

## Single Star Rebuild 2002-2006

Single Star was purchased in Hilton Head ,SC in January 2002 & transported to Vancouver,BC via Dockwise Transport. She was originally taken to Rockport boat yard in Richmond ,BC. The following work was done at Rockport or by me:

1. All wiring & electrical panels removed from boat AC, DC, including battery cables, Batteries, battery boxes, etc.
2. Old Boiler & all of copper plumbing & radiators removed
3. All fresh water copper plumbing, pumps, sink & shower valves removed
4. Toilets, sanitation hose, treatment system removed
5. All seacocks & thru hull fittings removed
6. All pumps, generators, battery chargers,etc removed from Engine Room. Main engine remained in place at this time, but Twin Disc Marine Gear removed & sent to Twin Disc for rebuild.
7. All exhaust system & Keel Coolers removed
8. Wagner T5 steering ram & 2 helm pumps removed and sent to Wagner for rebuild
9. Old shaft was removed. It was 2 piece with stub shaft bearing.
10. Anchor winch removed
11. Old chain removed & chain locker cleaned & repainted
12. All Port Holes & deck prisms removed.
13. Main Salon Bronze window frames removed
14. All old carpet removed
15. Fire place removed from starboard side Salon. It was cement block & fire brick with copper hood & single wall stack!!!
16. Small bath tub removed from Master head.
17. Mast & standing rigging removed
18. All Air conditioner units & compressors removed
19. Sailboat style railings & pulpits removed.
20. Old mahogany cap rail removed
21. pilot house removed after using it as a mold to layup new fiberglass exterior extending front 3' forward. This allowed having Helm seat & walk space in pilot house
22. Deck & house striped down to identify any soft spots
23. Repairs made to deck & house as needed
24. Aft deck access was addressed & Stairs cut into transom & large swim step constructed & installed.
25. The hull was faired & top of Hull extended up to make higher
26. Hull was spray painted with Awlgrip stars & strips blue paint
27. At this time attention was directed at refinishing interior salon & pilot house. It became apparent that the workers did not know how to construct face frame cabinets. Decision was made to ship boat to Port Townsend via landing craft. They constructed a cradle for the hull & lowered boat in with a travel lift. The 40' container full of parts was shipped via truck

## Single Star Rebuild at Galmakof Marine Port Townsend,WA 2023-2024

1. Fuel tanks inspected & found to have been coated with Gel Coat ! This is not a sealant for diesel fuel. Large inspection ports were cut in top of all 4 tanks to allow a worker in isolation suit to sand blast entire surface of all 4 Tanks. The baffles were cut out enough to allow access to all sections. The surface was taken down to solid fiberglass. Once tanks were thoroughly vacuumed & wiped out ,the interior was sealed with epoxy sealant that is used on Submarine ballast & fuel Tanks. The baffles were then bolted in place & all new S/S fitting panels installed. The top inspection openings were installed with bolts & heavy duty Neoprene gaskets.
2. Main engine was lifted into salon & blocked up to allow oil pan to be pulled off. All bearings on pushrods & main pillows inspected. Front & rear main crank seals replaced. Expansion tank & all external jacket plumbing disassembled & flushed. Oil cooler was rodded. New reman Cat turbocharger installed. 2 new cat starter motors installed. Mechanical Gauge panel on engine gone through. New sending units for main installed : jacket water temp,jacket water level, oil temp, oil pressure, exhaust elbow pyrometer. New Raw water cooling pump installed
3. Marine Gear installed with new oil cooler hose & new sensors for marine gear oil pressure & Marine gear oil Temperature. New pipe fittings used on all installations of senders & hose
4. Interior of Pilot House using teak & white surfaces to follow Herresmhoff theme. All drawer faces solid teak. All Cabinet doors solid frames. Floor raised to allow installation of helm seat near wheel. Wire races established. Defroster system built into cabinets below forward windows. Ceiling & walls stiffened with foam core fiberglass beams.
5. Aft head rebuilt with fiberglass shower stall & all new cabinets.
6. Wesmar 9 sq ft hydraulic stabilizer fins installed with special blocking
7. When time to install machinery in ER and rebuild salon Wire & plumb boat we could not come to agreement. We entered into a contract with Townsend Bay Marine located located just across the yard from Galmakof.

