

Mechanical Survey

Coastal Marine Engine

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Seattle, WA 98107

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Surveyor: Patrick Hayertz

Date: 10/14/2025

Boat Name: Sea Jay II

Make: Coastal Craft

Mechanical Survey

Hull/ USCG#: CKP10056G212			Oils Samples: Yes		No. Samples: 5		
MAIN ENGINE INFORMATION							
Engine Model	D13B-G MP		PT S/N	VP 188999 2013338475		Hours	1158.70
ST S/N			VP 188998 201338418		Hours	1157.55	
AR#/Spec#/ Center ESN							
Transmission Model	IPS3-A		PT S/N	3950001104		Ratio 1.88:1	
Spec# Center SN			ST S/N	3950001103			
GENERATOR INFORMATION							
Generator Model/Spec#	Panda 12 Mini PMS Digital		PT S/N	C04-044-060		Hours	323.4
			ST S/N			Hours	
SEAKEEPER/ GYRO INFORMATION							
SEAKEEPER	SIDE	Model:	S/N:		Run Hrs	Sea Hrs	
	SIDE	Model:	S/N:		Run Hrs	Sea Hrs	
ADDITIONAL EQUIPMENT							
AUX EQUIPMENT	Model		S/N				
	Model		S/N				
	Model		S/N				

Condition of the Engine Compartment: Clean, dry and organized

PORT ENGINE:

Coolant level: Ok (unknown age of coolant).

Oil level: Ok.

Transmission oil: Ok.

Zincs:

Oil leaks: Located at the rear of the engine. Possible sources include the valve cover and/or timing cover.

Coolant leaks: None noted - passed pressure test at 15psi.

Raw water leaks: See water pump and connections.

Cooling system hoses: Ok.

Fuel System: Ok.

Air system: Ok.

Oil system: Ok.

Exhaust system: Very slight soot observed at the exhaust elbow connection. The clear wake muffler end is corroded and beginning to leak.

Electrical: Ok.

D/C charging system:

Voltage Readings:

- Engine: 2 amps at 28.2 VDC
- House: 20 amps at 14.4 VDC

Engine mounting: Ok.

Main engine thru hull: No thru-hull stand pipe installed.

Engine running condition:

Additional items found and or recommendations:

- CCV hoses are hardened and oil-saturated
- Corrosion observed in the area between the top box and exhaust horn
- Raw water intrusion and corrosion beginning in the pod ring

ECM Connect/ Cylinder Inspection/ Electronic Control Inspection:

STARBOARD ENGINE:

Coolant level: Ok (unknown age of coolant).

Oil level: Ok.

Transmission oil: Ok.

Zincs:

Oil leaks: Seawater pump seal.

Coolant leaks: No leaks noted. Passed 15psi pressure test cold.

Raw water leaks: Sea water pump.

Cooling system hoses: Ok.

Fuel System: Ok.

Air system: Ok.

Oil system: Ok.

Exhaust system: Slight soot observed at the exhaust elbow connection. Evidence of a minor water leak from one or more exhaust connections downstream of the elbow. The Clear Wake muffler end cap is actively leaking.

Electrical:

D/C charging system:

Voltage Readings:

- Engine: 28.3 VDC
- House: 28.8 VDC

Engine mounting:

Main engine thru hull: No thru-hull. Stand pipe installed.

Engine running condition:

Additional items found and or recommendations:

- CCV hoses are hardened and oil-saturated.
- Corrosion around pod ring.

ECM Connect/ Cylinder Inspection/ Electronic Control Inspection:

GENERATOR:

Coolant level: Ok.

Oil level: Ok.

Overall condition:

Zinc: Ok.

Oil leaks: None.

Coolant leaks: None.

Raw water leaks: None.

Cooling system hoses: Ok.

Fuel System: Ok.

Air system: Ok.

Exhaust system: Ok.

D/C charging system: 28.8 VDC

A/C electrical system: 240V at half-capacitor load, operating at 60.5 Hz.

Engine running conditions: Normal

Additional Comments: Smoke observed during and after engine start-up. A sheen was visible on the water near the underwater exhaust following start-up.

Notes and Observations:

1. **Port Engine:** Very slight soot at the heat shield opening. No other signs of exhaust leaks on the engine or in the engine room.
2. **Port Engine:** CCV hose is hardened and stained due to oil saturation.
3. **Port Engine:** Seawater pumps showing signs of leakage; pump connections are corroded.
4. **Port Engine:** Oil leak observed at the rear of the engine. Source not yet verified.
5. **Port Engine:** Clear Wake muffler outboard end cap is corroded and shows signs of leakage.
6. **Port Engine:** Small area of corrosion noted at the aft end of the top box, near the exhaust.
7. **Starboard Engine:** Slight soot at the turbo heat shield opening. No other signs of exhaust leaks (like Item 1).
8. **Starboard Engine:** Signs of water leakage at the exhaust elbow to fiberglass pipe connection.
9. **Starboard Engine:** Seawater pump is leaking from the mechanical seal and showing signs of oil leakage.
10. **Starboard Engine:** Clear Wake muffler end caps are corroded. Outboard side is actively leaking while the engine is running.
11. **Generator:** Heat exchanger end cap shows signs of leakage.
12. **Generator:** Exhaust thru sound shield elbow corroded and leaking at the threaded hose barb connection, located outside the sound shield.
13. **Generator:** Exhaust is smoky after startup. Underwater exhaust leaves a sheen on the water. Smoke mostly clears after warm-up, with occasional puffs.
14. **Recommendation:** Service the engine and transmission coolers (including heat exchangers, air charge coolers, transmission coolers, etc.) due to age and sea trial observations. Also recommend coolant flush and/or replacement. Noted coolant temperatures creeping up at wide-open throttle (WOT): 90°C on port, 91°C on starboard. Multiple DTCs indicating above-normal air intake temperatures were recorded on Vodia (both port and starboard).
15. **Engine Control Units:** Software updates are available and recommended.

SEA TRIAL OBSERVATIONS AND DATA:

TIME 12:30PM	DATE 10/14	START	STOP	AMB. TEMP 53	SEA TEMP 56	NOTES	
WEATHER OBSERVATIONS							
MAX TURBO BOOST PSI			NO LOAD RPM	PT 2300	ST 2300		AIR INTAKE TEMP
PT 343.8	ST 346.99		FULL LOAD RPM	PT 2380	ST 2380		PT 40-50c 41-51c

Running Conditions:

<u>RPM</u>	<u>TEMP</u>		<u>OIL PSI</u>		<u>KNOTS</u>	<u>GPH</u>		<u>BOOST PSI</u>		<u>LOAD %</u>	
	PT	ST	PT	ST		PT	ST	PT	ST	PT	ST
1000	73	88	334	262	10.3 10.3	430	430	40 143	42 144	33%	32%
1500	86	87	420	365	17.6 17.9	470	475	192 296	182 286	59%	57%
2000	86	87	444	385	29.5 30	482	472	275 379	271 375	75%	73%
P: 2381 S: 2380	90c 194f	91c 195.8f	444	410	37.7 38.3	368	375	340 439	340 439	100%	100%

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Print name: Patrick Hayertz

Sign: Patrick Hayertz Date: 10/14/2025