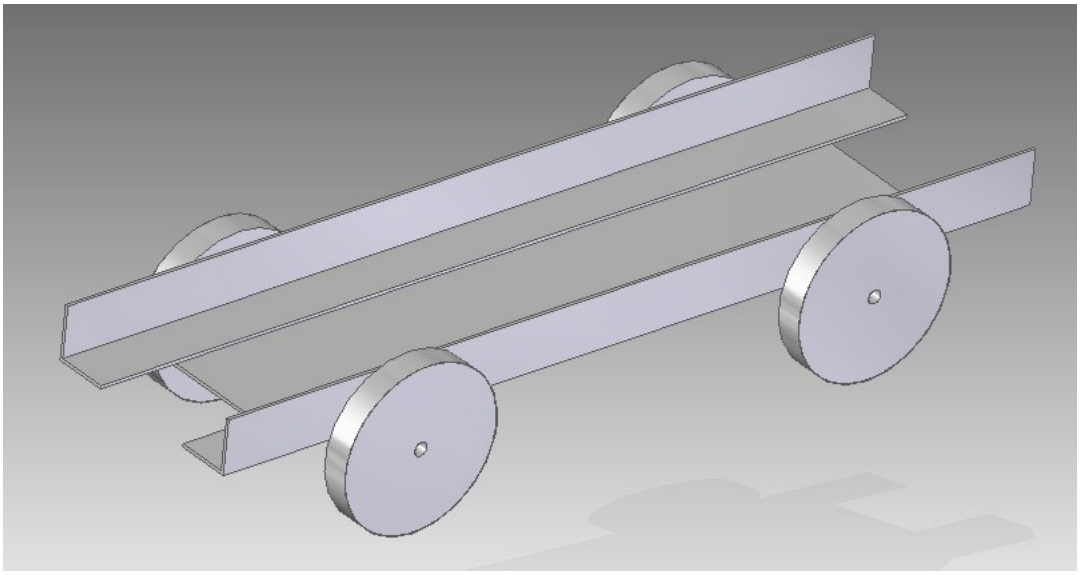
As members age, there is a real need for mechanical aids to facilitate target handling. The Herberton Rifle Range has its mantlet and target gallery built into the side of a hill and there is very little room for expansion. There is a narrow concrete floor leading to a small storage shed at one side. The surface of the concrete could be better but it is just good enough for the following system. There is NO electricity supply which dictates some human derived energy source.

General details are given but obviously the dimensions need to be modified depending on target heights on existing target machines.

Basically, each target is permanently stored on a small wheeled carriage. This is short which allows pivoting the target to steer it. The target and carriage is positioned close to and immediately in line with the target machine. A mini fork lift then picks up the target and carriage, lifts it a small distance, then wheels it forward enough so it sits on the target machine brackets. At this point the target may be elevated in the usual way.

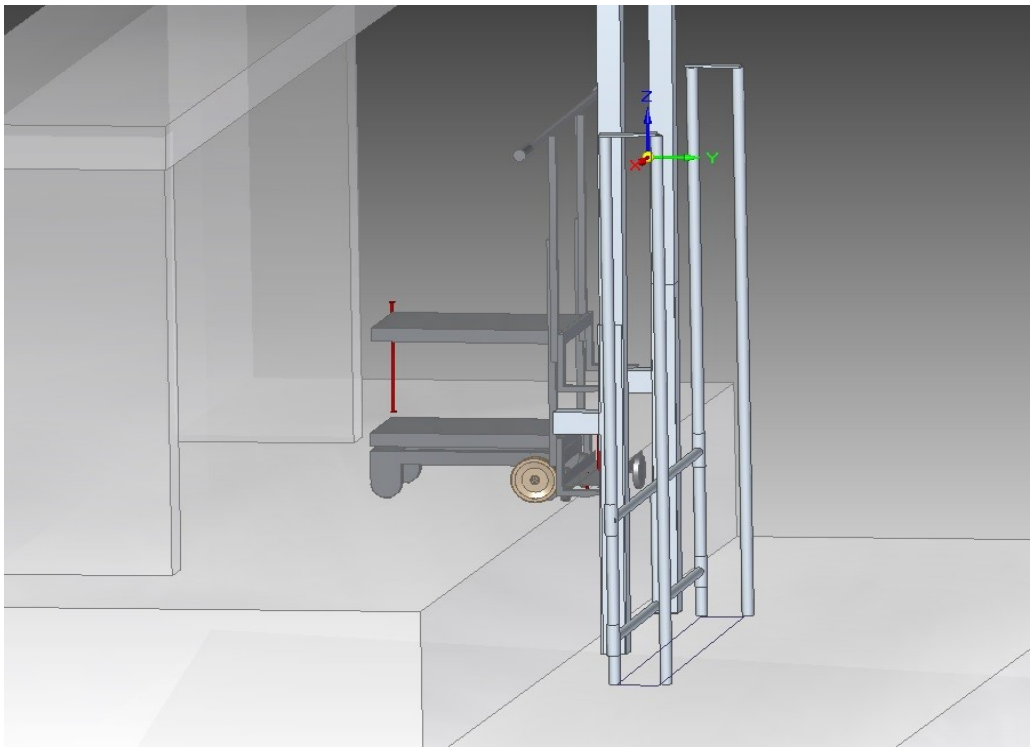
After a lot of discussion we opted to modify a small commercial scissors lift table available from Hare and Forbes. The cost of materials and the work involved in building something from scratch was the main factor in this decision. It is their second smallest single stage scissor table. Cost $390 plus GST. (2020) https://www.machineryhouse.com.au/J051

