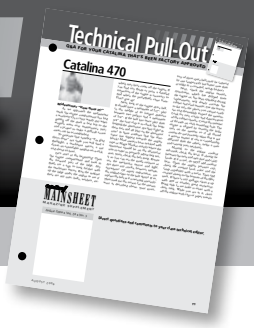
Technical Pull-Out

Q&A FOR YOUR CATALINA THAT'S BEEN FACTORY APPROVED FOR ACCURACY



Catalina 470

C470 Association Technical Editor
Joe Rocchio
Onward - Hull #126
jjr@onward.ws

New C470 Association Technical Editor Joe Rocchio lives aboard Onward *C470-126 and cruises full time along the East Coast between Maine and the Bahamas. He started the wandering life upon retirement in 2007 as Deputy Director of the US Army Research Laboratory. He has more than 46 years of sailing experience, mostly in the Chesapeake.*

The Catalina C470 and the Single-handed Sailor, Part 1 of 2

I took delivery of *Onward* C470-126 in August 2003 with the intention of living aboard until retirement and then cruising full time. After 32 years of marriage I found myself mate-less and I made the commitment to become proficient at sailing single-handed so that I would never be a prisoner of the pier due to need for crew. This initiated an extensive drive to prepare both *Onward* and myself for long-term single-handing. The hard part was and still is the "myself" part.

I just completed my fifth annual "cycle" of wanderings from Annapolis to New England, the Bahamas, and back. For the overwhelming majority of the time and distance I was single-handing and *Onward* was a dream to sail.

I believe there are two key areas of preparation and execution for safe and successful single-handing: (1) Boat/Equipment and (2) Procedures and Captain. This Tech Note is in two parts; the second part will cover minor equipment, navigation, safety, procedures and the mind game. Each Captain needs to make the decisions that are right for her/him.

BOAT & EQUIPMENT

It helps a lot to start out with a strong, well built, well laid out, stable vessel! Gerry Douglas has never admitted to me but I believe he must have had single-handing in mind when he designed the C470. Over-complexity, often the bête noir of reliability, was avoided. The C470 often makes up for flaws in the performance of its Captain.

Sails and Furling. *Onward* has the in-mast furling main and a furling 135 % genoa. While this combination gives up some performance, it's more than made up for by allowing sailing in conditions that would be avoided if it required

Catalina MAINSHEET
MAGAZINE SUPPLEMENT

Fall 2012 • Vol. 30 • No. 3

Publisher/Editor
Jim Holder

Associate Editor
Carol VandenBerg

830 Willow Lake
Evans, GA
Phone (706) 651-0587
Fax (706) 651-0533
cv.jholder@mainsheet.net

Technical Editor
Gerry Douglas
Designer & Engineer
Catalina Yachts
(818) 884-7700
gerard@catalinayachts.com

Catalina Mainsheet is published quarterly by Eagle Ltd., Jim Holder, 830 Willow Lake, Evans, GA 30809 Phone (706) 651-0587 & Fax (706) 651-0533 • cv.jholder@mainsheet.net.
For advertising information, contact Jim Holder, Eagle Ltd. For subscription information see page 56.
Technical articles are the opinion of the authors and not necessarily the advice of Catalina Yachts, Catalina Mainsheet or the National Associations.

Direct questions and comments to your class technical editor.

Catalina 470
Joe Racchio
jjr@onward.ws

Catalina Morgan 440
Mike Simpson
mike@3-sheets.com

Catalina 42
Gene Fuller
gefuller42@comcast.net

Catalina 400
Brian Mistrot
brian@pbmfirm.com
Olav Pederson
olavnp@gmail.com

Catalina 380/387/390
380/390
Tim Porter
serendipity380@gmail.com
387
Tom Brantigan
Tbrantigan@verizon.net

Catalina 38
Steve Smolinske
ssmolinske@
rainierrubber.com

Catalina 36/375
Pre MK II Hulls
Steve Frost
sfrost@
corpairtech.com
MK II Hulls
Larry Brandt
LCBrandt@
coastpilot.com
C375
Francois Desrochers
Ontario, Canada
meteor64@yahoo.ca

Catalina 350
Bill Templeton
pbtemp6816@verizon.net

Catalina 34
John M. Nixon
jmnpe@flash.net

Catalina 320
Chris Burti
clburti@gmail.com

Catalina 310
Bill Lewis
wol1@yahoo.com

Catalina 30/309
Max Munger
catalina30@
verizon.net

Catalina 28
Dick Barnes
dickbarnes@
earthlink.net

Catalina 27/270
C27
Judy Blumhorst
judy@hydesailsUSA.com
C270
Phil Agur
pjagur@sbcglobal.net

Catalina 26
Art Harden
artstree@aol.com

Catalina 25/250/Capri 25
C25
Paul Zell
heidenzell@
sbcglobal.net
C250
Randy Kolb
kolbrp@hotmail.com
Capri 25
Open

Catalina 22
Technical Editor-Cruising
Louis Plaisance
LouisPlaisance@
hotmail.com

Catalina 18
Erik Van Renselaar
esvanr@sbcglobal.net

Coronado 15
Paul Vance
drpaulvance@
comcast.net


Furling

sail handling on deck. If I was starting over today, in-boom furling with a larger mainsail and battened roach would deserve a close look.

