SILHOUETTE MAKE & MEND Sheets No.3 SKEGS

"When 'Cara' broke her moor . ings in 1970, she grounded on a rocky shore and the skeg was damaged. Parts of the wood were soft, and the bolts rusted so we decided to replace the lot. The bolts were made up from bright steel rod, tapped at the top end, and bent through 90° about an inch from the bottom. Having no means of drilling long holes, we made the skeg from two pieces of 1/2in. marine ply cut to shape with a jig-saw drill attachment, and gouged grooves on the inside surfaces to take the bolts. It is very easy to make a uniform groove in marine ply; you just have to count the number of veneers as you go through. The bolts were placed in position in one half of the skeg, the other half glued on top and a few brass wood screws entered in strategic positions (e.g. in the 'crook' of the bolts). The skeg did its job last year and shows no sign of weakness yet."

This letter from a member a few years ago typifies the situations where problems with the skeg occur, and the fairly simple way of dealing with it.

The skeg serves two puposes. When sailing, it gives the boat added directional stability, helping it to point higher into the wind. Some early owners improved its efficiency by extending it forward so that it ran as a continuation of the aft end of the ballast keel, instead of having a gap of three inches between the two.

Silhouettes fitted with inboard engines have a skeg thicker than other boats to accommodate the propellor shaft, and also a cutout in its aft face for the propellor, but this latter feature seriously affects the windward sailing capability of the boat, see note later.

When the boat takes to the ground, the skeg invariably takes the impact of the weight of the aft end, and if you keep it on a drying mooring, whether mud or hard sand, the skeg will take even more of a hammering, as well as the rudder blade. It is prone to both vertical and sideways stresses as the boat swings round on the wind or tide, and over a period of time the junction with the hog plank may become weakened and strained. This in turn may affect the lower rudder fixings, so it is important to check the soundness of the skeg fairly regularly, and particularly if the boat has been sublect to some rough weather or handling

The Fittings

On both Mkll Marine ply and GRP Silhouettes the skeg and rudder arrangements are usually identical, the only variation being that where an inboard engine was originally fitted, the thickness of the skeg is increased to 1 1/2" to accommodate the propeller shaft which passes through it, and the cutout on the aft edge of the skeg to take the propeller. On the Tucker drawings, it is this variant which is reproduced, and there no clear details concerning the thinner (3/4in thick skeg which is fitted to the majority of Mk II boats.

The profile on the drawings may differ from individual examples, especially some Hurley built boats, but this is not significant If you need to replace the skeg and rudder and have existing patterns to work from, there is little further information to be obtained from the original drawings. Unlike the MkIII arrangement, the skeg on the Mk II boat does give some support and protection to the rudder blade, and if the skeg has rotted or split, noticeable play will be detected at the bottom bearing of the rudder stock. There may also be leakage into the aft compartment through the retaining bolts.

Removal

To remove the skeg, you may need to jack the boat up, since the rudder stock may have to be taken off as well, and the hull needs support so that you can work on it from inside as well as from below. Normally, jacking the trailer up a foot and dropping the front end to ground level will give enough clearance, but this presents a rather unstable rig to work on. It is advisable to level up the boat with plenty of shoring all round.

The skeg is fixed to the hull by three bolts or lengths of screwed rod set into its tbickness and passing through the hog plank, as in the drawing. Hurley boats were also fitted with triangular wood fillets on either side of the skeg, giving a little more rigidity. These were screwed in place, and with luck may be removed intact if you can find the screw heads!

Access to the nuts retaining the skeg is easy on the wooden boats, because the floorboards may be removed to expose them, but on the grp hulls, the cockpit sole is solid, and unless you are prepared to cut access hatches in it, the only way to get at the nuts is from inside the cabin, reaching aft beneath the bridge deck.

A dose of penetrating oil, a long arm and a socket spanner may be required If the nuts simply won't



Published by the Silhouette Owners' International Association Hon. Secretary Barbara Heald, 13 Bartlett Road, Shaw, Oldham Lancs OL2 7BS Skeg s page 1 of 2

move, you may need to destroy the skeg (after first making a template from it), and saw through the bolts, finally knocking them upwards through the hull.

Replacement

A new skeg is most easily made by laminating two or three sheets of 8mm ply to make up the required thickness. If two laminations are used, then channels half the thickness of the retaining bolts need to be gouged into each piece so that the bolt can be sandwiched between when the plies are glued and screwed together. With three laminations, the centre one needs to be about the same thickness as the

bolts, so that slots can be cut right through it to accommodate their diameter. The 'bolts' are not in fact bolts, they are usually lengths of 3/8" thick steel rod bent over at right angles for the last two inches or so at the bottom, and threaded a couple of inches at the top end. Some boats have been found with slight variations on this arrangement however, so it pays to be cautious when dismantling your own boat.

Having cut the profiles of the laminations and the bolt recesses, the boards should be temporarily screwed together, and the bevels on the top edge planed to give a snug fit against the underside of the hull. As shown on the drawing opposite, there is a twisted bevel along the length of the skeg junction, and this is best produced by making a set of templates taken off the hull. It is easier to separate the plies to shape the top edges individually, since the profile required is an internal vee. If the total skeg thickness is greater than the original 3/4" you may decide not to replace the fillet pieces, but if you are making new ones, it is easier to screw them on to the skeg cheeks and plane both to fit the hull simultaneously

The completed assembly should be offered up to the hull and checked for fit before gluing. Resorcinol or Cascamite can be used for the plies, but epoxy resin is perhaps the favourite, as the bolts can be embedded in it. (DON^{TT} use Polyester resin as a 'glue', it isn't effective). There is a case for not gluing the skeg to the hull, but relying on the bolts, together with a flexible mastic to give a good watertight seal. The



fillet pieces provide further reinforcement. It is likely that the skeg will flex to some extent, and if you have made it extra thick, it is possible that hard glue or resin joint at the hull may fracture under the stress. This is an arguable point however. Mastic, pitch or Seelastic tape should be used underneath the plate washers on the inside of the hull, and the tightness of the nuts checked a few days/weeks after the initial installation.



The prop. cutaway

This feature can cause you a lot of problems - even if there is still an engine and propellor fitted. With the inboard-engined Silhouettes there is always a reluctance for the boat to go about, and there will probably be more noticable weather helm too.

If the engine and prop. have been removed the aperture should be filled in. If you leave it open you will find that the boat simply won't point up into the wind properly. The best remedy is to carefully let in a piece of plywood, or a laminate of several pieces, tapering aft from the thicker section of the skeg to the leading edge of the rudder. Getting as smooth a transition as possible betrween the two will get the best results.

SPARE PARTS

If you can't make your own replacement skegs, rudders, hatches etc. contact Colin Tevelion, - Boatbuilder. 2 Blounts Cottage, Allens Green, Sawbridgeworth, Herts CM21 0LT. Tel: 01297 721097 and 01297 723488