PERFORMANCE SEA TRIAL AND GENERAL ENGINE INSPECTION REPORT

Customer's Name: New Castle Marine Holdings LLC / Kitson Yachts / Cinthya Castro / cinthya@kitsonyachts.com

Date: 07-30-2025

Yacht Name: MINE SET

Location: Bradford Marine – Fort Lauderdale - FL

Conditions of this performance sea trial report acceptance:

This report represents the surveyor's honest and unbiased opinion and was performed visually with the aid of various test instruments. No disassembly of any component was performed unless specifically stated in this report.

All details and particulars in this report are believed to be true but are not guaranteed accurate. All judgments, conclusions and recommendations are expressions of opinion of the undersigned based on his skill, training and experience.

This report sets forth the conditions existing at the time of inspection and sea trial. By acceptance of this report it is understood by all parties that it is not to be considered a warranty or guarantee either expressed or implied and does not create any liability on the part of the surveyor. The use of any part of this report constitutes acceptance of these conditions.

YT. MINE SET

94' Mangusta

Builder: Mangusta - Overmarine Group

Model: Mangusta 94

Type: Motor Yacht

Year: 2016 Reported

LOA: 94'

Beam: 21'11"

Draft: 5'4"

Hull Material: Fiberglass

Hull #: OMR094048616

Load Displacement (fully loaded displacement): 95 tonnes

Displacement with average load: 90 tonnes

Fuel Capacity: 9300 liters

Water Capacity: 1400 liters

Main Engines: MTU

Model: 16V2000M96L

Rated Power: 2636 Metric HP / 2600 SAE HP / 1939 KW @ 2450 rpm

HP/L: 72.8

Manufacturers Rating Definition:

Rating: 1DS Pleasure craft.

Diesel engine for fast vessels with low load factors.

Typical applications: Fast yachts, fast patrol boats, police craft and fire-fighting vessels.

Annual hours: Up to 3,000Hs.

Average Load: Less than 60% of rated power.

ENGINE DESCRIPTION:

The engine is liquid-cooled four-stroke diesel engine with c.c.w direction of rotation, direct injection, sequential turbocharging and charge air cooling.

An electronic management system provides engine control and monitoring.

Fuel System with Common Rail Injection:

Controlled by the electronic engine management system, the Common Rail Injection system determines injection pressure, commencement and amount of injection independently of engine speed.

Injection pressures up to 1800 bar provide optimum injection and combustion conditions.

Fuel feed pump, fuel hand pump, fuel pre-filter, fuel main filter with diverter valve, on-engine fuel cooler, HP fuel pump, jacketed HP fuel lines, injection nozzles (common rail system), flame

proof hose lines, leak-off tank level monitored.

Combustion Air System:

Sequential turbo charging with 3 water-cooled exhaust gas turbochargers, on-engine intake air filters.

Lube oil System:

Wet-sump forced-feed lubrication system

The following components are supplied with lube oil:

1) Bearings

2) Piston Cooling

3) Control and actuating elements of the sequential turbocharging system

Cooling System:

Two separate circuits:

1) Engine coolant

2) Raw water

Coolant cooled by raw water cooled plate-core heat exchangers

Thermostat-controlled coolant circuit

Self-priming centrifugal raw water pump.

Gear driven coolant circulation pump.

Exhaust System:

Triple-walled, liquid cooled, on-engine exhaust manifolds, single centrally located exhaust outlet, exhaust bellows horizontal discharge.

Starting System:

Electric Starter 24V

Auxiliary System:

Alternator, 80A, 28V, 2 poles

Mounting System:

Resilient mounts at free end.

Engine Management System:

Engine control and monitoring system (ADEC), engine interface module (EIM)

CHARACTERISTICS:

Operation Mode: 4 Stroke Diesel Engine

Cylinders: 16 in 90 Deg V arrangement with wet and replaceable cylinder liners.

