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DEPARTMENT OF THE ARMY TECHNICAL MANUAL

DEPARTMENT OF THE AIR FORCE TECHNICAL ORDER

TM 11-487F
TO 10B-1-34

DIRECTORY OF SIGNAL CORPS EQUIPMENTS

PHOTOGRAPHIC EQUIPMENT

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DOWNGRADED
Auth: DA Ltr 16 1954
BY C. ALWARD, CAPT, SIGC.
CHARLESTON SIGNAL DEPOT
Lois Bentel, 13 Jan 55

DEPARTMENTS OF THE ARMY AND THE AIR FORCE

SEPTEMBER 1954

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TECHNICAL MANUAL
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DEPARTMENTS OF THE ARMY AND
THE AIR FORCE

WASHINGTON 25, D. C., *14 September 1954*

DIRECTORY OF SIGNAL CORPS EQUIPMENTS PHOTOGRAPHIC EQUIPMENT

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INTRODUCTION

1. Purpose

TM 11–487F, Directory of Signal Corps Equipments, Photographic Equipment, contains information pertaining to the technical, physical, and operational characteristics of Signal Corps photographic equipment. It is not intended for use in connection with procurement, storage, and issue.

2. Types Of Equipment

This publication contains information on picture-taking, picture-processing, and picture-using equipment.

3. Status Of Equipment

Only equipment with a status of Standard, Limited Standard, or Substitute Standard is included in this publication.

4. Arrangement Of Content

a. Items of equipment are arranged and identified in accordance with MIL–STD–155, 29 February 1952, Military Standard, Type Designations for Photographic Equipment, as follows:

PICTURE-TAKING EQUIPMENT (CAMERAS):

Category Letter	*Mission Letter*
K—Camera	A—Reconnaissance.
L—Accessories, Attachments or Components for Cameras	B—Strike Recording.
	C—Mapping.
	D—Scope Recording.
	E—Still Picture—Not otherwise classified.
	F—Motion Picture—Not otherwise classified.
	G—Special Purpose (Including instrumentation).
	M—Miscellaneous (Applying to more than one of the above types—Used only with accessory letters).
	S—Set or System.

PICTURE-PROCESSING EQUIPMENT:

Category Letter	*Mission Letter*
E—Processing Equipment	H—Processing Machines.
F—Accessories, Attachments or Components for Processing Equipment	J—Developers.
	K—Washers.
	L—Driers.
	N—Printers (Including rectifying printers, motion picture printers, contact printers, and projection printers).
	M—Miscellaneous (Applying to more than one of the above types—Used only with accessory letters).
	S—Set or System.

PICTURE-USING EQUIPMENT:

Category Letter	*Mission Letter*
A—Using Equipment	P—Projectors—Still.
B—Accessories, Attachments, or Components for Using Equipment	Q—Projectors—Motion Picture.
	R—Viewing Devices.
	M—Miscellaneous (Applying to more than one of the above types—Used only with accessory letters).
	S—Set or System.

*This manual supersedes TM 11–487F, 18 April 1951.

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Examples of type number sequence:

KF–1(1)—Initial production assignment.
KF–1(2)—Different maintenance parts.
KF–1A(1)—Design or construction modification (revised specification).
KF–1A(2)—Different maintenance parts.

b. Items of equipment with "AN" (Army-Navy), service, commercial, or other nomenclature type-designations are arranged under the most appropriate MIL–STD–155 letter indicators.

Examples:

Still cameras	*Motion-picture cameras*	*Projectors*
KE–1	KF–1	AS–1
KE–4	KF–2	AS–2
KE–9	KF–3	AS–3
KE-TYPE	KF-TYPE	AS-TYPE
PH-47	PH–270	AN/PF
PH–150	PH–274	P–3
PH–518 /PF	PH–330	AN/PF P–4
		PH–131

5. Models Of Equipment

The basic type-designation of an equipment, without model-indicating letters or numerals, is used to refer to all models of the equipment. Differences in models may be indicated in the text, or by separate coverage of each model.

6. Details Of Content

a. Classification. Security classification of items of equipment conforms to data contained in JANAP 140 of issue current at date of preparation of each page of information.

b. Major Components. Data given under this heading include only the principal operating components and are usually confined to no more than six items. Spare equipment, auxiliary or maintenance components, and modification parts or components are not included.

c. Technical Characteristics. Data given under this heading include volume, weight, and dimensions of equipment when available. These characteristics are given as an aid in planning storage, transportation, and installation.

7. Currency Of Information

Information is current as of the dates indicated. Changes occurring after these dates will be reflected in subsequent changes or revision.

