

## SERENGETI Mechanical Survey

Dear Mr. Merrigan,

At your request, Mr. Lance Biggs of Marine Diesel Injection has conducted an inspection of the main engines, reversing gears, and generators, on the 2002, 130-foot Westport motor yacht named "SERENGETI" while she lay afloat and hauled out at the Marine Group in National City, California, and during a trial run in the Pacific Ocean off of San Diego, California. These inspections took place on September 29 and 30, and October 1, 2025. A follow up inspection and sea trial was conducted on January 21, 2026 while she lay afloat at Balboa Bay Club in Newport Beach, California and in the Pacific Ocean off of Newport Beach, California. On board, representing the vessel, was Captain Trevor Mulkey and crew.

### Port Main Engine

Model: MTU 12V 4000M90

Serial Number: 5262000839

Hours: 14,339

Port Transmission: 9A-1388; DD6984A; hours: 14,339

Findings after visual inspection:

- The mechanical oil pressure gauge that has leaked all the liquid out of the gauge body and does not appear to read correctly.
- There is oil leaking from the fuel lift pump drive shaft seals.
- The seawater pump has salt crust from the seal relief and should be monitored for leaks.
- The seawater discharge elbow from the heat exchanger has multiple pin holes and should be replaced.
- The alternator excitation switch appears to be leaking oil.
- There are multiple exhaust pyro mounting connections that are broken and not able to be secured.

### Starboard Main Engine

Model: MTU 12V4000M90

Serial Numbers: 5262000838

Hours: 14,300

Starboard Transmission: 9A-1400; DD6984A; hours: 14,300

- Various oil leaks from the a-ring seals on the crankcase breather piping.

- There is oil leaking from the fuel lift pump drive shaft seals.
- The alternator excitation switch is leaking oil.
- The seawater pump housing has multiple pinholes that are leaking.
- The seawater pump inlet elbow has multiple pinholes and should be replaced.
- The fuel prime pump switch cover is cracked.
- There are multiple exhaust pyro mounting connections that are broken and not able to be secured.

### Dockside Inspection

- Check all oil and coolant levels on all machinery, all are good.
- Started both Main Engines and inspect cold start up smoke. Both Main Engines have minimal exhaust smoke at startup.
- Engine coolant temperatures are 68 degrees Fahrenheit at startup.
- All pressures and temperatures are normal at startup.
- Allow engines to warm up dockside, when warm check forward and reverse on both transmissions, all are ok.

### Sea Trial

- Run both Main Engines at various RPM's to full throttle. Both engines make the factory rated full throttle speed of 2100 PM.
  - o Port Main Engine make 2125 RPM.
  - o Starboard Engine makes 2108 RPM.
- There is no abnormal exhaust smoke or engine vibration at any speed.
- All engine pressures and temperatures are normal on both Main Engines at all speeds.
- All exhaust gas temperatures for each cylinder are normal on Both Main Engines.
- Take snapshot recordings for both Main Engines at all run speeds.
- All transmission oil temperatures and pressures are normal at alt speeds.

<u>Speed</u>	<u>RPM</u>
12 Knots	1100
14	1300
15.8	1500
17.6	1700
20.6	1900
24	2100

\*\*\*SPEED'S & RPM'S PROVIDED BY CAPTIAN DURING SEA TRIAL\*\*\*

- When satisfied with sea trial return engines to idle speed.
- Test all throttle control stations for proper function.
- All throttle controls work properly and the emergency backup throttle also works properly.
- The local control throttles in the engine room were tested and both are not working.
- All engine start and stop buttons are working.
- When satisfied with all testing, return to dock and shut down engines.
- Oil samples were taken from both engines and transmissions. Included separately.
- While running it is notes that the oil centrifuges on Both Main Engines are leaking oil from the base seals. Both engines have oil leaks from the oil pan seal to the cylinder block. The fittings for the oil prelube pump is leaking oil at the engine gear case connection on both Main Engines.

### Generator Inspection

#### Port Generator:

- Serial Number: 4452-27483
- Model: 4045T-65KW
- Hours: 35,351

Remove sound enclosure covers and conducted visually inspection.

- The Port Generator Murphy switch for coolant level has a cracked cover.
- The seawater pump is leaking seawater past the shaft seal.
- The oil filter and oil cooler housings are heavily corroded due to seawater leak from the seawater pump.
- The heat exchanger end cap seals are showing signs of leakage.
- The coolant pump seals are leaking coolant.
- The seawater elbow on the exhaust elbow has signs of either a small pinhole or needing to be resealed.
- There is a small amount of oil splatter between the flywheel housing and generator fan, possibly coming from the crankshaft rear seal.
- It is noted that the Port Generator oil pressure shut down switches are dripping oil.

#### Starboard Generator:

- Serial Number: 4452-27462
- Model: 4045T-65KW
- Hours: 34,972

Remove sound enclosure covers and conducted visually inspection.

- The Starboard Generator has a few small leaks from the plugs on the oil pan.
- The seawater pump seals are leaking sea water.
- The sound insulating foam is falling apart on the enclosure panels.
- Check all engine fluid levels and start generators. Allow to warm-up. When warm place vessel load on each Generator.
- Both Generators carry vessel load dockside and while underway.
- All engine pressures and temperatures are normal.
- There is no abnormal exhaust smoke or fuel sheen on the water.
- Once satisfied with electrical load test, remove load and engage hydraulic PTO pumps.
- Using the hydraulic pumps the vessel was spun a full 360 degree circle.
- Both Generators carry full hydraulic load.
- Once satisfied, remove all loads and shut down Generators.
- Take oil samples and install sound enclosures.