

Summary Report for Individual Task
551-88L-3067
Troubleshoot a Heating System
Status: Approved

Distribution Restriction: Approved for public release; distribution is unlimited.

Destruction Notice: None

Foreign Disclosure: FD5 - This product/publication has been reviewed by the product developers in coordination with the [installation/activity name] foreign disclosure authority. This product is releasable to students from all requesting foreign countries without restrictions.

Condition: Given a heating 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 pertaining to a heating 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: Low

MOPP 4:

Task Statements

Cue: None

DANGER
None

WARNING
None

CAUTION
None

Remarks: None

Notes: None

Performance Steps

1. Demonstrate troubleshooting procedures for no heat from duct and air handler heaters.

- a. Check to see if thermostat is set too low.
- b. Check for power switch OFF or thermostat not properly set.

(1) Turn power switch ON.

(2) Set thermostat to required temperature.

c. Check for main breaker OFF.

d. Check for circuit breaker tripped.

(1) Reset circuit breaker.

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

e. Check for blown fuse in fused heaters.

f. Check for low voltage to heater.

g. Check for element failure.

(1) Clean and secure connections.

(2) Replace element if required.

h. Check for defective contactor, transformer, or thermostatic switch.

(1) Secure electrical connections as required. Repair broken wires.

(2) Replace defective contactor, transformer, or switch as required.

2. Demonstrate troubleshooting procedures for unit and space heaters.

a. No heat – no blower running.

(1) Check for power switch OFF or thermostat not properly set.

(a) Turn power switch ON.

(b) Set thermostat to required temperature.

(2) Check for main breaker OFF.

(3) Check for circuit breaker tripped.

(a) Reset circuit breaker.

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

(4) Check for blown fuse in fused heaters.

(5) Check for defective contactor, transformer, or thermostatic switch.

(a) Secure electrical connections as required. Repair broken wires.

(b) Replace defective contactor, transformer, or switch as required.

(6) Check for defective fan.

(7) Check for defective heater motor on unit space heaters.

(a) Replace heater motor as required.

(b) Refer to manufactures technical manual.

b. No heat – fan/blower running.

(1) Check for proper thermostat setting.

(2) Check for element failure.

(a) Clean and secure connections.

(b) Replace element if required.

c. Not enough heat.

(1) Check to see if thermostat is set too low.

(2) Check for low voltage to heater.

(3) Check filter in air flow source if equipped.

(4) Check for element failure.

(a) Clean and secure connections.

(b) Replace element if required.

(Asterisks indicates a leader performance step.)

Evaluation Guidance: None

Evaluation Preparation: None

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Demonstrated troubleshooting procedures for no heat from duct and air handler heaters.			
a. Checked to see if thermostat is set too low.			
b. Checked power switch.			
c. Checked main breaker.			
d. Checked circuit breaker.			
e. Checked for blown fuse.			
f. Checked for low voltage to heater.			
g. Checked for element failure.			
h. Checked for defective contactor, transformer, or thermostatic switch.			
2. Demonstrated troubleshooting procedures for unit and space heaters.			
a. No heat – no blower running.			
b. No heat – fan/blower running.			
c. Not enough heat.			

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-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)	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-1039	Demonstrate Basic Knowledge of 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)	Proposed
551-88L-2059	Maintain an Air Conditioning System	551 - Transportation (Individual)	Approved
551-88L-2060	Maintain a Heating System	551 - Transportation (Individual)	Approved
551-88L-4033	Review HVAC Theory	551 - Transportation (Individual)	Approved
551-88L-1043	Identify Basic Components of a HVAC 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