

# Vreyheyt II

## Overview



Vreyheyt II is a 37 foot Dutch river barge built in 1920 in the Netherland. Her hull is constructed of riveted iron sheets and has a Mercedes OM617 5 cylinder diesel for propulsion. She is fully navigable and has a modern solar and electrical system.

Year: 1920

Type: Dutch River Barge

Length: 37'

Beam" 10'

Draft: 28"

Registration: USCG

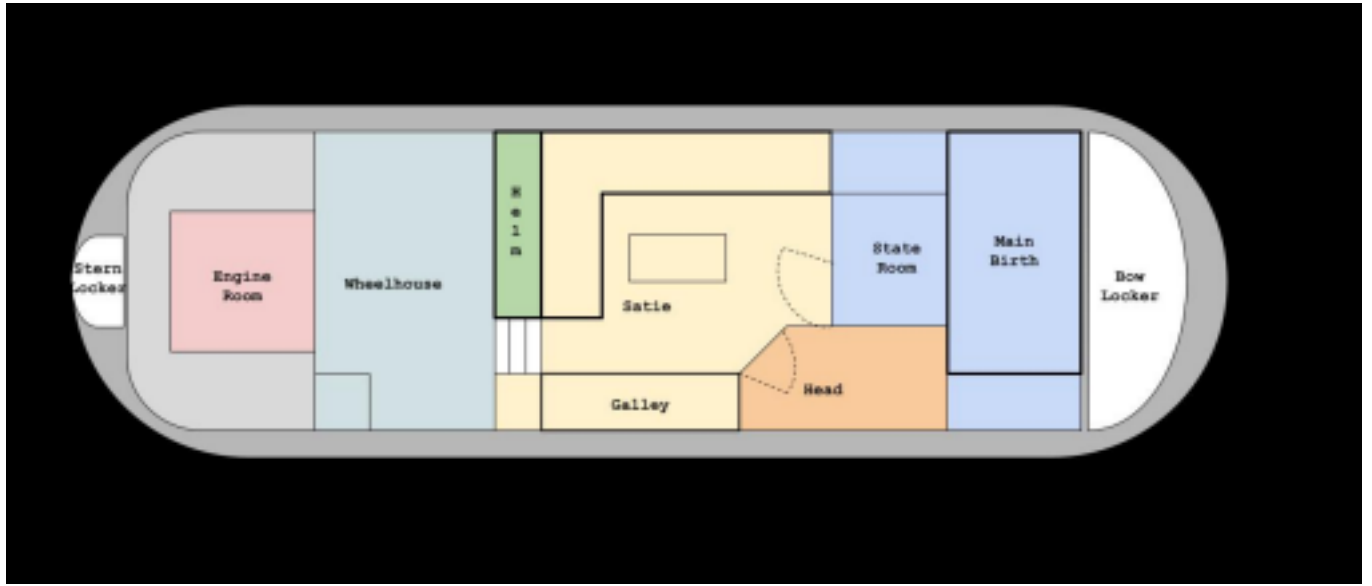
Hull Type: Riveted Flat Bottom Iron Barge

Propulsion: Mercedes OM617 5-cyl Diesel (~450hrs)

Bow Thruster: Side Power

Electrical: 2x Battleborn 220Ah Lithium, 2x 340W Solar, Blue Sea Systems Distribution, Victron Inverter/Charger, Solar Controller, and Management.

## Layout



## History

She was purchased by [REDACTED] in 2020 from the previous owners [REDACTED] [REDACTED] who had owned the boat for two years. Prior owners are unknown.

In 2021 she was hauled out at [REDACTED] in Sausalito where she had her keel cooler replaced and hull stripped and repainted below the waterline. Additional top side paint was also applied up to the gunnels



Later in 2021 her electrical system was updated, replacing breaker and fuse panels, installing lithium batteries and a solar system.

Early 2022 she experienced a pinhole leak under the shower in the head, likely due to a steel rod later found embedded in the mud beneath the vessel. This hole was patched internally and externally with "Splash Zone" epoxy and the bilges were cleaned and recoated with an appropriate "Bilge Oil" for the vessel.

