Report Date: 30 Jun 2014

Summary Report for Individual Task
551-88L-3070
Troubleshoot a Ventilation System
Status: Approved

Condition: Given a ventilation system 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.), with a lock out tag out kit, and a marine rail tool box.

Standard: The Soldier correctly conducts troubleshooting procedures to a ventilation system aboard an Army vessel, IAW the appropriate Technical Manual and local SOPs, without injury to self or others and without damage to equipment.

Special Condition: None

Safety Risk: Medium

MOPP 4:

Task Statements

Cue: None

DANGER

None

WARNING

None

CAUTION

None

Remarks: None

Notes: None

Performance Steps

1. Demonstrate troubleshooting procedures for ventilation supply or exhaust fan with excessive noise and vibration.

    a. Check for accumulation of dirt or debris on impeller (fan blades).

        (1) Clean impeller with rags, soft bristle brush, or vacuum cleaner.

        (2) Refer to TASK 551-88L-2064, Step 3.

    b. Check to see if belt is too loose or too tight on V-belt drive fans.

        (1) Adjust as required.

        (2) Refer to TASK 551-88L-2064, Step 3.a.4).

    c. Check for belt hitting guard on V-belt drive fans.

        (1) Adjust V-belt.

        (2) Refer to TASK 551-88L-2064, Step 3.a.4).

    d. Check to see if belt is dirty, oily, or frayed on V-belt drive fans.

        (1) Clean dirty or oily belt with mild soap and water.

        (2) Replace frayed belt as required.

        (3) Refer to TASK 551-88L-2064, Step 3.a.4).

    e. Check for wrong belt in use on V-belt drive fans.

        (1) Replace as required.

        (2) Refer to TASK 551-88L-2064, Step 3.a.4).

    f. Check for loose mounting bolts or other attached hardware.

        (1) Secure bolts and hardware until snug.

        (2) Refer to TASK 551-88L-2064, Step 3.a.3).

    g. Check for motor or drive misalignment.

        (1) Check and adjust motor as required.

        (2) Refer to TASK 551-88L-2064, Step 3.

    h. Check to see if impeller is hitting housing.

        (1) Adjust impeller on shaft.

(2) Replace impeller, shaft, or fan as required.

i. Check impeller and sheaves for looseness.

(1) Secure mounting hardware as required.

(2) Refer to TASK 551-88L-2064, Step 3.a.3).

j. Check for bent drive shaft.

(1) Replace fan shaft as required.

(2) Replace fan motor as required.

k. Check to see if bearings need lubrication.

(1) Lubricate bearings.

(2) Refer to TASK 551-88L-2056, Step 2.a.

l. Check for worn or defective bearings.

(1) Replace bearings as required.

(2) Replace fan motor as required.

2. Demonstrate troubleshooting procedures for a ventilation supply or exhaust fan with low air flow.

a. Check for dirty or clogged filter in air flow source.

(1) Clean filters.

(2) Refer to TASK 551-88L-2064, Step 2.a.

b. Check to see if dampers or registers are closed or obstructed.

(1) Open dampers or registers as required.

(2) Clear obstructions as required.

c. Check to see if inlet or outlet screens are clogged or obstructed.

(1) Clean screens.

(2) Clear obstructions as required.

(3) Refer to TASK 551-88L-2064, Step 2.b.

d. Check for dirty or clogged coil in recirculation air source.

(1) Clean as required.

(2) Refer to TASK 551-88L-2064, Step 2.b.

3. Demonstrate troubleshooting procedures for a ventilation supply or exhaust fan with high air flow.

a. Check air filters to ensure that they are in place in recirculation air source.

(1) Insert or adjust filters if missing.

(2) Refer to TASK 551-88L-2064, Step 2.a.

b. Check to see that registers, grilles and dampers are installed.

(1) Install if missing.

(2) Open if closed.

4. Demonstrate troubleshooting procedures for a ventilation supply or exhaust fan that does not operate.

a. Check to see if electrical power to the fan is OFF.

(1) Turn breaker in power panel ON.

(2) Turn power at controller ON.

b. Check for open circuit breakers.

(1) Reset circuit breaker.

(2) If it trips again, locate the problem and correct as required.

c. Check for broken or loose wiring and connections.

(1) Check wiring and connections.

(2) Secure or replace as required.

d. Check for broken V-belt on belt drive fans.

(1) Replace as required.

(2) Refer to TASK 551-88L-2064, Step 3.a.4).

e. Check for loose pulley on belt drive fan.

(1) Check pulley.

(2) Secure setscrew until snug.

(3) Refer to TASK 551-88L-2064, Step 3.a.3).

f. Check to see if voltage is wrong.

g. Check for defective fan motor in accordance with TASK 551-88L-2059.

(Asterisks indicates a leader performance step.)

