Report Date: 30 Jun 2014

Summary Report for Individual Task
551-88L-2063
Maintain an Oily Water Separator
Status: Approved

Condition: Given an operational oily water separator aboard a vessel, at sea, at anchor or moored alongside a pier, day or night, under all sea and weather conditions, while wearing appropriate PPE, (i.e. hearing protection, Nitrile gloves, eye protection, etc.), lock out tag out kit and a marine rail tool box.

Standard: The Soldier correctly maintains an oily water separator aboard an Army vessel, IAW the appropriate Technical Manual and local SOPs, without injury to self or others and without damage to equipment. The oily water separator was fully mission capable at task completion.

Special Condition: None

Safety Risk: High

MOPP 4:

Task Statements

Cue: None

DANGER

None

WARNING

None

CAUTION

None

Remarks: None

Notes: None

Performance Steps

1. Demonstrate basic knowledge of separator maintenance.

a. Preventive Maintenance Checks and Service (PMCS) is performed to keep the oil water separator in operating condition.

(1) The checks are used to find, correct, and report problems so that defects may be discovered and corrected.

(2) PMCS is to be accomplished each day the oil water separator is operated.

b. If a deficiency is noted when performing PMCS, fix it, if possible, using troubleshooting procedures and/or maintenance procedures.

c. Leakage classifications I, II, III.

(1) When operating with Class I or II leaks, continue to check fluid levels as required in your PMCS.

(2) Class III leaks should be reported immediately to your supervisor.

(3) It is necessary to know how fluid leakage affects the status of the reverse osmosis water purification unit.

(a) Class I: Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.

(b) Class II: Leakage of fluid great enough to form drops but not enough to cause drops to drip from the item being checked/inspected.

(c) Class III: Leakage of fluid great enough to form drops that fall from the item being checked/inspected.

2. Conduct the maintenance procedures for oily water separator.

a. Perform disassembly of oily water separator.

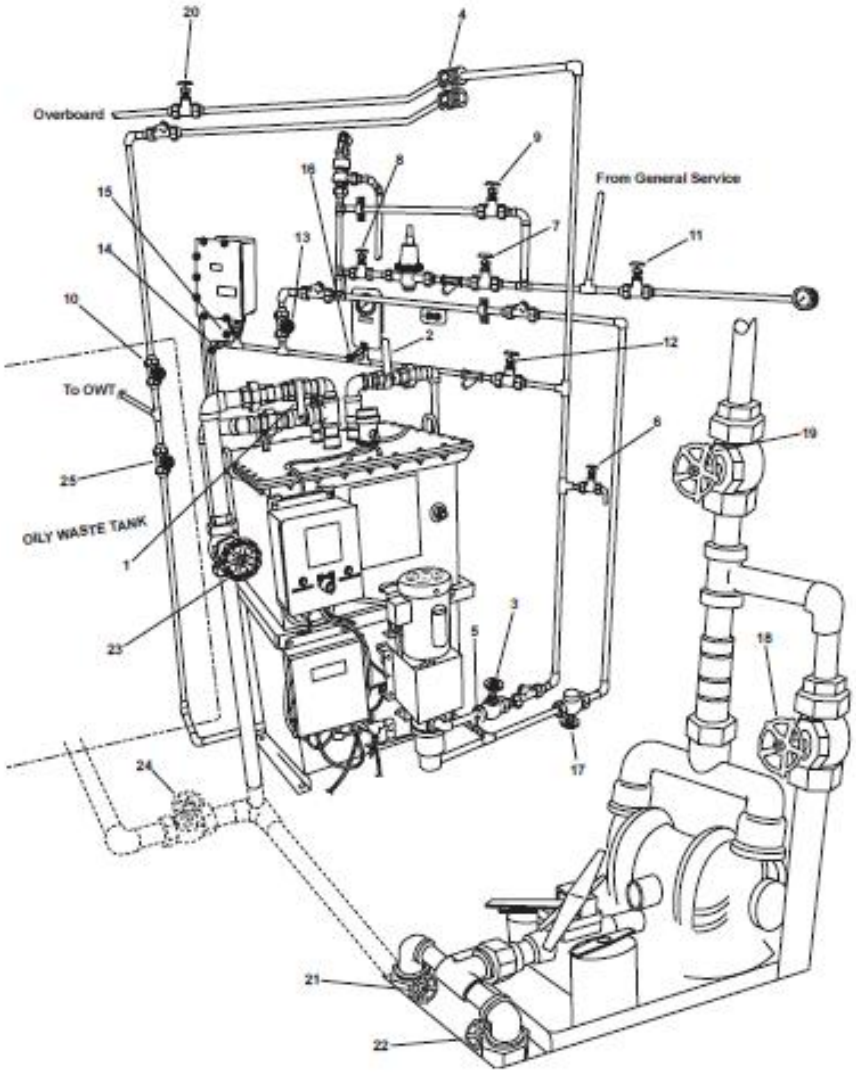
(1) Align the Oil Water Separator (OWS), the Oily Bilge (OB), and Oil Content Monitor (OCM) valves as indicated in Figure 551-88L-2063_02.