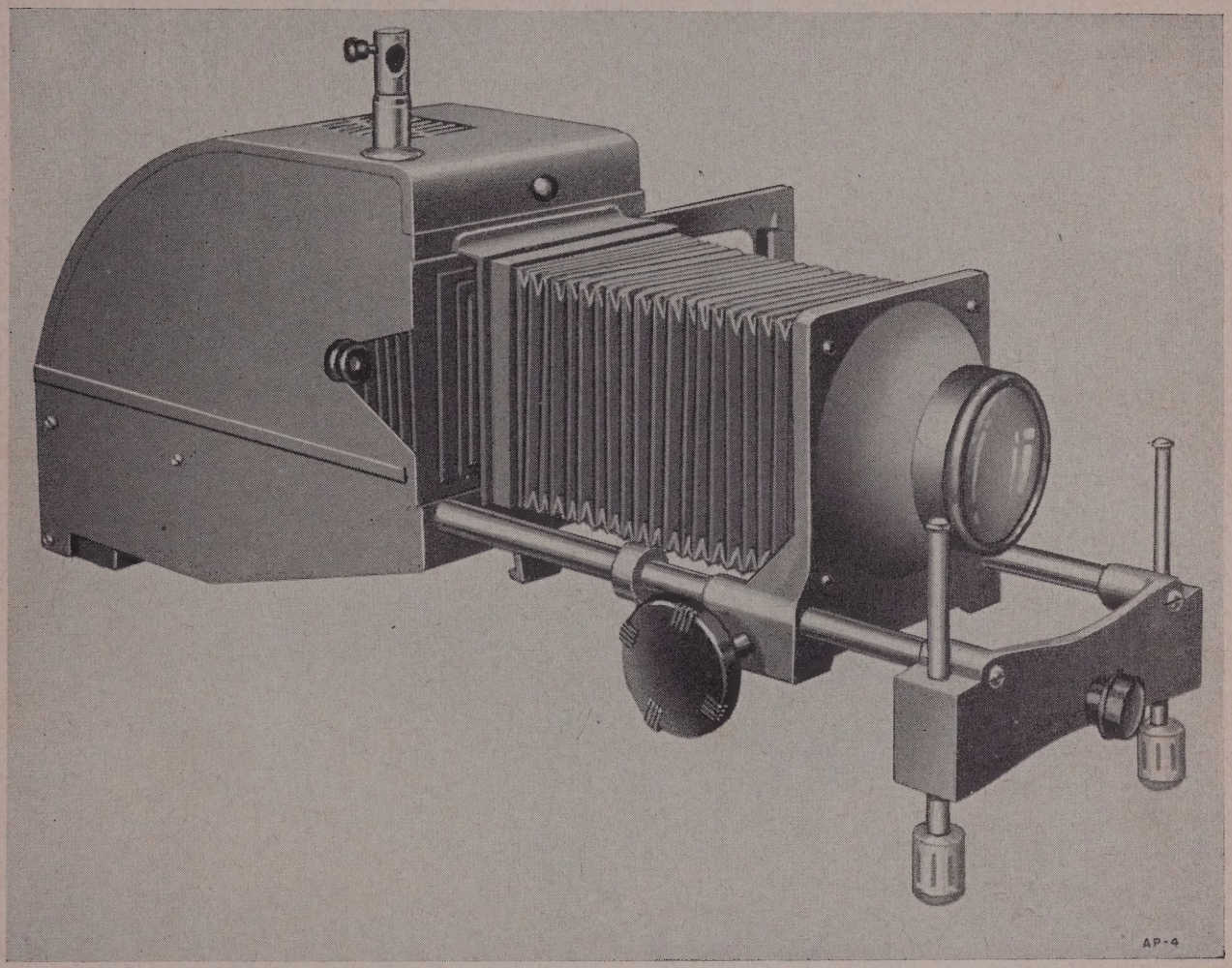
8. Abbreviations

a-c	alternating-current
amp	ampere
C	centigrade
c/o	consist of
cfm	cubic feet per minute
cu ft	cubic foot (feet)
cyc	cycle
d	deep
d-c	direct-current
dia	diameter
F	Fahrenheit
fpm	feet per minute
fps	frames per second
ft	foot, feet
hp	horsepower
hr	hour
in.	inch
inf	infinity
kva	kilovolt-ampere
L/Std	Limited Standard
lg	long
min	minute
mm	millimeter
No.	number
oz	ounce
lb	pound
rpm	revolutions per minute
sec	second
S/Std	Substitute Standard
Std	Standard
Uncl	Unclassified
v	volt
w	watt
wd	wide

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CHAPTER 1
PRINCIPAL ITEMS OF PHOTOGRAPHIC EQUIPMENT



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb. 54. *Type numbers:* AP–4. *Name of equipment: Projector,* Still Picture.

FUNCTIONAL DESCRIPTION

Projector, Still Picture AP–4 is a portable projector for 3¼-by 4-inch lantern slides. The equipment is used primarily as an aid in training, briefing, and entertaining troops.

This equipment consists essentially of a commercial (Beseler, Slide King) projector including the housing, a 12-inch projection lens, a slide changer, a carrying case, and associated accessories. A special feature is a built-in adjustable pointer facilitating application of the projector for training purposes.

CURRENCY OF INFORMATION: 1 Feb 54.

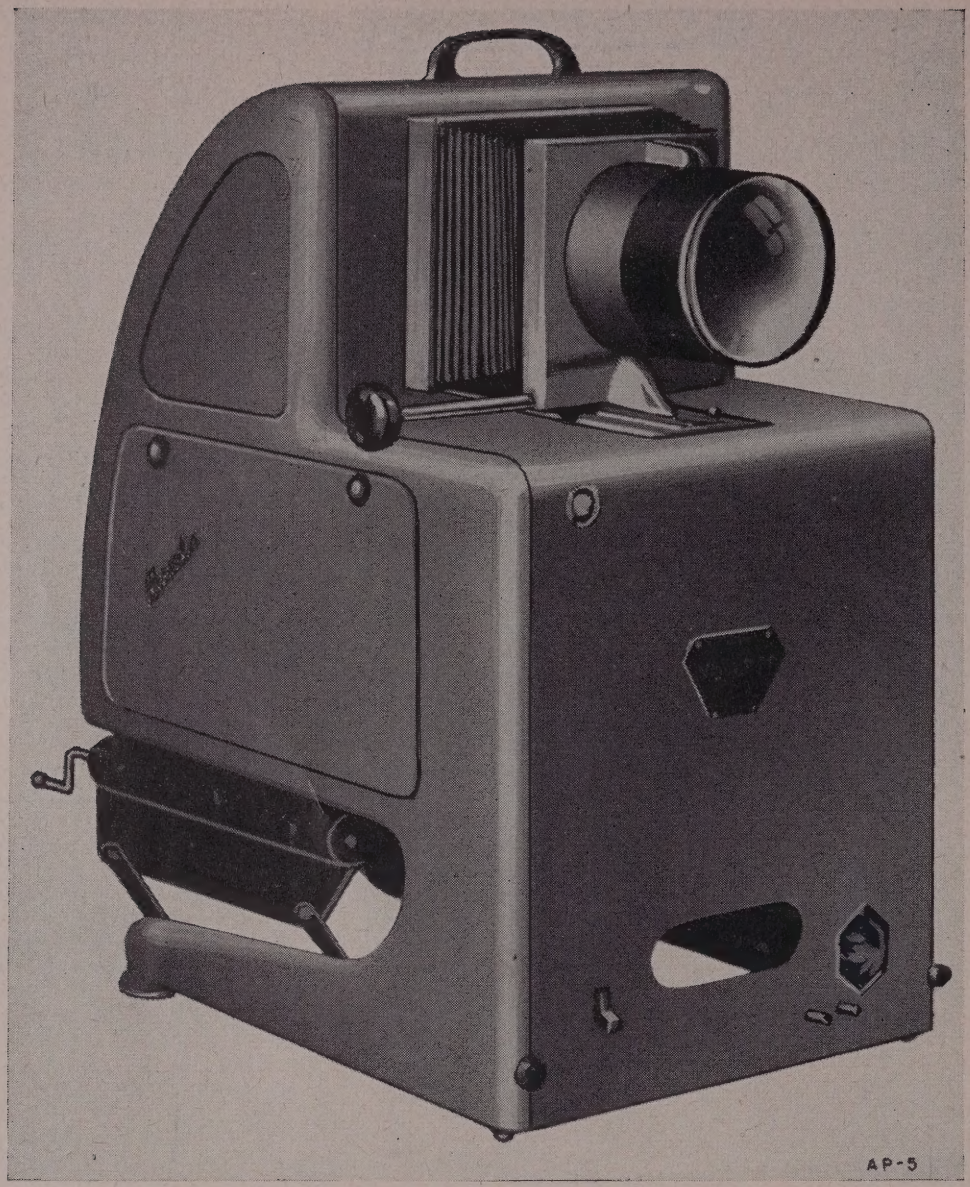
MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

SIZE OR SLIDE: 3¼-x4-in. glass slide.
OPERATING SPEED: Manual.
LIGHT SOURCE: 750-w incandescent projection lamp.
LENS: 12-in. focal length.
VENTILATION PROVISIONS: Forced air ventilation.
POWER REQUIREMENTS: 750-w, 115-v, 60-cyc a-c.
DIMENSIONS: 27 x 8½ x 14½ in.
WEIGHT: Unpacked, 24 lb.

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Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb. 54. *Type number:* AP–5. *Name of equipment:* Projector, Still Picture.

FUNCTIONAL DESCRIPTION

Projector, Still Picture AP–5 is a portable projector for opaque objects such as charts, maps, pages from books or magazines, and flat physical objects of 11- by 8-inch area. The equipment is used primarily as an aid in training, briefing, and for entertaining troops.

This equipment consists essentially of a commercial (Beseler Opaque Object Projector Type IC/QPV–ZCB) projector including the housing, a 22-inch projection lens, a carrying case, and associated accessories. A special feature is a built-in pointer facilitating application of the projector for training purposes.

