



RPM DIESEL ENGINE CO. INC.
2555 STATE RD 84
FT. LAUDERDALE FLORIDA 33312
BROWARD: 954-587-1620 FAX: 954-587-0367

DATE: May 5, 2023

HULL# BWD00250J191

DOC#982010

WO# 70218

TO: Lloyd Sorenson
5020 Mill Pond Rd #3158
Wesley Chapel, FL 33543

Survey on the M/V A PLACE IN THE SUN

The 100 BROWARD was inspected on 05-05-2023 while at Ft. Lauderdale, FL. and during a trial run on the Atlantic Ocean. This was requested by Skip Sorenson the prospective owner, buyer, or broker/agent for the vessel.

The vessel was equipped with TWIN DETROIT DIESEL 12V-92T Main Engines and Twin generator sets.

The following inspections and tests were conducted by external methods only. If major dismantling of the engines is required, it will be conducted at a later date at an agreed upon rate at which time an addendum to this report will be issued. The type of inspections conducted at this time are intended to relay the present operating condition of the engines, transmissions, and generators as of this date. Latent defects and internal failures will not be covered in this report.

A bore scope test was not conducted at this time, as per customer request. Customer Initial. See attached addendum.

Oil samples were taken and sent to laboratory for analysis. The results should be sent to us in four or five days.

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TERMS, CONDITIONS & LIMITATIONS

This engine survey report is issued by the undersigned, who has exercised reasonable care in conducting a visual inspection of the accessible areas, in connection with a marine diesel engine survey of the subject vessel. All details and particulars in this report are believed to be true, but are not guaranteed accurate. All judgements, conclusions and recommendations are expressions of opinion of the undersigned based on his skill, training and experience. After a routine examination of the vessel's engines, and after discussions with owners or others familiar with the vessel.

No part of this report is issued as an expressed or implied warranty of the condition or life expectancy of the vessel's engines, reverse gears and generators, or of the cost of repairs. Unless specifically stated otherwise in this report, the undersigned has not disassembled or removed any components, covers, or accessories for inspection or testing; therefore this report does not cover latent defects not readily discovered without such removal or disassembly. **The undersigned has conducted his survey and issued this report for the sole use of the specified requesting party. For an agreed fee based on the intended use of the report and legal liability of the undersigned; accordingly. Others are not to use this report and not to rely upon the contents of this report without payment to the undersigned of an additional agreed fee based upon reevaluation of the same factors.** Further, the undersigned shall have no liability for property loss damages, and no liability for punitive damages, all of which shall be deemed to have knowingly and voluntarily waived upon use of this report; further, in no event shall the legal liability of the undersigned for this report ever exceed the fee paid by the requesting party for issuance of this report, regardless of the number of claims or suits and regardless of whether under theory of tort, contract, warranty, outrage, or otherwise.

THIS SURVEY IS PREPARED EXCLUSIVELY FOR A POTENTIAL BUYER AND IS NOT IN ANY CIRCUMSTANCES TRANSFERRABLE.

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TRIAL RUN DATA

| | IDLE | PORT FULL LOAD | IDLE | STBD FULL LOAD |
|------------------------|------------|----------------------|------------|----------------------|
| RPM | <u>600</u> | <u>2140*</u> | <u>600</u> | <u>2120*</u> |
| NO LOAD | | | | |
| OIL PRESSURE (psi) | <u>17</u> | <u>65</u> | <u>18</u> | <u>65</u> |
| CRANKCASE PRESSURE H2O | <u>.2</u> | <u>2.5</u> | <u>.2</u> | <u>3.5</u> |
| WATER TEMP (deg F) | <u>160</u> | <u>195*</u> | <u>157</u> | <u>185</u> |
| DRIVE OIL PRESSURE | <u>250</u> | <u>255</u> | <u>250</u> | <u>255</u> |
| DRIVE OIL TEMP | <u>108</u> | <u>130</u> | <u>110</u> | <u>135</u> |

Notes:

- 1. Sea trial went well. Seas 2 were 3 to feet.
- 2. Port and Starboard engines did not come up to rated RPMs. Rated full throttle RPMs is 2300. Repair as necessary.
- 3. Port engine coolant temperature was high at full throttle RPMs. Repair as necessary.

