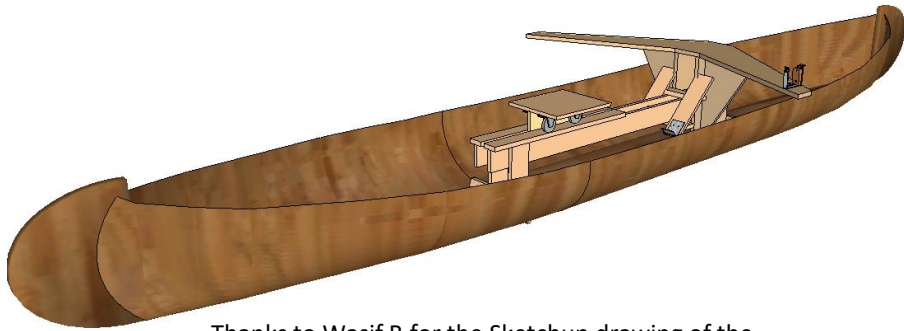
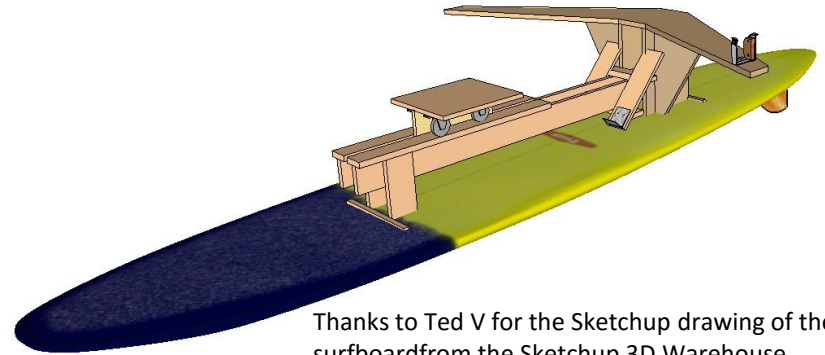


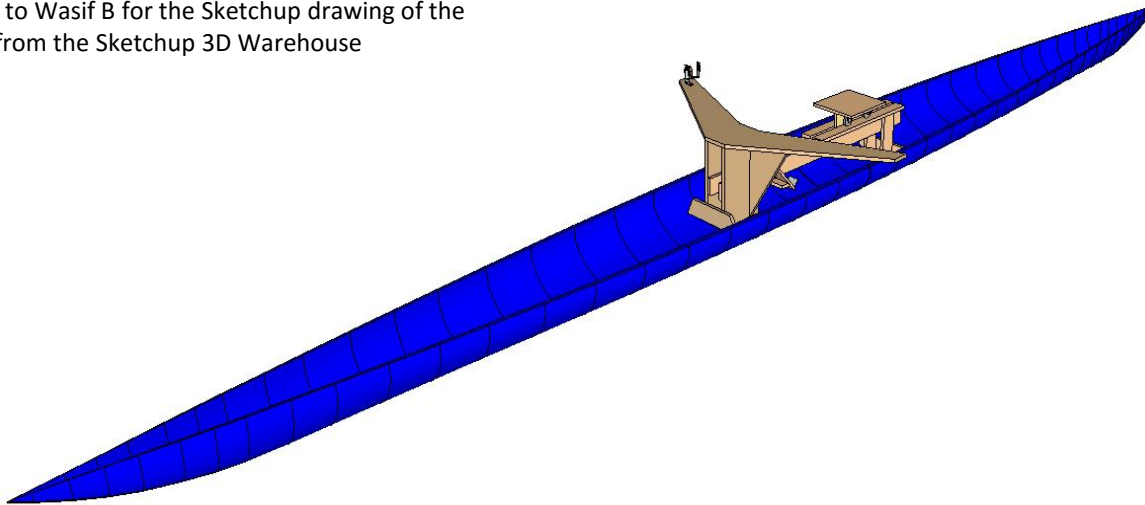
# A 'drop in' rigger and sliding seat to convert different types of boats for rowing