## Rebuild work done at Townsend Bay Marine July 2004-December 2005

1. Layout of equipment in Engine Room planned with weight distribution & service accessibility Priority. heaviest was the generators & boiler. Since the battery box will be on starboard side the 20KW went port aft, Boiler placed over shaft alley on center & 6 KW( later upgraded to 12KW) starboard side. First all new sound insulation installed in ER ceiling ,side walls & bulkheads. Layout of remainder equipment completed & new fiberglass shelving & floorboards installed.
2. The hydraulic system was designed & installed. Reservoir tank 15 gallons, hydraulic oil cooler located so Main raw water intake line ran through it. Piston pump with 24VDC PTO installed on 20 KW Gen. Mounting bracket fabricated for Hydraulic pump mount on main front crank using love joy coupling. The bolt holes were made in bracket so that when pump was removed for service they would be self aligning. The pump would always be perfectly centered on crankshaft.
3. 25HP Side Power bow thruster installed with fiberglass tube. The controls for it a promotional. Control station in PH & Upper Helm.
4. Next Pex tubing lined plumbing for hydronic heat system with radiators in each cabin, 2 aft cabin & three in salon. Thermostats in each cabin using Honeywell controls. The first Boiler was a Kabola which is a Dutch brand. It did an excellent job of heating the boat, but the control circuit board panel malfunctioned repeatedly. After having technician fly to Kodiak & replacing more parts it still would stop working. We decided to replace the boiler with an Olympic Boiler rated at 100,000BTU. It has a conventional Becket burner that is used in oil fired boilers all over country, especially Kodiak since we do not have natural gas. It has worked very well over the years. We do annual Maintainance .
- 5.The following equipment was installed in ER on new shelving: 2 8D batteries in Blue Seas battery boxes connected in series for Main Start, 24vdc battery charger for Main Star batteries, 24 VDC Reverso oil change pump with 4 ports ( main , Marine Gear, 20 KW & 12KW generators. 24VDC Kallenberg air compressor for air horn. It has valve with air hose to enable infecting Fenders,etc.
6. Fuel polishing & transfer pump with filter system installed
- 7.Fuel system plumbed with USCG reinforced hose. Each tank has ball valve at tank. Each tank has site gauge with ball valves to site glass. Site glass protected with plexiglass cover. Suction side of fuel system from each tank goes to a header tank that sits in front of main engine between Engine Stringers. All users remove fuel from this tank. Ball valves on all fittings. Fuel lines for all user go to Fuel filters on Port ER side wall. Dual Racor filters for main & 20 k w . Single racer for 12 kw & boiler. All engines have primary fuel filter on engine. Vacuum gauge on main & 20 kw filters.
8. Wagner T5 steering ram installed on rudder post helm units install . 2 independent steering pumps installed 24VDC selector switch installed in pilot house. New hydraulic lines run to connect steering using minimum stretch hose.
9. Sea Recovery water maker reinstalled moving membranes onto wall. Large fiberglass media filter installed after boost pump for larger particulate matter. Commercial grade cartridge filter installed after media filter. Separate sea water intake for water maker to avoid suction issues when other pumps cycle. Charcoal filter installed on fresh water since circuit to remove Chlorine from dock water. Also charcoal filter in product water line to tank. The product water goes to the Aft water tank which is higher than forward tank. This allows water to be transferred forward via suction lines.

