INTRODUCTION:

Becoming a Boat Crew Member is a title that is earned and definitely not given. Often times it is easy for the trainer to give you sign offs, but it is ultimately your responsibility to be the best Crew Member that you can possibly be. So if your instructor offers to sign something off and you don't feel comfortable doing it yet, then by all means let them know that. Don't take the quick and easy route, take the smart and efficient route. It's called the Break-In process for a reason, it is literally meant to break you. You will find yourself wanting to sit down and watch T.V. with the rest of your section or just go out to the smoke pit and hang out, but don't be lured in to these privileges. Remember that privileges are earned also and that the people that you see enjoying them have already been through what you are going through right now. Most importantly don't feel like an outcast, try to enjoy the process and it will make the route to becoming a Boat Crew Member much quicker and easier to learn.

WHAT SHOULD YOU KNOW?

It's quite simple. As much as humanly possible. Ask questions about everything you see, especially on the 47' MLB. It's definitely a lot of stuff, but each and everything on this boat was designed for a specific purpose and may very well save your life as well as others in a time of immediate danger or distress. Take your PQS and get all your sign offs, but don't get comfortable with just learning what's in the PQS. The reason behind that is because the PQS doesn't cover everything that you need to know and that's why I'm making this study guide. Hopefully I will cover all the areas and information you need to know to be the best Crew Member you can be. All it takes is a little motivation and self discipline. The Code of Conduct puts it best "Discipline can often be described as the right attitude." So if you have the right attitude then the Break-In process shouldn't be so bad, you might even find yourself enjoying it!

IT STARTS...

ABOUT THE 47' MLB:

MANUFACTURER-
Textron Marine and Land Systems of New Orleans, LA

MINIMUM CREW-
04 (Coxswain, Engineer, Crew Member, Break-In Crew Member)

MAXIMUM PASSENGERS-
05 -ADULTS or CHILDREN

LENGTH-
48'11" -43' AT WATERLINE

BEAM-
15' @ FRAME 05

FREEBOARD-
Stern: 7'1" Recess: 26" Bow: 6'8"

DRAFT-
4'6" @ Shaft Strut Extensions Between Frames 01 & 02

FIXED HEIGHT-
18'6" (Radar)

HEIGHT AT DF-
24'6" (DF Antenna) -HIGHEST POINT OF MAST

HEIGHT AT HF-
28'4" (HF Antenna) -HIGHEST POINT

NAVIGATION LIGHTS-
01 White Anchor Light 360 Deg. Arc of Visibility
02 White Masthead Lights 225 Deg. Arc of Visibility
02 Amber Tow Lights 135 Deg. Arc of Visibility
01 White Stern Light 135 Deg. Arc of Visibility
01 Red Port Light 112.5 Deg. Arc of Visibility
01 Green Stbd. Light 112.5 Deg. Arc of Visibility

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47' MLB Boat Crew Study Guide
Courtesy of SN Stephen Hatch and SN Erin Regan
www.BoatswainsMate.net

**ENGINES**
Detroit Diesel DDEC III 6V92 6 Cyl. 2 Stroke Turbo after cooled

**ENGINE SPECS**
558 Cubic Inches, 435 BHP at 2100 RPM, Right Hand Rotation

**ENGINE OIL**
- Oil Type: 2104W (40W) -5.5 Gallons
- Oil Temp: 200-250 DEGREES FAREINHEIGHT 24 Plate Cooler
- Minimum Pressure @ Idle: 5 PSI
- Pressure Cruising: 49-70 PSI

**BATTERIES**
04 12-Volt Gel-Cell Batteries

**ALTERNATORS**
02 220-AMP Alternators

**PROPELLERS**
Twin Propellers with Fixed Pitch, 4-Blade MYT4 -28” Diameter 36” Pitch

**FUEL SYSTEM**
- Fuel Tank Capacity: 394 GAL
- Capacity at 95%: 373 GAL
- Usable Fuel: 353 GAL
- Fuel Pressure: 50-70 PSI Fuel Pump