The lifting is via a foot pedal activating the hydraulic cylinder. Some spare parts are available if needed. I was originally worried that the lift (we need about 8 inches of lift) would be too slow but it has proved fast enough to be satisfactory. Thus the operator has hands free so one person can lift and move the target into position. Our 6 foot targets which weigh about 80 Kg.

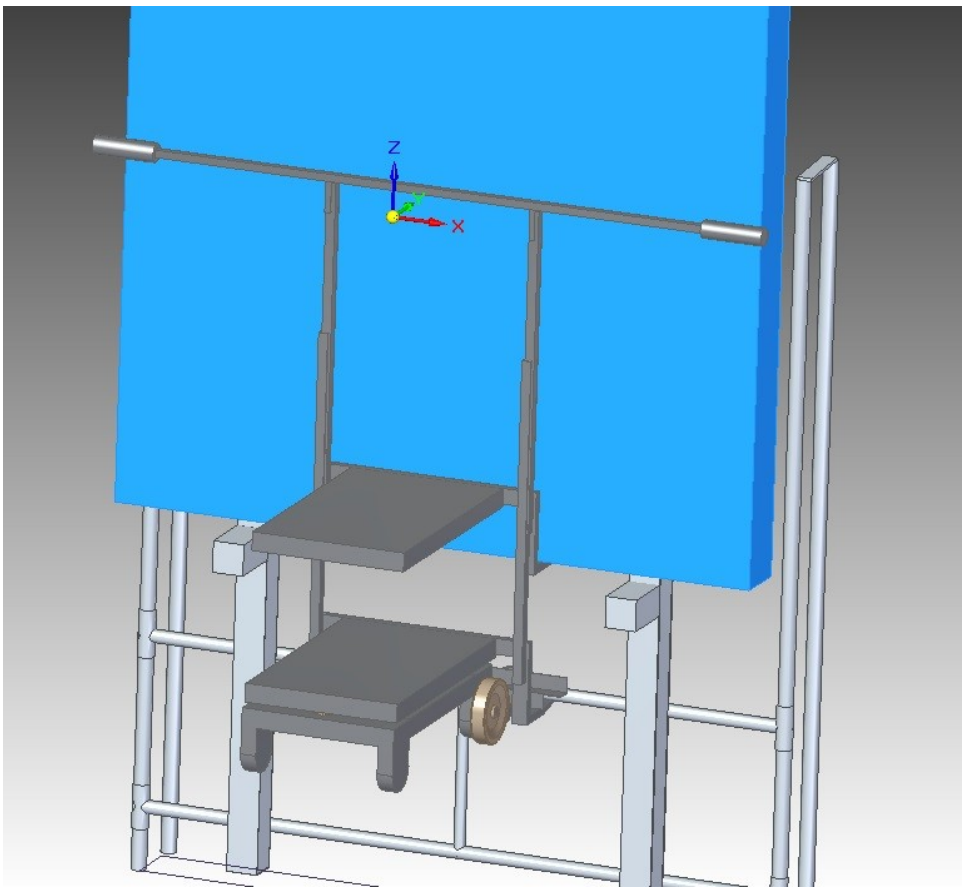


Carriage construction was slightly different. It depends on materials at hand.

