

TECHNICAL MANUAL

**NIGHT VISION EQUIPMENT
DATA SHEETS**

HEADQUARTERS DEPARTMENT OF THE ARMY

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HEADQUARTERS
 DEPARTMENT OF THE ARMY
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NIGHT VISION EQUIPMENT DATA SHEETS

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SECTION I

INTRODUCTION

1. Scope

a. This manual contains information and data on US Army night vision equipment. Additional publications of this series will be listed in DA Pam 310-4.

b. DA Pam 310-7 lists modification work orders.

c. Reporting of errors, omissions, and recommendations for improving this manual by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications and Blank Forms) and forwarded direct to Commander, US Army Electronics Command, ATTN: AMSEL-MA-S, Fort Monmouth, NJ 07703.

2. Purpose

This manual is intended primarily for use by personnel in US Army activities who are responsible for selecting (or recommending selection of) night vision equipment for application and use in all types of military missions in the field, and in design, development, procurement, maintenance engineering, and other related activities. It is not intended to give complete design, technical data, operating, maintenance, and procurement information. It includes only the information that will enable personnel concerned to determine which of the equipments listed (if any) will be most likely to meet the requirements of a mission. Details beyond the scope of this manual will be found in the applicable technical manual.

3. Organization of Content

a. All data on any one equipment appears on one or more pages comprising a data sheet for that equipment. The type designation appears in the upper outside corner of each page for that equipment. The data sheets themselves are arranged throughout this manual in this manual in alpha-numerical order according to type designations which are derived from a coded system of designators. Tables 1 and 2 explain these designation

codes which are in accordance with the Joint Electronic Type Designation System.

b. The contents page lists the type numbers of the data given in this manual. With each change published that adds or deletes one or more data sheets of the publication, new contents pages are published to reflect the added or deleted items. Users of the manual should be sure that all new contents pages are inserted, as well as data sheets, and that superseded pages are removed. Users of this directory should also check the latest edition of DA Pam 310-4.

4. US Army Type Classification

a. The type classification of an equipment is highly significant in the selection of an equipment for any mission and should be given appropriate consideration.

b. The status (type classification) of items of equipment covered in this manual are defined below; however, this directory also includes items which have not been assigned formal or official type classification, but which, nevertheless, may have been issued and are in current use.

(1) *Limited procurement* (LP). An item of materiel required for testing or other special use where a specified small quantity will be procured without further intent of additional procurement of this item under this classification. Each procurement under this classification will be separately justified and authorized. Items designated for LP-type classification are those which initially do not qualify for adoption as Standard (STD) but which are required for one of the following purposes:

(a) To meet urgent operational requirements which cannot be satisfied by a standard item.

(b) To test specified quantities of materiel prior to type classification standard.

(c) To maintain low rate initial production for a special period of time.

(d) To maintain an established produc-

tion line at the most economical, or minimum sustaining rate, during the period between final delivery of test models and the scheduled delivery of the first STD production model.

(e) Other special uses approved by HQDA.

(2) *Standard (STD)*. An item/system of materiel which is acceptable for the mission intended and for which a decision has been made to introduce the item into the inventory. This designation includes items which have been, or are being, replaced by new STD items and which are still acceptable for the intended missions.

(3) *Contingency (CON)*. An item or materiel which no longer satisfies US Army operational requirements but which has residual value for use in training or as contingency stock.

(4) *Obsolete (OBS)*. An item of materiel which is no longer required or acceptable for US Army use.

c. The letter designations used under the former type classification procedures have been redesignated Logistic Control Codes (LCC) which are assigned by the materiel developer. A standard item with LCC-B (similar to the former Standard B) must be redesignated LCC-A when procurement is required.

5. Currency of Information and Omitted Data

Information and data in this manual is current as of the date printed on the cover of the manual or revised pages. Where headings are included without data, the anticipated data was not available and will appear in a subsequent change.

Table 1. Electronic Equipment Indicator Letters

(1) 1st letter (designed installation classes)	(2) 2d letter (type of equipment)	(3) 3d letter (purpose)	(4) Model No.	(5) Modification letter	(6) Miscellaneous identification
<p><i>Installation</i></p> <p>A—Airborne (installed and operated in aircraft). B—Underwater mobile, submarine. C—Air transportable (inactivated, do not use). D—Pilotless carrier. F—Fixed. G—Ground, general ground use (include two or more ground-type installations). K—Amphibious. M—Ground, mobile (installed as operating unit in a vehicle which has no function other than transporting the equipment). P—Pack or portable (animal or man). S—Water surface craft. T—Ground, transportable. U—General utility (includes two or more general installation classes, airborne, shipboard, and ground). V—Ground, vehicular (installed in vehicle designed for functions other than carrying electronic equipment, etc, such as tanks). W—Water surface and underwater.</p>	<p><i>Type of equipment</i></p> <p>A—Invisible light, heat radiation. B—Pigeon. C—Carrier. D—Radiac. E—Nupac. F—Photographic. G—Telegraph or teletype. I—Interphone and public address. J—Electromechanical or inertial wire covered. K—Telemetering. L—Countermeasures. M—Meteorological. N—Sound in air. P—Radar. Q—Sonar and underwater sound. R—Radio. S—Special types, magnetic, etc, or combinations of types. T—Telephone (wire). V—Visual and visible light. W—Armament (peculiar to armament, not otherwise covered). X—Facsimile or television. Y—Data processing.</p>	<p><i>Purpose</i></p> <p>A—Auxiliary assemblies (not complete operating sets used with or part of two or more sets or sets series). B—Bombing. C—Communications (receiving and transmitting). D—Direction finder, reconnaissance, and/or surveillance. E—Ejection and/or release. G—Fire control or searchlight directing. H—Recording and/or reproducing (graphic, meteorological, and sound). K—Computing. L—Searchlight control (inactivated, use G). M—Maintenance and test assemblies including tools). N—Navigational aids (including altimeters, beacons, compasses, radars, depth sounding, approach, and landing). P—Reproducing (inactivated, do not use). Q—Special, or combination of purposes. R—Receiving, passive detecting. S—Detecting and/or range and bearing, search. T—Transmitting. W—Automatic flight or remote control. X—Identification and recognition.</p>	<p>1 2 3 4, etc.</p>	<p>A B C D, etc.</p>	<p>X—Changes in. Y—Voltage. Z—Phase, or frequency. T—Training. (V)—Variable grouping.</p>

