Simple Startup

See additional system checks below

1. Disconnect shore power
2. Drop saildrive
    a. Release drive rope
    b. Lock drive latch
    c. Pull rope to check that drive is locked
3. Turn on instruments
    a. Turn on instruments breaker
    b. Turn on Garmin chartplotter (hold button)
    c. Turn on Vesper VHF (button on right)
    d. Turn on Raymarine chartplotter Aft helm (hold button)
4. Start engine
    a. Turn on engine panel
    b. Hold engine preheat
    c. Crank engine
    d. Check fuel gauge
    e. Check exhaust has water exiting
5. Select helm forward/aft controls
6. Turn on bow thruster
7. Visually check rudder position on autopilot fwd or chartplotter aft

Systems & Checks

Check or operate as needed when current status unknown

1. Engine
    a. Check engine oil - 15-40w
    b. Check gear oil - 20 or 20w sae (engine oil, not gear oil standard)
    c. Check drive oil - 90w hypoid (west marine)
    d. Check engine coolant
2. Electrical
    a. Battery selector on HOUSE under all normal operation
        i. Select START or RUN (combine) only for emergency or to bypass ACR
    b. Check house battery amp hours (%) victron batt monitor - House lithium can be run down to 0% if needed
    c. Check start battery voltage
    d. Start, House, and Thruster batteries all charge from all sources (alternator, shore, & solar when connected)

    e. Sustained cold weather can prevent charging of the house bank - maintain pilothouse temp above freezing at least a day or two per week.
    f. house batt charger
    g. Start batt charger
    h. solar house charger
    i. ACR house and start
    j. ACR (or DC DC charger) house to thruster bank
3. Electronics
    a. Garmin chartplotter
        i. Charting with AIS, depth, and radar
    b. Raymarine chartplotter
        i. Charting with AIS, depth, rudder indicator, and autopilot control
    c. Raymarine autopilot
        i. Pilothouse autopilot display
        ii. Cockpit chartplotter display
        iii. Handheld remote
    d. Navionics tablet
        i. Networked with AIS, depth, records depths
    e. Wind meter (electric)
        i. Manual - no network communication
    f. Wind indicator (mast head)
        i. This is really more accurate than the meter, look up for trimming sails
    g. Second Garmin aft (removed)
        i. Second depth transducer still in place
    h. Vesper VHF AIS
        i. VHF functions include full AIS send and receive, man overboard, distress, and DSC private calling
        ii. Vesper Onboard app can connect and show systems AIS for mobile apps like Navionics (tablet is set up this way)
        iii. System monitoring includes main battery voltage, depth, anchor alarm, tracking, through cell connection and mobile app Vesper Monitoring
    i. Second VHF
        i. Analog VHF
        ii. DSP status unknown
4. Water
    a. 2 tanks port and starboard - 150 gal aprox.
    b. Transfer pump from port to stbd - use to balance boat if needed
    c. Water system pulls from stbd tank
    d. With empty tanks prop may cavitate - suggest running 50% or more
    e. Water heater - AC shore power, engine, and furnace heated - valve in port laz
5. Fuel
    a. 50 gal aprox.
    b. Gauges at both helms
    c. Fill port side (label peeling off, forward of water, aft of waste)

6. Heat
    a. Select engine or furnace in port lazerette (fwd is engine, aft is furnace)
    b. Turn on at pilothouse switch. This energizes head exchangers and circulation pump
    c. Check and fill coolant forward of pilothouse seats both pressure and expansion tank accessible. (use long black funnel in por laz)
    d. Wabasto furnace has tripped it's internal breaker, located on very top of furnace and almost impossible to see. Feel for button, it will not be apparent when pressed to reset.
7. Refrigeration
    a. Check or set fridge temp under aft pilothouse seat (~26F)
    b. Lower compartment should freeze, middle and top fridge as long as some air circulates
8. Head
    a. Black water tank is small ~20 gal
    b. Head operation on wall
    c. Overboard valve labeled in port lazarette - set to Holding Tank
    d. Black water pump out on port forward of fuel.
    e. Manual pump out in port laz.
9. Propane & Stove
    a. 2x propane tanks under aft helm
    b. sniffer in galley
    c. stove lights manually
10. Music Stereo
11. Lights & 12v power
12. AC power
    a. shore power
    b. inverter
    c. microwave
    d. water heater
13. Anchor
    a. Remove pin in anchor and slide out slightly to deploy
    b. Operate windlass at pilothouse helm
    c. Weighing anchor usually requires two people, one at helm, and one to spot and sometimes to assist with windlass grip on rode (chain is ok)
    d. Second anchor stored in foredeck hatch or aft rail hanger
    e. Spare anchor rode in foredeck hatch

