Re-Pedestalization of the Southern Yankee



C350 Association Technical Editor Bill Templeton

I have received and hereby submit this detailed accounting of replacement of the pedestal, adding "below decks" autopilot and updating of instruments on a C350 by Scott Monroe. My question to all of you is whether you have experienced corrosion of your pedestal... please let me know. Also let me know if you have a MK I or II as I discovered when I built my cockpit grates using a friend's grates (from a MK II) as a template that there is a difference.

Future submissions will include installation of a bow thruster under the "queen" berth and replacement of the holding tank waste valve. **–Bill Templeton**, pbtemp6816@verizon.net

In a family of all women and me, there are few things that I can claim as mine, the garage, basement, occasionally the remote control, and most importantly the helm station on the Southern Yankee, our 2006 Catalina C350. Its not that I have diminished man-points from life but I adhere to the wisdom that a happy wife is a happy sailing life. So, on board we have throw pillows, a clean fresh smelling head, comfortable cushions, fitted sheets and a galley well stocked with spices, all of which were absent during a bachelor period in my life but warmly welcomed now.

But the helm station is mine, and when things got ugly it was time to act!

The Southern Yankee had come stock with a standard compliment of ST60 Raymarine transducers, and I had added an inexpensive wheel based autohelm shortly after moving the boat from a Texas lake to the sailor's dream of Narragansett Bay in Rhode Island. But alas my helm station was absent an MFD (Multi Function Display)! That lovely bit of electronics that not only tell you where you are, how fast you are going, and control your stereo but will also allow you to watch Netflix while doing so (true story). The cost of adding an MFD was dropping significantly, Raymarine released their Axiom series that put a 9" display well within reach.

A problem of debonding paint on the aluminum stand of the pedestal had started a couple years ago and got progressively worse (Fig. 1). The thought of sanding and repainting the pedestal was discussed and researched. Since the problem was wide spread, the whole pedestal would have to be sanded and painted, so it would have to be removed to really do the job right.



Fig 1. Original pedestal stand with debonding paint.

I brought Edson technical staff into the discussion and after debating plausible causes, galvanic corrosion was one strong possibility. After some discussion about options it became clear that it would be easier to just replace instead of repair.

And so, began the rabbit hole and my new MFD, a below deck autohelm and .....

The Edson team helped immensely with deciding which pedestal was best. It appears that Catalina sources the stand and gear assembly from Edson but makes their own pedestal head, so a new unit would have an identical foot print but now I had options for the pedestal head. I settled on the Vision NV Pedestal. The head was slightly larger than the original (Fig 3.), but it was the closest option since I wanted to keep the compass where it currently sits. The biggest help was the fact that I could re-use the existing gear assembly, pedestal guard and engine controls from my current pedestal which saved significant dollars. Disassembly wasn't overly difficult with help from Edson. The key was the removal of a set of retaining spring rings that keeps the gears on the shaft (see Fig 2.) With a little coaxing the assembly came apart nicely.



Fig 2. Top image shows steering gear assembly laid out in order of placement in pedestal. Lower image shows assemble as it was being dissembled, arrow points to where one of the spring retaining rings was. Other was on back of shaft holding bearing in place.

Re-essembly of the new pedestal was easily managed, everything fit as it should with the supplied holes cut into the new pedestal by Edson. All said and done this, swap saved over $1000.

Starting with a fresh canvas really allowed me to clean up a lot of the "boat builder's" mentality as well as re-design the console to match more modern electronics (Fig 3). Before I started anything, I labeled everything with a label maker as it was connected within the existing pedestal head. I also took a lot of pictures from many angles.

Cleaning up the wiring mess in the pedestal was a priority. Catalina had used screw terminal blocks within the pedestal to connect the engine wiring harness (see Fig 4). I found that many of the wires showed signs of corrosion from exposure to salt air. I opted to run all new wire from the pedestal below deck and connect to the engine harness via terminal strips located under the fiberglass housing in the aft berth. I also glassed in a couple of wood mounting blocks in the pedestal to allow me to screw down the wire harness and

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Fig 3. Original and new Edson Vision NV pedestal side by side. New pedestal head is a few inches wider and taller. Face plate was taped out and templates assembled before cutting faceplate.