Bore: 135 mm

Stroke: 156 mm

Displacement: 35.7 l

Number of inlet valves per cylinder: 2

Number of exhaust valves per cylinder: 2

Number of turbochargers: 3

Fuel System: Common Rail direct fuel injection with electronic control

Engine Lubrication: Closed system with force feeding oil cooling and filtering

Type of Cooling: Heat Exchanger with engine and seawater circuit.

DIMENSIONS AND MASSES (INCL. GEARBOX):

Length: 3078 mm (121.2 in)

Width: 1293 mm (50.9 in)

Height: 1453 mm (57.2 in)

Mass (dry): 4020 kg (8863 lbs)

MAIN ENGINES INFORMATION:

Port Year: 2015

Starboard Year: 2015

Port Serial #: 545 100 369

Starboard Serial l#: 545 100 226

Port Engine Hs: 1,546 Hs

Starboard Engine Hs: 1,582 Hs

Propulsion System: KAMEWA

Kamewa waterjets 56 S3 NP

Transmissions: ZF

Model: 3070 A

Ratio: 1.828: 1

Port Serial #: 50037776

Parts List # 3101078063

Starboard Serial #: 50037775

Parts List # 3101078063

Generators: KOHLER

Port Model: 28EFOZD

Port Serial #: SGM22DGSD

KW: 28 KW

Hz: 50 / RPM: 1500

Insulation: NEMA Class H

Note: Hours presented herein do not verify, confirm or validate the total time of operation of equipment

Port Generator Hours: 306.1 hours

Starboard Model: 28EFOZD

Starboard Serial # SGM32DG9F

KW: 28 KW

Hz: 50 / RPM: 1500

Insulation: NEMA Class H

Note: Hours presented herein do not verify, confirm or validate the total time of operation of equipment

Starboard Generator Hours: 4144 hours

PORT ENGINE:

Primary Fuel Filters: Dual SEPAR element 04030.

Secondary Fuel Filter: Not leaking.

Air Filters: Clean.

Oil Filter: Not leaking.

Heat Exchanger: Not leaking. *Coolant concentration out of normal range.

Raw water lines: *Exhaust raw water pipe with corrosion due to a leak.

Fresh water piping: Not leaking.

Fuel lines: OK.

Exhaust system hose: No external leaks.

Engine mounts: Secure.

STARBOARD ENGINE:

Primary Fuel Filters: Dual SEPAR element 04030.

Secondary Fuel Filter: Not leaking.

Air Filters: Clean.

Oil Filter: Not leaking.

Heat Exchanger: Not leaking. *Coolant concentration out of normal range.

Raw water lines: *Exhaust raw water pipe with corrosion due to a leak.

Fresh water piping: Not leaking.

Fuel lines: OK.

Exhaust system hose: No external leaks.

Engine mounts: Secure.

Note: *Oil seepage at oil pan gasket.

GENERATORS:

Port generator was load tested individually, no abnormal smoke was observed, no overheating conditions, no alarms.

PORT GENERATOR:

Primary Fuel Filter: *Racor bowl with debris.

Secondary Fuel Filter: Serviceable.

Lift Pump: Not leaking.

Oil Filter: Not leaking.

Fresh Water Pump: Not leaking.

Hoses: Serviceable.

Raw Water Pump: Not leaking.

Muffler: No external leaks.

Exhaust Hoses: Serviceable.

Injectors: No leaks.

Injection Lines: No leaks.

Belts: OK.

Sound Shield Insulation: NEMA CLASS H in fair condition.

STARBOARD GENERATOR:

* Starboard generator held the electric load for a few minutes and then shutdown due to an oil pressure alarm.

General Observations during inspection:

Oil levels were between low and full mark on both engines and transmissions.

Oil level was between low and full mark on generators.

Exhaust Flappers – Turbo switching mechanisms:

Both engines exhaust flap mechanisms moved freely.

The sequential turbo switch points were found correct on both engines.

NOTE: A borescope inspection was not requested/performed at this time.

The internal condition of the engines is unknown at this time.

OILS:

NOTE: Oil samples from both main engines, both transmissions and both generators were pulled and sent to lab for analysis. (Please see results reports attached).

