

On The Decks



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As an engineer it's great when you're in air-conditioned comfort in the control room, the engine room is gleaming and all is well. Then a reality check suddenly hits; the shore power kW meter starts flickering up and down, you hear the anchor windlass being adjusted, a bit of chain comes in and then, with just a few seconds too much strain, it's timed perfectly as the AC compressor kicks in and you've lost shore power. You're reminded about deck issues and all that entails. Probably more than you have to worry about inside: tenders, davits, passerelle's forepeak etc. You can always tell an engineer, with a V-shaped tanned neck and forearms from the white overalls. It's on deck and back to work.

Joe Hodgson
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Engineers' Comments



A couple of years ago I worked on a 50-m CRN motor yacht, chartering heavily in the Med & Caribbean. Like many other yachts we crossed the Atlantic twice a year and we were all quite experienced in the preparation of a crossing. We had encountered some very heavy weather before, but we had never had serious problems.

We came from America and were heading for Gibraltar, and with only 24 hours to go when we drove into some bad weather. The weather worsened and the green water came over the bridge. We drove straight into the waves, but besides a single bilge alarm everything was fine.

The bilge alarm was off the forepeak, so I activated the pneumatic bilge pump from the control room; however, the alarm light stayed on. The weather was too rough to go outside, so I informed the captain and we decided to leave it as it was. But soon we realised the bow came deeper into the water by every wave we took, so the captain decided that we would stop the boat and inspect the fore peak.

The vessel slowed down and we walked

over to the fore deck. Although we had no forward movement anymore, the big waves still smashed on deck. My second engineer opened the fore peak hatch and I jumped into it, standing straight away up to my middle in water; my second closed the hatch above me. We removed the power to the area before, so with my little Maglite I tried to find the leak; suddenly we plunged into a gap between two big waves. My stomach came up like I was in a roller coaster and the forepeak transformed into one giant washing machine where the water was going everywhere. I lost grip, dropped my Maglite and I didn't know anymore what was up and what was down.

In complete darkness I desperately tried to find something to hold onto while the washing machine kept swirling the water around. Luckily we had a moment of calm water outside and the water calmed down inside as well. I could feel again what was up, so I could take a gulp of air and picked up the Maglite, which was clearly visible on the floor plates. I quickly cleaned the strainer of the pneumatic bilge pump that

was blocked by a rag (which must have been floating around in the water before) when another wave came over. Better prepared this time I held on for my life and I could see where the water was coming from.

Although we thought we were well prepared for the crossing, we completely forgot to properly close the spurling pipe (the pipe going down to the anchor chain locker, where the anchor chain runs through). Through this pipe we flooded the forepeak completely and I almost lost my life because of this. It is therefore of utmost importance to check every gap, pipe, hatch, door and everything else where water can enter inside the vessel, as heavy weather may be so severe that you can't do anything about it anymore until it's too late.

A good way to test this is from the outside using a charged fire hose, as big waves have a similar pressure as a fire hose. I know the boat gets all salty, but it is better than risking, or even losing, your life and/or vessel in bad weather.

Chief Engineer Edgar van Eden

I experienced a similar incident heading towards St Maarten with bad weather and the forepeak filling up from the same location. The bilge pump, being a stand-alone, had picked up some blue masking tape, which filled the strainer. We were able to stop and clear the blockage, nothing like the nightmare scenario you had.

Joe

The following is only a concern after sailing with a Hydraulic Davit system that uses clutch plates within the breaking system. Upon inspection of these plates we have found negligible wear on these plates and the thickness of the pads has also measured within tolerance. However, the spring set housed in the upper plates should also have their free-length measured – the maximum tolerance of which should be checked with the manufacturer, as even though it has been difficult to prove these could present a weakness within the system, the manufacturer eventually agreed to replace all of the spring sets upon submission of our results from the measurement of the springs. This is an unacceptable risk within the system when we can simply keep a track on the free-length of the springs during the same planned maintenance scheme laid down for the clutch plates.

A small point: it has been noticed that the swivel on the anchor is not being cleaned correctly prior to re-painting; this can pre-

vent the anchor from turning as designed and allow for tangle when hoisting, and unnecessary damage to the hawse pipe.

Michael Trew

Well, you know my theory: that electric is better than hydraulic ... the best davits I have used are made by Akerboom (put on many Feadships). These are mfg. with two three-phase motors to lift and move the walking beams, with basically a motor and a cable drum on each beam, quite simple and very reliable. The addition of a drive shaft and universal joints allows the motor to be placed inboard away from the cable drum. The control system I had at the time was a simple e-prompt, giving a counter that determined the out reach and the centring. This 'of course' would play up but, by centring manually, it was easy to over come until you have time to reset the system, which on the model I had was just to remove a jumper and reset the power (all in the book). Now these davits, I am sure, have been redesigned since the time I used them. I must say that the equipment made by Akerboom is some of the best in the industry. This includes not only their davits, but also their passerelles, shaft seals and garage doors. With all the work they have done for Feadship and the really good people that work for Akerboom I believe that they will always be one of the best.