**REDUCTION GEARS**
Reintjes WVS 234 UP Drive Reduction Gears
- Reduction Compression Ratio: 2:1 FWD & REVERSE

**REDUCTION GEAR OIL**
- 2104 D or E 30W
- Oil Capacity: 7.3
- Oil Temperature: 140-176 DEGREES
- Pressure Engaged: 230-290 PSI
- Pressure Disengaged: 58-66 PSI

**REDUCTION GEAR SHAFTS**
2 ½” Cres. Aquamet 22 Construction

**STEERING SYSTEM**
- Head Pressure: 20-30 PSI
- System Pressure: 150-250 PSI
- Max Power Cylinder Pressure: 950 PSI

**STEERING SYSTEM FLUID**
Tellus T-15 Steering Fluid
- Total Fluid: 2 GAL
- Reserve Fluid: 1 GAL

**FRESH WATER COOLING SYSTEM**
- Water Temp.: 160-205 DEGREES
- Water Capacity: 10-12 GAL
- Water Pump: 160 GPM

**FRESH WATER COOLING SYSTEM FLOW**
(TANK)->(HEAT EXCHANGER)->(PUMP)->(LUBE OIL COOLER)->(BLOCK)->(HEADS)->(THERMOSTAT)

**RAW WATER COOLING SYSTEM**
- Sea Chests Located Between Frames 4 and 5
- Water Strainers: 4” Duplex On Either Side
- Water Pumps: 67 GPM

**RAW WATER COOLING SYSTEM FLOW**
(SEA)->(STRAINER)->(PUMP)->(FUEL COOLER)->(HEAT EXCHANGER)->(RED GEARS)->(EXHAUST WATER TANK)->(MUFFLER)

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HULL CONSTRUCTION-
5456 Marine Grade Aluminum

HULL THICKNESS-
Sides: ¼” Bottom: 5/16” Chine Plates: 3/8” Keel: ½”

HULL DESIGN-
Modified Planning Hull With Deep V Planning From Bow To Stern

FRAMES-
17 from -TRANSOM | | | | | | | | | | | | | | | BOW

FRAME SPACING-
Longitudinal: 11” –GIVE OR TAKE
Transversal: 30” –GIVE OR TAKE

COMPARTMENTS-

WATERTIGHT COMPARTMENTS-

BILGE PUMPS-
07 -33 GPM Bilge Pumps
Bilge pump activates automatically when flooding reaches 10” (Alarms at 5”)

LOCATIONS-

BILGE PUMP DISCHARGES-
05-
(Transom, FRM 03 Port Bulkhead, FRM 03 STBD Bulkhead, FRM 09 Port Bulkhead, FRM 11 STBD Bulkhead)

ANCHOR TYPE-
19lb. Fortress FX-37 Danforth

ANCHOR CHAIN-
9’ of 3/8” Stainless Steel

ANCHOR LINE-
300’ of 2 1/4” DBN (Double Braided Nylon)

TOWING LINE-
900’ of 3 1/4” DBN on Lower Tow Reel - 300’ of 2” DBN on Upper Tow Reel

TOWING CAPACITY-
150 Displacement Tons

DDEC (DETROIT DIESEL ELECTRONIC CONTROLS)-
DDEC automatically performs engine protection and self-diagnostic functions.

MAJOR COMPONENTS-
02 ECMs(Electronic Control Modules)
12 EUIs(Electronic Unit Injectors)
02 MIMs(Marine Interface Modules)
ERIM(Engine Room Interface Module)
03 CSIMs(Control System Interface Modules)
04 EDMs(Electronic Display Modules)
02 EGIMs(Engine Gear Interface Modules)

ECMs-
LOCATED ON TOP OF EACH ENGINE.
Each ECM is responsible for performing the following functions:
1.) ENGINE GOVERNING
2.) COLD START FUELING AND TIMING
3.) ENGINE PROTECTION AND DIAGNOSTICS
4.) INJECTION TIMING
5.) RATED SPEED AND POWER
6.) SENSOR CALIBRATIONS
7.) SMOKE CONTROL

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EUIs-
Equipped with an electronically controlled solenoid valve and straight plunger on each injector. The injectors control how much fuel is actually being pumped into the engine.

MIMs-
Provide the interface between the boats control systems and the ECM. MIM also features a diagnostic connection port for easy diagnostic code reading and troubleshooting.

