

TECHNICAL BULLETIN
FIELD AND SUSTAINMENT
MAINTENANCE (D, F, H)

FOR

FAMILY OF TQG GENERATORS
2k THRU 200k GENERATOR SETS
TACTICAL GENERATOR DESERT OPERATIONS
SPECIAL TEST, INSPECTION, AND REPAIR
REQUIREMENTS

SUPERSEDURE NOTICE. This TB supersedes TB 11-6115-741-24, dated 1 July 2007.

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HEADQUARTERS, DEPARTMENT OF THE ARMY

15 MAY 2009

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TECHNICAL BULLETIN

TB 11-6115-741-24

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 15 MAY 2009

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REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Reports, as applicable by the requiring Service, should be submitted as follows:

- (a) (A) Army - Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) located in the back of this manual, directly to: Commander, U.S. Army CECOM Life Cycle Management Command (LCMC) Fort Monmouth, ATTN: AMSEL-LC-LEO-E-CM, Fort Monmouth, NJ 07703-5006. You may also send in your recommended changes via electronic mail or by fax. Our fax number is 732-532-1556, DSN 992-1556. Our e-mail address is MONM-AMSELLEOPUBSCHG@conus.army.mil. Our online web address for entering and submitting DA Form 2028s is <http://edm.monmouth.army.mil/pubs/2028.html>.

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CHAPTER 1

GENERAL

SECTION I

INTRODUCTION

1.0 Scope. This document provides inspection and maintenance requirements and operational criteria to repair generator sets to operational 10/20 standards for re-issue to the field.

1.1 Purpose: Describes the technical and administrative requirements necessary to create and implement a program to restore Army tactical power generators to a completely serviceable condition with a measurable (expected) life. Though Army tactical generators are fully maintainable below the depot level, inspections of generators returning from SWA have revealed that the excessive exposure to fine desert/dust-like sand and long periods of extreme heat have significantly accelerated wear on the generator sets. In many cases, the sand has contaminated and compromised the engine, the main alternator, the fuel tank and most electromechanical parts. The excessive heat has made the rubber components hard and brittle. Based on these conditions future generators returning from OIF/OEF will be RESET to the Special Test, Inspection and Repair (STIR) requirements via a National Center of Excellence (COE) and/or service providers from the Government and Commercial Industrial Base.

1.2 Equipment to be inspected and repaired:

Generator Size and Type	Model Number	PU/PPs	PU/PPs
2 kW MTG	MEP-501A/531A		
3 kW TQG	MEP-831A/832A	PP-AN/MJQ-42/43	
5 kW TQG	MEP-802A/812A	PU-797/797A	PP-AN/MJQ-35/36
10 kW TQG	MEP-803/813A	PU-798/798A/799	PP-AN/MJQ-37/38
15 kW TQG	MEP-804/814A	PU-800/801/802	PP-AN/MJQ-39
30 kW TQG	MEP-805/815A/805B/815B	PU-803/804/803B/804B	PP-AN/MJQ-40/40B
60 kW TQG	MEP-806A/816A/806B/816B	PU-805/806/805B/806B	AM-MJQ-41/41B
3 kW Mil Std	MEP-016B/701A		PP-AN/MJQ-32/33
5 kW Mil Std	MEP-002A	PU-751/M	PP-AN/MJQ-16
10 kW Mil Std	MEP-003A /112A	PU-753/M	PP-AN/MJQ-18/25
15 kW Mil Std	MEP-004A /113A	PU-405A/M & 732/M	PP-AN/MJQ-15
30 kW Mil Std	MEP-005A /114A	PU-406B/M & 760/M	PP-AN/MJQ-10A
60 kW Mil Std	MEP-006A /115A	PU-650B/G & 707A/M	PP-AN/MJQ-12A
100 kW Mil Std	MEP-007B	PU-495B/G	
5 kW APU	MEP-952 B		
10 kW APU	MEP-903A/903B/903C		
Trailer	Model Number		
Ton	M116A2		
1 Ton	M116A3/A4		
1 ½ Ton	M103A3		
2 ½ Ton	M200A1		
3 ½ Ton	M353		
5 Ton	M1061A1		

1.2.1 In the 1980 sAcoustic Suppression Kits (ASKs) were developed for the 3 kW, 5 kW, 10 kW, 15 kW, & 30 kW Mil-Std Generators. The ASKs were purchased as an interim fix for a field requirement to quiet generator sets.

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This capability is built into the current TQG Family (first fielded in 1993) that is replacing Mil-Std generators. Although design drawings were developed for the ASKs, very few spare part NSNs were established. It was thought that the life of the kit components would exceed the life of the generator sets. The kits are optional on the generators other than the MEP-701 (which consists of an MEP-016B with an ASK installed).

The Mil-Std generators have now been out in the field longer than expected, and the ASKs are failing before the generators are removed from service. Studies indicate that it isn't economical to now purchase and stock spare parts for the ASKs or to spend significant dollars repairing ASKs when the Mil Std Generator sets are near the end of their life. CECOM has approved a very flexible approach to repairing ASKs. Use common sense, CARC paint finished repairs, and maintain the air seal of panels and airflow to preserve generator set cooling. CECOM does not have stock of complete 3kW, 15 kW or 30 kW ASKs, though complete 5 & 10 kW ASKs may be available. Though spare parts are not DOD centrally stocked specifically for the ASKs some hardware may be standard, and thus available from the supply system or bench stocks.

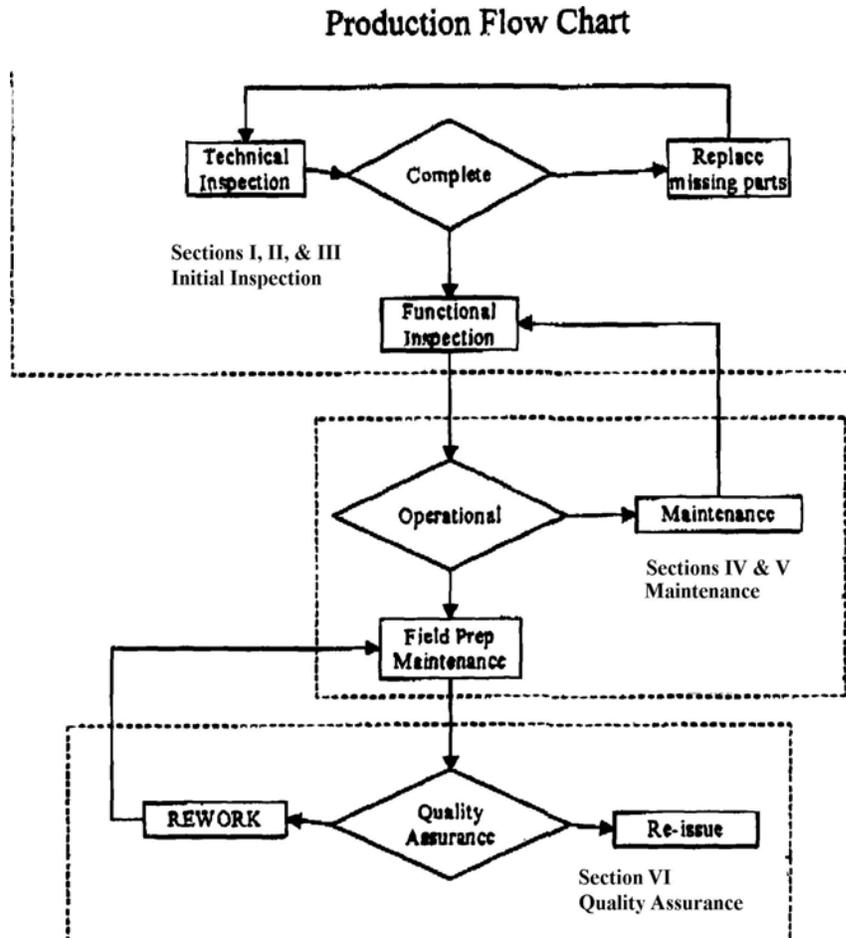
1.3 The STIR describes the requirements for work being performed at Tier 1 and Tier 2.

1.3.1 Tier 1 facilities are shops on military forts/bases/stations that DS/GS or DOL type maintenance could be performed in. These shops have open bays, overhead cranes or other lifting capability, compressed air, electricity, waste disposal access, load banks and rudimentary cleaning capabilities. Repairs could be performed by military personnel, local civilians or contractors, or temporary contractors.

1.3.2 Tier 2 facilities have extensive industrial capabilities such as found at Depots or manufacturer's factories. In addition to the capabilities found at Tier 1, Tier 2 facilities generally have significant covered space, extensive cleaning capability, sophisticated testing equipment, dynamometers, fabrication shops, repair shops, ovens, large paint shops, acquisition staff, and engineering support. Repairs could be performed by Government civilians or contractors

1.3.3 RESET Production Flow Diagram:

RESET Production Flow Chart



1.4 Generator Set Non-Economical to Repair Criteria: The repair cost shall include both the parts and labor costs to repair the generator sets to the STIR requirements.

The 3-60 kW Tactical Quiet Generator sets shall be considered uneconomical to repair when the repair cost exceeds 85% of the acquisition replacement cost, as defined by the PM-MEP published contract price list.

The 2 kW Military Tactical Generator shall be considered uneconomical to repair when the repair cost exceeds 75% of the acquisition replacement cost, as defined by the PM-MEP published contract price list.

The 5 kW MEP-952 & 10 kW MEP-903A/B/C shall be considered uneconomical to repair when the repair cost exceeds 75% of the acquisition replacement cost, as defined by the PM-MEP published contract price list.

The 3-100 kW Diesel Engine Driven Military Standard Generator Sets shall be considered uneconomical to repair when the repair cost exceeds 65% of the acquisition replacement cost, as defined by the PM-MEP published contract price list for the replacement Tactical Quiet Generator Sets. The repair cost includes the cost of repairing the ASK, if applicable.

In accordance with Army Regulations, authorization to exceed the MEL may be requested from CECOM Generator RESET. Approval would be based on the circumstances of the need and the justification provided.

1.5 Generator Set TIER 2 Criteria: The following criteria shall be used to identify units that are candidates for TIER 2 repairs as specified herein. CECOM shall select the generator sets to be repaired at TIER 2.

- Generator Sets that require replacement of the main AC alternator should automatically be sent to TIER 2 for repair.
- Military Standard Generator sets that require engine replacement should automatically be sent to TIER 2 for repair.
- Units that exceed the hour meter reading specified in Table 2, if known to be accurate.
- Units with a burnt or damaged wiring harness.
- Units with a significant number of essential parts missing.
- Units that are missing either a starter, alternator, fuel injection pump or other major engine component.
- Units that will not start after nominal repair.
- Units with abnormal engine sounds, knocks, misfiring cylinders, or other signs of wear.
- Units with abnormal main generator sounds.
- Units with abnormal exhaust smoke or carbon after nominal repair.
- Units that will not generate AC/DC power or exhibit frequency instability after nominal repair.
- Units that fail any functional inspection or test after nominal repair.
- Units that fail the oil pressure, cylinder compression, or crankcase vacuum tests.
- Units with significant sheet metal or skid damage.
- Units with a large number of TI deficiencies.

TABLE 2. Generator Set Hour Point for TIER 2 RESET

Generator Size and Type	Model Number	Hour Meter Reading
2 kW MTG	MEP-501A/531A	2500
3 kW TQG	MEP-831A/832A	2500
5 kW TQG	MEP-802A/812A	3500
10 kW TQG	MEP-803/813A	3500
15 kW TQG	MEP-804/814A	4500
30 kW TQG	MEP-805/815A/805B/815B	5000
60 kW TQG	MEP-806A/816A/806B/816B	5000
3 kW Mil Std	MEP-016B/701	2500
3 kW Mil Std	MEP-016D - Yanmar L70	2500
3 kW Mil Std	MEP-016E - Yanmar L100	2500
5 kW Mil Std	MEP-002A	4000
10 kW Mil Std	MEP-003A /112A	4000
15 kW Mil Std	MEP-004A /113A	5000
30 kW Mil Std	MEP-005A /114A	5000
60 kW Mil Std	MEP-006A /115A	5000
100 kW Mil Std	MEP-007B	6000
5 kW APU	MEP-952	3000
10 kW APU	MEP-903A/903B/903C	4000

1.6 The requirements of this Technical Bulletin. The requirements of this Technical Bulletin shall take precedence over the TM or OEM requirements. As each engine NMWR is published, that NMWR shall take precedence over the engine requirements in this Technical Bulletin. Questions about conflict between this Technical Bulletin and other referenced documentation should be directed to the U.S. Army CECOM Cycle Management Command (LCMC) Fort Monmouth, ATTN:AMSEL-LC-LEO-E-CM, Fort Monmouth, NJ 07703-5006, Commercial (732) 532-1556; Autovon (DSN) 992-1556, for guidance and clarification.

SECTION II

INSPECTION AND MAINTENANCE REQUIREMENTS

1.7 Inspection and maintenance requirements. The six tasks listed in paragraphs 1.8 to 1.13 shall be performed in the order listed. The additional tasks listed in Section III of this chapter shall also be performed.

1.7.1 Trailers shall be inspected and repaired in accordance with Chapter 4.

1.7.2 As soon as a generator set is determined to be Non-Economical to repair or selected for TIER 2 repair, no further work shall be performed on that set.

1.8 Initial Inspection. An initial inspection shall be done on each unit received to determine deficiencies and to determine the optimal repair facility.

1.9 Technical Inspection. Refer to Chapter 2, Paragraph 2.0. The Technical Inspections (TI) shall be performed and recorded in accordance with the checklist provided. Every component shall be visually inspected for serviceability. Damaged and/or missing components will be annotated on a DA 2404 (provided at Appendix H). Missing or damaged parts that require replacement before starting the generator set shall be denoted. Technicians familiar with generator set configurations shall perform the Technical Inspections.

1.10 Functional Inspection. Refer to Chapter 2, Paragraph 2.1. The Functional Inspection (FI) shall be performed on all sets that have been Technically Inspected and recorded IAW the checklist provided. The FI shall include a Test Method 608.1, full load only, Mil-Std 705 along with all other inspections as specified. Prior to test set-up, start and operate the set to confirm rated voltage and frequency. During stabilization period, check all set instrumentation for proper operation, and check audible and visual engine performance.

1.11 Oil pressure, cylinder compression, and crankcase vacuum test. All engines that pass the functional testing of paragraph 1.10 shall have the oil pressure and cylinder compression or crankcase vacuum tested in accordance with Chapter 7, Paragraph 7.1.1. Data collected along with the functional test shall be used to determine if the generator set is a candidate for TIER 2 repair or engine replacement.

1.12 TIER 1 repair as required. After the TI and FI are completed and the unit is identified as optimally repaired at TIER 1, the deficiencies identified shall be corrected. Troubleshooting procedures, in accordance with applicable technical manuals, shall be followed to correct all deficiencies. Additional TIER 1 maintenance and mandatory part replacement in accordance with Chapter 3 shall be completed.

1.12.1 TIER 1 repair not required. On units that are fully functional, pass TI and FI and Paragraph 1.11, and have no evidence of sand or dust in the fuel tank, past the intake air filter, or in the main generator; TIER 1 Maintenance Requirements are not applicable. If any evidence of wet stacking is observed during operation, the exhaust system shall be inspected and repaired IAW the applicable TM. These units shall be repaired as required, have all applicable MWO% applied, have S1 and S6 replaced as applicable IAW paragraphs 7.7.8 and 7.7.9, and perform only the PMCS IAW the applicable TM.

1.13 Preventative Maintenance Checks and Services (PMCS). After completion of repairs, perform the required Preventative Maintenance Checks and Services (PMCS) in accordance with Appendix E.

1.14 Quality Assurance Requirements. After completion of repairs and PMCS, perform the required Quality Assurance Requirements in Chapter 7.

SECTION III

ADDITIONAL MAINTENANCE REQUIREMENTS

1.15 Topcoat. Both Tier 1 and Tier 2 generator set housings and trailers shall have a final topcoat of CARC paint in accordance with MIL-DTL-53072, color/pattern as specified by CECOM.

1.16 Data plates.

1.16.1 All data plates, decals and electrical schematic diagrams shall be legible. Questionable items shall be replaced.

1.16.2 For generator sets remanufactured at Tier 1 facilities, an additional data plate shall be riveted to the generator set that contains the following data. This data plate shall be affixed adjacent to the Generator Set identification plate.

- Tier 1 RESET by: "facility name"
- Engine serial number
- Date of the Tier 1 RESET
- Generator Set hour meter reading after final test

1.16.3 For generator sets remanufactured at Tier 2 facilities, an additional data plate shall be riveted to the generator set that contains the following data. This data plate shall be affixed adjacent to the Generator Set identification plate.

- Tier 2 RESET by: "facility name"
- Remanufactured/new engine serial number
- Date of the Tier 2 RESET
- Generator Set hour meter reading after final test

1.17 Engineering Change Proposal (ECP). As ECP's are approved, they shall be provided to the Tier facilities and implemented.

1.18 Fluid Seal and Gasket Leakage. There shall be no leakage permitted except as specified below.

1. MEP-002 & MEP-003: fuel leakage in the injection pump is allowable IAW TM 5-6115-584-34, paragraph 7-18 and TM 5-6115-585-34, paragraph 7-18.
2. MEP-805A/B & MEP-806A/B: class I and II oil leaks at the turbocharger inlet housing are acceptable.
3. Tier 1 Generator Sets: class I oil leaks are acceptable.

1.19 Mandatory Replacement Parts. See Appendix J, K, and I for the TIER 1 Mandatory Replacement Parts Lists. All non-metallic fuel hoses, coolant hoses, air intake hoses, door and radiator seals, reducer tube, fan belts, grommets, battery terminal covers, and edge protectors shall be replaced on Tier 1 and Tier 2 generator sets unless otherwise specified herein. TIER 2 Mandatory Replacement Parts Lists shall include the TIER 1 Lists plus all other parts as specified herein.

1.19.1 Non-metallic Material. If the generator set had been RESET or was manufactured within the last four years, non-metallic fuel hoses, coolant hoses, air intake hoses, door and radiator seals, reducer tube, fan belts, grommets, battery terminal covers, engine and generator mounts, and edge protectors are not Mandatory Replacement Parts and shall be inspected and replaced as necessary. This requirement takes precedence over non-metallic material requirements in Chapters 3 and 7.

1.20 Hardware. Hardware shall be replaced if broken. Hardware may be reconditioned/reused or equal or greater value hardware substituted if the material is not readily available through the supply channels. Any locking device (such as lock washers, etc.) that is removed will not be reused.

1.21 Corrosion and Painting. Rust and Corrosion definitions shall be in accordance with Appendix A. New internal items that are replacement items will not be repainted. Access doors, covers, panels, and the control box will only be disassembled as necessary to facilitate any repair. Damaged and corroded items will only be disassembled to a level where repairs can be made. Replacement of items or next higher assembly may be an option. Interior surfaces shall only be cleaned and shall not be repainted unless an item has been repaired. The

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repaired surface(s) then shall be spot painted or hand touched-up. Stage 1 and 2 rust on interior surfaces is acceptable and shall not require a repair or paint with the exception that no rust is acceptable on any sealing surface. Exterior surfaces shall be painted with CARC paint in accordance with MIL-DTL-53072, color/pattern as specified by CECOM.

1.22 Components of End Item (COEI), Accessories, and Basic Issue Items (BII). The items listed in Appendix M shall be provided by the TIER 1 or TIER 2 facility when the end item is issued as a supply transaction. All electrical cables provided with the units shall be cleaned and continuity tested before being reissued.

1.23 Electrostatic Discharge Sensitive (ESDS) Devices. All TQG Control Box Assemblies are ESDS and shall be handled in accordance with industry standard ESD protective processes/procedures. In addition, any component that is considered ESDS by the component manufacturer shall be handled IAW industry standard ESD protective processes/procedures.

1.24 Soldering. Soldering shall be performed IAW the applicable TM, military specification, manufacturer drawing, or industry standard.

1.25 Electrical Connections. Electrical connections shall be made IAW the applicable TM, military specification, manufacturer drawing, or industry standard.

1.26 Paper Documentation. Paperwork; such as shop travelers, final inspection records, checklists, tags, test sheets; shall be used to document all processes, procedures, testing, and inspections specified and performed herein. A single document can cover one or multiple items. The original paperwork shall be maintained at the RESET facility for two years.

1.27 IUID. All generator systems shall have an IUID data plate installed IAW 13230E7022 or 88-22842.

CHAPTER 2

INSPECTION PROCEDURES

2.0 Technical Inspection. The Generator Set shall be inspected for damaged, inoperative, broken, deteriorated, missing, or corroded parts and components that adversely affect generator set performance using the checklist in Appendix C to perform the technical inspection. Damaged, missing, or otherwise unserviceable components will be annotated on a DA 2404 (provided at Appendix H).

2.1 Functional inspection. The functional performance of the generator set shall be assessed using the following procedure and the checklist in Appendix D. The functional inspection shall be performed after the Technical Inspection. The generator set must start, operate, and produce AC/DC power to perform a full functional inspection. If the engine will not start or the generator will not produce power, the generator set must be nominally repaired prior to the start of the functional inspection.

2.1.1 Functional Inspection Operational Procedure.

- a) Check and add coolant and oil as required. Verify that the nominal repairs identified during the TI have been completed so that a FI can be performed.
- b) Test dead crank switch by cranking engine. If the fuel tank is empty, attempt to start generator set. Verify Low fuel failure occurs. If the fuel tank has sufficient fuel to operate the generator set, remove the low fuel shutoff switch wire and verify that low fuel failure occurs. (low fuel shutoff system can be checked later in the repair process if desired.)
- c) Turn master switch (S1) to on. Observe engine and fuel gauges for movement.
- d) Start the generator set and observe operation. Allow generator set to warm up. On the Mil Std sets, verify proper operation of the shutter assembly, shutters open evenly and at correct temperature IAW applicable TM.
 - Observe coolant temperature, oil pressure, fuel level, battery charging amps, and output voltage.
 - Listen to engine for abnormal sounds, knocks or other signs of wear.
 - Observe exhaust for signs of abnormal smoke.
- e) Close contactor. Observe movement of contactor switch.
- f) Apply load till 100 percent generator set load is reached.
 - Observe and record coolant temperature, oil pressure, output voltage, amperage, percent KW, and other output readings.
 - Listen to engine for abnormal sounds, knocks, misfiring cylinders, or other signs of wear.
 - Inspect generator set for oil, coolant and fuel leaks.
 - Observe engine exhaust for abnormal smoke or carbon.
 - Observe frequency gauge for signs of frequency instability
- g) Turn AM/VM switch to measure output on different legs.
- h) Twist voltage adjust switch to lowest voltage and then to highest voltage. Observe output voltage and resistance of switch, looking for voltage jumps and uneven resistance (indicating dust contamination)
- i) Move frequency select switch and observe Hz meter for frequency change. Monitor frequency for stability.

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- j) Verify operation of engine battery charging alternator by measuring DC voltage.
- k) Test operation of GFCI on convenience receptacle (CR). On the 5 and 10 KW Mil Std sets, verify that the CR "HOT" is wired to the circuit breaker then verify that the other side of the circuit breaker is wired to terminal L3 on S6. Verify that the CR Neutral is wired to terminal 6 on S6. And verify that there is an AWG #4 jumper wire on S6 between terminals 6 and L0. After wiring is verified, test CR voltage/polarity at all three generator output voltage connections.
- l) Slowly increase load on generator set until over current protection circuit trips. Turn off load and restart generator set.
- m) Test low oil pressure protection circuit IAW applicable TM and verify generator set shuts down.
- n) Test high temperature protection circuit IAW applicable TM and verify generator set shuts down.
- o) Test operation of battle short switch IAW applicable TM.
- p) Check auxiliary fuel pumps for proper operation.
- q) Perform Quality Power Test IAW paragraph 7.1, Generator Testing. As applicable, verify proper operation of the Power Unit Switch Box IAW paragraph 7.2.
- r) Shut down generator set.
- s) Remove the valve covers and inspect the internal oil galleries for caked dust and oil sludge. If caked dust or oil sludge is thicker than 0.125 inch (1/8 inch), the generator set shall be identified as a candidate for TIER 2 repair or engine replacement.

End of Functional Inspection operational procedure

CHAPTER 3

Tier 2 Maintenance Requirements

3.0 During repairs, a new component may be substituted as an alternative to remanufacturing or repairing the old component.

3.0.1 Inspect and Test Units. On units with less than 500 hours and that were RESET or manufactured within the last four years that are fully functional, pass Paragraph 1.11, and have no evidence of sand or dust in the fuel tank, past the intake air filter, or in the main generator; TIER 2 Maintenance Requirements are not applicable. If any evidence of wet stacking is observed during operation, the exhaust system shall be inspected and repaired IAW the applicable TM. These units shall be repaired as required, have all applicable MWO's applied, have S1 and S6 replaced as applicable IAW paragraphs 3.7.8 and 3.7.9, and perform only the PMCS IAW the applicable TM.

3.1 Generator Set Disassembly. The entire generator set shall be disassembled as required to perform the maintenance required in this chapter.

3.2 Engine.

3.2.1 The entire engine shall be disassembled and remanufactured in accordance with (IAW) the OEM specifications and the requirements specified herein. As each engine NMWR is published, that engine shall be remanufactured in accordance with its NMWR. Block, head, rods, crankshaft, camshaft, and other components to be reused after inspection shall be thoroughly cleaned to remove all contaminants, corrosion and carbon. As an option, a new OEM engine may be installed.

3.2.1.1 On engines (generator sets) with less than 1000 hours and have no evidence of sand or dust past the intake air filter, the engine shall be dynamometer tested IAW paragraph 3.2.14. If any evidence of wet stacking is observed during operation, the exhaust system shall be inspected and repaired IAW the applicable TM. At a minimum, the engines must meet or exceed 95% of rated HP at NMWR/OEM acceptable speed, temperatures, and pressures. After successfully passing the dynamometer test, the engine and the original engine/generator set hour meter shall be reinstalled in the generator set. Engines that do not successfully pass shall be remanufactured IAW paragraph 3.2.1.

3.2.1.2 The Onan diesel engine that is original equipment on the MEP-016B and MEP-701A 3KW DED is non-supportable. This engine shall be replaced with a Yanmar L-100 diesel engine using diesel conversion kit NSN 2920-01-418-0970. There is an interference fit between the MEP-701A ASK enclosure and the Yanmar L-100 diesel engine that causes problems with intake and exhaust porting and with cooling air flow. The ASK shall NOT be installed on a Yanmar L-100 engine-equipped 3 KW set and no modifications to the ASK are authorized. Yanmar L-100 engine-equipped 3 KW sets will be designated as MEP-016B generator sets for tracking purposes.

3.2.1.3 No 3 kW gasoline engine driven generator shall be RESET unless directed by CECOM. All that are directed to be RESET shall have the Yanmar L-70 diesel engine conversion kit NSN 2815-01-440-4426 installed. Yanmar L-70 engine-equipped 3 KW sets will be designated as MEP-016E generator sets for tracking purposes only; the "E" is not an official designation.

3.2.2 All wearable items, such as non-metallic hoses, filters, gaskets, o-rings, seals, expansion plugs, bearings, bushings, piston rings shall be replaced with new items. All screens shall be cleaned or replaced. All additional parts specified herein and by the OEM to be replaced shall be replaced. Some of the normally replaced components may be not be available for older engines no longer in production. If parts availability problems are encountered, please contact U.S. Army CECOM Cycle Management Command (LCMC) Fort Monmouth, ATTN: AMSEL-LC-LEO-E-CM, Fort Monmouth, NJ 07703-5006. Commercial (732) 532-1556; Autovon (DSN) 992-1556. for guidance and clarification.

3.2.3 The block shall be remanufactured to OEM specifications. The block shall be NDT inspected by a certified inspector. The block shall be visually inspected for signs of pitting, gouging, or scoring and dimensionally checked. Resurface the cylinder head mating surface as required to ensure proper sealing of new head gasket as required. Machine/hone main bore as required. Blocks with liners shall have all parent bores machined as required. Install new freeze plugs and cam bearings.

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3.2.4 The head shall be remanufactured to OEM specifications. Each head shall be NDT inspected by a certified inspector. Heads shall be inspected for flatness and resurfaced as required to ensure proper sealing of new head gasket. Valves and valve seats shall be ground or replaced then ground. Valves, valve guides and valve springs shall be inspected and tested. Out of tolerance valve springs shall be replaced. Assemble components and test the valve and valve seat using a vacuum pump maintaining a minimum of 25 in. HG.

3.2.5 Each connecting rod shall be visibly inspected for damage and if an indication/crack is possibly observed, the item shall be NDT inspected by a certified inspector. As required, the big end shall be resized and machined to OEM specifications Pin bushing shall be replaced and sized to OEM specifications. Each rod shall be inspected for twist and bend dimension as well as center-to-center length.

3.2.6 Each crankshaft shall be NDT inspected by a certified inspector. Each camshaft shall be visibly inspected for damage and if an indication/crack is possibly observed, the item shall be NDT inspected by a certified inspector. Each shall be Rockwell hardness tested as required. Each shall be dimensionally checked to OEM specifications. All crankshaft fillet areas shall be checked for proper dimensional tolerances. Journals may be ground if scored or out of dimension. Upon acceptance, each journal and/or lobe shall be micro-polished. Ra surface finish on journals shall be within OEM specifications. Crankshaft and camshaft shall also be demagnetized as required.

3.2.7 Turbocharger shall be remanufactured and tested in accordance with the OEM Technical Manual.

3.2.8 Cooling System. Thermostat and fan belts shall be replaced. The water pump shall be remanufactured in accordance with OEM Technical Manual or replaced.

3.2.8.1 On the 15 kW TQG A model Isuzu engine, a Kevlar V-belt, NSN 3030-00-528-4635, shall be installed.

3.2.9 Fuel System. Replace or remanufacture and test fuel injectors and fuel injection pump.

3.2.10 Lubrication System. Filters, gaskets, seals, O-rings, and fluids shall be replaced. Oil pressure regulating and bypass valves shall be inspected and replaced as required. The oil pump shall be remanufactured in accordance with OEM Technical Manual or replaced.

3.2.11 Air Intake and Exhaust System. Exhaust clamps, gaskets, seals, filters, and check valve shall be replaced. Heater devices and glow plugs shall be tested and replaced as required.

3.2.12 Electrical System. The starter and battery-charging alternator shall be replaced or remanufactured and tested to OEM specifications/requirements. During remanufacture, replace all brushes and bearings. Replace diodes and other internal components as required.

3.2.13 Repainting. Engine shall be repainted after remanufacture original OEM color or as otherwise specified. Do not paint OEM nameplate, fuel line hoses, water connections, electrical terminals, pulley grooves, belts, glow plugs, exhaust manifold, heaters, electronic sensors and switches, and flywheel mating surfaces. All openings shall be sealed or capped during repainting.

3.2.14 Engine Dynamometer Testing. Testing of completed engines will be in accordance with the OEM Technical Manual, Table 6 or 7, and shall be as follows. Test reports shall be completed by engine serial number and provided with each engine. For engines rebuilt, engine manufacturer% break in oil shall be used as applicable. MEP-802, -803, -805A/B, and -806A/B engines shall be filled with Lister Petter or John Deere break-in oil, as applicable. A tag shall be secured to the engine and to the S1, engine start switch, stating that the engine contains break in oil and specifying that the first oil change shall be performed at the 100 hour generator set hour meter reading.

Table 6. Engine Dynamometer Testing (except Yanmar).

CAUTION

If engine will idle longer than 5 minutes, stop the engine.

- a) Break-In: Start engine and run at loads and speeds shown in the following chart for the time limits given.
- b) Run engine at slowest adjustable speed or as recommended by the engine OEM for 5 minutes - check for oil, fuel, & coolant leaks.
- c) Run engine at rated speed at 1/2 load for 60 minutes.
- d) Run engine at rated speed at 3 load for 40 minutes.
- e) Run engine at rated speed at full load for 15 minutes.
- f) Run engine 2 minutes at rated speed with no load before shutdown.
- g) Retorque the head and reset the valves as appropriate as specified by the applicable Technical Manual.

Table 7. Yanmar Engine Testing

CAUTION

- a) Break-In: Start engine and run at loads and speeds shown in the following chart for the time limits given.
- b) Run engine at rated speed at no load for 30 minutes - check for oil & fuel leaks.
- c) Retorque the head and reset the valves as specified by the applicable Technical Manual.

3.3 Main Generator

3.3.1 The AC generator assembly shall be removed from the generator set, disassembled and cleaned (steam cleaning is the preferred cleaning method) to remove the loose and caked dust from all the windings. If liquids are used to clean alternator, alternator must be dried in an oven or via other industrial process to remove all the liquid from the windings prior to reassembly. Perform Insulation Resistance test in accordance with Mil-Std-202, Method 302, Test Condition B, $\geq 200M\Omega$. Alternator components shall be inspected, tested, and repaired or replaced, as necessary, IAW applicable TM. Diodes shall be tested and replaced as required. Rotor bearing (s) and any o-ring shall be replaced. Windings shall be reinsulated using NSN 5970-00-076-8988 red insulator or a RESET Office approved equivalent. Damaged windings shall be rewound IAW applicable drawing or replaced. Rotor shall be rebalanced if required. Ensure that the rotor wiring is properly routed and secured to prevent stator contact.

3.3.2 The exterior surface of the AC generator assembly does not require repainting, except for the MEP-002/-003A, MEP-016 Series, MEP-531/501, and MEP-903 Series assemblies; these assemblies shall be painted.

3.3.3 On the MEP-531A, replace the brushes, caps, and holders IAW the TM and polish the slip rings.

3.3.4 On the 15, 30, and 60 KW TQG%, the two generator mounting bolts shall be replaced using new NSN 5305-00-724-7265.

3.3.5 Mil-Std AC generator assembly. Diodes shall be replaced unless the diodes were replaced in a previous RESET (2004 and on) operation. If in doubt, diodes shall be replaced.

