

TECHNICAL MANUAL

**INTERMEDIATE DIRECT SUPPORT AND
INTERMEDIATE GENERAL SUPPORT**

MAINTENANCE MANUAL

**LOCOMOTIVE, DIESEL-ELECTRIC,
56-1/2-INCH GAGE, 80-TON, 670 HP,
0-4-4-0 WHEEL,
MODEL B-B-160/160-4GE747-A1
NSN 2210-01-158-2980**

Approved for public release; distribution is unlimited

TECHNICAL MANUAL

NO. 55-2210-224-34

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 21 July 1987

INTERMEDIATE DIRECT SUPPORT AND INTERMEDIATE GENERAL SUPPORT MAINTENANCE MANUAL

LOCOMOTIVE, DIESEL-ELECTRIC,
56-1/2-INCH GAGE, 80-TON, 670 HP,
0-4-4-0 WHEEL, MODEL B-B-160/160-4GE747-A1
NSN 2210-01-158-2980

Approved for public release; distribution is unlimited

REPORTING OF 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. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 (Recommended Changes to Equipment Technical Publications), located in the back of this manual direct to: Commander, US Army Troop Support Command, ATTN: AMSTR-MCTS, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished to you.

TABLE OF CONTENTS

			Page
CHAPTER 1	1	INTRODUCTION	
Section	I	General Information	1-1
	II	Equipment Description and Data	1-3
CHAPTER 2	2	LOCOMOTIVE MAINTENANCE INSTRUCTIONS	
Section	I	Repair Parts, Special Tools, TMDE, and Support Equipment	2-1
	II	Quarterly and Annual Checks and Services	2-1
	III	General Maintenance Instructions	2-7
	IV	Preparation for Storage or Shipment	2-9
CHAPTER 3		INTERMEDIATE DIRECT SUPPORT MAINTENANCE INSTRUCTIONS	
Section	I	Repair Parts, Special Tools, TMDE, and Support Equipment.....	3-1
	II	Intermediate Direct Support and Intermediate General Support Troubleshooting	3-1
	III	Intermediate Direct Support Maintenance Instructions	3-28
CHAPTER 4		INTERMEDIATE GENERAL SUPPORT MAINTENANCE INSTRUCTIONS	
Section	I	Repair Parts, Special Tools, TMDE, and Support Equipment	4-1
	II	Intermediate General Support Maintenance Instructions	4-1

TABLE OF CONTENTS (cont)

		Page
APPENDIX A	REFERENCES	A-1
APPENDIX B	EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST	B-1
APPENDIX C	ILLUSTRATED LIST OF MANUFACTURED ITEMS	C-1
APPENDIX D	TORQUE LIMITS	D-1
INDEX.....		Index 1
FO-1	AIR PIPING SCHEMATIC	FP-1/FP-2
FO-2	ELECTRICAL SCHEMATIC	FP-3/FP-4
FO-3	WIRE RUN LIST	FP-9/FP-10

CHAPTER 1

INTRODUCTION

Section I. GENERAL INFORMATION

1-1. SCOPE

MODEL NUMBER AND NAME: B-B-160/160-4GE747-A1, 80-ton diesel-electric locomotive.

PURPOSE OF EQUIPMENT: Used for general yard switching or short-line railway service. Can be used as a single unit or connected in multiple-unit operation under one operator.

TYPE OF MANUAL: Intermediate Direct Support and Intermediate General Support Maintenance.

- a. This manual is published for the use of personnel engaged in the inspection and maintenance of the 80-ton diesel-electric locomotive. It shall be used as a guide for regulations, standards, and procedures governing such work assignments.
- b. Maintenance portion of this manual provides guidance to intermediate direct support and intermediate general support level maintenance personnel. The purpose of each assembly and subassembly, and general overall locomotive maintenance procedures are given. Also included is a general troubleshooting guide to aid in inspection, removal, disassembly, cleaning, inspection, repair, assembly, and installation of components. General functions of the main features are given as an aid to provide a concise understanding of major and minor components.

1-2. MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, The Army Maintenance Management System (TAMMS).

1-3. PREPARATION FOR STORAGE OR SHIPMENT

Refer to TM 55-2210-224-12, Operator and Unit Maintenance Manual for Locomotive, for information pertaining to the preparation for storage or shipment.

1-4. QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

- a. Refer to Federal Railroad Administration (FRA) Form 6180-49A to document 92-day Locomotive Inspection and Repair Record in accordance with Locomotive Inspection Act, 36 State, 913. The form must be completed and signed by the personnel conducting the inspection. The completed form shall be placed in the card holder in the locomotive cab. A copy shall be retained for a period of 2 years. Refer to TB 55-2200-207-15/1, Inspection and Maintenance Checklist for Diesel-Electric Locomotive, for intermediate direct support and intermediate general support maintenance's 92-day inspection of the locomotive. The checklist and DA Form 2407, Maintenance Request, will be used as prescribed in DA PAM 738-750.
- b. Refer to TB 55-2200-207-15/1 for intermediate direct support maintenance inspection of the locomotive. The checklist in TB 55-2200-207-15/1 and DA Form 2407 will be used as prescribed in DA PAM 738-750.

1-5. CALIBRATION

Measuring and test equipment used to determine equipment conformance will be calibrated in accordance with MIL-STD-120, Gage Inspection, MIL-STD-45662, Calibration Systems Requirements, and MIL-I-45607, Acquisition, Maintenance, and Disposition of Inspection Equipment.

1-6. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your locomotive needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you do not like about your equipment. Let us know why you do not like the design or performance. Tell us why a procedure is hard to perform. Put it on an SF 368 (Quality Deficiency Report). Mail it to: Commander, US Army Troop Support Command, ATTN: AMSTR-QX, 4300 Goodfellow Blvd. , St. Louis, MO 63120-1798. We'll send you a reply.

1-7. WARRANTY INFORMATION

- a. The NTA-855-L4 diesel engine is warranted by Cummins Engine Company for 12 months or 1000 hours of operation, whichever comes first. Warranty starts on the date found on DA Form 2408, Equipment Log Assembly, or DA Form 2410, Component Removal and Repair/Overhaul Record, in the logbook.
- b. The AVLALBBF99999 Air Compressor is warranted for 1 year from the date of receipt of the warranty card by the Gardner Denver Division of Cooper Industries. Upon receipt of the locomotive, the warranty card must be properly filled out and sent to the manufacturer. Report defects in material or workmanship to your supervisor, who will take appropriate action.

Section II. EQUIPMENT DESCRIPTION AND DATA

1-8. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

CHARACTERISTICS

An eight-wheel, four-traction-motor-driven, 80-ton diesel-electric locomotive.

CAPABILITIES

Used as a yard switching locomotive or short-line railway service and includes features listed below. Description of major components and systems is listed in the applicable maintenance paragraphs. Can also be operated as a single unit or connected with other units of the same type for multiple unit operation.

FEATURES

Include the following:

- Diesel engines
- Main generators
- Battery charging alternators
- Traction motors
- Air compressors
- Airbrake system
- Sanding system