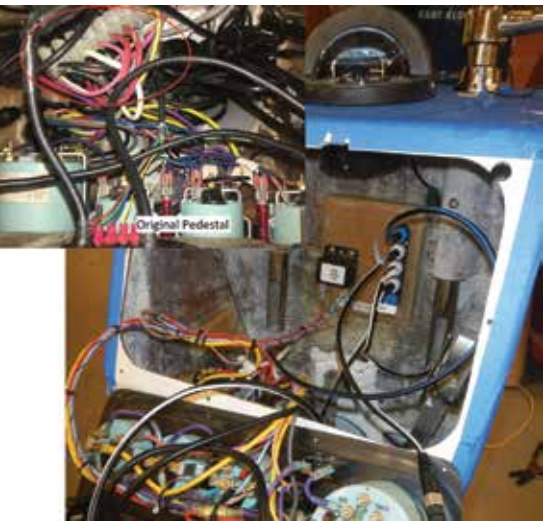


Fig 4. Upper image is top down view through compass mounting hole in original pedestal. Circled area shows screw terminal blocks. Lower image shows open pedestal head as viewed from removed instrument panel. Fiberglass mounting block can be seen in back with buzzer and SeaTalkng 5-way Connector screwed down.

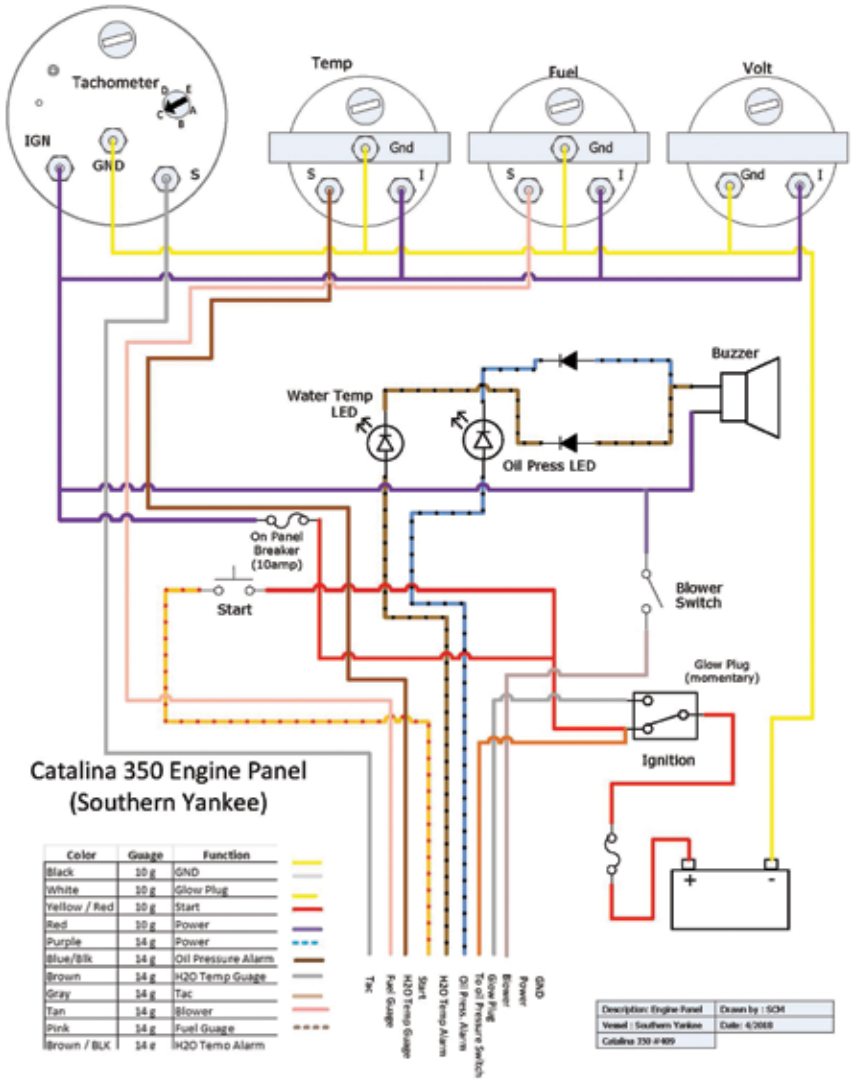


Fig 5. Engine control wiring diagram created with Microsoft Visio. Note ground wire is yellow to ABYC standards.

For clarity, I also generated a wiring diagram for the engine panel to help with installation and future modifications.

electronics backbone connectors. (Fig 4). Lastly, I glued in a 1 1/2" PVC pipe down the pedestal stand to be used as a wire raceway keeping the pedestal harness clear of the steering cables (this was a nice feature that Catalina added to the pedestal stand that wasn't in the new unit).

Choosing and arranging the instruments was going to be a challenge as my goal was to have the faceplate house all instruments, including the MFD, engine controls and transducer instrument displays (Fig 3) (new autopilot instrument display was still going to be in existing side arm mount on the pedestal guard). The Edson NV pedestal comes with a removable black starboard faceplate (15" x 10.25"). I found there was just enough room for the 9" MFD, a single instrument transducer display and engine controls, original face plate had an engine panel from Catalina and the three instrument displays from Raymarine.

I did opt to mount the original engine instruments directly into the new face plate. The original engine instrument panel faceplate had become unsightly and replacing it added cost. Besides, I like the all black look on the pedestal. For clarity, I also generated a wiring diagram for the engine panel to help with installation and future modifications. (Fig. 4). I stayed true to the original wiring with the exception of the alarm buzzer / Oil & Temp LED which I used a standard off the shelf buzzer and blocking diodes. The buzzer only had a single input and it needed to be con-



Fig. 6 Image shows placement of LED courtesy light below steering.

nected in series to both LEDs and I did not want back feeding one alarm LED to the other, i.e. the need for the diodes.

While I was already down the rabbit hole, I had always wanted LED accent lights in the cockpit area, it gets dark at night out on the hook or mooring and a lantern never really fit the bill. I mounted two blue Seadog accent lights one at the bottom of the pedestal facing into the cockpit and the other just below the pedestal head facing aft. (Fig. 6)