3.3.6 Stator Splices: To repair a wire, one mechanical crimp splice is acceptable on each wire. Appropriate manufacturer splice, tool and tooling shall be used for each wire size. After crimping, ensure that there are no sharp

edges, then insulate with class F electrical tape (e.g., Permacel P246 or P247) and lastly, cover tape with 105 C rated heat shrink. All non-OEM produced splices shall be replaced.

3.4 DC Electrical System. The 12-volt batteries will be:

- a) Inspected for terminal integrity, cracks, bulging or swelling of the battery case, and other damage.
- b) Filled with fluid as applicable.
- c) Recharged to a resting voltage (after the surface charge has worn off) of 12.6 volt minimum. The Optima shall be recharged to a resting voltage of 12.70 volt minimum.
- d) Hydrometer tested as applicable. After charging, the specific gravity reading shall be between 1275 and 1300 for each cell.
- e) Verify cold cranking amps using a Midtronics Model ED-18 Electrical System Analyzer (or equivalent) A printout for all passing batteries shall be provided; a number shall be marked on the printout and matching number marked on the battery.
- f) Hot water washed with soap to remove dirt and grease.
- g) Inspected for terminal integrity, cracks, bulging or swelling of the battery case, and other damage.
- h) Clean terminal post with terminal brush.

Batteries will be replaced if required, or if adequate testing equipment is not available. Cables, terminal/battery covers, and terminal lugs shall be replaced on an as required basis. Recondition or replace battery tray and hold down assemblies as necessary.

3.5 Housing. The housing shall be cleaned, repaired as required, and painted. On the MEP-002/-003A, MEP-016 Series, MEP-531/501, and MEP-903, the complete generator set including all subassemblies shall be painted. Sound absorbing foam panels shall be replaced 100% with cut-to-size replacement foam and installed using pin-rivets through the foam. The generator set housing shall have a final topcoat of CARC paint in accordance with MIL-DTL-53072, color/pattern as specified by CECOM.

3.5.1 On the 3 kW TQG, inspect the set to ensure that the leak prevention kit has been installed. See Appendix L for inspection and installation procedures.

3.5.2 Panel/Door Deflection Acceptance Criteria: Distortion from original plane or contour in the form of a wave, sag, or bulge is acceptable if not in excess of 1/2 inch in a distance of 12 inches. Panels/doors with dents/deflections in excess of this requirement shall be repaired or replaced. Dents/deflections shall not impact operation or performance of any gen set system.

3.6 Acoustic Suppression Kits (ASKs)

3.6.1 On the 3 kW, 5 kW, or 10 kW, ASKs may be removed from the generators and the generators will function normally. For 5 & 10 kW generators new replacement kits may still be available from the supply system for purchase and installation if the owning unit wants to retain the reduced acoustic signature provided by the kits.

3.6.2 On the 15 kW and 30 kW generators the exterior generator panels were removed to install the ASKs. The ASK panels reduce the generators acoustic signature and protect generator set components from environment elements. If 15 and 30 kW ASK panels/doors have failed, replacement ASK panels/doors must be installed or the complete kit must be removed and original generator panels/doors must be installed. Failure to enclose the 15 & 30 kW generators sets will lead to weather damage of internal generator set components and potential overheating of the main alternator, engine, and other generator components, as the exterior panels and doors duct cooling air through the generator components.

3.6.3 Mil-Std generators have a short remaining life and repairs should proportionate to the expected life of the generators. All door seal material shall be replaced. The sealing surface of all doors shall be intact and shall be repaired as necessary to maintain the integrity of the seal. . All doors shall seal, close, and lock properly. It is acceptable for the inside door screen to be rusty and missing material. The preferred order of repair options is as follows:

1) On the 5 through 30 kW ASKs, panels can be repaired by welding or riveting new sheet metal over rust holes. Recommend that RTV be used to seal riveted panel patches. Fiberglass may also be used. Pound out dents when possible. Weld angle iron onto panels to repair edges. Since the ASKs are not mandatory, repairs to the acoustic insulation are not required, unless the unit wishes to maintain the acoustic suppression capability. There

should be standard hardware available for most of the screws, washers and nuts. Patches or new material should be CARC painted after installation.

2) On the 5 & 10 kW generator sets, if the ASKs cannot be repaired or the damage is major, complete kits may be ordered from the supply system.

3) If three or more panels require replacement, remove the ASK from the 5 or 10 kW Generator sets unless reduced acoustic signature is critical to the Soldier mission.

4) On all ASKs, if two or less panels require replacement, new panels can be locally fabricated. Technical drawings for the ASK components can be obtained from CECOM. Panels may also be available from commercial sources. Contact U.S. Army CECOM Cycle Management Command (LCMC) Fort Monmouth, ATTN: AMSEL-LC-LEO-E-CM, Fort Monmouth, NJ 07703-5006, Commercial (732) 532-1556; Autovon (DSN) 992-1556, for guidance and clarification.

5) On the 15 & 30 kW ASKs, if two or more panels require replacement the total generator set may be uneconomical to repair. Calculate total repair cost for repairing generator set and replacing ASK components and compare cost with MEL. If cost is less than MEL, repair generator set.

The Onan diesel engine that is original equipment on the MEP-016B and MEP-701A 3KW DED is non-supportable. This engine shall be replaced with a Yanmar L-100 diesel engine using diesel conversion kit NSN 2920-01-418-0970. There is an interference fit between the MEP-701A ASK enclosure and the Yanmar L-100 diesel engine that causes problems with intake and exhaust porting and with cooling air flow. The ASK shall NOT be installed on a Yanmar L-100 engine-equipped 3 KW set and no modifications to the ASK are authorized. Yanmar L-100 engine-equipped 3 KW sets will be designated as MEP-016B generator sets for tracking purposes.

3.7 Control Box Assembly.

3.7.1 The Control Box may be cleaned without removal of the electrical/electronic assemblies, except on the 5 KW to 60 KW TQG's; the voltage regulator shall be removed and cleaned.

3.7.2 Replace glass/plastic encased electromagnetic relays 100%.

3.7.3 See paragraph 3.10 for harness and cables requirements.

3.7.4 Replace hour meter 100%.

3.7.5 Replace light bulbs 100%. Panel incandescent lamps shall be green tinted in accordance with the 88-22662 , CAGE 30554 drawing.

3.7.6 On the 5 and 10 kW TQG% only: Install fuse on quad winding wire going into the voltage regulator. See Paragraph 5.2.

3.7.7 Inspect gauges for proper operation and replace as required.

3.7.8 On 5-60 kW A/B TQG's only: If a new style sealed switch is not installed, replace the S1 Master Start switch 100% with the new style sealed switch, Electroschwitch part numbers 75902LV (5-15 kW) or 75901LJ (30 & 60 kW), or American Solenoid part numbers DHR10 C57400 EF or DHR10 C57410 EF, respectively. NSN 5930-01-531-2976 (5-15 KW) and NSN 5930-01-531-2972 (30 & 60 KW).

3.7.9 On 5-60 kW A TQG's only: If a new style sealed switch is not installed, replace the S6 Rotary VM-AM 100% with the new style sealed switch, Electroschwitch part numbers 31907LW (5 & 10 kW) or 31904QT (15-60 kW), or American Solenoid part numbers DHR10 C57430 EF or DHR10 C57420 EF, respectively. The Control Bracket may need to be bent backward slightly to accommodate the switch. NSN 5930-01-531-2977 (5 & 10 KW) and NSN 5930-01-531-2975 (15- 60 KW).

3.7.10 On 5-60 kW TQG's only: Install a 10A fuse in-line with the convenience receptacle and a new 10A receptacle data plate. The in-line fuse is not required if a Ground Fault Interrupter NSN 5925-01-493-9106, containing a built in circuit breaker, is installed.

3.7.11 On 15, 30 & 60 kW TQG's only: with TRC voltage regulators, install fuse on exciter circuit on F1. See Paragraph 5.3.

3.7.12 On 15, 30 & 60 kW TQG's Voltage Regulator only: A1, clean dust/sand from circuit card.

3.7.13 On 30 & 60 kW TQG "B" Models only: replace the inline 30 amp battery-charging fuse with a 50-amp circuit breaker. See Paragraph 5.4. Also, if a newly redesigned module is not installed, the Backplane Module shall be replaced 100% with the newly redesigned module, same NSN. The newly redesigned module utilizes surface mount components in lieu of the discrete capacitors and resistors. If the Master Switch is turned on and the CIM does not boot up (black display), refer to Appendix N for CIM checking procedures.

3.7.14 On 5 & 10 kW TQG's, position wires between load terminal and main contactor so that the wires are not rubbing on internal sheet metal parts. See Safety-of-Use-Message SOUM-ATCOM-95-003.

3.7.15 On the 5 & 10 kW TQG's, if not already performed, rotate the slave receptacle so that the positive terminal is on top. This ensures that the wrench does not short out on the back terminal of the slave receptacle when disconnecting the battery terminal.

3.7.16 On the 3 kW TQG, Frequency Converters that have evidence of sand or dust shall be minimally cleaned IAW the following procedure. Each Frequency Converter shall be upgraded to the latest configuration by TRC, (727-535-0572), as applicable. The latest configuration provides an increase in reliability. The Frequency Converter is an ESDS (Electrostatic Discharge Sensitive) device and shall be handled using all ESD protective processes/procedures. Cleaning is not required on Frequency Converters that have no evidence of sand or dust.

1. Inspect the unit for damage. In addition as the unit is disassembled, inspect for damage and defective components. Damaged units must be repaired.
2. Remove both side covers and top plate.
3. Remove the bottom plate with fan.
4. Remove the bottom side rail then slide the metal shell up from the electronic assembly.
5. Remove the Control Circuit Board and Capacitor Circuit Board from the sides of the electronic assembly.
6. Clean the circuit boards using isopropyl alcohol or other electronic cleaning solvent (which does not attack the polyurethane conformal coating on the circuit boards).
7. Clean the metal plates/covers.
8. Reassemble in reverse order.

3.7.17 On the 5 and 10 KW Mil Std sets, locate terminal block TB4. Remove wire P59E16 from terminal TB4-3 and attach the wire to TB-12/13/14.

3.8 Air Intake and Exhaust.

3.8.1 Air cleaner elements, breather filters, and rubber seals shall be replaced. Clean air cleaner housing as required. Breather screens shall be cleaned or replaced. Exhaust muffler shall be inspected per the appropriate TM. The 2 kW MTG and 3 kW, 5 kW & 10 kW TQG mufflers shall be inspected for clogging and excessive carbon buildup. Clean, repair or replace all mufflers as required. Heater devices and glow plugs shall be tested and replaced as required.

3.8.2 On the Mil Std sets, verify proper operation of the shutter assembly, shutters open evenly and at correct temperature IAW the applicable TM.

3.9 Output Box and Load Terminal Board.

3.9.1 Clean and inspect without removing the electrical/electronic assemblies, repair as necessary. See paragraph 3.10 for harness and cables requirements. Replace Main Contactor and start relay as required. On 15, 30, & 60 KW TQG's, apply RTV to wires on back of J15 inside the bottom of output box.

3.9.2 On the 5 and 10 KW Mil Std sets, verify/test Convenience Receptacle (CR) voltage/polarity at all three generator output voltage connections. On the 5 and 10 KW Mil Std sets, verify that the CR HOT is wired to the

circuit breaker than verify that the other side of the circuit breaker is wired to terminal L3 on S6. Verify that the CR Neutral is wired to terminal 6 on S6. And verify that there is an AWG #4 jumper wire on S6 between terminals 6 and L0.

3.10 Electrical Harnesses and Cables.

3.10.1 All cables and harnesses are to be cleaned and inspected in-place, then repaired or replaced on an as needed basis. Electrical connections (such as connectors, screws, terminals) shall be cleaned or replaced if any rust or corrosion is observed. Any wires replaced are not required to have wire numbers every three inches. Any wires replaced shall have the wire number marked, using a petroleum resistance heat shrink sleeve (band marker) at locations such as near bulk heads, terminal ends, switches, etc. to facilitate field repair and troubleshooting. Harnesses/wires will not be disassembled solely to provide band markers. Replacement wires shall be routed along and neatly attached to the existing harness. No splices are permitted except when installing a 10A fuse in-line with the convenience receptacle. When an in-line fuse is installed, it shall be installed using a solder type butt splice.

3.10.1 Soldier joints and splices performed by the generator set manufacturer and his OEM component suppliers should not be considered splices as described in the STIR and are acceptable.

Wiring harnesses that have nicks in the insulation, but intact and undamaged copper conductors, may be repaired using heat shrink tubing or other sealing and insulating methods that electrically insulate the wire/conductor and protect the wire from water, chaffing, deterioration, corrosion and excessive flexing.

3.11 Engine and AC/DC Generator Mounts. Inspect mounts for cracking, tears, being crushed, and deterioration. Replace engine and AC generator assembly mounts on 5 & 10 kW TQG's. All other mounts shall be replaced as required.

3.12 Cooling System. The radiator shall be cleaned, inspected, rodded, fins straightened, repaired as necessary and painted or the radiator shall be replaced. Coolant drain hoses shall be inspected and replaced as required. Radiator and bypass hoses, radiator cap, thermostat, and fan belt shall be replaced. If available, replace the 15 kW TQG radiator with the heavy-duty radiator, NSN 2930-01-470-0217.

3.13 Fuel System.

3.13.1 Replace all the fuel system filters, seals, gaskets, o-rings, reducer tube, and supply and return non-metallic hoses. Fuel tank vent hoses shall be inspected and replaced as required. Inspect and clean all strainers, including those at the fuel pump, fuel injection pump, and tank.

3.13.2 Flush and clean fuel tank. All fuel tank gaskets and drain rubber bulkhead fitting shall be replaced. All fuel tanks shall be pressure tested IAW the applicable drawing.

3.13.3 On 5 & 10 kW TQG's, replace the main fuel pump with an Airtex Products P/N E1074 (round body) pump unless an Airtex Products P/N E1074 pump is already installed. Until a source of supply of the Airtex pump is on-line, replace the main fuel pump with a new Purolator pump unless an Airtex Products P/N E1074 pump is already installed. Primary Airtex Fuel Pump Kit NSN: 2910-01-491-1339. Auxiliary Airtex Fuel Pump Kit NSN: 2910-01-491-1340.

3.13.3.1 If the Airtex pump is nonfunctional, you have two options, replace with a new Airtex or replace with a new Purolator.

To change over the main pump from Airtex to Purolator, you need to order:

1. 4730-01-238-6442 elbow
2. 4730-01-051-9840 elbow
3. 2910-01-378-6025 pump
4. 5999-01-092-2655 contact
5. 5935-00-482-7721 connector

To change over the auxiliary pump from Airtex to Purolator, you need to order:

1. 2940-01-365-6535 filter
2. 2910-01-366-7293 pump
3. reuse top elbow (because Ferromont s using a shorter length tube)
4. 5999-01-092-2655 contact
5. 5935-00-482-7721 connector

3.13.4 On the Mil Std sets, all fuel hoses shall be replaced as required.

3.13.5 On the 2 KW MTG, inspect the fuel filter assembly (NSN 2910-01-488-7002) for damage, replace as required.

3.13.6 On the Mil Std sets, replace all electrical main and auxiliary (as applicable) fuel pumps.

3.13.7 On the 5 KW, 28 VDC, APU; replace the plastic (fuel line) tee above the cylinder head with a brass tee, NSN 4730-01-058-9758. This tee is in the fuel return line. Verify that the new fuel filter has a metal case.

3.13.7.1 On the 5 KW, 28 VDC, APU; inspect and verify proper operation of the day tank.

3.14 Lubrication System. Filters, gaskets, seals, O-rings, and fluids shall be replaced.

3.15 Switch Box

3.15.1 The housing interior and exterior shall be cleaned, repaired and repainted as required; minor dents that do not affect the serviceability are acceptable. All electrical and mechanical components shall be inspected and repaired or replaced as required. All wiring shall be cleaned and inspected in-place, then repaired or replaced as required. Pull on any spliced wires to test physical integrity of splice (s). Connectors and terminal ends shall be cleaned or replaced if any corrosion is observed. Replacement wires shall be routed along and neatly attached to the existing harness. The housing shall have a coat of CARC paint in accordance with MIL-DTL-53072, color/pattern as specified by CECOM. Replace light bulbs 100%.

3.15.2 On the AN/MJQ-32 & -33 switch box P/N 13205E5079, verify that the indicator lights are wired to A1 and B1 and thus operate in both single- and three-phase operation.

3.15.3 On the AN/MJQ-35/36 & -37/38 switch box P/N 13229E5820, verify that the procedure in Paragraph 5.6 has been performed.

3.15.4 All AN/MJQ-35/36 & -37/38 switch boxes, P/N 13229E5820, shall have the modifications performed IAW Appendix P.

3.16 MEP-814A Modification. All MEP-814A generator sets shall have the modifications performed IAW Appendix O to reduce generator set vibration and eliminate exhaust leaks.

CHAPTER 4

Trailer Maintenance Requirements

4.1 Inspection Checklist. The Trailer shall be inspected for damaged, inoperative, broken, deteriorated, missing, or corroded parts and components that adversely affect trailer performance using the checklist in Appendix F to perform the inspection. Damaged, missing, or otherwise unserviceable components will be annotated on a DA 2404 (provided as Appendix H).

4.2 Repair. Trailers that do not meet the requirements specified shall be repaired IAW the applicable TM, TB 9-2510-242-40, and as specified herein. Trailers will be produced as Condition Code "A" units. There shall be no mandatory replacement parts listed, except all gaskets and seals shall be replaced on assemblies that have been disassembled. The trailer shall have a coat of CARC paint in accordance with MIL-DTL-53072, color/pattern as specified by CECOM.

4.2.1 Identification Plate. The Identification Plates, Drawing # 13220E4462 and 13216E7604, shall be modified to add a Power Plant S/N line below the NSN line.

CHAPTER 5

Special Maintenance Requirements

5.1 Repairs. The repairs in this chapter shall be performed as required.

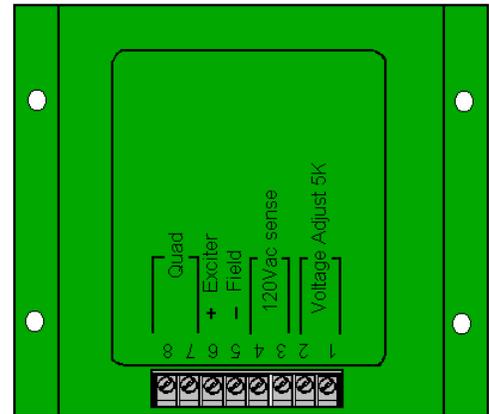
5.2 Repair for MEP-802/812/803/813 Tactical Quiet Generator (TQG) Voltage Regulator (A1) and Quad Winding Problem

5.2 Overview

The 5 and 10 kW TQG's use a "Quad" winding circuit to provide a no-load voltage source to the voltage regulator (A1). The "Quad" winding, designated as Q1-Q2, is a separate winding within the main alternator stator that is connected directly to the A1 "Quad" circuit (terminals 7 and 8.) The A1 uses a full-wave bridge to rectify the quad winding input voltage.

5.2 Problem

The A1 full-wave bridge rectifier diodes short out and cause catastrophic failure of the "Quad" winding. This renders the generator set inoperative and necessitates replacement of the entire main stator and A1. In many field cases the A1 bridge rectifier circuit problem remains undetected and the main stator is replaced and put back into service. This causes immediate failure of the new stator. Given the relatively low cost of the A1 and the relatively high cost of the main stator and given the excessive labor cost and downtime associated with main stator failures, it is necessary to protect the "Quad" winding from damage in the event of bridge rectifier circuit failure and to establish some "Quad" circuit troubleshooting guidelines to ensure proper diagnosis of A1/"Quad" circuit problems.



5.2 Possible Causes

Tests show that voltages developed across the "Quad" winding during engine start can peak at well over 400 VAC, exceeding the A1 bridge rectifier circuit diode PRV rating. There is also an apparent positive relationship between engine crank time and "Quad" voltage peaks. This suggests that generator sets that have engines with fuel system-related or internal problems that make them "hard to start" may be more susceptible to bridge rectifier circuit failure. The field fix described below is an interim solution to protect the "Quad" winding in case of bridge rectifier circuit failure. The long-term solution is to identify and install a more robust bridge circuit in the A1.

5.2 Repair

Install a 3amp/600VAC, time delay fuse between terminal 8 of the voltage regulator (A1) and Q1 of the "Quad" winding using the following:

Parts Required:

Description	Part Number	NSN	Price	Quantity
Buss Fuse Holder (600V, 3A)	BM6031SQ	5920-00-816-6892	\$1.63	1
Fuse, 3A, 600V Time Delay	FNQ-R-3	5920-01-322-6986	\$3.68	1
Spade Terminal (22-18 AWG)	AA-8704-06	5940-01-425-2020	\$0.25EA	1
Disconnect Terminal, female, 1/4" 22-18 AWG	RB2573	5940-01-112-9746	\$4.50 HD	2
Wire (88-20540-2, 20 Gage)	Alpha Wire # 1342 or Delta Surprenant # MD1932GN	6145-01-129-9955	\$.30FT	1 Ft
Screw (10-32, 3/4"), with assembled star washer		5305-01-187-5878	\$0.12	1
Wire Ties (2-1/2")	MS3367-4-9	5975-00-727-5153	\$0.47	3 ties

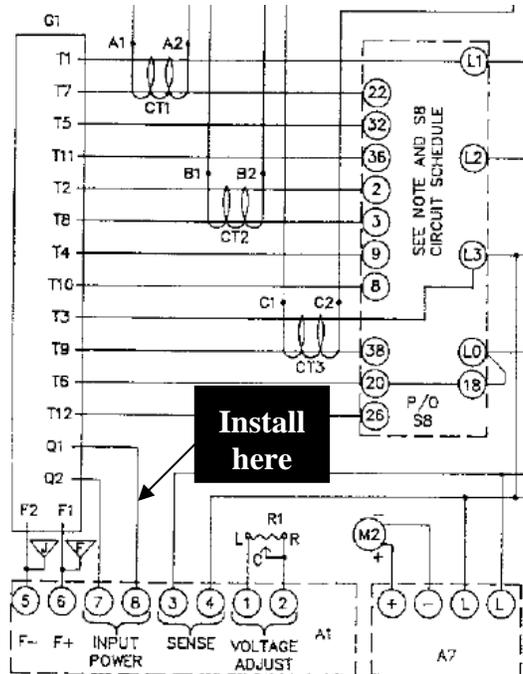
5.2 Repair Procedures:

- a) Disconnect the battery.
- b) Remove the control box cover to expose the control box from the top.
- c) Remove the lower left mounting screw for the Voltage Regulator.
- d) Install the fuse holder vertically using the new screw into the hole. Orient the fuse holder so the yellow label can be seen from the side.
- e) Disconnect wire from terminal 8 of the voltage regulator (A1). Remove the terminal end and replace with the female quick disconnect terminal provided. Connect this wire to the lower terminal of the fuse block.
- f) Use the wire and terminals supplied to make the connection from the top terminal of the fuse block to terminal 8 of the voltage regulator (A1).
- g) Using the wire ties provided, neatly tie the new wire to the existing wiring harness.
- h) Install the new fuse.
- i) Install the control box cover.
- j) Reconnect batteries.
- k) Start generator set and check for proper voltage.
- l) Shutdown the generator set. The modification is complete.

5.2 Test:

- a) Start and run generator set.
- b) Verify correct voltage and frequency.
- c) Shut down set
- d) Repeat steps a and step b.

e) Load test generator



5.2 Troubleshooting Guidelines

If the fuse blows perform the following tests:

- a) Disconnect wire # 106B from A1, terminal 8; disconnect wire # 107B from A1, terminal 7.
- b) Connect a digital multimeter, set to "ohms," between A1 terminal 7 and A1 terminal 8. Resistance value should be high. Low resistance indicates a defective bridge rectifier circuit. Perform same test across A1 terminal 7 and A1 terminal 8 in "diode check" mode. Voltage drop should be approximately 1-1.2 VDC. A zero (0) VDC reading indicates a defective bridge rectifier circuit. If the resistance reading is low or the voltage reading is zero (0) the A1 **must** be replaced.
- c) With wire #'s 106B and 107B still disconnected, connect digital multimeter, set to "ohms," between wire # 106B and wire # 107B.
- d) Check the "Quad" winding for proper resistance (Re: TM 9-6115-641-24, Figure 4-10.7, steps h & i and TM 9-6115-642-24, Figure 4-10.7, steps h & i) Reading should be 0.9 - 1.2 ohms for the MEP-802/803 and 1.2-1.6 ohms for the MEP 812/813. Verify resistance value does not drop during test. If reading is out of tolerance the stator must be replaced
- e) **With "Quad" circuit still disconnected**, test engine. If engine takes an excessive amount of time to start or and/or an excessive amount of time to develop rated speed, troubleshoot the engine fuel system. Verify that fuel system is free of contaminants. Verify condition of fuel filters. Verify correct operation of electric fuel pumps. Verify combustion on all cylinders. Verify correct installation and adjustment of injection pumps. Verify correct operation of injector nozzles. Repair or replace components as necessary.
- f) Retest engine and verify correct operation
- g) Verify correct readings on A1 and "Quad" winding.
- h) Reconnect wire # 106B to A1 terminal 8; reconnect wire # 107B to A1 terminal 7.
- i) Install new fuse
- j) Test generator set

Related NSN s

Voltage Regulator, A1 (MEP-802/803)
NSN 6110-01-363-0492

Voltage Regulator, A1 (MEP-812/813)
NSN 6110-01-383-4122

Stator (MEP-802)
NSN 6115-01-368-7159

Stator (MEP-803)
NSN 6115-01-368-7157

Stator (MEP-812)
NSN 6115-01-370-8220

Stator (MEP-813)
NSN 6115-01-375-1941

5.3 Excite Circuit Fuse Modification for the 15, 30 and 60 kW Tactical Quiet Generator Sets

5.3.1 Issue: The voltage regulation system for the MEP-804A, MEP-805A, and MEP-806A Tactical Quiet Generators can fail in a mode that heavily damages the main alternator windings, causing the generator set to be Non-Mission Capable until the alternator and other components are replaced. This modification adds a fuse into the excitation circuit to protect the main alternator from damage.

5.3.2 Parts:

Description	Part Number	NSN	Price	Quantity
Buss Fuse Holder (600V, 30A)	BM6031SQ	5920-00-816-6892	\$1.63	1
Fuse, 3A, 600V Fast Acting	KTK-3	5920-00-225-9983	\$3.68	1
Spade Terminal (22-18 AWG)	AA-8704-06	5940-01-425-2020	\$0.25EA	1
Disconnect Terminal, female, 1/4" 22-18 AWG	RB2573	5940-01-112-9746	\$4.50 HD	2
Wire (88-20540-2, 20 Gage)	Alpha Wire # 1342 Delta Surprenant # MD1932GN	6145-01-129-9955	\$.30FT	1 Ft
Screw (10-32, 3/4"), with assembled star washer		5305-01-187-5878	\$0.12	1
Wire Ties (2-1/2")	MS3367-4-9	5975-00-727-5153	\$0.47	3 ties

5.3.3 Repair Procedures:

1. Disconnect the battery.
2. Remove the control box cover to expose the control box from the top.
3. Remove the top left mounting screw for the Voltage Regulator (A1). (Figure 1.)



Figure 1. Location of fuse folder.

4. Install the fuse holder vertically using the new screw and lock washer, into the hole. Orient the fuse holder so the yellow label can be seen from the side. (Figure 2)



Figure 2. Fuse Holder Orientation

5. Disconnect wire # 141A20 from terminal 1 of the voltage regulator (A1).
6. Remove the terminal end and replace with the female quick disconnect terminal provided.
7. Remove enough wire ties from the harness to allow wire # 141A20 to be connected to the lower male quick disconnect terminal of the fuse holder.
8. Install wire # 141A20 on the lower male quick disconnect terminal of the fuse holder. (Figure 3)

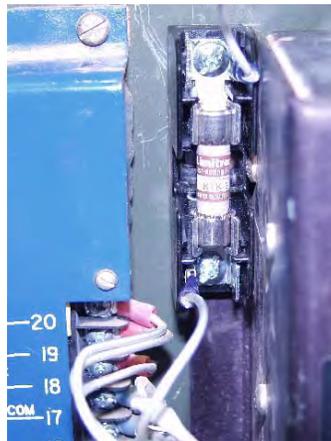


Figure 3. Lower Wire Connection

9. Install the female quick disconnect end of the wire provided on the male quick disconnect terminal located at the top of the fuse holder. Connect the spade terminal end of the wire provided to terminal 1 of the voltage regulator (A1). (Figure 4.)



Figure 4. Top Wire Connection

10. Using the wire ties provided, neatly tie the new wire to the existing wiring harness. (Figure 5)



Figure 5. Completed Modification

11. Install the control box cover.
12. Reconnect batteries.
13. Start generator set and check for proper voltage.
14. Shutdown the generator set.
15. The modification is complete.

5.4 Battery Charging Fuse Modification 30-60 kW "B" model Tactical Quiet Generator Sets MEP-805B, MEP-815B, MEP-806B, MEP-816B

5.4 Scope:

The MEP-805B, MEP-815B, MEP-806B, MEP-816B, models of the Tactical Quiet Generator (TQG) family of generator sets have a problem with the battery charging fuse. The battery charging fuse has a high rate of blowing. This requires the soldier to keep many spare fuses on hand for replacements. A blown fuse caused two problems. The obvious problem is the loss of the ability to charge the batteries. The more critical problem is the loss of DC control power during mission operations.

The blown battery charging fuse problem is caused by the charging characteristics of the Optima battery. The Optima batteries have a low internal resistance enabling the battery to receive a higher than normal charging current. The alternator has a continuous current capacity of 45 Amps, with a peak of 60 Amps. With the Optima battery and this alternator, the battery charging current, at times, can exceed the maximum current capacity of the fuse therefore the fuse blows. The 6TMF, 6TL, etc., batteries have a higher internal resistance and will not accept current higher than the current capacity of the fuse. The solution to this problem is to replace the 30 A fuse and the 18 gauge wire with a 50 A circuit breaker and a 12 gauge wire. The procedures and materials are described below.

The control power loss problem is caused by the location of the control power circuit take off. The control power is connected to the battery terminal and not the battery charging alternator. While the generator set is operating, the battery charging alternator provides the DC control power through battery charging system. When the fuse blows, the source of generator set DC control power becomes the batteries until available battery power is consumed. With no DC control power, the generator set shuts down. There is another set of instructions to move the DC control power wire to the back of the alternator in order to prevent this failure mode.

The modification below is designed to replace the battery charging fuse circuit with a circuit breaker and a larger wire. The instructions for the DC control power modification are including as Paragraph 5.5. Both of these modifications must be accomplished in order to prevent mission failure due to dead batteries. These modification instructions are authority to modify the generator set until the formal design change documentation is approved and disseminated to the field.

5.4 Parts Required:

QTY	Nomenclature	P/N	NSN	Source of Supply
2	Terminal, Lug, 14-16, 0.164 stud size	13226E0107-19	5940-00-143-4775	S9G, \$5.03/HD
2	Terminal, Lug, 14-16, 3/8 stud size	13226E0107-23	5940-00-113-9826	S9G, \$4.70/HD
1	Circuit breaker, 24 V, 50 A	W23-X1A1G-50	5925-00-103-5085	S9E, \$16.91
1	Bracket, Current Transducer	96-23743	5935-01-511-3663	S9E, \$10.36
53"	Wire, Electrical, 12AWG	88-20540-6	6145-00-578-7514	S9E, \$0.19/FT

5.4 Repair Procedures:

1. Disconnect the batteries in accordance with BATTERY CONNECTION INSTRUCTION PLATE, figure 1, located in the battery compartment.