Evaluation Guidance: None

Evaluation Preparation: None

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Demonstrated troubleshooting procedures for a ventilation supply or exhaust fan with excessive noise and vibration.			
a. Checked for accumulation of dirt or debris on impeller (fan blades).			
b. Checked V-belt tightness.			
c. Checked for belt hitting guard on V-belt drive fans.			
d. Checked for frayed or dirty V-belt.			
e. Checked for wrong V-belt.			
f. Checked for loose mounting bolts or other attached hardware.			
g. Checked for motor or drive misalignment.			
h. Checked to see if impeller is hitting housing.			
i. Checked impeller and sheaves for looseness.			
j. Checked for bent drive shaft.			
k. Checked to see if bearings need lubrication.			
l. Checked for worn or defective bearings.			
2. Demonstrated troubleshooting procedures for a ventilation supply or exhaust fan with low air flow.			
a. Checked for dirty or clogged filter in air flow source.			
b. Checked dampers and registers.			
c. Checked inlet and outlet screens.			
d. Checked for dirty or clogged coil in recirculation air source.			
3. Demonstrated troubleshooting procedures for a ventilation supply or exhaust fan with high air flow.			
a. Checked for placement of air filters.			
b. Checked to see that registers, grilles and dampers are installed.			
4. Demonstrated troubleshooting procedures for a ventilation supply or exhaust fan that does not operate.			
a. Checked power supply.			
b. Checked for open circuit breakers.			
c. Checked for broken or loose wiring and connections.			
d. Checked for broken V-belt on belt drive fans.			
e. Checked for loose pulley on belt drive fan.			
f. Checked for proper voltage.			
g. Checked for defective fan motor.			

Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	TC 55-509	MARINE ENGINEMAN's HANDBOOK	No	No
	TC 55-509-1	Marine Electricity	No	No
	TM 55-1905-223-24-17	UNIT, INTERMEDIATE DIRECT SUPPORT AND INTERMEDIATE GENERAL SUPPORT MAINTENANCE INSTRUCTIONS FOR ENVIRONMENTAL CONTROL SUBSYSTEM FOR LANDING CRAFT UTILITY (LCU) (NSN 1905-01-154-1191) (REPRINTED W/BASIC IN	No	No
	TM 55-1915-208-24&P	UNIT INTERMEDIATE DIRECT SUPPORT AND INTERMEDIATE GENERAL SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST) FOR ENVIRONMENTAL CONTROL SYSTEM P/N LM2-WC30-65, 39BA-050, 42CG, 42VF,	No	No
	TM 55-1915-254-10-1	OPERATOR'S MANUAL FOR LOGISTICS SUPPORT VESSEL (LSV-7 & -8)	No	No
	TM 55-1915-254-10-2	OPERATOR'S MANUAL FOR LOGISTICS SUPPORT VESSEL (LSV-7 & -8)	No	No
	TM 55-1925-224-24&P	UNIT, INTERMEDIATE DIRECT SUPPORT AND INTERMEDIATE GENERAL SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST) FOR ENVIRONMENTAL CONTROL SUBSYSTEM FOR LARGE TUG (LT) (NSN 1925-01-24	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-2064	Maintain a Ventilation System	551 - Transportation (Individual)	Approved
551-88L-1043	Identify Basic Components of a Heating Ventilation and Air Conditioning (HVAC) System	551 - Transportation (Individual)	Analysis
551-88L-2060	Maintain a Heating System	551 - Transportation (Individual)	Approved
551-88L-2059	Maintain an Air Conditioning System	551 - Transportation (Individual)	Approved
551-88L-1039	Demonstrate Basic Knowledge of a Ventilation System	551 - Transportation (Individual)	Analysis

551-88L-2056	Maintain an Electric Motor	551 - Transportation (Individual)	Approved

Supported Individual Tasks :

Task Number	Title	Proponent	Status
551-88L-1043	Identify Basic Components of a Heating Ventilation and Air Conditioning (HVAC) System	551 - Transportation (Individual)	Analysis
551-88L-2056	Maintain an Electric Motor	551 - Transportation (Individual)	Approved
551-88L-2064	Maintain a Ventilation System	551 - Transportation (Individual)	Approved
551-88L-2059	Maintain an Air Conditioning System	551 - Transportation (Individual)	Approved
551-88L-1039	Demonstrate Basic Knowledge of a Ventilation System	551 - Transportation (Individual)	Approved
551-88L-1039	Demonstrate Basic Knowledge of a Ventilation System	551 - Transportation (Individual)	Analysis
551-88l-1043	Identify Basic Components of a Heating Ventilation and Air Conditioning (HVAC) System	551 - Transportation (Individual)	Proposed
551-88L-1043	Identify Basic Components of a HVAC System	551 - Transportation (Individual)	Approved
551-88L-4033	Review HVAC Theory	551 - Transportation (Individual)	Approved
551-88L-2060	Maintain a Heating System	551 - Transportation (Individual)	Approved

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