(2) Place a suitable screen covered drain pan under the OWS outlet piping Figure 551-88L-2063_03.

WARNING

Do not allow oily water to come in contact with unprotected skin or eyes. Prolonged skin contact can cause illness or injury. Eye contact can cause serious injury. Always wear chemical protective gloves and goggles when handling oily water. Failure to follow these precautions can result in illness or serious injury. Oily water hoses and lines may be under pressure. Loosen connection fittings on hoses and lines slowly. Allow oily water to run around threads of the connection fittings, releasing pressure before disconnecting the union. Releasing pressurized oily water suddenly may cause severe personal injury.

(3) Slowly loosen the drain plug (Figure 551-88L-2063_03, item 2) in the OWS outlet piping (Figure 551-88L-2063_03, item 1) and allow any trapped pressure to escape.

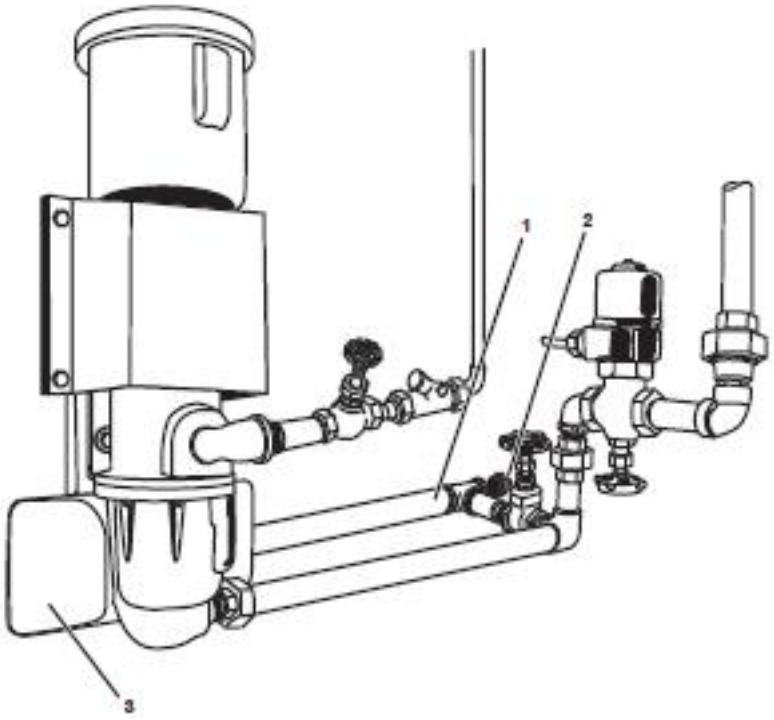


OWS, OB, and OCM Piping
Figure 551-88L-2063_01

Table 1. Valve Positions During OWS Service

Item Number (Figure 1)	Valve Number	Function	Position During Operation Under Usual Conditions
1	OWS-1	OWS MANUAL BACKFLUSH	CLOSED
2	OWS-2	OWS DISCHARGE	CLOSED
3	OWS-3	OWS PUMP DISCHARGE	CLOSED
