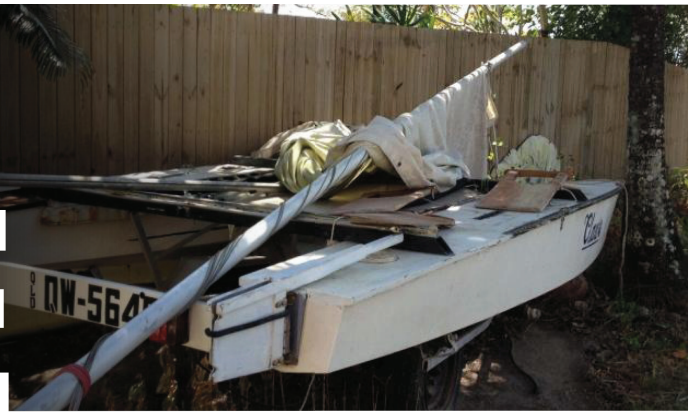
2nd CHANCE



As highlighted in last edition's article on resurrecting *Bushranger*, there can be a lot of satisfaction to be had from bringing an old Paper Tiger back to life. A successful outcome, however, will depend on starting with a boat that is in a salvageable condition. The following article will attempt to guide the prospective new owner through evaluating their find and avoiding the disappointment (and cost) that could result if the wrong choice is made.

Firstly there should be a clear notion of what will be expected of the finished product. Will it be used as a fun boat for family (or singles) holidays; will it be a learn-to-sail boat with prospects of eventually getting it on a racecourse; or is the plan to get amongst the action from day one? Finally, is it expected to last until long after all the hard work is completed?

The above will help answer the question - "Is this the right boat for me to put my time, money and effort into restoring?"

Clearly the best option for restoration will be a boat that was well put together and has had an easy life. The suitability of anything else will depend on the skill and determination of the restorer. Of course there will be the occasional "bargain" that should really be walked away from.

The Hulls

The hulls are the most significant part of the boat. They will require the most effort to fix and will be a constant source of problems if they are unsound.

Basically there are three types of hull construction that will be encountered when looking at older PTs; plywood, basic fibreglass, and foam sandwich/fibreglass.

Plywood hulls can be long lasting (30+ years, if well built, properly treated against water absorption and decay, well maintained and stored out of the weather).

If not, they will deteriorate to a non-salvageable state. Hull weight depends on how light the materials used in construction were and whether the boat has been kept dry during its life.

Basic fibreglass hulls are robust and are likely to be sound if professionally built, unless they have been seriously abused during their life. They do, however, tend to be significantly heavier than other construction types.

Foam sandwich hulls are a compromise between the other two. Initial construction quality is more predictable than plywood and they better withstand neglect, such as being stored out in the weather. However, they can suffer from surface cracking, dents, leaks and failure of the foam in high load areas, especially if they have been raced intensely. They can be as light as plywood, but may increase in weight over time if moisture penetrates the foam.

Horses for Courses

So which hull type should the prospective owner be looking at?

If the boat is going to be for non-competitive use, basic glass may be the preferable option because:-

- It won't matter as much if it is relatively heavy.
- It can handle being stored outside.
- It can better withstand the bumps and grinds of being dragged on and off a trailer or the shore.
- It should better handle the extra load of a bunch of friends or ankle-biters piling on for a ride.
- It should be relatively easy to repair.

Plywood and foam sandwich hulls are not unsuitable, but they may require more effort to restore and maintain and will need to be more carefully looked after if they are to be kept in good condition.

If the intention is to eventually race the boat, then weight starts to play a role, although how much of a role depends on how competitive the owner is. If there is an expectation to get amongst the front runners of a light-weight PT fleet, basic glass hulls are probably not the

preferred choice (unless maybe the skipper is a lightweight) as they can be around 15kg heavier than minimum weight and there is nothing that can be done to significantly lighten them. If the boat doesn't perform, the weight will likely become a psychological handicap, if not a physical one.

Having decided that the boat will be competitively raced, the choice would desirably be between foam sandwich and plywood. Assuming that price is not the determinant and that the quality of the two options is similar, points to consider might be:-

- A personal preference for working with either timber or fibreglass.
- The ability to store the finished boat under cover.

Storing timber boats under boat covers is not really a satisfactory option, so fibreglass would be the preferred choice if undercover storage is an issue.

Buyer Beware

OK, having decided on a preference, what now to look out for when boat hunting?

There may be obvious repaired damage. This may be cause for concern as, if properly repaired, it shouldn't really be obvious. However, it is a boat, not lounge-room furniture and the owner may have been into performance rather than appearance. The nature of the damage is more of a concern.

There are a number of areas on PTs that take a lot of load and if the damage is in these areas it may indicate poor construction or significant deterioration. They are:-

A. The deck between the centrecase and the rear beam.
B. The deck at the main and rear beam attachment points (inner and outer gunwale).
C. The transom around the rudder fittings.
D. The hull around the chainplates.
E. The keel, chines and gunwales.
F. The bottom hull panels, especially towards the stern.
G. The lower-rear end of the centrecase slot.

We will go through what to look for point by point.

A. The Deck

This area of the deck takes the most loading as it is where the skipper spends most of the time and where he/she can land with some force when tacking. To test for damage, push down firmly on the deck. It should have minimal flex if in sound condition. If there is significant give, the deck structure has probably failed. Surface cracking on a timber boat indicates that the top layer of ply has failed. Flexing can indicate failure of the sub-framing and perhaps the lower layers of ply. Surface cracking and flexing on a glass boat likely means that all layers of the deck structure have failed.

Lasting repairs to this area will probably require replacement of part of the deck, or surface repairs and installation of internal reinforcement. Both are substantial exercises.