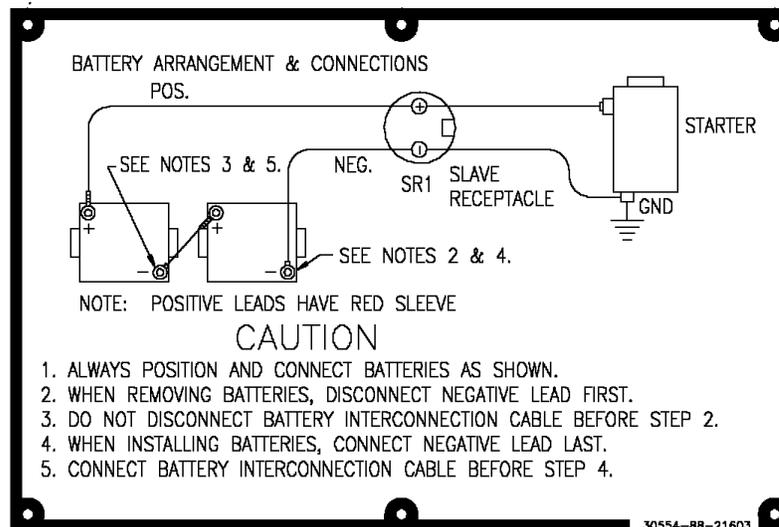


Figure 1. Battery Connection Instruction Plate

2 Remove wire # 310B16 from the positive terminal of the NATO slave receptacle (SR1) as shown in figure 2.

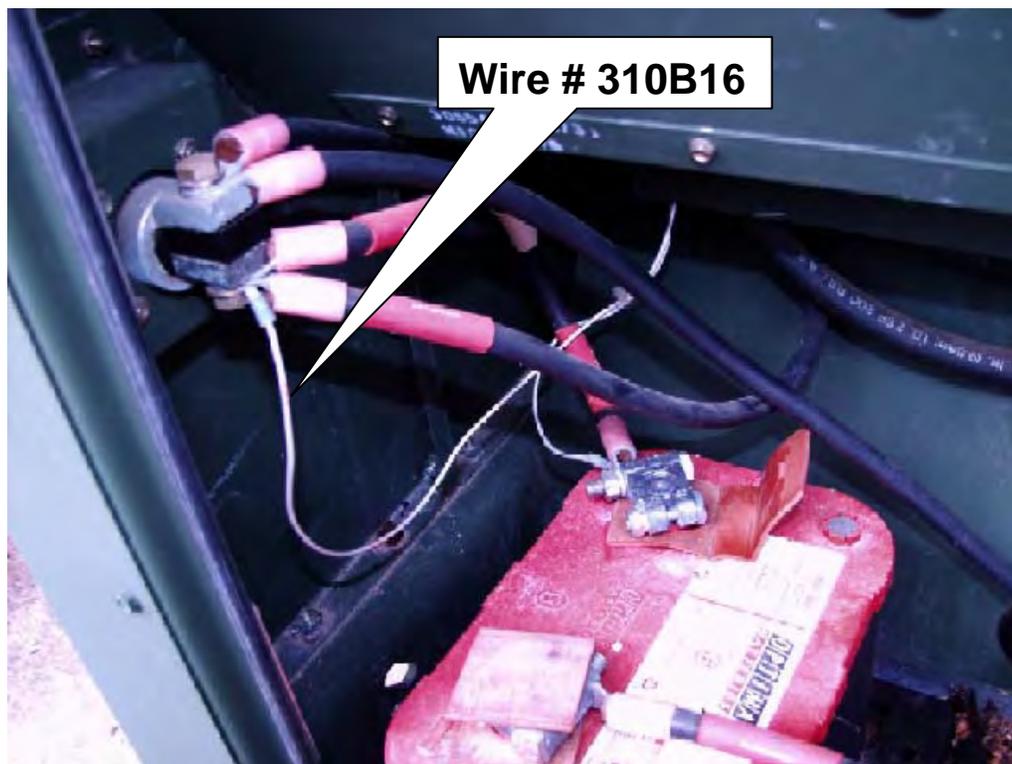


Figure 2. Battery Compartment

3 Disconnect wire #310B16 from the positive terminal on the battery charging alternator, cut off the terminal lug and remove the wire and fuse holder from the harness, see figure 3. If wire #165C16 has not been removed from the current transformer, perform the procedure in appendix A to move the DC control power wire.

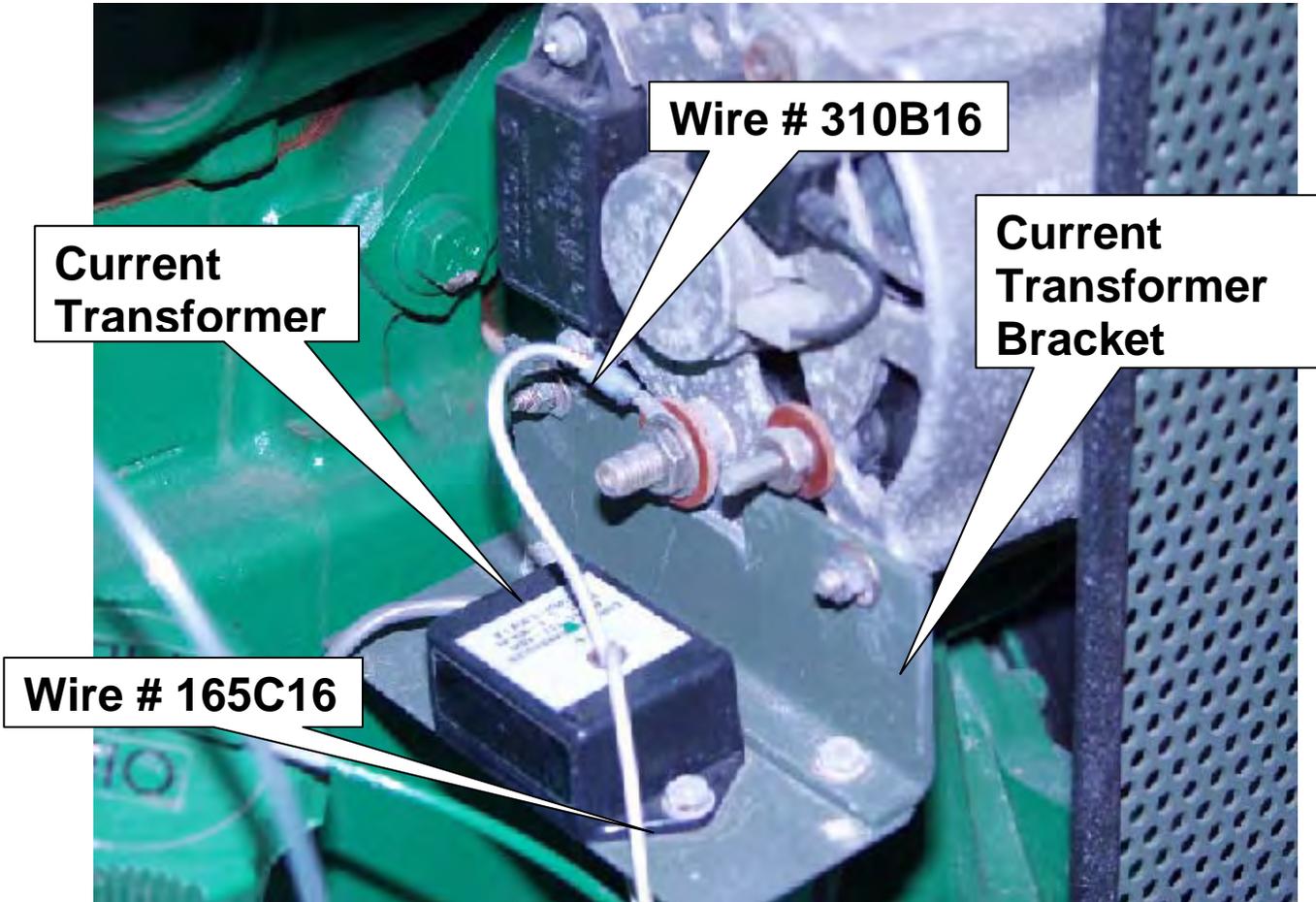


Figure 3. Alternator compartment

4. Remove the current transformer bracket from the back of the alternator, see figure 3. Remove the battery charging current transformer from the bracket and discard the bracket.
5. Using the Bracket Drawing in Figure 7, fabricate the new bracket. Install the battery charging current transformer, in the same orientation, on the new bracket.
6. Measure and cut a 41 inch piece of 12 gauge wire (88-20540-6). Label wire "310B12" close to both ends. On one end, install a 10-12 gauge, 0.164 inch stud size lug terminal. On the other end, install a 10-12 gauge, 3/8 inch stud size lug terminal.
7. Install the 0.164 inch stud size lug terminal of wire # 310B12, on the load terminal of the circuit breaker (CB1) so that the lug terminal is parallel to CB1 on the label side as shown in figure 4.
8. Install a 10-12 gauge 0.164 inch stud size lug terminal to one end of the 12 inch wire. Label wire "310A12" close to both ends.
9. Install the 0.164 inch stud size lug terminal of wire #310A12, on the line terminal of CB1 so that the lug terminal is perpendicular to CB1 on the label side, as shown in figure 4.
10. Install CB1 into side hole of the battery charging current transformer bracket as shown in figure 4.

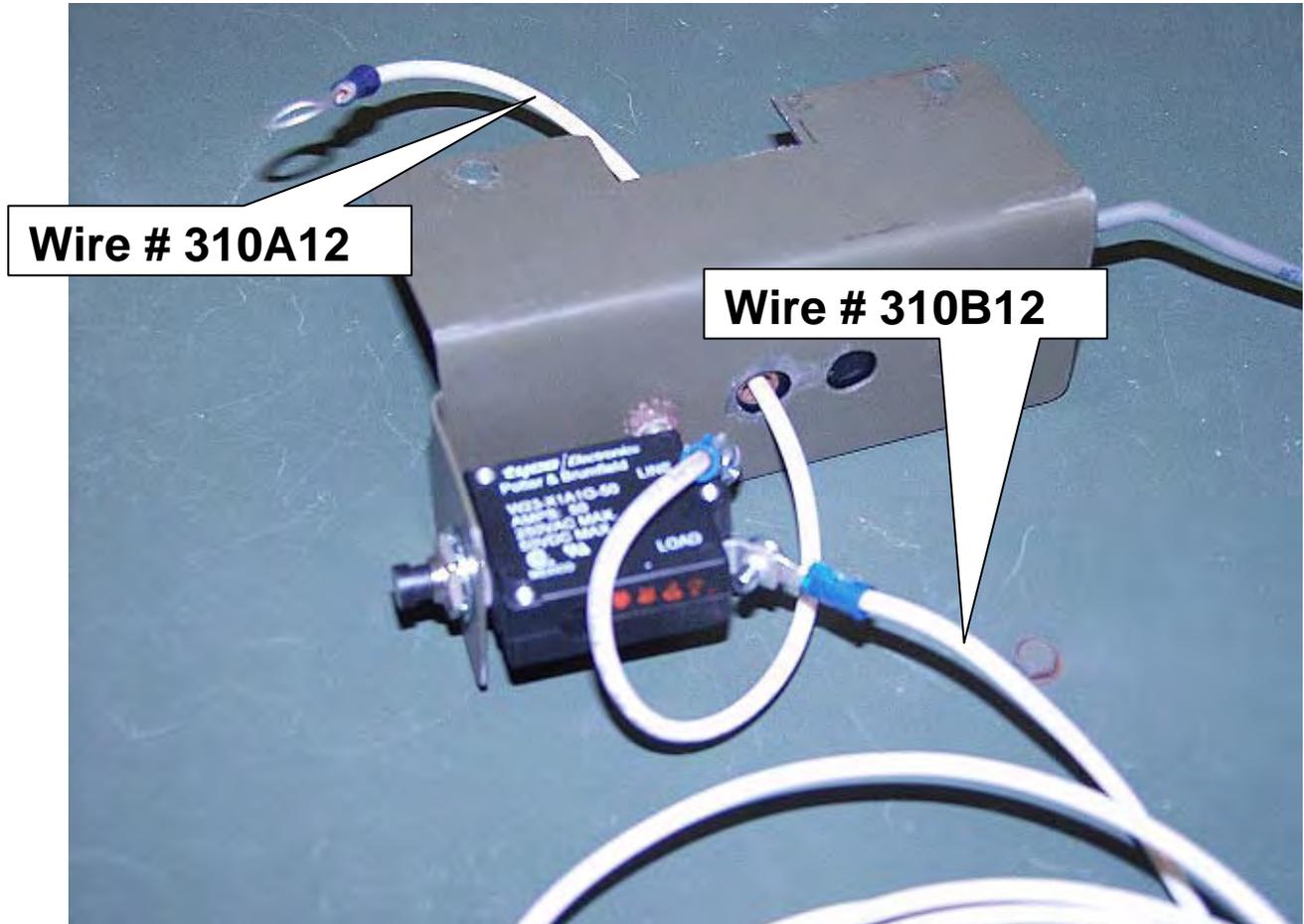


Figure 4. CB1/BCT Bracket Assembly

11. Fish the other end of the wire # 310A12 through the bracket into the battery charging current transformer as shown in figure 4. Install 10-12 gauge, 3/8 inch stud size lug terminal to the end of the wire.
12. Attach CB1/BCT bracket assembly to the alternator using the existing hardware as shown in figure 5.
13. Install 3/8 inch stud size, lug terminal to the positive terminal on the battery charging alternator, as shown in figure 5. If both procedures have been followed properly, then there should be two wires, wire #165C16 and wire #310A12, attached to the positive terminal of the battery charging alternator.

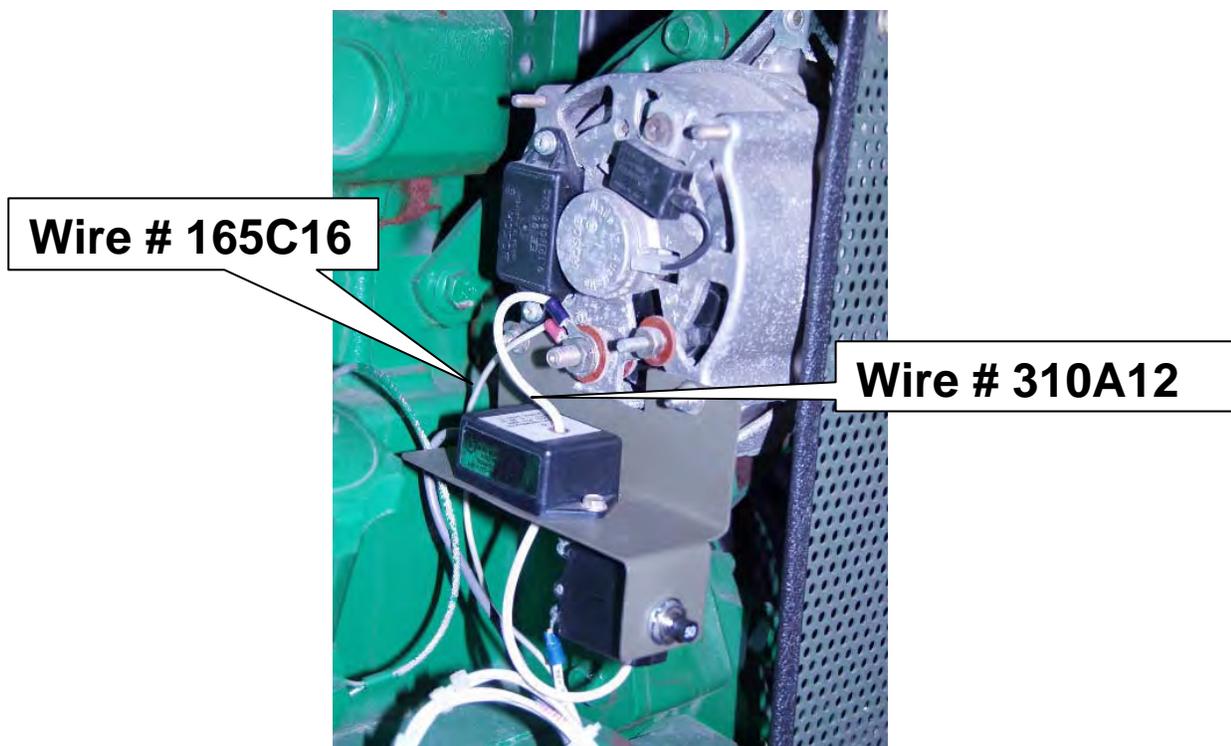


Figure 5. Final Assembly

14. Following the wire harness as much as possible, attach the 3/8 inch lug terminal of wire # 310B12 to the positive terminal of the NATO slave receptacle (SR1) as shown in figure 6. Add wire ties as necessary.

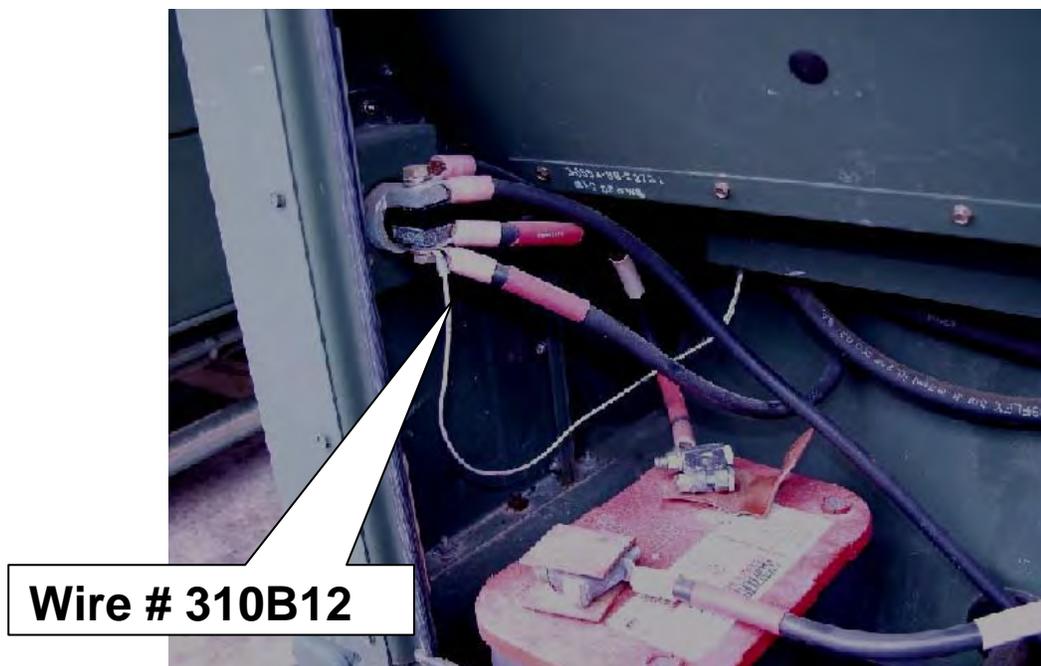


Figure 6. Modified Battery Compartment

1. Re-connect batteries in accordance with the Battery Connection Instruction Plate, figure 1.

TB 11-6115-741-24

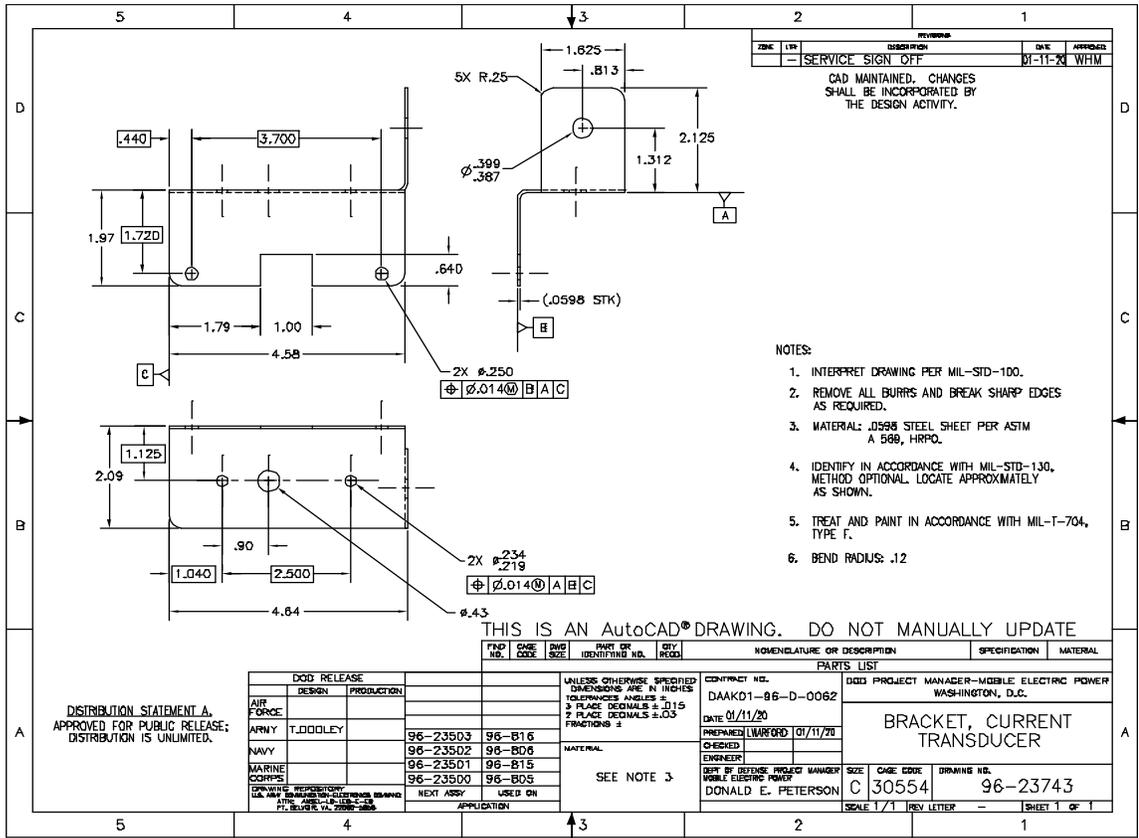


Figure 7. Current Transducer Bracket Drawing

5.5 Control Power Circuit modification 30-60 kW "B" model Tactical Quiet Generator Sets MEP-805B, MEP-815B, MEP-806B, MEP-816B

5.5 Scope:

The MEP-805B, MEP-815B, MEP-806B, MEP-816B, models of the Tactical Quiet Generator (TQG) family of generator sets have a readiness problem. The problem is the loss of DC control power during mission operations. The power loss is caused by a blown fuse located in battery charging circuit between the alternator and the batteries. While the generator set is operating, the source of the DC control power is the battery charging alternator. When the fuse blows, the source of generator set DC control power becomes the batteries until available battery power is consumed. With no DC control power, the generator set shuts down. This modification is designed to eliminate the battery charging fuse from the DC control power circuit. This will prevent generator set shutdown and mission failure due to drained batteries. These modification instructions are authority to modify the generator set until the formal design change documentation is approved and disseminated to the field.

5.5 Parts Required:

QTY	Nomenclature	NSN
(1)	Terminal, Lug	5940-00-143-4773

5.5 Repair Procedures:

The following procedures are designed to allow the soldier to disconnect the control power from its current location and move it to the positive terminal on the battery-charging alternator.

1. Disconnect the batteries in accordance with BATTERY CONNECTION INSTRUCTION PLATE, figure 1, located in the battery compartment.

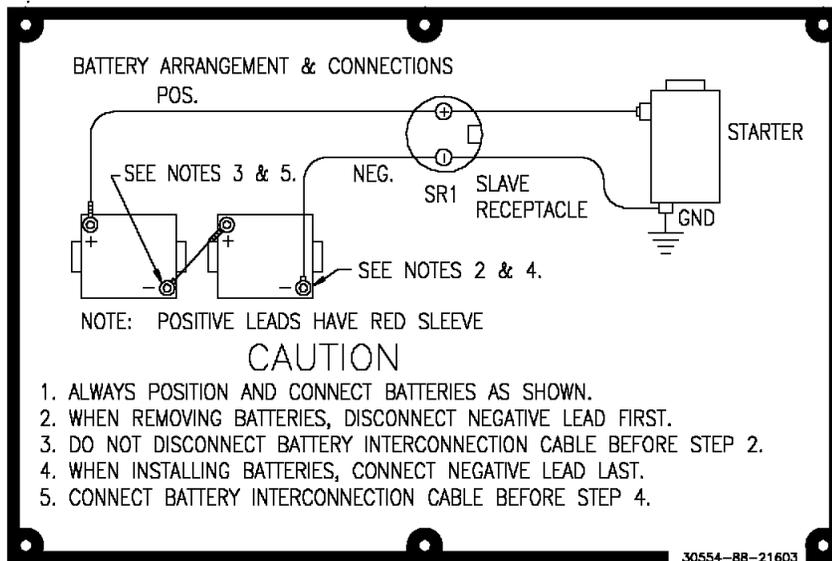


Figure 1. Battery Connection Instruction Plate

2. Remove wire # 165C16 from the positive terminal of batteries as shown in figure 2.

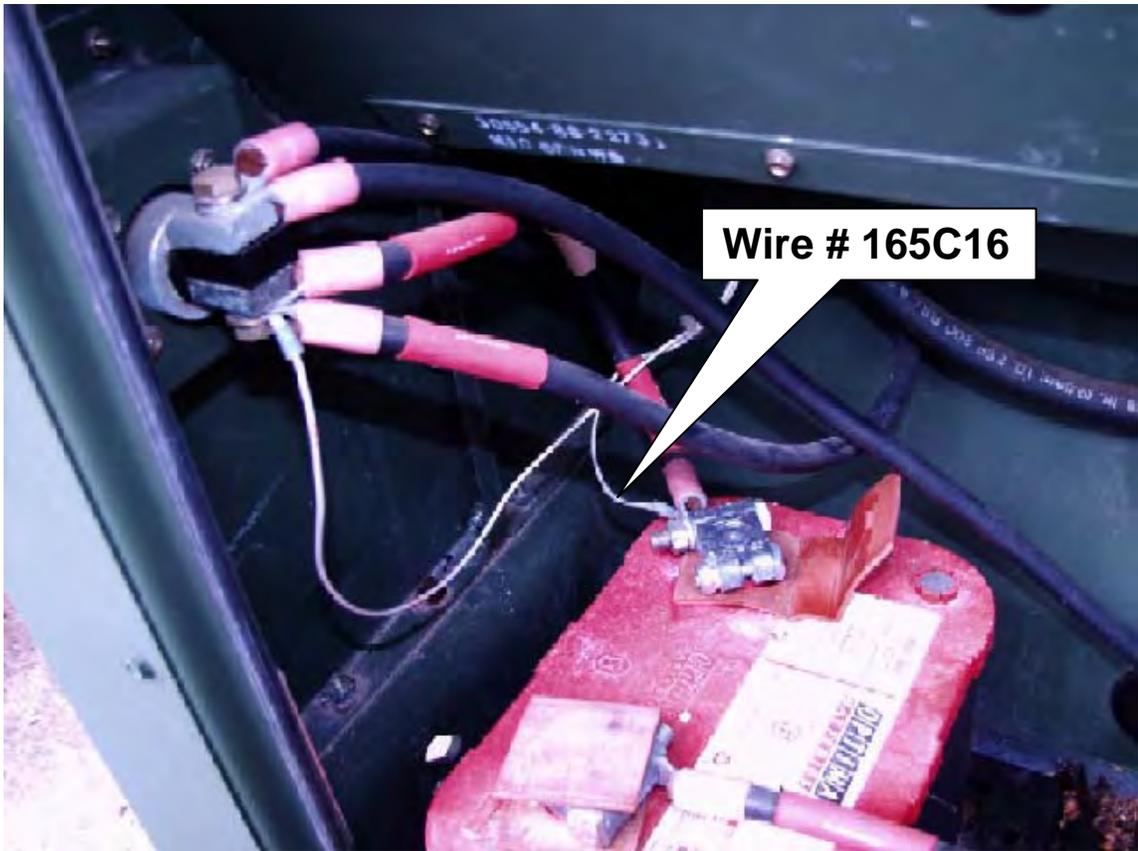


Figure 2. Battery Compartment

3 Remove wire #165C16 from harness and battery current transformer (BCT), see figure 3.

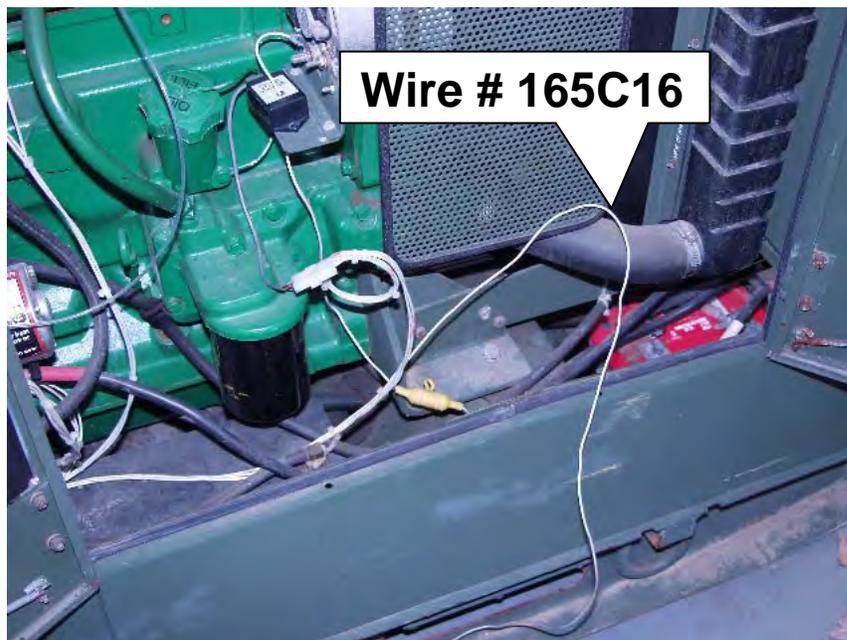


Figure 3. Alternator compartment

4. Measure and cut wire # 165C16 with enough slack to reach the positive terminal of the battery charging alternator as shown in figure 4. Add a new lug terminal, 18-22 gauge, 3/8 stud size (NSN 5940-00-143-4773, pkg of 100), to the end of the wire # 165C16.

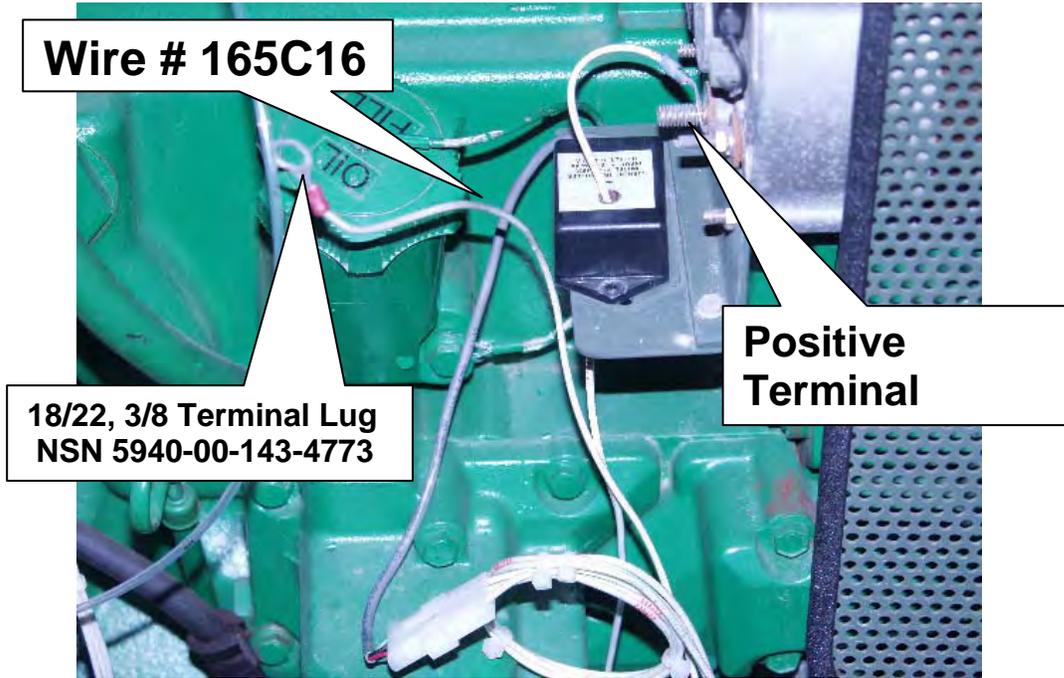


Figure 4 . Terminal Lug

5. Connect wire # 165C16 to the positive terminal alternator as shown in figure 5.

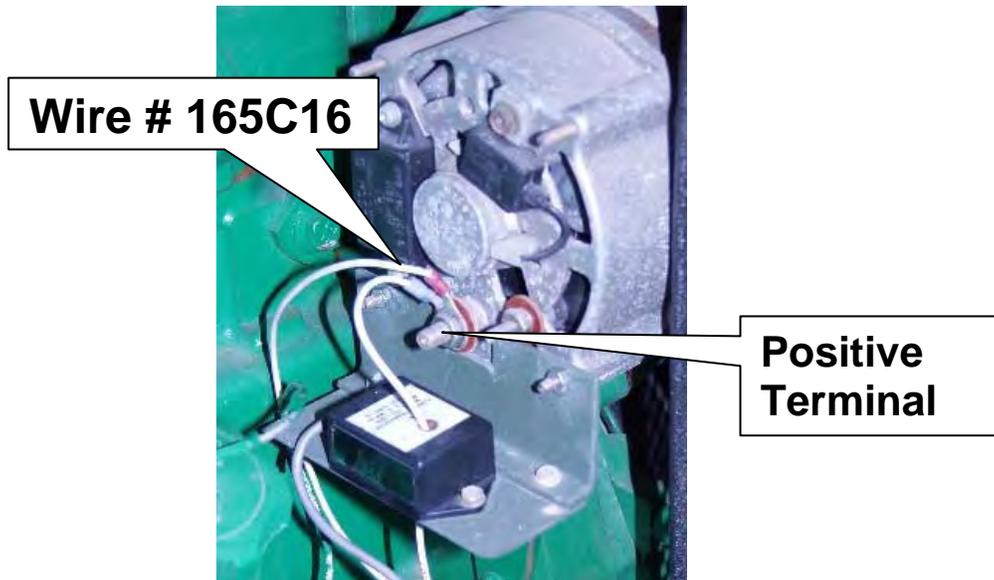


Figure 5. Control Power Hook-up

6. Re-connect batteries in accordance with the Battery Connection Instruction Plate, figure 1.

5.6 Repair of the 5 & 10 KW Switch Box P/N 13229E5820.

THE FOLLOWING PROCEDURE WILL UPDATE THE SWITCH BOX TO ENABLE POWER TRANSFER AT ALL POSSIBLE OUTPUT VOLTAGE CONNECTIONS INCLUDING 120 VAC SINGLE PHASE AND MAINTAIN THE DIAGNOSTIC CAPABILITY OF DETERMINING IF THE BOX HAS BEEN MISWIRED TO THE GENERATOR SETS (I.E. IMPROPER PHASE ROTATION).

1. LIFT TOP OF SWITCH BOX AND REMOVE BOTH PLASTIC BARRIER COVERS FROM THE TOP OF EACH CONTACTORS K1 AND K2.
2. REMOVE THE NUT AND LOCKWASHER ASSEMBLY FROM THE A2 AND C2 STUDS OF CONTACTOR K1.
3. REMOVE THE NUT AND LOCKWASHER ASSEMBLY FROM THE A2 AND C2 STUDS OF CONTACTOR K2.
4. LIFT THE TWO WIRES DESIGNATED TB2-2-K1-A2 AND K2-32-K1-A2 FROM K1-A2.
 - a) PLACE NEW C2 DESIGNATION FROM KIT OVER THE A2 PORTION OF THE DESIGNATIONS SO THE WIRE DESIGNATION NOW READS: TB2-2-K1-C2 AND K2-32-K1-C2
 - b) **NOTE:** FIRST DESIGNATION FOR WIRE REMAINS THE SAME FROM OLD TO NEW DESIGNATION.
 - c) RECONNECT BOTH TO K1-C2 REPLACE AND TIGHTEN NUT AND LOCKWASHER ASSEMBLIES.

