

Software development is in the Doldrums

29 June 2018 · agile, questioning, system, tools

“Don’t get off the boat.”

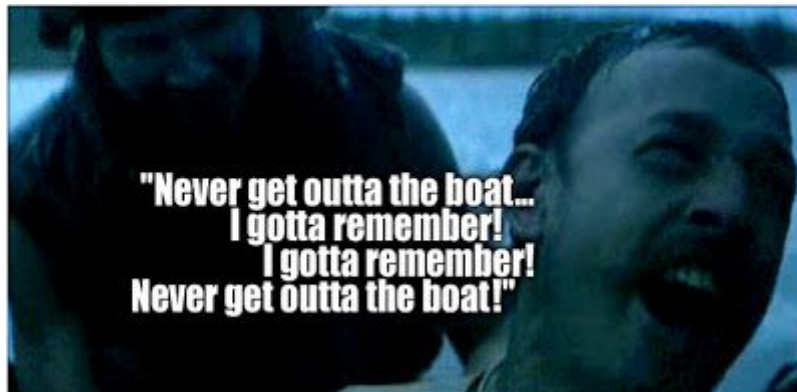
“Seriously, never get off the boat,” The instructor said, leaning forward and looking at each of us in turn.

“But surely if it’s sinking...” We reply, somewhat confused and slightly incredulous. We’ve seen Titanic, we think to ourselves, we know how this sea survival stuff works...

“OK” He concedes, If things get really bad, “Get on the life raft if you can step-up from the boat to the life raft”.

“But, But... the yacht is like 37ft long, Do we want to wait until that whole boat is lower than the life-raft? When less than 1ft of the yacht is above the surface? Meanwhile all the time the life raft is just there... floating happily alongside.”

“Pretty much, yes,” he said nodding.



The movie Apocalypse Now speaks the truth.

That was about 15 years ago. Not much has changed since. The reasons are manifold. Firstly, the yacht is a decent shelter. The thin plastic of a legal minimum life-raft isn't going to protect you from the debris and bad weather the sea can throw at you.

The sail-yacht costs hundreds of thousands of pounds, it has layers of redundancy and a spare everything. The life raft is a legally mandated glorified inflatable bag. Take your choice.

When the boatyard builds a yacht, it's not like they are developing an app. For example, there are very few single points of failure on a sail-yacht. And for an experienced sailor, a work-around can usually be found to the few that do exist. A sailor can usually test using those same workarounds/hooks to see what is actually broken.

For example, has the engine failed? Put up the mainsail while you investigate. Has the mainsail torn? Use the Genoa etc.

Batteries flat? No worries the engine should start, that has a separate battery. Run the engine, and that should charge all the batteries.

Helm not working? Control the rudder directly from the emergency tiller/winch handle. If that doesn't work maybe you've managed to break the rudder itself, you can deploy a drogue and use that to direct you. (A drogue is a sort of cross between a bucket and a net that will add drag to the side of the boat it's placed on.)

On a recent sailing holiday, the first after a few years, I noticed this robustness once again. I also saw the places where the usual robustness was absent. The areas where there is no redundancy and a reasonable chance of failure tend to be those added in the last couple of decades.

The GPS/Chart plotter for example. When you start to sail, you learn the old-fashioned way. No GPS, just charts, hand-bearing compass etc. I remember uttering more than a few remarks about how the communists seem to have won the cold war, at least in the arena of sailing navigation.

