

The Occasional ET's toolkit

Every boat should have a kit to take care of the electronics in addition to the standard mechanical tool sets. Here's our suggestion for such a kit. Left out of this list are items which every boat should already have, such as:

- Shore power cord and adapter.
- Cell phone with camera.
- Hand bearing compass (to check your other 2 compasses).

This list is ordered from most vital to most fun. As you go down the list, at some point you'll think 'too much'. This will define your toolkit.

Tools

Tool Usage
 Voltmeter Vital for all forms of troubleshooting. All boats with a battery should have one.
[link](#)

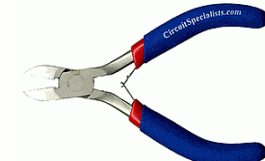
Image



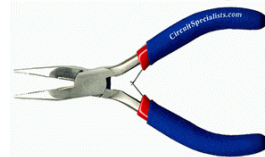
LGS [link](#) Ockam's standard screwdriver



Other tools These are small tools which usually aren't included in your main toolbox.
 4" wire cutter [link](#)



Needle nose pliers [link](#)



Wire stripper [link](#)



6" crescent wrench [link](#)



Combo screwdriver with Philips and flat blade bits.
[link](#)



Inspection mirror [link](#)



Retrieval tool [link](#)



Break-off utility knife [link](#)

Always sharp when you need it. Safer to use than that dull thing in your toolbox.



Marker [link](#)

Black indelible marker for identifying connections.



Flashlight

Handy to see in those dark corners where electronics tend to be installed.



Electrical tape

White electrical tape [link](#)
This is the basic tape used to cover bare wires and connections. However, it does not provide a waterproof covering. Buy white in preference to black because you can write on it.



Self-vulcanizing rubber tape [link](#)
This tape fuses together to provide a waterproof cover. It sticks to itself, creating a 'boot' around the connection that has to be cut away.



Heat shrink tubing [link](#)
Provides a clean finish to wire ends.



Baggies

Keep a few of these handy to hold all the little parts together during repair.



Wipes

A few clean rags or industrial wipes should be kept in a baggie in the toolkit to clean and dry contacts or surfaces about to be taped.



Wet notepad [link](#)

Keep your calibrations and other instrument settings safe by writing them down. "Wet notes" are made of Tyvek which doesn't deteriorate in a humid environment.



Alcohol wipes
[link](#)

Keep a few of these in your kit to clean up grungy surfaces before soldering or taping.



Silicone grease
[link](#)

Use this to fill BNC connectors before mating for improved waterproofing.



Cable ties
& Bases
[link](#)

Dress cables for improved appearance and to keep them out of danger. Do not rely on sticky-back bases – they never hold. Mount with screws.



Soldering iron & solder

Pick one that best suits your needs

Propane soldering iron [link](#)
Works in any condition, and is more reliable than battery power. But it is hard on its tips.



Battery powered iron [link](#)
Easier on its tip than the propane model, but is held hostage to the state of its battery.



12-volt soldering iron [link](#)
This is the preferred iron for onboard electronics repair.



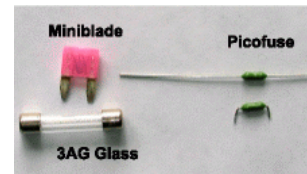
Consumables

Item
Spare fuses
[link](#)

Usage
Fuses only blow in the hours before an important race. If there's any consumable you should carry, these should be it. The Ockam system uses the following types:

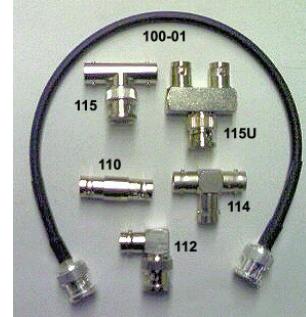
- 0.12 Picofuse DF212P Masthead interface
- 0.25 Picofuse DF225P Black interfaces
- 0.50 Picofuse DF250P Gray interfaces
- 4A 3AG Glass DF312 001 processor
- 4A Miniblade DF340B T1 processor
- 10A Picofuse DF410P T1 & 001 ground fault

Image



20 ft Coax cable & Tee [link](#)

Carrying a 20 foot coax and FMF tee connector (#115) allows you to replace a broken, crushed, shorted or corroded cable when the need arises – like during a race.



Paddle repair kit [link](#)

Replaces the broken paddle on your boatspeed transducer.



'213' board [link](#)

If you use a B&G masthead, this would be a good addition to your sensor spares. Refurbished units are available for considerably less cost (see link).



6-conductor cable [link](#)

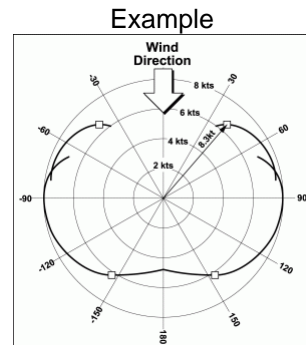
Used to replace damaged mast or power distribution cable should the need arise.



Software & data

Tool
Polars on mylar

Usage
Used to manually determine optimum courses off a chart.



Shear-ometer

This is a simple line with woolies attached. You hoist it up a halyard to determine how much shear is occurring ([link to shear and its importance](#)). It is also used to zero out your masthead sensor.

Picture needed

Laptop

In addition to its main job as onboard tactical workhorse, a computer can be used to contain documentation and run test software.

Interface:
RS232 [link](#)
LANbridge [link](#)



Thumb drive
or CD
containing:

Ockam System Manual
<http://ockam.com/docs/sysman.pdf>

Other manuals. All possible onboard gear should have its manual stored on your computer where you can get at it when needed. Most can be downloaded off the internet – a good winter project.

Terminal program – not all pc's come with one now.
<http://www.brothersoft.com/hyperterminal-private-edition-71955.html>

Data logger - produces new-style logs of system data.
<http://www.ockam.com/docs/DataLogger.zip>

DeWiggler Calibration tool ([What's this?](#))
<http://ockam.com/dewiggler/DeWigglerAnalystSetup.exe>