Table 2. Table of Component Indicators

Component indicator	Family name	Examples of use (not to be construed as limiting the application of the component indicator)
AB	Supports, antenna	Antenna mounts, mast bases, mast sections, towers, etc.
AM	Amplifiers	Power, audio, interphone, radiofrequency, video, electronic control, etc.
AS	Antenna, complex	Arrays, parabolic type, masthead, etc.
AT	Antenna, simple	Whip or telescopic loop, dipole, reflector, etc.
BA	Battery, primary type	B batteries, battery packs, etc.
BB	Battery, secondary type	Storage batteries, battery packs, etc.
BZ	Signal devices, audible	Buzzers, gongs, horns, etc.
C	Controls	Control box, remote tuning control, etc.
CA	Commutator assemblies, sonar	Peculiar to sonar equipment.
CB	Capacitor bank	Used as a power supply.
CG	Cable assemblies, RF	RF cables, waveguides, transmission lines, etc., with terminals.
CK	Crystal kits	A kit of crystals withholders.
CM	Comparators	Compares two or more input signals.
CN	Compensators	Electrical and/or mechanical compensating regulating or attenuating apparatus.
CP	Computers	A mechanical and/or electronic mathematical calculating device.
CR	Crystals	Crystal in crystal holder.
CU	Couplers	Impedance-coupling devices, directional couplers, etc.
CV	Converters (electronic)	Electronic apparatus for changing the phase, frequency, or from one medium to another.
CW	Covers	Cover, bag, roll, cap, radome, nacelle, etc.
CX	Cable assemblies, non RF	Non-RF cables with terminals, test leads, also composite cables of RF and non-RF conductors.
CY	Cases and cabinets	Rigid and semirigid structure for inclosing or carrying equipment.
D	Dispensers	Chaff dispensers.
DA	Load, dummy	RF and non-RF test loads.
DT	Detecting heads	Magnetic pickup device, search coil, hydrophore, etc. (see RF).
DY	Dynamotors	Dynamotor power supply.
E	Hoists	Sonor hoist assembly, etc.
F	Filters	Bandpass, noise, telephone, wave traps, etc.
FN	Furniture	Chairs, desks, tables, etc.
FR	Frequency measuring devices	Frequency meters, tuned cavity, etc.
G	Generators, power	Electrical power generators without prime movers (see PU and PD).
GO	Goniometers	Goniometers of all types.
GP	Ground rods	Ground rods, stakes, etc.
IT	Head, hand, and chest sets	Includes earphone.
HC	Crystal holder	Crystal holder less crystal.
HD	Air-conditioning apparatus	Heating, cooling, dehumidifying, pressure, vacuum devices, etc.
ID	Indicators, noncathode-ray tube	Calibrated dials, and meters, indicating lights, etc. (see 1P).
IL	Insulators	Strain, standoff, feed-through, etc.
IM	Intensity measuring devices	Includes swr gear, field intensity and noise meters, slotted lines, etc.
IP	Indicators, cathode ray tube	Azimuth, elevation, panoramic, etc.
J	Junction devices	Junction, jack, and terminal boxes, etc.
KY	Keying devices	Mechanical, electrical, electronic keyers, coders, interrupters, etc.
LC	Tools, line construction	Includes special apparatus such as cable plows, etc.
LS	Loudspeakers	Separately housed loudspeakers, intercommunication station.
M	Microphones	Radio, telephone, throat, hand, etc.
MA	Magazines	Magnetic tape or wire, etc.
MD	Modulators	Device for varying amplitude, frequency or phase.
ME	Meters	Multimeters, volt-ohm-milliammeters, vacuum-tube voltmeters, power meters, etc.
MF	Magnets or magnetic field generators	Magnetic tape or wire eraser, electromagnetic, permanent magnetic, etc.
MK	Miscellaneous kits	Maintenance, modification, etc. except tool and crystal (see CK, TK).
ML	Meteorological devices	Barometer, hygrometer, thermometer, scales, etc.

Table 2. Table of Component Indicators-Continued

Component indicator	Family name	Examples of use (not to be construed as limiting the application of the component indicator)
MT	Mountings	Mountings, racks, frames, stands, etc.
MX	Miscellaneous	Equipment not otherwise classified, includes subassemblies. Do not use if better indicator is available.
MU	Memory units	Memory units.
O	Oscillators	Master frequency, blocking, multivibrators, etc. (for test oscillators see SG).
OA	Operating assemblies	Assembly of operating units not otherwise covered, used with or part of one set or set series.
OC	Oceanographic devices	Bathythermographs, etc.
OS	Oscilloscope, test	Test oscilloscopes for general test purposes.
PD	Prime drivers	Gasoline engines, electric motors, Diesel motors, etc.
PF	Fittings, pole	Cable hanger, clamp, protectors, etc.
PG	Pigeon articles	Container, loft, vest, etc.
PH	Photographic articles	Camera, projector, densitometer, etc.
PP	Power supplies	Nonrotating machine type such as vibrator pack, rectifier, thermoelectric, etc.
PT	Plotting equipments	Except meteorological. Boards, maps, plotting table, etc.
PU	Power equipments	Rotating power equipment except dynamotors, motor generator, etc.
R	Receivers	Receivers, all types except telephone.
RC	Reels	Reel cable (see RI).
RD	Recorder.reproducers	Sound, graphic, tape, wire, film, disk, facsimile, magnetic, mechanical, etc.
RE	Relay assemblies	Electrical, electronics, etc.
RF	Radio frequency component	Composite component of RF circuits. Do not use if better indicator is available.
RG	Cables, RF, bulk	RF cable, waveguides, transmission lines, etc. without terminals.
RL	Reeling machines	Mechanisms for dispensing and rewinding antenna or field wire, recording wire or tape, etc.
RO	Recorders	Sound, graphic, tape, wire, film, disk, facsimile, magnetic, mechanical, etc.
RP	Reproducers	Sound, graphic, tape, wire, film, disk, facsimile, magnetic, mechanical, etc.
RR	Reflectors	Target, confusion, etc., except antenna reflectors (see AT).
RT	Receiver and transmitter	Radio and radar transceivers, composite transmitter and receiver, etc.
S	Shelters	House, tent, protective shelter, etc.
SA	Switching devices	Manual, impact, motor-driven, pressure-operated, etc.
SB	Switchboards	Telephone, fire control, power, panel, etc.
SG	Generators, signal	Test oscillators, noise generators, etc. (see O).
SM	Simulators	Flight, aircraft, target, signal, etc.
SN	Synchronizers	Equipment to coordinate two or more functions.
ST	Straps	Harness, straps, etc.
SU	Optical device	Telescopes, periscopes, projectors, and boresighting scopes.
T	Transmitters	Transmitters, all types, except telephone.
TA	Telephone apparatus	Miscellaneous telephone equipment.
TB	Towed body	Towed underwater body or fish, paravane, etc.
TC	Towed cable	Articulated towing strut, faired cable, etc.
TD	Timing devices	Mechanical and electronic timing devices, range device, multiplexer, electronic gates, etc.
TF	Transformers	Transformers when used as separate items.
TG	Positioning devices	Tilt and/or train assemblies.
TH	Telegraph apparatus	Miscellaneous telegraph apparatus.
TK	Tool kits	Miscellaneous tool assemblies.
TL	Tools	All types, except line construction (see LC).
TN	Tuning units	Receiver, transmitter, antenna, tuning units, etc.
TR	Transducers	Magnetic heads, phonopickups, sonar transducers, vibration pickups, etc. (see H, LS, and M).
TS	Test items	Test and measuring equipment not otherwise included; boresighting and alignment equipment.
TT	Teletypewriter and facsimile apparatus	Miscellaneous tape, teletype, facsimile equipment, etc.

Table 2. Table of Component Indicators-Continued

Component indicator	Family name	Examples of use (not to be construed as limiting the application of the component indicator)
TV	Tester, tube	Electronic tube tester.
TW	Tapes and recording wires	Recording tape and wire, splicing, electrical insulating tape, etc.
U	Connectors, audio and power	Unions, plugs, sockets, adapters, etc.
UG	Connectors, RF	Unions, plugs, sockets, choke couplings, adapters, elbows, flanges, etc.
V	Vehicles	Carts, doilies, trucks, trailers, etc.
VS	Signaling equipment, visual	Flag sets, serial panels, signal lamp equipment, etc.
WD	Cables, two-conductor	Non-RF wire, cable and cordage in bulk (see RG).
WF	Cables, four-conductor	Non-RF wire, cable and cordage in bulk (see RG).
WM	Cables, multiple conductor	Non-RF wire, cable and cordage in bulk (see RG).
WS	Cables, single conductor	Non-RF wire, cable and cordage in bulk (see RG).
WT	Cables, three conductor	Non-RF wire, cable and cordage in bulk (see RG).
ZM	Impedance-measuring devices	Used for measuring Q, C, L, R, or PF, etc.



