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CHECK LIST FOR AGING SIGMA 33'S

By David W Hopkins, Marine Surveyor & Consultant
Ex Sigma 33 owner/sailor

I was involved with the initial concept of the Sigma 33 and am very familiar with the Sigma 33's and hope the following will help owners in assessing work to be done during the life of this Sigma Class.

1 HULL

The Sigma 33 hull skin is of a solid hand layup construction and generally speaking it is a very sturdy hull skin. However, as with any keenly raced vessel they can suffer the odd coming together etc. causing some gel crazing and cracking. Most of the time this is of a cosmetic nature only. However, it is important to check the hull skin around highly stressed areas and that is the shroud anchorage points and keel fixing.

As the Sigma 33's are beginning to show their age, it is often found that the shroud plates, which are fastened to a fore and aft bulkhead are showing signs of movement and as this can be seen in the following examples.

1. The hull skin at the bottom of the fore and aft bulkhead in way of the shroud plates distorting, i.e. hollowing as the bulkhead pulls the hull skin in an upward direction. This can be seen when the vessel is hauled out and there is an obvious unfairness at this point.
2. The lifting of the deck around the shroud anchorage points.

3. The bonding of the bulkhead to the hull and fastenings, showing signs of movement in an upward direction on the main bulkhead and the through bolting through the GRP bonding to the hull.

Other points to look for are the distortion of the hull under the mast compression post at the forward end of the keel recessed area in a downward direction and distortion of the hull in an upward direction at the after end of the keel recessed area.

Other weak points in the hull are sometimes found in the transverse foam filled stiffening in way of the keel and this is most likely to be found on the after transverse floor member over the top of the keel recess area. This is usually caused by some grounding or unfair cradling. Also, some gel cracks can occur in the corners of the recessed area for the keel, which can be found by scraping away the antifouling on each corner of the recess for the keel on the outside.

3 KEEL

The iron ballast keel is generally a tough casting and I have only ever seen one keel where the flange has cracked around the keel bolts, mainly forward after a heavy grounding.

However, the keel studs, nuts and washers do suffer from rust and corrosion. However, I have not personally seen one which is totally rusted away and needed replacing. If signs of corrosion and deterioration are found, it is not a bad idea to unwind one for inspection. These studs are threaded into the keel flange.

Keeping them in good condition by cleaning them back to bright metal and thoroughly coating with bare plate primer is a good idea.

The keel itself, if not kept in a good racing trim may have some surface rusting and unfairness and this is obvious and blasting off back to bright metal, coating and filling and fairing in with an epoxy system and antifouling is a good idea, especially if one is racing.

The keel flange to recess joint to the hull sometimes shows signs of movement and rust weeping from around the keel flange in the recess. Raking out, cleaning out and thoroughly coating this area helps to stop this situation and then filling and fairing as necessary.

If the rust is severe, the only way to be sure of overcoming this problem would be to have the keel removed and then the flange cleaned back and thoroughly coated before re-bedding the keel back in place.

4 RUDDER & STEERING GEAR

The GRP rudder blade is moulded in two halves and then glued together using a cold bolt system and generally they are a sound rudder. However, cracks have been known to occur where the stainless steel rudderstock enters the rudder blade and the first sign of this is on the centre joint just above the balanced part of the rudder blade, on the leading edge of the blade.

The grp rudder tube is generally sound and well fixed, although it has been known for some movement to occur on the rudder tube where it is joined to the hull to deck joint at the top of the transom.

The rudder bearings are PTFE type rudder bearings generally and these do not last that long. However, it is easy to replace these bearings by dropping the rudder and fitting new ones.

Another situation which may arise with the rudder is when the bronze tiller head, which is attached to the rudderstock by a cotter pin can bind on the rudder stop plate under the tiller head and this is made of bronze and a stainless steel pin in the tiller head sometimes goes missing and there is a spacing washer usually under the tiller head, which stops the tiller head from binding on the stop plate. This can make it unpleasant to steer the boat.

It is very important that the stop pin is in place so as the rudder cannot go almost square across the vessel, when going astern.

5 STERN GEAR

The stern gear, generally gives very little trouble until the cathodic protection is not connected properly and the only form of cathodic protection on the Sigma 33 is a shaft anode and it is quite common that the cathodic protection wire is not making good contact with the 'P' bracket. Also, the 'P' bracket then usually suffers as a result of no cathodic protection, or the wiring is well connected and the shaft anode drops off and the 'P' bracket starts acting as an anode. Therefore it is very important that the cathodic protection wiring is checked to make sure it is well connected to the engine and 'P' bracket and it is also very important that the shaft anode is fixed to this vessel's shaft at all times.

If the vessel is to remain afloat for long periods, then two shaft anodes should be fitted back to back, approximately one inch away from the forward bearing surface of the 'P' bracket.

Scraping away the 'P' bracket to see whether or not it has gone pink is a good idea from time to time.

The other important thing to keep an eye on is the stern gland. These vessels usually had a stuffing box type stern gland and the rubber flexible part of the stuffing box should be checked regularly and should be changed approximately every ten years. If a Volvo rubber stern gland is fitted, then Volvo recommends that they should be checked regularly.