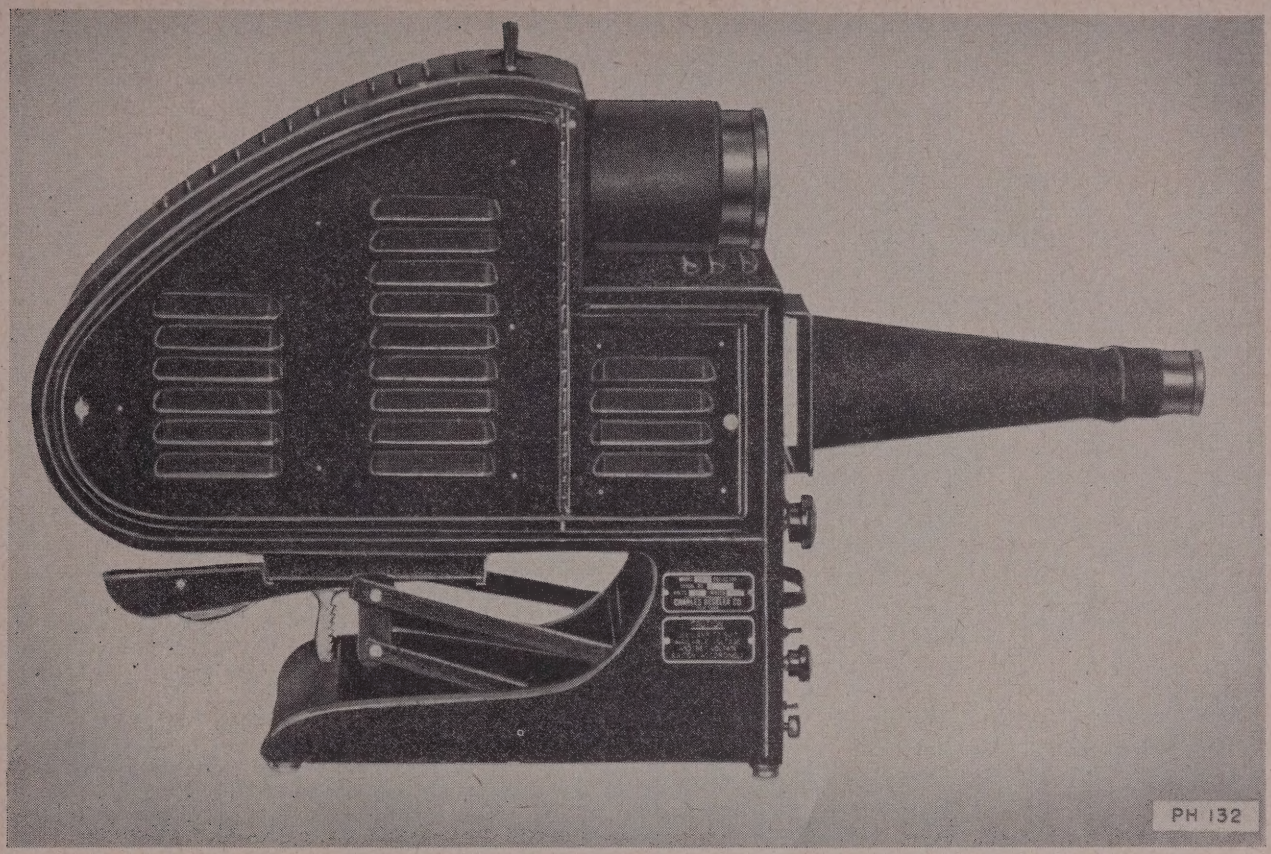
CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

SIZE OF PROJECTED AREA: 11 x 8 in.
OPERATING SPEED: Manual.
LIGHT SOURCE: 1,000-w incandescent projection lamp.
LENS: 22-in. focal length.
VENTILATION PROVISIONS: Forced air ventilation.
POWER REQUIREMENTS: 1,000-w, 115-v, 60-cyc a-c.
DIMENSIONS: 13½ x 19½ x 25 in.
WEIGHT: Unpacked, 35 lb.



Status of equipment: L/Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–132. *Name of equipment:* Projector Equipment.

FUNCTIONAL DESCRIPTION

Projector Equipment PH–132 is a portable projector for 35-mm film strips, 3¼- by 4-inch slides, opaque objects, and copy of 6¼- by 6¼-inch area. The equipment is used primarily as an aid in training, briefing, and for entertaining troops.

This equipment consists essentially of a commercial (Balopticon) projector including the housing, 4-, 10-, and 18-inch projection lenses, a slide-carrier, a film-strip projection attachment, a screen, a carrying case and associated accessories.

There are several models of this equipment; all models are interchangeable except for maintenance parts. PH–132, PH–132–A, and PH–132–B are obsolete models of this equipment; PH–132–C and PH–132–D are Limited Standard.

INSTRUCTION LITERATURE: PH–132–C, TM 11–2349; PH–132–D, TM 11–2330.

CURRENCY OF INFORMATION: 1 Feb 53.

MAJOR COMPONENTS

This equipment consists only of a single operating component.

TECHNICAL CHARACTERISTICS

FILM SIZE: 35–mm film strips, 3¼ x 4-in. glass slides; 6¼- x 6¼-in. opaque objects; and copy 6¼ in. sq (maximum).

OPERATING SPEED: Manual.

LIGHT SOURCE: 500-w bulb.

LENS: 4-in. dia, 18-in. focal length; 2-in. dia, 10-in. focal length; 1½-in. dia, 4-in. focal length.

VENTILATION PROVISIONS AND MOTOR CHARACTERISTICS: Ventilating blower motor, 1/80 hp, 6,000 rpm.

POWER REQUIREMENTS:

PH–132–C: 115-or 230-v a-c or d-c.
PH–132–D: 115-v a-c or d-c.

DIMENSIONS:

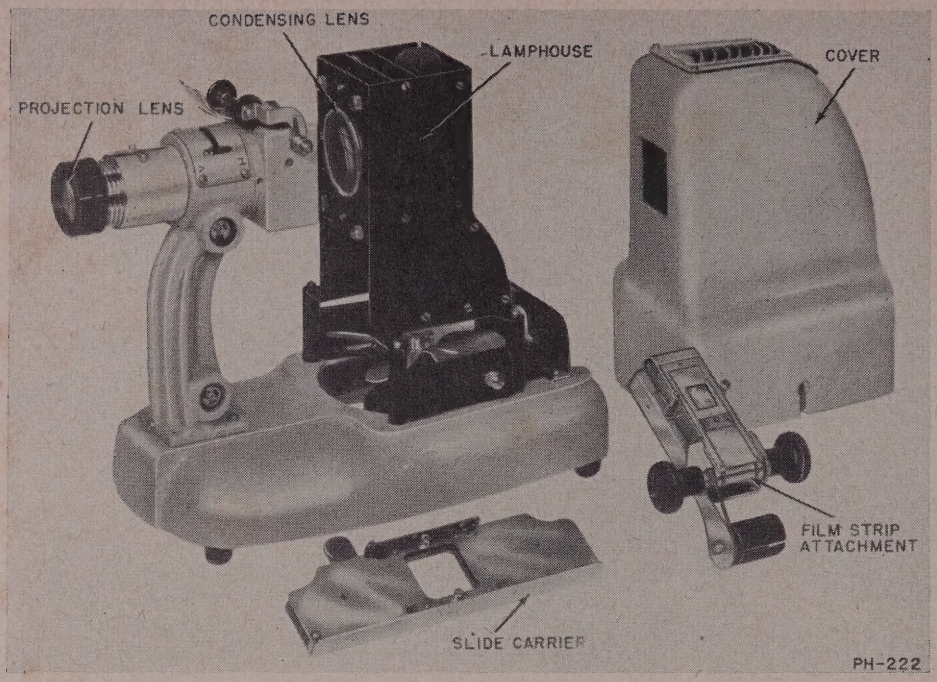
Projector case, 25 x 15 x 32 in.
Screen bag, 111 in. lg.