| | | | | | | | |
|-------------------|------|------|------|------|------|------|--------------|
| Hand Tach | | 1200 | 1500 | 1650 | 1850 | 2000 | Full RPMs |
| PORT | IDLE | 1200 | 1400 | 1600 | 1800 | 2000 | 2140 |
| Oil Psi | 17 | 53 | 60 | 64 | 65 | 66 | 65 |
| Coolant Temp | 160 | 165 | 165 | 170 | 175 | 185 | 195 |
| Crank Case Psi | 0.2 | 1 | 1.6 | 1.8 | 1.4 | 2 | 2.5 |
| Gear Psi | 250 | 250 | 250 | 250 | 255 | 255 | 255 |
| Gear Temp | 108 | 114 | 116 | 121 | 126 | 127 | 130 |
| Hand Tach | | 1200 | 1500 | 1650 | 1850 | 2000 | Full RPMS |
| STARBOARD | IDLE | 1200 | 1400 | 1600 | 1800 | 2000 | 2120 |
| Oil Psi | 18 | 53 | 60 | 63 | 65 | 66 | 65 |
| Coolant Temp | 157 | 163 | 165 | 165 | 170 | 180 | 185 |
| Crank Case Psi | 0.2 | 1 | 1.4 | 1.6 | 3 | 3 | 3.5 |
| Gear Psi | 250 | 255 | 255 | 255 | 250 | 255 | 255 |
| Gear Temp | 110 | 113 | 110 | 120 | 122 | 124 | 135 |

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ENGINES: PORT

| | | |
|-----------------|------------------|-----------------------------|
| PORT ENGINE | <u>MTU</u> | HOURS <u>10 See Note#11</u> |
| MODEL NUMBER | <u>8122-7400</u> | SERIAL NUMBER <u>12VF-</u> |
| | <u>005993</u> | |
| NO. OF CYLINDER | <u>12</u> | RATED H.P <u>1080</u> |
| | | RATED RPM <u>2300</u> |
| TRANSMISSION | <u>ZF</u> | |
| MODEL NUMBER | <u>BW-195</u> | SERIAL# <u>1964</u> |
| RATIO | <u>2.571:1</u> | |

CONDITION

| | |
|----------------------------------|-----------------------------------|
| PRIMARY FUEL FILTER | <u>Triple Racor 1000 See Note</u> |
| <u>#1</u> | |
| SECONDARY FUEL FILTER | <u>Single Canister</u> |
| AIR CLEANER | <u>Twin AirSep</u> |
| FUEL LINES | <u>Not Leaking</u> |
| LUBE OIL LINES | <u>Not Leaking</u> |
| TRANSMISSION OIL LINES | <u>Not Leaking</u> |
| TRANSMISSION WATER COOLING LINES | <u>Not Leaking</u> |
| RAW WATER SYSTEM | <u>See Note #10</u> |
| RAW WATER HOSES | <u>Not Leaking</u> |
| RAW WATER CLAMPS | <u>Serviceable</u> |
| RAW WATER PUMP | <u>Not Leaking</u> |
| RAW WATER SEA VALVE | <u>See Note #9</u> |
| RAW WATER STRAINER | <u>See Note #2</u> |
| HEAT EXCHANGER | <u>See Note #8&10</u> |
| FRESH WATER SYSTEM | <u>See Note #10</u> |
| FRESH WATER CIRCULATING PUMP | <u>Not Leaking</u> |
| FRESH WATER HOSES | <u>Not Leaking</u> |
| FRESH WATER CLAMPS | <u>Serviceable</u> |
| COOLING FLUID CONDITION | <u>Serviceable</u> |
| PRESSURE CAP | <u>Not Leaking</u> |
| EXHAUST SYSTEM RISER | <u>No external leaks</u> |
| EXHAUST SYSTEM HOSES | <u>Not Leaking</u> |

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PORT ENGINE (Continued)

| | |
|--|-------------------------|
| EXHAUST SYSTEM | <u>Serviceable</u> |
| TURBO | <u>Spin Freely</u> |
| SHAFT COUPLER | <u>True</u> |
| CLUTCH AND THROTTLE CONTROL 2 Glendining | <u>Normal operation</u> |
| MOTOR MOUNTS | <u>Secure</u> |
| EMERGENCY ENGINE STOPS | <u>Serviceable</u> |
| GAUGES 3 Analog | <u>Normal Operation</u> |
| WIRING | <u>See Note #12</u> |
| BELTS | <u>Serviceable</u> |
| BLOCK HEATERS | <u>None</u> |
| TRANSMISSION SEAL | <u>Not Leaking</u> |
| ENGINE FRONT SEAL | <u>Not Leaking</u> |
| ENGINE REAR SEAL | <u>Not Leaking</u> |

