West Aussie Les Davidson:

How I Built My Own 8.5m Ally Cat

Just a few words on my background. I was born in 1942 into a farming background, driving and using machinery from the age of 12. I finished school at 16, and went for a mix of farming and contracting for 2-3 years. As there was no money in farming, I went driving bulldozers for the next 12 years.

After that, I went into the service station game for 5 years, before starting my own earth moving business with bobcats, trucks, loaders, sandpit compactors, sand screens, (etc) for the next 30 years, during which time I did all the mechanical repairs, welding and general maintenance as well as driving and working along with 10-12 employees.

It is widely acknowledged that an aluminium powered cat project involves up to 50% work, about 30% more in materials, and invariably, twin engines - so the question has to be asked: Is it worth it? For WA cat enthusiast, and die-hard fisho Les Davidson, it was a no-brainer: he wanted the cat's soft ride, the massive stability and the inherent safety of having two of everything. In WA, it goes with the territory, okay?

Retiring in 2005, it wasn't long before I needed a project to get my head and body into gear. I'd already had a lovely 7.0m Leisurecat for 5 years but decided to sell that, which we did, and then made the call to go ahead with this 8.0m ally cat.

Despite having done a considerable amount of welding through my life, I hadn't done very much on aluminium. I contacted a marine engineer in Perth, Mr Denis Walsh, and after several meetings and much discussion, we decided to build an 8.0 metre by 3.10 metre beam plate aluminium cat.

The boat is 8.0 metres down the centreline, plus a 0.45m bow sprit and a 0.750m Walk-out between the motors, so call it what you will for length.

As Editor PW has mentioned in previous publications, Denis sent a CAD disc over to One Steel, and they cut the patterns out for the project. Eleven sheets of ally arrived 9.0m long by 2.20m wide, along with the extra ally required for the ally trailer I designed and subsequently built.

Like other blokes who have taken on projects like this, I also had a friend, John Robinson, who was very experienced in this field, and he was good enough to give me some basic instruction and advice at various times through the construction of the boat. It was great, because when I'm doing something like this, given my experience using, driving and operating big equipment, I'm very conscious of the various forces and weights that can be applied at various times in difficult situations.

For example, think about the inertia weight on fuel tank mountings when tanks, maybe 2/3rds full in very rough seas, with a capacity of anywhere from 250 litres up to 1,000 litres, moving about in the hulls. One thing is as sure as hell, if I'm 30 odd miles offshore, and it gets nasty out there, the last thing I want to hear is something clicking and clacking under my feet.

John was tremendous to call on for advice and comment about such matters, usually discussed over a quiet phone call at night. I'm a bit of a terror at over-building; I think it's better to have a few percent extra on your side, rather than

the other way around.

I won't bore readers with all the fit-up on various pieces and the tacking process, as the Boatmags team have covered these items in previous publications, but I would like to mention a few items about the construction that readers tackling a DIY project (or one with a pro plate boat builder, for that matter) may find helpful and interesting.

Design & Build Issues.

The boat is made up of 6mm plate on hull bottom and up to the chines, with 5mm sides and 4mm on all the rest.

The rear deck is 500mm above water line depending on load, and load doesn't make much difference. Rear deck line port side, through both sponsons and over the tunnel to deck line starboard side, we have 50mm x 6mm flat bar stringers every 160mm with 60mm intermittent welds to both sides of these stringers.

The rear deck and forward deck have 25mm box floor stringers welded through frames at 150mm centres. Both the forward and rear decks are fully welded in situ using the technique of cutting 19mm openings (with a very hard working hole saw) over the top of the 25mm x 25mm stringers. These holes are then welded up, fusing the ally deck to the stringers - and ground back level. And yes, I did count every one of them - *all 338 of them!*

On fitting the 2 large outer side plates and inner side tunnel plates, and the outer upper smaller outside plates (where they come together on the bows) I didn't like just welding them together from chine line upwards to the top deck line, as it leaves a very sharp pointed bow edge with not much strength in the join.

So I picked up 2 pieces of 22mm rod, each 1.4m long. I tapered 2 sides of each piece of rod from where they sit on the join of the chines at the front, running upwards and out to the 22mm rod width, 750mm up. We positioned them so the side plates met onto the rod section just short of the centre of same, so it left a good weld gap on the 5mm plates to fill and then grind off, forming a great looking, rounded, upper bow edge(s) that has saved a lot of welding and has the strength where needed. (see pics)

Then I backed up on the inside with a piece of 6m x 75mm x 75mm angle, bridging both sheets and fully welding both side plates to it.

All seams - all 22 of them - are fully welded inside and out, the latter by turning boat, milling out the seams, then re-welding and cleaning up.

Interesting point here: When you have sanded the welds back on the unpainted sections of the hulls that are not painted, a great idea to hide the markings from the welding of the inside of the hull, is by orbital sanding with 80grit paper. This leaves a "hammer-tech" appearance, which removes the visual appearance of the swollen internal welding marks and leaves the area with a smooth finish that looks tremendous.

I was a bit worried about the strength of this ally in some parts, including the