

EQUIPMENT SERVICEABILITY CRITERIA
FOR
POWER PLANT, UTILITY, PORTABLE, GAS TURBINE ENGINE
DRIVEN, SKID MTD, AIRESEARCH MDL PPU85-5 NON-
WINTERIZED, FSN 6115-937-0929, AIRESEARCH MDL PPU85-4,
WINTERIZED, FSN 6115-134-0825, LIBBY WELDING CO.,
MDL LPU-71 NON-WINTERIZED, FSN 6115-165-3842

Headquarters, Department of the Army, Washington, D.C., 25 May 1973

Section		Paragraph
I.	INSTRUCTIONS	1-4
II.	POWER PLANT EVALUATION PROCEDURE.....	5-6

Section I. INSTRUCTIONS

1. Purpose. This manual furnishes the user a procedure for evaluating the readiness condition of the equipment to perform its primary mission for 90 days with normal maintenance support. Application of this procedure does not eliminate or reduce the requirement for prescribed maintenance service on the equipment and does not authorize replacement of components.

- 2. Definitions**
- a.** Equipment Category **GREEN**. Equipment free of condition that would limit the reliable performance of its primary mission for a period of 90 days of operation.
 - b.** Equipment Category **AMBER**. Operationally ready equipment that possesses a limiting factor(s) which may curtail a

reliable performance of its primary mission for a period of 90 days of operation.

c. Equipment Category **RED**. Equipment unable to perform its primary mission immediately or possessing an unacceptable reliability for sustained performance (90 days) of its primary mission.

3. General Instruction.

a. This technical manual, unless classified, will be filed with the equipment log book.

NOTE

Preventive maintenance checks and services and troubleshooting tables in the applicable TM 5 manual are to be used in conjunction with this TM when performing the evaluation. Also applicable LO 5 is required.

b. This evaluation will actually be performed on the item(s) being rated, by operator/crew.

c. Equipment serviceability criteria items covered in this manual, but not authorized to the evaluating organization shall not be rated.

d. Authorized items not on hand will be given the lowest color rating authorized for that item.

e. This equipment is rated on the basis of capability for immediate operation and amount of wear life remaining on the components. The rating is not meaningful unless each check is made with the utmost care and accuracy.

f. Record the evaluation results on DA Form 2404, Equipment Inspection and Maintenance Worksheet, using a separate sheet for each multiple-aspect equipment, subsystem, and/or component, including those evaluated by separately

published equipment serviceability criteria technical manuals. The blocks will be completed as shown below:

(1) BLOCK 1. Insert the organizational designation of the unit performing the evaluation.

(2) BLOCK 2. Insert item name and model.

(3) BLOCK 3. Insert the Federal Stock Number.

(4) BLOCK 4. Insert the hours equipment has been operated as of the date of the evaluation.

(5) BLOCK 5. Insert the standard six digit calendar date that equipment serviceability criteria evaluation is performed. (EXAMPLE: 3 January 1969 would be 690103).

(6) BLOCK 6. Insert the letters "ESC."

(7) BLOCK 7. Insert the equipment serviceability criteria technical manual number and its date of issue.

(8) Column a. Insert the checkpoint item number.

(9) Column b. Place each obtained color rating opposite the item to which it applies. (Insert "**GREEN**," "**AMBER**," or "**RED**" as applicable.)

(10) Column c.. Briefly describe each test item.

(11) Obtain the color rating for each subsystem by taking the lowest color rating given.

(12) BLOCKS 8 and 9. Self explanatory.

(13) BLOCK 10. Insert the overall equipment color categorization.

(14) The color category for the overall equipment will not be rated any higher than the lowest rated item. The color rating will be kept current by recording changes as they occur, on DA Form 2404.

(15) Staple all forms applying to the same system together, with those which apply to the basic system on top.

g. Determine and record the appropriate rating for each checkpoint, each subsystem/component, and the system. The color rating for multiple-aspect equipment will be the lowest rating recorded for a subsystem/component.

NOTE

If an URGENT modification work order has not been applied to any authorized equipment, the equipment and the system will be rated “RED.”

h. Subsystems and components will be separately color rated.

i. A color rating will be assigned for the overall system.

4. Reporting of Equipment Publication Improvements .

The reporting of errors, omissions and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028, Recommended Changes to DA Publications and forwarded to Commander, U. S. Army Mobility Equipment Command, ATTN: AMSME-MP, St. Louis, MO 63120.