REMARKS AND RECOMMENDATIONS:

1. Racor fuel filter I dirty and needs to be cleaned.
2. Sea strainer is cracked and needs to be repaired.
3. There is a lot of rust at the rear of the transmission recommend clean and painting as necessary.
4. Wiring is in poor shape. Recommend checking and repairing as necessary.
5. Engine and transmission gauges at the main helm and the fly bridge don't read accurately and need to be checked and repaired as necessary.
6. Engine has some oil leaks nothing to serious. Recommend cleaning and repairing any leaks as necessary.
7. Hour meter is no accurate.
8. Heat exchanger is leaking water and needs to be repaired.
9. Sea valve is frozen and needs to move freely
10. Engine coolant temperature was high at full throttle RPMs. Repair as necessary. (Clean fresh and raw water systems)Heat exchanger.
11. Hour meter is not correct.
12. There are a number of wires that are not hooked up. Wiring needs to be cleaned up. Repair as necessary.

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ENGINES: STARBOARD

| | | | |
|-----------------|-----------------------|---------------|--------------|
| STBD ENGINE | <u>Detroit Diesel</u> | HOURS | <u>1099</u> |
| MODEL NUMBER | <u>8122-7400</u> | SERIAL NUMBER | <u>12VF-</u> |
| | <u>005991</u> | | |
| NO. OF CYLINDER | <u>12</u> | RATED H.P | <u>1080</u> |
| TRANSMISSION | <u>ZF</u> | RATED RPM | <u>2300</u> |
| MODEL NUMBER | <u>BW-195</u> | SERIAL# | <u>1964</u> |
| | | | |
| RATIO | <u>2.571:1</u> | | |

CONDITION

| | |
|----------------------------------|--------------------------------------|
| PRIMARY FUEL FILTER | <u>Triple Racor 1000 See Note #1</u> |
| SECONDARY FUEL FILTER | <u>Single Canister Type</u> |
| AIR CLEANER | <u>Twin AirSep</u> |
| FUEL LINES | <u>Not Leaking</u> |
| LUBE OIL LINES | <u>Not Leaking</u> |
| TRANSMISSION OIL LINES | <u>Not Leaking</u> |
| TRANSMISSION WATER COOLING LINES | <u>Not Leaking</u> |
| RAW WATER SYSTEM | <u>Serviceable</u> |
| RAW WATER HOSES | <u>Not Leaking</u> |
| RAW WATER CLAMPS | <u>Serviceable</u> |
| RAW WATER PUMP | <u>Not Leaking</u> |
| RAW WATER SEA VALVE | <u>See Note #9</u> |
| RAW WATER STRAINERS | <u>See Note #2</u> |
| HEAT EXCHANGER | <u>Serviceable</u> |
| FRESH WATER SYSTEM | <u>Serviceable</u> |
| FRESH WATER CIRCULATING PUMP | <u>Not Leaking</u> |
| FRESH WATER HOSES | <u>Not Leaking</u> |
| FRESH WATER CLAMPS | <u>Serviceable</u> |
| COOLING FLUID CONDITION | <u>Serviceable</u> |
| PRESSURE CAP | <u>Not Leaking</u> |
| EXHAUST SYSTEM RISER | <u>No external leaks</u> |
| EXHAUST SYSTEM HOSES | <u>Not leaking</u> |

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STARBOARD ENGINE (Continued)

| | |
|---|-------------------------|
| EXHAUST SYSTEM | <u>Serviceable</u> |
| TURBO | <u>Spin Freely</u> |
| SHAFT COUPLER | <u>True</u> |
| CLUTCH AND THROTTLE CONTROL 2 Glendinning | <u>Normal operation</u> |
| MOTOR MOUNTS | <u>Secure</u> |
| EMERGENCY ENGINE STOPS | <u>Serviceable</u> |
| GAUGES 2 | <u>Normal operation</u> |
| WIRING | <u>See Note #11</u> |
| BELTS | <u>Serviceable</u> |
| BLOCK HEATERS | <u>None</u> |
| TRANSMISSION SEAL | <u>Not Leaking</u> |
| ENGINE FRONT SEAL | <u>Not Leaking</u> |
| ENGINE REAR SEAL | <u>Not Leaking</u> |