EL 0001-13-TM-1

Figure 1. Metascope AN/PAS-6()

SECTION II

EQUIPMENT

1. NOMENCLATURE: Metascope AN/PAS-6().
2. TYPE CLASSIFICATION: Standard A.
3. SECURITY REQUIREMENTS: Unclassified.
4. PRIMARY USE OF CONCEPT OF EMPLOYMENT:
A hand-held infrared viewer which is used as an aid in the detection of enemy infrared sources, or as a general purpose viewer.
5. BRIEF FUNCTIONAL DESCRIPTION: The AN/PAS-6() is a small, hand-held, battery-powered, infrared viewer which can be used as a general-purpose viewer with an infrared light source, or it can be used to detect enemy infrared sources.
6. TECHNICAL CHARACTERISTICS:
Normal operating temperature range -150° F (-26° C) to 115° F (46°C).
Magnification 1.1.
Focus range 12 in. to infinity.
Field of view 26° minimum.
Total weight (in carrying case) 2 lb 12 OZ.
Overall dimensions (in carrying case) 4½ in. x 4½ in. x 6 in.
7. MAJOR COMPONENTS:
Metascope SU-43/PAS-6.
Light Source MX-7987/PAS-6.
Carrying case.

8. SET, SYSTEM, FACILITY, AND CONFIGURATION APPLICATION: This item is used independently.
9. ADDITIONAL EQUIPMENT REQUIRED AND AUXILIARY EQUIPMENT: None.
10. TOOLS AND TEST EQUIPMENT:
Multimeter TS-352B/U.
Tool Kit, Electronic Equipment TK-100/G.
11. REFERENCE DATA AND LITERATURE:
TM 11-5855-239-10.
TM 11-5856-239-23.
12. REPAIR PARTS SUPPORT CAPABILITY: Full support until 1975.
13. TRAINING REQUIREMENTS:
Operator Any trained user.
Maintenance 35E.
14. TYPICAL BASIS OF ISSUE:

<i>TOE</i>	<i>Quantity</i>
17-108H	7
17-117H	3
17-127H	4
15. PRICE DATA: 5187.78.
16. ITEM REPLACED: None.
17. REMARKS: None.



Figure 2. Night Vision Sight, Individual Served Weapon AN/PVS-1().

1. NOMENCLATURE: Night Vision Sight, Individual Served Weapon AN/PVS-1().

2. TYPE CLASSIFICATION: Standard B.

3. SECURITY REQUIREMENTS: Unclassified.

4. PRIMARY USE OR CONCEPT OF EMPLOYMENT: Used to detect distant objects by amplifying reflected ambient nighttime light from the moon and stars.

5. BRIEF FUNCTIONAL DESCRIPTION: The AN/PVS-1() is used for night observation and aimed fire of individual weapons under night ambient sky, starlight and moonlight illumination. It is a small, portable, battery-powered, electro-optical instrument that can be mounted and used as a sight-on individual weapons, such as the M14, M16, M67, M90 rifles, the M60 machine gun, the M72 rocket launcher, and the M79 grenade launcher.

6. TECHNICAL CHARACTERISTICS:

Magnification 4 power.
Field of view 186 roils.
Focus 4 meters to infinity.
Temperature range -65° F to 125° F.
Humidity range 0 to 100 percent.

Dimensions of scope:

Length 18½ inches.
Width 3½ inches.
Height 5½ inches.
Weight 6 pounds.

7. MAJOR COMPONENTS:

Sight assembly.
Adapter assembly, rifle.
Case, carrying.

8. SET, SYSTEM, FACILITY AND CONFIGURATION APPLICATION: This item is used independently.

9. ADDITIONAL EQUIPMENT REQUIRED AND AUXILIARY EQUIPMENT: None.

10. TOOLS AND TEST EQUIPMENT:

Multimeter TS-352B/U.
Tool Kit, Electronic Equipment TK-100/G.

11. REFERENCE DATA AND LITERATURE:

TM 11-1090-268-13.
TM 11-5855-236-24P.
DMWR 11-5855-236.

12. REPAIR PARTS SUPPORT CAPABILITY: Full support until 1977.

13. TRAINING REQUIREMENTS:

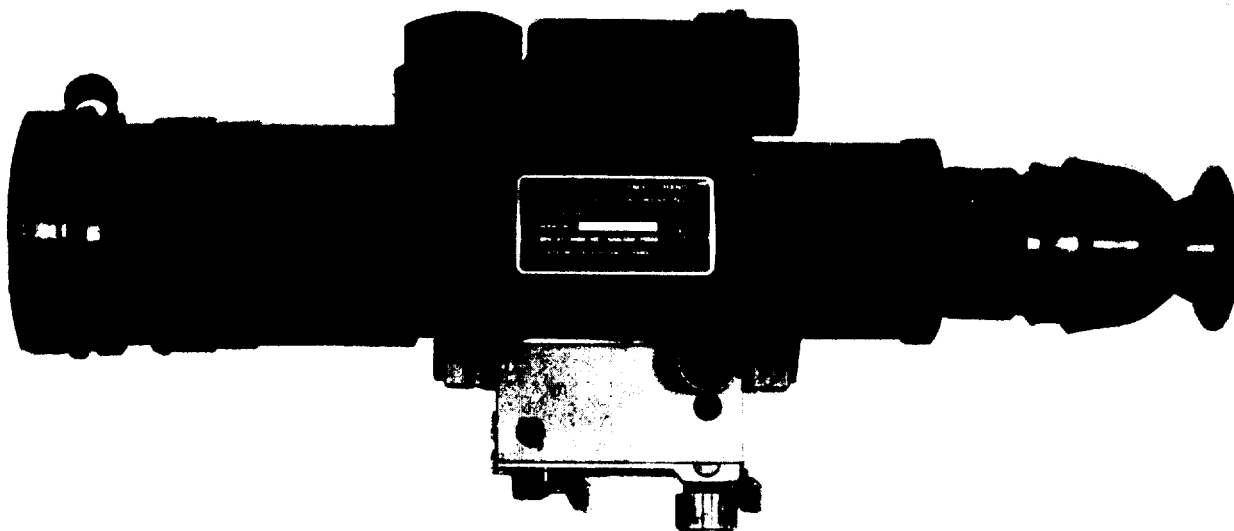
Operator Any trained user.
Maintenance 35E.