4	OWS-4	OCM 3-WAY DIVERTER	Controlled by OCM
5	OWS-5	OWS DISCHARGE	CLOSED
6	OWS-6	OWS PITOT SAMPLE	CLOSED
7	OWS-7	BACKFLUSH WTR TO PRESS RDCR	CLOSED
8	OWS-8	BACKFLUSH WTR FROM PRESS RDCR	CLOSED
9	OWS-9	BACKFLUSH WTR PRESS RDCR BYPASS	CLOSED
10	OWS-10	OWS RECIRCULATING COV	CLOSED
11	OWS-24	SW TO OWS PRESS GAGE ISOLATION	CLOSED
12	OCM-1	OCM NOZZLE SAMPLER COV	CLOSED
13	OCM-2	OCM BACKFLUSH WATER	CLOSED
14	OCM-3	OCM SAMPLING VALVE	CLOSED
15	OCM-4	OCM INLET	CLOSED
16	OCM-9	OCM GAGE ISOLATION	CLOSED
17	GS-74	OWS BACKFLUSH INLET SOLENOID	Automatic (Ensure that the manual override handle is in the CLOSED position (CCW) with the valve stem all the way out)
18	OB-8	XFR PUMP TO OILY WATER TANK	CLOSED
19	OB-9	XFR PUMP DISCH TO SHORE	CLOSED
20	OB-10	OWS OVERBOARD DISCHARGE	CLOSED
21	OB-13	OWT TO XFR PUMP SUCTION	CLOSED
22	OB-14	COV-XFR PUMP SUCTION	CLOSED
23	OB-15	OWS INLET	CLOSED
24	OB-16	WATER FROM OWT COV	CLOSED
25	OB-17	OILY WATER TANK INLET	CLOSED

Valve Positions During OWS Service
Figure 551-88L-2063_02



OWS Outlet Piping
Figure 551-88L-2063_03

(4) Remove the drain plug (Figure 551-88L-2063_03, item 2) from the OWS outlet piping (Figure 551-88L-2063_03, item 1) and allow the OWS tank (Figure 551-88L-2063_03, item 3) to drain.