REMARKS AND RECOMMENDATIONS:

1. Racor fuel filter I dirty and needs to be cleaned.
2. Sea strainer is cracked and needs to be repaired.
3. There is a lot of rust at the rear of the transmission recommend clean and painting as necessary.
4. Wiring is in poor shape. Recommend checking and repairing as necessary.
5. Engine and transmission gauges at the main helm and the fly bridge don't read accurately and need to be checked and repaired as necessary.
6. Engine has some oil leaks nothing to serious. Recommend cleaning and repairing any leaks as necessary.
7. Hour meter is not accurate.
8. Alternator is leaking oil and needs to be repaired.
9. Sea valve is frozen and needs to move freely.
10. Engine room tachometer is not working and needs to be repaired.
11. There are a number of wires that are not hooked up. Wiring needs to be cleaned up. Repair as necessary.

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GENERATOR: PORT

| | | | |
|------------------|----------------|---------|------------------------|
| GENERATOR | | HOURS | <u>317 See note #7</u> |
| MODEL NUMBER | <u>Unknown</u> | SERIAL# | <u>Unknown</u> |
| KILOWATTS | <u>Unknown</u> | VOLTS | <u>240/120</u> |
| NO. OF CYLINDERS | <u>4</u> | RPM | <u>1800</u> |

CONDITION

| | |
|-------------------|-------------------------------------|
| FILTERS | <u>Single Racor 500 See Note #4</u> |
| LIFT PUMP | <u>Not Leaking</u> |
| FRESH WATER PUMP | <u>Not Leaking</u> |
| RAW WATER PUMP | <u>Not Leaking</u> |
| RAW WATER HOSES | <u>Not Leaking</u> |
| FRESH WATER HOSES | <u>Not Leaking</u> |
| BELT(S) | <u>Serviceable</u> |
| MUFFLER | <u>See Note #1</u> |
| EXHAUST HOSES | <u>Not Leaking</u> |
| INJECTORS | <u>Serviceable</u> |
| INJECTION LINES | <u>Not Leaking</u> |
| ZINCS | <u>See Note #8</u> |
| HEAT EXCHANGER | <u>Serviceable</u> |
| MIXING ELBOW | <u>See Note #5</u> |

OPERATIONAL DATA

| | |
|-------------------|---------------|
| WATER TEMPERATURE | <u>178° F</u> |
| OIL PRESSURE | <u>40 Psi</u> |

REMARKS AND RECOMMENDATIONS:

1. Exhaust muffler is in poor condition and is cracked. Repair as necessary.
2. Lots of oil leaks, engine needs to be cleaned and any oil leaks need to be repaired.
3. Wiring is poor condition and needs to be repaired.
4. Racor fuel filter is dirty and needs to be cleaned.
5. Exhaust mixing elbow shows signs of leaking water and needs to be repaired.
6. Engine stop switch is not secure and needs to be repaired.
7. Hour meter is not correct.
8. Check and replace zincs as necessary.
9. Unit ran well and held load.

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GENERATOR: STARBOARD

| | | | |
|------------------|----------------|----------|-----------------------|
| GENERATOR | <u>Unknown</u> | HOURS | <u>272 See Note #</u> |
| MODEL NUMBER | <u>No Tag</u> | SERIAL # | <u>No Tag</u> |
| KILOWATTS | <u>Unknown</u> | VOLTS | <u>240/120</u> |
| NO. OF CYLINDERS | <u>4</u> | RPM | <u>1800</u> |