TOTAL VOLUME:

Projector case, 7 cu ft.
Screen bag, 1.5 cu ft.

WEIGHT:

Carrying case, complete 82 lb.
Screen bag, complete, 55 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 20 Mar 53. *Service type number:* PH–222. *Name of equipment:* Projector.

FUNCTIONAL DESCRIPTION

Projector PH–222 is a 35-mm, still picture projector used to exhibit single- or double-frame film-strip subjects or 2- by 2-inch double-frame transparencies for training and briefing purposes.

This equipment consists essentially of a film-strip projecting equipment, a light source, condensers, film-strip advance, projection lens, and slide holder assemblies and is contained in a carrying case.

There are several models of this equipment. PH–222, –A, and –B are commercial (SVE) film-strip projectors; PH–222–C is manufactured by Viewlex and includes a motor-driven ventilator fan. All models are generally interchangeable as to purpose and use but differ in design and maintenance parts requirements.

INSTRUCTION LITERATURE: PH–222, TM 11–400; PH–222–C, TM 11–2332.

CURRENCY OF INFORMATION: 20 Mar 53.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

FILM SIZE: 35-mm, single-or double-frame film strips and 2 x 2-in. slides.

OPERATING SPEED: Manual.

LIGHT SOURCE:
- PH–222, and –B: 300-w, type T–10, projection lamp with prefocused bayonet mount.
- PH–222–A: 200-w projection lamp with prefocused bayonet mount.
- PH–222–C: 500-w, medium prefocused projection lamp, biplane filament type T–10.

LENS:
- PH–222: 5- and 7-in. projection (type).
- PH–222–A and –B: 5-in., f/3.5 projection (type).
- PH–222–C: 5-in., f/3.5 projection (type).

CONDENSING LENSES:
- PH–222, –A, and –B: one concave-convex and one bi-convex.
- PH–222–C: one bi-convex and one plano-convex, with an infrared light filter mounted between.

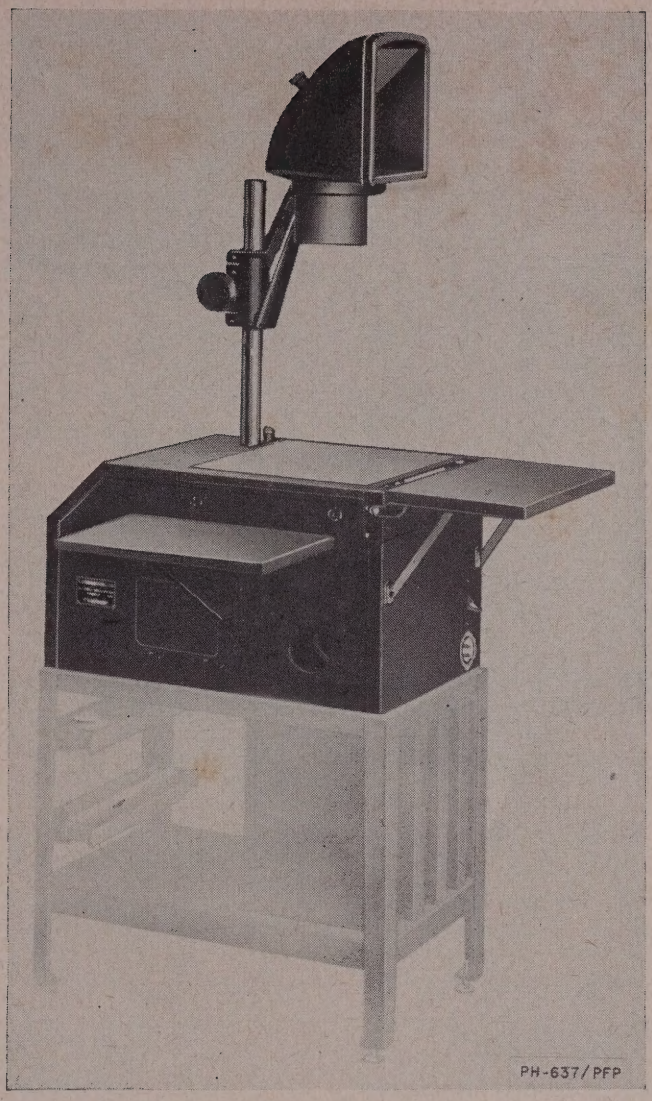
VENTILATION PROVISIONS:
- PH–222, –A, and –B: heat-absorbing glass and louvers
- PH–222–C: motor and fan.

MOTOR CHARACTERISTICS:
- PH–222–C only: 1/70 hp, a-c or d-c.

POWER REQUIREMENTS:
- PH–222, and –B: 110- to 120-v or 220- to 230-v a-c or d-c, with 230-v, 230-w projection lamp.
- PH–222–A: 110 to 120-v a-c or d-c.
- PH–222–C: 115-v a-c or d-c.

DIMENSIONS (unpacked but in carrying case):
- PH–222, and –B: 13½ x 4⅜ x 9¼ in.
- PH–222–A: 12 x 5⅜ x 9 in.
- PH–222C: 13¾ x 8 x 12⅜ in.

WEIGHT:
- PH–222: 10 lb.
- PH–222–A: 11 lb.
- PH–222–B: 10 lb.
- PH–222–C: 21½ lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 17 Mar 53. *Service type number:* PH–637/PFP. *Name of equipment:* Projector, Still Picture.

FUNCTIONAL DESCRIPTION

Projector, Still Picture PH–637/PFP is a portable overhead-type, still picture projector for showing slides, transparencies, and matter which has been written or drawn upon transparent material. Projection is at right angles, upon a screen, in a normally lighted room.

This equipment is essentially a commercial (VU-Graph) unit which includes the projector-head assembly, a supporting tube, a projector stage, a mirror, a light source, a motor with blower, and associated items.

The light source is located beneath the transparent surface of the writing base or stage; this permits the projection of material appearing upon the stage to a mirror and thence to the viewing surface at an angle of 90° with respect to the plane of the writing stage surface.