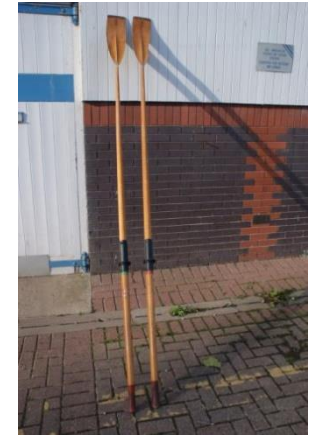
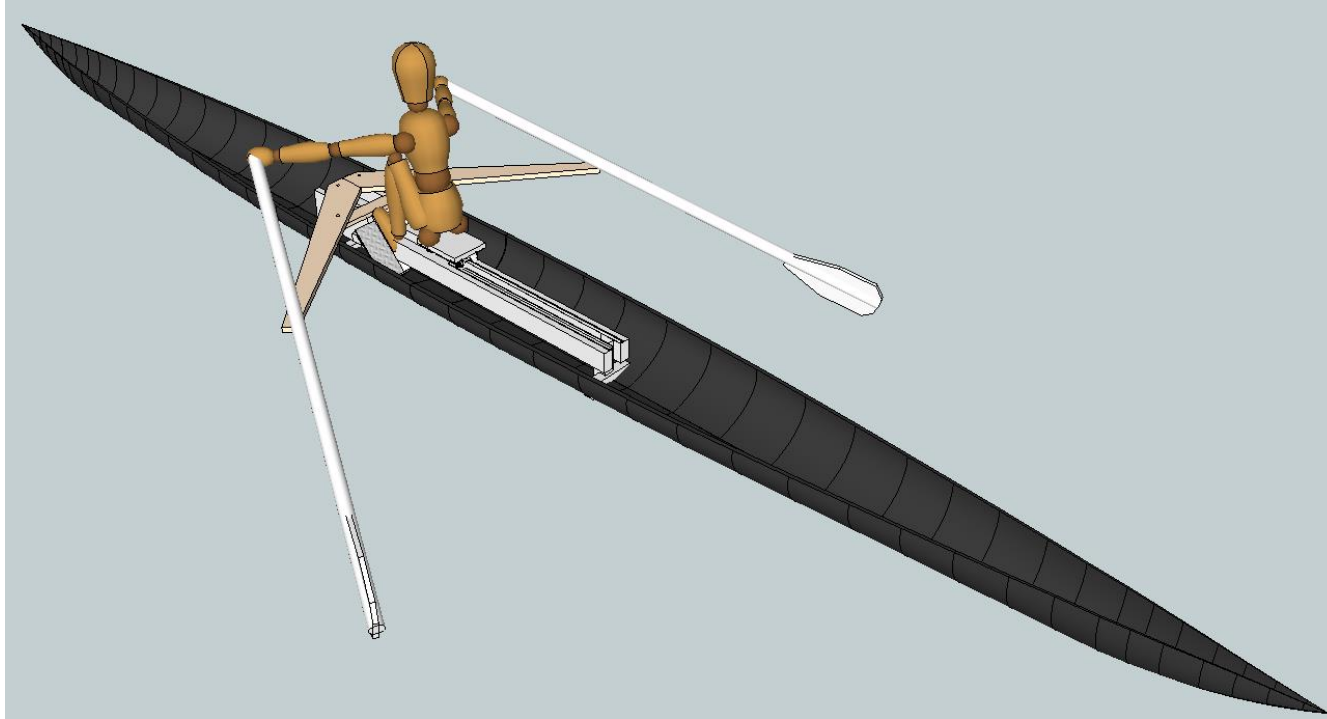
Thanks to Wasif B for the Sketchup drawing of the canoe from the Sketchup 3D Warehouse



Thanks to Ted V for the Sketchup drawing of the surfboard from the Sketchup 3D Warehouse



The 'drop in' sliding seat and rigger can be fitted to a variety of local boats that are suitable of teaching beginners to row.