Genoa Furling. I have run my genoa furling line across the portside deck at the shrouds, up onto the port companionway deck and through a sheave in the traveler base to a rope clutch that replaced the clam cleat previously used for the port end of the mainsheet. The line crosses the side deck below toe level so it will not trip one up and the natural tendency to grab the shrouds as one passes also enhances safety. I bring the furling line to my starboard electric winch (port winch used as a turning block) for rapid and effortless furling under all conditions.

Inner Forestay and Staysail. My mast was rigged to accept an inner forestay and running backstays. During construction, the factory reinforced the foredeck for the inner forestay. Over time, experience led to the decision that the added complexity and wear of moving the genoa through the slot between the two forestays with the potential need to go out on deck to fix a stuck sail is too high a price to pay for the benefit derived. So, a single headsail remains. Under winds of up to 25 knots that allow a reach of any type, *Onward* sails happily under genoa alone without the need to reef – just sucking up gusts for added speed.

Mainsheet. *Onward's* mainsheet was converted to single-ended and the original starboard clam cleat was replaced with a rope clutch. Under sail, the clutch is open and the mainsheet is led onto the starboard electric winch where it can be trimmed with the winch, eased, or rapidly set free under adverse conditions.

Snubber. A size 6 winch was installed just forward of the starboard electric winch and toward the centerline. This serves as a snubber when a line needs to be eased and the winch is in use.

Rope Clutches. All running lines except the genoa sheets run through rope clutches as they provide rapid and secure control of lines with easily visible verification.

Electric Winch. The standard electric No. 44 dual-speed winch on the starboard bridge deck does all the hard work of line tensioning, furling and unfurling (and dinghy hoisting). A second electric winch on the port side would be convenient and provide nice redundancy; however, the manual winch can be used as a turning block to enable the starboard electric winch to handle any port side line. Electric versions of the No. 66 genoa winches would be nice to have, too. But for less than 2% of the cost, a 28-V Milwaukee ½" battery-operated electric drill with 90° chuck and a Winchbit adapter do the job well if not as elegantly.


Snubber

Whisker Pole. Onward does not carry a whisker pole because the need to go onto the foredeck and the risks from handling the pole and large sail loads were deemed to high.

Boom Brake. One of the potentially most destructive problems one can encounter is an unintentional jibe. The boom brake is very effective with proper attention to adjustment of line tension and friction. An added bonus is quieting boom noise while in a rolly anchorage.

Bow Thruster. *Onward* is equipped with a bow thruster that is very useful under the right circumstances – for finesse versus brute strength. The general rule is: never put the boat in a condition where the thruster is needed to handle it. It does not take much more than a 10-knot crosswind to overpower a thruster.

Extra Fuel Tank. A 55-gal. fuel tank replaced the equivalent port midships water tank. This adds about 250+ nautical miles of motoring range.

Fuel Manifold and Filter System. A custom fuel manifold enables fuel to be transferred from any of the three tanks. Either of the two Raycor filter/water separators can be isolated and the water bowl drained and/or the filter element changed while the engine is running. Research revealed that the average size of fine particles from sludge in the fuel tanks is about 10 microns. I discontinued use of the recommended 20-micron filters in favor of a 2-micron (same as the final filter on the 4JH3TE) filters that are changed regularly with their performance monitored via a vacuum gauge. An electric transfer pump can be switched into line so fuel can be moved about or filtered without using the engine.

Electrical Power. Plenty of electrical power and redundancy is in place as there is enough to worry about aboard. *Onward* has a Fischer-Panda 8-kw diesel generator, two 85-watt photocell arrays (a third 135-watt array will likely be added this year) with a BlueSky controller as well as an AirX wind generator. A Link 2000 provides power management with a PathMaker battery combiner. There are four separate battery banks: house bank; engine starter/backup; bow thruster and LectraSan; and generator starting battery. All but the latter are charged via the combiner. Trojan T1275 12-V golf cart batteries replaced the original lead-acid batteries, for higher reliability, higher energy density, and easier to handle form factor at a lower cost.