The oil analysis incorporates three different tests.

The first part of the report examines the units oil for wear metals, measured in parts per million. Wear metals are minute particles of metal suspended in the unit's oil, which are formed by friction between moving parts, abrasion or corrosion. The second part of the analysis inspects the oil for contaminants such as fuel, water, sodium, potassium, glycol, dirt (silicon) and soot.

The third checks the oil for its ability to lubricate and protect the unit properly. (Oxidation, viscosity, SAE and TBN.

LAB RESULTS:

Oil Lab Reports attached with own observations and recommendations.

COOLANTS:

The coolant levels were normal on both engines.

*The coolant concentration was tested with a refractometer and found both brix # values out of normal range.

HAUL-OUT INSPECTION:

Performed at Broward Marine in Fort Lauderdale along with Elite Marine Surveyors.

Check running gears and seawater intake. Took photos.

START-UP MAIN ENGINES AND DOCKSIDE TEST:

Main Engines Start Up Engines Test: No smoke.

Generators Start Up Test: No smoke.

PORT ENGINE IDLE SPEED:

RPM:	600
Port Injection Qty (%)	3
Port Fuel Rate (l/h):	5
Port ETC Speed (KRPM):	0
Port Oil Pressure (bar):	3.6
Port Fuel Pressure (bar)	6.7
Port Fuel Rail Pressure (bar)	677

Port Charge Air Pressure (bar):	1.02
Port Crank Case Pressure (mbar):	1.6
Port Oil Temp (C):	62
Port Fuel Temp (C):	51
Port Coolant Temp (C):	62
Port Charge Air Temp (C):	37
Port Intake Air Temp (C)	38
Port Exhaust Comb A (C)	100
Port Exhaust Comb B (C)	97
Port Gear Pressure (bar)	4.7
Port Gear Temp (C):	42

STARBOARD ENGINE IDLE SPEED:

RPM:	601
Stbd Injection Qty (%)	3
Stbd Fuel Rate (l/h):	5
Stbd ETC Speed (KRPM):	0
Stbd Oil Pressure (bar):	3.5
Stbd Fuel Pressure (bar)	7.4
Stbd Fuel Rail Pressure (bar)	679
Stbd Charge Air Pressure (bar):	1.00
Stbd Crank Case Pressure (mbar):	1.7
Stbd Oil Temp (C):	64
Stbd Fuel Temp (C):	52
Stbd Coolant Temp (C):	64

Stbd Charge Air Temp (C):	37
Stbd Intake Air Temp (C)	36
Stbd Exhaust Comb A (C)	101
Stbd Exhaust Comb B (C)	98
Stbd Gear Pressure (bar)	4.7
Stbd Gear Temp (C):	42

A sea trial was conducted: 07-30-2025 / Location: Fort Lauderdale

Load Condition:

60% fuel / 60 % water / 7 people

	1800	2000	2200	WOT
Port Injection Qty (%)	60	73	87	100
Port Fuel Rate (l/h):	230	332	406	512
Port ETC Speed (KRPM):	70	76	80	80
Port Oil Pressure (bar):	7.7	7.7	7.7	7.6
Port Fuel Pressure (bar)	9.1	9.1	9.2	9.1
Port Fuel Rail Pressure (bar)	1451	1711	2025	2174
Port Charge Air Pressure (bar):	3.10	3.38	4.09	4.17
Port Crank Case Pressure (mbar):	-0.6	-3.4	-2.9	-3.1
Port Oil Temp (C):	75	79	83	86
Port Fuel Temp (C):	72	73	76	77
Port Coolant Temp (C):	78	83	87	89
Port Charge Air Temp (C):	44	46	49	48

