



Neil Dunstan:

Ebb & Flow...

Installing My New 'Stress Free' Deck Winch

Once I had made up my mind to buy a Stressfree Midi drum winch for the Trojan, I ordered one from our local Stressfree agent, Reef Marine in Mackay, and it duly arrived about a week later.

The kit included the winch itself plus a directional control relay, the combination up/down switch and 135 amp overload protection relay. The instruction was a pretty poor effort but I guess it was compiled for people with zero electrical knowledge and contained little in the way of specifications for the motor and gearbox (etc) which

Quite a few readers have queried this pic from last month, reflecting on the apparent exposure of the cables and contact points. In fact, Neil was still contemplating whether to Denzo tape the whole thing - including the casing - but he was justifiably concerned about heat build-up and its dissipation (then) when the winch was under load from a deep drop. In the end, he decided to compromise, wrapping just the exposed terminals - see pic on Page 76.

would be pretty handy.

I decided to install the winch close to the bow roller so that the angle of the anchor line coming off the top of the drum would be as steep as possible and this would allow the anchor line to feed off the drum with the weight of the anchor instead of just falling onto the deck which happens when the anchor is parked on the bow roller.

With this in mind I had a good look at the deck area where it would be sited to see if there was enough strength there, and found that the old Trojan was built pretty strongly as it had a three mm deck with a hefty king plank riveted to the underside down the middle.

Luckily, this king plank was wide enough so that when I drilled the mounting holes for the winch frame they were inside the "U" shaped king plank, and did not require any extra reinforcing plates to take the strain of the winch.

As the deck had a slight curve across it, I needed to have some type of spacer underneath it so that the winch base had a solid

area to bolt down to. I decided to use a piece of 9.0mm nylon sheet which would distort enough to allow for the slight curve in the deck and also insulate the stainless steel base from the aluminium deck to stop any corrosion.

I priced a piece of suitable sheet from a plastics supplier and it was quite expensive so I went into one of those Crazy

"... I have to admit having a good quality, locally sourced and assembled winch does provide a lot of peace of mind ..."

Jim-type of shops that sell all sorts of cheap Chinese-made stuff, and bought a nylon cutting board of suitable size for \$4 - a bargain, I thought!

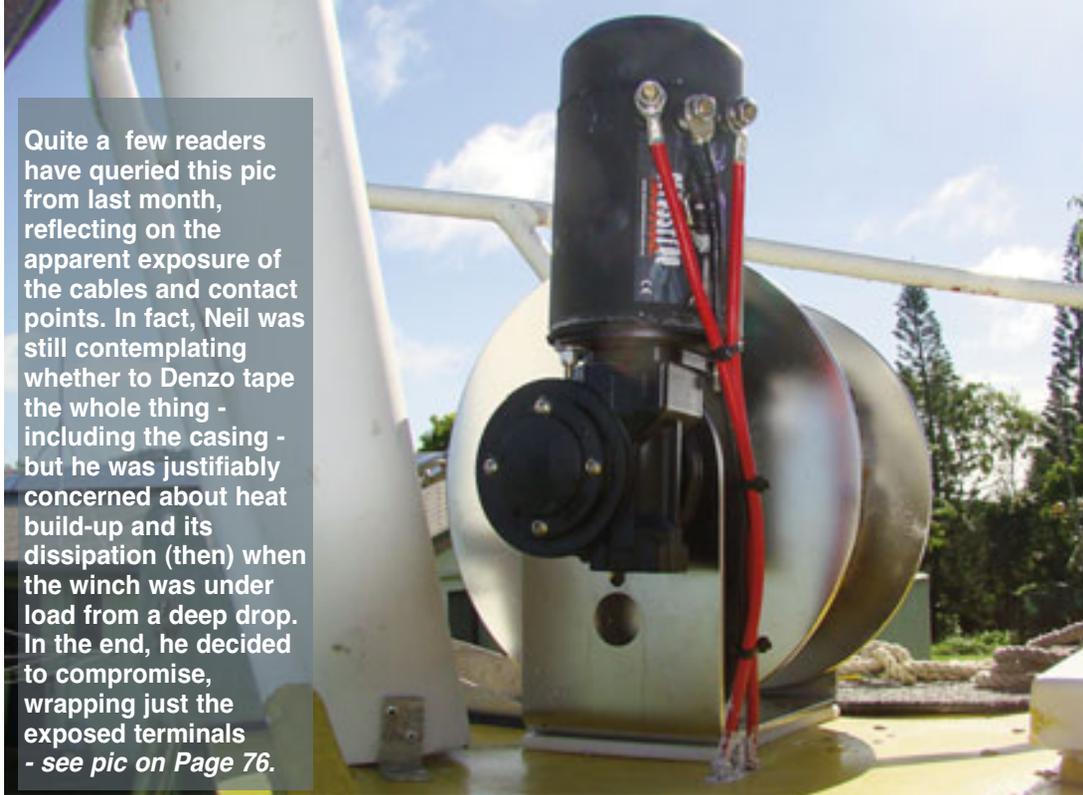
With this cut to size and drilled to suit the mounting

bolts, I then had to drill a few more holes in the vicinity of the rivets that held the king plank in place so that the heads sat inside the holes and did not interfere with the base plate. After bolting it all down with the stainless steel bolts supplied it looked pretty good, and I then set to work to install the switches, relays and wiring.