## Hull/Structure

Below the gunnels is mostly original to the vessel and is riveted iron plate. She has a flat bottom with no keel other than the "log splitter" on the front and two thin metal strips where the hull rises. Along the bottom of the hull there is a plate that appears to have been added later in the boat's life.

The house and structure above the gunnels is welded steel and not original to the boat and likely was added when along with the interior and current engine in the Netherlands, likely in the late 1980s.

The vessel has six "Divers Dream" 6"x12"x1" for cathodic protection for the hull. One located each side aft of the bow flare, forward of the stern taper, and alongside the shaft.

*A small "Splash Zone" patch is located under the head and care should be taken in this region when cleaning the bottom*



# Plumbing

## Freshwater



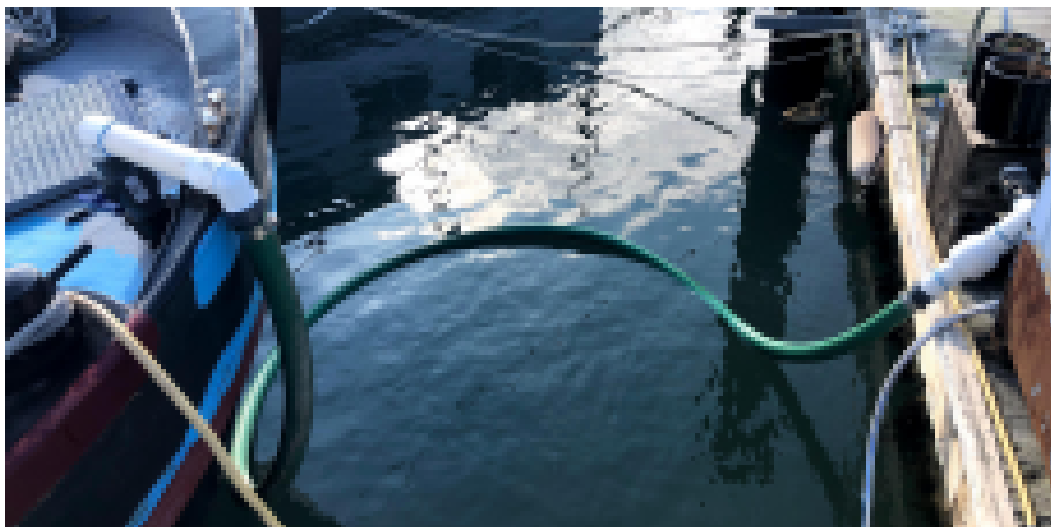
Two ~25 gal freshwater tanks are located under the main berth and can be filled via a deck port on the bow. Both tanks supply a pump and accumulator behind the tanks to port, and which distributes to the head, galley, and water heater via brazed copper pipe. Water was heated with a propane heater located in the head.

*The heater unit itself should still be functional but the gas line is compromised*

## Wastewater

Two ~40 gal waste water tanks are located forward of the freshwater tanks under the main berth. All utilities discharge into the starboard tank.

An electric diaphragm pump located between the waste water tanks can be used for discharge to a 2" cam-lock deck connection on the bow or to a thru hull outboard of the head. A 2" hose can be connected to the deck fitting to discharge waste water if an appropriate connection is available, however the pump must still be controlled manually.