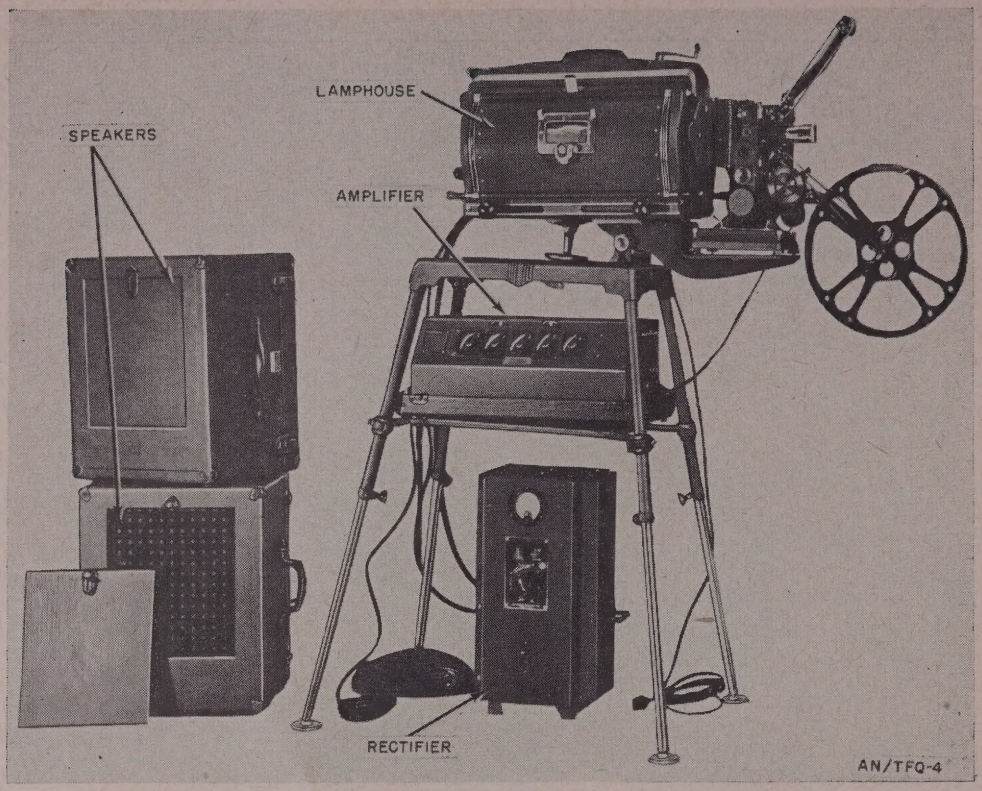
INSTRUCTION LITERATURE: TB SIG 236.
CURRENCY OF INFORMATION: 17 Mar 53.

MAJOR COMPONENTS

This equipment consists essentially of a single principal operating component.

TECHNICAL CHARACTERISTICS

FILM SIZE: Transparencies; slides or transparent material to 10 x 10 in.
OPERATING SPEED: Manual.
LIGHT SOURCE: 500-w, 115-v, projection lamp.
LENS: 14-in. projection lens.
VENTILATION PROVISIONS: Centrifugal blower.
MOTOR CHARACTERISTICS: Constant-speed motor.
POWER REQUIREMENTS: 110- to 120-v, a-c.
DIMENSIONS: Unpacked, 21 x 37 x 13 in.



Status of equipment: L/Standard. *Classification of equipment:* Unclassified. *Currency of information:* 20 Mar 53. *Service type number:* AN/TFQ–4. *Name of equipment:* Projector.

FUNCTIONAL DESCRIPTION

Projector AN/TFQ–4 is a 16-mm, sound or silent motion-picture projector utilizing carbon arc illumination. It is used for large indoor or outdoor audiences. Its 3-inch lens projects a rectangle approximately 13 by 18 feet in size at 150 feet.

This equipment is essentially a commercial (Ampro Model AA) unit consisting of the projector, a lens, an arc lamp house, a stand, an amplifier, a rectifier, four speakers, cases, and related items.

Film projection speeds between 16 and 24 frames per second and backward or forward re-runs without rethreading are possible with this equipment.

INSTRUCTION LITERATURE: TM 11–2347.

CURRENCY OF INFORMATION: 20 Mar 53.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in.) installed*
1	Projector	48 x 27.5 x 69
1	Arc lamp house	8.75 x 10.25 x 22.75
1	Amplifier	
1	Rectifier	
1	Stand	
4	Speakers	19.5 x 12.25 x 17 (each speaker)

TECHNICAL CHARACTERISTICS

FILM SIZE: 16 mm; sound and silent.

OPERATING SPEED: 16 and 24 frames per second.

LIGHT SOURCE: Carbon arc, high intensity, drawing 30 amp at 28 v.

LENS: 3 in., f/2.

REEL CAPACITY: 2,000 ft (maximum).

RECTIFIER: Input, 110- to 120-v, 50/60 cyc a-c; output, 28-v, 30-amp d-c.

AMPLIFIER CHARACTERISTICS:

Power Output: 55-w (with not more than 5% distortion); output impedances available, 2, 4, 5.3, 8, 16, and 500 ohms.

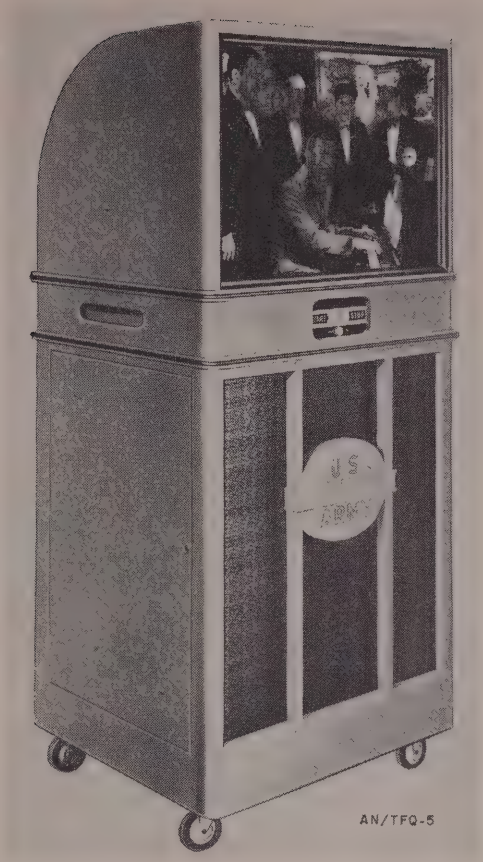
Number Output Channels: Four speakers are provided.

SPEAKERS: 2 (LS–12–A) 25-w permanent magnet speakers, 20 in. dia; 2 cone-type speakers 12-in. dia.

VENTILATION PROVISIONS: Blower fan attached to motor armature.

MOTOR CHARACTERISTICS: Universal motor, 100- to 120-v, 50/60 cyc a-c, or 100- to 120-v d-c; controlled by electric governor and rheostat for selection of speed between 16 and 24 frames per second.

POWER REQUIREMENTS: 100- to 120-v, 50/60 cyc a-c, 2,500 w.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 20 Mar 53. *Service type number:* AN/TFQ–5. *Name of equipment:* Projector.

FUNCTIONAL DESCRIPTION

Projector AN/TFQ–5 is a complete, self-tained, sound motion-picture projection equipment having a film-reel capacity of 1,600 feet. It is capable of being moved easily, as between wards in a hospital, and can be adjusted to project motion pictures upon the ceiling for the benefit of patients confined to bed. It has an inclosed screen measuring approximately 30 by 23 inches, upon which the image may be normally projected for audiences numbering to about 200.

This equipment consists essentially of a main cabinet, a projector, an amplifier, a loudspeaker, a screen, a large mirror and an adjustable mirror, and related items.

The arrangement of dual mirrors enables projection of the photographic image upon a translucent plastic screen, which is in front of the main cabinet, or onto the ceiling, upon removal of the upper cabinet.

It operates on conventional 115- to 120-volt, 60-cycle a-c.