14. TYPICAL BASIS OF ISSUE: Not available,

15. PRICE DATA: \$1,335.00.

16. ITEM REPLACED: None.

17. REMARKS: Replaced by AN/PVS-2().



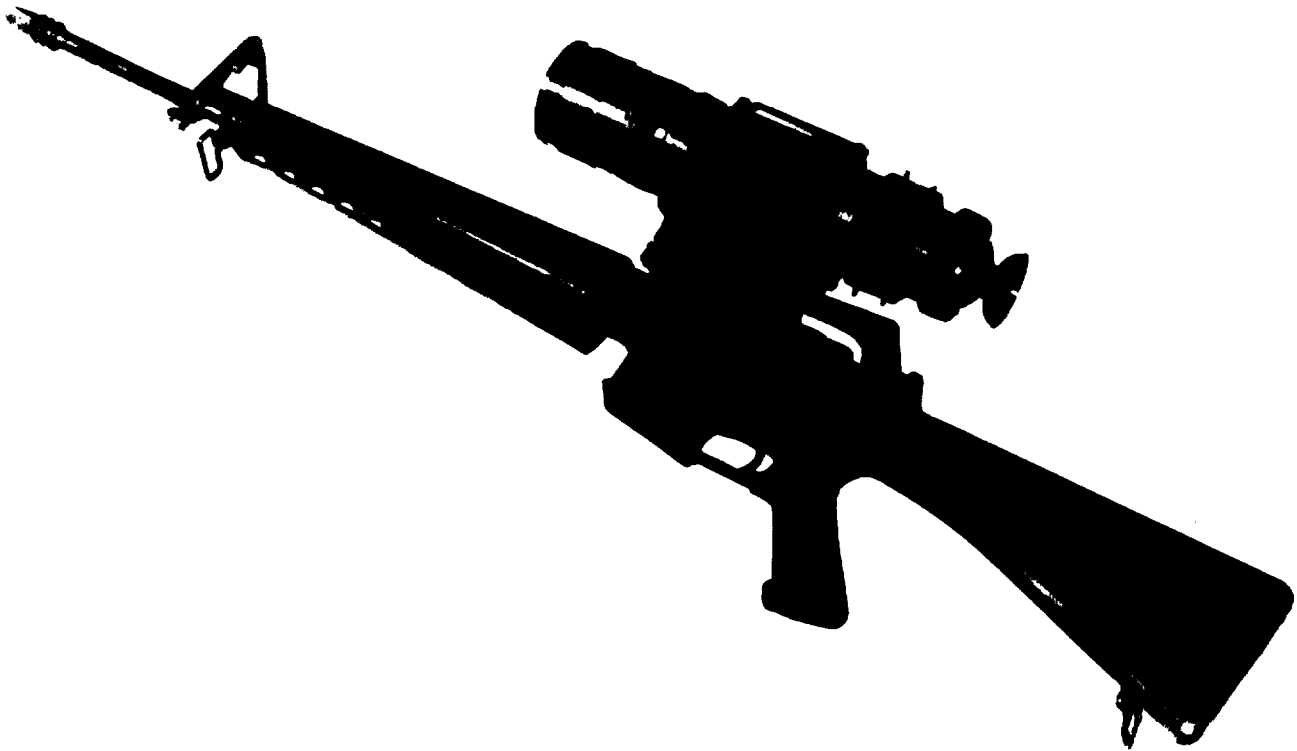
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Figure 3. Night Vision Sight, Individual Served Weapon AN/PVS-2().

1. NOMENCLATURE: Night Vision Sight, Individual Served Weapon AN/PVS-2().
2. TYPE CLASSIFICATION: Standard A.
3. SECURITY REQUIREMENTS: Unclassified.
4. PRIMARY USE OR CONCEPT OF EMPLOYMENT: Used to detect distant objects by amplifying reflected ambient nighttime light from the moon and stars.
5. BRIEF FUNCTIONAL DESCRIPTION: The AN/PVS-2() is used for night observation and aimed fire of individual weapons under night ambient sky, starlight and moonlight illumination. It is a small, portable, battery-powered, electro-optical instrument that is designed for employment on the M14, M14A2, and XM16E1 rifles, the M60 machine gun, the M67 90-mm recoilless rifle, and the M72 66-mm high explosive antitank rocket.
6. TECHNICAL CHARACTERISTICS:
 - Magnification 4 power.
 - Field of view 10.7°.
 - Eyepiece focus +4 to -4 diopters.
 - Objective lens focus 4 meters to infinity.
 - Operating temperature 65° F to +125° F.
 - Humidity range 0 to 100 percent.
 - Dimensions of scope:
 - Length 17½ inches.
 - Width 3½ inches.
 - Height 7¾ inches.
 - Weight 6 pounds.
 - Battery:
 - Type BA-1100.
 - Voltage 6.75.
 - Use life 100 hours (approx).

7. MAJOR COMPONENTS:
 - Sight assembly.
 - Adapter assembly, rifle.
 - Case, carrying.
8. SET, SYSTEM, FACILITY, AND CONFIGURATION APPLICATION: This item is used independently.
9. ADDITIONAL EQUIPMENT REQUIRED AND AUXILIARY EQUIPMENT: None.
10. TOOLS AND TEST EQUIPMENT:
 - Multimeter TS-352B/U.
 - Tool Kit, Electronic Equipment TK-100/G.
11. REFERENCE DATA AND LITERATURE:
 - TM 11-5855-203-13.
 - TM 11-685 S-203-45.
 - DMWR 11-585 S-203.
12. REPAIR PARTS SUPPORT CAPABILITY: Full support until 1977.
13. TRAINING REQUIREMENTS:
 - Operator Any trained user.
 - Maintenance 35E.
14. TYPICAL BASIS OF ISSUE:

<i>TOE</i>	<i>Quantity</i>
6-715H	1
7-15H	62
7-35H	58
15. PRICE DATA: \$1,350.00.
16. ITEM REPLACED: AN/PVS-1().
17. REMARKS. None.



EL 0001-13-TM-4

Figure 4. Night Vision *Sight AN/PVS-3, AN/PVS-3A*

1. NOMENCLATURE: Night Vision Sight AN/PVS-3, AN/PVS-3A.

2. TYPE CLASSIFICATION: Standard B.

3. SECURITY REQUIREMENTS: Unclassified.

4. PRIMARY USE OR CONCEPT OF EMPLOYMENT: Used to amplify ambient low-level light to allow viewing of objects and scenes at night.

5. BRIEF FUNCTIONAL DESCRIPTION: The AN/PVS-3 and AN/PVS-3A are portable, battery-powered, electro-optical instruments used for observing distant objects under conditions of either night or day illumination. When used at night, the night sight amplifies reflected ambient light, such as moonlight, starlight, or skyglow so that the object to be viewed becomes clearly visible to the operator.

6. TECHNICAL CHARACTERISTICS:

Type Portable, hand-held viewing device.

Power source Battery tray (two cells).

Operating temperature 65° F to + 115° F.

Humidity range 0 to 100 percent.

Focusing range 4 meters to infinity.

Field of view 100.

Magnification 4 power.

Dimensions of scope:

Length 13½ inches.

Width 3½ inches.

Weight 3 pounds (with battery tray).

Battery tray data:

Battery type Mallory RM-930 (two).

Voltage 2.8 volts dc.

7. MAJOR COMPONENTS:

Night sight.

Battery tray (two).

Case, carrying.

8. SET, SYSTEM, FACILITY, AND CONFIGURATION APPLICATION: This item is used independently.

9. ADDITIONAL EQUIPMENT REQUIRED AND AUXILIARY EQUIPMENT: None.

10. TOOLS AND TEST EQUIPMENT:

Multimeter TS-352B/U.

Tool Kit, Electronic Equipment TK-100/G.

11. REFERENCE DATA AND LITERATURE:

TM 11-5855-209-10.

TM 11-5855-209-23.

TM 11-6855-209-40P.

12. REPAIR PARTS SUPPORT CAPABILITY: Full support until 1982.

13. TRAINING REQUIREMENTS:

Operator Any trained user.

Maintenance 35E.

14. TYPICAL BASIS OF ISSUE: Not available.

15. PRICE DATA: \$2,438.00.

16. ITEM REPLACED: None.

17. REMARKS: Night Vision Sight AN/PVS-3A differs from Night Vision Sight AN/PVS-3 in the following details:

a. The cover assembly cap furnished with the AN/PVS-3 replaces the attenuator lens cap.

b. The eyeshield differs in that it is not molded onto the eyepiece assembly.

c. The AN/PVS-3A has an attached boresight mount and is supplied with adapter assemblies for mounting on the M14 or M16 rifle.



Figure 5. Night Vision Sight, Crew Served Weapon AN/TVS-2().

1. NOMENCLATURE: (C) Night Vision Sight, Crew Served Weapon AN/TVS-2() (U).

2. TYPE CLASSIFICATION: Standard B.

3. SECURITY REQUIREMENTS: Confidential.

4. PRIMARY USE OR CONCEPT OF EMPLOYMENT: Used to provide night observation of distant objects by amplifying reflected ambient nighttime light from the moon and stars.