Lighting. All running lights were replaced with factory encapsulated

LEDs. In spite of checking the original lights regularly, there was a lighting failure on almost 100% of nighttime offshore passages. LEDs bring greater brightness, reliability, and a big benefit in reduced power consumption. An automatic LED masthead anchor light/tricolor/strobe is a nice safety factor as I spend several hundred nights a year on an anchor or mooring. As LED lights with the right characteristics and form factors came on the market, almost all lights aboard were replaced with LEDs. One of the benefits is that a stray LED left on and unnoticed will not threaten power resources as an incandescent bulb would. Floodlights for the foredeck are an important safety feature for problems at night (soon to be replaced with an LED). LED headlamps are used when it is necessary to be on deck or in the cockpit at night.

Emergency Bilge Pump. Not long after commencing cruising full time, I learned of a vessel that sank after taking on water unnoticed by the crew until too late. Soon thereafter, a platform was installed 6" above the bottom of the bilge section just forward of the galley sink. A 3700 gal/hr electric pump was installed on it with a separate float switch and a very loud auto alarm horn. It is powered from the bow thruster battery bank that is located well above the waterline. If the main electric bilge pump should fail or be overwhelmed, the secondary system will provide an alert along with additional time to deal with the problem.

Emergency Leak Plugs. A wide selection of tapered wooden plugs are centrally located where they can be found quickly and in the dark to apply to a leaking through hull, hose or small hull puncture. This emergency locker also holds one of the Forespar TruPlug large deformable polymer plugs. Several sheets of 1.5" dense closed-cell foam are also centrally located should it become necessary to seal an odd-shaped hole. While offshore, all but absolutely needed through-hull valves are kept closed.

Anchoring. A reliable anchoring system is a must for peace of mind and a chance to rest. The windlass is remotely operated from the helm station, which makes deployment and recovery easy without having to go forward. A divider in the chain locker combined with a chain chute and chain guide helps the chain to run smoothly without supervision. The primary and secondary anchors each have about 300' of 5/16" HT chain. The primary anchor is a 66-lb. Manson Supreme – a selection made at the suggestion of Steve Floyd former owner of *Cygnus* C470-78. This was fantastic advice with near flawless performance in hundreds of uses. The secondary anchor is a Bruce and a third, Fortress FX37, is carried on the port stern side deck ready to deploy as a stern or emergency anchor. A reel of flat nylon ribbon cable provides an easily stowed and deployed rode for this anchor. Other key pieces of equipment are: multiple chain hooks rigged in the anchor locker in case the chain needs to be worked on; a good anchor hook and bridle to spread the anchoring load over both foredeck cleats; and a mooring buoy pickup hook on a lanyard that can be deployed and rapidly released if necessary using a boat hook.


Swim Ladder

Davits. Davits made of 1.25" heavy-wall SS tubing with five braces to the stern rail and the electric winch allow rapid, easy and safe launch and recovery of the dinghy. If I had one wish, it would be that Catalina offered a factory-designed arch to do this job better.

Dinghy & Equipment. Long-term cruising means the dinghy is a central part of life – it gets a lot of use and is an important safety component. Spending time alone in remote anchorages like in the Bahamas adds an additional layer of safety needs. I prefer as large a RIB as a boat can carry. *Onward* carries a 10' RIB with 15-hp 2-stroke outboard for easy maintenance and periodic cleaning in remote locations. A hand-held, floatable VHF radio is aboard; also a cell phone in a dry bag where there is cellular coverage. Other equipment includes: air pump; emergency patch kit; four inflatable PFDs; small Fortress anchor with chain and 100' of rope rode to prevent adverse winds/currents sweeping a disabled dingy out to sea; mushroom anchor; and a corkscrew pylon for beach landings. An emergency rope ladder is clipped in place so it can be reached from the water. At night, a Fenix high power/high brightness LED flashlight (uses two AA batteries) that can throw a beam ¼ mile or more is always aboard. A 28" cooler serves as a seat and dry box; it is a much safer (and drier) ride. In an anchorage, the dinghy is always tethered with two and usually three lines to prevent a walkabout.

Swim Ladder. *Onward's* swim ladder was modified to fold in two so it can be put down while the dinghy is on the davits – useful in an emergency. A secondary swim ladder that can be grabbed from the water and pulled down was added for emergency use when no one else is aboard. *–Joe Roccio*

Catalina 42

C42 Association Technical Editor
Gene Fuller
3437 Saint Croix Court
Punta Gorda, FL 33950
941-505-0215
gefuller42@comcast.net
Yorkshire Rose, #870

No submission this issue. Please send your technical questions for our next edition.