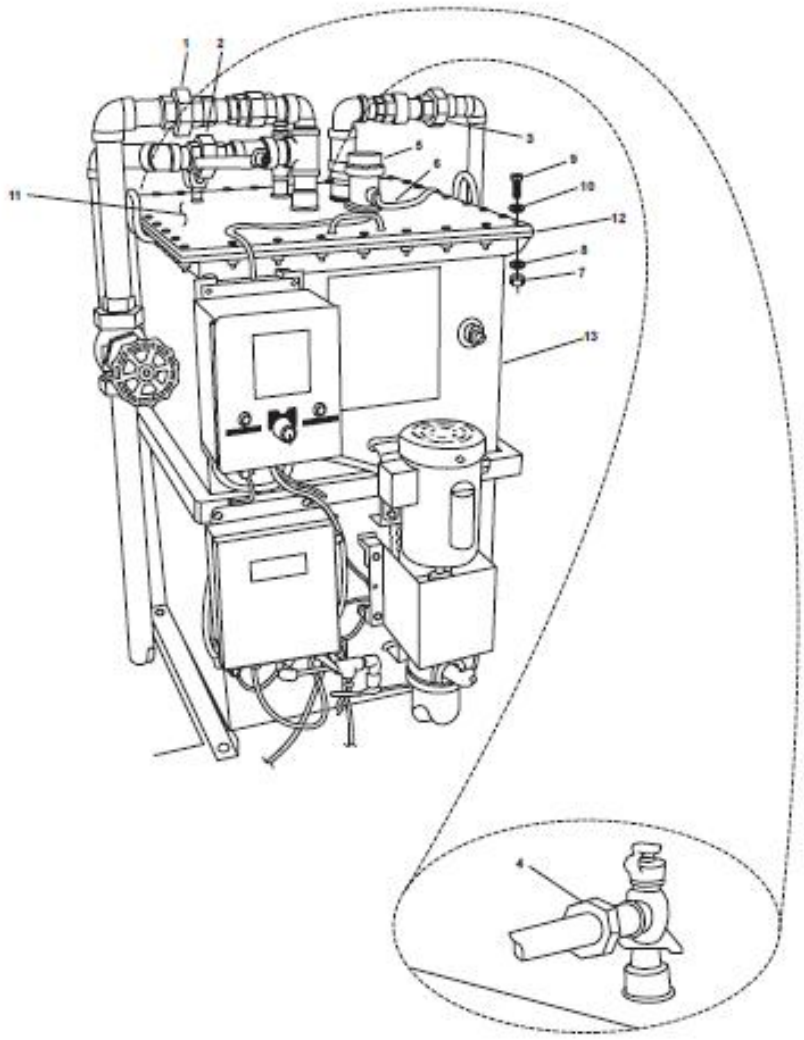
CAUTION

Failure to use two wrenches while loosening pipe fittings, couplings, and valves may cause damage to the valves, fittings, couplings, and piping.

(5) Slowly loosen the union (Figure 551-88L-2063_04, item 1) and allow any trapped pressure to escape. Disconnect the union after all the pressure has escaped.

(6) Disconnect the unions (Figure 551-88L-2063_04, items 2, 3, and 4).

(7) Remove the cap (Figure 551-88L-2063_04, item 5) and label and disconnect the interface sensor cable (Figure 551-88L-2063_04, item 6).



Oil Water Separator
Figure 551-88L-2063_04

(8) Inspect the interface sensor cable's (Figure 551-88L-2063_04, item 6) connections for corrosion or sludge buildup. Clean the connections using a clean wiping rag.

(9) Remove the 32 nuts (Figure 551-88L-2063_04, item 7), 32 washers (Figure 551-88L-2063_04, item 8), 32 bolts (Figure 551-88L-2063_04, item 9), and the 32 washers (Figure 551-88L-2063_04, item 10) securing the OWS tank cover (Figure 551-88L-2063_04, item 11).

Note: When removing the OWS tank cover, take precautions to ensure that the sensitive switch probes are not damaged.

(10) Carefully lift and remove the OWS tank cover (Figure 551-88L-2063_04, item 11).

(11) Remove the cover gasket (Figure 551-88L-2063_04, item 12) from the OWS tank cover (Figure 551-88L-2063_04, item 11). Discard the gasket.

WARNING

Removing components by means of wire brushing produces flying particles. These particles can cause serious injury to personnel. Protective goggles, gloves, and long sleeves must be worn at all times during wire brushing operations. Failure to comply with this warning can result in serious injury to personnel.

(12) Using a wire brush, remove any remaining pieces of the OWS cover gasket (Figure 551-88L-2063_04, item 12) and adhesive from the OWS tank cover (Figure 551-88L-2063_04, item 11) and OWS tank (Figure 551-88L-2063_04, item 13).

(13) Remove the inlet baffle (Figure 551-88L-2063_05, item 1) and weir (Figure 551-88L-2063_05, item 2) from the OWS tank (Figure 551-88L-2063_05, item 3).

(14) Remove the upper coalescer box (Figure 551-88L-2063_05, items 4) from the OWS tank (Figure 551-88L-2063_05, item 3).