NOTE: DEPENDING ON THE INDIVIDUAL WIRE HARNESS IT MAYBE NECESSARY TO CUT ONE OR MORE WIRE TIES TO MINIMIZE TENSION IN THE NEW WIRE LOCATION.

5. PERFORM THE FOLLOWING:
 - a) LIFT THE THREE WIRES DESIGNATED TB2-5-K2-A2, K2-22-K2-A2, AND K1-32-K2-A2 FROM K2-A2. PLACE NEW C2 DESIGNATION FROM KIT OVER THE A2 PORTION OF THE DESIGNATIONS SO THE WIRE DESIGNATION NOW READS: TB2 - K2-C2, K2-22 - K2-C2, AND K1-32 - K2-C2.
 - b) **NOTE:** FIRST DESIGNATION FOR WIRE REMAINS THE SAME FROM OLD TO NEW DESIGNATION.
 - c) RECONNECT ALL THREE WIRES TO K2-C2.
 - d) LIFT THE WIRE DESIGNATED TB-1-4 - K2-C2 FROM K2-C2. PLACE NEW A2 DESIGNATION FROM KIT OVER THE C2 PORTION OF THE DESIGNATION SO THE WIRE DESIGNATION NOW READS: TB-1-4 - K2-A2. RECONNECT WIRE TO K2-A2.
 - e) REPLACE AND TIGHTEN NUT AND LOCKWASHER ASSEMBLES ON K2-C2 and K2-A2.

NOTE: DEPENDING ON THE INDIVIDUAL WIRE HARNESS IT MAY BE NECESSARY TO CUT ONE OR MORE WIRE TIES TO MINIMIZE TENSION IN THE NEW WIRE LOCATION.

6. REMOVE THE FOUR SCREWS HOLDING THE RELAY BOARD TO THE LID OF THE BOX SWITCH, SWING THE RELAY BOARD OUT AND LOCATE WIRE ON THE RELAY BOARD DESIGNATED XK3-6% TB1-6.

NOTE: LEAVE WIRE XK5-6--TB1-6 AT TB1-6.

- a) LIFT THE WIRE DESIGNATED XK3-6 - TB1-6 ON THE RELAY BOARD FROM TB1-6 AND PLACE THE NEW 4 DESIGNATION OVER THE 6 SO THE WIRE DESIGNATION NOW READS XK3-6 - TB1-4.
- b) LIFT THE WIRE DESIGNATED XK3-3 - TB1-4 ON THE RELAY BOARD FROM TB1-4 AND PLACE THE NEW 6 DESIGNATION OVER THE 4 SO THE WIRE DESIGNATION NOW READS XK3-3 - TB1-6.
- c) CONNECT XK5-6--TB1-6 AND XK3-3--TB1-6 TO TB1-6 AND XK3-6--TB1-4 TO TB1-4. SWING THE RELAY BOARD BACK INTO POSITION, REPLACE AND TIGHTEN THE 4 SCREWS HOLDING THE RELAY BOARD.

NOTE: ONE OR MORE WIRE TIES MAY HAVE TO BE CUT TO ALLOW ENOUGH WIRE LENGTH TO REACH THE NEW TERMINAL DESIGNATIONS.

7. REPLACE CONTACTOR BARRIER COVERS.
8. DRILL OUT RETAINING RIVETS ON SCHEMATIC PLATE USING CAUTION NOT TO DAMAGE ANY WIRES INSIDE THE BOX.
9. REMOVE OLD SCHEMATIC PLATE (OPTIONAL): REMOVE PROTECTIVE PAPER BACKING FROM NEW PLATE. CAREFULLY, PLACE NEW SCHEMATIC PLATE, 13229E5819 Rev. F, ALIGNING RIVET HOLES AND PRESS ON REMOVING AIR BUBBLES FROM UNDER PLATE, REINSTALL RIVETS FROM KIT.
10. CLEAN ANY FILINGS FROM THE DRILLING PROCEDURE FROM INSIDE THE BOX.
11. CLOSE SWITCH BOX COVER AND LATCH.

CHAPTER 6

Quality Assurance Requirements

6.1 Generator Testing: Testing of the completed Generator Set will be as follows. Test sheet IAW Appendix G or equivalent shall be completed.

6.1.1 Operational resistive load runs of 45 minutes at 50% of rated load, 45 minutes at 75% of rated load and 30 minutes at 100% of rated load.

6.1.1.1 For 5 & 10 KW: Operational resistive load runs of:

- 20 minutes at 120 volt connection at 50% of rated load,
- 10 minutes at 120 volt connection at 100% of rated load,
- 20 minutes at 120/240 volt connection at 50% of rated load,
- 10 minutes at 120/240 volt connection at 100% of rated load,
- 30 minutes at three phase connection at 75% of rated load, and
- 30 minutes at three-phase connection at 100% of rated load.

6.1.1.2 For 2 KW: Operational resistive load runs of:

- 60 minutes at 120 volt at 50% of rated load and
- 60 minutes at 120 volt at 100% of rated load.

6.1.1.3 For 3 KW TQG: Operational resistive load runs of:

- 30 minutes at 120 volt connection at 50% of rated load,
- 30 minutes at 120 volt connection at 100% of rated load,
- 30 minutes at 120/240 volt connection at 50% of rated load and
- 30 minutes at 120/240 volt connection at 100% of rated load.

6.1.1.4 For 3 KW Mil Std: Operational resistive load runs of:

- 20 minutes at 120 volt connection at 50% of rated load,
- 10 minutes at 120 volt connection at 100% of rated load,
- 20 minutes at 120/240 volt connection at 50% of rated load,
- 10 minutes at 120/240 volt connection at 100% of rated load,
- 30 minutes at three phase connection at 75% of rated load, and
- 30 minutes at three-phase connection at 100% of rated load.

6.1.2 Overload Test. Perform in accordance with (IAW) appropriate TM.

6.1.3 Frequency Swing Stability Test.

6.1.3.1 TIER 1 REQUIREMENTS: On 5 KW and greater Generators, perform IAW MIL-STD-705, Method 608.1, 90% rated resistive load only; except no test recording instrumentation is required. On 2 KW and 3 KW Generators, perform IAW MIL-STD-705, Method 608.1, 80% rated resistive load only; except no test recording instrumentation is required. The generator set shall have the applicable rated resistive load applied IAW Method 608.1 and shall be deemed acceptable if no generator faults occur during the test.

6.1.3.2 TIER 2 REQUIREMENTS: Perform IAW MIL-STD-705, Method 608.1, rated resistive load only, and the appropriate TM. TIER 2 shall provide a strip chart of the test.

TB 11-6115-741-24

6.1.4 Parallel Test. Perform parallel testing on skid and PU/PP IAW appropriate TM. Does not apply to 10 KW and below. As applicable, parallel testing of 15 KW and larger sets shall be performed at the PU/PP operational level.

6.1.5 B Model CIM Checking. CIM shall be checked IAW Appendix N.

6.2 Switch/Transfer Box Testing: Verify functionality of the switch/transfer box by performing a 100% load test and parallel test as applicable.

6.3 Quality Assurance. After PMCS, testing, and painting have been completed, a quality assurance inspection shall be performed. Inspect test data sheet and all the parts, components, and problems identified in the Technical and Functional Inspections as needed repair. Perform Operator and Unit PMCS inspections. Upon successful completing of the QA inspection, the sets shall be certified for re-issue to the field.

6.3.1 In-process Inspections. In-process inspections shall be performed on a daily basis. These inspections shall be noted on the applicable shop hardware traveler.

CHAPTER 7

Tier 1 Maintenance Requirements

7.0 During repairs, a new component may be substituted as an alternative to remanufacturing or repairing the old component.

7.0.1 Tier 1 Mandatory Part Replacement Kits. Kits can be ordered for each generator model number using the NSN% provided in Table 3. These kits provide all the 100% mandatory replacement parts specified in this TB. All parts that are replace as required or replace if removed must be ordered as necessary.

Table 3. Tier 1 Mandatory Part Replacement Kits

Generator Size and Type	Model Number	Kit Drawing Number	Kit NSN
2 kW MTG	MEP-531A	DSCC-LC-2815-0027	2815-01-532-9525
2 kW MTG	MEP-501A	DSCC-LC-2815-0028	2815-01-532-9526
3 kW TQG	MEP-831A, 832A	DSCC-LC-2815-0029	2815-01-532-9527
5 kW TQG	MEP-802A	DSCC-LC-2815-0030	2815-01-532-9528
5 kW TQG	MEP-812A	DSCC-LC-2815-0031	2815-01-532-9529
10 kW TQG	MEP-803A	DSCC-LC-2815-0032	2815-01-532-9531
10 kW TQG	MEP-813A	DSCC-LC-2815-0033	2815-01-532-9532
15 kW TQG	MEP-804A	DSCC-LC-2815-0034	2815-01-532-9533
15 kW TQG	MEP-814A	DSCC-LC-2815-0035	2815-01-532-9535
30 kW TQG	MEP-805A	DSCC-LC-2815-0036	2815-01-532-9537
30 kW TQG	MEP-815A	DSCC-LC-2815-0037	2815-01-532-9539
60 kW TQG	MEP-806A	DSCC-LC-2815-0038	2815-01-532-9540
60 kW TQG	MEP-816A	DSCC-LC-2815-0039	2815-01-532-9541
30 kW TQG	MEP-805B, 815B	DSCC-LC-2815-0040	2815-01-532-9542
60 kW TQG	MEP-806B, 816B	DSCC-LC-2815-0041	2815-01-532-9543
5 kW Mil Std	MEP-002A	DSCC-LC-2815-0042	2815-01-532-9544
10 kW Mil Std	MEP-003A, 112A	DSCC-LC-2815-0043	2815-01-532-9546
15 kW Mil Std	MEP-004A, 103A, 113A	DSCC-LC-2815-0044	2815-01-532-9550
30 kW Mil Std	MEP-005A, 104A, 114A	DSCC-LC-2815-0045	2815-01-532-9552
60 kW Mil Std	MEP-006A, 105A, 115A	DSCC-LC-2815-0046	2815-01-532-9554
100 kW Mil Std	MEP-007B	DSCC-LC-2815-0047	2815-01-532-9556
3 kW Mil Std	MEP-016B, 701A	DSCC-LC-2815-0048	2815-01-532-9558
3 kW Mil Std	MEP-016D	DSCC-LC-2815-0049	2815-01-532-9560
3 kW Mil Std	MEP-016E	DSCC-LC-2815-0050	2815-01-532-9561
5 kW APU	MEP-952B	DSCC-LC-2815-0051	2815-01-532-9562
10 kW APU	MEP-903A, 903B, 903C	DSCC-LC-2815-0052	2815-01-532-9563

7.1 Generator Set disassembly. The generator set shall be disassembled as required to perform oil pressure and cylinder compression or crankcase vacuum testing, the repairs identified in the technical inspection, to inspect and clean the main alternator if required, to clean the fuel tank and control box if required, and to perform the maintenance required in this section.

7.1.1 Generator sets that pass the functional inspection in paragraph 1.10 shall have oil pressure and cylinder compression or crankcase vacuum testing performed IAW the applicable TM using the acceptance criteria in Table 4. Removal of top housing sheet metal may/will be required to perform cylinder compression testing. Prior to performing the cylinder compression or crankcase vacuum test, adjust the valves IAW the applicable TM.

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- On the 3 KW Mil Std Onan Engine, the fuel injector copper washer, Part Number 3920174, can be obtained from your local Cummins Power Systems distributor. This washer is not in the Tier 1 Mandatory Part Replacement Kit.
- On generator sets that fail the low oil pressure test, the oil and oil filter shall be changed and the test shall be repeated.

Table 4. Oil Pressure, Cylinder Compression, Crankcase Vacuum Criteria.

Generator Size and Type	Model Number	Oil Pressure (Min. at rated speed)	Cylinder Compression (Min. psi)	Cylinder Compression (Max. psi Diff.)	Crankcase Vacuum (Min. Inches WG)
2 kW MTG	MEP-501A/531A	15	284	N/A	N/A
3 kW TQG	MEP-831A/832A	15	284	N/A	N/A
5 kW TQG	MEP-802A	20	N/A	N/A	0.4 in. (1)
5 kW TQG	MEP-812A	20	N/A	N/A	. 0.79 in.
10 kW TQG	MEP-803	20	N/A	N/A	0.4 in. (1)
10 kW TQG	MEP-813A	20	N/A	N/A	. 0.79 in.
15 kW TQG	MEP-804/814A	40	327	28	N/A
30 kW TQG	MEP-805/815A/805B/815B	40	350	50	N/A
60 kW TQG	MEP-806A/816A/806B/816B	40	350	50	N/A
3 kW Mil Std	MEP-016D/E -Yanmar L70/L100	15	284	N/A	N/A
5 kW Mil Std	MEP-002A	20	325	15%	N/A
10 kW Mil Std	MEP-003A	20	325	15%	N/A
15 kW Mil Std	MEP-004A	30	325	20%	N/A
30 kW Mil Std	MEP-005A	30	325	20%	N/A
60 kW Mil Std	MEP-006A	20	400	50	N/A
100 kW Mil Std	MEP-007B	15	384	51	N/A
5 kW APU	MEP-952	6	392	N/A	N/A
10 kW APU	MEP-903A/903B/903C	14	327	10%	N/A

NOTE: (1) - Newly remanufacturing engines in which the rings have not been bedded into the bores (which can take up to 50 hours) shall have a maximum acceptable pressure of 0.4 inch WG.

7.1.2 PMCS's shall be performed IAW the checklist in Appendix E and the applicable TM, except as noted herein.

7.2 **Engine.** Engine requirements shall be IAW those specified in paragraphs:

- 7.8 Air Intake and Exhaust.
- 7.12 Cooling System
- 7.13 Fuel System. TIER 1
- 7.14 Lubrication System.

7.2.1 If a new or remanufactured engine is installed in a MEP-802, -803, -805A/B, and -806A/B; the engine shall be filled with Lister Petter or John Deere break-in oil, as applicable. A tag shall be secured to the engine and to the S1, engine start switch, stating that the engine contains break in oil and specifying that the first oil change shall be performed at the 100 hour generator set hour meter reading.

7.2.2 The Onan diesel engine that is original equipment on the MEP-016B and MEP-701A 3KW DED is non-supportable. This engine shall be replaced with a Yanmar L-100 diesel engine using diesel conversion kit NSN 2920-01-418-0970. There is an interference fit between the MEP-701A ASK enclosure and the Yanmar L-100 diesel engine that causes problems with intake and exhaust porting and with cooling air flow. The ASK shall NOT be installed on a Yanmar L-100 engine-equipped 3 KW set and no modifications to the ASK are authorized. Yanmar L-100 engine-equipped 3 KW sets will be designated as MEP-016B generator sets for tracking purposes.

7.2.3 No 3 kW gasoline engine driven generator shall be RESET unless directed by CECOM. All that are directed to be RESET shall have the Yanmar L-70 diesel engine conversion kit NSN 2815-01-440-4426 installed. Yanmar L-70 engine-equipped 3 KW sets will be designated as MEP-016E generator sets for tracking purposes only; the "E" is not an official designation.

7.3 Main Generator

7.3.1 The AC generator assembly shall be inspected for evidence of sand and dust intrusion. If sand and dust is found in the AC generator, the AC generator assembly shall be removed from the generator set, disassembled and cleaned (steam cleaning is the preferred cleaning method) to remove the loose and caked dust from all the windings. If liquids are used to clean alternator, alternator must be dried in an oven or via other industrial process to remove all the liquid from the windings prior to reassembly. If disassembled, rotor bearing (s) and any o-ring shall be replaced. If disassembled, alternator components shall be inspected, tested, and repaired or replaced, as necessary, IAW applicable TM. On AC generator assemblies that are disassembled, perform Insulation Resistance test in accordance with Mil-Std-202, Method 302, Test Condition B, $\geq 200M\Omega$. If disassembled, diodes shall be tested and replaced as required and windings shall be reinsulated using NSN 5970-00-076-8988 red insulator or a RESET Office approved equivalent. Damaged windings shall be rewound IAW applicable drawing or replaced. Rotor shall be rebalanced if required. Ensure that the rotor wiring is properly routed and secured to prevent stator contact.

7.3.2 The exterior surface of the AC generator assembly does not require repainting, except for the MEP-002/-003A, MEP-016 Series, MEP-531/501, and MEP-903 Series assemblies, these assemblies shall be painted.

7.3.3 On the MEP-531A if disassembled, inspect the brushes, caps, wires, and holders IAW the TM, replace as required, and polish the slip rings.

7.3.4 On the 15, 30, and 60 KW TQG% if the AC generator assembly is removed from the generator set, the two generator mounting bolts shall be replaced, NSN 5305-00-724-7265.

7.3.5 On the 5 and 10 KW TQG, inspect the feet on the stator housing for cracks; cracked feet must be repaired or replaced.

7.3.6 Mil-Std AC generator assembly. Diodes shall be replaced unless the diodes were replaced in a previous RESET (2004 and on) operation. If in doubt, diodes shall be replaced.

CAUTION: Extreme care must be taken during the disassembly, handling, transportation, cleaning, and drying of the individual AC generator components to ensure that the windings, leads, connectors, and housing are not damaged.

7.4 DC Electrical System. The 12-volt batteries will be inspected for damage, hydrometer tested, filled with fluid, recharged, and load or conductance tested. Batteries will be replaced if required, or if adequate testing equipment is not available. Cables, terminal/battery covers, and terminal lugs shall be replaced on an as required basis. Recondition or replace battery tray and hold down assemblies as necessary.

7.5 Housing. If disassembled, the housing shall be cleaned, repaired, and repainted as required. Sound absorbing foam panels shall be replaced as required; generator sets shall not be disassembled just to replace damaged foam. The generator set housing shall have a final topcoat of CARC paint in accordance with MIL-DTL-53072, color/pattern as specified by CECOM.

7.5.1 On the 3 kW TQG, inspect the set to ensure that the leak prevention kit has been installed. See Appendix L for inspection and installation procedures.

7.6 Acoustic Suppression Kits (ASKs)

7.6.1 On the 3 kW, 5 kW, or 10 kW, ASKs may be removed from the generators and the generators will function normally. For 5 & 10 kW generators new replacement kits may still be available from the supply system for purchase and installation if the owning unit wants to retain the reduced acoustic signature provided by the kits.

7.6.2 On the 15 kW and 30 kW generators the exterior generator panels were removed to install the ASKs. The ASK panels reduce the generators acoustic signature and protect generator set components from environment elements. If 15 and 30 kW ASK panels/doors have failed, replacement ASK panels/doors must be installed or the complete kit must be removed and original generator panels/doors must be installed. Failure to enclose the 15 & 30 kW generators sets will lead to weather damage of internal generator set components and potential overheating of the main alternator, engine, and other generator components, as the exterior panels and doors duct cooling air through the generator components.

7.6.3 Mil-Std generators have a short remaining life and repairs should proportionate to the expected life of the generators. All door seal material shall be replaced. The sealing surface of all doors shall be intact and shall be repaired as necessary to maintain the integrity of the seal. . All doors shall seal, close, and lock properly. It is acceptable for the inside door screen to be rusty and missing material. The preferred order of repair options is as follows:

1) On the 5 through 30 kW ASKs, panels can be repaired by welding or riveting new sheet metal over rust holes. Recommend that RTV be used to seal riveted panel patches. Fiberglass may also be used. Pound out dents when possible. Weld angle iron onto panels to repair edges. Since the ASKs are not mandatory, repairs to the acoustic insulation are not required, unless the unit wishes to maintain the acoustic suppression capability. There should be standard hardware available for most of the screws, washers and nuts. Patches or new material should be CARC painted after installation.

2) On the 5 & 10 kW generator sets, if the ASKs cannot be repaired or the damage is major, complete kits may be ordered from the supply system. The 5 kW kit is NSN 6115-01-273-7377. The 10 kW kit is NSN 6115-01-273-7376.

3) If three or more panels require replacement, remove the ASK from the 5 or 10 kW Generator sets unless reduced acoustic signature is critical to the Soldier mission.

4) On all ASKs, if two or less panels require replacement, new panels can be locally fabricated. Technical drawings for the ASK components can be obtained from CECOM. Panels may also be available from commercial sources. Contact U.S. Army CECOM Cycle Management Command (LCMC) Fort Monmouth, ATTN: AMSEL-LC-LEO-E-CM, Fort Monmouth,NJ 07703-5006. Commercial (732) 532-1556; Autovon (DSN) 992-1556. for guidance and clarification.

5) On the 15 & 30 kW ASKs, if two or more panels require replacement the total generator set may be uneconomical to repair. Calculate total repair cost for repairing generator set and replacing ASK components and compare cost with MEL. If cost is less than MEL, repair generator set.

The Onan diesel engine that is original equipment on the MEP-016B and MEP-701A 3KW DED is non-supportable. This engine shall be replaced with a Yanmar L-100 diesel engine using diesel conversion kit NSN 2920-01-418-0970.

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There is an interference fit between the MEP-701A ASK enclosure and the Yanmar L-100 diesel engine that causes problems with intake and exhaust porting and with cooling air flow. The ASK shall NOT be installed on a Yanmar L-100 engine-equipped 3 KW set and no modifications to the ASK are authorized. Yanmar L-100 engine-equipped 3 KW sets will be designated as MEP-016B generator sets for tracking purposes.

7.7 Control Box Assembly.

7.7.1 The Control Box may be cleaned without removal of the electrical/electronic assemblies, except on the 5 KW to 60 KW TQG's; the voltage regulator shall be removed and cleaned.

7.7.2 Replace glass/plastic encased electromagnetic relays 100%.

7.7.3 Replace control cubicle and distribution box wiring harnesses on an as required basis. Replace or clean corroded terminal lugs. Replace missing terminal lugs. Pull on any spliced wires to test physical integrity of splice.

7.7.4 Replace hour meter on generator sets that have a new or remanufactured engine installed. Generator sets that retain their original engine shall retain their original hour meter.

7.7.5 Replace light bulbs 100%. Panel incandescent lamps shall be green tinted in accordance with the 88-22662, CAGE 30554 drawing.

7.7.6 On the 5 and 10 kW TQG's only: Install fuse on quad winding wire going into the voltage regulator. See Paragraph 5.2.

7.7.7 Inspect gauges for proper operation and replace as required.

7.7.8 On 5-60 kW A/B TQG's only: If a new style sealed switch is not installed, replace the Master Start switch 100% with the new style sealed switch, Electros witch part numbers 75902LV (5-15 kW) or 75901LJ (30 & 60 kW), or American Solenoid part numbers DHR10 C57400 EF or DHR10 C57410 EF, respectively. If a new style sealed switch is not installed and a new style sealed switch is not available, replace the Master Start switch with an old style switch. (S1).

7.7.9 On 5-60 kW A TQG's only: If a new style sealed switch is not installed, replace the rotary VM-AM 100% with the new style sealed switch, Electros witch part numbers 31907LW (5 & 10 kW) or 31904QT (15-60 kW), or American Solenoid part numbers DHR10 C57430 EF or DHR10 C57420 EF, respectively. The Control Bracket may need to be bent backward slightly to accommodate the switch. If a new style sealed switch is not installed and a new style sealed switch is not available, replace the rotary VM-AM switch with an old style switch. (S6).

7.7.10 On 5-60 kW TQG's only: Install a 10A fuse in-line with the convenience receptacle and a new 10A receptacle data plate. The in-line fuse is not required if a Ground Fault Interrupter NSN 5925-01-493-9106, containing a built in circuit breaker, is installed.

7.7.11 On 15, 30 & 60 kW TQG's only: with TRC voltage regulators, install fuse on exciter circuit on F1. See Paragraph 5.3.

7.7.12 On 15, 30 & 60 kW TQG's Voltage Regulator only: A1, clean dust/sand from circuit card.

7.7.13 On 30 & 60 kW TQG "B" Models only: replace the inline 30 amp battery-charging fuse with a 50-amp circuit breaker. See Paragraph 5.4. Also, if a newly redesigned module is not installed, the Backplane Module shall be replaced 100% with the newly redesigned module, same NSN. The newly redesigned module utilizes surface mount components in lieu of the discrete capacitors and resistors. If the Master Switch is turned on and the CIM does not boot up (black display), refer to Appendix N for CIM checking procedures.

7.7.14 On 5 & 10 kW TQG's, position wires between load terminal and main contactor so that the wires are not rubbing on internal sheet metal parts. See Safety-of-Use-Message SOUM-ATCOM-95-003.

7.7.15 On the 5 & 10 kW TQG's, if not already performed, rotate the slave receptacle so that the positive terminal is on top. This ensures that the wrench does not short out on the back terminal of the slave receptacle when disconnecting the battery terminal.

7.7.16 On the 3 kW TQG, Frequency Converters that have evidence of sand or dust shall be minimally cleaned IAW the following procedure. Each Frequency Converter shall be upgraded to the latest configuration by TRC, (727-535-0572), as applicable. The latest configuration provides an increase in reliability. The Frequency Converter is an ESDS (Electrostatic Discharge Sensitive) device and shall be handled using all ESD protective processes/procedures. Cleaning is not required on Frequency Converters that have no evidence of sand or dust.

1. Inspect the unit for damage. In addition as the unit is disassembled, inspect for damage and defective components. Damaged units must be repaired.
2. Remove both side covers and top plate.
3. Remove the bottom plate with fan.
4. Remove the bottom side rail then slide the metal shell up from the electronic assembly.
5. Remove the Control Circuit Board and Capacitor Circuit Board from the sides of the electronic assembly.
6. Clean the circuit boards using isopropyl alcohol or other electronic cleaning solvent (which does not attack the polyurethane conformal coating on the circuit boards).
7. Clean the metal plates/covers.
8. Reassemble in reverse order.

7.7.17 On the 5 and 10 KW Mil Std sets, locate terminal block TB4. Remove wire P59E16 from terminal TB4-3 and attach the wire to TB-12/13/14.

7.8 Air Intake and Exhaust.

7.8.1 Air cleaner elements, breather filters, and rubber seals shall be replaced. Clean air cleaner housing as required. Breather screens shall be cleaned or replaced. Verify that the exhaust manifold nuts and the muffler mounting bolts are tightened. Exhaust muffler shall be inspected per the appropriate TM. The 2 kW MTG and 3 kW, 5 kW & 10 kW TQG mufflers shall be inspected for clogging and excessive carbon buildup. Clean, repair or replace all mufflers as required. Heater devices and glow plugs shall be tested and replaced as required.

7.8.2 On the Mil Std sets, verify proper operation of the shutter assembly, shutters open evenly and at correct temperature IAW the applicable TM.

7.9 Output Box and Load Terminal Board.

7.9.1 Clean and inspect without removing the electrical/electronic assemblies, repair as necessary. Replace Main Contactor and start relay as required. On 15, 30, & 60 KW TQG's, apply RTV to wires on back of J15 inside the bottom of output box.

7.9.2 On the 5 and 10 KW Mil Std sets, verify/test Convenience Receptacle (CR) voltage/polarity at all three generator output voltage connections. On the 5 and 10 KW Mil Std sets, verify that the CR "HOT" is wired to the circuit breaker than verify that the other side of the circuit breaker is wired to terminal L3 on S6. Verify that the CR Neutral is wired to terminal 6 on S6. And verify that there is a AWG #4 jumper wire on S6 between terminals 6 and L0.

7.10 Electrical Harnesses and Cables. All cables and harnesses are to be cleaned and inspected in-place, then repaired or replaced on an as needed basis. Electrical connections (such as connectors, screws, terminals) shall be cleaned or replaced if any rust or corrosion is observed. Any wires replaced are not required to have wire numbers every three inches. Any wires replaced shall have the wire number marked, using a petroleum resistance heat shrink sleeve (band marker) at locations such as near bulk heads, terminal ends, switches, etc. to facilitate field repair and troubleshooting. Harnesses/wires will not be disassembled solely to provide band markers. Replacement wires shall be routed along and neatly attached to the existing harness. Only solder type butt splices shall be used. Any one wire may have a maximum of one splice and any harness may have a maximum of three splices. Pull on any spliced wires to test physical integrity of splice (s).

7.11 Engine and AC/DC Generator Mounts. Inspect mounts for cracking, tears, being crushed, and deterioration. Replace engine and AC generator assembly mounts on 5 & 10 kW TQG's. All other mounts shall be replaced as required.

7.12 Cooling System

7.12.1 The cooling system shall be flushed in accordance with TM 750-254, prior to inspection and repair of the cooling system. The radiator shall be repaired or replaced as required. Use fin straightener to repair minor damage to the radiator. Coolant drain hoses shall be inspected and replaced as required. Radiator and bypass hoses, thermostat, and fan belt shall be replaced.

7.12.2 On the 5 & 10 KW TQG's, if a rubber cap tube is installed, the tube, NSN 4730-01-385-5915, and clamp, NSN 5340-01-383-9379, shall be replaced as required.

7.12.3 If available and the radiator requires replacement, replace the 15 kW TQG radiator with the heavy-duty radiator, NSN 2930-01-470-0217.

7.13 Fuel System.

7.13.1 Replace all the fuel system filters, seals, gaskets, o-rings, reducer tube, and supply and return non-metallic hoses. Fuel tank vent hoses shall be inspected and replaced as required. Inspect and clean all strainers, including those at the fuel pump, fuel injection pump, and tank.

7.13.2 Inspect fuel tank. Flush and clean fuel tank if sand or dust is visible through the fuel filler neck. If removed from the generator set for cleaning, the fuel tank gaskets and drain rubber bulkhead fitting shall be replaced. If any float, sender unit, pickup, or drain is removed, the applicable gasket or rubber fitting shall be replaced.

7.13.3 During PMCS, fuel injectors shall be checked for leakage, spray pattern and pop pressure. Failed injectors shall be cleaned/repared or replaced. See Table 5 for used injector pop pressures. On the 3 KW Mil Std Onan Engine, the fuel injector copper washer, Part Number 3920174, can be obtained from your local Cummins Power Systems distributor. This washer is not in the Tier 1 Mandatory Part Replacement Kit.

7.13.4 On 5 & 10 KW TQG's, the metal/rubber hose fuel rail assembly (P/N% 186-6159 and 186-6160) shall be inspected and replaced as required.

7.13.4.1 On 5 & 10 kW TQG's, replace the main fuel pump with an Airtex Products P/N E1074 (round body) pump unless an Airtex Products P/N E1074 pump is already installed. Until a source of supply of the Airtex pump is on-line, replace the main fuel pump with a new Purolator pump unless an Airtex Products P/N E1074 pump is already installed. Primary Airtex Fuel Pump Kit NSN: 2910-01-491-1339. Auxiliary Airtex Fuel Pump Kit NSN: 2910-01-491-1340.

7.13.4.1.1 If the Airtex pump is nonfunctional, you have two options, replace with a new Airtex or replace with a new Purolator.

To change over the main pump from Airtex to Purolator, you need to order:

1. 4730-01-238-6442 elbow
2. 4730-01-051-9840 elbow
3. 2910-01-378-6025 pump
4. 5999-01-092-2655 contact
5. 5935-00-482-7721 connector

To change over the auxiliary pump from Airtex to Purolator, you need to order:

1. 2940-01-365-6535 filter
2. 2910-01-366-7293 pump
3. reuse top elbow (because Fermont s using a shorter length tube)
4. 5999-01-092-2655 contact
5. 5935-00-482-7721 connector

7.13.5 On the Mil Std sets, all fuel hoses shall be replaced as required.

7.13.6 On the 2 KW MTG, inspect the fuel filter assembly (NSN 2910-01-488-7002) for damage, replace as required.

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7.13.7 On the 5 KW, 28 VDC, APU; replace as required the plastic (fuel line) tee above the cylinder head with a brass tee, NSN 4730-01-058-9758. This tee is in the fuel return line. Verify that the new fuel filter has a metal case.

7.13.7.1 On the 5 KW, 28 VDC, APU; inspect and verify proper operation of the day tank.

7.14 Lubrication System. Filters, gaskets, seals, O-rings, and fluids shall be replaced.

7.15 Switch Box

7.15.1 The housing interior and exterior shall be cleaned, repaired and repainted as required; minor dents that do not affect the serviceability are acceptable. All electrical and mechanical components shall be inspected and repaired or replaced as required. All wiring shall be cleaned and inspected in-place, then repaired or replaced as required. Pull on any spliced wires to test physical integrity of splice (s). Connectors and terminal ends shall be cleaned or replaced if any corrosion is observed. Replacement wires shall be routed along and neatly attached to the existing harness. The housing shall have a coat of CARC paint in accordance with MIL-DTL-53072, color/pattern as specified by CECOM. Replace light bulbs 100%.

7.15.2 On the AN/MJQ-32 & -33 switch box P/N 13205E5079, verify that the indicator lights are wired to A1 and B1 and thus operate in both single- and three-phase operation.

7.15.3 On the AN/MJQ-35/36 & -37/38 switch box P/N 13229E5820, verify that the procedure in Paragraph 5.6 has been performed.