Wooden oars



Local boats built at the Fisheries Training School in Kampala, Uganda

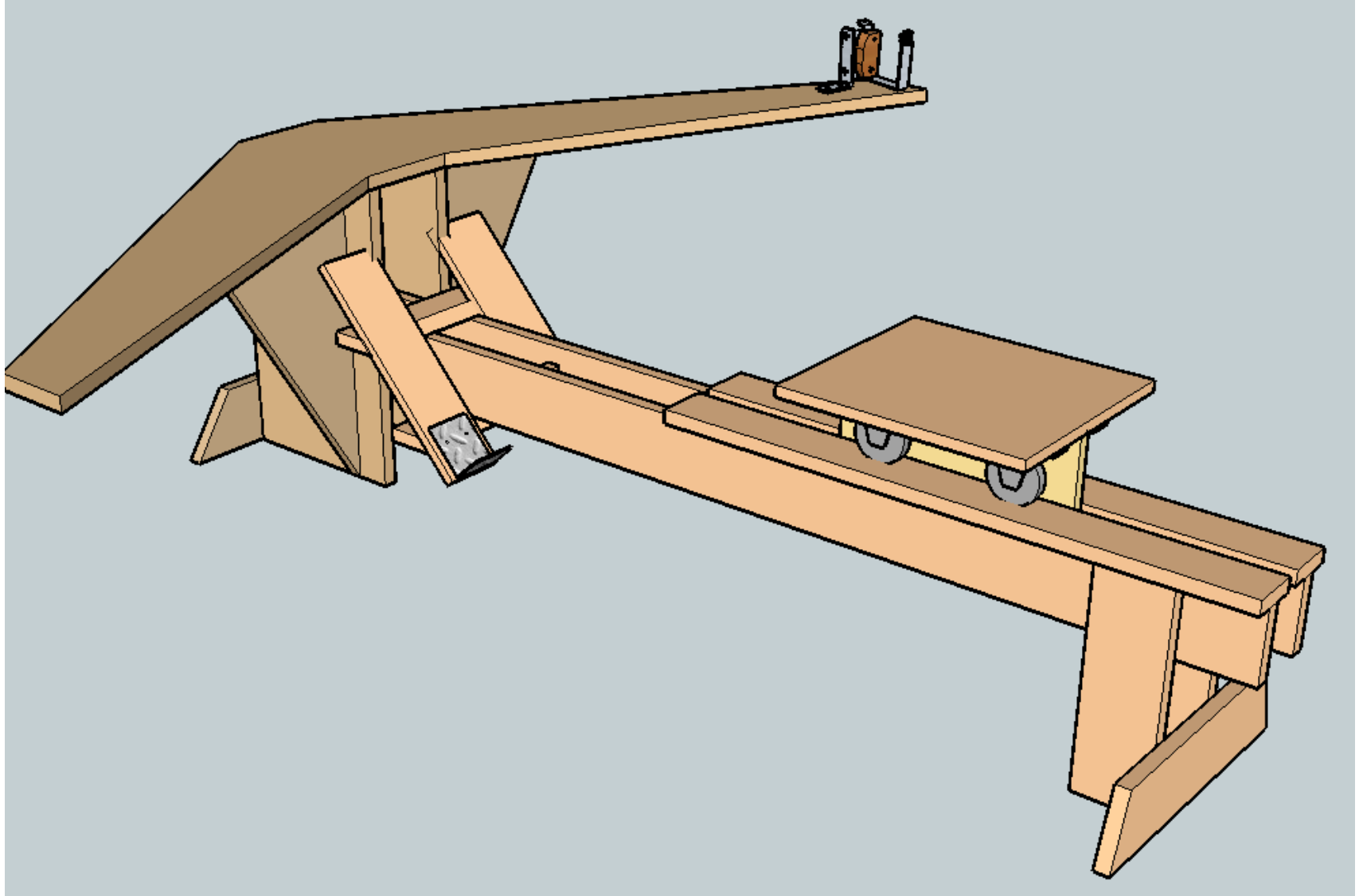