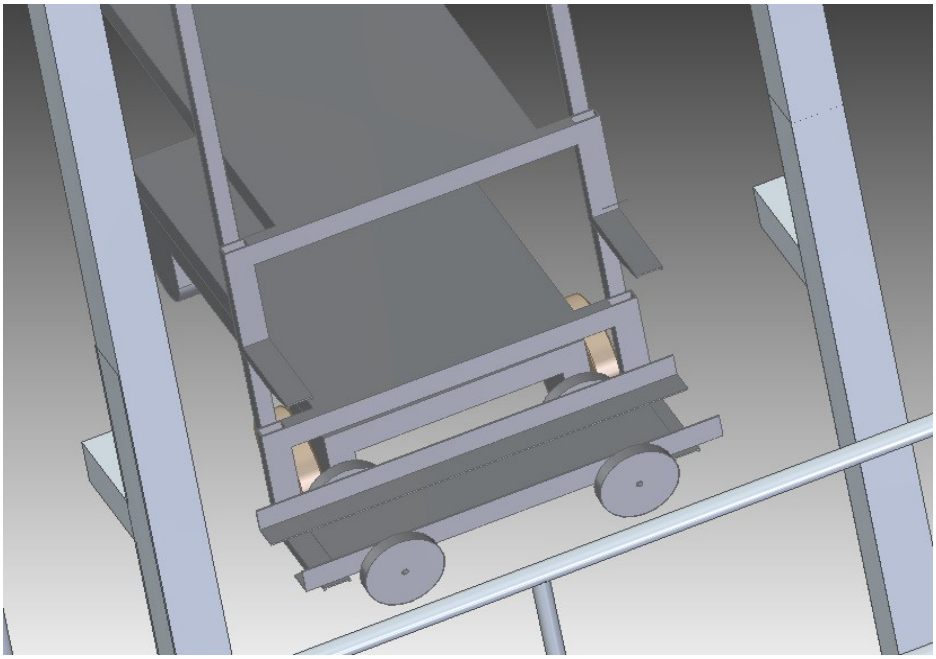
Make sure the width is adequate but not excessive. We could have done with an extra half inch. Carriage must not be too long else it will be hard to pivot the target.