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Section II. POWER PLANT EVALUATION PROCEDURES

5. Evaluation Requirements. Before inspecting the power plant, insure that fuel, lubricating oil, battery level, and potable water are adequate and that the power plant will, without damage, operate satisfactorily to perform the requirements of this evaluation.

6. Procedures. All information will be determined by actual inspection and operation of the equipment. Evaluate each item listed and record proper rating on DA Form 2404 as described in Section I. All operator/crew preventive maintenance checks and services shall be performed prior to evaluation.

Item 1. MODIFICATION WORK ORDERS (MWOs)

PROCEDURE	RATINGS		
	GREEN	AMBER	RED
Determine if all urgent MWOs have been applied. Refer to DA Form 2408-5 in log book.	All urgent MWOs have been applied.		One or more urgent MWOs have not been applied.

Item 2. BATTERIES

Inspect for obvious defects which could make the batteries unserviceable, such as: cracked or broken cases or burned posts.	Batteries crank engine to required starting RPM. All batteries present.		Batteries will not crank engine to required starting RPM. One or more batteries missing.
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Item 3. ENGINE OPERATION

Start engine. Note that starter drops out at 35%, ignition at 95%, acceleration to governed speed. Max 60 seconds. Ready to load indicator lights. Exhaust gas temperature stabilizes at normal. Detect any	Engine operates and accelerates to governed speed.	Detectable noise. Operates properly, no vibration.	Excessive noise, or vibration. Not operating properly.
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PROCEDURE	RATINGS		
	GREEN	AMBER	RED
erratic operation, vibration or unusual noise. After completing remaining operational checks, stop engine and check for smooth operation during wind-down.			

Item 4. LEAKAGE

With engine running inspect the fuel lines, lubricating oil lines, fuel and oil tank, filters, oil cooler, accessory case and dual drive pad.	No leakage. (May be moist to touch, but no droplet formation)	Less than 3 drops in a 5 minute period.	More than 3 drops in a 5 minute period. Visible cracks or deteriorated hoses.
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Item 5. INSTRUMENTS AND CONTROLS

During operation of the engine, inspect and actuate to determine that the controlling switches, selector switches and circuit breakers are functioning properly on all systems (except the turbine emergency switch). All instruments functioning properly, all switches, instruments and circuit breakers mounted securely.	All items operate properly.	One or more items not listed in RED that are not operating properly or missing.	Controlling or selector switch missing or inoperative.
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Item 6. GENERATOR COMPONENT ASSEMBLY, 400 HZ

Determine that the generator functions properly at rated output. Check AC	Operates properly.	Any one electrical indicator or component	Unusual noise or vibration. Generator
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PROCEDURE	RATINGS		
	GREEN	AMBER	RED
voltmeter, ammeter, frequency meter, phase selector switch, circuit breaker and contactors for proper output. Detect any unusual noise or vibration that might indicate damaged or worn parts. Hours of operation since new or overhauled.	0-4000	failed or missing. 4000 or over.	failed.

Item 7. GENERATOR COMPONENT ASSEMBLY, 60 HZ

Determine that the generator functions properly at rated output. Check AC voltmeter, ammeter, frequency meter, phase selector switch, circuit breaker and contactor for proper output. Detect any unusual noise or vibration that might indicate damaged or worn parts. Hours of operation since new or overhauled.	Operates properly. 0-7500	Any one electrical indicator or component failed or missing. 7500 or over.	Unusual noise or vibration. Generator failed.
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Item 8. ENGINE OIL CONSUMPTION

Determine how many quarts of oil were consumed during the last 500 hours of operation. If less than 500 hours have been accumulated since the last oil change, use data between previous changes. Do not consider amount used in making change.	0-2	3-4	Over 4.
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PROCEDURE	RATINGS		
	GREEN	AMBER	RED
Item 9. ENGINE HOURS OF OPERATION			
Determine the hours engine has been in operation since new or overhaul. If hour meter has been replaced, add hours at time of replacement to present hour meter reading for total hours of engine operation since new or overhaul.	0-7500	7500 or over.	
Item 10. ENVIRONMENTAL SYSTEM, COOLING			
Determine if all components are operational. Check that the compressors, condenser and recirculating fans are operating properly. Detect any unusual noise or vibrations that might indicate damaged or worn parts. Check sight glass on receivers for refrigerant level which might indicate leaks in the systems. Inspect valves, lines, fittings, condensers and evaporators for obvious damage. Check for restricted air flow through the condensers and evaporators.	Both systems operate properly.	One system inoperative.	Both systems inoperative. Unusual noise or vibration.
Item 11. ENVIRONMENTAL SYSTEM, HEATING			
Determine if all components are	Systems operate	One system	Both systems

