TECHNICAL MANUAL

OPERATOR, ORGANIZATIONAL AND DIRECT SUPPORT MAINTENANCE MANUAL

DETECTING SET, MINE: AURAL INDICATION;
10V DC OPERATING POWER: PORTABLE
TRANSISTORIZED, W/CASE AN/PSS-11
(POLAN MODELS P153 AND P158) FSN 6665-966-9071
(POLAN MODEL P190) FSN 6665-181-0432
(OREGON TECHNICAL PRODUCTS MODEL MD-M)
FSN 6665-966-0972
(THE VP COMPANY MODEL VP200) FSN 6665-144-7655
(FOURDEE MODEL 4D5000) FSN 6665-181-0369

HEADQUARTERS, DEPARTMENT OF THE ARMY

27 DECEMBER 1971

WARNING

DEATH

or severe injury

may occur to operator if safety precautions are not observed while searching suspected mined areas.

Do not operate the mine detector set if it is improperly adjusted. Cease searching suspected mined areas immediately if faulty signal responses or other indications of improper operation are detected.

Be extremely careful when searching an area that is covered with metal fragments, as there is danger of encountering mines yielding signals that might be mistaken for those caused by the metal fragments.

False signals, sufficient to override the signals normally obtained when small pieces of metal are encountered, may sometimes be produced during search operations in a rain or heavy dew, or when the detector head comes in contact with wet grass, weeds, or foliage.

WARNING

DEATH

or severe injury

may occur to operator if safety precautions are not observed while searching suspected mined areas.

Do not operate the mine detector set if it is improperly adjusted. Cease searching suspected mined areas immediately if faulty signal responses or other indications of improper operation are detected.

Be extremely careful when searching an area that is covered with metal fragments, as there is danger of encountering mines yielding signals that might be mistaken for those caused by the metal fragments.

False signals, sufficient to override the signals normally obtained when small pieces of metal are encountered, may sometimes be produced during search operations in a rain or heavy dew, or when the detector head comes in contact with wet grass, weeds or foliage.

Do not operate detector unless yellow with black stripe output amplifier module is installed. Output amplifier modules other than the yellow with black stripe may not alert the operator of low battery voltage. Detectors operated with low battery voltage will not detect metallic objects, which endangers the life of the operator.

Do not operate the mine detector set prior to performing preliminary adjustment and sensitivity check. Faulty signal responses or other indications of improper operation endanger the life of the operator.

TECHNICAL MANUAL

No. 5-6665-202-13

*TM 5-6665-202-13

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., 27 December 1971

Operator, Organizational and Direct Support Maintenance Manual

DETECTING SET, MINE: AURAL INDICATION; 10V DC OPERATING POWER; PORTABLE TRANSISTORIZED, W/CASE AN /PSS-11 (POLAN MODELS P153 AND P158) NSN 6665-00-966-9071 (POLAN MODEL P190) NSN 6665-00-181-0432 (OREGON TECHNICAL PRODUCTS MODEL MD-M) NSN 6665-00-966-9072 (THE VP COMPANY MODEL VP200) NSN 6665-00-144-7655 (FOURDEE MODEL 4D5000) NSN 6665-00-181-0369

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. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to: Commander, US Army Aviation and Troop Command, ATTN: AMSAT–I–MP, 4300 Goodfellow Blvd., St. Louis, MO 631 20–1 798. A reply will be furnished to you.