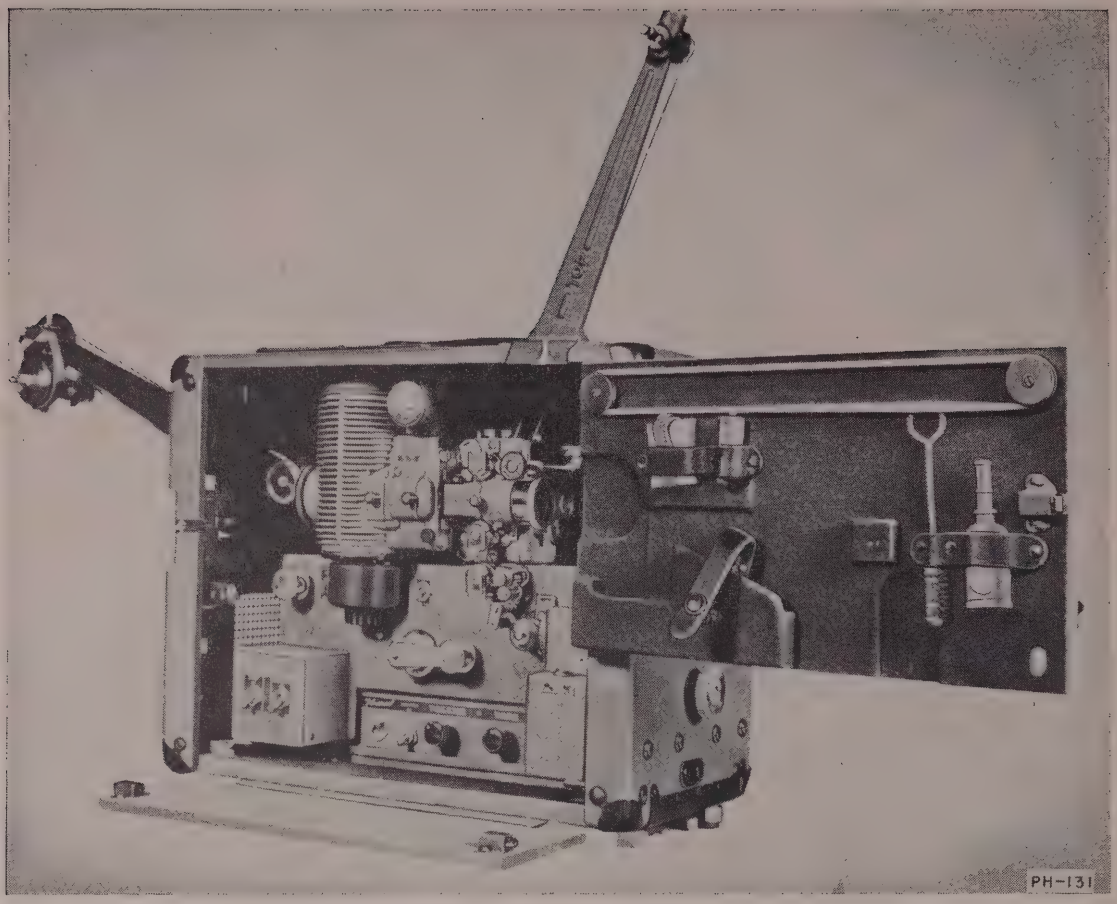
INSTRUCTION LITERATURE: TM 11–2346.
CURRENCY OF INFORMATION: 20 Mar 53.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

FILM SIZE: 16 mm; sound.
OPERATING SPEED: 24 frames per second.
LIGHT SOURCE: 750-w, or 1,000-w standard projection lamp.
LENS: 1-in., f/1.6 projection lens.
REEL CAPACITY: 1,600 ft.
AMPLIFIER CHARACTERISTICS:
Power Output: 10 w (at less than 5% harmonic distortion).
Number Output Channels: One loudspeaker.
VENTILATION PROVISIONS: A ventilation fan is attached directly to the motor shaft.
MOTOR CHARACTERISTICS: 1/25-hp, capacitor-starter type.
POWER REQUIREMENTS: 110- to 120-v, 60-cyc a-c.
SPEAKER: 10-in. cone, permanent magnet with 8-ohm impedance voice coil.
DIMENSIONS: 72 x 32.5 x 28 in.



Status of equipment: S/Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–131. *Name of equipment:* Projector Equipment.

FUNCTIONAL DESCRIPTION

Projector Equipment PH–131 is a portable, 16-mm, silent and sound motion-picture projection equipment. It can be used for audiences of approximately 600, either indoors or outdoors.

Several models of this equipment have been procured. PH–131–E through–J and –L are essentially commercial (Bell & Howell) projectors having a film reel capacity of 2,000 feet.

The entire equipment is contained in two cases that hold the projector-amplifier, the loudspeaker, and associated items; PH–131–H, illustrated above, is a typical projector of this series.

Projection Equipment PH–131–K is essentially a commercial (Natco), portable, 16-mm, sound motion-picture projector equipment contained in three cases that hold the projector, an amplifier, a loudspeaker, and associated items.

INSTRUCTION LITERATURE: PH–131–A thru –J, TM 11–2357.

CURRENCY OF INFORMATION: 23 Mar 53.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

FILM SIZE: 16-mm; silent or sound.

OPERATING SPEED: 16 and 24 frames per second.

LIGHT SOURCE: 750-w or 1,000-w 115-v T–12 type, projection lamp, with special prefocused base.

LENS: 2-in., f/1.6.

REEL CAPACITY: 2,000-ft maximum capacity.

AMPLIFIER CHARACTERISTICS:

Power Output: 12-w (PH–131–L; 8-maximum).

Number Output Channels: 2 loudspeakers.

SPEAKER: Permanent-magnet type; 16-ohm impedance.

VENTILATION: Blower-type fan, forced air.

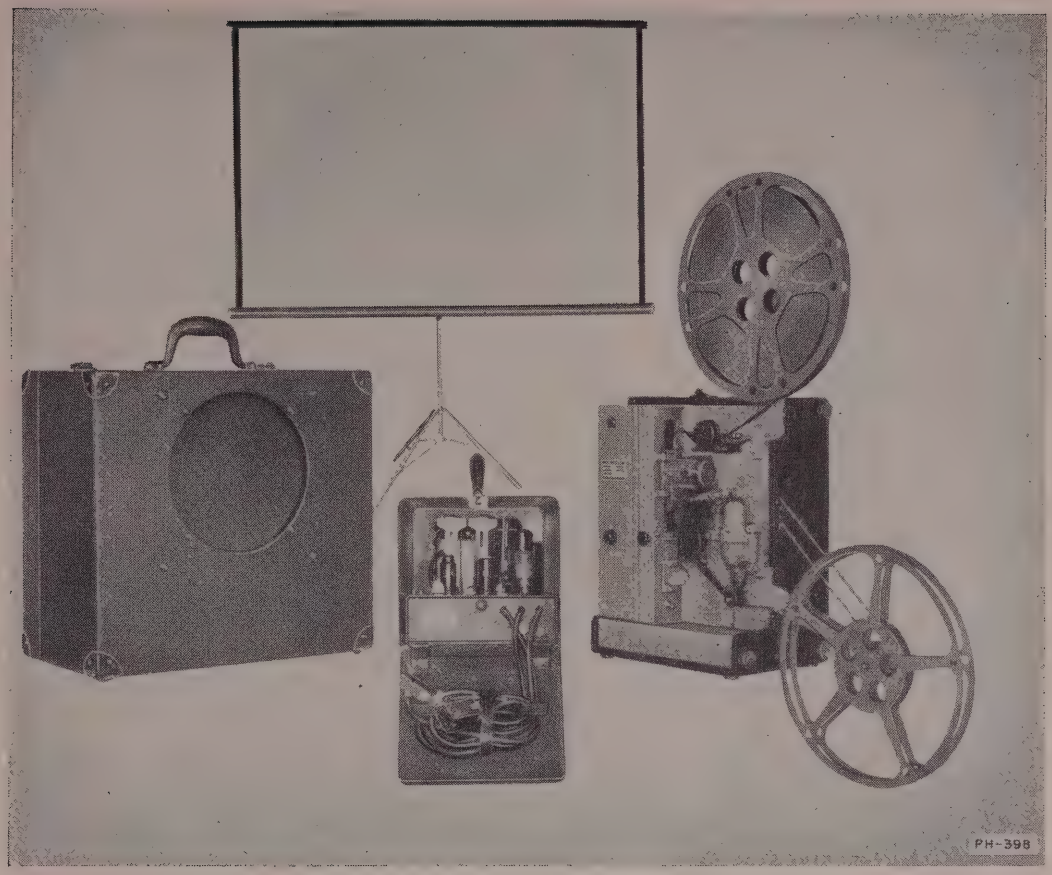
MOTOR CHARACTERISTICS: Governor controlled, 960 rpm (silent) and 1,410 rpm (sound).