Dugout canoes are still in use in Mombasa, Kenya

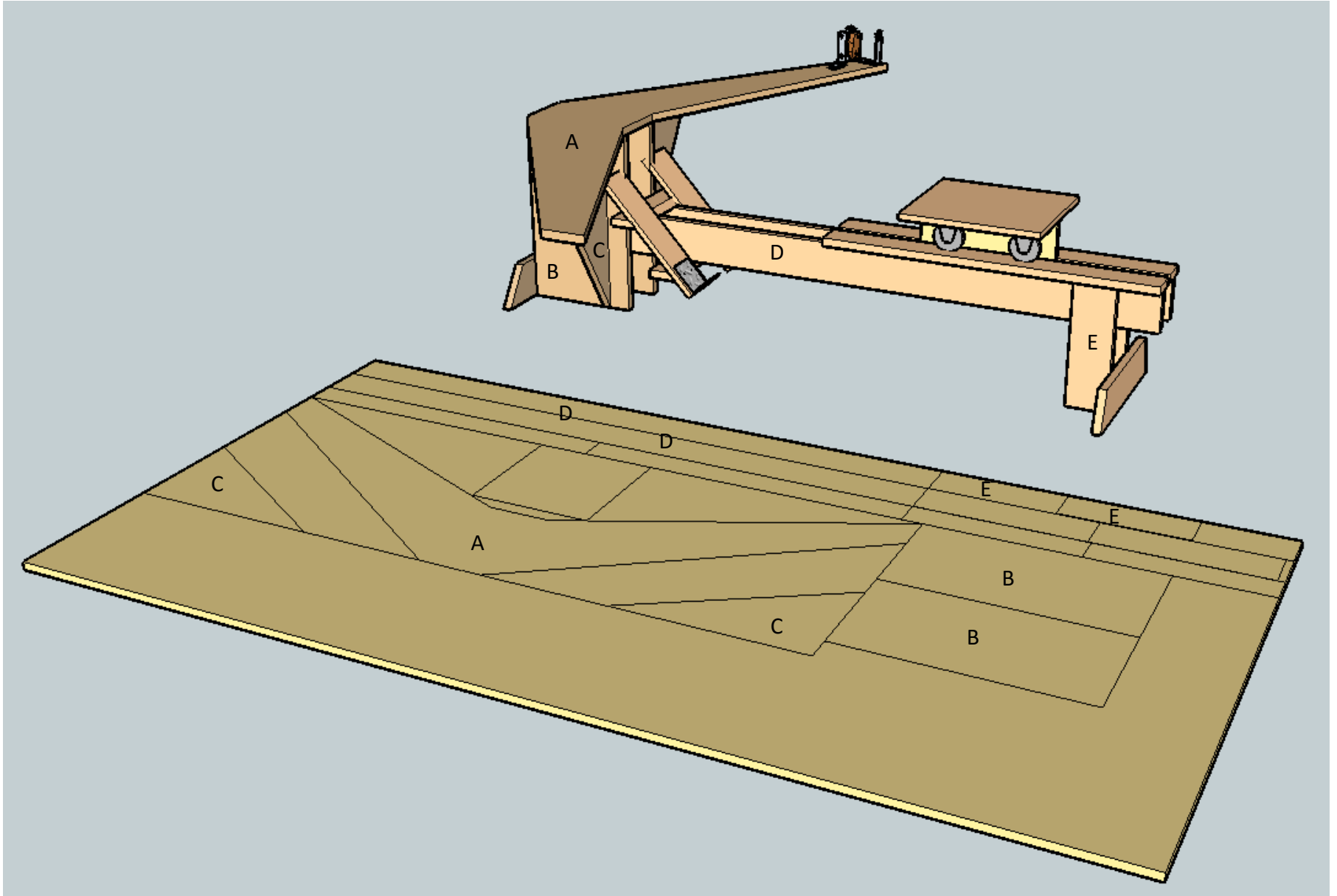