5. BRIEF FUNCTIONAL DESCRIPTION: The AN/TVS-2() is used for night observation and aimed fire of crew weapons under night ambient sky, starlight and moonlight illumination. It is a portable, battery-powered, electro-optical device designed to be mounted on the M2 .60 caliber machine gun, the M40 106-mm recoilless rifle, and the 20-mm automatic cannon.

6. TECHNICAL CHARACTERISTICS:

Magnification 7 power.
Field of view 108 roils.
Focus 50 meters to infinity.

Dimensions of sight:

Length $24\frac{1}{2}$ inches.
Width $6\frac{7}{8}$ inches.
Height 8 inches.
Weight 16 pounds.

7. MAJOR COMPONENTS:

Sight assembly.
Eyepiece, right angle.
M2 adapter.
M40 adapter.
Case, carrying.

8. SET, SYSTEM, FACILITY, AND CONFIGURATION APPLICATION: This item is used independently.

9. ADDITIONAL EQUIPMENT REQUIRED AND AUXILIARY EQUIPMENT: None.

10. TOOLS AND TEST EQUIPMENT:
Multimeter TS-352B/U.
Tool Kit, Electronic Equipment TK-100/G.

11. REFERENCE DATA AND LITERATURE:
TM 11-5855-202-13.
TM 11-5855-202-45P.
DMWR 11-5855-202.

12. REPAIR PARTS SUPPORT CAPABILITY: Full support until 1976.

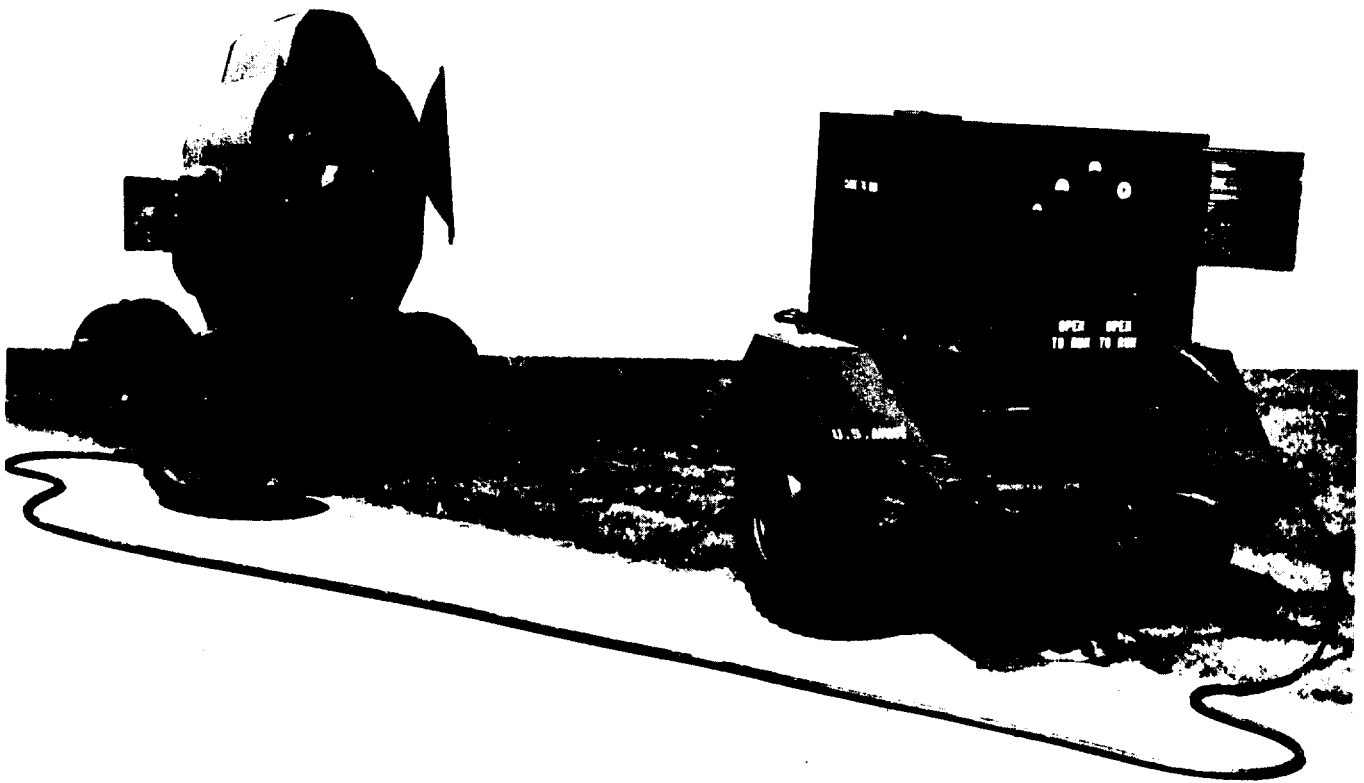
13. TRAINING REQUIREMENTS:
Operator Any trained user.
Maintenance 35E.