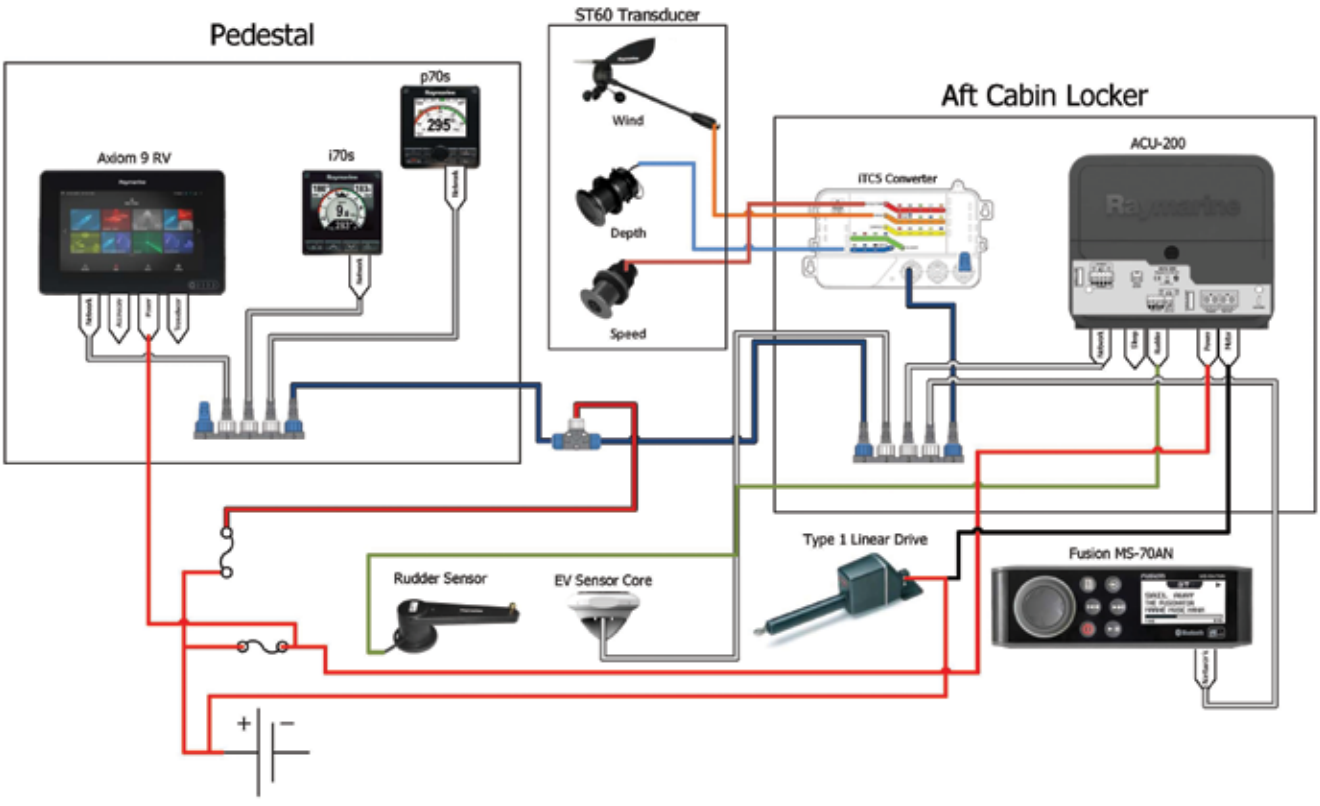
After the pedestal was re-wired and everything was installed, I went through a thorough test procedure in my shop. I used a spare battery for power and connected everything as I would on board. The gauge's circuits were easy enough to test since grounding the signal wire will give full deflection indicating a functioning circuit. The only item I couldn't test was the tachometer. The MFD chirped alive nicely and I had a spare speed transducer that I was able to connect to the iTC-5 to confirm functionality.

It was now time to install the pedestal on board. While I was a little nervous about the fit, despite measuring at least twice, the bolt pattern was a perfect match and the supplied aluminum bolts from Edson were long enough at 4" (ones I removed were 4 ½", but trashed). Engine control cables fit back without any hitch and worked (a plus). I used BoatLife Life Calk for the bedding compound to seal the pedestal on deck.

The last portion of the re-installation of the pedestal was re-connecting the chain and wire steering cable. Following Edson's online installation instructions made the procedure seamless but you should ensure that the cables are crossed in the pedestal before the idlers. When it came to tightening the cables, I was told by Edson to turn the wheel hard over and then tighten the slack side, and then reverse the procedure for the other. This worked extremely well!

Having planned to go fully digital (SeaTalkng) with an i70s instrument display and iTC-5 Instrument Transducer Converter from Raymarine allowed me to reduce down to a single instrument display while utilizing my original transducers (wind/depth/speed). Additionally, the Axiom MFD allows you to customize the display to show any one or many of the transducer data. Note that the i70s

Fig. 7 : Schematic layout of electronics and SeaTalkng backbone (created in Microsoft Visio).