7.15.4 All AN/MJQ-35/36 & -37/38 switch boxes, P/N 13229E5820, shall have the modifications performed IAW Appendix P.

TABLE 5. Used Fuel Injector Opening Pressure

Generator Size And Type	Model Number	Used Fuel Injector Opening Pressure (Nom. Psi)
2 kW MTG	MEP-501A/531A	2700
3 kW TQG	MEP-831A/832A	2700
5 kW TQG	MEP-802A/812A	3481
10 kW TQG	MEP-803/813A	3481
15 kW TQG	MEP-804/814A	1706
30 kW TQG	MEP-805/815A/805B/815B	3620
60 kW TQG	MEP-806A/816A/806B/816B	3620
3 kW Mil Std	MEP-016B/701 - Yanmar L100	2700
5 kW Mil Std	MEP-002A	1750
10 kW Mil Std	MEP-003A/112A	1750
15 kW Mil Std	MEP-004A/113A	2750
30 kW Mil Std	MEP-005A/114A	2750
60 kW Mil Std	MEP-006A/115A	2900
100 kW Mil Std	MEP-007B	615
5 kW APU	MEP-952B	3400
10 kW APU	MEP-903A/903B/903C	1991

NOTE: Used fuel injector opening pressure will vary somewhat from nominal, however, cylinder to cylinder pressures on an engine should not vary.

APPENDIX A

STAGES OF RUST AND CORROSION

A.1 As an aid in evaluating rust damage and planning rust repair actions, rust shall be classified into four stages;

A.1.1 Stage 1 - Red, black, or white corrosion deposits on surface accompanied by minor etching and pitting. Base metal is sound.

A.1.2 Stage 2 - Powered granular and scaled condition resulting in erosion of material from the surface. Base metal is sound.

A.1.3 Stage 3 - Surface condition and corrosion deposits are similar to Stage 2, except that metal in the corroded areas is unsound and small pinholes may be present.

A.1.4 Stage 4 - Corrosions have advanced to a point where the surface has been penetrated. No metal remains at point of severest corrosion. There are rust holes in the surface area, or metal is completely missing along the edge.

A.2. Exterior surfaces of units with areas of Stage 1 or Stage 2 rust shall be blasted, cleaned, treated, primed and painted. Units with areas of Stage 3 or Stage 4 rust shall be repaired, cleaned, treated, primed and painted in those areas or should have assemblies replaced with new assemblies if repair is not economical.

A.3. Any evidence of corrosion on working surfaces of close tolerance parts is not acceptable. Pitting or surface deterioration in the area of any seal or gasket is not acceptable if it affects the proper functioning and/or proper performance of the applicable component.

APPENDIX B

TACTICAL GENERATOR MANUALS

LO 5-6115-465-12	Gen Set, DED, 30 KW, Mdls MEP-005A, MEP104A
LO 5-6115-545-12	Gen Set, DED, 60 KW, Tactical Utility/Precise
LO 5-6115-584-12	Gen Set, DED, 5 KW, Tactical Utility
LO 5-6115-585-12	Gen Set, DED, 10 KW
LO 5-6115-600-12	Gen Set, DED, 100 KW, Mdl MEP007B
LO 5-6115-615-12	Gen Set, DED, 3 KW, Mdls 016B, MEP-021B, MEP-026B
LO 9-6115-464-12	Gen Set, DED, 15 KW, Mdls MEP-004A, -104A, -113A
LO 9-6115-641-12	Gen Set, Tactical Quiet, 5 KW, Mdls MEP-802A, -812A
LO 9-6115-642-12	Gen Set, Tactical Quiet, 10 KW, Mdls MEP-803A, -813A
LO 9-6115-643-12	Gen Set, Tactical Quiet, 15 KW, Mdls MEP-804A, -814A
LO 9-6115-644-12	Gen Set, Tactical Quiet, 30 KW, Mdls MEP-805A, -815A
LO 9-6115-645-12	Gen Set, Tactical Quiet 60 KW, Mdls MEP-806A, -816A
TB 9-6115-641-13	Winterization Kit Installed on Generator Set, Skit Mounted, Tactical Quiet 5kW, 60 and 400 Hz MEP-802A and MEP-812A
TB 9-6115-642-13	Winterization Kit Installed on Generator Set, Skit Mtd, Tactical Quiet, MEP-803A and MEP-813A
TB 9-6115-643-13	Winterization Kit installed on Generator Set, Skid Mtd, Tactical Quiet MEP-804A and MEP-814A
TB 9-6115-644-13	Winterization Kit installed on Generator Set, Skid Mounted, Tactical Quiet, 30kW, 50/60 and 400 Hz (MEP-805A and MEP-815A)
TB 9-6115-645-13	Winterization Kit Installed on Generator Set, Skid Mounted, Tactical Quiet, 60kW, 50/60 and 400 Hz MEP-806A and MEP-816A
TB 9-2510-242-40	Towed Wheeled Vehicles, FSC Class 2330, Lunette Trailers and Semitrailers
TM 11-6115-479-12	Power Plant, Elec, AN/MJQ-44
TM 11-6115-481-13	Generator Set, Diesel Engine PU-815/TSC-154
TM 5-6115-465-10-HR	Gen Set, DED, 30 KW, MEP-005A, -104A, -14A
TM 5-6115-465-12	Gen Set, DED, 30 KW, MEP-005A, -104A, -114A
TM 5-6115-465-34	Gen Set, DED, 30 KW, MEP-005A, -104A, -114A
TM 5-6115-545-12	Gen Set, DED, 60 KW, MEP-006A, -105A, -115A
TM 5-6115-545-12-HR	Gen Set, DED, 60 KW, MEP-006A, -105A, -115A
TM 5-6115-545-34	Gen Set, DED, 60 KW, MEP-006A, -105A, -115A
TM 5-6115-584-12	Gen Set, DED, 5 KW, Mdl MEP-002A
TM 5-6115-584-12-HR	Gen Set, DED, 5 KW, Mdl MEP-002A
TM 5-6115-584-34	Gen Set, DED, 5 KW, Mdl MEP-002A
TM 5-6115-585-12	Gen Set, DED, 10 KW, Mdls MEP-003A, -112A
TM 5-6115-585-24P	Gen Set, DED, 10 KW, Mdls MEP-003A, -112A
TM 5-6115-585-34	Gen Set, DED, 10 KW, Mdls MEP-003A, -112A
TM 5-6115-600-24P	Gen Set, DED, 100 KW, Mdl MEP-007B
TM 5-6115-600-34	Gen Set, DED, 100 KW, Mdl MEP-007B
TM 5-6115-615-12	Gen Set, DED, 3 KW, Mdls MEP-016B, -021B, -026B
TM 5-6115-615-24P	Gen Set, DED, 3 KW, Mdls MEP-016B, -021B, -026B
TM 5-6115-615-34	Gen Set, DED, 3 KW, Mdls MEP-016B, -021B, -026B
TM 5-6115-625-14&P	Power PU-405A/M--Gen Set, MEP-004A, 15 KW; Trailer M200A1 Mod
TM 5-6115-626-14&P	Power PU-406B/M--Gen Set, MEP-005A, 30 KW; Trailer M200A1 Mod
TM 5-6115-627-14&P	Power Plant, AN/MJQ-10A--Gen Set, MEP-005A, 30 KW; Trailer, 200A1 Mod
TM 5-6115-628-14&P	Power Plant, AN/MJQ-15--Gen Set, MEP-113A, 15 KW; Trailer, M2
TM 5-6115-629-14&P	Power Plant, AN/AMJQ-12A--Gen Set, MEP-006A, 60 KW; Trailer
TM 5-6115-630-14&P	Power PU-751M--Gen Set, MEP-002A, 5 KW; Trailer, M116A1 Mod
TM 5-6115-631-14&P	Power Plant, AN/MJQ-16--Gen Set, MEP-002A, 5 KW; Trailer, M10
TM 5-6115-632-14&P	Power PU-753/M--Gen Set, MEP-003A, 10 KW; Trailer, M116A2 Mod
TM 5-6115-633-14&P	Power Plant, AN/MJQ-18--Gen Set, MEP-003A, 10 KW; Trailer M10

APPENDIX B (CONT)

TACTICAL GENERATOR MANUALS

TM 5-6115-640-14&P	Pwr Plant, AN/MJQ-32--Gen Set, MEP-701A, 3 KW, ASK; Trailer M, 116A2 Mod
TM 9-2815-252-24	Dsl Eng, Mdl DN2M 2 Cylinder 0.9 Liter
TM 9-2815-252-24P	Dsl Eng, Mdl DN2M 2 Cylinder 0.9 Liter
TM 9-2815-253-24	Dsl Eng, Mdl DN4M 4 Cylinder 1.2 Liter
TM 9-2815-253-24P	Dsl Eng, Mdl DN4M 4 Cylinder 1.2 Liter
TM 9-2815-254-24	Dsl Eng, Mdl C-240PW-28 4 Cylinder 2.4 Liter
TM 9-2815-254-24P	Dsl Eng, Mdl C-240PW-28 4 Cylinder 1.2 Liter
TM 9-2815-255-24	Instructions Diesel Engine Mdl 4039T 4 Cylinder 3.9 Liter
TM 9-2815-255-24P	Diesel Engine, Mdl 4039TF002, Four-Cylinder, Four Cycle, Turbocharged
TM 9-2815-256-24	Instructions Diesel Engine Mdl 6059T 6 Cylinder 5.9 Liter
TM 9-2815-256-24P	Diesel Engine, Mdl 6059TF002, Six Cylinder, Four Cycle Turbocharged
TM 9-2815-257-24	Diesel Engine Assembly Model L70AE-DEGFR
TM 9-2815-257-24P	Diesel Engine Model L70AE-DEGRF
TM 9-2815-259-24	Diesel Engine, Model 4045TF151, 4 Cylinder 4.5 Liter
TM 9-2815-259-24P	Diesel Engine, Mode 4045TF151, 4 Cylinder, 4.5 Liter
TM 9-2815-260-24	Diesel Engine, Model 6068TF151, 6 Cylinder 6.8 Liter
TM 9-2815-260-24P	Diesel Engine, Model 6068TF151, 6 Cylinder, 6.8 Liter
TM 9-6115-464-10-HR	Gen Set, DED, 15 KW, Mdls MEP-004A, -103A, -113A
TM 9-6115-464-12	Gen Set, DED, 15 KW, Mdls MEP-004A, -103A, -113A
TM 9-6115-464-24P	Gen Set, DED, 15 KW, Mdls MEP-004A, -103A, -113A
TM 9-6115-464-34	Gen Set, DED, 15 KW, Mdls MEP-004A, -103A, -113A
TM 9-6115-465-24P	Gen Set, DED, 30 KW, Mdls MEP-005A, -104A, -114A
TM 9-6115-545-24P	Gen Set, DED, 60 KW, Mdls MEP-006A, -105A, -115A
TM 9-6115-584-24P	Gen Set, DED, 5 KW, Mdl MEP-002A
TM 9-6115-639-13&P	3KW Tactical Quiet Generator Set, MEP-831A (60 HZ) and MEP-832A (400 HZ)
TM 9-6115-641-10	Gen Set, Tactical Quiet, 5 KW, Mdls MEP-802A, -812A
TM 9-6115-641-24	Gen Set, Tactical Quiet, 5 KW, Mdls MEP-802A, -812A
TM 9-6115-641-24P	Gen Set, Tactical Quiet, 5 KW, Mdls MEP-802A, -812A
TM 9-6115-642-10	Gen Set, Tactical Quiet, 10 KW, Mdls MEP-803A, -813A,
TM 9-6115-642-24	Gen Set, Tactical Quiet, 10 KW, Mdls MEP-803A, -813A
TM 9-6115-642-24P	Gen Set, Tactical Quiet, 10 KW, Mdls MEP-803A, -813A
TM 9-6115-643-10	Gen Set, Tactical Quiet, 15 KW, Mdls MEP-804A, -814A
TM 9-6115-643-24	Gen Set, Tactical Quiet, 15 KW, Mdls MEP-804A, -814A
TM 9-6115-643-24P	Gen Set, Tactical Quiet, 15 KW, Mdls MEP-804A, -814A
TM 9-6115-644-10	Gen Set, Tactical Quiet, 30 KW, Mdls MEP-805A, -815A
TM 9-6115-644-24	Gen Set, Tactical Quiet, 30 KW, Mdls MEP-805A, -815A
TM 9-6115-644-24P	Gen Set, Tactical Quiet, 30 KW, Mdls MEP-805A, -815A
TM 9-6115-645-10	Gen Set, Tactical Quiet, Mdls MEP-806A, -816A
TM 9-6115-645-24	Gen Set, Tactical Quiet, Mdls MEP-806A, -816A
TM 9-6115-645-24P	Gen Set, Tactical Quiet, 60 KW, Mdls MEP-806A, -816A
TM 9-6115-646-14&P	Pwr Unit PU-495A/G, B/G--Gen Set, 100 KW, MEP-007A Or B;Trailer, M353 Mod
TM 9-6115-647-14&P	Pwr Unit PU-789/M--Gen Set, MEP-114A, 30 KW; Trailer, M353
TM 9-6115-648-14&P	Pwr PU-650B/G--Gen Set, MEP-006A, 60 KW; Trailer, M200A1
TM 9-6115-650-14&P	Pwr Plant, AN/MJQ-25--Gen Set, MEP-112A, 10 KW; Trailer, M103, A3 "
TM 9-6115-651-14&P	Pwr Unit PU-707A/M--Gen Set, MEP-115A, 60 KW; Trailer, M200A1
TM 9-6115-652-14&P	Pwr Unit PU-760M--Gen Set, MEP-114A, 30 KW; Trailer, M200A1
TM 9-6115-653-14&P	Pwr Unit PU-732/M--Gen Set, MEP-113A, 15 KW; Trailer, M200A1
TM 9-6115-658-13&P	Power Plant, Diesel Engine Driven, 1-ton Trailer, Mounted 3kW, 60 Hz, AN/MJQ-42 and 3kW, 60Hz, AN/MJQ-43
TM 9-6115-659-13&P	Pwr Unit/Plant, DED, 5 KW, Mdls PU-797, -797A, AN/MJQ-35, -35, -36

APPENDIX B (CONT)

TACTICAL GENERATOR MANUALS

TM 9-6115-660-13&P	Pwr Unit/Plant, DED, 10 KW, Mdls PU-789,-789A,-799,-799A, AN/MJQ-37, -38
TM 9-6115-661-13&P	Pwr Unit/Plant, DED, 15 KW, Mdls PU-800, -801, -802, AN/MJQ-3
TM 9-6115-662-13&P	Power Unit/Plant, DED, 30 KW, Mdls PU-803, -804, AN/MJQ-40
TM 9-6115-663-13&P	Power Unit/Plant, 60 KW, Mdls PU-805, -806, AN/MJQ-41
TM 9-6115-664-13&P	Auxiliary Power Unit, 5KW, 28VDC, MEP 952B
TM 9-6115-666-13&P	Hz Power Plants, DED, 5 Ton Trl Mtd, Mdls AN/MJQ-1612
TM 9-6115-670-14&P	Auxiliary Power Unit 10kw, 120/240 VAC, 60 HZ, Model No. MEP-903A, MEP-903B, and MEP-903C
TM 9-6115-671-14	Generator Set, Skid Mtd, Tactical Quiet 30 KW, 50/60 and 400 HZ, MEP-805B and MEP-815B
TM 9-6115-671-24P	Generator Set, Skid Mtd, Tactical Quiet 30 KW, 50/60/400 HZ, M, MEP-805B and MEP-815B
TM 9-6115-672-14	Generator Set, Skid Mtd, Tactical Quiet, 60 KW, 50/60/400 HZ, M, MEP-806B and MEP-816B
TM 9-6115-672-24P	Generator Set, Skid Mtd, Tactical Quiet 60 KW, 50/60/400 HZ, M, MEP-806B and MEP-816B
TM 9-6115-673-13&P	Gen Set, 2KW Mil Tactical, 120 VAC, MEP-531, 60 HZ and MEP-501, 28 VDC
TM 9-2330-376-14&P	Chassis, Trailer, Flatbed, 5-Ton, 4-Wheel, M1061A1
TM 9-2330-247-14&P	Chassis, Trailer, General Purpose, 3-1/2 Ton, 2-Wheel, M353
TM 9-2330-205-14&P	Chassis, Trailer, Generator, 2- Ton, 2-Wheel, M200A1
TM 9-2330-213-14&P	Chassis, Trailer, 1-1/2-Ton, 2-Wheel, M103A1; M103A3
TM 9-2330-202-14&P	Chassis, Trailer, 3/4-Ton, 2-Wheel, M116A2 and 1-Ton, M116A3
TM 9-2330-392-14&P	Trailer, Cargo: Light, 2-Wheel, M1101; Heavy, 2-Wheel, M1102; Chassis, Trailer (LTT): 2-Wheel

APPENDIX C

TIER 1 TECHNICAL INSPECTION CHECKLIST

	Tier 1 Technical Inspection	Condition
1	Inspect the doors, panels, hinges, and latches for damaged, loose or corroded items and missing gaskets.	
2	Inspect engine exhaust cover for damage and free movement. If cover is missing, inspect muffler and engine for internal water accumulation. See PS Magazine #566, Jan 2000.	
3	Inspect air intake and exhaust grills for debris, and torn or deteriorated foam.	
4	Inspect data plates for looseness and legibility.	
5	Inspect skid base for cracks and corrosion.	
6	Ensure that insulating materials are complete, free from deterioration and damage, and not touching exhaust components.	
7	Inspect engine wiring harness for damage, frayed insulation, loose splices, loose or corroded terminals, and terminals with broken or partially broken wires.	
8	Inspect the fuel system for leaks and damaged, loose or missing parts.	
9	Check supply and return fuel lines, fuel injector pump and fuel injectors for cracks, leaks and evidence of damage. Verify that the high-pressure injector line clamps are installed as applicable.	
10	Inspect the fuel filter/water separator for leaks, proper mounting, cracks, and damaged or missing parts.	
11	Check the ether start system for deteriorated, loose or missing parts and loose tubing.	
12	Inspect the lubrication system for leaks and damaged, loose or missing components.	
13	Inspect the oil drain system for leaks, cracks and missing components.	
14	Inspect the fuel tank through the fuel filler neck for sand and dust contamination.	

APPENDIX C (CONT)**TIER 1 TECHNICAL INSPECTION CHECKLIST**

	Tier 1 Technical Inspection	Condition
15	Inspect the fuel fill assembly for missing components, damaged components and corrosion.	
16	Inspect the fuel filler neck collar for cracks and deterioration.	
17	Inspect the fuel tank air vent hoses for damage, deterioration and missing components.	
18	Inspect the fuel tank switches for damage, deterioration and missing components.	
19	Inspect the fuel tank drain for leaks, damage, deterioration and missing components.	
20	Check the radiator for leaks, clogged cooling fins, damage or missing components.	
21	Inspect the radiator hoses for leaks, cracks and deterioration.	
22	Inspect radiator cap for corrosion, damage and a torn or deteriorated seal.	
23	Check the cooling fan for bent blades, damage, looseness, and proper installation (air flow direction).	
24	Inspect the cooling fan cowling for damage, cracks looseness, and missing or damaged hardware.	
25	Check the overflow bottle for leaks, sealing capability, acceptable threads, and missing parts.	
26	Inspect the overflow bottle hoses and the engine coolant drain hoses and valves for damage, missing components, cracks and deterioration.	
27	Inspect the fan guards for damage, and missing rubber edges and mounting hardware.	
28	Check the muffler and exhaust system for leaks, clogging and damaged or missing components.	
29	Inspect the air cleaner assembly and piping for loose connections, damaged components.	
30	Check the restriction indicator for indication of restricted or clogged air cleaner element.	
31	Inspect batteries for damage, corrosion, expansion, and test for serviceability.	
32	Check battery compartment for missing, damaged or corroded battery hold down brackets and rods and battery box tray.	

APPENDIX C (CONT)**TIER 1 TECHNICAL INSPECTION CHECKLIST**

	Tier 1 Inspection	Condition
33	Inspect battery cables and connectors for corrosion and loose, damaged or missing parts.	
34	Inspect slave receptacle for loose connections, damage, corrosion, burning, and missing parts.	
35	Inspect output/voltage reconnection box for loose or damaged wiring or cables.	
36	Inspect output/voltage reconnection box components for damage, looseness, corrosion and missing components.	
37	Inspect voltage reconnection board for loose wires, burned connections, and missing nuts or other components.	
38	Inspect load output terminal board for damaged or missing hardware and components, stripped terminal threads, missing load terminal wrench, broken wrench retaining cord, and missing nut retaining clips.	
39	Inspect control box for missing, damaged, loose, corroded, or burned components.	
40	Inspect control box wiring harness for damage, frayed insulation, loose splices, loose or corroded terminals, and terminals with broken or partially broken wires.	
41	Push and pull DC circuit breaker listening and feeling for uneven resistance from dust contamination.	
42	Inspect parallel cable for damage.	
43	Inspect switches for smooth operation and signs of dust contamination.	
44	Inspect relays for dust contamination.	
45	Inspect the engine assembly for loose, damaged or missing components and wires.	
46	Inspect engine breather system for damage, clogging, and missing and loose components.	
47	Inspect engine for damage or missing oil fill cap and dipstick.. Check dipstick o-ring for serviceability	
48	Inspect engine for loose or missing freeze plugs, oil leaks, antifreeze leaks, cracked block, and carbon trails or leaks around exhaust manifolds and engine head.	
49	Inspect fuel pumps (main and auxiliary as applicable) for loose connections, broken wires, missing components, clogged filters, clogged screens, and cracked intake and output lines.	

APPENDIX C (CONT)

TIER 1 TECHNICAL INSPECTION CHECKLIST

	Tier 1 Inspection	Condition
50	Inspect 5 & 10 kW TQG battery charging alternator for excessive leakage through internal voltage regulator. Open DC breaker, disconnect battery negative cable, set meter to read DC amps, measure DC amps between cable and neg. battery terminal. Reading < 5 milliamps is OK.	
51	If applicable, inspect breather heating elements for broken wires and missing insulation.	
52	Inspect switchbox assembly for damage, corrosion, missing components, loose screws and connectors, damaged wiring harness, broken wires, burned out light bulbs, stripped terminal lug threads, and missing terminal lug nut retainers.	
53	Inspect power plant cables between switchbox and generator sets for damage, broken case insulation, broken wires, damaged connectors, kinks, or signs of overheating.	
54	Ensure that the safety switches are wired correctly.	
55	Inspect all mounts for cracking, tears, being crushed, and deterioration.	
56	On the 3 KW TQG, verify that the bolts and flat/lock washers are installed on the muffler bracket.	
57	Inspect main generator for sand and dust contamination.	
58	Inspect ASKs for missing or damaged hardware, nuts, bolts, clamps, door, panels, and components. Inspect ASKs for rust, corrosion, and holes that go completely through the panels.	
59	Inspect the switch box interior and exterior for missing and damaged panels, hardware, components, and wiring as applicable.	
60	On the 5 & 10 KW TQG, inspect the feet on the stator housing for cracks.	
Mil-Std Generator Specific Inspections		
61	Inspect day tank for sand and dust contamination.	
62	Inspect Static exciter and voltage regulator for sand and dust accumulation.	

APPENDIX D

TIER 1 FUNCTIONAL INSPECTION CHECKLIST

	Functional Inspection	Condition
1	Check coolant, fuel and oil levels	
2	Check panel lights and dead crank switch	
3	Start and Operate the set	
4	Check engine meters; water temp, oil pressure, battery charging ammeter, etc	
5	Check fuel level gauge	
6	Listen for abnormal sounds or knocks	
7	Observe exhaust for abnormal smoke	
8	Inspect for fluid leaks	
9	Apply 100% load. On the 5 & 10 KW, repeat 100% load and meter checks for all three output voltage connections.	
10	Check electrical meters, all meter switch positions; voltage, percent power, percent current, frequency, etc.	
11	Check voltage and frequency adjust switches	
12	Observe Generator set for unusual noises	
13	Verify operation of engine battery charging alternator by measuring DC voltage	
14	Verify/test operation of convenience receptacle (for all three output voltage connections on 5 & 10 kW generator sets).	
15	Check protective device: high temperature shut down	
16	Check protective device: low fuel shut down	
17	Check protective device: low oil pressure shut down	
18	Check protective device: battle short	
19	Check auxiliary fuel pumps for proper operation	
20	Perform Quality Power Test. As applicable, verify proper operation of the Power Unit Switch Box.	
21	Check for caked dust and oil sludge in valve cover gallery or oil pan	

APPENDIX E**PREVENTATIVE MAINTENANCE CHECKS AND SERVICES (PMCS)
CHECKLIST**

	PMCS and Parts Replacement IAW Applicable TMs unless otherwise specified	Date Completed
	Cooling System	
1	Flush cooling system IAW TM 750-254	
2	Replace cooling system hoses and thermostat	
3	Replace fan belts	
	Fuel System	
4	Replace rubber fuel lines and rubber fuel return lines as specified herein	
5	Replace filters and clean/replace strainers	
6	If tank is cleaned, replace fuel tank bulk head fittings and gaskets	
7	Test fuel injectors	
8	Replace primary fuel pumps and auxiliary pumps as specified herein	
	Intake system	
9	Replace air cleaner and breather filters and seals	
10	Service/Replace crank case breather screens	
11	Test heater/glow plugs and wires	
12	Inspect mufflers	
13	On the Mil Std sets, verify proper operation of the shutter assembly IAW TM	
	Control System	
14	Replace rotary master switch on 5- 60 kW TQG	
15	Replace rotary VM-AM switch on 5-60 kW TQG	
16	Replace glass/plastic encased electromagnetic relays	
17	Replace battery charging fuse with circuit breaker kit on the 30/60 kW TQG model B	
18	Install voltage regulator fuse kit on the 15, 30 and 60 kW TQG model A	
19	Install fuse in-line with the convenience receptacle and a new 10A receptacle data plate (Note: The in-line fuse is not required if a Ground Fault Interrupter NSN 5925-01-493-9106 is installed.)	
20	Install fuse on quad windings going into VR on 5/10 kW TQG	
21	Replace light bulbs	
22	On 5 & 10 KW Voltage Regulator only: A1, clean dust/sand from circuit card	
23	On the 3 kW TQG, the Frequency Converter shall be cleaned as required.	
24	On the 5 and 10 KW Mil Std sets, verify CR voltage/polarity at all three generator output voltage connections.	

APPENDIX E (CONT)**PREVENTATIVE MAINTENANCE CHECKS AND SERVICES (PMCS)
CHECKLIST**

	PMCS and Parts Replacement IAW Applicable TMs unless otherwise specified	Date Completed
	Lubrication System	
25	Replace oil and filter	
	Main Generator	
26	If disassembled, replace bearing and o-ring (if applicable)	
27	On the MEP-531A, inspect the brushes, caps, wires, and holders IAW the TM and polish the slip rings.	
	Generator Set	
28	Inspect and test batteries	
29	Lubricate all hinges/latches	
30	Inspect engine and generator mounts	
31	Inspect Acoustic Suppression Kit if applicable	
	Engine	
32	Adjust valves IAW the applicable TM	
33	On 5 & 10 KW TQG%, the metal/rubber hose fuel rail assembly (P/N% 186-6159 and 186-6160) shall be inspected and replaced as required.	
	Power Plant	
34	Verify switch box functionality	
	Other PMCS items as specified in applicable TM shall be performed	

APPENDIX F

TRAILER INSPECTION CHECKLIST

	COMPONENT	REQUIREMENT	CONDITION
1	Air Hose Assembly	Will be free of leaks or damage. Minor weather checking on hoses is acceptable. Air filter assemblies will function properly.	
2	Air/Hydraulic Chambers	Repair kits will be installed 100 percent for units that do not require replacement.	
3	Air Reservoir	Will be free of leaks, damage or corrosion that would weaken the reservoir.	
4	Axles and Suspension	Wheel bearings will be greased and adjusted properly. Springs will be free of cracked or broken leaves, excessive worn bushings, and will show no indication of a permanent set. Spring mounting hardware will be in place and free of damage. Axle tubes will be free of breaks and cracks; radius rods will be straight and rubber bushings will be serviceable. Shock absorbers will be properly mounted and serviceable. Weather checked rubber grommets are acceptable. Axle spindle threads will be free of wear, cross threads or damage. Axle spindles will be free of bends and damaged bearing seats.	
5	Brake System	The operational components of the brake system will be completely inspected to insure reliability. Brake systems utilizing polyglycol brake fluid will be converted to silicone brake fluid in accordance with TB 43-0002-87.	
6	Hand Brakes.	The hand or parking brake will be complete with all linkage in a serviceable condition and properly adjusted.	
7	Service Brakes.	Service brakes will be inspected by removing the brake drums. Brake lining will be properly secured and have a minimum of 50 percent of original thickness remaining above rivet head or 50 percent of original thickness if bonded. Lining will show no evidence of oil or grease. Brake backing plates and related parts will be properly mounted, free of bends and distortion.	
8	Brake Drums.	Brake drums will not be cracked or distorted. Scores on drum braking surfaces that reduce lining-to-drum contact more than 10 percent are not acceptable. Refinished drums that are machined to maximum allowable diameter are acceptable if remaining scores do not exceed 1/32 inch in width or 1/64 inch in depth. Oversize will be stamped on outer face of drum just above and between two studs on finished drums. Linings will not be shimmed. New shoe and lining assemblies, if required, will be used on both brakes of the same axle, using the same brake lining composition. Drums must be matched per axle and will be checked and serviced in accordance with the applicable TM.	
9	Brake Cylinders.	Master and brake cylinders will be inspected to insure reliability. Cylinders will be clean, free of leaks or seepage, properly mounted and operate freely under pressure. Boots and dust covers are acceptable with minor weather checks. Evidence of swelling from oil, grease or hydraulic fluid is not acceptable.	

APPENDIX F (CONT)**TRAILER INSPECTION CHECKLIST**

	COMPONENT	REQUIREMENT	CONDITION
10	Brake hose and lines.	Brake lines will be of correct diameter and length and free of kinks or flat sections. Fittings and nuts will not be distorted to the extent that they cannot be properly tightened. Brake hose will be free of spongy areas and evidence of leaks. Hairline weather checks are acceptable, provided damage does not go through the outer casing to the first ply of fabric. Brake lines will be properly flushed prior to installation of wheel cylinders to eliminate corrosion and residue	
11	Air supply tanks.	Air supply tanks will be properly mounted and are acceptable with minor dents that do not affect the serviceability. All water will be drained and drain valves will be in operating condition	
12	Data Plates	All required data plates will be in place and will be legible	
13	Drawbar Lunette and Support Legs	Lunette shall adjust properly. Drawbar and support legs shall be free of damage, be properly aligned, and will operate freely	
14	Electrical System	Functionally test the complete electrical system. All lights must function properly. Cables, wiring and harnesses will be free of damage and properly installed. Minor weather checking is acceptable. Minor discoloration, scratches or corrosion on lenses is acceptable. Turn signals when installed operate properly.	
15	Emergency Relay Valve	Valve will function properly during all operational conditions. Proper operation is to be assured with towing vehicle connected.	
16	Frames, Side rails and Cross members	Must be free from cracks, breaks, loose mountings, and bends affecting alignment; must be free of broken welds. Frames must be in proper alignment.	
17	Gaskets and Seals	All gaskets and seals will be replaced on assemblies that have been disassembled.	
18	Jacks, Outriggers and Leveling Devices	Must be securely attached and operate freely.	
19	Landing Gear, Rear Leveling Jacks And Aircraft Loading Jacks	Functionally test each one throughout its complete range. Components must function properly and will not be damaged or have permanent deformation.	
20	Leaks	Class II and Class III leaks are not acceptable.	
21	Lubrication	Lubricate vehicle in accordance with the applicable Lubrication Order, using prescribed grease and oil.	
22	Paint	A final finish of a continuous coat of exterior topcoat CARC shall be applied IAW MIL-DTL-53072. The color/pattern shall be as specified by CECOM. Prior to application of paint, the surface must be free of foreign material, rust, and loose paint. This condition can be achieved by any combination of sanding, grinding, or spot blasting as necessary. Bare surfaces will be pretreated and primed IAW MIL-DTL-53072 prior to topcoat. Apply non-skid coating on areas upon which operating personnel are required to work prior to	

APPENDIX F (CONT)**TRAILER INSPECTION CHECKLIST**

	COMPONENT	REQUIREMENT	CONDITION
		applying final top coat. Final finish top coat can be applied over adherent existing paint and blended with existing paint for adhesion purposes. Feather edging of existing paint for appearance alone is not required. The final finish top coat surface will have good adhesion; be free of rust, bare spots or scratches extending through the depth of the paint; and will be free of peeling or flaking.	
23	Suspension Systems	Shock absorbers will be free of leaks and will operate properly.	
24	Tires	Each tire must have 3/16 inch or more of tread remaining, and be in good serviceable condition. All tires on a vehicle must be matched to provide proper performance and approximately equal life. Tires will not show evidence of cupping or chunking. Tires will not have cuts or cracks greater than 1 inch in length, 1/8 inch wide. Tires will not have cuts or breaks regardless of length or width, which extend to the fabric. Rubber separation or bulges on tire sidewalls are not acceptable.	
25	Trailer Connecting Accessories	Couplings will be intact and function properly. Minor weather checking of hoses is acceptable providing they do not extend to the body core. Intervehicular cables shall be free of opens or shorts. Insulation and rubber jackets shall be free of cuts and breaks	
26	Wheels	Wheels will be free of cracks, breaks and damaged mounting holes.	
27	Fenders and Accessory Box	Must be securely and properly mounted and are acceptable with minor dents that do not affect the serviceability. Accessory box components, e.g., hasp, catches, fasteners, straps, etc. must be fully functional.	
28	Panels, floors, and quarter panels	All scratches, pits, and rust spots which do not reduce metal thickness more than 50 percent are acceptable provided they are filled and ground flush with existing metal. Rust will be removed by sandblasting or grinding before body filler is used. Patches on panels, floor, and quarter panels are acceptable provided they are ground smooth and original contour is maintained. Body filler may be used. Distortion from original plane or contour in the form of a wave, sag, or bulge is acceptable if not in excess of 3/8 inch in a distance of 12 inches. Not more than one such defect is allowed in any one panel section. No more than one dent which covers a maximum diameter of 1 inch and 3/8 inch or less in depth is acceptable in each 100 inch square area of panel surface. Weld patches are acceptable if overall contour is maintained and outside part of weld is ground smooth. Tailgate and other gate panels which meet the general requirements for side panels will be considered acceptable. The tailgate, brackets, and hardware will be free from damage or distortion which hinders latching operations or impairs positive fastening of tailgate.	