14. TYPICAL BASIS OF ISSUE:		
	<i>TOE</i>	<i>Quantity</i>
	17-37H	19
	17-61H	312
	17-55H	104

15. PRICE DATA: \$2,653.00.

16. ITEM REPLACED: None.

17. REMARKS: None.



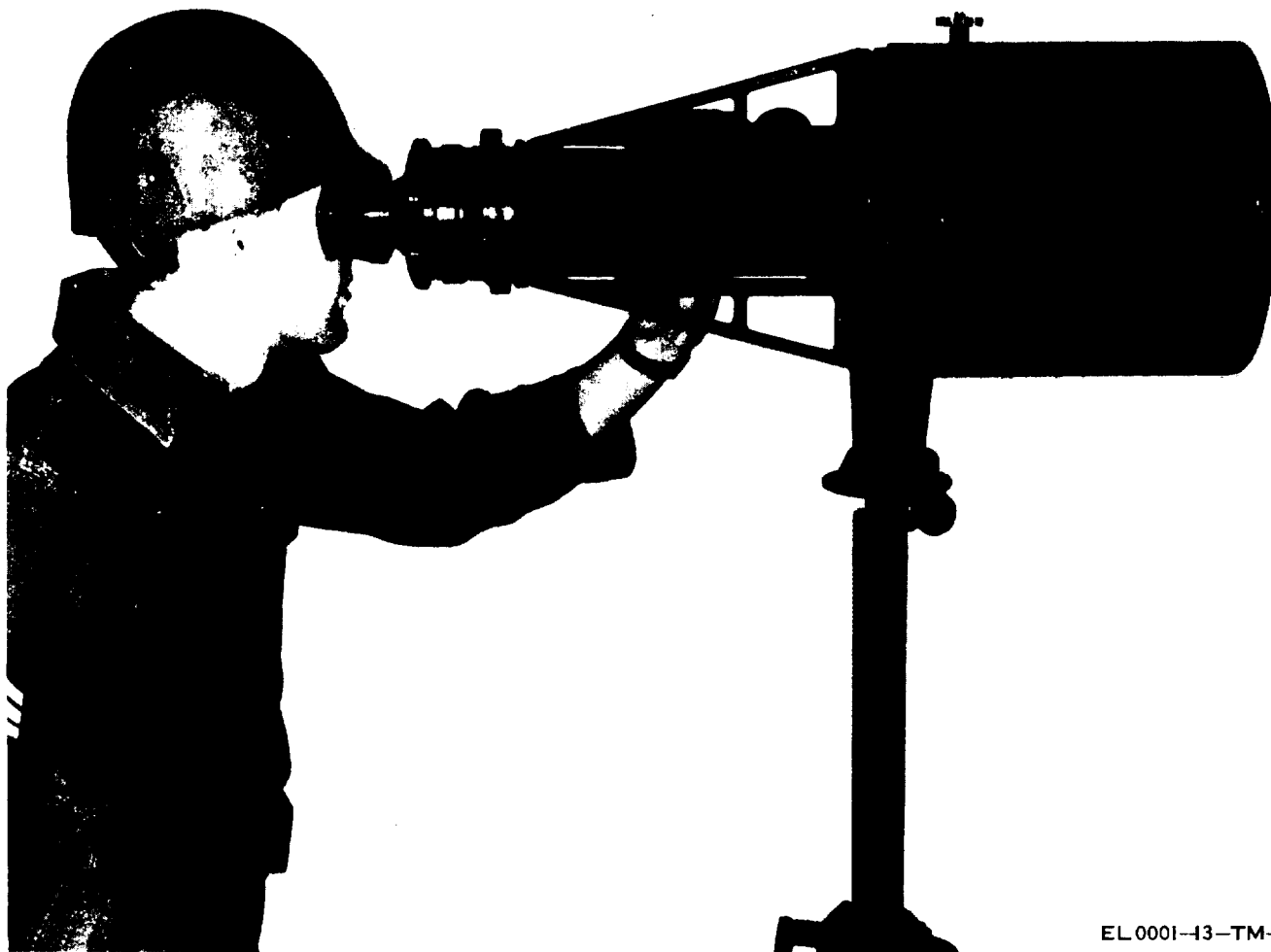
EL 0001-13-TM-6

Figure 6. Searchlight AN/TVS-3.

1. NOMENCLATURE: Searchlight AN/TVS-3.
2. TYPE CLASSIFICATION: Standard A.
3. SECURITY REQUIREMENTS: Unclassified.
4. PRIMARY USE OR CONCEPT OF EMPLOYMENT: Provides battlefield and rear area illumination with either visible or infrared light.
5. BRIEF FUNCTIONAL DESCRIPTION: The AN/TVS-3 is a weather-resistant, general-purpose, trailer-mounted searchlight that provides a focused or defocused beam at high intensity infrared or visible light. It contains all controls for automatic operation.
6. TECHNICAL CHARACTERISTICS:
 - Type of light Visible or infrared.
 - Type of lamp Zenon, 43 volts, 466 amperes (nominal).
 - Peak beam candlepower 800 million (minimum).
 - Beamwidth:
 - Focus 1.0° (minimum).
 - Defocused 9.0° minimum).
 - Spread (visible light only) 10 .0°(minimum).
 - Input power requirements: 120 to 208 volts, 400 hertz, three-phase, 15, 20, or 25 kilowatts.
 - Azimuth scan limits:
 - Mils 4,800 to either side from center.
 - Degrees 270 to either side from center.
 - Elevation scan limits:
 - Mils -400 to + 1,775.
 - Degrees -22 to +100.
 - Cooling system capacity: 7 pints.
7. MAJOR COMPONENTS:
 - Searchlight MX-7999/TVS-3.
 - Trailer V-416/TVS-3.

8. SET, SYSTEM, FACILITY, AND CONFIGURATION APPLICATION: This set is used independently.
9. ADDITIONAL EQUIPMENT REQUIRED AND AUXILIARY EQUIPMENT: A 120- to 208-volt, 400-hertz, three-phase, ac power source, with at least 15 kilowatts and a stabilized output voltage and frequency.
10. TOOLS AND TEST EQUIPMENT:
 - Ammeter AN/USM-33
 - Multimeter TS-352B/U
 - Stroboscope TS-805/U
 - Test Set, Xenon AN/ GSM-184
 - Voltmeter ME-147/U
 - Xenon Lamp Alignment Fixture
 - Pliers, Retaining Ring
 - Fact shield
 - Too} Kit, Electronic Equipment TK-100/G
 - Wrench, open end, adjustable
11. REFERENCE DATA AND LITERATURE:
 - TM 11-6230-220-12.
 - TM 11-6230-220-35.
12. REPAIR PARTS SUPPORT CAPABILITY: Full support until 1977.
13. TRAINING REQUIREMENTS:
 - Operator 17E.
 - Maintenance 36E.
14. TYPICAL BASIS OF ISSUE:

	<i>Quantity</i>
<i>TOE</i>	
6-558G	188
<i>TDA</i>	
P8WAVB9903	6
5AW2NTAA08	4
15. PRICE DATA: \$25,000.
16. ITEM REPLACED: None.
17. REMARKS: None.



EL 0001-13-TM-7

Figure 7. Night Vision Sight, Tripod Mounted AN/TVS-4.

1. NOMENCLATURE: Night Vision Sight, Tripod Mounted AN/TVS-4.

2. TYPE CLASSIFICATION: None.

3. SECURITY REQUIREMENTS: Unclassified.

4. PRIMARY USE OR CONCEPT OF EMPLOYMENT: Used to provide night observation of distant objects by amplifying reflected ambient nighttime light from the moon and stars.

5. BRIEF FUNCTIONAL DESCRIPTION: The AN/TVS-4 is a portable, battery-powered, electro-optical instrument used for night observation of distant objects. It was designed to be used by artillery forward observers in adjustment of indirect fire. It may be mounted on a small tripod for use at ground level, or on a large tripod for viewing in a standing position.

6. TECHNICAL CHARACTERISTICS:

Azimuth rotation	6,400 mils.
Magnification	7.5 power.
Field of view	8°.
Focus	50 meters to infinity.
Temperature range	-65° F to + 125° F.
Humidity range	0 to 100 percent.
Elevation limits	-500 to + 800 roils.
Dimensions of sight:	
Length	33 inches.
Width	13 inches.
Height	14¾ inches.
Weight	34 pounds.

7. MAJOR COMPONENTS:

Sight assembly.
Adapter assembly.
Case, carrying.

8. SET, SYSTEM, FACILITY, AND CONFIGURATION APPLICATION. This item is used independently.

9. ADDITIONAL EQUIPMENT REQUIRED AND AUXILIARY EQUIPMENT: None.

10. TOOLS AND TEST EQUIPMENT:

Multimeter TS-352B/U.
Tool Kit, Electronic Equipment TK-100/G.

11. REFERENCE DATA AND LITERATURE:

TM 11-585-228-13.
TM 11-5855-237-40P.
DMWR 11-5855-237.

12. REPAIR PARTS SUPPORT CAPABILITY: Full support until 1980.

13. TRAINING REQUIREMENTS:

Operator Any trained user.
Maintenance 35E.

