2014 CCWBRA Design and Construction Report and Recommendations:

1: Exotic materials.

With the introduction of exotic materials, the D&C committee feels that more emphasis may be needed on the WOODEN part of our CCWBRA acronym. To this end we suggest that the following copy be added on Page 2 of the handbook:

"All boats (youth and adult) must be constructed per CCWBRA plans published in "*SKUA, 8' All Plywood Outboard Skimmer, Drawings, Building Notes and Materials List*" or be built from a kit or plans sold by Chesapeake Light Craft, Annapolis, MD, under license to the CCWBRA." A racing-qualified CCR's primary structure must be built using the materials specified in either of these two sets of building plans or provided in CLC kits. Any additional support materials a builder wants to add to strengthen their craft are allowed, as long as the original one-design shape is maintained. Composite materials may not be used to replace primary structural materials.

2: Keel modification.

There has been significant activity regarding keel modification in the interest of reducing lower unit ventilation.

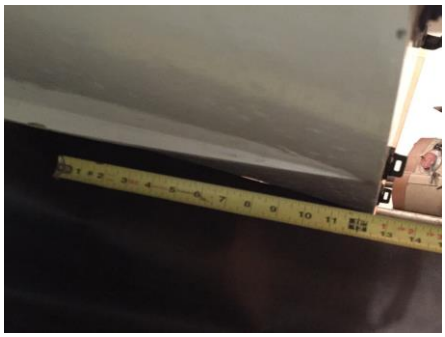
Four individual members have conducted their own R&D to address this problem and all of the test modifications conducted by these members have produced significant improvements in ventilation reduction.

Below are the 4 examples of individual member's experiments with keel modifications and Committee Member Keith Carew's analysis and illustration.

Goldner version: 12” keel removal, side keels added to improve cornering.

Granbery version: 12” keel removal, 1” added depth, trailing edge taper in both directions.

Johnson version: 24” tapered removal in profile view.



Hundley version: 12” taper in profile view.

From Keith:

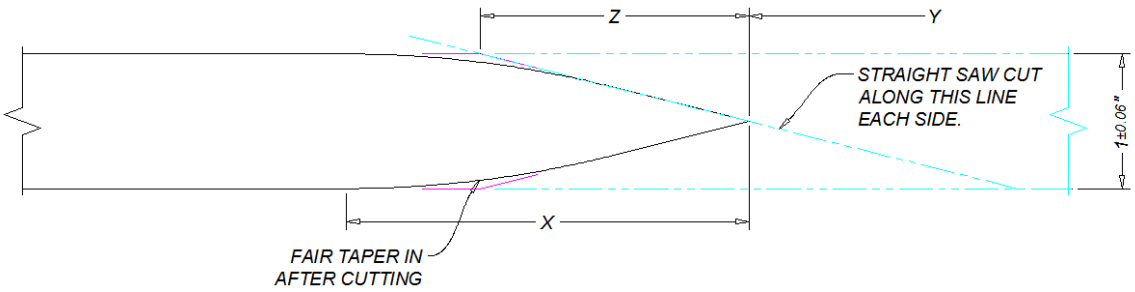
Guys:

I think the best taper is one which keeps full height but gets narrower as it goes back. So it looks square from the side but is getting narrower in plan view. In FYD's general opinion though, ending on a point is worse than ending with an edge so it shouldn't taper in both directions. And this kind of taper can be made to an existing boat with a skill saw with the blade set to cut 1" deep.

So with that in mind I would suggest that our spec would include the taper (X) long and its tip must end by (Y) from the transom. Y is the most important number and has the biggest influence on whether ventilation gets to the prop. This value should be controlled with a tight tolerance and should be easy to verify through measurement. What happens over length X should be left to each individual. That is part of the creative fun of the class. The value of Z could be offered as only a recommendation for the geometry challenged. The performance difference between them will be small so long as Y is correct. I suggest X = 4” +/-1/2”, Y = 12” +/- ¼”.

The X is more dependent on practical issues. For sure Lee is correct to say that the sooner and more gradual the taper the better it is hydro dynamically. But I think at the end of the day we can't advocate for something which will leave the bottom (of a CLC kit boat) compromised or that has a trailing edge so fine it can't be maintained. See image below for a plan view.

Regards,
Keith



If and when the Executive Committee chooses to take action on instituting a change, it is the recommendation of the D&C committee to adopt the modification as presented by Keith.

Note: Some CCWBRA members consider ventilation management to be an opportunity for driver skill to come into play. As such there have been opinions expressed that the boat should stay the way it is, and it is the *drivers* that should change to adapt to the characteristics of the boat.

In either case we recommend mandating one or the other, while providing a grace period to comply if a change is adapted.

3: Fuel tank size:

On page 18 of the Handbook under fuel systems, section 9; we suggest that the existing wording be changed to:

9. Fuel tank shall have a minimum capacity of 1.8 gallons and each boat shall carry a minimum of 1.8 gallons at the start of it's first race of the day.

Committee Comments:

From Lee Edmonds:

Hi Kim,

The fuel tank size is great.

But I don't think we should try to stipulate the amount of gas in a tank at the beginning of racing. Many of the fuel tanks are opaque and the Pit Boss or checking official would have to open each tank for a visual check to estimate the amount of gas inside. Much too hard to do easily with the variety of tanks being used. Also, not sure how to check tanks with fuel-fill hoses through decks where the tank's size can't be seen.

I wouldn't be too keen on poking a marked stick into 40 fuel tanks, while trying to keep the stick clean of all dirt, water, or other contaminants, and trying not to soak myself or clothes with gas before someone with a cigarette comes near. We already have the penalty for running out of gas during a race. That and a warning during the skippers' meeting ought to be enough.

Lee

My Reply:

Thanks Lee,

Your point is well taken. Although the running out of gas penalty covers your concerns, there's no sense having a minimum tank size without a minimum gas requirement. The full tank provision could be on the honor system to avoid the need for verification. Leaving it for the skipper’s meeting could create a problem of omission. I will submit your opinion with the report.

Kim

Design and Construction Committee:

Keith Carew
Lee Edmonds
Morgan Friday
Kim Granbery
Chris Riddick