Port Intake Air Temp (C)	40	39	40	41
Port Exhaust Comb A (C)	559	661	739	770
Port Exhaust Comb B (C)	569	676	742	781
Port Gear Pressure (bar)	22.4	22.6	22.9	22.9
Port Gear Temp (C):	50	53	56	58
Stbd Injection Qty (%)	61	74	86	99
Stbd Fuel Rate (l/h):	241	348	422	513
Stbd ETC Speed (KRPM):	71	76	79	79
Stbd Oil Pressure (bar):	7.8	7.8	7.9	7.8
Stbd Fuel Pressure (bar)	9.0	9.1	9.2	9.1
Stbd Fuel Rail Pressure (bar)	1478	1722	2008	2124
Stbd Charge Air Pressure (bar):	3.16	3.41	4.13	4.20
Stbd Crank Case Pressure (mbar):	11.1	7.4	0.3	-0.4
Stbd Oil Temp (C):	75	77	80	82
Stbd Fuel Temp (C):	73	74	77	78
Stbd Coolant Temp (C):	78	82	83	84
Stbd Charge Air Temp (C):	42	44	47	46
Stbd Intake Air Temp (C)	37	37	37	36
Stbd Exhaust Comb A (C)	575	713	705	784
Stbd Exhaust Comb B (C)	576	715	709	785
Stbd Gear Pressure (bar)	22.4	22.7	22.9	22.9
Stbd Gear Temp (C):	50	52	55	58
Boat Speed (knots)	13.5	15.3	18.7	26.2

Observations during sea trial

The engines were tested at different speeds, data was collected and smoke was monitored.

Temperatures were double checked with the use of an infrared thermometer gun.

*At WOT (Wide Open Throttle) there were Port engine high exhaust gas temperature right manifold and intake manifold alarms with a power reduction. The max rated rpm's (2450 rpm) could be attained on Starboard engine but not on Port engine.

There was no abnormal smoke exiting the engines at different rpms.

There was no abnormal smoke during acceleration.

There was no abnormal smoke at wot (wide open throttle).

ACCELERATION TEST:

Good acceleration with no abnormal smoke exiting exhausts.

MAINTENANCE RECORDS:

No Maintenance records were found onboard.

RECOMMENDATIONS:

The following is recommended for both main engines:

As a good base line for the new owner and preventive maintenance it is recommended to change oil, oil filters, primary and secondary fuel filters.

Clean seawater strainers. Make sure that Port side raw water intake is not obstructed.

Service both engines heat exchangers and intercoolers (charge air coolers).

Install new coolant and adjust to right concentration.

Check valve clearance, adjust if necessary.

Repair both engines raw water leaks on exhaust raw water pipes and inspect pipes for possible damage due to corrosion.

Monitor oil seepage at Stbd oil pan gasket.

The following is recommended for both ZF transmissions:

Change oil and oil filter.

Service gear coolers.

The following is recommended for Generators:

General maintenance service (oil and filter change, primary and secondary fuel filters change, service heat exchanger, change raw water pump impeller, change zincs).

Clean RACOR bowls.

Investigate shutdown on Starboard generator due to the oil pressure alarm and perform needed correction.

The following is recommended in general:

Maintain manufacturer's maintenance guidelines (MTU, ZF, KOHLER)

Keep a record of oil sample results every time the oil is changed.

Operating at the recommended cruising speed will help to provide the maximum engine service life and the most economical operation.

Fuel Conservation Practices:

The efficiency of the engines can affect the fuel economy, therefore be aware of the properties of the different fuels. Use only the recommended fuels.

Avoid unnecessary idling.

Shut off the engines rather than idle for long periods of time.

Keep the air filters clean.

Ensure that the turbochargers are operating correctly so that the proper air/fuel ratio is maintained. Clean exhaust indicates proper functioning.

No part of this report is issued as an expressed or implied warranty of the condition or life expectancy of the vessel's engines, transmissions and generators, or of the cost of repairs.

It is agreed that Scarano Marine Inc. shall not be held liable or responsible for any errors, omissions, or oversights in the inspection of the above described yacht.

This report is issued without prejudice to the rights of whom it may concern.

Sincerely,

Adolfo Scarano

Certified Marine Engineer-Surveyor

Scarano Marine

Certified MTU

Authorized MAN Dealer

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