14. TYPICAL BASIS OF ISSUE:

TOE	<i>Quantity</i>
17-51H	27
17-55H	9
17-75H	6

15. PRICE DATA. \$2,500.00.

16. ITEM REPLACED: None.

17. REMARKS: None.

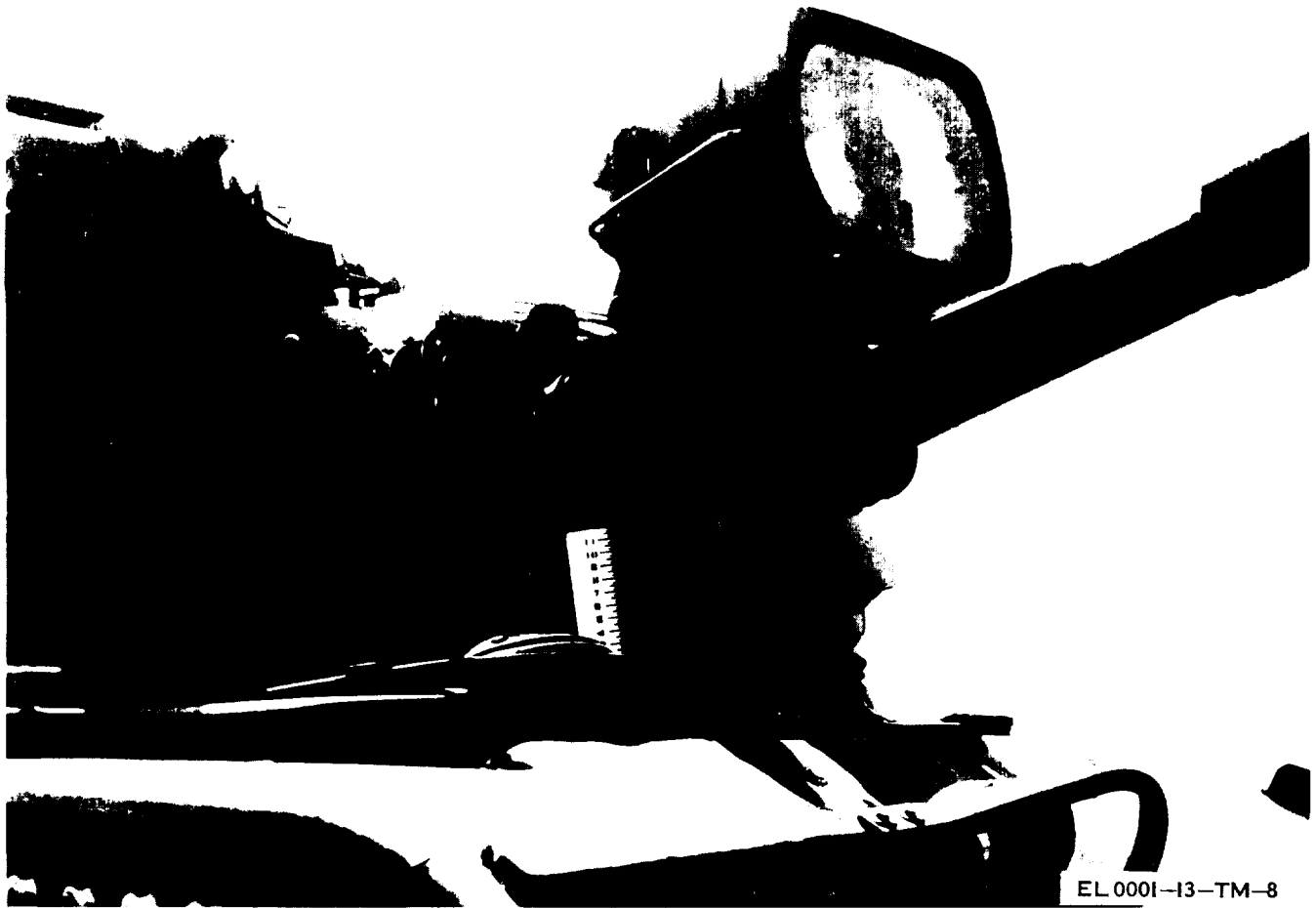


Figure 8. Searchlight, Visible Light-Infrared AN/VSS-1().

1. NOMENCLATURE: Searchlight, Visible Light-Infrared AN/VSS-1 (). (Except where noted, this equipment is identical to the AN/ASS-1(), the AN/GSS-14 (), the AN/GSS-18(), the AN/MSS-3(), the AN/VSS-1() /P, and the AN/VSS-2().)

2. TYPE CLASSIFICATION:

- AN/VSS-1() Standard A.
- AN/ASS-1() None.
- AN/GSS-14() LP-U.
- AN/GSS-18() None.
- AN/MSS-3() None.
- AN/VSS-1()/P None.
- AN/VSS-2() None.

3. SECURITY REQUIREMENTS: Unclassified.

4. PRIMARY USE OR CONCEPT OF EMPLOYMENT: Provides a source of infrared or visible light. Mounting hardware is provided for the following:

- AN/VSS-1() M60 tank.
- AN/ASS-1() Helicopter.
- AN/GSS-14() Truck (¼ ton) or tower.
- AN/GSS-18() Truck (¼ ton) or tower.
- AN/MSS-3() Truck (¼ ton).
- AN/VSS-1()/P M60 tank.
- AN/VSS-2() M60 tank.

5. BRIEF FUNCTIONAL DESCRIPTION: The searchlight is a versatile, 23-inch, 2.2-kilowatt xenon unit that provides a narrow or wide beam of high intensity visible or infrared light. A 50-percent increase in light intensity can be temporarily provided for 15 to 20 seconds by overdriving the searchlight. The light emission can be interrupted without requiring power shutdown by operating the searchlight in the blackout or standby condition.

6. TECHNICAL CHARACTERISTICS:

Type of light Visible or infrared.
Type of lamp Xenon, short arc.

Output Candlepower:

- Normal 100 million.
- Overdrive 150 million.
- Beam width (all except AN/ASS-1()):
- Narrow 0.5° to 0.75°.
- Wide 7.0°

Beam width (AN/ASS-1() only):

- Narrow 3.0°.
- Wide 15.0°.

Input power requirements:

- Voltage 28 volts dc.
- Current:
- Normal 100 amperes.
- Overdrive 140 amperes.

Scan limits (for AN/GSS-14(), AN/GSS-18(), and AN/MSS-3() only.

- Azimuth 0 to 6,500 roils.
- Elevation -700 to +1,400 roils.

7. MAJOR COMPONENTS:

- Searchlight, subassembly.
- Control box.
- Cable assembly, power.
- Mount,

8. SET, SYSTEM, FACILITY, AND CONFIGURATION APPLICATION: This set is used independently.

9. ADDITIONAL EQUIPMENT REQUIRED AND AUXILIARY EQUIPMENT:

- Power source of 28 volts dc, 150 amperes (minimum).
- Cable Assembly, Special Purpose.

10. TOOLS AND TEST EQUIPMENT:

- Multimeter TS-352B/U.
- Pliers, Retaining Ring.
- Test Set AN/GSM-182.
- Test Set AN/GSM-184.
- Tool Kit, Electronic Equipment TK-100/G.
- Power Supply PP-4606/G.

11. REFERENCE DATA AND LITERATURE:

- TM 11-6230-219-12.
- TM 11-623&219-35.

12. REPAIR PARTS SUPPORT CAPABILITY: Full support until 1982.

13. TRAINING REQUIREMENTS:

- Operator Any trained user.
- Maintenance 35E.

14. TYPICAL BASIS OF ISSUE:

- a. AN/VSS-1(), AN/VSS-1()/P, AN/VSS-2().
- TOE Quantity
- 49T 54
- b. AN/GSS-14(), AN/GSS-18().
- TDA Quantity
- P6WDG39901 12
- c. AN/MSS-3().
- TDA Quantity
- CDW14JAA05 5
- NGW8ADAA00 1
- 5AW2NTAA08 4
- P5WDG39901 12