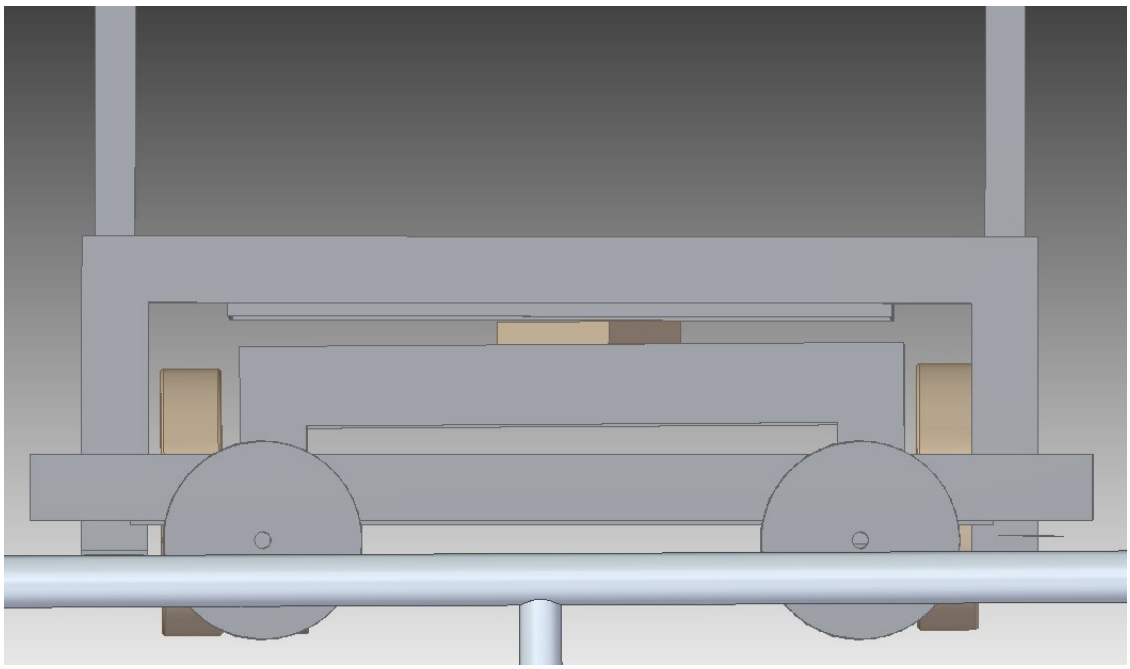


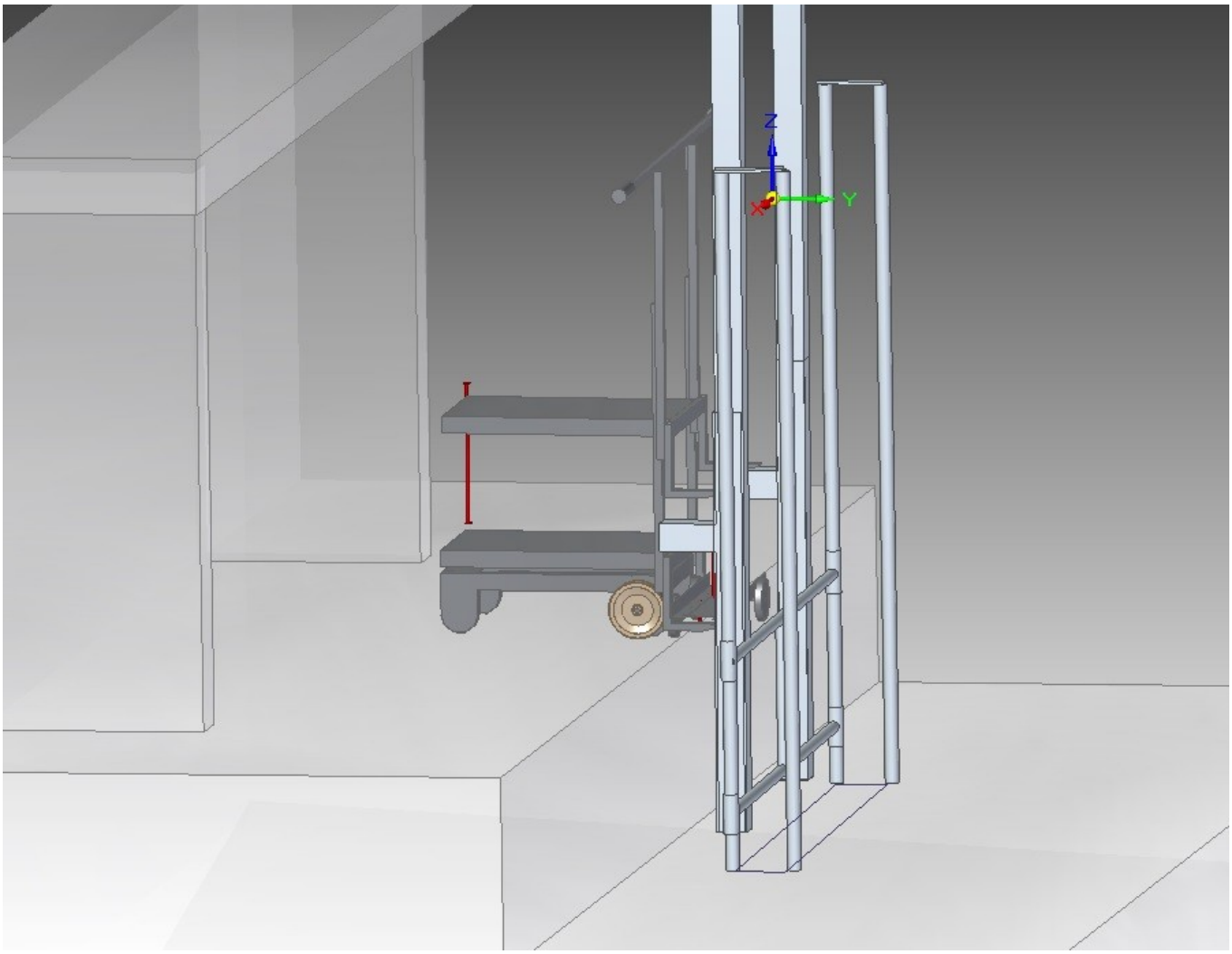
Carriage in position in the Target Gallery to lift a target. You need adequate room around it.