Frank Stockwell

I was the engineer on a busy 42-m charter boat in the Caribbean in the mid '80s and, as usual, was called out at all hours. This particular morning at about 6 am the Captain called to say there was no power on the stbd davit. I went to check the breaker in the engine room, which was fine, so I then looked in the control box also located in the engine room. It was then that I did the old trick of touching in the contactor briefly with a screwdriver to see if power was there. It was. In that split second the motor on the davit span, the handle that had been left in place also span. It shot out, bounced on the teak deck and set off on a trajectory that clipped a day worker's back en-route and flew into the boat deck of a larger yacht four berths to our starboard. The poor guy was rushed to hospital with massive bruising to his lower back and was lucky not to have destroyed his internal organs or smashed his spine.

The handle weighed several kilos and was the Z-shaped type. Although the handle should not have been left in the davit, I assumed full responsibility and happily the day worker regained full fitness. As you can imagine I'm very fussy about that kind of thing now-a-days.

Anonymous

It sounds like the local control had failed; this is another frightening scenario being in

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the engine room and isolated from the crew outside, but having some control over events as well. It's certainly worth the pause before activating control circuits.

Joe

Deck gear – keep the mud off your face. We've all been there: the guests have had a great day and now it's time to put the toys away, up anchor and proceed to the night anchorage with the guests off to a restaurant or night-club. Then the very fancy hydraulic sequencing crane, or the anchor windlass doesn't work on the push button umbilical cord. S**t!

One of the most worthwhile procedures I've done in the past is to have previously labelled the functions of the contactors in the control panel. The remote push buttons are usually on a low voltage 24 V servo circuit controlling the line voltage relay contactors or hydraulic servo valves in the control distribution box (find this box!). Each separate function has its own contactor or servo coil on the hydraulic valves. These functions can be manually push operated with an insulated push tool (screw driver).

Each function can be easily identified when things are working well AND before the guests are aboard. With good communication have a helper push all buttons on the remote and label all the contactors or servo valves as to how they function (up- down- left- right- etc). Get the label machine out or good tape, or make directions on a computer print-out.

When the s**t hits the fan, just push the right buttons.

Richard Weston

You're absolutely right, there's nothing more stressful than trying to fix a davit control, with a tender standing off waiting to be picked up. There always seems to be a favourite davit, which gets used more and more hence the umbilical cord is wound and unwound. It's certainly worth going round the vessel and making sure you have plenty of spare micro switches and multi-core cable for the various foot and hand control deck equipment.

Joe

Deck equipment; where do I start? We have eight tenders on board, so to get them off we have two huge deck cranes, not the regular yacht davits. Each crane has the lifting capacity of 30,000 lb, so they have their own maintenance schedule. Of course with them being in this kind of environment we have a strict weekly and monthly routine to keep them in good operating condition. We operate them weekly, as well as fitting inspections, greasing and any corrosion protection we see necessary.

As I have said before, scheduled maintenance and a good routine help keep it all together. My assistant has a scheduled maintenance procedure he sticks to, which keeps our breakdowns to a minimum; being out in the middle of nowhere, chartering like we do, we cannot afford to get complacent. So good routines and schedules are important no

matter how big, small or trivial they might seem; they save huge amounts of money, time and heartache for engineers, captains and owners.

One quick story for you as well: we were recently in the Cook Island, where the anchorages are not very good, very extreme in some places, and were anchored off one of the atolls in about 100 ft of water, with about 400–500 ft of chain out during the day. We dragged a little.

Seeing as there was nothing around, only deep water, we were not too concerned. Then it came time to haul anchor and move on; we began the process, the deck crew engaged the windlass and started to haul anchor. However, during the dragging the anchor had slid off the coral shelf and was basically hanging straight down. So if you do some rough calculations we had 400–500 ft of one-inch (approx) link chain and a 1,000-lb anchor hanging down ... a lot of weight! More than the windlass hydraulics were rated for! So the captain, 1st mate and I got together and threw a number of ideas around (everything from dive lift bags). We even attempted to run back into shallow waters, which the seabed would not co-operate with. In the end we used our forward deck crane, a diver, the windlass, heavy lifting equipment and about eight of our crew. The whole process took about 1½ hours of lifting 50 ft of chain each time. All was done very cautiously, very safely and very successfully.