Local boats in Lagos, Nigeria

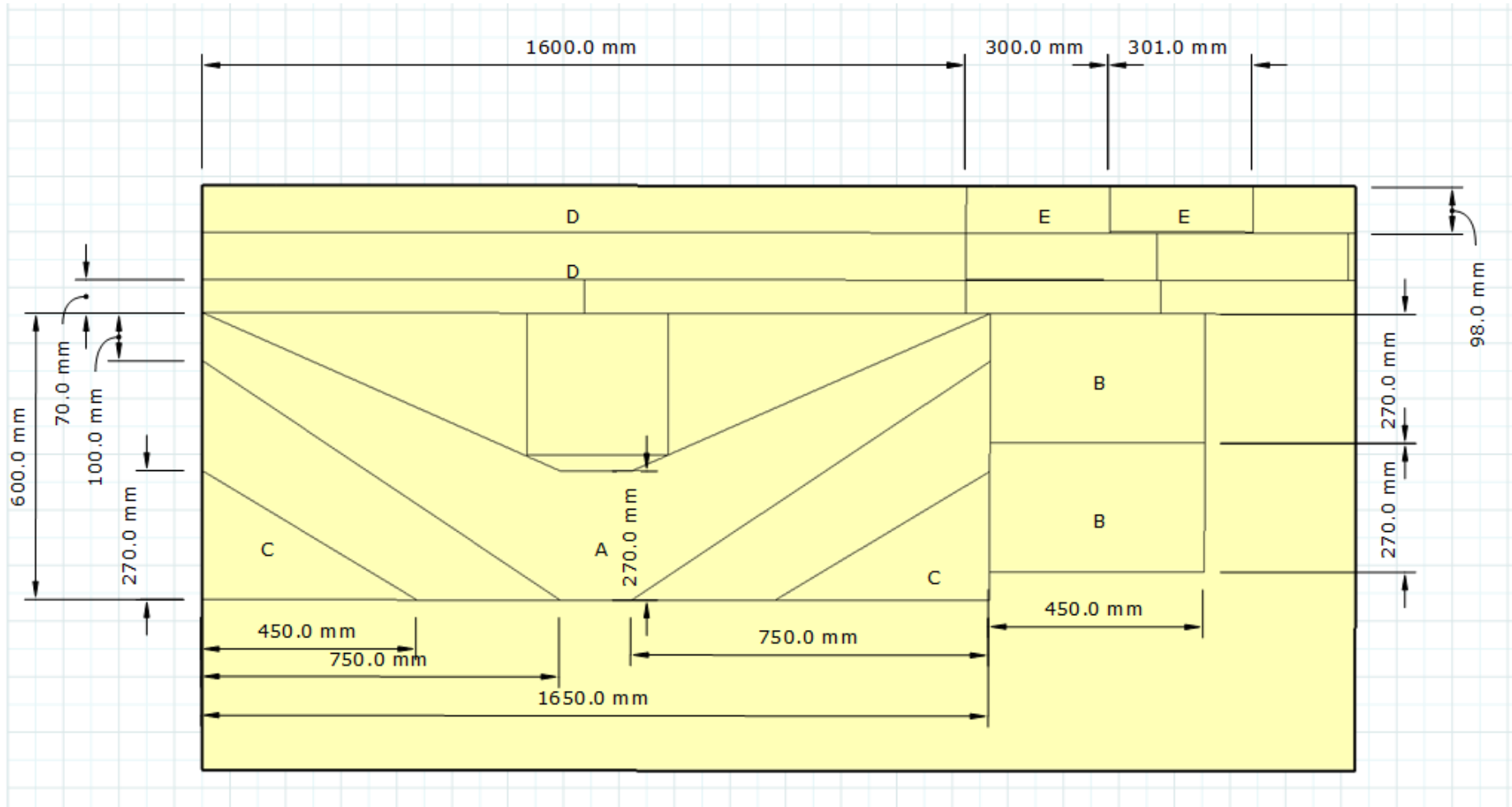
The basic 'drop in' conversion unit for rowing

