

## Report of AYRS meeting at Thorpe, Surrey - 5th November 2017

Fred Ball welcomes some new arrivals (right)

Many thanks to Fred Ball (and Margaret who provided refreshments) for once again arranging this wonderful meeting in the village hall at Thorpe in Surrey UK.

Several hours of presentations of members' projects were interspersed with chat over tea/coffee breaks together with a mid-day break for our packed lunches.



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A 15 foot rowing boat (left) was completed by John Perry over the winter 2016/17. It has folding outriggers for the rowlocks, a sliding seat, storage space for camping equipment for two persons, a lifting rudder remote controlled from within the boat and clip on wheels for launching/portaging. There are two positions for the outriggers allowing for rowing either solo or with a passenger. The hull is 3mm plywood externally sheathed with glass and epoxy, weight including all fittings but without crew and stores is 41kg.

This boat has already been well used having completed the Lechlade to Beale park Thames row in company with a Home Built Boat Rally fleet, several weekend Dinghy Cruising Association

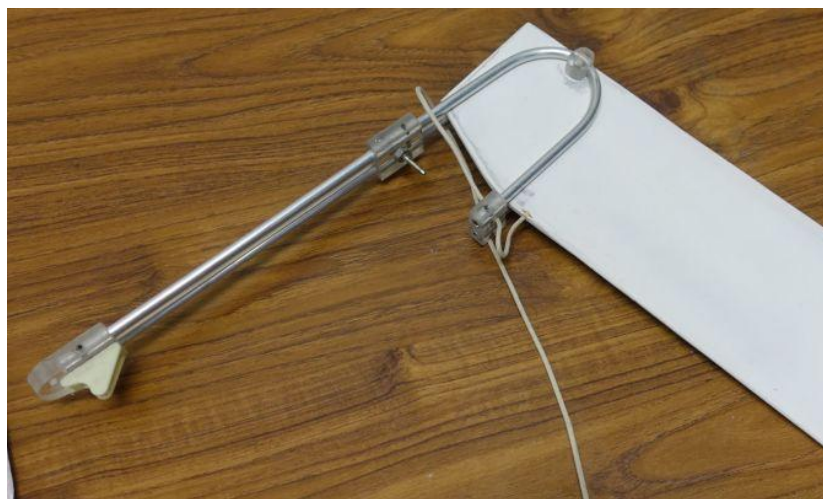
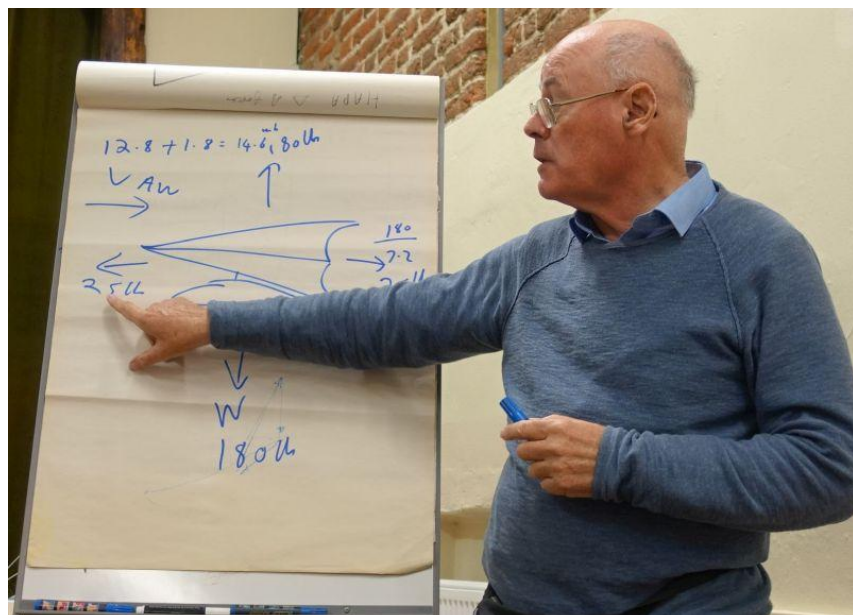
meetings and a number of day trips on west country estuaries, also a few canal trips.

The drag of this boat was predicted using Michlet software and the day before this meeting a group of members attempted a tow test on the Basingstoke canal to compare tow test results with the Michelet predictions. The tow test drag measurements were in the region of twice the predicted drag but the tow force fluctuated very widely (at least 4:1 range) during the test, so these results are uncertain and I don't think any conclusion should be drawn at this stage. The reason for the wide fluctuation in tow force is uncertain but may perhaps have something to do with the towed boat moving in and out of the propeller wash from the towing boat – a longer tow line and more accurate steering may help. Just shows that what you might think would be a simple measurement to take can prove far from simple when you actually try it on the water!



Roger Glencross (right) takes us through his calculations for sailing with a hapa and hang glider combination, the pilot/skipper being suspended in a harness part way between the hapa and the glider. This is Roger's most recent iteration of a concept that he has developed over many years.

The small dinghy rudder (below) was very neatly designed and constructed by Kim Fisher. The tiller/stock is mainly stainless steel tube. The blade is hollow and made from the sheet grp material (also used as liner for refrigerated lorries) that Kim has utilised in several of his boat building projects.



Slade displays one of his prototype hapas (right) – this was one of several hapas on display at the meeting, these showing a range of very different designs. This Tee foil version has a 'tail fin' the angle of which can be controlled by two cords lead down the strut.



The model (left) by Peter Worsely (not present at the meeting) is the classic demonstration of Down Wind Faster Than The Wind – a concept that attracted much interest from AYRS members a few years back.



Taken during Kim Fisher's digital projector presentation, Kim (right) is describing his custom built stand up paddle board which features air filled cavities in the bottom to reduce wetted surface and so reduce drag. For this prototype small outriggers were added for stability since the air in the cavities tended to escape from the corners of the cavities when the board was slightly heeled. Kim thinks a small design change could avoid this. (sorry about the poor photo)



A prototype track link (left) made by Mark Tingley from low cost materials. This is a single track link for a proposed amphibious vehicle having buoyant caterpillar tracks that carry the weight of the vehicle and provide propulsion on both land and water. Buoyancy is provided by 1 litre empty plastic milk bottles. The total buoyancy for two complete tracks will be about 1000lbs, so that's about 450 fully submerged milk bottles, presumably the total number of bottles will be somewhat more than twice that. The project is named 'Milkfloat'

Kim Fisher showed this water pump connected to a commercially available 'air mover' (right). The air mover is normally used to create a blast of air at ambient static pressure from a smaller flow rate of compressed air. Kim suggests using this as a propulsion device for a water craft. The propulsive efficiency provided by water emitted from the air mover may well be greater than could be achieved using just the jet of water from the pump without the air mover connected. How will it compare with a conventional propeller driven by the same prime mover?



Kim Fisher showed female moulds (right) used for making small streamlined grp floats that could be used as canoe outriggers (including 'cordless canoe' outriggers!). Kim's first use of these moulds was to make the floats that stabilise his prototype paddleboard, see above. The idea is that these moulds can be joined together in different combinations to make various lengths of float.



***A fascinating meeting – enjoyed by all!***

A further meeting at the same venue will be combined with the AYRS AGM in January 2018

These meetings are open to all who have an interest in boat design/research/development, not just AYRS members