PROCEDURE	RATINGS		
	GREEN	AMBER	RED
operational. Check the recirculating fans for proper operation, unusual noise or vibration. Determine that the load control valves are operating properly. Check for airflow restriction through the evaporators. When the winterization kit is installed, check the airflow for exhaust fumes indicating broken tubes in the heat exchanger. Actuate temperature control switches to determine proper operation of the thermostats.	properly.	inoperative.	inoperative. Excessive fan vibration or noise. Presence of exhaust fumes.

Item 12. WATER SYSTEM

While priming the water system, if applicable, determine if the hot and cold water pumps are operating properly. Detect any unusual noise or vibration. Check the heat exchanger valve, thermostatic switch, and pressure switch; for proper operation. Check lines, fittings and valves for leaks or obvious damage.	Both systems operate properly.	One system inoperative.	Both systems inoperative.
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Item 13. VACUUM SYSTEM

Inspect for obvious defects, such as loose mounting of the valve, ejector and exhaust assembly. Inspect hose for chafing	System operates properly.	Deteriorated hose, chafing or loose mountings.	System inoperative.
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PROCEDURE	RATINGS		
	GREEN	AMBER	RED
deterioration or loose clamps. Inspect tubes for kinks, cracks or loose connectors which might restrict the air flow or result in leakage.			

Item 14. GENERAL

Inspect the power plant for its general overall condition, pay particular attention to the wiring harnesses and cables for secure mounting, chafed or deteriorated insulation, loose or burned connectors and broken wires. Inspect the upper and lower electrical power tray assemblies for secure mounting of all components. Inspect doors, panels and hinges for damage, loose or deteriorated sound attenuation material, air intake filter for restrictions, damaged or missing tubes, air plenum and cooling ducts for cracks or damage, receptacle panel for damage, loose or burned receptacles, exhaust stack for restrictions.	General overall condition is good.	Wiring harnesses not securely mounted. Panels, doors and hinges slightly damaged. Sound attenuating material loose or deteriorated.	Broken wires or cables. Damaged or burned connector or receptacles.
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b. Rating.

- (1) Determine if any AMBER ratings were recorded.
- (2) Determine if any RED ratings were recorded.
- (3) The color rating will be the lowest rating recorded.

By Order of the Secretary of the Army:

Official:

CREIGHTON W. ABRAMS,
General, United States Army,
Chief of Staff

VERNE L. BOWERS,
Major General, United States Army
The Adjutant General

Distribution:

To be distributed in accordance with DA Form 12-25A (qty rqr block No. 637), Operator requirements for MUST System.

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The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
 1 decimeter = 10 centimeters = 3.94 inches
 1 meter = 10 decimeters = 39.37 inches
 1 dekameter = 10 meters = 32.8 feet
 1 hectometer = 10 dekameters = 328.08 feet
 1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
 1 decigram = 10 centigrams = 1.54 grains
 1 gram = 10 decigrams = .035 ounce
 1 dekagram = 10 grams = .35 ounce
 1 hectogram = 10 dekagrams = 3.52 ounces
 1 kilogram = 10 hectograms = 2.2 pounds
 1 quintal = 100 kilograms = 220.46 pounds
 1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce
 1 deciliter = 10 centiliters = 3.38 fl. ounces
 1 liter = 10 deciliters = 33.81 fl. ounces
 1 dekaliter = 10 liters = 2.64 gallons
 1 hectoliter = 10 dekaliters = 26.42 gallons
 1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

<i>To change</i>	<i>To</i>	<i>Multiply by</i>	<i>To change</i>	<i>To</i>	<i>Multiply by</i>
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.365	metric tons	short tons	1.102
pound-inches	newton-meters	.11375			

Temperature (Exact)

° F	Fahrenheit	5/9 (after	Celsius	° C
	temperature	subtracting 32)	temperature	

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