The first things I needed to acquire were the main cables to carry the heavy current load to the winch motor. I calculated that if the motor was in the full stall condition and was drawing maximum current, it would draw approx. 116 amps, ie 1400 watts divided by 12 volts gives 116 amps and so the cables would need to be able to carry (say) 130 amps.

I also noted that the overload circuit breaker was set at 135 amps, so that would be about right, ie the cables would need to carry my original 130 amps.

There are ways of calculating the cable size for this, but for most



people if they used a cable which was rated as a light battery cable (as used in a car) they would not be far out.

I priced two lengths of suitable battery cable in red and black and decided that it was way too expensive, so I had a look around in the shed to see what I could come up with. I found some industrial cable left over from a job somewhere and checked the current rating and found that it would be quite suitable in that area, so out it came, and was fitted up with connectors on one end ready to install.

I would add here, that the battery type cable I would have used has many fine strands allowing it to flex easily without breaking whilst the industrial cable has only seven strands so is much less flexible. This was deemed to not be a problem as when the cable is installed in the boat it is fixed in position so does not need to have extra flexibility.

Also industrial cable is rated at much higher volts so that the insulation is of a higher standard which I thought would not rub through as easily due to movement. I am mentioning this as low flex industrial cable is a hell of a lot cheaper to buy if you needed to.

When I last made up some heavy duty battery cables for my dual battery system, I used some spare welding cable which I had in the shed, but as it was so thick I had to borrow a hydraulic crimping tool to compress the lugs that were big enough for that cable.

With the industrial cable I used, I was able to buy six lugs to suit for \$1 each and they were compressible using a standard hand type crimping tool. The cables were threaded through various sections of the framework of the boat and held in place using a set of small clips made from scrap alloy plate held in place with pop rivets.

At the same time I also threaded the smaller control cables through with them using normal auto tinned hook up wire. Once this was done, all that was needed was to install the control switch/ circuit breaker unit in the dash and the directional solenoid unit under the front deck and hook everything up. The cables were then tidied up at the battery end and the connections to the battery were



installed.

I decided to connect these cables direct to the battery as the normal battery isolator/ selector switch does not have terminals long enough to accommodate all the various battery cables as well as the extras from the winch.

I use a dedicated starting battery for the outboard which has a gel type electrolyte for zero maintenance; the house battery is a much larger deep cycle unit that doubles as a starting battery if needed. I monitor the battery voltage and switch the charging circuit around to keep them both charged but most new boats are available with a voltage sensitive relay system which charges both batteries automatically.

The next problem I found was that I needed to connect the winch cables to the battery with the large lugs I had fitted, but the battery had a tapered post for standard battery lugs. I found some standard type battery lugs that had a clamp type fitting which allowed me to just bare-back the cable, slip the end under the clamps and tighten them up - easy fixed. I decided to give it a rest for the day as I was a bit stiff and sore after cramming my body up into all those small spaces that boats have whilst installing the cables, etc.

The next day I livened up all the circuits and hit the up switch and by some miracle, everything worked and the drum even rotated the right way! In the event that the drum is going the wrong way it is easily reversed

by swapping over the control cables which are connected to the back of the up/ down switch by slide-on connectors.

I managed to wind nearly eighty metres of twelve m.m. silver rope plus five metres of chain onto the drum. However I had to take the various D shackles off the rope and chain and replace them with split chain links to stop any interference on the deck as the last bit of the chain came up.

So all in all it was a fairly easy job to install and I spent less than twenty dollars on bits and pieces for the fit-up by using stuff I had in the shed, so don't ever throw any bits and pieces out, keep them in the shed and save yourself a bundle.

I am about to take her out next Thursday on a trip down to the Cape so I will soon find out how she goes. I think I have installed the right unit for my boat but I would suggest that anyone contemplating fitting a winch to their boat should have a look on the web at some of the Chinese units available at around half the price of Australian made ones.

Providing they are sold by an Australian supplier and have a decent warranty, the ones I have looked at seem to be a reasonable sort of bet, but I have to admit having a good quality, locally sourced and assembled winch does provide a lot of peace of mind.

Neil Dunstan.

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TBM