		Paragraph	Page
CHAPTER 1.	INTRODUCTION		
Section I.	General	1-1	1-1
II.	Description and Data	1-5	1-1
CHAPTER 2.	OPERATING INSTRUCTIONS		
Section I.	Service upon receipt of materiel	2-1	2-1
II.	Movement to a new worksite	2-3	2-2
III.	Controls and instruments	2-5	2-3
IV.	Operation under usual conditions	2-7	2-3
V.	Operation under unusual conditions	2-11	2-9
CHAPTER 3.	OPERATOR/CREW MAINTENANCE INSTRUCTIONS		
Section I.	Lubrication instructions		3-1
II.	Preventive maintenance checks and services	3-1	3-1
III.	Troubleshooting	3-3	3-2
IV.	Maintenance of the mine detecting set	3-5	3-2
CHAPTER 4.	ORGANIZATIONAL MAINTENANCE INSTRUCTIONS		
Section I.	Service upon receipt of material	4-1	4-1
II.	Movement to a new worksite		4-1
III.	Repair parts, special tools, and equipment	4-3	4-1
IV.	Lubrication instructions		4-1
V.	Preventive maintenance checks and services	4-5	4-1
VI.	Troubleshooting	4-7	4-2
VII.	Maintenance of the mine detecting set	4-9	4-3
CHAPTER 5.	DIRECT SUPPORT MAINTENANCE INSTRUCTIONS		
Section I.	Repair parts and special tools, and equipment	5-1	5-1
II.	Troubleshooting	5-4	5-1
III.	Removal and installation of major components and auxiliaries	5-6	5-2

*This manual supersedes TM 5-6665-202-15, 8 June 1964 including all changes.

CHAPTER 6. REPAIR OF MINE DETECTOR SET 6-1 6-1

APPENDIX A. REFERENCES A-1
B. COMPONENTS OF END ITEM LIST B-1
C. MAINTENANCE ALLOCATION CHART C-1

LIST OF ILLUSTRATIONS

Number	*Title*	*Page*
1-1	Mine detector set with shipping instructions	1-2
1-2	Schematic wiring diagram	1-4
2-1	Battery, removal and installation	2-1
2-2	Preparations for search operation	2-2
2-3	Controls	2-3
2-4	Starting and stopping the mine detector set	2-5
2-6	Mine detector set circuits	2-6
2-6	Module and Sensitivity Check	2-6
2-7	Detector head cover	2-8
2-8	Detector head, positions and uses	2-8
2-9	Battery adapter, removal and installation	2-9
4-1	Carrying case and inserts, disassembly and reassembly	4-4
4-2	Modules, removal and installation	4-5
5-1	Headset, removal and installation	5-3
5-2	Control box, removal and installation	5-4
5-3	Short handle, detector head and balance coil removal and installation	5-5
5 4	Variometer phasing adjustment	5-7
5-5	Transmitter/Receiver Assembly	5-8
6-1	Battery adapter, disassembly and reassembly	6-3
6-2	Header, removal and installation	6-4
6-3	Terminal board, removal and installation	6-4
6 4	Capacitor, removal and installation	6-5
6-5	Control box, disassembly and reassembly	6-7
6-6	Short handle, detector head and balance coil, disassembly	6-10
FO-1	Electrical schematic diagram	Back of Manual

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. Scope

These instructions are published for the information and guidance of personnel to whom the mine detector is issued. Information is provided on the operation; preventive maintenance services, and organizational and direct support maintenance of the equipment, accessories, component, and attachment.

1-2. Demolition and Administrative Storage

a. For information on the administrative storage of this equipment, refer to TM 740-90-1.

b. For information on the demolition of this equipment, refer to TM 750-244-3.

1-3. Maintenance Forms and Records

Maintenance forms, records and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by DA PAM 738-750, The Army Maintenance Management System (TAMMS).

Paragraph 1-4 deleted.

Section II. DESCRIPTION AND DATA

1-5. Description

The mine detector is a portable device capable of detecting metallic objects; it is specifically intended for detecting metallic antitank or anti-personnel mines that are buried or hidden from sight. The presence of a metallic object is indicated audibly by a 2,500-cycle tone in the headset. False responses caused by the operation over salt water or magnetic soils are effectively eliminated by a compensating circuit within the mine detector. The design of the mine detector is so compact that it is easily handled, operated, and transported. Figure 1-1 illustrates the mine detector set and provides shipping dimensions.