APPENDIX F (CONT)

TRAILER INSPECTION CHECKLIST

28	Panels, floors, and quarter panels (continued)	Waves or sags in floors, measured from trough to crest, will not exceed 3/8 inch in a distance of 12 inches. Cracks, breaks, and tears in floor panels will be repaired with sound welds and ground smooth and flush with panel surface. Material used for patches will be equal in thickness to floor or panel material.	
29	Road Test Requirements	Trailers will be road tested with generators mounted unless otherwise specified.	

APPENDIX G

5 & 10 KW QUALITY POWER TEST DATA SHEET

Gen Set Model #:										
Gen Set S/N:										
Starting Gen Set Hour Meter:										
AM	PERAGE			VOLTAGE			PERCENT POWER	FREQ	OIL PRESSURE	WATER TEMP
Load Test:	L1	L2	L3	L1	L2	L3				
Single phase 15 minutes at 50% load	N/A	N/A		N/A	N/A					
Single phase 15 minutes at 100% load	N/A	N/A		N/A	N/A					
120/240 15 minutes at 50% load		N/A			N/A					
120/240 15 minutes at 100% load		N/A			N/A					
3 phase 30 minutes at 75% load										
3 phase 30 minutes at 100% load										
Freq Swing Stability Test:										
Overload Test:										
Check Alternator Charge DC Voltage:										
Operator:										
Date:										
Final Gen Set Hour Meter Reading:										

APPENDIX G (CONT)

15 - 100 KW QUALITY POWER TEST DATA SHEET

Gen Set Model #:										
Gen Set S/N:										
Starting Gen Set Hour Meter:										
	AMPERAGE			VOLTAGE			PERCENT POWER	FREQ	OIL PRESSURE	WATER TEMP
Load Test:	L1	L2	L3	L1	L2	L3				
3 phase - 45 minutes at 50% load										
3 phase - 45 minutes at 75% load										
3 phase - 30 minutes at 100% load										
Freq Swing Stability Test:										
Parallel Test:										
Overload Test:										
Check Alternator Charge DC Voltage:										
Operator:										
Date:										
Final Gen Set Hour Meter:										

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APPENDIX H

**DA FORM 2404, EQUIPMENT INSPECTION AND MAINTENANCE
WORKSHEET**

DA Form 2404 is provided on the next sheet

APPENDIX I

Gen Set RESET: Required TIER 1 Parts Replacement List for 2 KW MTG, 3 KW TQG, 5 KW APU, and 10 KW APU.

Gen Set RESET: Required TIER 1 Parts Replacement List for 2 kW MTG, 3 kW TQG, 5 kW APU, and 10 kW APU.				2 kW		3 kW	3 kW MIIStd					
				531A	501A	831A & 832B	016B & 701A	016A & C	016D	016E	952B - 5 kW APU	903 - 10 kW APU
Description	P/N	NSN	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty	
Fuel Tank Assembly												
Tank Filter	114250-55100	4240-01-328-4878	1	1								
Hose, Fuel, U/I - 50'	H234 1-4	4720-00-289-5213						5				
Hose, Fuel pump to filter	GS-2495	4720-01-463-0858							1			
Hose, Fuel filter to injector	GS-2497	4720-01-463-0855							1			
Hose, Drain	GS-2509	4720-01-463-0857							1			
Fuel Filter Assembly												
Fuel Element	114250-55510	2910-01-420-9067	1	1								
O-Ring	102103-55520	5331-01-431-7566	1	1								
Filter Body, Fluid	479735	2940-01-365-6535			2							
Filter Element Includes O-Ring	R12T	4330-01-374-9147			1							
Bowl, O-Ring	RK10012	5330-01-373-3649			1							
Fuel Filter	114650-55120	2910-01-310-6566						1	1			
Fuel Bowl Gasket	7744707	5330-00-087-3612						1	1			
O-Ring	24341-000150	5331-01-325-5810						1	1			
Fuel Element	33168	2910-01-523-5636								1		
Fuel Element, In-line	541.038.2	2910-12-314-8154								1		
Kit, Fuel - Water Separator	192050	4330-01-275-2460			1				1			
Pump gasket		5330-00-763-9322			1				1			
Fuel Filter, Element	15231-43560	2940-01-478-9487									1	
O-ring	14301-43570	5331-01-320-9568									1	
O-ring	04811-00390	5331-01-320-9567									1	
Generator Set Assembly												
Relay	RH2B-ULDC24	5945-01-461-2084			2							
Tubing , Flexible M/F AEM02012	95-8030-27	4720-01-464-0411	2	2								
Tubing , Flexible M/F AEM02022	95-8030-X	4720-01-464-0400	1.3	1.3								
Hose , Non-Metallic M/F P/N 208-4	88-20579-3	4720-01-470-3929			3.5							
Hose , Non-Metallic M/F P/N N20353.5	98-19736-0X	4720-01-483-6467			3.3							
Hose , Non-Metallic M/F P/N 208-5	88-20579-4	4720-01-470-6230			4							
Hose , Non-Metallic M/F	88-20579-4	4720-01-470-6230									4.2	
Hose , Non-Metallic M/F	88-20579-2	4720-00-005-5008									1.5	
Hose , Fuel 1/4"	5645K22	4720-01-372-2758							2	3		
Hose clamp	88-20561-1	4730-01-470-1626							4	12		
Engine/Alternator Assembly												

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Gasket, Air Filter	95-8053-1	5330-01-472-5601	2	2								
Filter, Element	114250-12580F	2940-01-421-1106	1	1								
Air Filter, Element	114250-12580	2940-01-310-4495	1	1	1			1				
Element w/Pre-Filter	114650-12590	2940-01-311-4218							1			
Gasket, Air Filter		5331-01-287-0922					1					
Filter, Element		4310-01-281-5988					1					
Breather		2940-01-274-8456					1					
Air Filter, Element	CA6306	2940-01-470-7197									1	
Air Filter, Element	P831520	2940-01-500-3734										1
Breather	15841-0567-0	2815-01-478-7480										1
Keco provide P/N & NSN: Hose	air cleaner to turbo	TM fig 2, item 52										1
Clamp	88-20561-3	4730-01-470-1567										2
Hose	16881-11630	4720-01-500-6508										1
Clamp	16241-72970	4730-01-500-6461										2
Hose	16881-11670	4720-01-500-6509										1
Clamp	16241-11720	4730-01-500-6211										2
* Belt (FPA)	19217-97010	3030-01-490-6137										*
* Belt (FPB, LTG)	19805-72530	3030-01-500-8099										*
* - order Belt per application												
Oil Pump and Filter												
Strainer, Oil	114250-35070	2815-01-353-7523	1	1	1							
O-Ring	24341-000224	5331-01-326-8017	1	1	1							
Filter, Oil		2940-01-275-4285					1					
O-Ring	24311-000180	5331-01-323-2728							2	2		
Hose, Drain	GS-2499	4720-01-463-0856								1		
Filter, Oil	541.050.2	2940-12-342-1512									1	
Filter, Oil	15853-99170	2940-01-500-6490										1
Hose, Turbo oil	16881-33242	4720-01-500-6484										1
Clamp	09318-88200	4730-01-478-7123										2
Clamp	16241-73360	4730-01-478-7130										2
* Hose (FPA)	16881-37160	4720-01-500-6507										*
* Hose (FPB, LTG)	16899-37162	4720-01-500-6506										*
* - order Hose per application												
Cooling System												
Thermostat	19203-7301-0	2990-01-436-1329										1
Gasket	15676-73270	5330-01-437-1059										2
Hose, Radiator, Upper	13230E6330	4720-01-478-6491										1
Hose, Radiator, Lower	15881-72870	4720-01-478-7185										1
Hose Rubber	16851-73350	4720-01-478-7182										1
Clamp	16241-73360	4730-01-478-7130										2
* Hose, Radiator, Lower (FPB, LTG)	13230E6331	4720-01-478-6494										*
* Hose, Radiator, Lower (FPA)	5242003A	4720-00-184-6241										*
* - order hose per application												
Cylinder Head												
GASKET, VLV COVER	114250-11310	5330-01-326-8022	1	1	1							
GASKET, VLV COVER	114650-11310	5330-01-415-3798						1	1			
gasket, injector	114250-11460	5330-01-326-8021	1	1	1			1	1			
Spacer, Nozzle	114350-11470	5365-01-322-8692						1	1			
Shim Packs (Inj Nozzle Adj)	114250-53400	5365-01-486-3255	*	*	*			*	*			
GASKET, VLV COVER		5330-01-275-3361					1					

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washer, injector Onan		See Para. 3.1.1											
GASKET, VLV COVER	770.288.4	5330-12-349-2239										1	
washer, injector	890.74.04	5330-12-350-7011										2	
GASKET, VLV COVER	16861-14522	5330-01-478-6369											1
washer, gasket	15601-96650	5330-01-478-4911											3
washer, injector	15841-53622	5331-01-431-3621											3
washer, overflow pipe to injector	15841-94040	order from Kubota											3
Alternator Assy													
Bearing	46UR5 (CAGE)	BG6204H03SP	1										
Bearing, Rear	11-1072-1	3110-01-458-4163		1									
Bearing, Front	11-3303-1	3110-01-419-3167		1									
Bearing	W204PPFS50381	3110-00-198-2462				1		1	1				
Bearing	051-01058	3110-01-486-4864											1
o-ring	051-21792	5331-01-479-0530											1

APPENDIX J

Gen Set RESET: Required TIER 1 Parts Replacement List for 5 KW -100 KW MIL STD s.

Gen Set RESET: Required TIER 1 Parts Replacement List for 5-100 KW Mil Std Sets			5 kW	10 kW	15 kW	30 kW	60 kW	100 kW
			002A	003A & 112A	004A & 103A & 113A	005A & 104A & 114A	006A & 105A & 115A	007B
Description	P/N	NSN	Qty	Qty	Qty	Qty	Qty	Qty
GENERATOR SET	RPSTL TM 9-6115		584-24P	585-24P	464-24P	465-24P	545-24P	457-24P
CONTROL PANEL LAMPS	6S6/30V-801	6240-01-470-4272	2	2	3	3	3	3
CONTROL PANEL LAMPS		6240-00-143-3060			2	2	1	2
CONTROL PANEL LAMPS		6240-00-155-8714			1	1	3	3
Fuel System Less Tank								
Gasket, Head Filter	101489	5330-00-663-4773	3	3	3	3	3	3
Cartridge, Filter	966	2910-00-287-1930	2	2				
Element, Filter	MIL-F-20627TYIICL2	2910-00-287-1912			2	2	2	2
Cartridge, Strainer	35070	2910-00-374-6020	1	1	1	1	1	1
WASHER, FLAT(FUEL CANISTER)	101487	5310-00-595-6398	2	2	2	2	2	2
PLUG,PIPE	104018	4730-00-537-1192	2	2	2	2	2	2
Washer Flat		5310-00-576-8136	1	1	1	1	1	1
Strainer, Fuel	53-479729	4730-00-893-6402	3	3	2	2	2	2
Gasket, Strainer	479136	5330-00-763-9322	3	3	2	2	2	2
Air Cleaner Assembly								
Element, Air Cleaner	A42030	2940-00-192-9182	1	1				
Filter Element, Air	P131919	2940-00-463-1362			1	1	2	2
Generator Assembly								
Bearing, Ball	30BC03XSS0M	3110-00-277-0420	1					
Bearing, Ball	72-5203	3110-01-214-8361		1				
Bearing, Ball	10018960-003	3110-00-141-9994			1	1		
Bearing, Ball	AA59585-208JEBH	3110-00-277-0322					1	
Bearing, Ball	6314-2RS	3110-00-833-3117						1
LOCKING PLATE		5340-01-049-0689	4	4				
LOCKING PLATE		5365-00-630-2441			4	4		
LOCKING PLATE		5340-00-307-1626					8	
LOCKING PLATE		5340-00-230-7278						4
Internal Engine Assembly								
Gasket, Oil Filter Cartridge	101978	5310-00-297-2278	1	1				
Gasket, Valve Bolt	101978	5310-00-297-2275	1	1				
Gasket, Oil Filter Cartridge		5330-00-351-6377	1	1				
Cartridge, Oil Filter	CH6PL	2940-00-580-6304	1	1	1	1		
Gasket	74396318	5330-00-740-6097					2	
Filter Element, Oil	MS35802-3	2940-00-580-6283					2	2
GASKET		5330-00-291-6881						2

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SEAL		5331-00-914-5821						2
WASHER		5365-00-262-9786						2
GASKET		5330-00-921-7128						2
VALVE COVER GASKET	115-0130	5330-00-871-9486	1	2				
VALVE COVER GASKET		5330-00-034-4978			1			
VALVE COVER GASKET		5330-00-678-3823				1		
VALVE COVER GASKET		5330-01-049-3967					1	
VALVE COVER GASKET		5330-00-520-1552						1
Washer, Flat, Valve Cover	206432A	5310-00-987-6365			2	3		
Gasket Breather	204420A	5330-00-842-0362			1	1		
Breather		2815-00-628-0386			1	1		
Filter Breather	123-1283	2940-01-052-4953	1					
Cooling Group								
Hose, Radiator Upper	72-2055	4720-00-627-9773			1	1		
Hose, Performed	70-1089	4720-00-283-9089					1	
Hose, Radiator Lower	72-2056	4720-00-614-6230			1	1		
Hose, Radiator Lower	70-1090	4720-00-309-2652					1	
Spring, Helical, Compression	70-1605	5360-01-122-0630					1	
Hose, Radiator Upper		4720-01-129-3135						1
Hose, Radiator Lower		4720-01-128-9402						1
GASKET		5330-01-094-8058						1
THERMOSTAT		6620-01-008-1893						1
Hose, Bypass	288704-00	4720-00-977-0316			1	1		
Hose, Nonmetallic	4035923	4720-01-051-9847					1	
Thermostat	MS35770-1	6620-00-841-1892			1	1		
Gasket: Outlet Pipe	266701-00	5330-00-971-5607			2	2		
Thermostat, Float Control	4A358-003	6685-00-954-8686					1	
Seal, Plain Encased	535917	5330-00-848-9943					1	
Gasket	74027024	5330-00-408-6005					1	
Engine Assembly & Components								
Nozzle Washer finned adp		5310-00-281-3342	2	4				
Injector Copper Washer	110-0419	5330-00-626-3966	2	4				
Injector Fiber Washer	147-0043	5330-00-626-3963	2	4				
Injector Copper Washer	206752	5330-00-167-9009			4	6		
NOZZLE WASHERS		5330-00-477-6785					6	
NOZZLE O-RING		5331-01-324-2529					6	
Belt, Fan	MS51066RP59	3030-00-756-8416			1	1		
Belt, V Matched Set	MS51067-53-2	3030-00-832-4323					1	
Belt, V	MS51066-48	3030-00-822-6279					1	
Sub P/N Belt, V	17475GL SET 2	3030-00-630-0092					AR	
Belt, Alternator Drive	MS51066RC46B	3030-00-936-7175						1
Substitute P/N, Alternator Drive		3030-01-044-3699						AR
Belt, Fan Drive, Set	MS51066RC46-2	3030-00-034-1865						1
Fuel Tank Assembly								
Tank gasket		5330-01-268-2615			1	1	1	
Tank gasket		5330-00-615-1834			1	1	1	
Tank strap lock-nut		5310-00-984-3807			4	4		
Tank gasket		5330-00-216-8512						1

APPENDIX K

Gen Set RESET: Required TIER 1 Parts Replacement
List for 5 KW - 60 KW TQG's.

Gen Set RESET: Required TIER 1 Parts Replacement List for 5-60 KW TQG's			5 kW		10 kW		15 kW		30 kW A	
			802A	812A	803A	813A	804A	814A	805A	815A
Description	P/N	NSN	Qty		Qty		Qty		Qty	
GENERATOR SET RPSTL TM 9-6115-			641-24P		642-24P		643-24P		644-24P	
DC Electrical System										
Adapter, Battery Tray (as required)	242-0038	6160-01-453-0858					0	0	0	0
B Model Kit, Battery Charging CB										
Terminal lug 14-16	13226E0107-19	5940-00-143-4775								
Terminal lug 14-16	13226E0107-23	5940-00-113-9826								
Circuit Breaker 24V 50A	W23-X1A1G-50	5925-00-103-5085								
Bracket, Current Transducer	96-23743	5935-01-511-3663								
Wire Electrical, 12 AWG	88-20540-6	6145-00-578-7514								
Control Box Assembly										
"Quad" FUSE KIT FUSE HOLDER	BM6031SQ	5920-00-816-6892	1	1	1	1				
DISCONNECT TERMINAL, FEMALE	RB2573	5940-01-112-9746	2	2	2	2				
FUSE, 3A, 600V Time Delay	FNQ-R-3	5920-01-322-6986	1	1	1	1				
RELAY	KUP14D15-24VDC	5945-00-458-3351	5	5	5	5	8	8	8	8
RELAY/SWITCH	MK2PSAC120	5945-01-365-9954					1		1	
RELAY/SWITCH	R10-T1P2-115V	5945-01-369-0791						1		1
LAMP	W-L=101/130	6240-00-143-3060					2	2	2	2
LIGHT, PANEL, GREEN	88-22662	6240-01-470-4272	3	3	3	3	3	3	3	3
S1 Switch, Rotary, 4 Position Master	75901LJ	5930-01-531-2972							1	1
S1 Switch, Rotary, 5 Position Master	75902LV	5930-01-531-2976	1	1	1	1	1	1		
S6 Switch, Rotary, Volt-Amp Meter	31907LW	5930-01-531-2977	1	1	1	1				
S6 Switch, Rotary, Volt-Amp Meter	31904QT	5930-01-531-2975					1	1	1	1
Conven Recept FUSE KIT										
FUSE HOLDER		5920-01-396-1989	1	1	1	1	1	1	1	1
FUSE 10A		5920-00-243-3787	1	1	1	1	1	1	1	1
TRC VR FUSE KIT										
FUSE HOLDER	BM6031SQ	5920-00-816-6892					1	1	1	1
FUSE, 3A, FAST ACTING	KTK-3	5920-00-225-9983					1	1	1	1
SPADE TERMINAL (22-18 AWG)	AA-8704-06	5940-01-425-2020					1	1	1	1
DISCONNECT TERMINAL, FEMALE	RB2573	5940-01-112-9746					2	2	2	2

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WIRE (88-20540-2, 20GA)	1342	6145-01-129-9955						1'	1'	1'	1'
SCREW (10-32, 3/4") with star washer		5305-01-187-5878						1	1	1	1
WIRE TIE	MS3367-4-9	5975-00-727-5153						3	3	3	3
Air Intake & Exhaust System											
Filter Element	P14-8969	2940-00-934-7989	1	1	1	1					
Filter Element	SMP18-1072	2940-01-103-3268					1	1			
Element Internal, Air Filter	P12-0307	2940-01-103-3267					1	1			
Element, Air Filter	P18-2059	2940-01-378-1130								1	1
Filter Element	42841	2940-01-406-9542									
Crankcase Breather Filter Assembly											
Parts Kit, Air Filter, W/ O-Ring	1R424A	2940-01-470-6444									
Coolant System											
Heavy Duty Radiator		2930-01-470-0217						AR	AR		
Hose, Performed Radiator Upper	88-20189	4720-01-385-1139	1	1	1	1					
Hose, Performed Radiator Upper	88-22171	4720-01-385-1102					1	1			
Hose, Performed Radiator Upper	88-21911	4720-01-369-0021									
Hose, Radiator, Upper	88-21909	4720-01-395-6532								1	1
Hose Rubber	Make from J20R5	4720-01-373-0526									
Hose Rubber	96-23595	4720-01-470-3561									
Hose, Nonmetallic	96-23550	4720-01-470-3016									
Hose, Performed Radiator Lower	88-20190	4720-01-389-0682	1	1	1	1					
Hose, Performed Radiator Lower	88-22172	4720-01-368-5430					1	1			
Hose, Radiator, Lower	88-21908	4720-01-373-0526								1	1
Hose, Nonmetallic	96-23551	4720-01-470-2086									
Hose Performed	88-22170	4720-01-374-0783					1	1			
Hose, Performed Radiator Filler	88-21985	4720-01-373-1405								1	1
Hose, Performed Radiator Filler	88-21986	4720-01-369-0020									
Belt, V	88-20273	3030-01-375-8087	1	1	1	1					
Belt, V	84390	3030-00-528-4635					1	1			
Belt, Fan	T24473	3030-00-264-3073								1	1
Belt, V	L451	3030-00-528-3771									
Belt, V	R501007	3030-01-470-3867									
Belt, V	R501017	3030-01-470-3850									
Generator Assembly											
Bearing Rotor	510-0112	3110-01-160-9663	1		1						
Ball Bearing	6306	3110-00-277-0420		1		1					
O-Ring	509-0094	5331-00-973-8598	1	1	1	1					
Bearing, Ball	6308-2RSJEM	3110-01-304-8142					1				
O-Ring	865876-01	5331-01-374-4468					1				
Bearing, Ball	312KDD	3110-00-155-6298							1	1	1
O-Ring	865873-01	5331-01-369-7318							1	1	1
Cooling System											
Thermostat, Flow Control	186-6193	6685-01-360-9653	1	1	1	1					
Gasket	186-6190	5330-01-358-5560	1	1	1	1					
Thermostat	324370	6620-01-220-7105					1	1			
Gasket	8943622020	5330-01-413-3723					1	1			
Hose Performed	9137211322	4720-01-382-2845					1	1			
Thermostat, Flow, Control	RE33705	6685-01-348-4793								1	1
Gasket	T20215	5330-00-340-5374								1	1

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Hose Performed, Bypass Thermostat	T20277	4720-01-116-7814								1	1
Gasket	AR48675	6685-01-073-1768									
Hose Non-Metallic, Bypass Thermostat, Flow, Control	R105788	4720-01-363-8035									
Gasket	RE64354	6685-01-444-9477									
Seal, Tube	R135896	5330-01-470-2034									
Seal, Tube	R123226	5330-01-470-2027									
Fuel System											
Hose Assembly, Non-Metallic	00906E-606 666-02300	4720-01-394-1931						1	1		
Hose Assembly, Non-Metallic	10404E-504-604-01038	4720-01-375-1391						1	1		
Hose Assembly, Non-Metallic	483666	4720-00-913-5910	3	3	3	3		7	7	8.5	8.5
Hose Assembly, Non-Metallic	00906E-606-03300	4720-01-366-7172						1	1		
Hose Assembly, Non-Metallic	00904E-504-J04	4720-01-386-1872								1	1
Hose Assembly, Non-Metallic	A3411-54	4720-01-375-1392								1	1
Hose Assembly, Non-Metallic	204P4-P54-JM4-27	4720-01-367-7446									
Hose Assembly, Non-Metallic	33H581	4720-00-542-4668	1.5	1.5	1.5	1.5					
Hose Assembly, Non-Metallic	00904E-504-J04-00963	4720-01-386-1856								1	1
Hose Assembly, Non-Metallic	96-23593-2	4720-01-470-1654									
Hose Assembly, Non-Metallic	208-5	4720-01-470-6230									
Hose Assembly, Non-Metallic	208-4	4720-01-470-3929									
Hose Assembly, Non-Metallic	88-20191-1	4720-01-434-3455	1	1							
Hose Assembly, Non-Metallic	88-20191-2	4720-01-434-3456	1	1	1	1					
Hose Assembly, Non-Metallic	88-20191-4	4720-01-434-3457	1	1	1	1					
Oil Hose Assembly, Non-Metallic	88-20144	4720-01-367-0007	1	1	1	1					
Pump Fuel Electrical Main	40193	2910-01-378-6025	1	1	1	1					
Pump Fuel Electrical Aux.		2910-01-366-7293	1	1	1	1					
Aux. Fuel line	33H581	4720-00-542-4668	1.5	1.5	1.5	1.5					
Filter Fluid	85285-F	2910-01-376-5666	1	1	1	1	1	1			
Filter Body Fluid	88-22755	2940-01-365-6535	2	2	2	2	1	1	1	1	1
Nut	A3816	5310-01-197-1473	2	2	2	2	5	5	5	5	5
Gasket	88-20286	5330-01-366-2836	3	3	3	3	3	3	3	3	3
Hose, Fuel Fill	88-20208	4730-01-420-5286	1	1	1	1					
Hose, Fuel Fill	88-22068	4720-01-392-0319					1	1	1	1	1
Hose, Fuel Fill	88-22069	4720-01-369-5042									
INJ WASHER	324412	5310-01-224-9108						10	10		
INJ WASHER	324409	5310-01-226-6661						4	4		
INJ WASHER	324411	5310-01-224-9107						4	4		
Washer Flat	186-6173	5310-01-360-1982	2	2	4	4					
Hose , Non-Metallic	N20353.5	4720-01-483-6467	6.3	6.3	7.5	7.5					
T, Hose	186-6177	4730-01-357-8706	2	2	4	4					
Fuel Filter Kit	393331	2815-01-139-4010	1	1	1	1					
Element Filter	201-13117	2910-01-416-5648	1	1	1	1					
Filter Assy, Fluid	9132018030	2910-01-363-3087					1	1			
Element Filter, Fluid	RE60021	2910-01-444-3758									
Parts Kit, Seal Repl	RE50752	5330-01-452-0929									
Valve Kit	RE60854	2910-01-470-1640									
INJ Return Line Bushing, Rubber	R51936	5365-01-124-0188								8	8
INJ Bushing	R79605	5365-01-118-4113								4	4
INJ O-Ring	R92352	5331-01-333-2698								4	4
INJ Washer	R48000	5310-01-228-0471								4	4
Filter, Element Fluid	RE62418	2910-01-359-4971								1	1

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Seal	29577	5330-01-383-8865								1	1
Strainer, Element Fluid	29575	4730-01-382-8751								1	1
Seal	28869	5330-01-360-7171								1	1
Lubrication System											
VALVE COVER GASKET	186-6117	5330-01-356-7138	2	2	4	4					
VALVE COVER SEAL	201-81200	5330-01-087-7373	2	2	4	4					
DIPSTICK SEAL	201-13120	5330-00-107-4151	1	1	1	1					
OIL FILLER CAP SEAL	186-6024	5331-01-359-1499	1	1	1	1					
OIL FILLER CAP SEAL	909920-6090	5330-01-381-1934						1	1		
PCV CHECK VALVE	382499	4820-66-128-5601						1	1		
VALVE COVER GASKET	8944475700	5331-01-361-7915						1	1		
GASKET	324134	5330-01-226-4455						2	2		
VALVE COVER GASKET	R73521	5330-01-197-0905								1	1
VALVE COVER GASKET	R75728	5330-00-170-2957									
VALVE COVER GASKET	R123542	5330-01-444-7957									
VALVE COVER GASKET	R123543	5330-01-470-6706									
VALVE COVER o-ring	R123575	5331-01-460-2664									
Filter Element, Fluid	186-6025	2940-01-154-5127	1	1	1	1					
Filter Element, Fluid	8-97024607-1	2940-01-493-4533						1	1		
Filter, Element, Fluid	PH20	2940-00-007-4791								1	1
Oil Cooler Hose, Non-Metallic	MF-T60811	4720-01-261-5368								0.6	0.6
Oil Cooler Hose, Performed	R99802	4720-01-337-4474								2	2
Filter Element, Fluid	RE59754	4330-01-444-3729									

APPENDIX K (CONT)

**Gen Set RESET: Required TIER 1 Parts Replacement
List for 5 KW - 60 KW TQG's.**

Gen Set RESET: Required TIER 1 Parts Replacement List for 5-60 KW TQG's			30 kW A		60 kW A		30 kW B		60 kW B	
			805A	815A	806A	816A	805B & 815B		806B & 816B	
Description and usable on code	P/N	NSN	Qty		Qty		Qty		Qty	
GENERATOR SET RPSTL TM 9-6115-			644-24P		645-24P		671-24P		672-24P	
DC Electrical System										
Adapter, Battery Tray (as required)	242-0038	6160-01-453-0858	0	0	0	0	0	0	0	0
B Model Kit, Battery Charging CB										
Terminal lug 14-16	13226E0107-19	5940-00-143-4775					2		2	
Terminal lug 14-16	13226E0107-23	5940-00-113-9826					2		2	
Circuit Breaker 24V 50A	W23-X1A1G-50	5925-00-103-5085					1		1	
Bracket, Current Transducer	96-23743	5935-01-511-3663					1		1	
Wire Electrical, 12 AWG	88-20540-6	6145-00-578-7514					5		5	
Control Box Assembly										
Backplane Module		5998-01-466-4726					1		1	
RELAY	KUP14D15-24VDC	5945-00-458-3351	8	8	8	8				
RELAY/SWITCH	MK2PSAC120	5945-01-365-9954	1		1					
RELAY/SWITCH	R10-T1P2-115V	5945-01-369-0791		1		1				
LAMP	W-L=101/130	6240-00-143-3060	2	2	2	2				
LIGHT, PANEL, GREEN	88-22662	6240-01-470-4272	3	3	3	3	3		3	3
S1 Switch, Rotary, 4 Position Master	75901LJ	5930-01-531-2972	1	1	1	1	1		1	1
S1 Switch, Rotary, 5 Position Master	75902LV	5930-01-531-2976								
S6 Switch, Rotary, Volt-Amp Meter	31907LW	5930-01-531-2977								
S6 Switch, Rotary, Volt-Amp Meter	31904QT	5930-01-531-2975	1	1	1	1				
Conven Recept FUSE KIT										
FUSE HOLDER		5920-01-396-1989	1	1	1	1				
FUSE 10A		5920-00-243-3787	1	1	1	1				
TRC VR FUSE KIT										
FUSE HOLDER	BM6031SQ	5920-00-816-6892	1	1	1	1				
FUSE, 3A, FAST ACTING	KTK-3	5920-00-225-9983	1	1	1	1				
SPADE TERMINAL (22-18 AWG)	AA-8704-06	5940-01-425-2020	1	1	1	1				
DISCONNECT TERMINAL, FEMALE	RB2573	5940-01-112-9746	2	2	2	2				
WIRE (88-20540-2, 20GA)	1342	6145-01-129-9955	1'	1'	1'	1'				
SCREW (10-32, 3/4") with star washer		5305-01-187-5878	1	1	1	1				
WIRE TIE	MS3367-4-9	5975-00-727-5153	3	3	3	3				
Air Intake and Exhaust System										

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Filter Element	P14-8969	2940-00-934-7989							
Filter Element	SMP18-1072	2940-01-103-3268							
Element Internal, Air Filter	P12-0307	2940-01-103-3267							
Element, Air Filter	P18-2059	2940-01-378-1130	1	1	1	1	1	1	1
Filter Element	42841	2940-01-406-9542	1	1	1	1			
Crankcase Breather Filter Assembly									
Parts Kit, Air Filter, W/ O-Ring	1R424A	2940-01-470-6444						1	1
Coolant System									
Heavy Duty Radiator		2930-01-470-0217							
Hose, Performed Radiator Upper	88-20189	4720-01-385-1139							
Hose, Performed Radiator Upper	88-22171	4720-01-385-1102							
Hose, Performed Radiator Upper	88-21911	4720-01-369-0021			1	1			
Hose, Radiator, Upper	88-21909	4720-01-395-6532	1	1					
Hose Rubber	Make from J20R5	4720-01-373-0526						1	1
Hose Rubber	96-23595	4720-01-470-3561							1
Hose, Nonmetallic	96-23550	4720-01-470-3016						1	1
Hose, Performed Radiator Lower	88-20190	4720-01-389-0682							
Hose, Performed Radiator Lower	88-22172	4720-01-368-5430							
Hose, Radiator, Lower	88-21908	4720-01-373-0526	1	1	1	1			
Hose, Nonmetallic	96-23551	4720-01-470-2086						1	1
Hose Performed	88-22170	4720-01-374-0783							
Hose, Performed Radiator Filler	88-21985	4720-01-373-1405	1	1					
Hose, Performed Radiator Filler	88-21986	4720-01-369-0020			1	1			
Belt, V	88-20273	3030-01-375-8087							
Belt, V	AX37	3030-01-017-4340							
Belt, Fan	T24473	3030-00-264-3073	1	1					
Belt, V	L451	3030-00-528-3771			2	2			
Belt, V	R501007	3030-01-470-3867						1	
Belt, V	R501017	3030-01-470-3850							1
Generator Assembly									
Bearing Rotor	510-0112	3110-01-160-9663							
Ball Bearing	6306	3110-00-277-0420							
O-Ring	509-0094	5331-00-973-8598							
Bearing, Ball	6308-2RSJEM	3110-01-304-8142							
O-Ring	865876-01	5331-01-374-4468							
Bearing, Ball	312KDD	3110-00-155-6298	1	1	1	1	1	1	1
O-Ring	865873-01	5331-01-369-7318	1	1					
Cooling System									
Thermostat, Flow Control	186-6193	6685-01-360-9653							
Gasket	186-6190	5330-01-358-5560							
Thermostat	324370	6620-01-220-7105							
Gasket	8943622020	5330-01-413-3723							
Hose Performed	9137211322	4720-01-382-2845							
Thermostat, Flow, Control	RE33705	6685-01-348-4793	1	1					
Gasket	T20215	5330-00-340-5374	1	1					
Hose Performed, Bypass	T20277	4720-01-116-7814	1	1					
Thermostat	AR48675	6685-01-073-1768			2	2			
Gasket	R54638	5330-01-190-1969			1	1			
Hose Non-Metallic, Bypass	R105788	4720-01-363-8035			1	1			
Thermostat, Flow, Control	RE64354	6685-01-444-9477						1	1