Chief Engineer Scotty Angelo
M/Y *Pangaea*

Sounds like quite a process. I remember being anchored off Santorini, Greece, with a collection of other white boats when a dry comment came over the VHF: "Why have you got the anchor ball up?" A semi confused answer from our captain: "We are at anchor". In fact the same had happened; we had drifted, the anchor and chain had shifted and in the deep water was now straight up and down.

Joe

As I sat in the control room reading the latest *The Yacht Report* the lights flickered momentarily and the generator bogged down – once, twice, three times in as many seconds. "Oh no – it's happening again", I thought, as the radio next to me crackled into life: "er...Piers we seem to have a problem with the windlass ..." The 'problem' was trying to drag 1,100 tonnes of yacht against wind and current, up to the anchor on an 11-Kw windlass whilst pressing the button like a space invaders game. Of course, the breaker had popped as the straining electrics tried to cope with the unreasonable loads placed on them – sound familiar?

Windlasses, winches, davits, passerelles, boarding ladders etc – all engineers I know have had problems of some sort or another caused by inappropriate finger-pushing with these, which cause breakers to pop, computers to go berserk, paintwork to be damaged and tempers to fray. Most of this equipment is built very strongly and often has complicated built-in safety features (time out shutdowns, overload trips, power off brake applications, overload slip clutches etc).

Some deck machinery, as 'essential equipment', is also built to tightly controlled Class Society or MCA regulations to ensure it will function in an emergency. Due to the nature of the forces and weights this equipment handles, it is often wired or plumbed into the vessel in a complex manner and therefore its operation can affect other systems in the vessel.

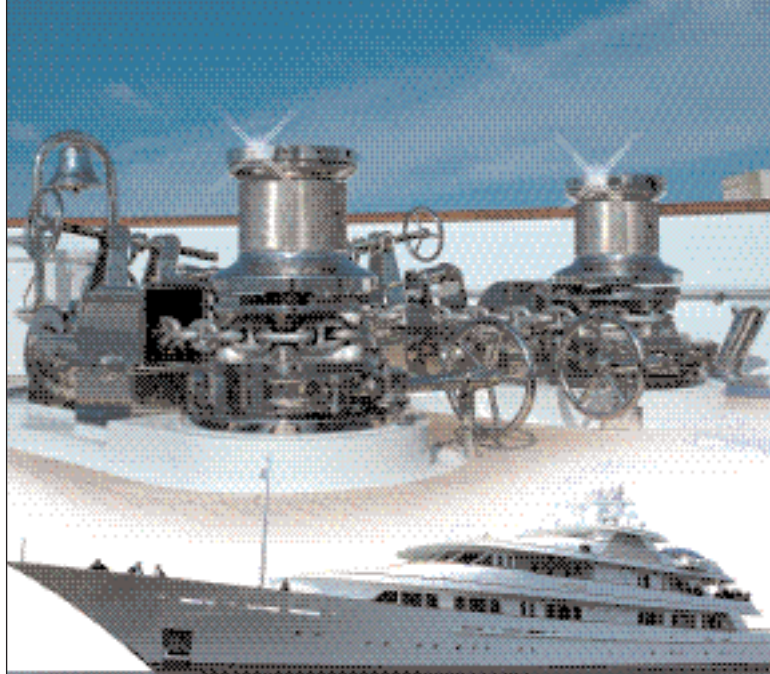
So why do so many problems occur with these pieces of equipment? Experience (after much repair work!) has taught me it's the same reason that I cannot back a guest-laden tender to a swim platform in a choppy sea – it's because no one has explained to the operators (or their commanders) how to do it properly. There is very rarely something intrinsically wrong with the equipment itself.

As engineers we generally know inside out, upside down, backwards and forward the basic principles of the equipment – so its correct operation is usually obvious to us – but the same is often not true for the person regularly using it. Especially if he/she is a new deckhand simply handed the controls and told to push the buttons. It took me quite a while to realise this, being an engineer.

I found the most effective way of resolving the root problem was to give each operator (and their commanders!) a brief explanation (preferably accompanied by a short 'deck equipment use' manual) on the preferred method of operation – ideally accompanied by reasons why it should be used this way. It is usually very interesting to note the lack of understanding of most crew on the limitations of the equipment – and once explained it becomes obvious to everyone why a small electric motor cannot drag a very large yacht against wind and current!

To write the manual and induct the crew (often including the captain!) take a little time – and can sometimes be met with a little resistance. However, once done, deck equipment problems will all but disappear – and I can relax and read a copy of *The Yacht Report* whilst others haul anchor!

Piers Flood



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