1-6. Differences Between Models

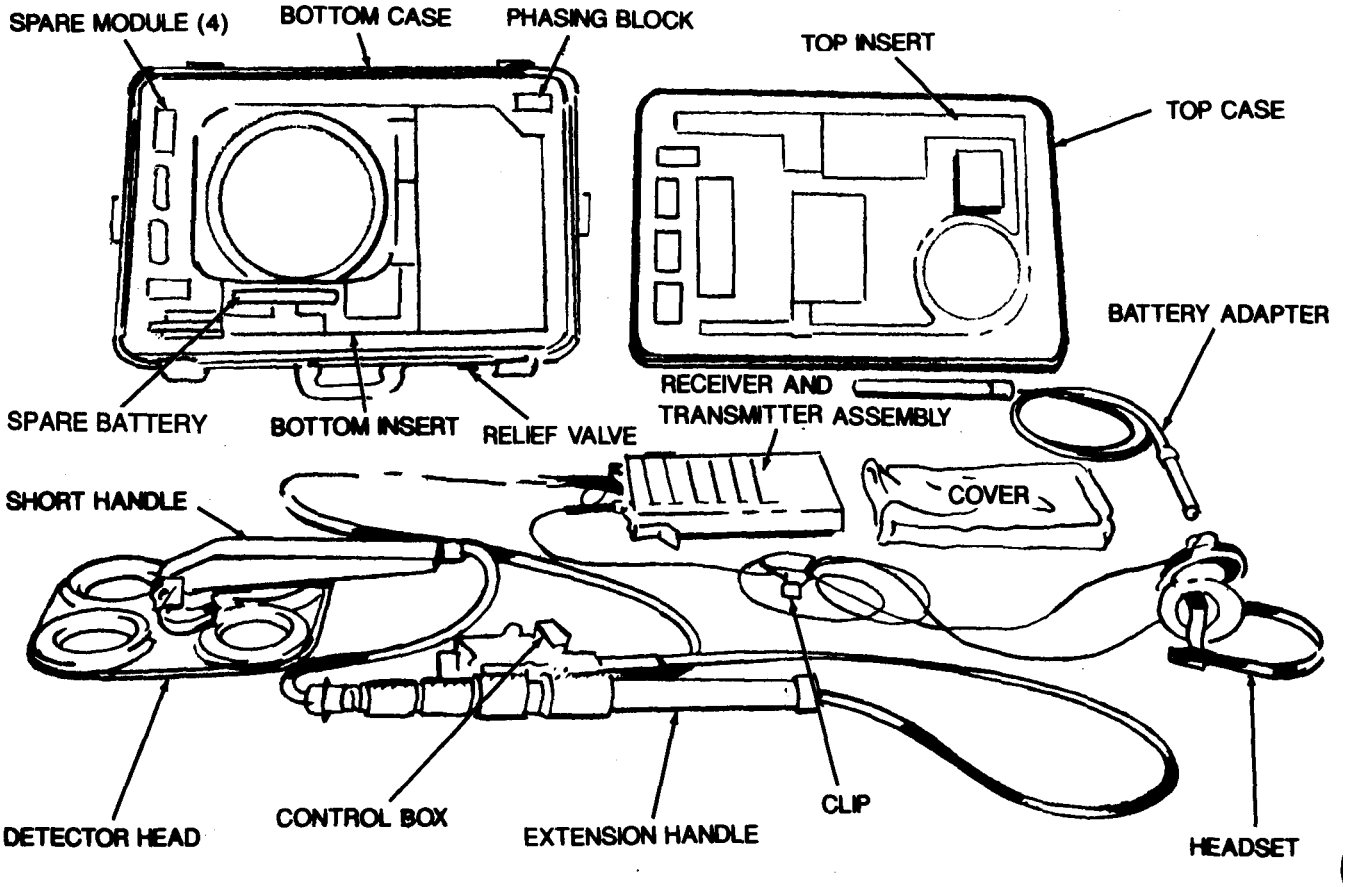
This manual covers the AN/PSS-11 (Polan Models P153, P158, and P190, Oregon Technical Products Model MD-M, The VP Company Model VP200 and Fourdee Model 4D5000) mine detector sets. The known differences between the models are the carrying cases and cushion inserts which are not interchangeable. The smaller diameter Receiver and Transmitter Cable, P/N13200E2702 on the Fourdee Model is not interchangeable, but may be used as a replacement cable for all models.