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Gasket	R135896	5330-01-470-2034						1	1
Seal, Tube	R123226	5330-01-470-2027						1	1
Fuel System									
Hose Assembly, Non-Metallic	00906E-606 666-02300	4720-01-394-1931							
Hose Assembly, Non-Metallic	10404E-504-604-01038	4720-01-375-1391							
Hose Assembly, Non-Metallic	483666	4720-00-913-5910	8.5	8.5	9.5	9.5		2.5	2.5
Hose Assembly, Non-Metallic	00906E-606-03300	4720-01-366-7172							
Hose Assembly, Non-Metallic	00904E-504-J04	4720-01-386-1872	1	1	1	1			
Hose Assembly, Non-Metallic	A3411-54	4720-01-375-1392	1	1				1	1
Hose Assembly, Non-Metallic	204P4-P54-JM4-27	4720-01-367-7446				1	1		
Hose Assembly, Non-Metallic	33H581	4720-00-542-4668				1	1		
Hose Assembly, Non-Metallic	00904E-504-J04-00963	4720-01-386-1856	1	1	1	1		1	1
Hose Assembly, Non-Metallic	96-23593-2	4720-01-470-1654						1	1
Hose Assembly, Non-Metallic	208-5	4720-01-470-6230						1	1.5
Hose Assembly, Non-Metallic	208-4	4720-01-470-3929						9	9
Hose Assembly, Non-Metallic	88-20191-1	4720-01-434-3455							
Hose Assembly, Non-Metallic	88-20191-2	4720-01-434-3456							
Hose Assembly, Non-Metallic	88-20191-4	4720-01-434-3457							
Oil Hose Assembly, Non-Metallic	88-20144	4720-01-367-0007							
Pump Fuel Electrical Main	40193	2910-01-378-6025							
Pump Fuel Electrical Aux.		2910-01-366-7293							
Aux. Fuel line	33H581	4720-00-542-4668							
Filter Fluid	85285-F	2910-01-376-5666							
Filter Body Fluid	88-22755	2940-01-365-6535	1	1	1	1		1	1
Nut	A3816	5310-01-197-1473	5	5	5	5		5	5
Gasket	88-20286	5330-01-366-2836	3	3	3	3		3	3
Hose, Fuel Fill	88-20208	4730-01-420-5286							
Hose, Fuel Fill	88-22068	4720-01-392-0319	1	1				1	
Hose, Fuel Fill	88-22069	4720-01-369-5042				1	1		1
INJ WASHER	324412	5310-01-224-9108							
INJ WASHER	324409	5310-01-226-6661							
INJ WASHER	324411	5310-01-224-9107							
Washer Flat	186-6173	5310-01-360-1982							
Hose , Non-Metallic M/F P/N N20353.5	186-6176	4720-01-483-6467							
T, Hose	186-6177	4730-01-357-8706							
Fuel Filter Kit	393331	2815-01-139-4010							
Element Filter	201-13117	2910-01-416-5648							
Filter Assy, Fluid	9132018030	2910-01-363-3087							
Element Filter, Fluid	RE60021	2910-01-444-3758						1	1
Parts Kit, Seal Repl	RE50752	5330-01-452-0929						1	1
Valve Kit	RE60854	2910-01-470-1640						1	1
INJ Return Line Bushing, Rubber	R51936	5365-01-124-0188	8	8	12	12		7	11
INJ Bushing	R79605	5365-01-118-4113	4	4	6	6		4	6
INJ O-Ring	R92352	5331-01-333-2698	4	4	6	6		4	6
INJ Washer	R48000	5310-01-228-0471	4	4	6	6		4	6
Filter, Element Fluid	RE62418	2910-01-359-4971	1	1	1	1			
Seal	29577	5330-01-383-8865	1	1	1	1			
Strainer, Element Fluid	29575	4730-01-382-8751	1	1	1	1			
Seal	28869	5330-01-360-7171	1	1	1	1			
Lubrication System									
VALVE COVER GASKET	186-6117	5330-01-356-7138							

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VALVE COVER SEAL	201-81200	5330-01-087-7373						
DIPSTICK SEAL	201-13120	5330-00-107-4151						
OIL FILLER CAP SEAL	186-6024	5331-01-359-1499						
OIL FILLER CAP SEAL	909920-6090	5330-01-381-1934						
PCV CHECK VALVE	382499	4820-66-128-5601						
VALVE COVER GASKET	8944475700	5331-01-361-7915						
GASKET	324134	5330-01-226-4455						
VALVE COVER GASKET	R73521	5330-01-197-0905	1	1				
VALVE COVER GASKET	R75728	5330-00-170-2957			1	1		
VALVE COVER GASKET	R123542	5330-01-444-7957					1	
VALVE COVER GASKET	R123543	5330-01-470-6706						1
VALVE COVER o-ring	R123575	5331-01-460-2664					4	6
Filter Element, Fluid	186-6025	2940-01-154-5127						
Filter Element, Fluid	8-97024607-1	2940-01-493-4533						
Filter, Element, Fluid	PH20	2940-00-007-4791	1	1	1	1		
Oil Cooler Hose, Non-Metallic	MF-T60811	4720-01-261-5368	0.6	0.6	0.6	0.6		
Oil Cooler Hose, Performed	R99802	4720-01-337-4474	2	2	2	2		
Filter Element, Fluid	RE59754	4330-01-444-3729					1	1

APPENDIX L

3KW TQG DOOR SEAL PROCEDURE

WARNING

When running, generator set engine has hot metal surfaces that will burn flesh on contact. Shut down generator set and allow engine to cool before performing checks, services, and maintenance. Wear gloves and additional protective clothing as required. Failure to comply with this warning can cause injury or death to personnel.

WARNING

All metal jewelry can conduct electricity and become entangled in generator set components. Remove all jewelry when working on generator set. Failure to comply with this warning can cause injury or death to personnel.

SCOPE:

Procedure to prevent water from leaking into the 3KW TQG Generator set.

EQUIPMENT:

Air tools, sockets, combination wrenches and other assorted hand tools as required.

ADDITIONAL HARDWARE:

Per Unit:

	<u>P/N</u>	<u>NSN</u>	<u>Qty.</u>
Gasket	98-19576-01		2
Gasket	98-19576-02		2
Washer	88-20033-11A	5310-01-500-2482	6
Washer	88-20033-20A	5310-01-103-6042	4
Seal	88-22705	5330-01-367-6329	41"
Sealing Compound *	88-20571-2		A/R

* Compound is GE RTV108 Transparent General Purpose Silicone Rubber Adhesive Sealant.

SEAL PROCEDURE:

1. Remove Old Seal from along bottom edge of cover in open position. (Note Position of Seal bubble).
2. Scrape any Adhesive from the old seal from the unit.
3. Peel Adhesive backing from the new seal.
4. Apply new seal where old seal was removed from. ****Be sure to replace the seal with the bubble in the proper direction**** See figure 1 below. The bubble will be towards the outside edge of the door. (Proper way will resemble a tear drop)

HINGE / GASKET PROCEDURE:

1. Remove hardware from one hinge. (Be careful not to lose existing hardware)
2. Apply Gaskets to hinge by peeling adhesive backing, lining up the holes, and sticking to the bottom of the hinge. (Be sure to use the proper Gasket for the appropriate side of the hinge)
3. Reassemble hinge hardware adding washers between bolt heads and the hinge. (Be sure to use the proper Washer for the appropriate bolt)
4. Repeat procedure for the other hinge

APPENDIX L (Cont)

Figure 1.

HINGE/GASKET & SEAL POSITION
DETAILS

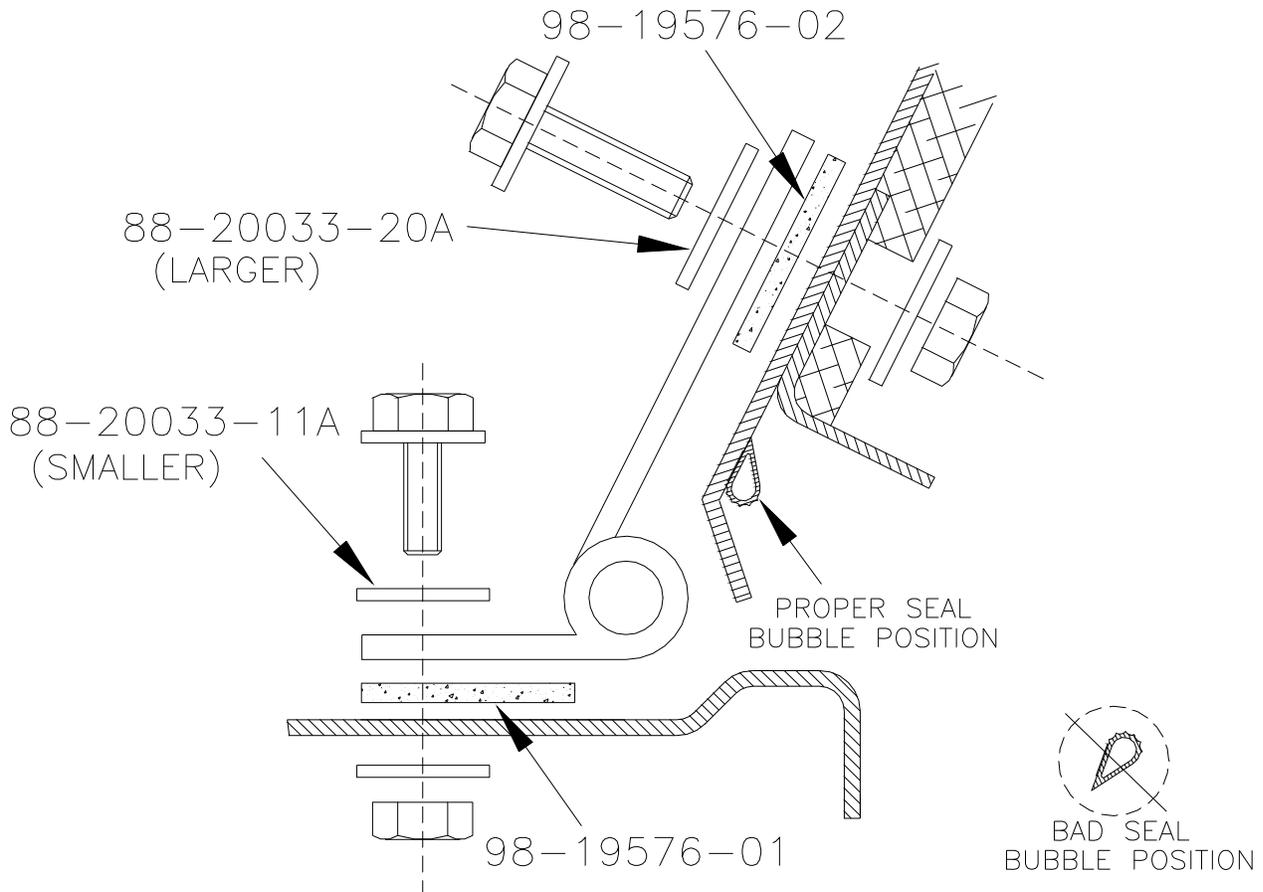
GASKETS  98-19576-01

 98-19576-02

WASHERS  88-20033-20A (LARGER)

 88-20033-11A (SMALLER)

EXPLODED VIEW



APPENDIX L (Cont)

SEALING COMPOUND PROCEDURE:

1. Apply sealing compound along the top edge of the Louver. (Apply through the vent openings in the sheet metal)
TOP EDGE OF LOUVER IS APPROX. 8" LONG
2. Use a screwdriver to press the compound into the edge.

INSPECTION

All applicable inspection procedures must be adhered to.

SEALING COMPOUND PROCEDURE:



APPLY COMPOUND ALONG TOP EDGE OF LOUVER



PRESS COMPOUND INTO LOUVER EDGE

APPENDIX M**BII Listing**

GEN SET BII ITEMS		
<u>MODEL NUMBER</u>	<u>ITEM</u>	<u>NSN</u>
MEP-531A/-501A		
	TECHNICAL MANUAL	TM 9-6115-673-13&P
	GROUNDING ROD	5975-00-878-3791
MEP-831A/-832A		
	TECHNICAL MANUAL	TM 9-6115-639-13&P
	GROUNDING ROD	5975-00-878-3791
	AUXILIARY FUEL LINE	4720-00-021-3320
MEP-802A/-812A		
	TECHNICAL MANUAL	TM 9-6115-641-10
	LUBRICATION ORDER	LO 9-6115-641-12
	GROUND ROD ASSY	5975-00-878-3791
	AUXILARY FUEL LINE	4720-00-021-3320
MEP-803A/-813A		
	TECHNICAL MANUAL	TM 9-6115-642-10
	LUBRICATION ORDER	LO 9-6115-642-12
	GROUND ROD ASSY	5975-00-878-3791
	AUXILARY FUEL LINE	4720-00-021-3320
MEP-804A/-814A		
	TECHNICAL MANUAL	TM 9-6115-643-10
	LUBRICATION ORDER	LO 9-6115-643-12
	GROUND ROD ASSY	5975-00-878-3791
	AUXILARY FUEL LINE	4720-00-021-3320
	PARALLELING CABLE	6150-01-406-9533
MEP-805A/-815A		
	TECHNICAL MANUAL	TM 9-6115-644-10
	LUBRICATION ORDER	LO 9-6115-644-12
	GROUND ROD ASSY	5975-00-878-3791
	AUXILARY FUEL LINE	4720-00-021-3320
	PARALLELING CABLE	6150-01-406-9533
MEP-805B/-815B		
	TECHNICAL MANUAL	TM 9-6115-671-14
	GROUNDING ROD	5975-00-878-3791
	AUXILIARY FUEL LINE	4720-00-021-3320
	PARALLELING CABLE	6150-01-406-9533
	CIM SOFTWARE	96-23569

APPENDIX M (CONT)

BII Listing

GEN SET BII ITEMS (CONT)		
MEP-806A/-816A		
	TECHNICAL MANUAL	TM 9-6115-645-10
	LUBRICATION ORDER	LO 9-6115-645-12
	GROUND ROD ASSY	5975-00-878-3791
	AUXILIARY FUEL LINE	4720-00-021-3320
	PARALLELING CABLE	6150-01-406-9533
MEP-806B/-816B		
	TECHNICAL MANUAL	TM 9-6115-672-14
	GROUNDING ROD	5975-00-878-3791
	AUXILIARY FUEL LINE	4720-00-021-3320
	PARALLELING CABLE	6150-01-406-9533
	CIM SOFTWARE	96-23569
MEP-016B/-701		
	TECHNICAL MANUAL	TM 5-6115-615-12
	LUBRICATION ORDER	LO 5-6115-615-12
	GROUNDING ROD	5975-00-878-3791
	AUXILIARY FUEL LINE	4720-00-021-3320
MEP-002		
	TECHNICAL MANUAL	TM 5-6115-584-12
	LUBRICATION ORDER	LO 5-6115-584-12
	GROUNDING ROD	5975-00-878-3791
	AUXILIARY FUEL LINE	4720-00-021-3320
	CASE, MAINTENANCE & OP MANUAL	7520-00-559-9618
MEP-003/-112		
	TECHNICAL MANUAL	TM 5-6115-585-12
	LUBRICATION ORDER	LO 5-6115-585-12
	GROUNDING ROD	5975-00-878-3791
	AUXILIARY FUEL LINE	4720-00-021-3320
	CASE, MAINTENANCE & OP MANUAL	7520-00-559-9618
MEP-004/-103/-113		
	TECHNICAL MANUAL	TM 9-6115-464-12
	LUBRICATION ORDER	LO 9-6115-464-12
	GROUNDING ROD	5975-00-878-3791
	AUXILIARY FUEL LINE	4720-00-021-3320
MEP-103/-113 ONLY	PARALLELING CABLE	6150-00-197-4934
MEP-005/-104/-114		
	TECHNICAL MANUAL	TM 5-6115-465-12
	LUBRICATION ORDER	LO 5-6115-465-12
	GROUNDING ROD	5975-00-878-3791
	AUXILIARY FUEL LINE	4720-00-021-3320
MEP-104/-114 ONLY	PARALLELING CABLE	6150-00-197-4934
MEP-006/-105/-115		
	TECHNICAL MANUAL	TM 5-6115-545-12
	LUBRICATION ORDER	LO 5-6115-545-12
	GROUNDING ROD	5975-00-878-3791
	AUXILIARY FUEL LINE	4720-00-021-3320
MEP-105/-115 ONLY	PARALLELING CABLE	6150-00-197-4934

APPENDIX M (CONT)

BII Listing

GEN SET BII ITEMS (CONT)		
	TECHNICAL MANUAL	TM 5-6115-600-12
	LUBRICATION ORDER	LO 5-6115-600-12
	GROUNDING ROD	5975-00-878-3791
	AUXILIARY FUEL LINE	4720-00-021-3320
MEP-952B	TECHNICAL MANUAL	TM 9-6115-664-13&P
MEP-903A/B/C	TECHNICAL MANUAL	TM 9-6115-670-14&P

APPENDIX M (CONT)**BII Listing**

PP/PU BII ITEMS			
	<u>BII TECHNICAL MANUALS</u>		<u>BII KIT # USED (SEE BELOW)</u>
AN/MJQ-42/43	TM 9-6115-658-13&P	TM 9-2330-202-14&P	2
PU-797 & AN/MJQ-35	TM 9-6115-659-13&P	TM 9-2330-202-14&P	1
PU-797A & AN/MJQ-35A	TM 9-6115-659-13&P	TM 9-2330-392-14&P	1
AN/MJQ-36	TM 9-6115-659-13&P	TM 9-2330-213-14&P	1
PU-798/799	TM 9-6115-660-13&P	TM 9-2330-202-14&P	1
PU-798A/799A	TM 9-6115-660-13&P	TM 9-2330-392-14&P	1
AN/MJQ-37/38	TM 9-6115-660-13&P	TM 9-2330-213-14&P	1
PU-800/802 & AN/MJQ-39	TM 9-6115-661-13&P	TM 9-2330-205-14&P	1
PU-801	TM 9-6115-661-13&P	TM 9-2330-202-14&P	1
PU-801A	TM 9-6115-661-13&P	TM 9-2330-392-14&P	1
PU-803/804 & AN/MJQ-40	TM 9-6115-662-13&P	TM 9-2330-205-14&P	1
PU-805/806 & AN/MJQ-41	TM 9-6115-663-13&P	TM 9-2330-205-14&P	1
PU-803B/804B & AN/MJQ-40B	TM 9-6115-662-13&P	TM 9-2330-205-14&P	1
PU-805B/806B & AN/MJQ-41B	TM 9-6115-663-13&P	TM 9-2330-205-14&P	1
AN/MJQ-32/33	TM 5-6115-640-14&P	TM 9-2330-202-14&P	3
PU-751/M	TM 5-6115-630-14&P	TM 9-2330-202-14&P	1
AN/MJQ-16	TM 5-6115-631-14&P	TM 9-2330-213-14&P	1
PU-753/M	TM 5-6115-632-14&P	TM 9-2330-202-14&P	1
AN/MJQ-18	TM 5-6115-633-14&P	TM 9-2330-213-14&P	1
AN/MJQ-25	TM 9-6115-650-14&P	TM 9-2330-213-14&P	1
PU-405A/M	TM 5-6115-625-14&P	TM 9-2330-205-14&P	1
PU-732/M	TM 9-6115-653-14&P	TM 9-2330-205-14&P	1
AN/MJQ-15	TM 5-6115-628-14&P	TM 9-2330-205-14&P	1
PU-406B/M	TM 5-6115-626-14&P	TM 9-2330-205-14&P	1
PU-760/M	TM 9-6115-652-14&P	TM 9-2330-205-14&P	1
AN/MJQ-10A	TM 5-6115-627-14&P	TM 9-2330-205-14&P	1
PU-789/M	TM 9-6115-647-14&P	TM 9-2330-247-14&P	1
PU-650B/G	TM 9-6115-648-14&P	TM 9-2330-205-14&P	1
PU-707A/M	TM 9-6115-651-14&P	TM 9-2330-205-14&P	1
AN/MJQ-12A	TM 5-6115-629-14&P	TM 9-2330-205-14&P	1
PU-495B/G	TM 9-6115-646-14&P	TM 9-2330-247-14&P	1
<u>BII KIT #1</u>	<u>NSN</u>		<u>QTY</u>
ADAPTER ASSY, FUEL DRUM	5342-00-066-1235		1
SLEDGE HAMMER, 8 LBS	5120-00-251-4489		1
SLIDE HAMMER	5120-01-013-1676		1
GROUND ROD ASSY	5975-00-878-3791		1
ELBOW, PIPE TO HOSE	4730-00-809-9703		1
CLAMP, HOSE	Type F, Size 12, SAE J1508		1
HOSE, NONMETALLIC, OIL DRAIN	88-20580-3		1
FIRE EXTINGUISHER, CO2	4210-01-361-6921		1 EA EXCEPT ALL MJQ% GET 2 FIRE EXTINGUISHERS

APPENDIX M (CONT)**BII Listing**

PP/PU BII ITEMS (CONT)		
BII KIT #2	<u>NSN</u>	<u>QTY</u>
ADAPTER ASSY, FUEL DRUM	5342-00-066-1235	1
SLEDGE HAMMER, 8 LBS	5120-00-251-4489	1
SLIDE HAMMER	5120-01-013-1676	1
GROUND ROD ASSY	5975-00-878-3791	1
FIRE EXTINGUISHER, CO2	4210-01-361-6921	2
ELBOW, PIPE TO HOSE	4730-00-916-2142	1
CLAMP, HOSE	4730-00-908-3195	1
HOSE, NONMETALLIC, OIL DRAIN	4720-00-670-6037	1
WRENCH BOX	5120-01-019-9564	1
BII KIT #3	<u>NSN</u>	<u>QTY</u>
STOWAGE RACK ASSY	13228E9902	1
ACCESSORY BOX	6115-01-230-0677	1
FITTED TARPAULIN	2540-00-926-0993	1
TARPAULIN BOW	2540-00-924-8478	1
TARPAULIN SUPPORT	2510-01-198-2885	1
SLEDGE HAMMER, 8 LBS	5120-00-251-4489	1
GROUND ROD	5975-00-878-3791	1
SLIDE HAMMER	5120-01-013-1676	1
EXTINGUISHER, FIRE, CO2	4210-01-361-6921	2
ANTENNA COVER	13228E9908	1
SWITCH BOX COVER	13228E9909	1
FUEL CAN, 5 GAL	7420-00-222-3088	1
FLEXIBLE SPROUT	7420-00-177-6154	1
FUEL DRUM ADAPTER	5342-00-066-1235	1
CABLE REEL	8130-00-656-1090	1
GROUND WIRE, 12" (2), 28", 60", 96", 120", & 136"		1 EA

TB 11-6115-741-24
APPENDIX N
CIM CHECKING PROCEDURE

I. If the Master Switch is turned on and the CIM does not boot up (black display):

A. Check the battery voltage. There must be at least 20 volts.

- 1) If the batteries are discharged, charge them or slave cable the generator set to a fully charge 24 volt power source. Return to Step I.
- 2) If there is sufficient battery voltage proceed to Step B.

B. Check the Network Failure light on the Control Panel:

1) If the Network Failure light is off, check the ambient temperature.

a. If ambient temperature is high, try cooling CIM down by closing the door, shading the control panel, etc. If unreadable after cooling, replace CIM.

b. If temperature is normal, adjust Contrast using procedure below.

c. If contrast cannot be adjusted, replace CIM.

2) If the Network Failure light is on, then turn off the master switch. Remove the screws holding the CIM to the set. Pull the CIM partially out of the set and remove the P27 cable from the back of the CIM. Turn on the master switch.

a. If the CIM boots up and its heart is beating on the screen, the CIM is functioning properly. Troubleshoot the P27 Cable and DCS components.

b. If the CIM does not boot up. Turn off the master switch, and disconnect P31 from the back of the CIM. Turn the Master Switch on and check if 24 VDC is present between Pins 1 & 8 and Pins 3 & 7. Pins 1 & 8 are positive and Pins 3 & 7 are connected to ground. The pin configuration of connector P31 can be found on the Wiring Diagram, Sheet 1 of 2, F0-3.

c. If generator set battery voltage (normally 24 VDC) is not present between Pins 1, 8 and Pins 3, 7, troubleshoot and repair the wiring between the batteries and the CIM.

d. If there is Battery voltage (at least 20 VDC) present at P31, the CIM has failed is broken and must be replaced.

II EMERGENCY CONDITIONS.

If the CIM is dark and the network failure light is off after one minute, attempt to start the set following the appropriate procedures.

If the set starts, then you can close the contactor and carefully check the voltage and frequency using a multimeter across the load terminals. If voltage and frequency are within acceptable limits then the set is operational and can be monitored using the remote operation system. The protective devices should operate; however, you will have to check the fuel manually.

Other troubleshooting hints and information:

P27 is the data connector for the CIM. P31 provides 24VDC from the Master Switch, S3 to power the CIM.

The CIM boots after at least 20 VDC is applied to the CIM power connector, J31. The CIM can be checked by disconnecting P27, and turning on the Master Switch which will apply 24 VDC to the CIM.

If the CIM doesn't boot with P27 disconnected, the power to the CIM should be checked with a VOM. If at least 20 VDC is present at P31 (Pins 1 & 8 are positive, Pins 3 & 7 are ground) and the CIM doesn't boot, the CIM is defective.

APPENDIX N (CONT.)

To check the P27 cable, connect it to a working CIM and DCS. With the master switch ON remove one connection at a time from the individual components at the other end of the P27 cable. If the CIM boots up when a connection is removed from a component, then that section of P27 is broken.

Testing procedures for the DCS Load Sharing Synchronizer A2, DCS Speed Control Unit A3, Automatic Voltage Regulator A4, Backplane Module A1, and I/O Interface Module A5 can be found in the respective Generator Set TMs.

CIM CONTRAST ADJUST PROCEDURE (Black and White CIM)

MCII has found a pattern in the failure modes (about 40% according to MCII) for the CIM coming back on warranty claims. Many CIMs come back with the contrast out of whack. There are two pins in the P27 connector that, when shorted to ground, will adjust the contrast set point to higher or lower than normal. This will either cause the CIM display to go fully dark or fully light. The problem is that some of the wires in the ribbon cable that are connected to these two pins are not cut short enough in the manufacturing process. Vibration, transportation, shock, etc. can cause one or both of these wires to make contact now and then with the metal case of the P27 connector. Each time this happens, the contrast is adjusted a little more away from normal range. In the end this yields a set that is producing power but cannot be monitored.

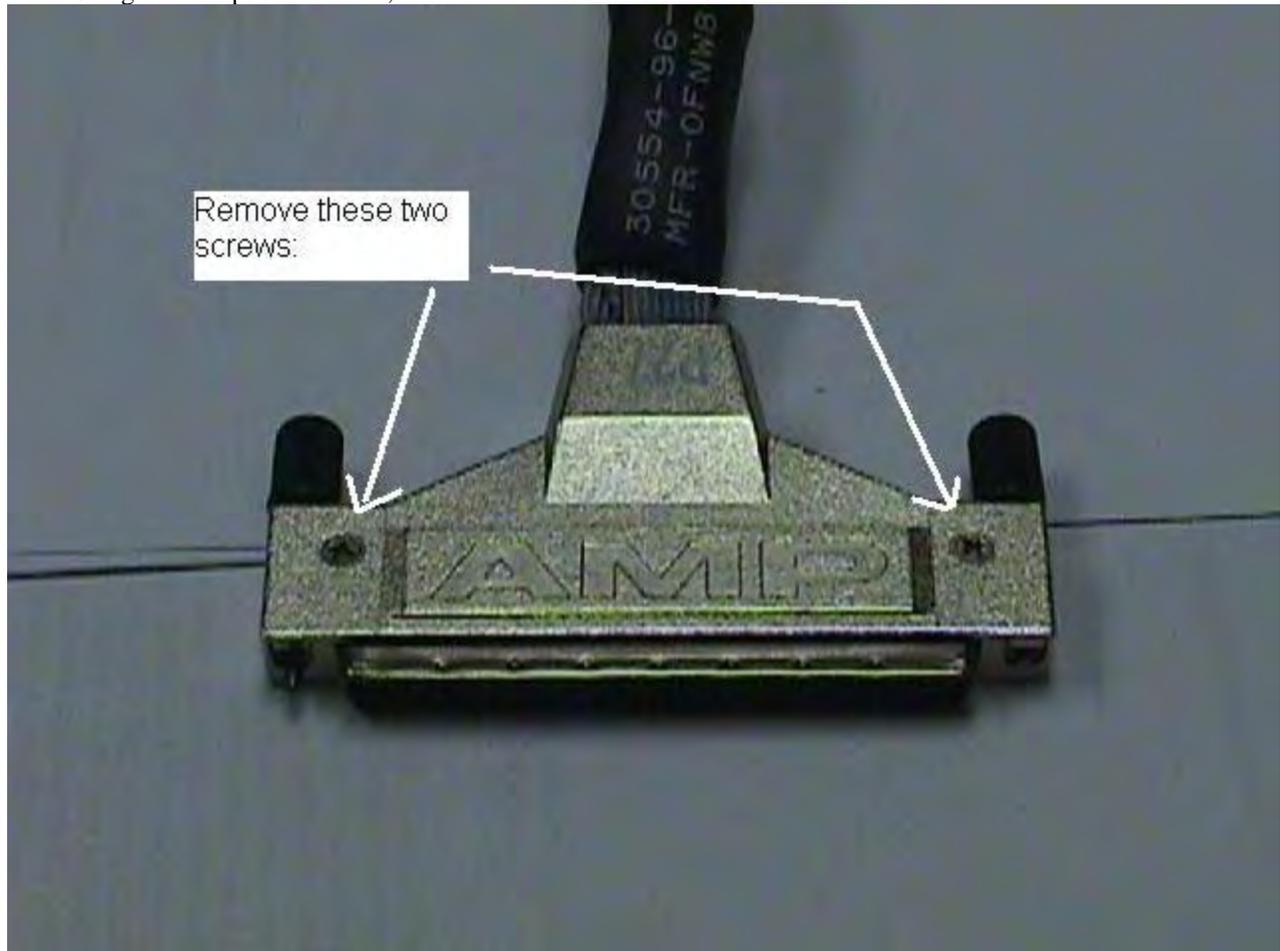
P27 connector repair procedure.

Equipment Required

1. #1 Phillips Screwdriver
2. Electrical Insulating tape, %wide

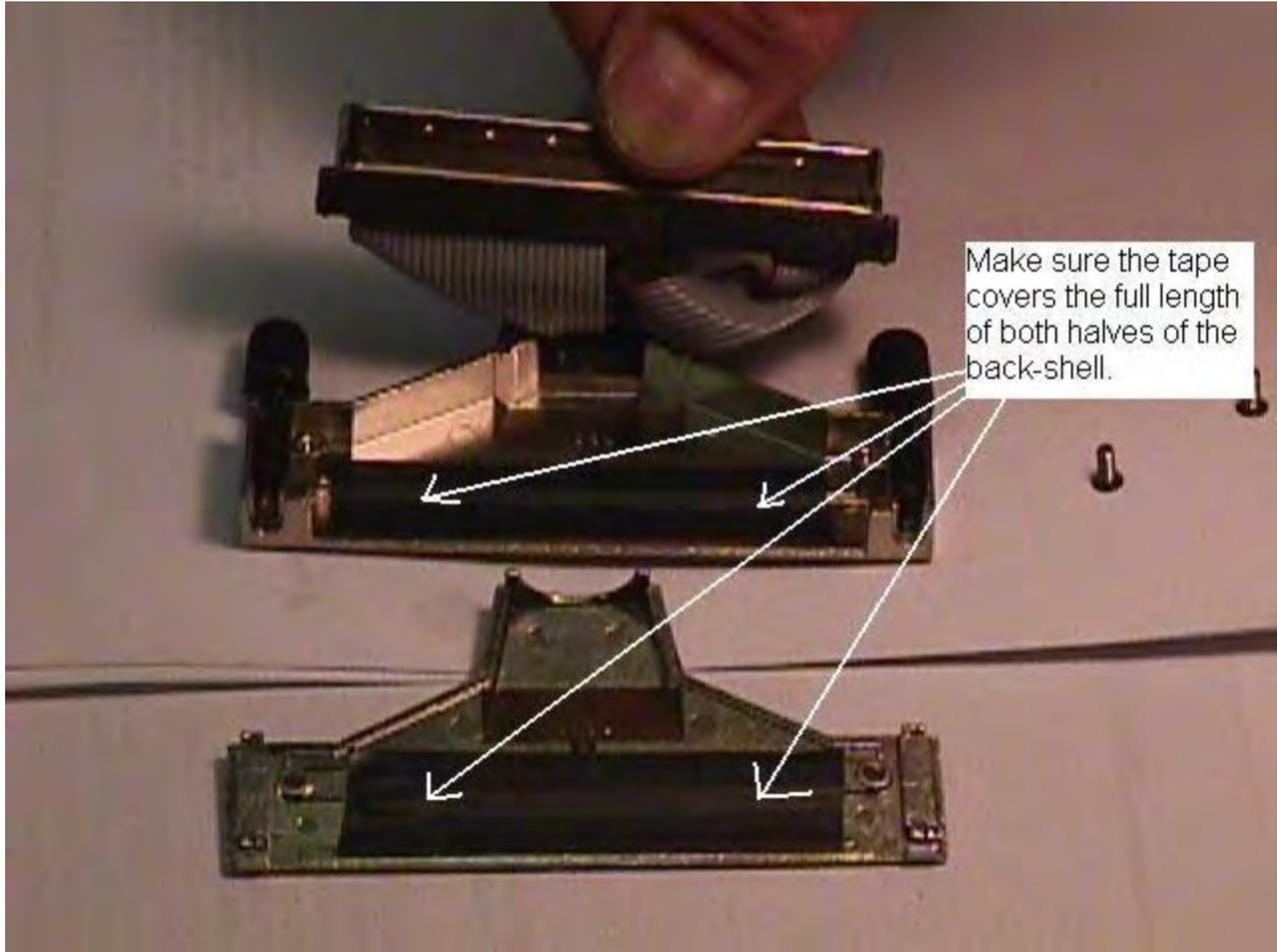
Instructions

1. Remove CIM from TQG in accordance with Tech Manual instructions.
2. Using #1 Phillips screwdriver, remove the back-shell screws from P27 as shown below.