10. Fresh water plumbing installed. Aft tank is 300Gallons located under floor of Lazz. Forward tank is 400 Gallons in keel below forward cabins. Each suction line has a water strainer inline that can be isolated to clean. 120VAC Grundfos shallow well pump is main pressure pump. 24VDC Head Hunter backup pump. They are valved for easy change over. Each pump has a ball valve on discharge side easily bleed any air in lines & dump to bilge. Gauges for water level in each tank mounted near pumps that can be seen from ER door. 30 gallon Hot water Heater installed port side Lazz. It is heated with 25 watt 220VAC element & heat exchanger via boiler.
11. Bilge pumps:: Four Rule 2000 24VDC located Lazz, Aft ER bilge, Forward ER bilge, Forward bilge. One hydraulic driven 2" pacer centrifugal pump plumbed to the Aft ER bilge. Priming line installed & can be rapidly connected to sink faucet in ER.
12. Main Engine 3406 Cat was reinstalled on engine stringers. New wet exhaust built with fiberglass pipe & Silicon hose. Fiberglass muffler. Main exhaust, 12 kw exhaust, all ER bilge pumps go into compartment Starboard side just aft ER. The starboard ER exhaust fan uses same pathExhaust out side of hull above water line.
13. Alarm system installed. Left side panel in pilot house has following alarms for Main & Marine Gear: Low oil pressure, High oil temp, High jacket water temp, low jacket water level, High exhaust elbow temp, low oil pressure marine gear, High oil temp Marine gear. Right side is Bilge & Fire alarm: High Water all 4 bilges, high temp alarm Galley, Engine Room, Lazarette.
14. Gauges for main & gear pilot house: Jacket water temp, Oil Temp, Oil pressure, marine Gear oil Temp, Marine gear oil pressure, Hydraulic oil temp, Hydraulic oil pressure, Air Pressure
15. New Mather Micro Commander main engine controls installed. 2023
16. New cap rails installed after building up hull above deck using resin compost synthetic wood.
17. Exterior house, new pilot hose & deck faired prep & painted. New all S/S railings fabricated for all upper & lower rails. Minimum height of 36". New radar arch constructed for all antennas. Also deck lights & 2 1000watt forward flood lights.
18. Upper deck bench seating refurbished
19. New SOLAS DBC Life raft installed upper deck with hydrostatic release in cradle
20. 406 hydrostatic release EPIRB installed
21. Plath windlass rebuilt at factory & installed with new hydraulic motor. This was replaced in 2012 with Light House windlass. Plath brake system failed.
22. Fire extinguishers: Automatic in ER Halon, Halon pilot house, Halon Galley, Dry chemical in each cabin & Salon
23. Purasan sewage treatment units installed 2015 one forward & one aft
24. New galley cabinets constructed. two sub zero 2 drawer refrigeration units installed facing galley. One subzero 2 drawer deep freeze installed facing salon. Dorian counter tops for galley & cabinet for Washer & Dryer. New 6 burner GE 220VAC stove top And 220VAC Bosch under counter Oven installed 2022 to replace units originally installed in 2005. New Amana Microwave. 2 basin sink with new faucet, Separate filtered faucet for drinking water. Galley is equipped with Keurig & Drip style coffee makers. Complete set of dishes & silver ware for 8 people. storage for all cooking pans, mixers, knives, etc. There is also a 7 cu ft chest freezer on back deck in protective Cabinet.
25. Salon Sony TV with sound Bar 2010
26. House hold size Washer & Dryer installed opposite Galley in salon.
27. Entire inside of boat was taken down to bare wood where varnish was to be applied. 6 coats of Epifanes varnish applied. All bulkheads & cabin sides were faired & painted wit 3 coats of petite easy poxy Hatteras white to keep the Herreshoff theme. This was all done by Mary Norman.

## 28. Electrical system: 220 VAC, 110 VAC, 24 VDC, 12 VDC

220 VAC shore power goes directly to Charles Industries 50 amp Isolation Boost Transformer  
120 VAC shore power to depart Isolation Transformer making boat totally isolated from shore power.

20 KW Northern Lights Generator

12 KW Northern Lights Generator

Two 4 KW Magnum Inverter/chargers The inverters have split loads on panel

The 120VAC panel has a split bus. The refrigeration units, outlets go through Inverters.

All other loads are bus loads. There is a with that will tie bus together incase of inverter failure.

### DC System:

24VDC from main house bank which consists of 12 2volt Glass Matt Rolls Batteries making a 1200 amp hour battery bank

These batteries are charged by the inverters which each has a 110 amp 24vdc charging capacity

two 8D 12 VDC batteries in series for main start. There is a Battery tie switch to enable engine start if engine start batteries are dead.

one 4D 12 vdc located in pilot house for emergency communications

two Group 4 batteries one for each get set isolated

24 VDC battery charger for main engine start batteries

Generator start are charged by alternator on generator set

one 12 VDC battery charger for emergency 12 volt battery

one 24VDC to 12 VDC converter this is main 12volt source for 12VDC panel

one 120 VAC to 12 VDC transformer as third alternative for 12 VDC power

There is a three way switch next to 12 volt panel to select source

## 29. Ground Tackle

Light house hydraulic anchor winch with 2,500 lbs pull. It is horizontal with chain wildcat lined up directly with anchor roller. The rope capon is off set to left. There are 2 sets of pressure switches to operate windlass, one forward close to roller & noe aft by windlass. 600' 3/8" high test chain with 100' marks. Main anchor is 50 KG bruce anchor.Has S/S ball swivel directly attached to anchor. Spare 100 lbs plow anchor stored in Lazarette. 300' 1" nylon with 50' chain rode stored in chain locker. two post style mooring bits on foredeck to secure nylon bridle to to take pressure off windlass & stop chain slapping on roller. This utilizes a 90 degree chain hook