1-7. Identification and Tabulated Data

a. Identification. The AN/PSS-11 Polan Models P153, P158, and P190, the VP Company Model VP200 and Fourdee Model 4D5000) mine detector set has two identification plates.

(1) *Case identification plate.* Located on the front, center of the top case. Specifies nomenclature, manufacturer, and manufacturer's part number.

(2) *Receiver and transmitter assembly identification plate.* Located on the center of the header. Specifies nomenclature, serial number, contract number, manufacturer, and stock number.



OREGON MODEL MD-M	
SHIPPING	DIMENSIONS
LENGTH	24-3/4 INCHES
WIDTH	16-1/2 INCHES
HEIGHT	7-1/4 INCHES
WEIGHT	32 POUNDS

POLAN MODEL P-153-158-190	
SHIPPING	DIMENSIONS
LENGTH	24-1/4 INCHES
WIDTH	16 INCHES
HEIGHT	7-1/4 INCHES
WEIGHT	30-3/4 POUNDS

FOURDEE MOD	
SHIPPINGS	DIMENSIONS
LENGTH	24-1/2 INCHES
WIDTH	16 INCHES
HEIGHT	7 INCHES
WEIGHT	30 POUNDS

THE VP COMPANY MODEL VP200	
SHIPPING	DIMENSIONS
LENGTH	24 1/4 INCHES
WIDTH	16 INCHES
HEIGHT	7 1/4 INCHES
WEIGHT	36 POUNDS

Figure 1-1. Mine Detector set with shipping dimensions.

b. Tabulated Data.

(1) ***Receiver transmitter assembly.***

Type ----------**Transistorized**
Voltage ---------- 10 v (Volts)
Manufacturer --------Polan Industries or Oregon Technical Products, VP Company and Fourdee, Inc.

(2) ***Extension handle.***

Length:

Extended ---------- 57 in. (inches)
Collapsed ---------- 19 in.
Number of sections -------- 5
Type joints ---------- Friction

(3) ***Battery.***

Quantity ---------- 2
Type ---------- Mercury
Voltage ---------- 7.25 to 10.8 v
Battery life (continuous operation) ---------- 3 5 hours

(4) ***Dimensions and weight.***

(a) Polan Models P153, P158, and P190.

Overall length ---------- 24 1/4 in.

Overall width ---------- 16 in.
Overall height ---------- 7 1/4 in.
Weight ---------- 32 lb (pounds)

(b) Oregon Model MD-M.

Overall length ---------- 24 3/4 in.
Overall width ---------- 16 1/2 in.
Overall height ---------- 7 1/4 in.
Weight ---------- 30 3/4 lb.

(c) The VP Company Model VP200.

Overall length ---------- 24 1/2 in.
Overall width ---------- 16 in.
Overall height ---------- 7 l/2 in.
Weight ---------- 36 lb

