# Refurb for a swing keel

## Clonking noises signalled time for a look at the cast iron underbelly and pivoting centreboard of Mike and Margaret Blatcher's Kelt 8.50m

Mike and Margaret Blatcher's Kelt 8.50m sailing in the Thames Est

**Our Kelt 8.50m, *Keltic Raider*, is kept on a drying mooring off the Essex Yacht Club in the Thames Estuary. It's an ideal cruiser for the East Coast as it features a pivoting centreboard and cast-iron grounding sole plate. With the centreboard lifted it draws just 0.66m (2ft 2in), making it a good boat for exploring shallow creeks, and with the centreboard down it draws 1.56m (5ft 2in) giving it a sporty performance.**

The boat had been scrupulously maintained, but during the last season clonking noises from the centreboard raised some questions. 'Out of sight, out of mind' was not an option in this case. If the centreboard is banging it could indicate a worn pivot pin or bearing. Was the centreboard in danger of falling out the bottom of the boat?

We'd read in a previous PBO article how one owner chopped away the GRP centreboard box inside the saloon to inspect the pivot pin – an extremely messy job which involved stripping out the saloon, lots of glassfibre dust, plus rebuilding work to make the boat watertight again.

### Must be a better way

I decided there was an alternative way to inspect the pin – which involved dropping the centreboard and sole plate off the bottom of the boat. The swinging plate weighs 370kg (800lb) whilst the cast-iron sole plate weighs in at 1,140kg (2,500lb). The grounding plate is attached to the hull with seven 16mm stainless steel bolts tapped in to the cast iron, and 11 countersunk bolts (12mm) secured by nuts and backing plates.

I returned home from work one day with a present for my wife Margaret: safety goggles and a face mask. I broached the subject of the two of us removing the bottom of our boat and waited patiently while she regained her composure and stopped looking in the classified section for a new boat. The decision was made.

Measurements were taken to find how high the boat would need to be off the ground to allow for clearance in case the centreboard had to be taken out from under the boat for repair. A substantial wooden base was made for a forward tower of wooden blocks, while two other towers supporting a crossbeam were built near the stern. Wedges were made and secured to the beam to stabilise the hull, and legs were fitted to prevent any movement in strong wind. The legs were bolted through the toe rail to make them extra secure.

Once the boat was safe we removed four bolts from the sole plate – two either side – and pushed metre-long threaded studding up through the h securing it inside with sub nuts and washers, and th more nuts and washers b hold the sole plate in posi rest of the sole-plate bolts then removed, so the plat be lowered on the studdi four nuts were undone.


Hull was made steady with substantial wooden blocks, wedges and legs

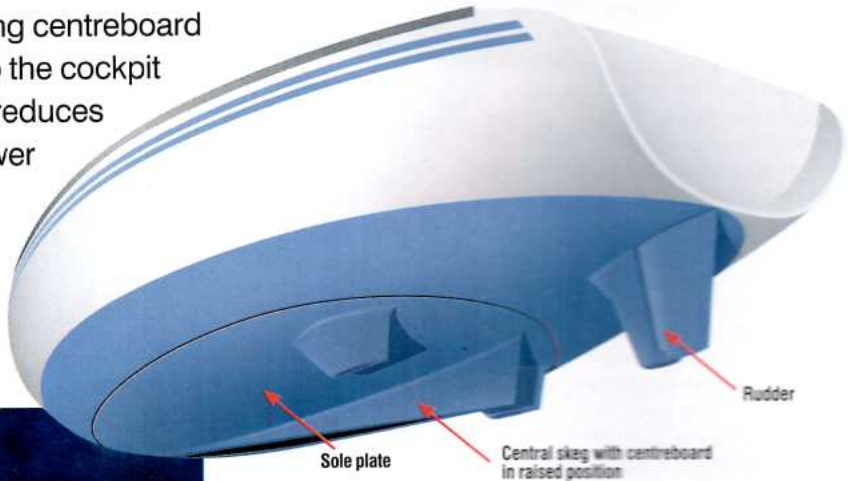
The sole plate was faire hull with glassfibre filler a initially prevented it from under its own weight. Ge jacking the boat slightly a dropping it back eventua the filler to crack away.

Margaret and I then wo either side of the boat, ur the nuts on the studding the total weight of 1,500k (3,300lbs) in a controlled

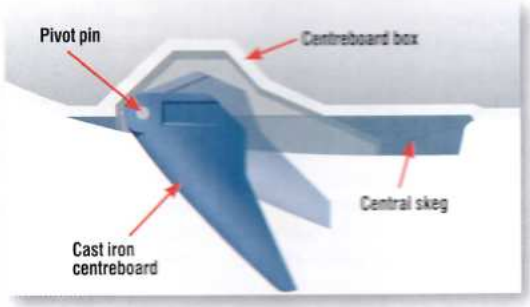
With the plate eventuall to the ground, the centre cleared the hull and an ir was possible. The hollow stainless-steel pivot-pin p through the centreboard bushed with nylon. The p extended into a galvanis three-sided garage, and this point there was som