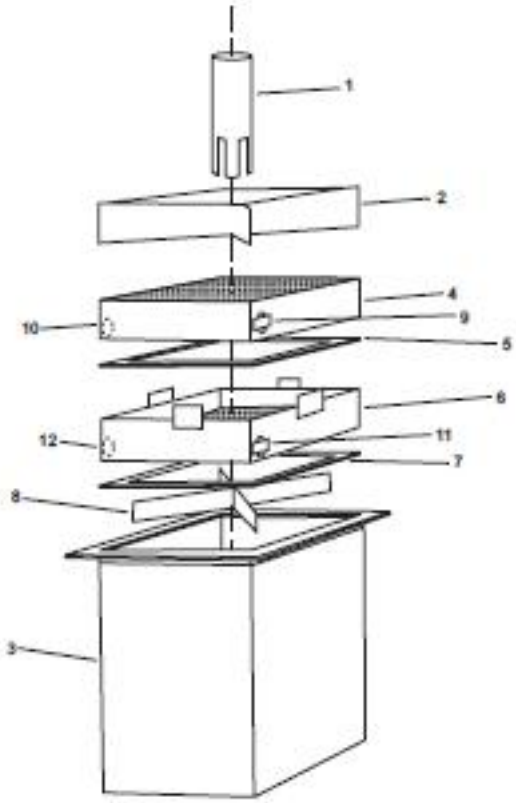


Figure 551-88L-2063_05
OWS Tank Assembly

(15) Remove the upper coalescer box gasket (Figure 551-88L-2063_05, items 5) from the OWS tank (Figure 551-88L-2063_05, item 3). Discard the upper coalescer box gasket.

(16) Remove the lower coalescer box (Figure 551-88L-2063_05, items 6) from the OWS tank (Figure 551-88L-2063_05, item 3).

(17) Remove the lower coalescer box gasket (Figure 551-88L-2063_05, item 7) from the OWS tank (Figure 551-88L-2063_05, item 3). Discard the lower coalescer box gasket.

(18) Remove the bottom standoff (Figure 551-88L-2063_05, item 8) from the OWS tank (Figure 551-88L-2063_05, item 3).

CAUTION

Do not use hot steam or cleaning solvents to clean the coalescer boxes, as damage to the coalescer box will occur.

(19) Remove the upper plug (Figure 551-88L-2063_05, item 9) and lower plug (Figure 551-88L-2063_05, item 10) from the upper coalescer box (Figure 551-88L-2063_05, item 4). Insert a water hose into the upper plug hole and flush the beads out of the lower plug hole into a suitable screen covered drain pan with a steady flow of clean water.

(20) Install the lower plug (Figure 551-88L-2063_05, item 10) in the upper coalescer box (Figure 551-88L-2063_05, item 4) and pour in the new/clean beads using a funnel. Completely fill the coalescer box and install the upper plug (Figure 551-88L-2063_05, item 9).

(21) Remove the upper plug (Figure 551-88L-2063_05, item 11) and lower plug (Figure 551-88L-2063_05, item 12) from the lower coalescer box (Figure 551-88L-2063_05, item 6). Insert a water hose into the upper plug hole and flush the beads out of the lower plug hole into a suitable screen covered drain pan with a steady flow of clean water.

(22) Install the lower plug (Figure 551-88L-2063_05, item 12) in the lower coalescer box (Figure 551-88L-2063_05, item 6) and pour in the new/clean beads using a funnel. Completely fill the coalescer box and install the upper plug (Figure 551-88L-2063_05, item 11).

b. Perform assembly of oily water separator.

(1) Install the bottom standoff (Figure 551-88L-2063_05, item 8) into the OWS tank (551-88L-2063_05, item 3).

(2) Install a new lower coalescer box gasket (Figure 551-88L-2063_05, item 7) into the OWS tank (Figure 551-88L-2063_05, item 3).

(3) Install the lower coalescer box (Figure 551-88L-2063_05, item 6) into the OWS tank (Figure 551-88L-2063_05, item 3).

(4) Install a new upper coalescer box gasket (Figure 551-88L-2063_05, item 5) into the OWS tank (Figure 551-88L-2063_05, item 3).

(5) Install a new upper coalescer box (Figure 551-88L-2063_05, item 4) into the OWS tank (Figure 551-88L-2063_05, item 3).