POWER REQUIREMENTS: 1,250-w, 110- to 125-v, 50/60-cyc, single-phase, a-c.

DIMENSIONS:

Projector-amplifier: 16½ in. lg x 9½ in. wd x 14 in. h.

Speaker: 16½ in. lg x 10½ in. wd x 17 in. h.



Status of equipment: S/Standard. *Classification of equipment:* Unclassified. *Currency of information:* 20 Mar 53. *Service type number:* PH–398. *Name of equipment:* Projector Equipment.

FUNCTIONAL DESCRIPTION

Projector Equipment PH–398 is a 16-mm, sound motion-picture projector used in classrooms, auditoriums, and outdoors.

This equipment is essentially a commercial (RCA) projector having a 1,600-foot film-reel capacity. It includes, besides the projector assembly, an amplifier, a speaker, and related accessory components.

There are two models of this equipment: PH–398, contained in three carrying cases; and PH–398–A, which combines the projector and amplifier as a single unit in one case, with the speaker in a separate container.

INSTRUCTION LITERATURE: TM 11–406 and TM 11–406A.

CURRENCY OF INFORMATION: 20 Mar 53.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in.) installed*	*Weight (lbs.)*
1	Projector (PH–398) in carrying case	15½ x 9 x 15⅞	38
1	Amplifier (PH–398) in carrying case	9 1/16 x 20¼ x 8 1/16	40
1	Speaker (PH–398) in carrying case	18¼ x 10⅝ x 20	36
1	Projector-amplifier (PH–398–A) in carrying case	20¼ x 9⅛ x 19¼	17½
1	Loudspeaker (PH–398–A) in carrying case	18¾ x 11⅛ x 21	42½

TECHNICAL CHARACTERISTICS

FILM SIZE: 16 mm, sound only.

OPERATING SPEED: 24 frames per second.

LIGHT SOURCE: 750-projection lamp.

LENS: 2 in., f/1.65.

REEL CAPACITY: 400, 1,200 and 1,600 ft.

AMPLIFIER CHARACTERISTICS:

Power Output: With 117 v on the power transformer output is 20 w (with 5% harmonic distortion).

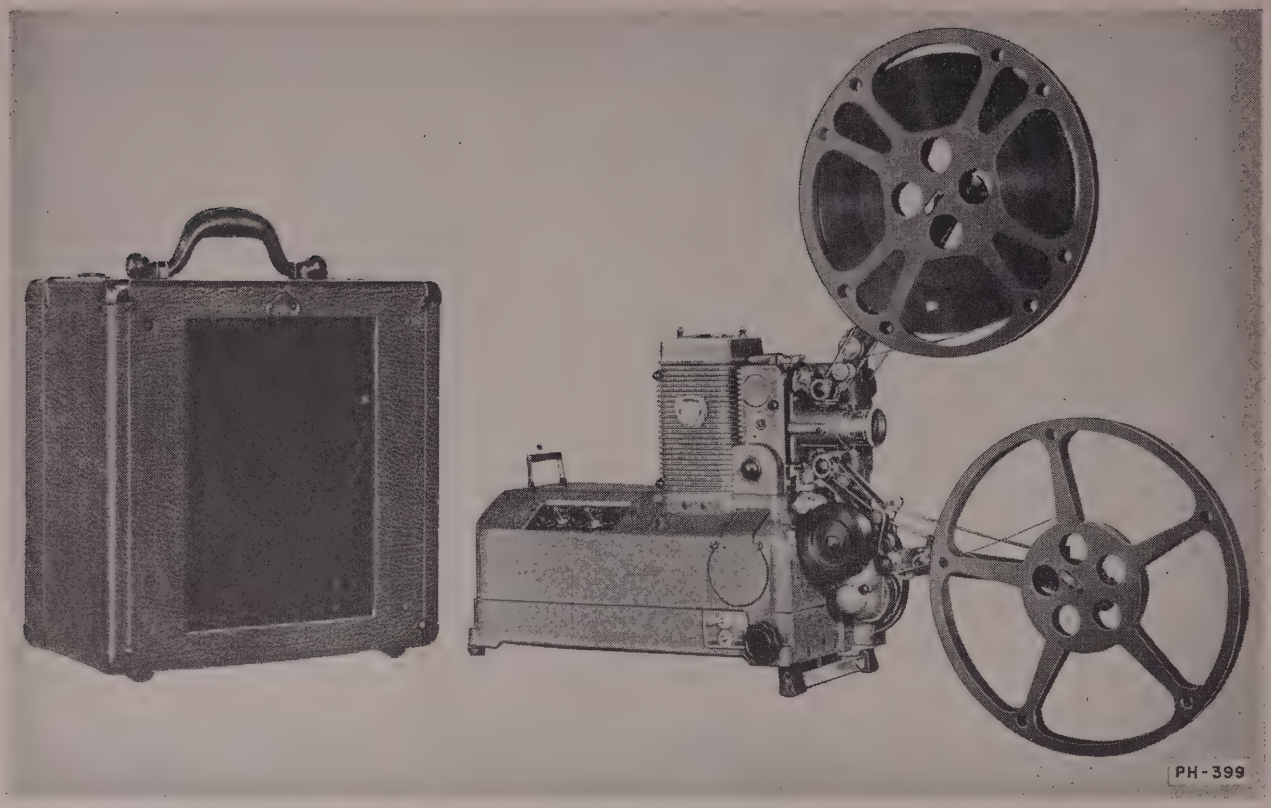
Number Output Channels: One loudspeaker.

SPEAKER: Electrodynamic type, 10-in. cone, 8-ohm voice coil.

VENTILATION PROVISIONS: Forced cooling by means of blower mounted on projector motor shaft.

MOTOR CHARACTERISTICS: 3,520 rpm.

POWER REQUIREMENTS: 900-w, 105- to 125-v, 60-cyc a-c.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 20 Mar 53. *Service type number:* PH–399. *Name of equipment:* Projector Equipment.

FUNCTIONAL DESCRIPTION

Projector Equipment PH–399 is a 16-mm, motion-picture, sound projector with a 1,600-foot reel capacity. It may be used indoors or outdoors for a maximum audience of approximately 600.

This equipment is essentially a commercial (Ampro Model YSA) projector consisting of the projector unit, a speaker, a projection lens, and related items contained in two carrying cases.

It is a major operating component of Projector Equipment PH–408.