# natomy of the centreboard keel Kelt 8.50m

he lifting mechanism of the pivoting centreboard
370kg (800lb) is taken through to the cockpit
here a multiple purchase system reduces
e effort necessary to raise and lower
e keel. The stiffness of the central
keg and two smaller skegs make
e Kelt 8.50m an extremely
able centreboard boat'
*Kelt sales literature, c.1985*








**The forward bolt hole in the hull was utilised as an attachment point for a small jockey winch to help manoeuvre the heavy centreboard**


oles in the garage had worn
ound to oval, although the
oin, nylon bearings and hole
centreboard showed no sign
ar.
e importantly the galvanised
e could be easily removed
he cast-iron sole plate for
, leaving the centreboard,
late and studding in place for
realignment later.
the whole of the centreboard now being completely visible under the boat it could be cleared of barnacles and rust. Although wearing a mask and safety goggles when using an angle grinder, Margaret removed the goggles for chipping-off as they tended to steam up. Unfortunately the shaft of the chipping hammer broke and she ended up sporting a black eye for a fortnight – a valuable lesson learned, always wear safety goggles! With Valentine's Day being close at hand I, the ever loving husband, bought her more presents: a new chipping hammer and safety goggles which wouldn't steam up!

With all the old paint chipped off the centreboard we repainted with five coats of Primocon followed by two coats of hard-racing antifouling. After the filler had been chipped off the sole plate it was found to be in very good condition, and only required sanding before it too received five coats of Primocon.

To enable access to all parts of the centreboard and keel-slot in the sole plate, the centreboard needed to be moved around, plus raised and lowered at will. The back of the centreboard could still be controlled with the keel pennant which leads to a winch on deck, but the boss at the forward end of the centreboard also required lifting so I devised a method which enabled finger tip control: the forward bolt hole into the hull was utilised as an attachment point for a small jockey winch with a wire cable passing through the pivot point on the keel. Large washers and backing plates were used round the bolt to prevent distortion.

## Garage repair

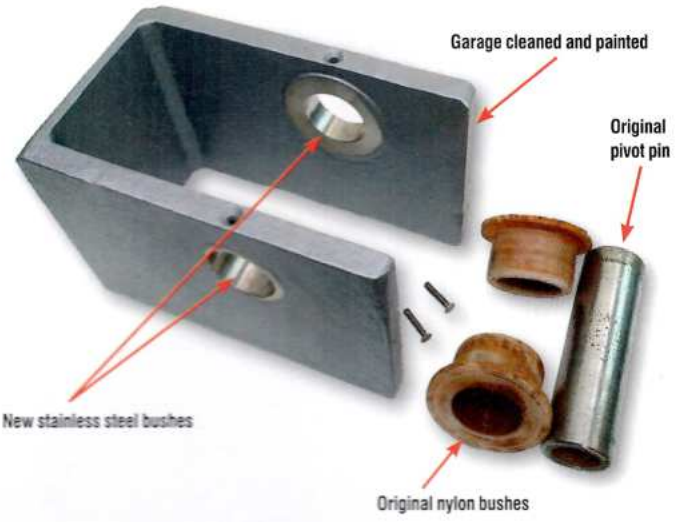
The repair to the garage involved machining out the hole for the pivot pin to make it round, and then bushing the hole with stainless steel. To prevent any subsequent movement of the bush the top of the garage was drilled and the bush secured with a countersunk stainless steel screw. The garage was cleaned up and then painted with Primocon.

It was next slotted back on to the sole plate and the centreboard manoeuvred into position. The bushes and pivot pin slid in to place and the centreboard was then tested for its lateral alignment and movement up and down. With everything working well it was time to give the sole plate and hull a final clean with acetone.

The garage was held in place with epoxy filler while a polysulphide sealant was spread evenly all over the grounding plate. The time had come for a speedy ascent. Three jacks were used to lift the sole plate and as it ascended the nuts were spun up the studding. If the plate became out of line the jacks were eased off and the plate swung on the studding to realign itself. Eventually the sole plate was close enough to the hull to wind the securing bolts back in. One by one the bolts were tightened as excess polysulphide was squeezed out from round the edge.

The underside of the grounding plate could now be scraped down to the cast iron and cleaned up before being prepared the same way as the centreboard. Once the polysulphide had hardened any excess round the join with the hull was cut away to make a clean surface for epoxy adhesion.

The join between the hull and the sole plate was then refilled with epoxy and faired in to give a smooth finish. Finally, the hull and sole plate was painted with antifouling and the boat was ready for relaunch.




## Tips for inspecti the pin

1 Make sure the bo well secured befo starting the job

2 Allow enough he get to all of the centreboard

3 Loosen stubborr securing nuts wit careful use of a blowl

4 Use lengths of th studding to help controlled drop. This enables realignment putting it all back tog

5 If new bearings a required use goc quality stainless steel

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## A successful job worthy of a celebratory gin and tonic!

**Cleaned, refurbished and re-painted, the reassembled centreboard and sole plate are ready to be hoisted back in position, guided by the threade**