

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

LOCOMOTIVE

DIESEL ELECTRIC

56½" GAGE, 44 TON

0-4-4-0, 400 HP

DAVENPORT BESLER



DEPARTMENT OF THE ARMY NOVEMBER 1955

**LOCOMOTIVE, DIESEL ELECTRIC, 56½" GAGE, 44 TON,
0-4-4-0, 400 HP, DAVENPORT BESLER**

	Para- graph	Page
CHAPTER 1. INTRODUCTION		
Section I. General.....	1-3	1
Section II. Description and data	4, 5	3
CHAPTER 2. OPERATING INSTRUCTIONS		
Section I. Service upon receipt of locomotive-	6-12	5
Section II. Controls	13, 14	5
Section III. Detailed function of equipment	15-18	6
Section IV. Starting the power plant-	19, 20	9
Section V. Operating the locomotive	21, 22	9
Section VI. Operation of auxiliary equipment	23-27	11
CHAPTER 3. MAINTENANCE INSTRUCTIONS		
Section I. Removal of equipment for service	28-36	14
Section II. Lubrication	37-44	16
Section III. General maintenance	45-48	21
Section IV. Preventive maintenance services	49-52	21
Section V. Troubleshooting	53-61	24
Section VI. High potential tests	62-64	25
Section VII. Traction generator	65-71	26
Section VIII. Auxiliary generator	72-77	33
Section IX. Traction motor	78-85	38
Section X. Miscellaneous control equipment	86-96	48
Section XI. Speed indicating equipment	97-99	62
Section XII. Kerosene burning heaters-	100-104	64
Section XIII. Internal bell ringer assembly	105-107	66
Section XIV. Oil filter	108, 109	67
Section XV. Compressor governor	110-113	69
Section XVI. Battery instructions	114-136	71
INDEX.....		82

CHAPTER 1

INTRODUCTION

Section 1. GENERAL

1. Scope

This manual is published for the information and guidance of the personnel concerned with the operation and maintenance of Davenport Besler Company 44 Ton, 400 HP, Diesel Electric Locomotive, providing information and instructions for carrying out their duties and discharging their responsibilities. This manual outlines procedures for necessary inspection and proper maintenance by trained personnel familiar with locomotive construction and repair.

2. References

- a. TC 7 & 8 L-78 Locomotive, Diesel Electric, 56½" Gage, 44 Ton 0-4-4-0, 400 HP, Davenport Besler (TC Stock No. 58-4991-05-518).
- b. TM 55-270-Operation Of Railroads, General Instructions For The Inspection And Maintenance Of Locomotives And Locomotive Cranes.
- c. TM 55-271-Operation Of Railroads, Diesel Electric locomotives.
- d. TM 55-405-Preventive Maintenance Of Electric Motors and Generators.
- e. TM 55-1046-Operator's Instructions for Caterpillar Diesel D17000 Power Unit.
- f. TM 55-1046-1-Engines, Caterpillar D17000, Locomotive, Electrical Set, Industrial, Marine.
- g. TM 55-2029-Brake Equipment 6-SL For Diesel Electric Yard Switching Locomotives (Westinghouse Air Brake Pamphlet 5046-15).

h. TM 55-2034-Air Compressors 4-YC and Z For Diesel Electric Locomotives (Westinghouse Air Brake Instruction Pamphlet 5002-5, Sup. 1).

i. LO 55-1279-Locomotive, Diesel Electric (561/2" Gage, 44 Ton, 04-4-0, 400 HP, Davenport Besler).

3. Standard Forms and Records

- a. DD Form 862-Daily Inspection Work Sheet For Diesel Electric Locomotives (Cut Sheet).
- b. DD Form 863-Monthly And Semi-Annual Inspection Work Sheet For Diesel Electric Locomotives.
- c. DD Form 864-Annual Inspection Work Sheet For Diesel Electric Locomotives.
- d. DD Form 438-1-Railway Equipment Report, Motive Power Other Than Steam-Part 1-Registry Assignment And Service Record (Cut Sheet).
- e. DD Form 438-5-Railway Equipment Maintenance (Exclusive of Rolling Stock) (Cut Sheet).
- f. DD Form 865-Daily Assignment Work Sheet For Locomotives And Locomotive Cranes (Cut Sheet).
- g. DA Form 55-154-Record Of Special Tests Made On Air Brake Equipment (Cut Sheet).
- h. DA Form 55-226-Daily Inspection Report Locomotives and Locomotive Cranes (Cut Sheet).
- i. DA Form 55-230-Monthly Inspection And Repair Report Of Locomotives And Locomotive Cranes Other Than Steam (Cut Sheet).

Section II. DESCRIPTION AND DATA

4. General Description

This locomotive has two Caterpillar Model D17000 diesel engines, each nominally rated 190 hp at 1,000 rpm. Each engine is directly connected to a Westinghouse type 195A, direct current, shunt wound generator. The generators which supply electrical energy to the traction motors are equipped with windings

for use in starting the engines by storage battery power. When the engines are shut down, auxiliary power is supplied by two 16 cell, lead acid type batteries which are recharged by the auxiliary generators. The auxiliary power is furnished at a constant potential over the full operating range of engine speed. The