

## Report on Carbon Boat damage

During a race Bruce's new Carbon Fibre 33 started to sink. He recovered it and it was found the the keel was raked forward approx 5 degrees. Bruce reported:

1. The boat was dropped onto a grass surface from the stand and landed on the keel bulb. The keel pivoted forward and the top of the keel punched through the keel box. The stainless steel shaft was bent.

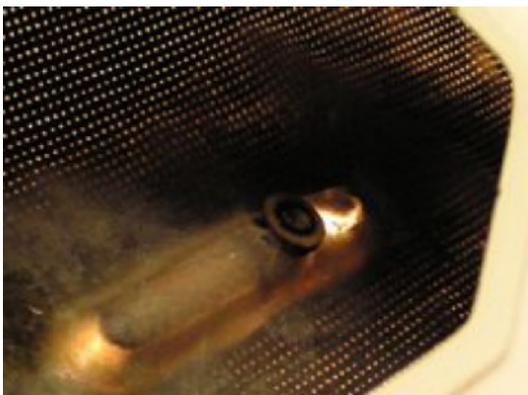
2. The keel box had been reinforced with two layers of fiberglass matt, but this was not enough to stop the penetration.

3. In assembling the boat the fit of the keel to the keel box is very poor. The keel box is distorted and a lot of work is required to shape the keel top to fit.

I believe the keel box area is unnecessarily weak. A better solution would be to mould in the original ABS keel insert.

4. Also (on a previous windy day) the forward, starboard chain-plate screw pulled out. More reinforcing under the deck where the sidestay chain plates are would be good.

5. An overall comment, is I believe the boat ( and resulting flexible deck & hull), have been made unnecessarily light. A little more hull weight and strength would have little effect on speed.



Akio UTSUMI read of the incident and asked:

This is the first time I've ever heard about the keel box damage on the Carbon Edition hull. (There has been many report about hair line cracks around the front of the keel box on ABS hull before.)

Is there any way to ask the owner of the broken Carbon Edition boat about the further detail of how the damage may have occurred?

(What might have caused its area to break?)

(Were there any under deck compression members in the vicinity of the internal structure to reduce deck buckling on this boat?)

If there is any design structural defects that may have caused this incident, I am considering to report to the KYOSHO Japan representative.

Akio UTSUMI

Class Secretary

Japan Seawind Class Owners Association  
(JSCOA)

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Summary of further comments:

From the engineering point of view..., it is necessary for the top of the keel to fit just right, so that the force from the keel is spread through out the entire surface of the hull's keel socket. This is very important, because this is the critical part of the boat where large stress can be applied upon shock loading case.

You may still need to fill the open void by epoxy putty or something like that, so that the proper matching can be obtained. This may be necessary, even if the damaged Carbon Hull is fixed by laminating the interior. I've personally done this by placing the wax on the hull socket, before applying the putty on the top of the keel. That way, the keel can be taken off from the hull with perfect surface fit, even after the epoxy putty is cured.

Akio UTSUMI

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I have received an official confirmation from Kyosho Japan about the resin used for the Carbon Edition Seawind.

It was certain the Polyester Resin.

Hope Bruce can fix his hull with success.

Good Luck!

Regards,

Akio UTSUMI