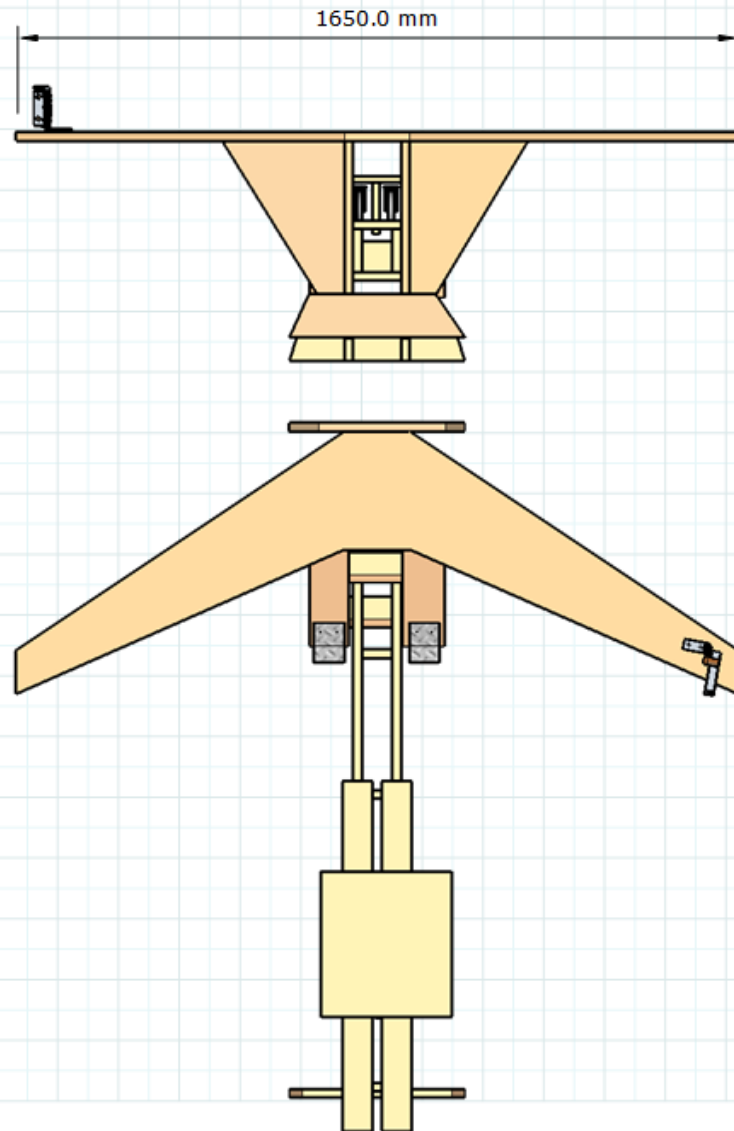
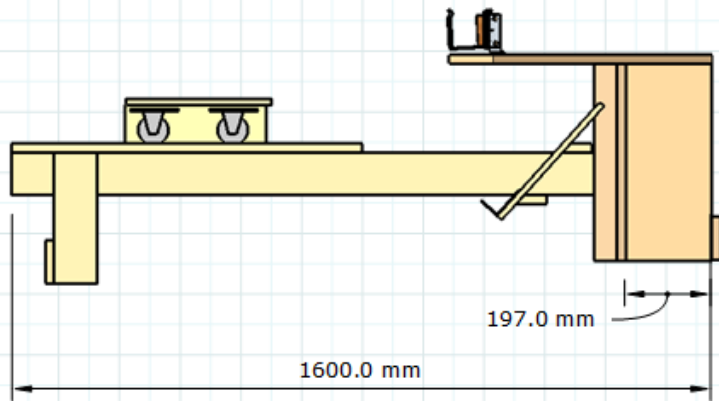