Operation

1. Engine Running
    a. 2600 rpm efficient cruise up to 6.5 kts depending on weight and bottom

    b. 3000 rpm max continuous approaches hull speed of 7.4kts
    c. 3200 rpm max 30 min storm or emergency use
2. Sailing
    a. Saildrive
        i. Unlock and lift drive for aprox .5 kts speed sailing
        ii. IMPORTANT - lower, lock, and CHECK drive before docking
            1. Under sail, it may be necessary to put the engine in drive
            2. If drive is not locked reverse will cause it to lift
    b. Main sail “Martha” - all weather
        i. Unfix cockpit lines before raising main
        ii. Raise main halyard from mast
        iii. Two reef points - 30 knots first reef, second reef likely only if motoring
        iv. Twin boom vangs can also be used as preventers
    c. Jib “Jinny” - 30 knots max, 50 deg-150 deg to wind (whisker pole to 180)
        i. If sheets are stowed in rope clutches, remove before using
        ii. Sheets must go through eye or will jam at winch
        iii. Furler is single line and can reef at any point
        iv. Furling line must also go through eye or will jam at winch
    d. Drifter “Dotty” - 25 knots max 60-150 deg to wind (whisker pole to 180)
        i. Attach to deck just aft of jib and hoist with red/white halyard.
        ii. Furler is continuous and line is attached. Furl in or out, no reefing.
        iii. Green sheets attached go to main winches through eyes
    e. Asymmetrical Spinnaker “Carmen” - 20 knots max, 90-180 deg to wind
        i. Two black sheets in laz rope locker with blocks. Attach one to windward bow eye. The other to leeward aft stay eye.
        ii. Hoist sail on green halyard socked
        iii. Attach tack and clew to sheets with tack approx centerline.
        iv. Unfurl from sock
3. Motorsailing
    a. Light wind - Fly upwind sailplan (jib or drifter)
    b. Heavy wind - Main (reefed, full, or add reefed jib) for stability

Shut down

1. Shut down engine and turn off panel
2. Raise saildrive (unlock & pull drive lift rope)
3. Turn off instruments breaker
4. Leave these breakers on normally (unless low power consumption is needed)
    a. Compass (cortex)
    b. Lights (bilge pumps)
    c. Accessory (aft panel - fridge)
5. Turn off Vesper VHF handheld (button on right side)
6. Connect shore power
7. Tie up normally with 4 lines (2 each from forward and aft large cleat)

Notes

- Empty black water and add head treatment regularly
- Fill water tanks

Maintenance (annual)

1. Engine yanmar 3YM30
    a. Oil change - 15-40w
    b. Oil filter
    c. Coolant check
    d. Water pump impeller
    e. Inspect hoses and belts
2. Transmission (even years under normal use)
    a. Oil check - 20 or 20w sae (engine oil, not gear oil standard)
3. Drive sonic cat drive 2
    a. Oil change - 90w hypoid (west marine)
4. Furnace webasto dbw 2010 (even years under normal use)
    a. Fuel filter
    b. Coolant filter
    c. Coolant check / change
5. Anodes
    a. Lewmar thruster
    b. Drive clam shells 2x
    c. Rudder post collars 2x
6. Thru-hulls
    a. Operate handles
7. Bilge pumps
    a. Operate pumps (float and manual)
8. Safety equipment
    a. Flares
    b. Lifejackets
9. Spares
    a. Check spares
    b. Check fluid & consumable stores
    c. Check tools
10. Teak
    a. Varnish
11. Wash
    a. Decks
    b. Hull
    c. Canvas
    d. Ropes

12. Dinghy
    a. Check electric drive
    b. Check / service gas engine

Safety Equipment

- VHF Radios - Pilothouse fwd, stbd, and handheld in Port cockpit locker or dinghy
- Manual bilge pump - Port cockpit, handle in Port cockpit locker
- Lifejackets - Port Laz, Stbd cockpit locker
    - Additionals forward when equipped
- Flares - Port cockpit locker
- First aid kit - Port cockpit locker
- hole plug - port below
- rigging cable cutters - port below
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Spares

- Engine oil filter - Sierra 18-7910-1
- Engine oil
- Engine fuel filter - 1004500-55710
- Racor fuel filter (engine) - 200tm-or
- Furnace fuel filter - napa 3107
- Transmission gear oil
- Coolant
- Zinc for thruster
- Zinc clamshell for drive
- Zinc collar for rudders
- Relay for windlass
- rocker switch windlass
- Engine belt 104511-78780 ???
- engine belt large ???
- prop
- elect dingy prop
- Engine water pump impeller 124223-42092??? … no it's **128990-42570**
- engine water pump gasket 124223-42110???

Needed spares

- impeller
- belts

other

windlass special wrench
mechanical toolkit
electrical toolkit
upholstery toolkit
lamps inflatables and plumbing tool kit
adhesives and patch toolkit
winch service kit
pants and varnish