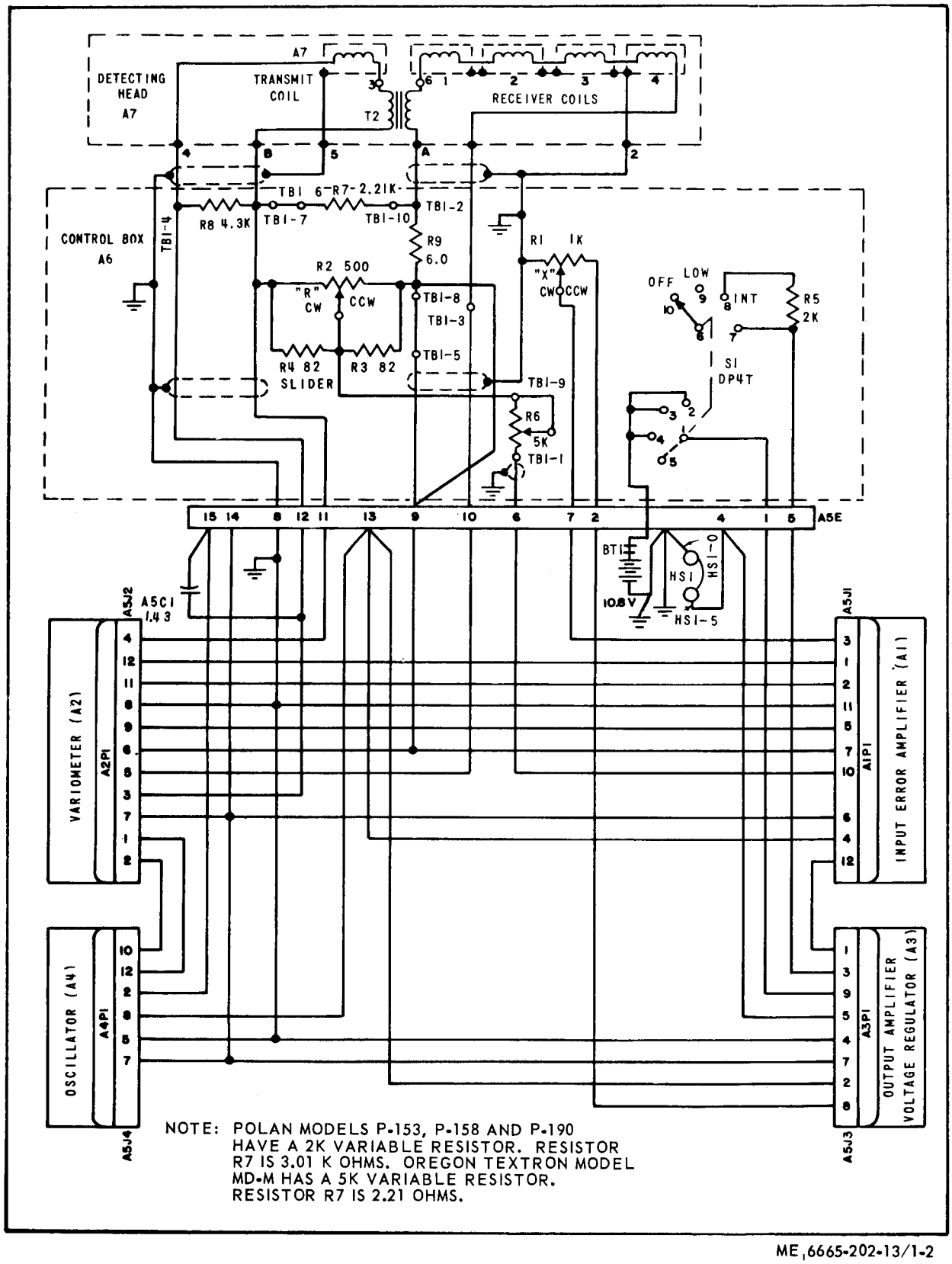
(d) Fourdee Model 4D5000.

Overall length ---------- 24 1/2 in.
Overall width ---------- 16 in.
Overall height ---------- 7 in.
Weight ---------- 30 lbs.

(5) *Detector set characteristics.*

Oscillation frequency ---------- 2,500 cps (cycles per second)
Temperature range (operating) ---------- -25°F. to +125°F.
Temperature range (storage) ---------- -65°F to +155°F.
Relative humidity (operating) ---------- 100 percent
Relative humidity (storage) ---------- 100 percent

(6) *Electrical wiring and schematic diagrams.* Refer to figure 1-2 and FO-1 (Located in back of Manual) for the electrical wiring and schematic diagrams.



ME 6665-202-13/1-2

Figure 1-2. Schematic wiring diagram.