Note: When the vessel is launched off, the Volvo rubber stern gland should be bled in order to lubricate this gland. This can be achieved by squeezing the rubber until water squirts from between the shaft and rubber gland. Volvo grease should be squirted into the gland between the shaft and the rubber. This then ensures the Volvo rubber stern gland is being correctly lubricated. Failure to do this will cause rapid deterioration of this type of gland.

The folding propeller should also be checked for deterioration and to make sure that the folding mechanism is working properly.

7 SHROUD ANCHORAGE POINTS

The forestay fitting passes through the deck and is bonded to the inside of the stem and generally speaking the forestay fitting gives no trouble, although when the mast is unstepped and the forestay clevis pin is removed, the hole for the clevis pin in the stainless steel forestay fitting should be checked to make sure it is not ovalling. If it is distorting seriously, then it may be necessary to remove the forestay fitting and have this area built up or repaired as necessary and then the forestay fitting re-laminated back to the stem.

The shroud plates, which we have already gone into in the hull section need to be checked and the most important thing for the shroud plates is to make sure that the deck plates around the shroud plates are regularly checked and bedded as leaking of the deck plates can cause decay in the core of the deck around the shroud plates.

The backstay eye bolts sometimes show signs of cracking around the eye bolts on the top of the transom at the hull to deck joint. This should be checked as sometimes these eye bolts miss the hull flange and they are only held on the deck part or half and half. This can be seen by crawling in the cockpit locker and looking up on the underside of these backstay eye bolts.

If it is found to look odd, i.e. not in the flange, then some reinforcing will be required in this area, so as to spread the load at this point.

8 ENGINE COMPARTMENT

Apart from the obvious on any engine the following points should be checked.

If the engine mounts become worn, the underside of the engine/sump can become very close, if not touch, the GRP cross member between the engine beds, which can end up causing vibration and this can be checked by passing a tape measure under the engine to make sure the sump of the engine is not touching this cross member between the engine beds.

The other important thing to watch out for is the engine room raw water intake hose, as sometimes these have been known to pass inside between the engine mounts and engine causing chafe. This hose should be routed outside of the engine beds.

9 FUEL TANKS

The old steel fuel tanks have mostly been replaced with modern tanks by now and it is not unusual for the old steel tanks to fail. This should be checked.

10 GROUND TACKLE

The anchor well on these vessels can often give trouble in the form of allowing water to seep into the space under the anchor well/chain locker and this usually occurs where the drain holes are drilled through the hull at the after end of the chain locker, both port and starboard and a good way to check this would be to undo the drain plug in the number one bulkhead in the space underneath the chain plate to check whether water is building up in this area. It is quite common to find water in the space under the anchor well, which is not a good idea, especially as it can cause rot and decay in the number one bulkhead and also it is a place in the boat where one doesn't want weight.

11 DECK

The GRP deck and superstructure is of a balsa core sandwich construction with plywood core around stress areas and as these vessels become older, leaking around deck fittings can cause decay of the core and therefore it is important to keep all deck fittings watertight.

The most common fault on the deck of the Sigma 33 is some sagging and depression of the deck around the mast "T" base, together with the aluminium mast "T" base bending.

Stanchion bases, corroding and splitting or becoming loose and flexing and cracking around Genoa sheet turning blocks may also be found. The cause of the deck sagging around the mast "T" base is usually due to the wedging up on top of the mast compression post, compressing and allowing the deck to sag and if this is occurring, the only way to overcome this problem is to remove the head linings both fore and aft of the mast compression post and pack up with a non-compressing material between the top of the mast compression post and underside of the deck and then re-bond the mast compression post to the underside of the deck.

Sometimes it is found that the plywood packing in the plinth under the mast compression post has also decayed and this will require removing and replacing with new packing in order to consolidate this area.

A new mast "T" base is usually required and when replacing this mast "T" base on should make sure that it is one of the type with a tongue at the after end so as a pin can be fitted to the mast heel fitting, which should have facility for a pin to stop the mast heel fitting pulling aft on the "T" base. It has been known for these mast steps to not have the facility for the pin at the after end of the mast heel fitting, which can result in the mast heel fitting pulling off of the mast "T" base.

12 RIG

Any faults with the rig are usually quite visually obvious. However, the most common fault I personally have seen is when the spreader attachment to the spreader brackets in the form of the cast spreader brackets wearing and the holes in the brackets for the clevis pins for the spreaders elongating and allowing the spreaders to flop backwards and forwards. This can be checked by catching hold of the cap shrouds and pushing them backwards and forwards. If there is excessive movement in this area, then this situation must be addressed.

Also the other common fault is a kink in the mast at the spreader routes and this is usually due to over-bending, i.e. too much tension on the backstay and the backstay being let off too far.

Gooseneck fittings often wear quite quickly and this is another area to keep a check on.

Finally, the Sigma 33 is not a lot different to any other vessel of a similar construction and with good maintenance and servicing, this class will go on for years and years to come. One of the best things about the Sigma 33 is that she is a very basic structure, which can be repaired relatively easily should damage occur. In checking the vessel during the winter layup, should any of the aforementioned problems above be found, it would be wise to seek advice of a good year and marine surveyor as to the severity of the problem and whether it needs to be addressed and how to address it.