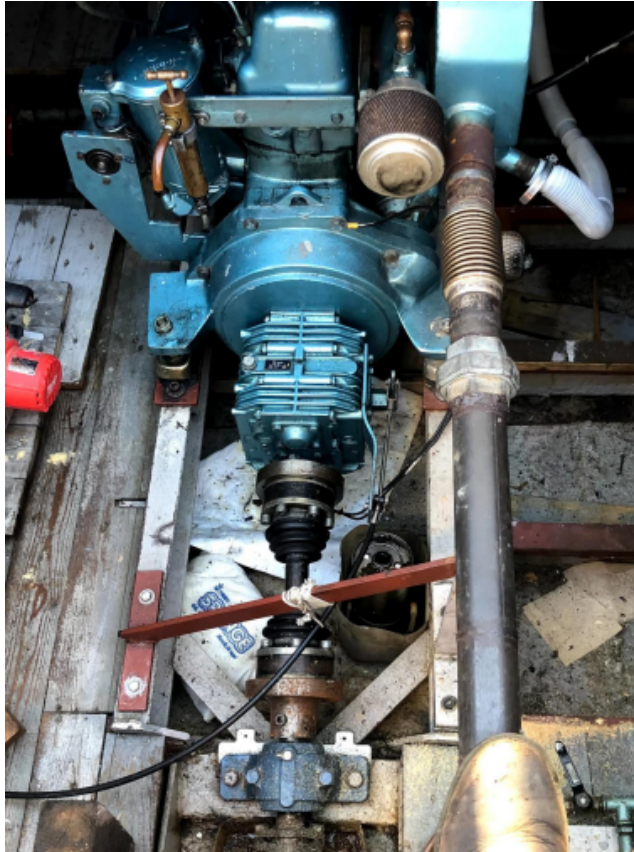


## Fuel



One 120L fuel tank is located on the port side of the engine room with a sight glass as means to indicate level. The fuel manifold is located beneath the floorboards and controls fuel to the engine and heater.

## Engine



The vessel is powered by a Mercedes OM617 five cylinder naturally aspirated diesel engine. The exhaust manifold was replaced with wet type, likely when the engine was installed. Engine cooling is provided by a keel cooler external to the hull along the starboard board with both inlet and outlet on the same side of the ER. The keel cooler was replaced in 2021 and is consists of two 18 foot length of 2" schedule 80 steel pipe with a U-fitting connecting the forward ends with small connecting tabs along the length.



Engine oil is cooled by a inline cooler on the return of the keel cooler and a hand operated pump on the aft of the engine can be used to remove oil from the engine.



The transmission is a Hurth HBW250 and the stern tube is a grease packed steel tube type with packing glands.

## Bow Thruster



The vessel has a "Side Power" 12v bow thruster located in a tube in the "log splitter" with the head of the unit just forward of the waste water tanks under the bow locker and is powered by the lithium house batteries with heavy gauge cables run beneath the center of the cabin. The controller is a push-button type on the helm and the bow thruster can be isolated with a disconnect located by the main bus bar in the engine room.

# Electrical

## Batteries

The main house batteries are two "Battleborn" 220ah 12v Lithium (LiFePO4) in parallel that were installed in January 2023.

The engine start battery is a 12v Lead Acid Battery that was replaced in 2022 and is maintained with a trickle charge from the inverter/charger.

A selector on the starboard bulkhead above the batteries is used to select the start battery.

**NOTE: NEVER COMBINE BATTERIES [1+2], THIS WILL DAMAGE ONE OR BOTH AS THEY ARE OF DIFFERENT CHEMISTRY, VOLTAGE, AND CAPACITY.**



## Inverter/Charger

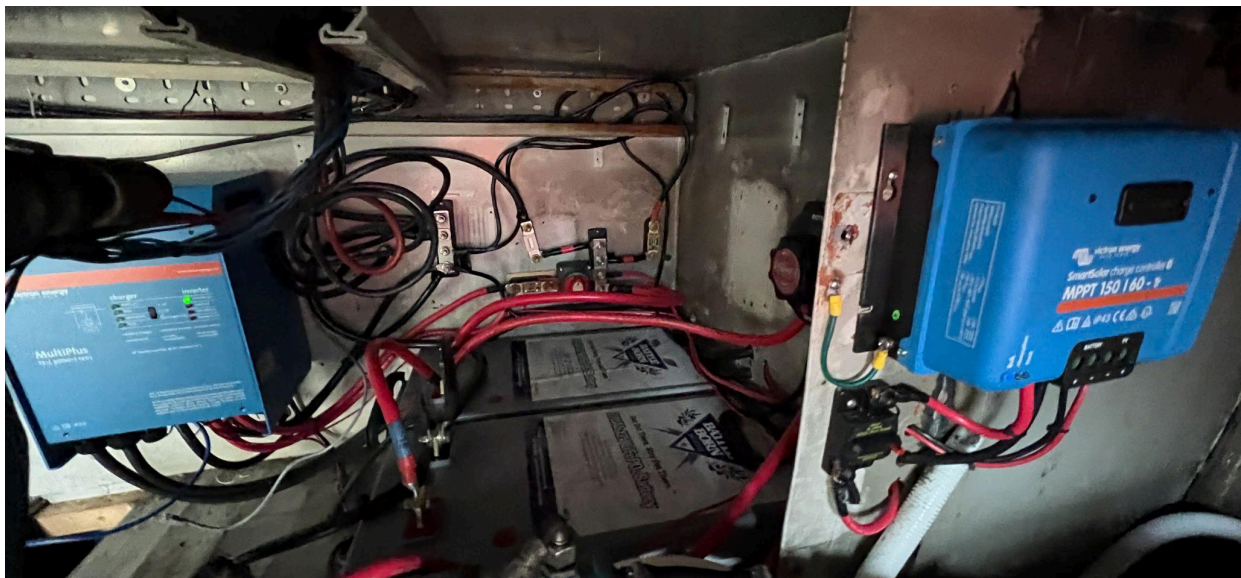
The Victron Multiplus 3kVA inverter/charger can select between using battery or shore power seamlessly to provide AC services and has advanced control functions to connect to shore power if a specified load is exceeded or battery charge falls to low.