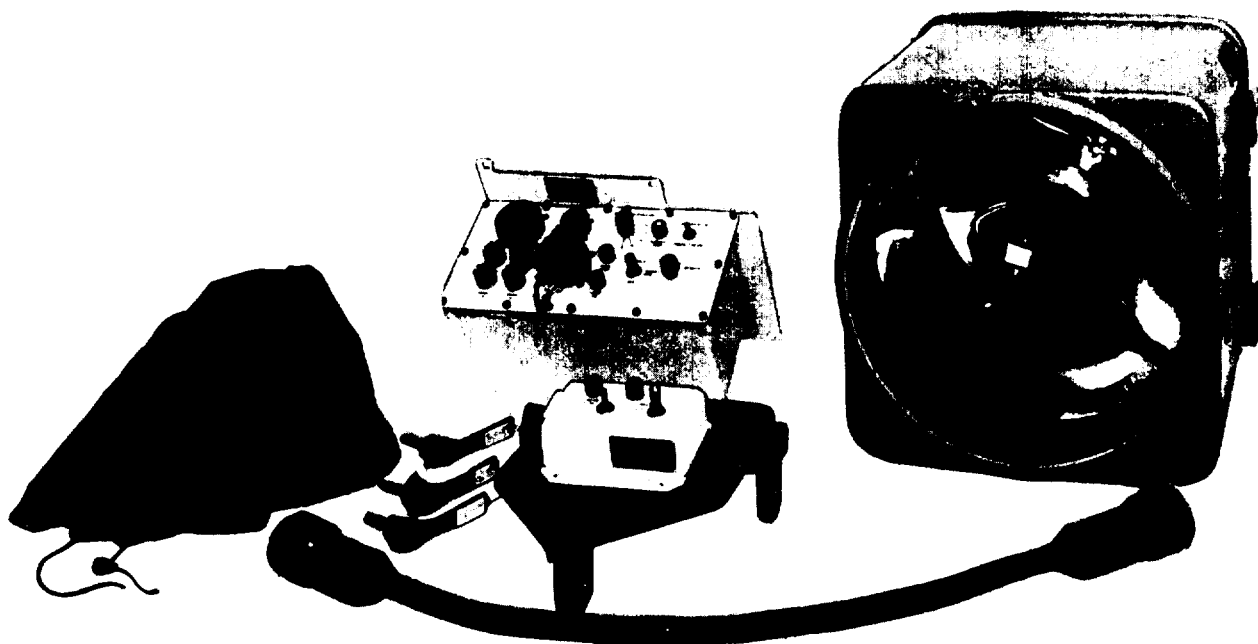
15. PRICE DATA. \$3,340.

16. ITEM REPLACED: Searchlight, 18-inch.

17. REMARKS:

a. The AN/VSS-2 () and the AN/GSS-18 () are identical to the AN/VSS-1() and the AN/GSS-14(), respectively, except that the black infrared filter in the lamp housing assembly was replaced by a pink filter.

b. The AN/MSS-3() is the same as the AN/GSS-14(), except that it includes a ¼-ton truck equipped with a 180-ampere (minimum) alternator.



EL 0001-13-TM-9

Figure 9. Searchlight Set, Infrared AN/VSS-3, AN/VSS-3A.

1. NOMENCLATURE: Searchlight Set, Infrared AN/VSS-3, AN/VSS-3A.
2. TYPE CLASSIFICATION:
AN/VSS-3 Standard B.
AN/VSS-3A Standard A.
3. SECURITY REQUIREMENTS: Unclassified.
4. PRIMARY USE OR CONCEPT OF EMPLOYMENT:
Provides a source of visible or infrared illumination for the M60 tank and the M551 reconnaissance vehicle.
5. BRIEF FUNCTIONAL DESCRIPTION: The AN/VSS-3 is a weather-resistant, water-tight, general-purpose, tank-mounted searchlight. It provides a compact (focused) beam of high intensity visible or infrared light for the illumination of battlefield areas. The AN/VSS-3 also has a spread beam width.
6. TECHNICAL CHARACTERISTICS:
Type of light Visible or infrared.
Type of lamp Xenon, short arc, 1.0 kilowatt.
Peak candlepower output 50 million (minimum).
Beam width:
 Compact 1.0° (minimum).
 Spread (AN/VSS-3A only) 7.0° 50.5°.
 Variable 1.0° to 7.0°
Input power requirement:
 Voltage 22 to 28 volts dc.
 Current 52 amperes maximum (75° F to 115° F); 58 amperes maximum (—65° F to 75° F).
 Power 1.6 kilowatt (minimum).
Mode of operation:
 Visible light Compact, spread, or variable beam width.
 Infrared light Compact, spread, or variable beam width.
 Cooling system Air-to-air heat exchanger using integral intake exhaust blower.
 Reflective system Metal parabolic mirror.
 Beam variation method. Motor-driven.
 Searchlight control Provided by control box and remote control box.

7. MAJOR COMPONENTS:
 Searchlight, Infrared MX-8272A/VSS-3.
 Control Box C7905A/VSS-3.
 Remote Control Box C-7905A/VSS-3.
 Power Cable CX-11893/VSS-3.
8. SET, SYSTEM, FACILITY, AND CONFIGURATION APPLICATION: This set is used independently.
9. ADDITIONAL EQUIPMENT REQUIRED AND AUXILIARY EQUIPMENT: Power source of 28 volts dc, 68 amperes (minimum).
10. TOOLS AND TEST EQUIPMENT:
 Multimeter TS-352B/U
 Power Supply PP-1656/G
 Stopwatch
 Tool Kit, Electronic Equipment TK-100/G
 Key set, socket head screw
11. REFERENCE DATA AND LITERATURE:
 AN/VSS-S:
 TM-11-5855-217-12.
 TM 11-5855-217-35.
 AN/VSS-3A :
 TM 11-5855-217-12-1.
 TM 11-5855-217-35-1.
12. REPAIR PARTS SUPPORT CAPABILITY: 1982.
13. TRAINING REQUIREMENTS:
 Operator 11E.
 Maintenance 35E.
14. TYPICAL BASIS OF ISSUE:

<i>TOE</i>	<i>Quantity</i>
17-205H	9
37H	27
57-100H	6
15. PRICE DATA:
 AN/VSS-3 \$2,500.
 AN/VSS-3A \$3,400.
16. ITEM REPLACED: None.
17. REMARKS. The AN/VSS-3A will replace the AN/VSS-1 for tank application only, beginning in FY 75.

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Ft Huachuca (10)
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SAAD (30)
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USARMIS (1)
PG (1)
USAH (1)
BAMC (1)
Arsenals (1)
AFIP (1)
USAAESWBD (1)
USARADB (1)
USAIB (1)
USAAVNTBD (1)

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USAR: None

For explanation of abbreviations used, see AR 310-50.

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 1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
 1 Kilometer = 1000 Meters = 0.621 Miles

WEIGHTS

1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
 1 Kilogram = 1000 Grams = 2.2 lb.
 1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
 1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeters = 0.155 Sq. Inches
 1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Feet
 1 Sq. Kilometer = 1,000,000 Sq. Meters = 0.386 Sq. Miles

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 1 Cu. Meter = 1,000,000 Cu. Centimeters = 35.31 Cu. Feet

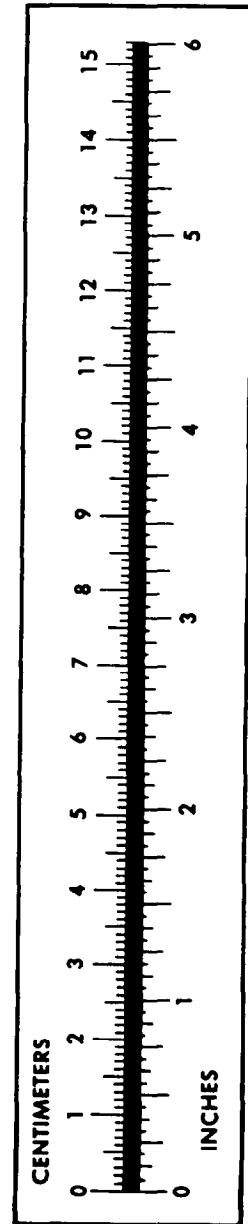
TEMPERATURE

$5/9(^{\circ}\text{F} - 32) = ^{\circ}\text{C}$
 212° Fahrenheit is equivalent to 100° Celsius
 90° Fahrenheit is equivalent to 32.2° Celsius
 32° Fahrenheit is equivalent to 0° Celsius
 $9/5^{\circ}\text{C} + 32 = ^{\circ}\text{F}$

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
its	Liters	0.473
arts	Liters	0.946
allons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
ers	Gallons	0.264
ms	Ounces	0.035
ograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pounds-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
ometers per Liter	Miles per Gallon	2.354
ometers per Hour	Miles per Hour	0.621



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