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is still required to calibrate the analog transducer data being collected by the iTC-5, so I could not go with the MFD solo. Instructions were more than adequate from Raymarine. The biggest issue, of course, was access to the wiring and wire routing. Clearly the deck was laid down after the wiring was installed. One issue that took me a long time to sort out was how the transducer wires were run aft. I found them emerging from a 1 1/2" PVC pipe low in the locker and separate from the rest of the wiring. I needed to route them to the aft berth port side clothes locker housing the iTC-5 with out looping them back forward because of length but I couldn't find where they entered the pipe. Ultimately, I did find the start of the pipe behind the panel which houses the battery switches (why was I surprised). In the end, I was pleased how easily the system connected and worked (the first time!).

To aid future references I created a schematic for the electronics (Fig. 7). The control units for the transducers and the ACU 200 for the autohelm fit nicely into the aft berth port side cloths locker. Its proximity to the electrical panel made running power and ground lines much simpler. I only needed to cut a 1" hole in the back aft corner of the locker to get wiring in and out. I did need to disassemble trim around the area to gain access.

The below deck autohelm required a bit more work. I purchased the tiller arm from Edson with a bore of 2.860". This had to be measured off the rudder post and supplied to them for machining so that the arm had a snug fit. The arm is pinned, bolted through the rudder post, so a 3/8" hole needed to be drilled through the stainless steel rudder post. Purchasing a series of extra long carbide bits to step drill was imperative to be able to drill through the stainless-steel post. (McMaster Carr)

To support the Type 1 mechanical linear drive, I had decided to use a shelf installed by Catalina in the port side aft lazarette. The drive unit needs to be well supported to handle the 650 lb peak thrust the unit can deliver. To beef up the shelf I added fiberglass to a depth of ¼" (2 layers of chop strand and woven roven with epoxy resin) over the shelf and up the stringer supporting it. The drive unit also had to be mounted 8" above the shelf to properly align with the Edson tiller arm. I crafted a stand from welded ¼" aluminum (6061 series) shown in figure 8. The stand was bolted through the fiberglass and wooden shelf.



Fig. 8 : Image from aft lazarette crawl space shows Raymarine Type 1 mechanical linear drive on fabricated aluminum stand. Drive unit is connected to Edson tiller arm which in turn is attached to rudder shaft.

The last addition to my new electronics package was the new Fusion MS-70AN stereo. My last installed stereo had a pedestal mounted controller that was no longer supported by the manufacture, so an alternative stereo was needed. The Fusion radio is NMEA 2000 compatible, and with a Device Net adapter cable from Raymarine I was able to connect the stereo to the SeaTalkng backbone (Fig 7). The Axiom MFD needed the latest firmware update but once that was downloaded I had control over the stereo. Must admit its pretty cool. And did I mention the MFD can play Netflix?

This was a really fun and rewarding project. All in, I spent a little over $7500 to replace the pedestal and purchase new electronics including the Axiom 9" MFD, EV-200 Sail autopilot kit, iTC-5 Instrument Transducer Converter, and Fusion stereo. I purchased most of the equipment during the off season to take advantages of sales from Raymarine and other marine chandleries in the New England area. The entire pedestal re-wiring was done over the winter in my shop, with final installation of the pedestal and electronics being done during early spring before launch time. I can't even start counting the hours spent, mainly because it was so much fun, I lost track!



Fig. 9 Final images of new pedestal. Lower image shows early evening with accent lights on.

The final result was a huge success, and in my opinion very good looking (Fig. 9). My helm station did not look any bigger in the cockpit, as I was a little afraid it might. I did add the folding cockpit table from Edson which is a huge hit with my wife. I was also very happy with having the MFD on the pedestal head. Having it in a pod would have been too obtrusive. And most importantly the project did not hinder our already short sailing season!

Probably the biggest thing that helped the project was having gone through the Marine Systems program at IYRS (International Yacht Restoration School, Newport RI). The program gave me a solid foundation for electrical, NMEA installation and steering systems which insured that I did things right and to ABYC standards. **–Scott & Cheryl Monroe**, Southern Yankee C350 #409

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