## Solar



Two Canadian Solar 340W solar panels are installed on the roof of the wheel house and are connected to a Victron MPPT Solar Charger providing power to the house batteries. This system is capable of providing up to 5kWh during the summer.



# Distribution

The main bus bar is near the batteries and chargers in the engine room and includes the main disconnects and primary fuses for the system and feeds the bow thruster, fuse block, and DC breaker panel.

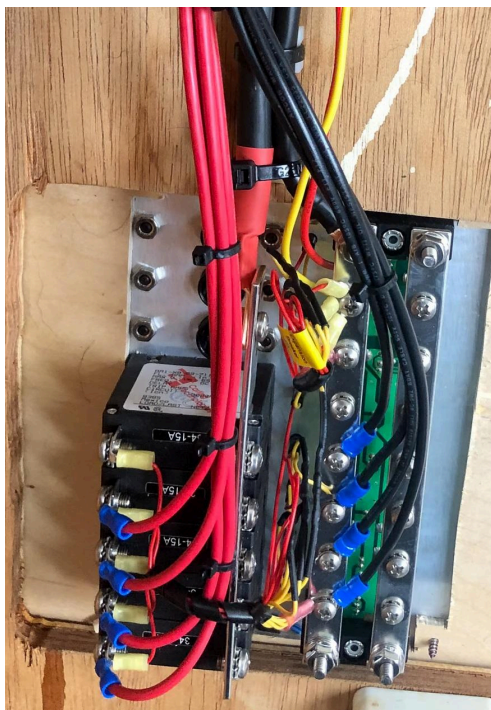
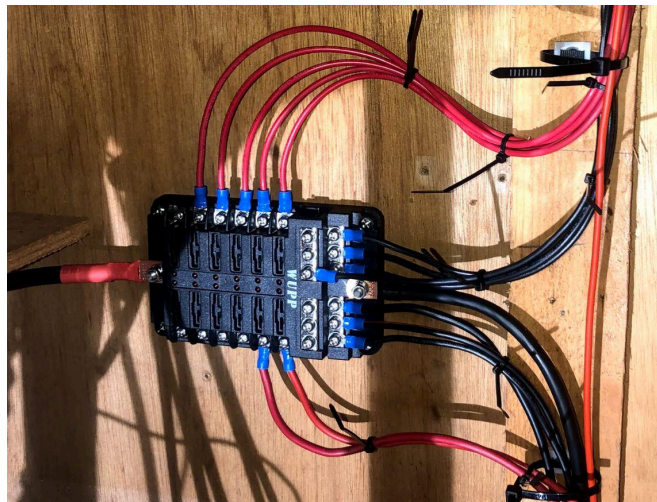
The fuse block is located under the helm and distributes power to the pump and lighting inside the vessel.

The DC Breaker Panel is to port of the helm and distributes power to navigation and propulsion systems.

The AC Breaker Panel is aft on the starboard side of the wheelhouse and controls solar power, shore and inverter power and distribution to AC sockets.

A sliding mechanical interlock is in place on this panel to prevent accidental connection of the Multiplus Inverter charger to shore power.

The fuse block and breaker panels are "Blue Sea Systems"



# Monitoring

Victron Cebo GX system management allows comprehensive and remote monitoring of the solar and electrical system.

*Note the solar is able to keep up to moderate use during most of the year but can require supplemental shore power in December/January.*