CONDITION

| | |
|-------------------|------------------------------------|
| FILTERS | <u>Single Racor 500 See Note #</u> |
| LIFT PUMP | <u>Not Leaking</u> |
| FRESH WATER PUMP | <u>Not Leaking</u> |
| RAW WATER PUMP | <u>Not Leaking</u> |
| RAW WATER HOSES | <u>Not Leaking</u> |
| FRESH WATER HOSES | <u>Not Leaking</u> |
| BELT(S) | <u>Serviceable</u> |
| MUFFLER | <u>Not Leaking</u> |
| EXHAUST HOSES | <u>Not Leaking</u> |
| INJECTORS | <u>Serviceable</u> |
| INJECTION LINES | <u>Not Leaking</u> |
| ZINCS | <u>See Note #2</u> |
| HEAT EXCHANGER | <u>Serviceable</u> |
| MIXING ELBOW | <u>See Note #5</u> |

OPERATIONAL DATA

| | |
|-------------------|---------------|
| WATER TEMPERATURE | <u>185° F</u> |
| OIL PRESSURE | <u>38 Psi</u> |

REMARKS AND RECOMMENDATIONS:

1. Exhaust muffler is in poor condition and is cracked. Repair as necessary.
2. Lots of oil leaks, engine needs to be cleaned and any oil leaks need to be repaired.
3. Wiring is poor condition and needs to be repaired.
4. Racor fuel filter is dirty and needs to be cleaned.
5. Exhaust mixing elbow shows signs of leaking water and needs to be repaired.
6. Exhaust pipe needs to be properly secured.
7. Exhaust hose and clamps are in poor condition and need to be repaired.
8. Hour meter is not correct.
9. Check and replace zincs as necessary.

10. Unit ran well and held load.

MTU (PLEASURE CRAFT) MAINTENANCE RECOMMENDATIONS (2000 SERIES)

1) Lubricating System

*Check oil level daily. Replace oil and filters every 500 hours.

Crankshaft Ventilation- clean wire meshes for:

Crankcase ventilation system, every 500 hours, and 250 Hours to fit new paper or woven insert (if fitted) for Line separator for oil mist. Centrifugal oil filter (If fitted), Check thickness of oil residue layer, 500 Hours.

2) Fuel System

*Change fuel filters every 500 hours or annually.

*Fuel hoses should be inspected every 500 hours and Replaced at 1000 hours. Fire resistant fuel hoses do not require automatic replacement at 1000 hours, but should be inspected and replaced as necessary.

*M-90 Series Engines- Bayonets & Injectors should be changed every 3000 hours. Fuel Injection Pumps (E.U.P.'s) every 6000 hours.

*M-91 Series Engines Bayonets, Injectors and Injection Pumps (E.U.P.'s) should be replaced every 2000 hours.

3) Cooling System

*Check coolant level daily. A cooling system properly maintained and protected with antifreeze and supplemental inhibitors can be operated up to 2 years or 4000 hours, whichever comes first.

*Cooling hoses should be inspected every 500 hours and replaced at 1000 hours of service.

*Check engine zincs initially every 60 days, then as required or annually.

*Raw water pump (flexible impeller) should be replaced annually.

*All marine tube & bundle type heat exchangers should be replaced after 4 years or 4000 hours, whichever comes first.

4) Air System

*Air separator filter elements and vacuum limiters must be cleaned and re-oiled every 250 hours of engine operation.

*Filter elements must be replaced every year or every 500 hours of engine operation, whichever comes first. Vacuum limiters must be replaced every two years or 1000 hours of operation, whichever comes first.

*Air box collectors should be drained every 150 hours.

*Air silencers - clean or replace polyurethane foam elements (socks) 3 years or 2000 hours. Should be cleaned though.

4) Drive belts

*Drive belt tension should be checked every 150 hours, adjust if necessary and inspect for splits, cracks, and glazing. Replace belts after 2000 hours of service for M-91 series, and 3000 hours on M-90 Series, regardless of apparent conditions.

MTU (PLEASURE CRAFT) MAINTENANCE RECOMMENDATIONS (2000 SERIES

5) **Marine Gear**

*Check marine gear oil level daily. Replace marine Gear oil coolers every 4 years or 4000 hours.

FUEL SYSTEM-

- 1) M-90 Series Engines- Bayonets & Injectors should be changed every 3000 hours. Fuel Injection Pumps (E.U.P.'s) every 6000 hours.
- 2) M-91 Series Engines Bayonets, Injectors and Injection Pumps (E.U.P.'s) should be replaced every 2000 hours.
- 3) Combustion Chambers- Inspect cylinder chambers using the Bore scope.

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