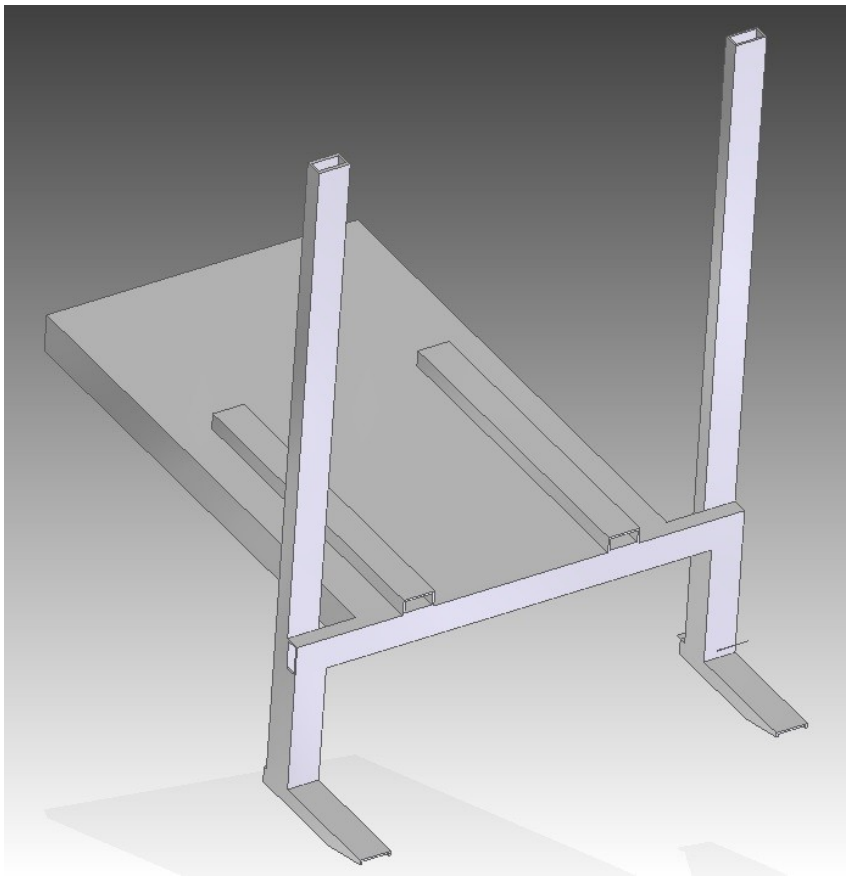


Carriage in position. Floor omitted for clarity.
NOTE drop in bar at top to stop target tipping.