B. Beam attachment

The beams are bolted through a reinforced pad under the deck. One way to check the condition of this structure is to lift the bow of one hull (assuming the boat is assembled). If the bow can be lifted significantly before the other bow starts to lift, the whole boat is twisting. This may be due to the individual hulls twisting (not good, but not a big handicap either), the fastening bolts being loose (they can loosen over time as the pads compress), or significant failure of the reinforcing pad structure. Determining the cause of the twist may not be straightforward, but there are a couple of things that can be readily checked:-

- With a bow lifted, see if it is possible to slip something thin between the beam and the deck at the inner and outer gunwale...there should be no gaps. Try again whilst lifting the opposite bow.
- Look for cracks along the gunwales at the beams.
- Look for cracks along the beam at the attachment points

If the bolts are loose, tightening may be all that is required, although larger washers under the deck will help reduce compression. Foam hulls may become soft around the bolts if water is penetrating the core material. This should be readily repairable.

A crack along the gunwale indicates a probable failure of the reinforced connection between the deck and hull side (more likely in timber boats). This will only get worse and may require significant surgery to remedy.

A cracked beam is rare but will require replacement of the beam as the beams are tempered, so don't like being welded. Beams can also split around the bolt head. This may show up as a gap between the deck and beam even though the bolt is tight. After pressing the beam back into shape, a large aluminium washer inside the beam can extend its life.

C. Transom

The rudders can apply significant loading to the transoms, especially if the rudders are subject to jelly fish strikes at speed or have been run aground. Things

to look for are:-

- Loose rudder fittings.
- Surface roughness around the fittings.
- Cracks around the fittings.
- Cracks around the edge of the transom.

If the fittings become loose, they may allow water into whatever the transom is made of. If this stays wet it will deteriorate over time leading to possible failure under load. Surface roughness of the surrounding paint or blisters in the fibreglass may indicate water penetration.

Cracks around the fittings (more likely around the lower one) indicate that the transom is failing under load. This can be reinforced internally.

Cracks around the edge of the transom most likely indicate a problem with the original construction or deterioration of the joint due to weather exposure. Whilst fixable, this may require more involved surgery to ensure a sound long term outcome.

D. Chainplates

Chainplate issues would most likely arise from fittings becoming loose and allowing water penetration to damage the surrounding material. Generally this should not be difficult to remedy.

E. Panel Joints

The panel joints can fail due to poor construction, exposure to the weather or hard use (more likely in timber hulls). These are fixable but may require invasive surgery to gain access inside the hull. Surface-only repair will likely fail again.

The keel may show damage due to being dragged along the ground/sand or being rolled on and off a trailer. If the wear has gone through the fibreglass (both hull types) it can, and must, be repaired.

The bottom of the hull may have become distorted as a result of being supported on rollers on a trailer, especially if it was tightly strapped down or transported on rough roads. Actual damage is possible at the support points, though not inevitable. Look along the keel to see if the curve is fair and check for cracks. Cracks are fixable, distortion isn't really.

F. Bottom Panels

The bottom panels can be damaged in a number of ways such as:-

- Impact with solid objects
- Dropping back onto the water from a near capsize.
- Sitting on poorly designed supports on the trailer.

Damage from rocks etc. will probably be superficial.

Dropping from height when sailing places significant load on the more horizontal rear hull panels, which can cause splitting of the inner surfaces, weakening the panels and allowing water absorption (more likely in plywood). Pushing firmly on these panels will indicate soft spots. This is more likely to occur if the outer plywood grain runs lengthwise.

The over-flexing of damaged panels could lead to chine failure, so should be fixed.

G. Centrecase

The centrecase is often a source of leaks. This may be due to poor construction, subsequent wear or damage from running aground. Unfortunately this is hard to check as the source of the leak may be near invisible.

On foam boats, look for wear in the back of the centrecase and cracks at the rear lower corner. Unfortunately effectively fixing centrecase leaks is not easy, usually requiring invasive surgery.

Decisions...Decisions

As well as the items covered above, another thing to consider is the condition of the hull surfaces. Painting can be a tedious exercise, so rapid failure of the newly finished surface is not a desirable option.

Look for fine splits on plywood surfaces. These will reappear unless stabilised with epoxy. Look for blisters on fibreglass. These are a sign of poorly cured resin reacting with water. They will have to be removed and the surface rebuilt. Significant cracks in the gel coat may indicate failure of the underlying glass fibres. Stabilising this surface may be difficult, if possible.

Finally, have a look at the general build of the hulls. The gunwales, chines and keel should be fair curves and the hulls should not be twisted. Foam hulls are generally OK as they are usually from professional builders, although some do have twist at the stern. The quality of ply hulls depends on the skill of the individual builder.

Look along the hull edges from the bow to check the symmetry of the hull and fairness of the curves. Obvious wonkiness should cause suspicion. To check for twist, sit the boat on level ground and sight from the main beam to the rear beam, looking from midway between the bows. The top surfaces of the beams should be parallel. If they're not, twist in the hulls is causing twist in the whole hull assembly. This will cause issues with setting up the mast and may well affect sailing performance.

In Closing

Hopefully, after working through the above, the buyer should have a better appreciation of what to look for in their potential purchase. However, it can only be a guide. The quality of materials used in construction is an unknown.

A closing comment on bargains to be avoided. Once the hull panelwork is obviously, seriously perished, the best of restoration efforts may all be in vain. If water has been lying long term in the hulls, this will likely have penetrated the panels, increasing their weight and permanently damaging them.

Next time we will consider all the other bits that come with the hulls.

Ralph Skea - *PT3065 Solitaire*

FLYING THE FLAG - apt HIT RATE SINCE ISSUE 1