# Main components

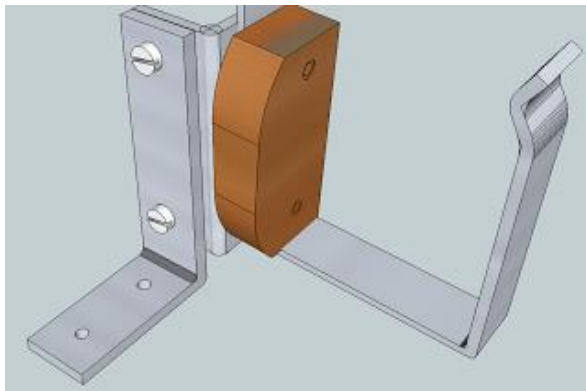
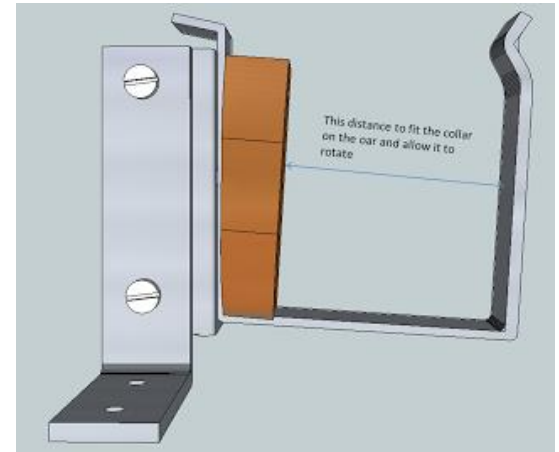
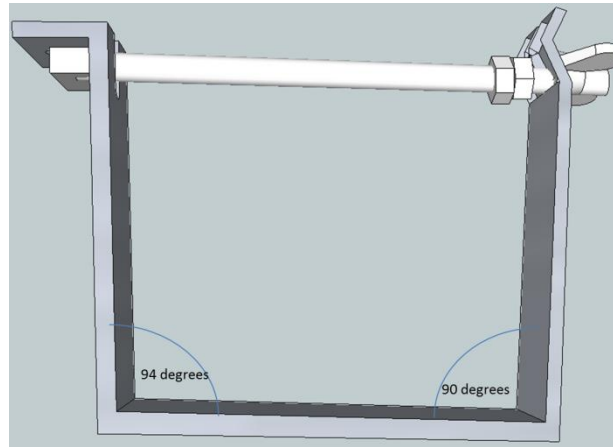
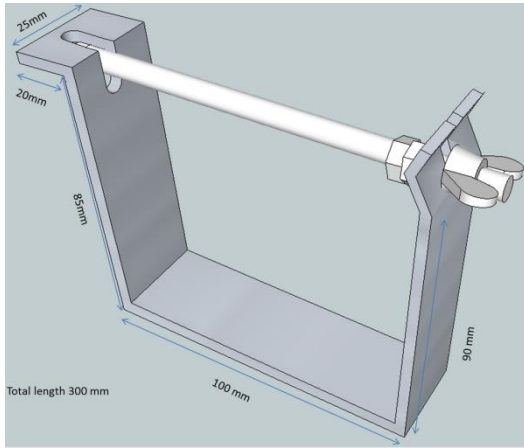


# Layout of the 2416mm x 1223mm (8' x 4') 20mm thick plywood sheet





## Swivels (rowlocks)



Swivels can be bought new from boat suppliers but at £25 per swivel (sometimes called a 'gate') and £16 for the pin, these are expensive items

([http://www.rowingcentre.co.uk/parts/006\\_rig.php](http://www.rowingcentre.co.uk/parts/006_rig.php)). The swivel shown is made from 300mm x 25mm x 2.5mm stainless steel. Aluminium could be used but would need to be a thicker section, say 30mm x 4mm. The hinge is stainless steel and available as a pair from Screwfix for £3.99 (<http://www.screwfix.com/p/ball-bearing-hinge-polished-stainless-76mm-1pr/75932>).

The wooden insert is made to fit the oars and needs a 4 degree taper to provide the correct stern pitch on the oar. The angle bracket connecting the swivel assembly to the rigger needs to be 4mm thick stainless steel or 6mm aluminium.

Note: the two swivels must be 'handed' i.e. a right hand version and a left hand version.



## Bits and pieces



Fixed castors: Screwfix Product Code: 69497



Corner braces 25mm x 25mm:  
Screwfix Product Code 11529

If you are in the UK, Screwfix is at <http://www.screwfix.com>  
There will be similar suppliers in other countries where it is possible to buy components like these – or bits that can be adapted.