ERIM-
The central processor of the control systems (throttles) on the boat. It accepts signals from the 03 CSIMs and commands the engines through the MIMs and ECMs. It also directs the clutch actuators to control direction of propulsion.

CSIMs-
Receive signals from throttle controls and sends it to the ERIM.

EDMs-
Receive information via a connection to the CSIM and display engine RPMs and vital performance data: Oil Pressure, Engine Temp, Transmission Oil Pressure and Temp, Fuel Consumption, Engine Hours

EGIMs-
Receive electronic signals from the ERIM and actuate the reduction gear clutches.

DEWATERING PUMP TYPE-
4 Stroke Gasoline 6.5 Horse Power Honda Centrifugal CG P6 Pump

DEWATERING PUMP OUTPUT-
250 Gallons Per Minute

DEWATERING PUMP LIFT-
12'

DEWATERING PUMP HOSE-
20' Collapsible Discharge Hose - 15' Hard Suction Hose with Strainer

HVAC (HEATING, VENTILATION, AIR CONDITIONING SYSTEM)-
Heats, Cools, and Ventilates the Survivors Compartment and the Enclosed Bridge

HVAC UNITS-
02 Self-contained Units (Enclosed Bridge and Survivors Compartment)

HVAC CONTROLS-
Survivors Compartment: Located inboard of the ladder leading to the aft deck.
Enclosed Bridge: Located on the starboard bulkhead.

BOTH CONTROL UNITS ALLOW MANUAL AND PROGRAMMABLE CONTROL OF HEATING AND COOLING

HVAC COOLING-
The HVAC system is cooled by the raw water system.

EWRS (EMERGENCY WINDOW RELEASE SYSTEM)-
PURPOSE: Provides free transfer of water trapped in enclosed bridge, which may affect stability.

SENSORS-
LOCATION: Port and starboard bulkheads near the overhead trigger.
ACTIVATION: The sensors activate when they sense salt water.

WINDOWS-
Windows are mounted on spring loaded hinges and held closed/locked down by a sliding lock assembly.

ACTUATORS-
Air Compressor: Mounted in Aux. Space to provide charged air to the release system.
CO2 Actuator: Backup actuator that is located on the overhead at the centerline of the Enclosed Bridge.

TESTING-
EWRS may be tested by pressing the EWRS release test switch mounted forward of the STBD window.

RE-ARMING-
EWRS may be re-armed by completing the following:
-RESET TEST SWITCH
-PUSH RESET BUTTON NEXT TO EACH WINDOW
-CLOSE WINDOWS AND SECURE SIDE LOCKS

ENGINE ROOM FIRE SUPPRESSION SYSTEM-
CO2 fire suppression system used for fire fighting in the Engine Room only.

ACTUATORS-
02 N2 Actuators located in Survivors Compartment and Enclosed Bridge (You may also activate the system directly from the CO2 bottles in the Aux. Space)
SWITCHES-
SWITCH 1 activates pre-discharge light, engine stop solenoid, and strobe light.
SWITCH 2 activates discharge light.
SWITCH 3 acts as a pressure switch to close damper.

FLOW-
(N2)->(CO2)->(CO2)->(SWITCH 1)->(30 SEC)->(SWITCH 2)->(SWITCH 3)->(DISCHARGE HORN)->(SIREN)

OPERATING CHARACTERISTICS-
OUTSIDE AIR TEMP: 10 DEG FAHRENHEIT – 95 DEG FAHRENHEIT DRY BULB
OUTSIDE WATER TEMP: 28 DEG FAHRENHEIT – 85 DEG FAHRENHEIT DRY BULB
MAXIMUM SPEED: 25 KTS @ 2100 RPM
CRUISE SPEED: 21.5 KTS @ 1950 RPM
MAX RANGE CRUISING: 200 NM
MAXIMUM WINDS: 50 KTS
MAXIMUM SEAS: 30 FT
MAXIMUM SURF: 20 FT
MAX TOWING: 150 DISPLACEMENT TONS
MAX ICE BREAKING: 4 INCHES @ 1000 RPM
FUEL CONSUMPTION CRUISING: 23.2 GPH
MAX TIME CRUISING: 11.9 HRS

Now You Know About The Boat...
Time For The Real Journey To Begin.

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