



MARINE SURVEY CHECKLIST
MITSUBISHI MARINE DIESEL ENGINES

CUSTOMER: _____

TYPE OF APPLICATION: _____

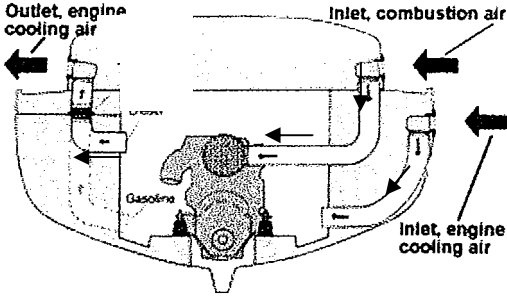
ENGINE MODEL & HP: _____

MARINE GEAR MODEL & RATIO: _____

DATE: _____

1. GENERAL INFORMATION		
1-1	CUSTOMER'S NAME	
1-2	CUSTOMER'S ADDRESS	
1-3	ENGINE MODEL ENGINE SERIAL NUMBER	Port: Center: Starboard:
1-4	ENGINE RATING (HP/RPM)	
1-5	TYPE OF APPLICATION	<input type="checkbox"/> Single <input type="checkbox"/> Twin <input type="checkbox"/> Triple <input type="checkbox"/> New Construction <input type="checkbox"/> Re-power
1-7	BOAT MODEL	SIZE: Loa: Lwl: Weight: Hull #: Loaded weight (lbs):
1-8	GEARBOX MODEL	Manufacturer: Model: Serial #: Ratio:
1-9	SPEED/GEARBOX LEVER CONTROL SYSTEM (Single or Twin Lever, No. of Stations, w/wo trolling etc)	
1-10	PROPELLER SPECIFICATION	P x D x Blades x Cup: Manufacturer:
1-12	ADDITIONAL PTO	<input type="checkbox"/> Front: <input type="checkbox"/> Rear: Purpose:
1-13	INTENDED USAGE	<input type="checkbox"/> Tags: <input type="checkbox"/> Fishing: <input type="checkbox"/> Cruising: <input type="checkbox"/> Other: Explain Other:

2. OPERATING CONDITIONS		
2-1	TERRITORY OF OPERATION	LOCATION:
2-2	MAXIMUM ENGINE INCLINATION ANGLE UNDER WAY (Consult Mitsubishi installation manual for allowable static installation angles)	Shaft drive installation angle: Degrees V-drive installation angle: Degrees

3. INDUCTION AIR SYSTEM		
3-1	AIR CLEANER/SILENCER	<input type="checkbox"/> Standard: <input type="checkbox"/> Other manufacturer: Specification:
3-2	AIR CLEANER POSITION IF NOT STANDARD	
3-3	TYPICAL ENGINE ROOM AIR INTAKE SYSTEM	 <p>Size of inlet (sq in): Size of outlet (sq in): Is a blower installed? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, does it always operate when the engine is running? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Is the ventilation system suitably protected from water entry? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
3-4	INTAKE AIR RESTRICTION (If not Mitsubishi Standard Silencer/Filter)	Inches water or equivalent
3-5	ENGINE ROOM DEPRESSION	Inches water :

5. COOLING SYSTEM		
5-1	INLET COOLING WATER	Pipe diameter: Inches
5-2	WATERHEATER	<input type="checkbox"/> Yes: <input type="checkbox"/> No:
5-3	INLET DIAMETER OF ENGINE SEAWATER PETCOCK	Inches
5-4	ANTI-SIPHON BREAK INSTALLED	<input type="checkbox"/> Yes: Distance above water line: Inches <input type="checkbox"/> No: Reason:
5-5	SEA STRAINER INSTALLED	<input type="checkbox"/> Yes: Distance above water line: Inches <input type="checkbox"/> No, reason:

6. FUEL SYSTEM		
6-1	PRIMARY FUEL FILTER	<input type="checkbox"/> Not installed <input type="checkbox"/> Installed, Manufacturer and Model: Flow Rate: Gal/Min Water separating type: <input type="checkbox"/> Yes <input type="checkbox"/> No
6-2	FUEL FILTER	<input type="checkbox"/> Standard Engine Mounted: <input type="checkbox"/> Locally procured: - Manufacturer: - Model: - Filtration Capability: micron (μ)
6-3	FUEL FEED	Inlet line diameter: Inches Return line diameter: Inches
6-4	FUEL TANK	Is fuel tank vented: <input type="checkbox"/> Yes <input type="checkbox"/> No

7. LUBRICATING OIL SYSTEM		
7-1	LUBE OIL DRAIN	<input type="checkbox"/> Manual: <input type="checkbox"/> Electric:
7-2	GEARBOX OILCOOLER	<input type="checkbox"/> Mitsubishi Provided: <input type="checkbox"/> Other: -Manufacturer: -Model: -Capacity:
7-3	LUBE OIL GRADE	Engine: <input type="checkbox"/> SAE Weight 15-40 <input type="checkbox"/> SAE Weight 0-30 <input type="checkbox"/> Other: API Rating (CD, CF, CH4, etc) Gearbox -SAE Weight or GL rating:

8. ELECTRICAL SYSTEM		
8-1	BATTERY SIZE	Group Size: Cold cranking amps CCA: Reserve capacity:
8-2	BATTERY CABLE RESISTANCE OR GAUGE	Ohms (Ω): Gauge:
8-3	ALTERNATOR	<input type="checkbox"/> Additional alternator installed: -Size: -Amp:

9. TEST CONDITIONS		
Ambient Air Temp.		Remarks
Ambient Water Temp.		
Maximum Observed Engine Intake Air Temperature		

10. MAINTENANCE ACCESSIBILITY

		Port	Center	Starboard
10-1	LUBE OIL CHECK BY DIPSTICK	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, Remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:
10-2	LUBE OIL SUPPLY THROUGH FILLER CAP	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, Remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:
10-3	ENGINE LUBE OIL FILTER REPLACEMENT	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, Remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:
10-4	COOLING WATER LEVEL CHECK FROM RADIATOR CAP OR SUB-TANK	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, Remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:
10-5	COOLING WATER DRAIN	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, Remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:
10-6	GEARBOX OIL SUPPLY AND LEVEL CHECK	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, Remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:
10-7	FAN BELT TENSION ADJUSTMENT AND REPLACEMENT	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, Remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:
10-8	AIR CLEANER ELEMENT CLEANING & REPLACEMENT	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, Remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:
10-9	ACCESS TO FUEL SUPPLY TO ENGINE	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, Remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:

10-10	FUEL FILTER ELEMENT CLEANING & REPLACEMENT	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, Remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:
10-11	PRIMARY FILTER CLEANING & REPLACEMENT	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, Remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:
10-12	AIR BLEEDING OF FUEL SYSTEM	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, Remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:
10-13	BATTERY ELECTROLYTE CHECK, SUPPLY AND VENTILATION	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, Remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:
10-14	SEA STRAINER CLEANING AND REPLACEMENT	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, Remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks:

11. SERVICE-ABILITY				
11-1	FLEXIBLE ENGINE MOUNTING BOLT RE-TIGHTENING	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks
11-2	VALVE COVER R&R	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks
11-3	VALVE COVER HEAD	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks
11-4	VALVE CLEARANCE ADJUSTMENT	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks
11-5	FUEL INJECTOR R&R	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks
11-6	FUEL INJECTION PUMP R&R	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks
11-7	FUEL FEED PUMP R&R	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks
11-8	COOLING WATER PUMP R&R	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks
11-9	SEAWATER PUMP AND IMPELLER	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks
11-10	STARTER MOTOR R&R	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks
11-11	ALTERNATOR R&R	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks

12. PARTS INTERFERENCE				
12-1	INTERFERENCE OF FAN BELT AND OTHER PARTS	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks
12-2	INTERFERENCE OF COOLING HOSE AND OTHER PARTS	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks
12-3	INTERFERENCE OF FUEL PIPE AND OTHER PARTS	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks
12-4	FUEL PIPE IS CLEAR OF HOT AREAS (EXHAUST MAN. ETC.)	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks
12-5	INTERFERENCE OF WIRING HARNESS OR OTHER PARTS	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks
12-6	WIRING HARNESS CLEAR OF HOT AREAS	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks
12-7	OTHERS	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not Good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks

13. OTHER				
13-1	ENGINE REMOVAL (Ease of Engine Removal from Vessel)	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not Good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Not good, remarks
13-2	EMISSION LABEL	<input type="checkbox"/> Fixed label on engine can be read <input type="checkbox"/> Extra loose supplied label	<input type="checkbox"/> Fixed label on engine can be read <input type="checkbox"/> Extra loose supplied label	<input type="checkbox"/> Fixed label on engine can be read <input type="checkbox"/> Extra loose supplied label

Sea Trail Data Sheet for Mitsubishi Engine

Obtain all temperatures with thermocouples, hand held inferred test instruments are not recommended.

Check Engine Test Record to determine speed for each output level

For IMO/EPA Certified Engines, have spec sheet handy to determine limitations. Do not use quick guide.

	Engine model:	Engine S/N:	Test Record Output
	Trans./Reverse gear:	Ratio:	Test Record Speed
	Trial Date	Vessel Name:	
1	Run Time <i>(indicate in hour:min)</i>		Units (circle one)
2	Out Put	0%	50%
3	Engine Speed	75%	100%
4	Charging air press		rpm
5	Ch. Air Temp. Before air cooler (MPTA)		bar PSI
6	Ch. Air Temp. after air cooler (MPTA)		°C °F
7	Exh. Temp. after turbo - Left Bank		°C °F
8	Exh. Temp. after turbo - Right Bank		°C °F
9	L/O press. Engine @ Low Idle	N/A	bar PSI
10	L/O press. Engine @ High Idle	N/A	bar PSI
11	L/O temp. @ oil pan		°C °F
12	F/W temp. after engine @ (thermo case)		°C °F
13	F/W temp. before water pump		°C °F
14	F/W pressure		bar PSI
15	S/W temp. before aircooler (MPTK / MPTAW)		°C °F
16	Exh. Gas back pressure	N/A	mmH2O inH2O
17	Crankcase inner pressure	N/A	mmH2O inH2O
18	Intake air restriction	N/A	mmH2O inH2O
19	Intake air temperature (In engine room)	N/A	°C °F
20	Ambient temperature (outside of engine room)	N/A	°C °F

Terms:
L/O = Lubrication Oil
F/W = Fresh Water
S/W = Sea Water