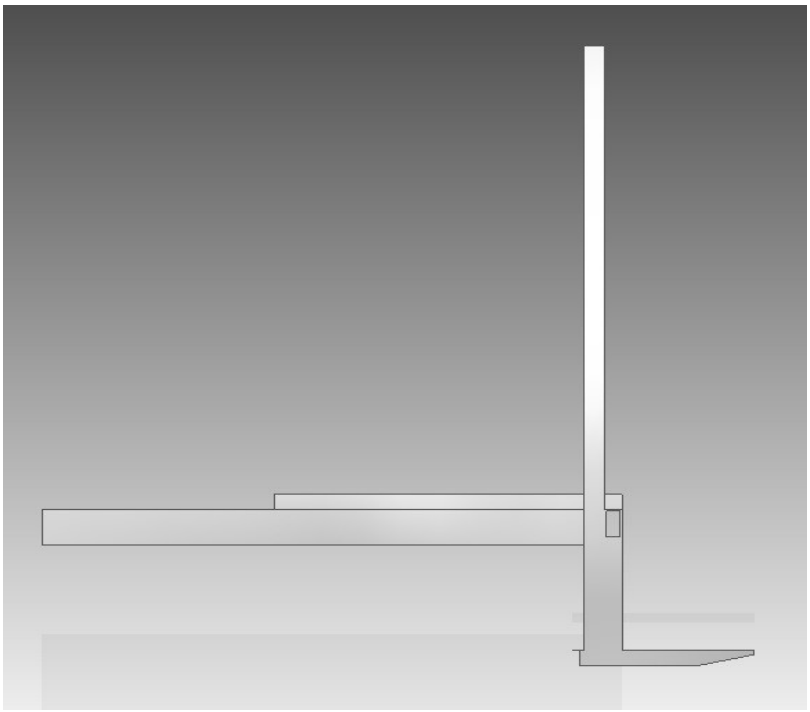


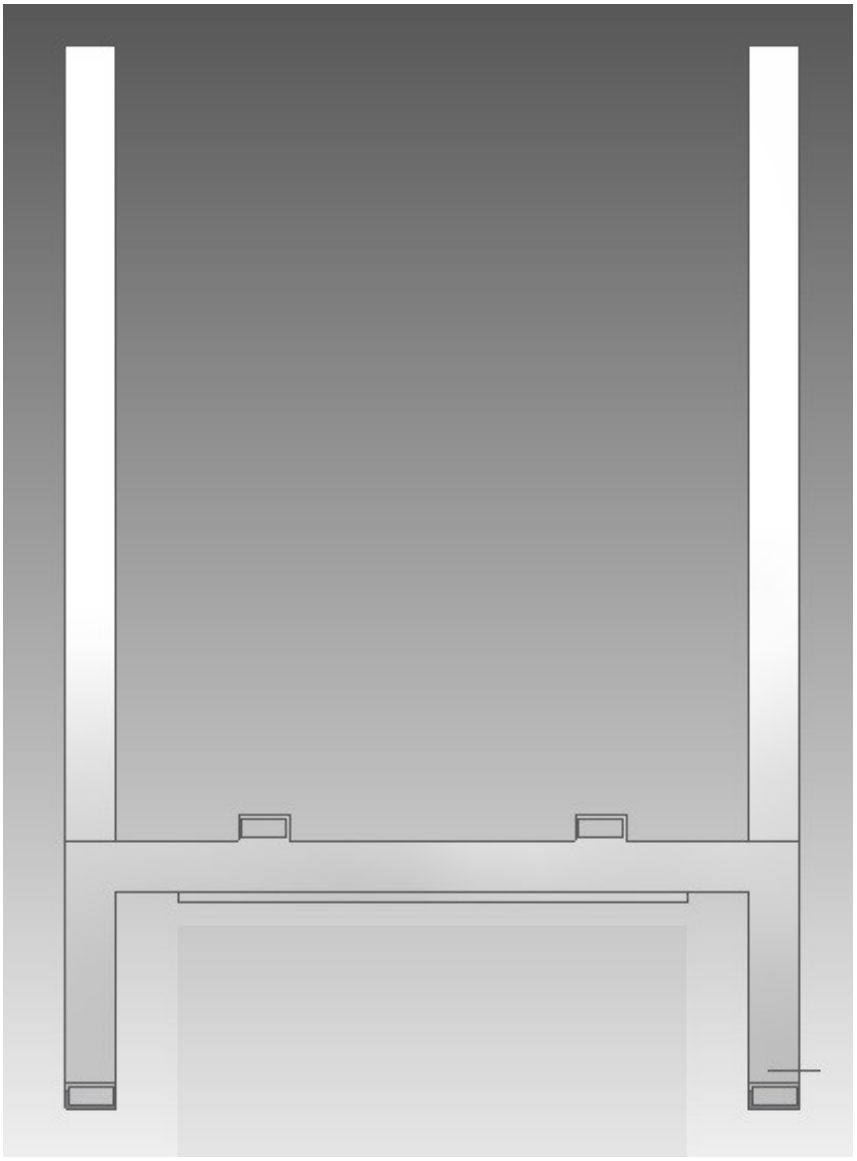



Z
Y
X



Modifications to the top table. All construction was done with 50x25 RHS – thickness 3 mm. No welding was done near guide slide channels because of possible distortion.
The two top RHS members extending back along the table are positioned directly above the top table scissor slides. A bolt passes through close to one edge of the RHS and comes out close alongside the slide channel under the table top. Then a small plate is tapped and hooks under the side of the slide. Whether this is needed is a moot point but welding the end of the RHS onto the thin metal of the table could be a problem.





A counterweight is positioned on the top table at the rear. Old railway iron was available.

I was worried about strength and did some stress analysis but have more faith in actual performance. The table seems quite adequate for our 6 foot targets. Actual lift is only about 8 inches so, even in the event of a failure, there would be little danger.

==========