APPENDIX N (CONT.)

3. Apply electrical insulating tape as shown below. It may be necessary to trim the tape so that it is less than %wide.



4. Reassemble the back-shell making sure that the thumb screws and ribbon cable fit properly. This will prevent unwanted changes in the contrast of the CIM display screen.

Use the adjustment cable to set the contrast back to normal. To make the contrast adjustment, attach the adjustment cable to P27 connection on the CIM and connect the P31 power supply. Power the CIM up and make the contrast adjustments by repeated clicks of the toggle switch in one direction. If this does not produce a change after a few clicks try the other direction on the switch. Each click on the switch increases or decreases the contrast by a set amount depending on the direction the switch is activated. After you have achieved the desired contrast, reinstall the repaired P27 cable.

APPENDIX O

MEP-814A MODIFICATIONS

1.0 Main Generator Support Brackets and Cylindrical Stud Mount Modification

1.1 Parts:

Item Number	Description	Drawing or Part Number	Quantity
1	Bracket Assembly, LH	SKU4000	1
2	Bracket Assembly, RH	SKU4001	1
3	Cylindrical Stud Mount	A53-061	1

1.2 Procedures for Installing Main Generator Support Brackets and Cylindrical Stud Mount (with panels on):

1. Shut down generator set; verify that set is shut down.
2. Place Emergency Stop switch (red button on control panel) in "stop" position (push in.)
3. Open RH (viewed from control panel end) engine access door
4. Place Dead Crank switch in "off" position.
5. Open battery access door.
6. Following the chart on the battery access door, disconnect negative lead from battery on RH (viewed from battery box end of set) side of battery compartment.
7. Disconnect generator output cable connector from output cable receptacle.
8. Open air cleaner access door
9. Disconnect connector from PATRIOT remote functions relay box receptacle.
10. Open load terminal access door and remove 8 (ea) screws, nuts and washers securing output cable receptacle to main generator access panel.
11. Remove fasteners securing main generator access panel and remove access panel.
12. Open LH (viewed from control panel end) engine access door.
13. Using 3/4" wrench or socket, remove fasteners from maintenance support brackets on LH and RH side of flywheel housing.
14. Remove and retain maintenance support brackets
15. Remove 1 (ea) set of bolts, nuts and washers from control panel end of LH (viewed from control panel) fuel tank retaining bracket.
16. Remove 1 (ea) set of bolts, nuts and washers from control panel end of RH (viewed from control panel) fuel tank retaining bracket.
17. Obtain 1 (ea) LH (viewed from control panel end) support bracket (**Fig 1, Item 1**) and 1 (ea) cylindrical stud resilient mount (**Fig 1, Item 3**, and associated hardware). (**Parts Required**)
18. From inside of set, insert one end (3/8"stud) of cylindrical stud mount through the open fuel tank retaining bracket hole and through the skid base.
19. From inside of set, place foot of support bracket (single hole) over the other end (top) of the cylindrical stud mount.
20. Align 3 (ea) holes in support bracket top plate with threaded holes in flywheel housing.
21. Start 3 (ea) bolts in flywheel housing through support bracket top plate.
22. Install 1 (ea) 3/8" flat washer, 3/8" lock washer, and 3/8" NC nut on each cylindrical mount stud and tighten securely.
23. Tighten top plate bolts securely.
24. Repeat steps 12-23 for RH support bracket (**Fig 1, Item 2**) installation. (**Parts Required**)
25. Secure all wire bundles and hoses around support brackets with plastic straps to prevent chafing.
26. Place maintenance support brackets in battery box door storage compartment.
27. Reinstall main generator access panel.
28. Reconnect connector to PATRIOT remote functions relay box receptacle.
29. Close air cleaner access door
30. Secure output cable receptacle to main generator access panel.
31. Close load terminal access door.

APPENDIX O (CONT)

32. Reconnect output cable connector.
33. Reconnect negative battery lead.
34. Close battery access door.
35. Place Dead Crank switch in "normal" position.
36. Close RH and LH engine access doors.
37. Place Emergency Stop switch in "normal" position (pull out.)
38. Installation process complete.

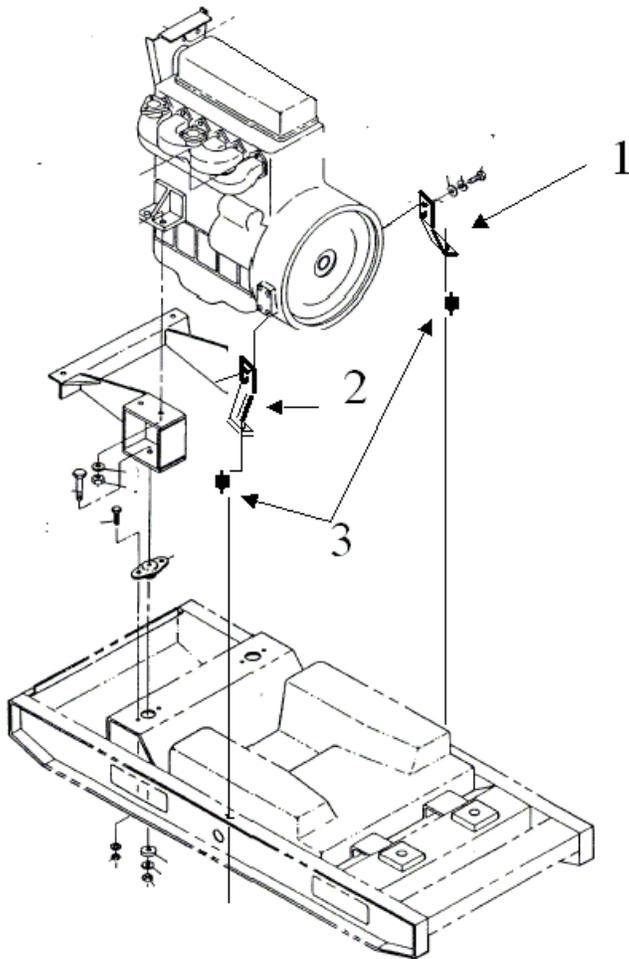


Figure 1. Main Generator Support Brackets and Cylindrical Stud Mount

APPENDIX O (CONT)

2.0 Main Generator Constrained-Layer Damping System Modification

2.1 Parts:

Description	Drawing Number	Quantity	Source
Modified Disc Coupling	AAP1616NS	2	American Acoustical Products 631-271-4490

2.2 Procedures for Installing Main Generator Constrained-Layer Damping System:

1. Install disc coupling as per TM 9-6115-643-24, paragraph 4-16 using assembly provided under American Acoustical Products drawing # AAP1616NNS.

3.0 Exhaust System Modification

3.1 Parts:

Description	Part Number	Quantity	Source
Adapter Pipe	82852 17517	1	AutoZone

3.2 Procedures for Installing Exhaust System:

1. Remove exhaust flange clamp securing muffler flex pipe to exhaust flange. Retain clamp.
2. Separate muffler flex pipe and exhaust flange.
3. Lift muffler and flex pipe assembly as a unit up through baffle and remove from set.
4. Place muffler (**Fig 2, Item 1**) in suitable clamp or vise
5. Using a band saw, or equivalent, remove 2%of flex pipe from the exhaust flange end of the muffler flex pipe. (**Fig 2, Note 1**) Discard removed flex pipe.
6. Place adapter pipe in suitable clamp or vise. (**Fig 2, Item 2**)
7. Cut relief slots in adapter pipe (4 places) as shown. (**Fig 2, View A, Note 3.**)
8. Using accepted welding practices, weld muffler pipe extension to end of muffler flex pipe. (**Fig 2, Note 2**)
9. Reinstall muffler and flex pipe assembly through baffle.
10. Fit muffler pipe extension over exhaust flange.
11. Secure muffler pipe extension to exhaust flange with clamp. Tighten securely.
12. Task complete.

NOTES:

1. Cut 2 inch length from flex pipe.
2. Cut relief slots 0.0265 inch at four places.
3. Weld adapter pipe to flex pipe.

APPENDIX P

SWITCH BOX 13229E5820 MODIFICATIONS

1.0 ISSUE. The insulation on the contactor control switch harness wires that are routed underneath the CCA metal bracket can be rubbed off by contact with the bracket. This allows the wire to short to the bracket as seen in Figures 1 and 2 below.

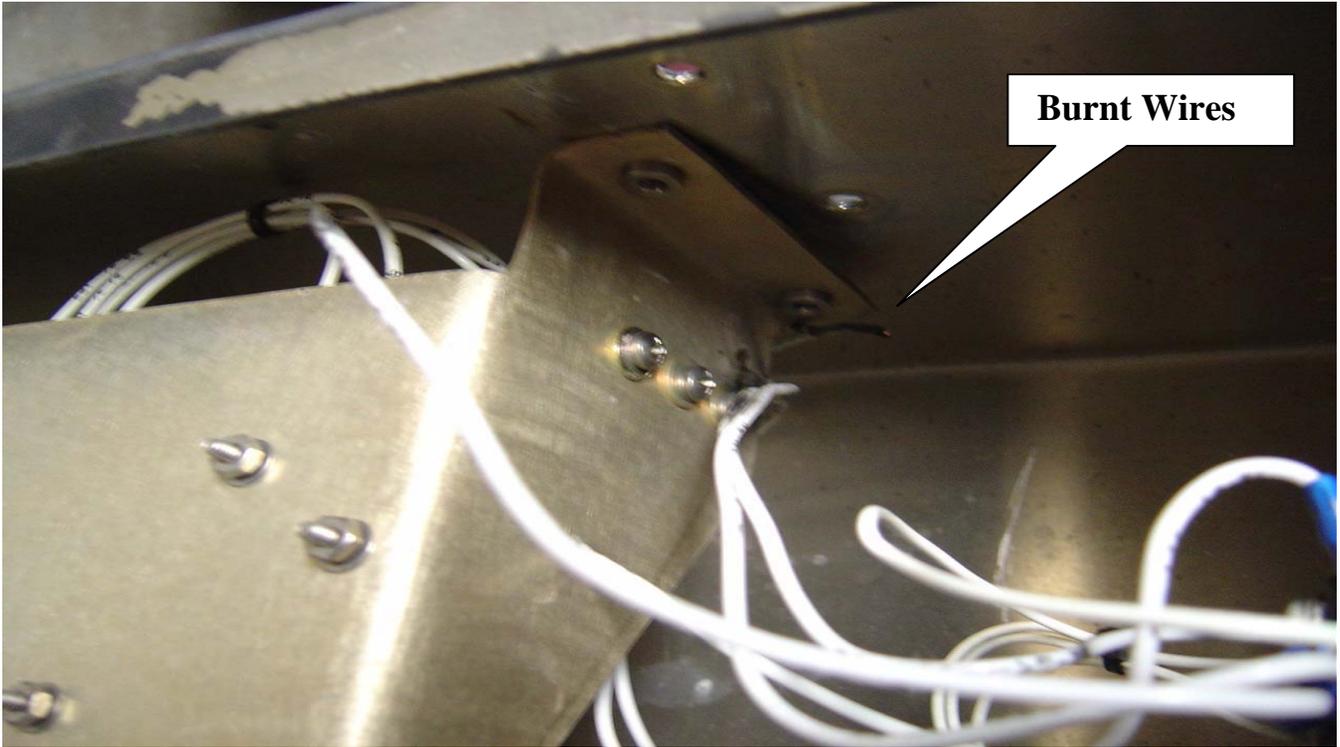


Fig 1

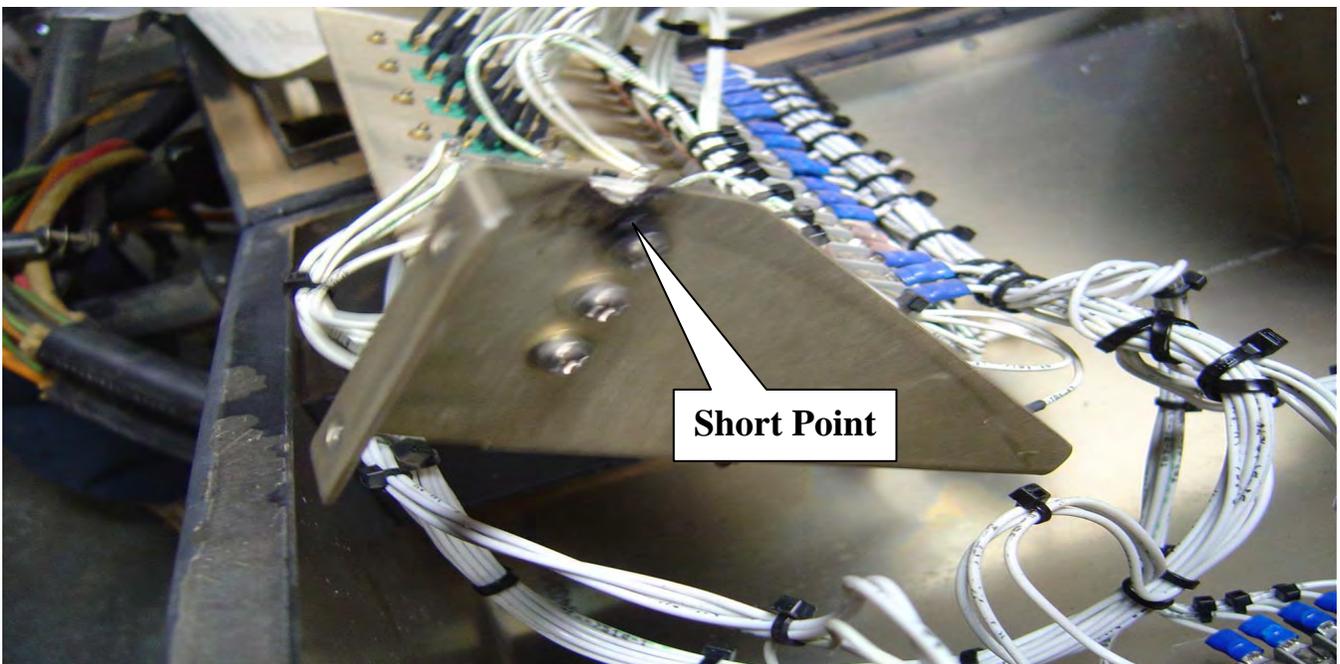


Fig 2

APPENDIX P (CONT)

1.1 Modification Parts:

Description	NSN	Quantity	Source
Cable Clamp	5340-01-476-9004	1	n/a
Tie Down Strap	5975-00-074-2072	A/R	n/a
Edge Protector	P/N 62B7X1/16-GRGB	A/R	TRIM-Lok Inc.

1.2 Procedures for Installing Modifications:

1. Install edge protector on CCA bracket as shown in Figures 3 and 6.

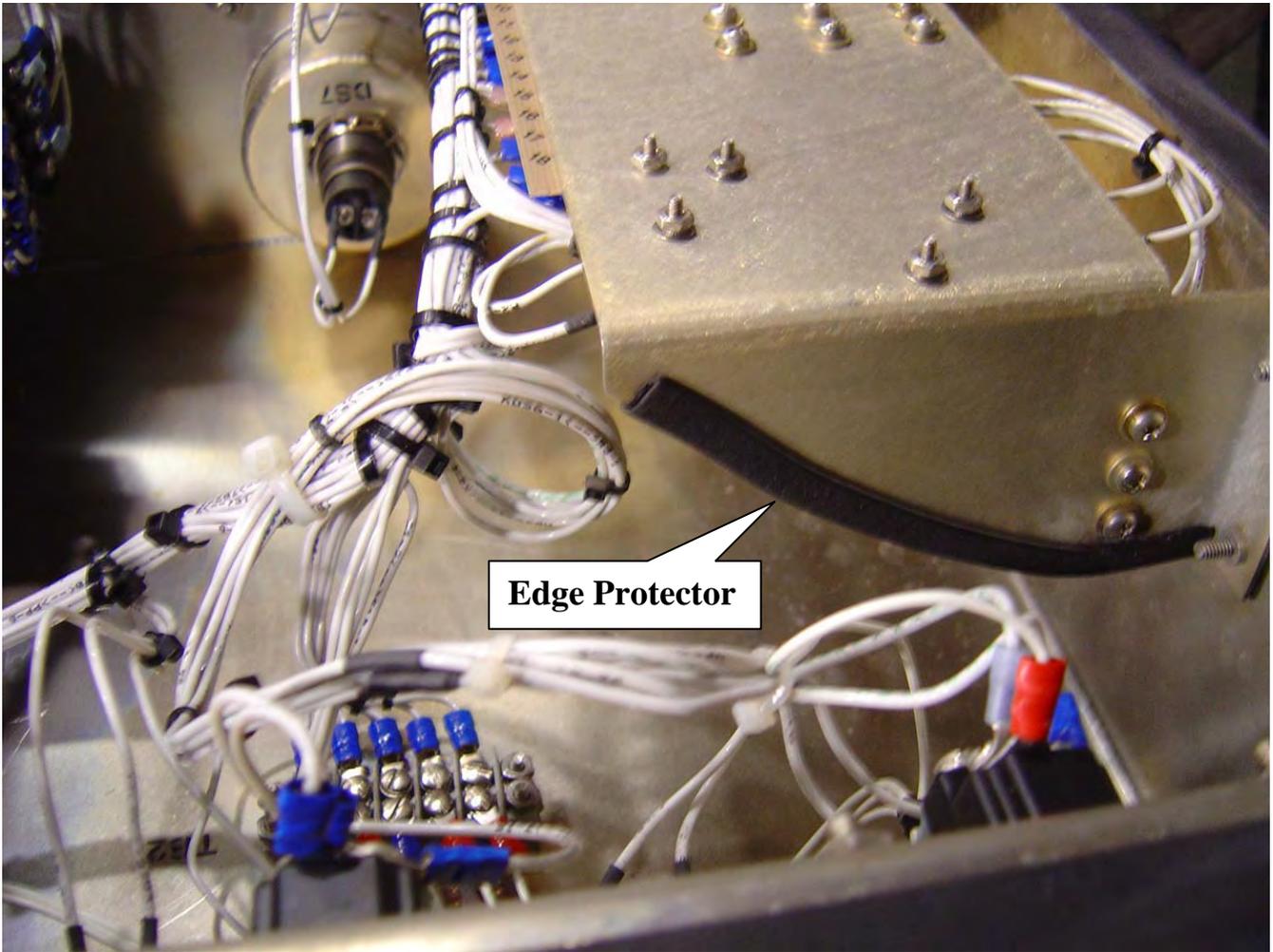


Fig 3

APPENDIX P (CONT)

2. Install cable clamp as shown in Figures 4 and 6. Insert PP relay harness in clamp to keep harness away from the top edge of the frame.

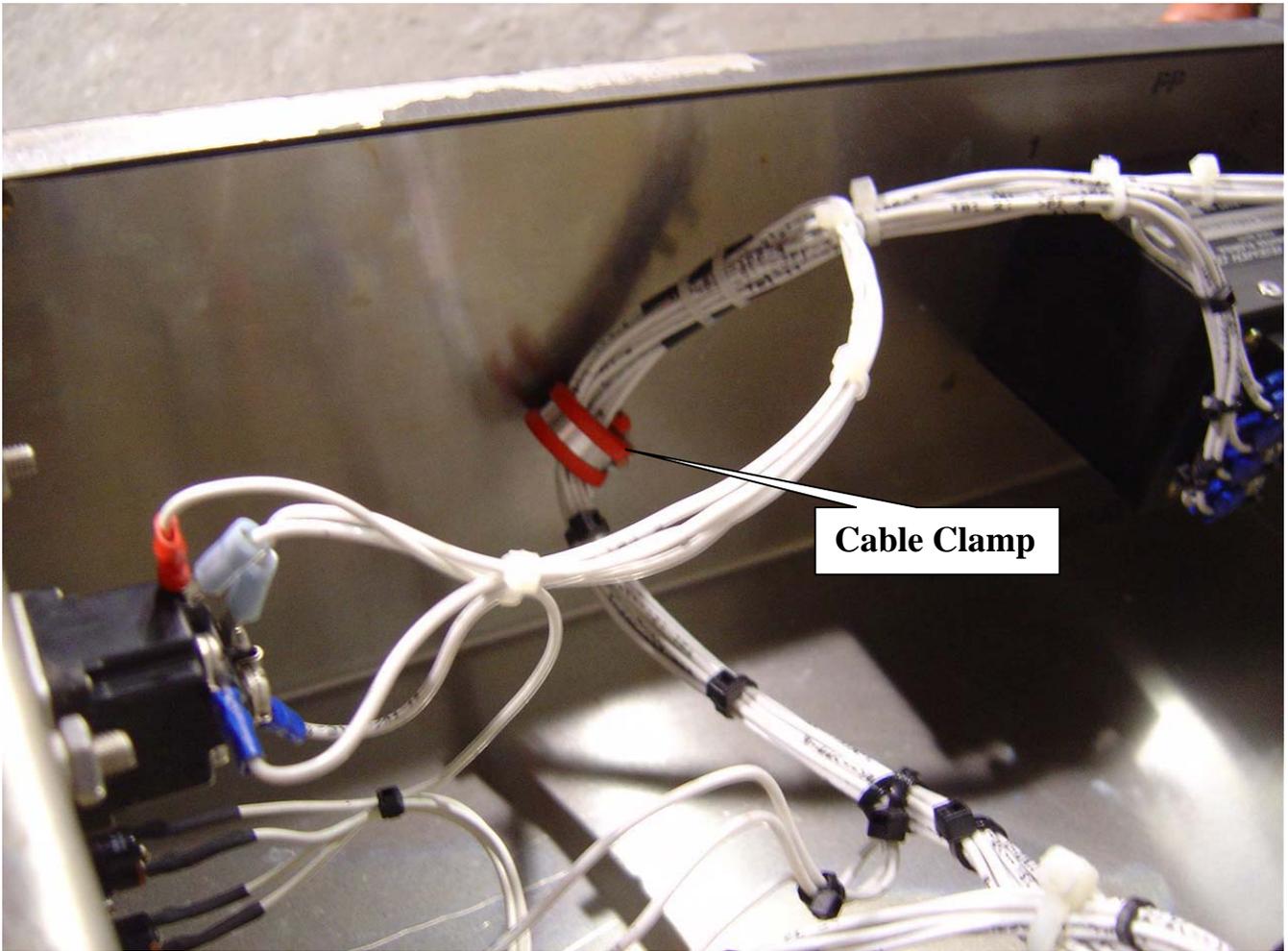


Fig 4

APPENDIX P (CONT)

3. Pull the harness out from underneath the CCA bracket and away from the frame near the contactor control switch and wire-tie to the existing harness running down the middle of the box. Install tie down straps as shown in Figures 5 and 6.

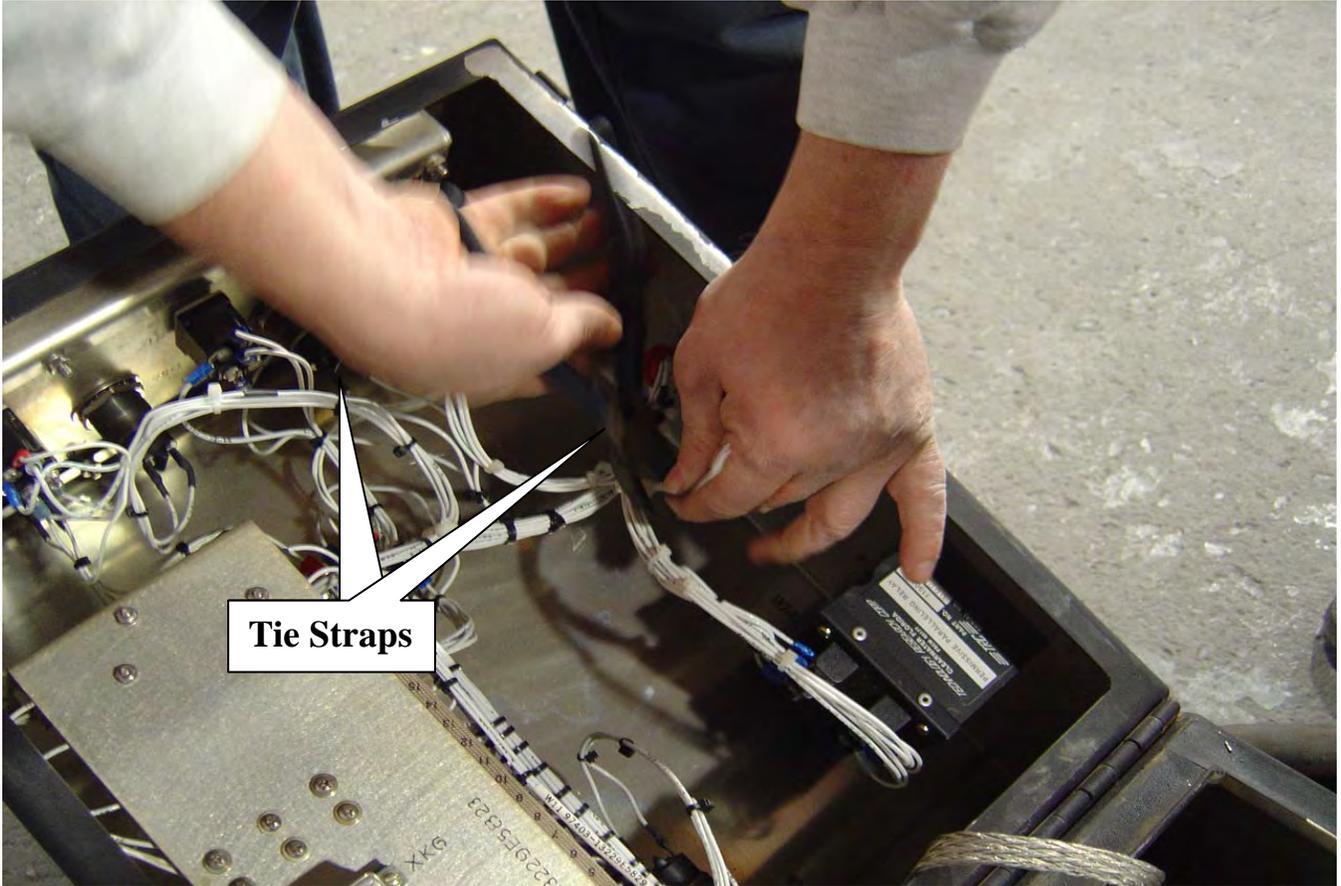


Fig 5

APPENDIX P (CONT)

4. Completed modifications shall be as shown in Figure 6.

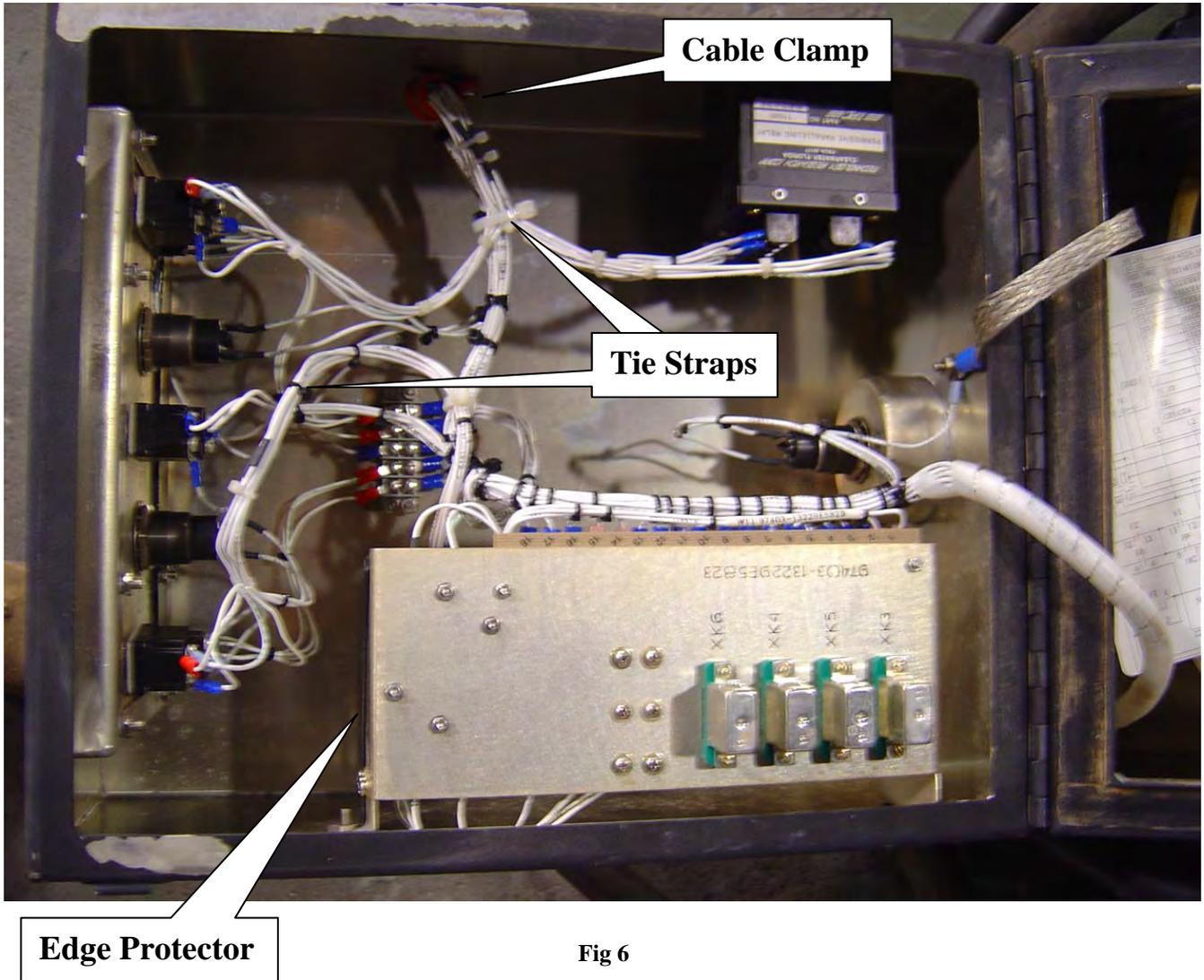


Fig 6

GLOSSARY

10/20 Maintenance Standards.....	Equipment meets 10/20 maintenance standards if the equipment is fully mission capable in accordance with the inspection criteria of the -10 and -20 level Preventative Maintenance Checks and Services (PMCS) of the applicable equipment TM(s).
APU	Auxiliary Power Unit
GFCI.....	Ground Fault Circuit Interrupter
MTG	Military Tactical Generator
NDT.....	Non-Destructive Testing
OEM	Original Equipment Manufacturer
QA	Quality Assurance
RESET.....	A series of actions taken to restore unit equipment to a desired level of combat capability after returning from contingency operations.
STIR	Special Test, Inspection and Repair
SWA	Southwest Asia
TIER 1	DS/GS level of maintenance
TIER 2	Depot or OEM level of maintenance
TM	Technical Manual
TQG.....	Tactical Quiet Generator

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is OAASA				Use Part II (reverse) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).		DATE 30 August 2002
TO: (Forward to proponent of publication or form) (Include ZIP Code) Commander, US Army C-E LCMC ATTN: AMSEL-LC-LEO-E-ED Fort Monmouth, NJ 07703-5006				FROM: (Activity and location) (Include ZIP Code) Jane Q. Doe, SFC 1234 Any Street Anytown, AL 34565		
PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS						
PUBLICATION/FORM NUMBER TM 11-1234-567-14			DATE 16 Sep 2001		TITLE Operator, Field and Sustainment Support Maintenance Manual for Radio, AN/ABC-123	
ITEM	PAGE	PARA-GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON
1	WP0005 PG 3		2			Test or Corrective Action column should identify a different WP number.
TYPED NAME, GRADE OR TITLE Jane Q. Doe, SFC				TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION 123-4567		SIGNATURE

EXAMPLE

TO: (Forward to proponent of publication or form) (Include ZIP Code)				FROM: (Activity and location) (Include ZIP Code)			DATE	
PART II- REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS								
PUBLICATION/FORM NUMBER				DATE		TITLE		
PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION
EXAMPLE								
PART III - REMARKS (Any general remarks, corrections, deletions, or suggestions for improvement of publications and blank spaces. Additional blank space may be used if more space is needed.)								
EXAMPLE								
TYPED NAME, GRADE OR TITLE			TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION			SIGNATURE		

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is OAASA					Use Part II (reverse) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).		DATE
TO: (Forward to proponent of publication or form) (Include ZIP Code)					FROM: (Activity and location) (Include ZIP Code)		
PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS							
PUBLICATION/FORM NUMBER				DATE		TITLE	
ITEM	PAGE	PARA- GRAPH	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON	
TYPED NAME, GRADE OR TITLE				TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION		SIGNATURE	

TO: (Forward to proponent of publication or form) (Include ZIP Code)	FROM: (Activity and location) (Include ZIP Code)	DATE
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PART II- REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION/FORM NUMBER	DATE	TITLE
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PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III - REMARKS (Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE
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RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is OAASA					Use Part II (reverse) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).		DATE
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PART II- REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

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By Order of the Secretary of the Army:

Official:



JOYCE E. MORROW

*Administrative Assistant to the
Secretary of the Army*

0915209

GEORGE W. CASEY, JR
*General, United States Army
Chief of Staff*

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