30. 24VDC high pressure gear pump for chain wash. has removable hose. Second identical pump with outlet back deck for wash down & emergency fire pump. Pumps are in ER

## 31. Pilot house electronics

Furuno Nav Net Chart Plotter with 72 mile open array digital radar antenna. 50-200 hz transducer via black box. AIS receiver. Furuno sat compass gps & second stand alone gps receiver. Separate 24 mile Furuno analog radar with dome antenna. Ray Marine 200 hz digital depth, Speed/log,wind speed. Stand alone wind speed non mechanical two Standard VHF Radios with one repeater upper helm, one SEA SSB, Iridium Pilot sat phone, Air horn Control, Com Nav 2001 autopilot with remote upper helm. Controls for 2 separate steering pumps. one Watch Alarm 406 EPIRB with hydrostatic release outside Starboard PH door. Clear view screen controls, Alarm panel. Rocker switches for lights etc.

## Single Star Aft Deck Crews Quarters addition 2018

After consulting with Naval Architect about COG weight & windage issues I drafted plans for building cabin on Aft deck. The length was limited by the Aft Cabin escape hatch. The port side from stairs to side of house would be for cabin with 2 berths & separate head wth stall shower. The starboard side would be a covered shelter deck with storage for life vests & would be open on aft end.

The lines were laid out on deck keeping same deck width from cain side to cap rail as Salon house. The tumble home sides were continued aft. The camber for ceiling was copied off salon. A flat floor was designed to have safe footing as well as space to run plumbing & wiring. The berths are oriented athwart ship in aft bulkhead. The shower & head forward area. 24VDC power was run from main panel to sub panel in head area. Radiator was plumbed from aft head circuit to provide heat. Gray water drains directly overboard & Black water is tied into Aft Head treatment system.

The ceiling beams were laminated off site over a jig and consisted of 6 layers of 1/2" clear Fir. The are on 16" centers The walls are 2 layers 1/2" Mirante Marine plywood sandwiched with System Three Epoxy on 2x2 clear fir studs. The inner layer is 3/8" Mirante. the voids are insulated with 2" solid foam insulation. Outer surface is covered with epoxy & fiberglass cloth. This was coved & faired with epoxy putties & painted with 3 coats Pettit Easy Poxxy white paint. Acuity was built over head of stairs to upper helm for headroom. A zippered curtain was installed instead of a door to make access easier. This was done between March 1- June 15, 2018. A shrink wrap shed roof was built over aft half of boat to keep work area dry & allow heating. This cabin allows us to use all three original cabins for guests. I also makes a great 4th cabin when not under charter.

## Storage Shed

1. Magnum 4KW Inverter/Charger
2. Team Silence Head with control panel
3. Assorted lumber for interior work: Teak, Honduras Mahogany, Ash, Vertical Grain Fir
4. Several sheets 1/2 Mirante Marine plywood
5. Assortment of tinned Copper Marine wire from 16 gauge 2 conductor to 4-0 battery cable.
6. boxes of marine grade butt connectors , ring terminals, etc.
7. Mercury 9.9 hp outboard
8. 10 lead ingots for trim ballast
9. 15-20 pairs used chest waders & boots
10. variety of paint in unopened cans. Boat interior is Pettit Easy poxy. Bulkheads are Hatteras White. Exterior is bright White. Hull is blue. Deck non skid is from Australia Gray
11. Spare new deck Hatch
12. Multiple containers of system three Epoxy Resin & matching catalyst
13. Sanitation hose 1.5" & 3/4"
14. Selection of sewage 45,90 & straight connectors
15. De Walt battery powered sanders, drill motors, skill saw Etc.
16. Large Sop Vav Vacuum
17. Assortment of bronze Ball valves & pipe fittings
18. Large containers of S/S Hex bolts, Lag bolts, machine screws, wood screws
19. Four new deck chairs 2023
20. 2 step ladders
21. Multiple pieces wire reinforced marine hose
- 22.