(6) Install the inlet baffle (Figure 551-88L-2063_05, item 1) and weir (Figure 551-88L-2063_05, item 2) into the OWS tank (Figure 551-88L-2063_05, item 3).

(7) Clean the OWS tank (Figure 551-88L-2063_04, item 13) and the OWS tank cover (Figure 551-88L-2063_04, item 11) gasket contact surfaces using isopropyl alcohol.

Note: The new adhesive backed cover gasket will not stick to the OWS tank cover or the OWS.

(8) Install a new cover gasket (Figure 551-88L-2063_04, item 12) onto the top of the OWS tank (Figure 551-88L-2063_04, item 13).

Note: While installing the tank cover, take precautions to prevent the sensitive switch probes from being damaged.

(9) Carefully lower the OWS tank cover (Figure 551-88L-2063_04, item 11) onto the OWS tank (Figure 551-88L-2063_04, item 13) and the cover gasket (Figure 551-88L-2063_04, item 12).

(10) Install the 32 bolts (Figure 551-88L-2063_04, item 9), the 32 washers (Figure 551-88L-2063_04, item 10), the 32 washers (Figure 551-88L-2063_04, item 8), and the 32 nuts (Figure 551-88L-2063_04, item 7), securing the OWS tank cover (Figure 551-88L-2063_04, item 11). Tighten the 32 bolts securely.

(11) Connect the oil-water interface sensor cable (Figure 551-88L-2063_04, item 6) and install the cap (Figure 551-88L-2063_04, item 5). Tighten the cap snugly.

CAUTION

Never attempt to connect union connections with only one wrench. Damage to the vessel's standing piping could occur. Always use two wrenches.

(12) Connect the unions (Figure 551-88L-2063_04, items 1, 2, 3, and 4). Tighten the unions securely.

(13) Wrap the male threads of the drain plug (Figure 551-88L-2063_03, item 2) with antiseizing tape and install it in the OWS outlet drain piping (Figure 551-88L-2063_03, item 1).

(14) Remove the lockouts and tagouts.

(15) Perform OWS manual backflush.

(16) Return the OWS to normal operation.

(17) Closely observe all pipe joints, checking for leakage.

(18) Return the OWS to the desired readiness condition.

(Asterisks indicates a leader performance step.)

Evaluation Guidance: None

Evaluation Preparation: None

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Demonstrated basic knowledge of separator maintenance.			
a. Performed PMCS checks at correct intervals.			
b. Checked for leakage.			
2. Conducted maintenance procedures for oily water separator.			
a. Performed disassembly of oily water separator.			
b. Performed assembly of oily water separator.			

Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	TM 55-1925-285-13&P	OPERATOR, UNIT AND DIRECT SUPPORT MAINTENANCE MANUAL INCLUDING REPAIR	No	No

Environment: Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects. Refer to FM 3-34.5 Environmental Considerations and GTA 05-08-002 ENVIRONMENTAL-RELATED RISK

ASSESSMENT.

Safety: In a training environment, leaders must perform a risk assessment in accordance with ATP 5-19, Risk Management. Leaders will complete the current Deliberate Risk Assessment Worksheet in accordance with the TRADOC Safety Officer during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical (NBC) Protection, FM 3-11.5, Multiservice Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Decontamination.

Prerequisite Individual Tasks : None

Supporting Individual Tasks :

Task Number	Title	Proponent	Status
551-88L-1038	Demonstrate Basic Knowledge of an Oil Water Separator	551 - Transportation (Individual)	Obsolete

Supported Individual Tasks : None

Supported Collective Tasks : None

ICTL Data :

ICTL Title	Personnel Type	MOS Data
88L30 Watercraft Engineer	Enlisted	MOS: 88L, Skill Level: SL3, Duty Pos: TFR, LIC: EN
88L40 Watercraft Engineer	Enlisted	MOS: 88L, Skill Level: SL4, Duty Pos: TGB, LIC: EN, SQI: O
88L20 Watercraft Engineer	Enlisted	MOS: 88L, Skill Level: SL2, Duty Pos: TFS, LIC: EN