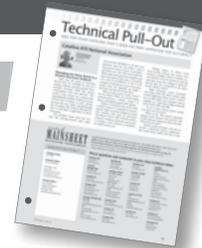


# Technical Pull-Out

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



## Catalina 470 National Association



**C470 Association  
Technical Editor**  
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### Padding About in the C470

Over the last almost 50 years of my sailing experience, electronic instrumentation for sailing has gone through an amazing series of sea changes: from analog to digital; proliferation, choice expansion, feature growth, and cost reduction mirroring the consumer electronics world; movement to networked systems followed by integrated systems, expanded role of the laptop computer, and the ongoing transition from wired to wireless systems. All this has put the electronic power of what was once only within grasp of super-wealthy owners and international yacht racing syndicates in the hands of the recre-

ational sailor/cruiser today. I believe that this tremendous evolution in electronics is being eclipsed by the era of the tablet computer initiated by the introduction of the iPad in March 2010.

The advent of the powerful, networked tablet computer has given today's captain and crew a whole universe of information at his/her fingertips and three years in it is still just the beginning of the evolution. On the day the iPad came on the market, my family and I were taking my newborn granddaughter on her first walk out into her new world and we happened upon an Apple store where I made an impulse decision to buy an iPad. This started me on a seemingly never-ending journey of exploration of new things that can be done onboard with a tablet. Today, I would not leave the dock without it. So let's take a look at the possibilities.

### iPad vs. Myriad Competitors

The question is an iPad vs. myriad competitors. I have spent many hours debating this with friends and here is not the forum for it. Like most things on your boat, it's the captain's decision. So here are some considerations: features, apps, integration, and cost. I will venture an opinion based on my experience: I spent most of my career in the electronics/computers/software research world and now I simply want complex electronics to do their job well and play nice together so I can sail. Thus, I opted for iPad and I haven't been disappointed and have not found anyone who wishes they had chosen differently. It excels in all of the factors cited above but cost and in my experience with the cost of "boat things" it's a trivial differential.

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So the captain makes his/her decision. Now what to do with it? There are simply too many applications and too many options available to give a good comparison. A complete article could be written about each subtopic

below. I have chosen instead to hit the highlights of applications to encourage the reader to pad about and explore on their own.

### Internet connectivity

Most tablets offer models with built-in cellular data modems for direct access to the internet wherever there is cell service. Others are “Wi-Fi only” and require access to a hotspot. *Onward* uses a small portable cellular data modem that connects to multiple units via Wi-Fi, and a Wi-Fi-only iPad so as not to have to a separate data contract. As pay-as-you-go no-contract cellular data service expands, a unit that has both would allow one the option when needed to insert a prepaid SIM card to get stand-alone internet access.

### Navigation Charts

One cannot have too many nautical charts and the tablet now makes many more options available and extremely usable. There are too many options to compare them all here but here are a couple of salient examples. *Onward* has a Raymarine E120 chart plotter that uses Navionics charts so I have the Navionics app that I use for planning and exploration of details. This provides exactly the same charts used to navigate in a much more accessible form. Garmin and Blue charts have a great app with charts that correspond to its chart plotters. There are many apps that will provide access to free NOAA ENC electronic charts. Some apps require internet access to use these charts others allow download for use without the internet.

### Chart plotter & Navigation Electronics

The major marine electronics companies today provide apps that integrate the iPad into their electronic boat navigation networks. These include Raymarine, Garmin, and Faruno. These apps allow navigation network data to be presented on the tablet and to varying degrees they enable the tablet to control navigation system functions. This area is currently undergoing rapid developments and upgrades in capabilities

making a tablet computer a much more useful, capable, portable and less expensive alternative to adding an additional chart plotter to your boat network.

### Navigation Information

There are many dedicated apps for nautical information on topics such as tides, currents, local knowledge, etc. With internet access and even wider spectrum of information is available so the captain can always have “local knowledge.”

### Weather

While *Onward* is moving along the East Coast and in the Bahamas, I find I spend 30-60 minutes each day evaluating weather. The tablet has become an invaluable tool for this, both through special purpose navigation weather apps as well as access to the many weather sites on the web. The myriad NOAA websites are invaluable. The iPad allows me to create a web app icon for each so I can rapidly access just the page I need. There are many great nautical weather apps. One of the best is PocketGrib, which puts the world of gridded binary data from the NOAA GFS weather model in your hands with a very effective user interface. I use a series of apps and websites that cover tropical storm warning and analysis, short and mid-term synoptic weather charts, optical satellite images, weather radars, and 8-day grib data forecasts. Even with these great tools I still subscribe to a professional weather service for daily advice.

### Information Storage

This is one of the best applications, yet it isn't the first one that comes to mind. I have developed a library of manuals for *Onward's* boat systems, equipment, installation guides, and technical reference data. They are in .pdf format and are stored on the iPad using the GoodReader app. Not only does this eliminate a huge amount of paper documentation but it is always ready at hand and, most important, it is all searchable to get rapid access to the specific information needed. Almost every manufacturer now has installation and use manuals, tech data sheets, etc. available in .pdf format on the web for download.

A complete set of the USCG Navigation Rules, Chart 1, Costal Pilots and the Local Notices to Mariners for the areas where *Onward* travels are now kept up to date as .pdf files (available from the USCG) in GoodReader. This allows access to this treasure trove of

knowledge without the many pounds of paper. Again it is all electronically searchable so the information is rapidly accessible. A complete set of .pdfs of ship's documents is also stored here for access in emergencies or for USCG inspections.

### Vessel Security

I have found anchor monitoring to be one of the best iPad or iPhone apps with options for both visual tracking on a chart and alarms. Apps and ancillary equipment are available that will allow you to monitor the status of your boat remotely. Separate modules allow sensing of various parameters (temperature, water leaks, power status) and some systems allow remote control of some functions. This is another area undergoing a lot of rapid development.

### Information Access via the Web

Ready access to the internet at all times has added immense richness to my travels as I am able to research and read about the many interesting places and things I see as I wander the East coast.

### Recreation

Need a break? The tablet is a great eBook reader, news source, mp3 and internet music source, video/movie screen, game station, cookbook, email tool, etc.

### Portability

One of the best features of a tablet: portability. You can do all this stuff from anywhere you want (and where you won't drop it overboard). Great fun!

### Nautical Environment

The hardware is fairly robust; *Onward's* iPad has lived aboard for three years of continuous cruising and is still going strong. That said, a good case that will provide protection from the occasional impact/drop is a must. While good user discipline can make sure it stays dry, there are many water-resistant/waterproof case options available. There are also many options available for mounting a tablet in the cockpit.

### Warning!

In closing, a fair warning: before you buy a tablet for your boat you should have strategies in place to deal with two very likely problems: first, use will tend to become addictive; second, the admiral/crew may not be happy with the amount of time you want to allocate to their use. —Joe Rocchio