A wide range of castors can be found at  
<http://www.ebay.co.uk/bhp/fixe-castor-wheels>



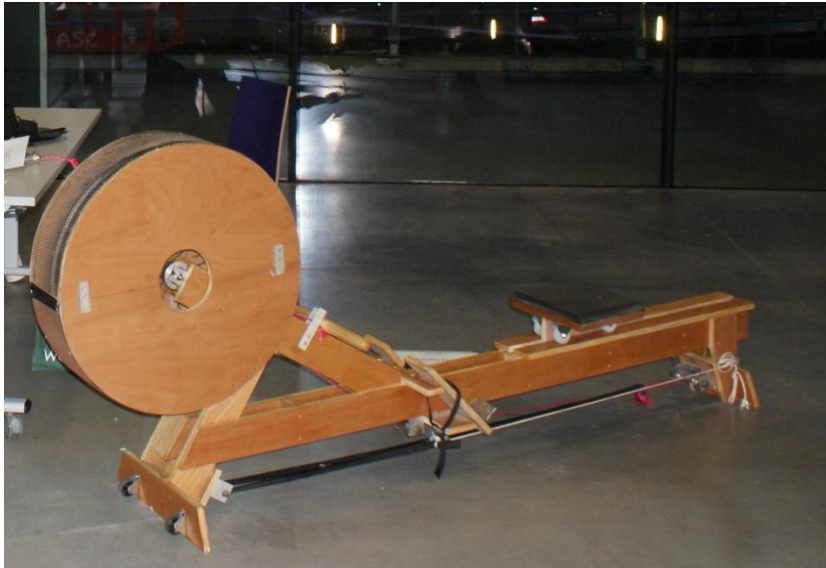
The seat detail. A turn button can be fitted on the guide plate to prevent the seat falling out



<http://www.screwfix.com/p/ball-bearing-hinge-polished-stainless-76mm-1pr/75932>



For two related projects, a self-build ergometer and a self-build boat, visit the links below



<http://openergo.webs.com/>



[www.theopenboat.org](http://www.theopenboat.org)

## Biographical notes



I'm a former lecturer in the Department of Design and Technology at Loughborough University, and Sub Dean of the Faculty of Technology at the UK Open University.

Currently I'm a FISA Development Coach and British Rowing Coach Educator.

### Publications related to rowing:

*Know the Game: Rowing* [http://www.amazon.com/Rowing-Know-Game-Amateur-Association/dp/0713684313/ref=sr\\_1\\_1?ie=UTF8&qid=1453464262&sr=8-1&keywords=know+the+game+rowing](http://www.amazon.com/Rowing-Know-Game-Amateur-Association/dp/0713684313/ref=sr_1_1?ie=UTF8&qid=1453464262&sr=8-1&keywords=know+the+game+rowing)

*The Complete Guide of Indoor Rowing (with Charlie Simpson)* [http://www.amazon.co.uk/s/ref=nb\\_sb\\_ss\\_c\\_0\\_28?url=search-alias%3Dstripbooks&field-keywords=the+complete+guide+to+indoor+rowing&prefix=the+complete+guide+to+indoor%2Caps%2C149](http://www.amazon.co.uk/s/ref=nb_sb_ss_c_0_28?url=search-alias%3Dstripbooks&field-keywords=the+complete+guide+to+indoor+rowing&prefix=the+complete+guide+to+indoor%2Caps%2C149)

*Advanced Rowing: Perspectives on High Performance Rowing (with Charlie Simpson)* [http://www.amazon.co.uk/Advanced-Rowing-International-Perspectives-Performance/dp/1472912330/ref=sr\\_1\\_1?ie=UTF8&qid=1453464616&sr=8-1&keywords=advanced+rowing](http://www.amazon.co.uk/Advanced-Rowing-International-Perspectives-Performance/dp/1472912330/ref=sr_1_1?ie=UTF8&qid=1453464616&sr=8-1&keywords=advanced+rowing)

### Free E-booklets

*Coaching Balance* <http://www.rowperfect.co.uk/product/balance-by-jim-flood-ebook-2/>

*The Ergonomics of Rowing* <http://www.rowperfect.co.uk/product/the-ergonomics-of-rowing-by-jim-flood-2/>

*A Manifesto to Improve Club Rowing for Beginners* <http://www.rowperfect.co.uk/product/the-ergonomics-of-rowing-by-jim-flood-2/>

*Why Slow the Boat When You Can Make It Go Faster* <http://www.rowperfect.co.uk/product/why-slow-the-boat-jim-flood/>