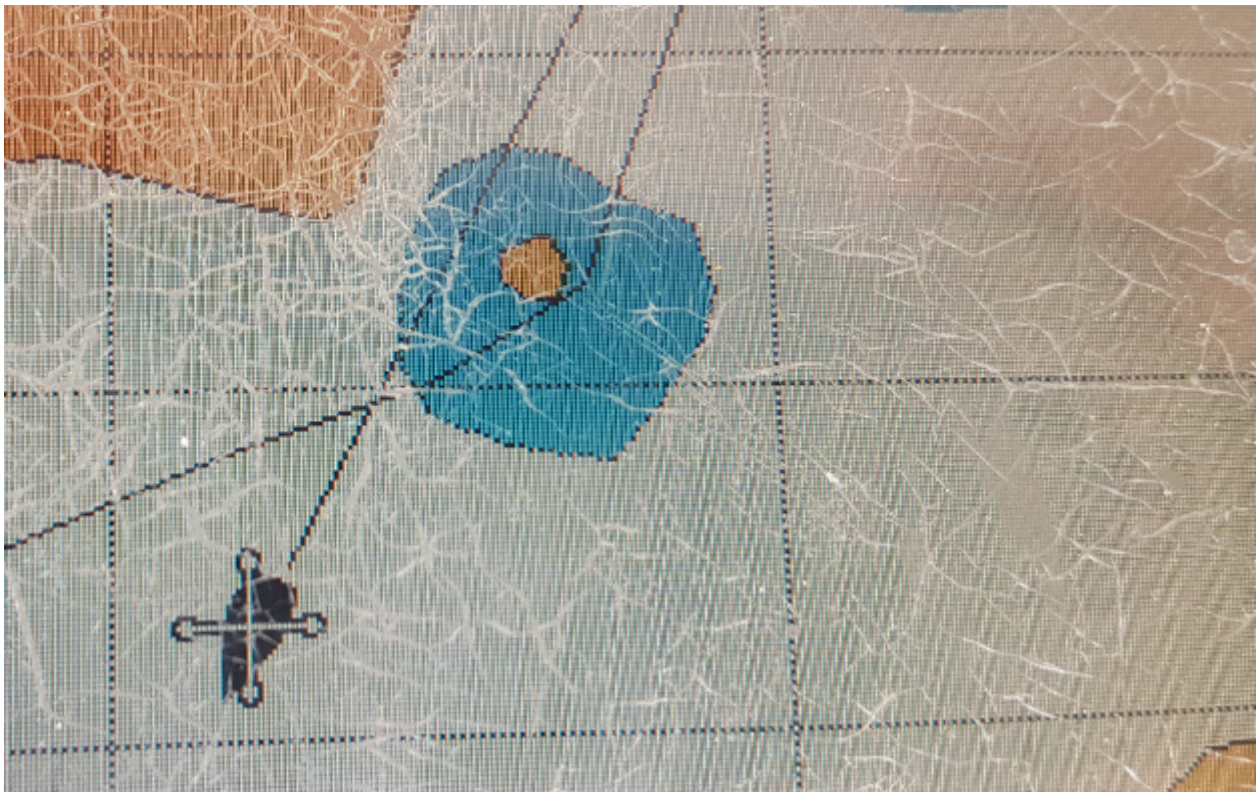


Me teaching the crew to second guess the machines.

But I was wrong. You need to use the old methods even when you have a GPS Chart plotter installed and running. Why? Because chart plotters are like much of software we use today.

That is, they are a bit rubbish and are not geared to work in a way that makes your life much easier.

As you've probably already noticed, they are a single point of failure. Chart plotters are a dependent system, requiring the battery to have juice before they work at all. They are also prone to inaccuracy. For example, the GPS may assign you coordinates quite a way from where you are. Take a look at this plot:



That plot was off by several hundred yards.

I was on the same (East) side of the island on both occasions, but that's not what the plotter had decided. Imagine [foolishly] relying on that at night.

GPS Co-ordinates can be inaccurate. And this inaccuracy can be estimated by the device. But does the display indicate this? Nope, a handy circle indicating possible location range is not displayed.

What's the backup plan? Its either have your own handheld GPS (I do) or revert to tried and tested nautical navigation techniques (I also do). There's not much to jury-rig on a marine GPS system.

Modern software isn't rigged to allow things to be tested, modified or fixed. I can check the fuel, oil and coolant levels on the diesel engine before departure. I can check for oil leaks or a failure in the sea-water cooling. For the chart plotter, even after over 20 years in the software

development business, I've had to resort to rebooting the GPS chart plotter repeatedly until it works.

With Investigating Software, I help make complicated systems easier and cheaper to build, test and deploy. Adding testability in from the start can dramatically reduce the cost of all forms of testing and fixing, be they highly automated or manually intensive. We can make better software, quickly and more cheaply if we use the techniques good mariners have used for hundreds of years.