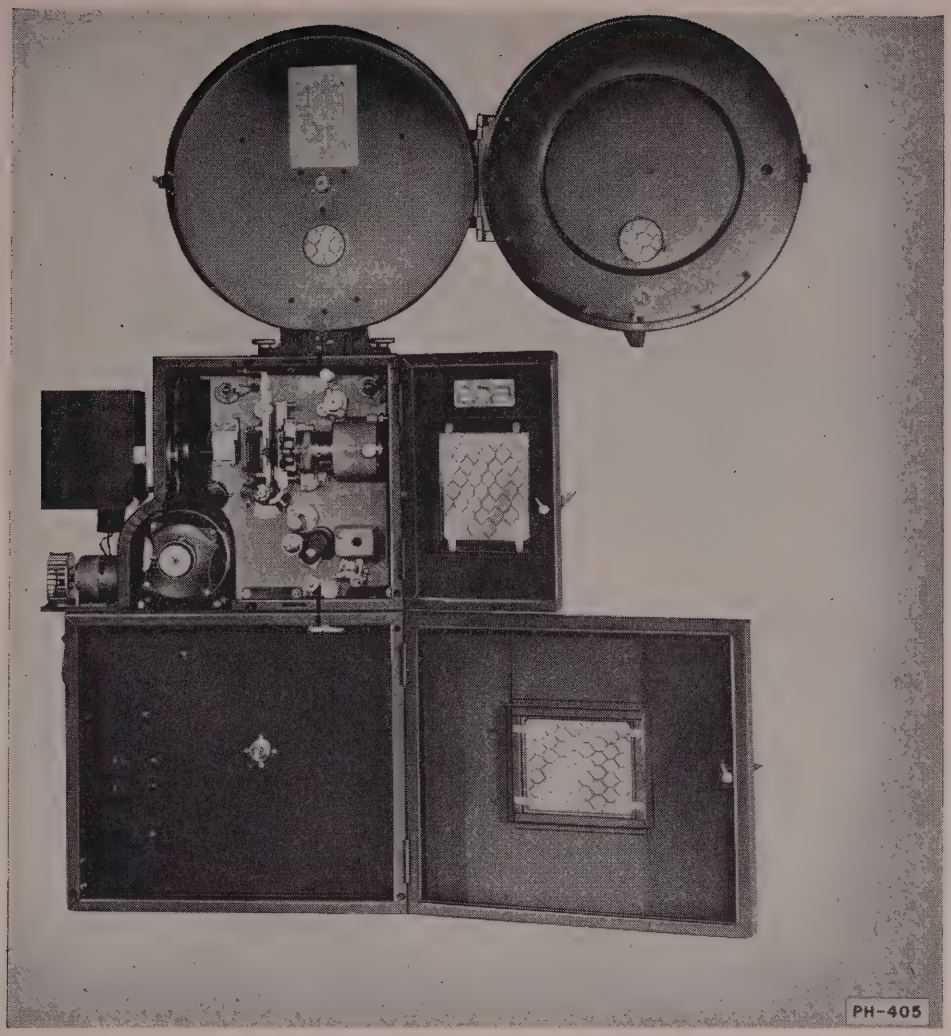
INSTRUCTION LITERATURE: TM 11–407.
CURRENCY OF INFORMATION: 20 Mar 53.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

FILM SIZE: 16 mm; sound or silent.
OPERATING SPEED: 24 or 16 frames per second.
LIGHT SOURCE: 750- or 1,000-w lamp.
LENS: 2-in., f/1.6.
REEL CAPACITY: 1,600 ft.
AMPLIFIER CHARACTERISTICS:
Power Output: 15-w maximum.
Number Output Channels: One loudspeaker.
SPEAKER: 12-in. permanent magnet, 15-ohm voice coil.
VENTILATION PROVISIONS: Blower fan is attached to motor armature.
MOTOR CHARACTERISTICS: Universal (a-c or d-c) motor.
POWER REQUIREMENTS: 110- to 120-v, 60-cyc a-c.
DIMENSIONS:
Unpacked:
Projector carrying case, 19¾ x 12½ x 23 in.
Speaker case, 18 x 10¾ x 16¼ in.
WEIGHT: Unpacked; 73 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 20 Mar 53. *Service type number:* PH–405. *Name of equipment:* Projector.

FUNCTIONAL DESCRIPTION

Projector PH–405 is a semiportable, 35-mm, sound motion-picture projector equipment having a 2,000-foot film capacity. It can be rapidly assembled and installed for operation in the field.

This equipment is essentially a commercial (DeVry) projector which includes the projector assembly, amplifier, loudspeaker, and associated items. It has forced ventilation and a detachable feed magazine; the lower magazine housing of the equipment serves as its base.

There are two models of this equipment: PH–405 and PH–405–A; they are interchangeable but have different maintenance parts requirements.

INSTRUCTION LITERATURE: TM 11–2345.

CURRENCY OF INFORMATION: 20 Mar 53.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

FILM SIZE: 35 mm, sound.

OPERATING SPEED: 24 frames per second.

LIGHT SOURCE: 1,000-w, T–20, medium prefocused base, incandescent projection lamp.

LENS: 4-in., f/2.6 (series 1).

REEL CAPACITY: 2,000 ft.

AMPLIFIER CHARACTERISTICS:

Power Output: 30 w.

Number of Output Channels: One speaker.

LOUDSPEAKER: 12-in. permanent magnet, output of speaker 30 w, peak load 50 w.

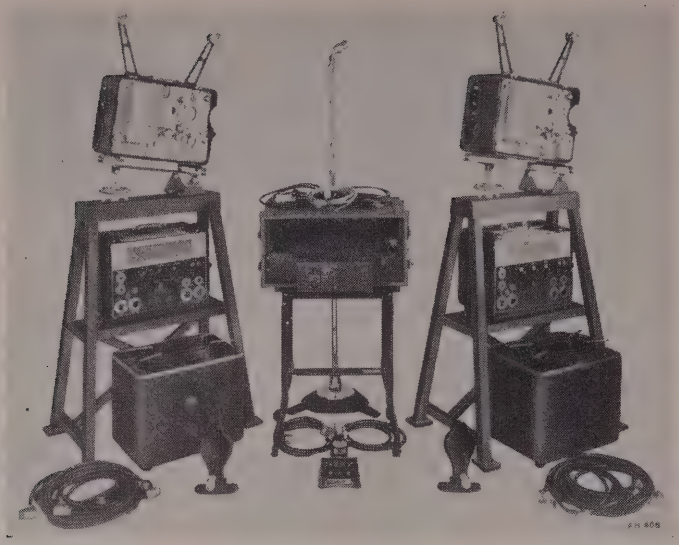
VENTILATION PROVISIONS: Ventilating motor with blower fan.

DRIVE MOTOR CHARACTERISTICS: 1/8-hp, a-c, motor.

POWER REQUIREMENTS: 110- to 120-v, 60-cyc a-c.

DIMENSIONS: 51½ in. h x 10¾ in. wd x 26½ in. lg.

WEIGHT: 172 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 20 Mar 53. *Service type number:* PH–408. *Name of equipment:* Projector Equipment.

FUNCTIONAL DESCRIPTION

Projector Equipment PH–408 is an assemblage of two similar 16-mm, motion-picture projectors for dual, continuous projection to audiences of approximately 2,000.

There are two models of this equipment: PH–408, essentially a commercial (Ampro) equipment which is capable of projecting either silent or sound pictures and includes (besides the two projectors) two lenses, two stands, and two speakers plus related items; PH–408–A (illustrated above), essentially a commercial (DeVry) equipment which can be used to project sound pictures only and includes (besides the two projectors), six lenses, a microphone, a disk record turntable, film repair components, a power unit, and accessory items.

This equipment operates on 110- to 120-volt, 50/60-cycle, single-phase a-c. Power Unit PE–75 may be used with, but is not part of, this projector equipment.

INSTRUCTION LITERATURE: TM 11–407.
CURRENCY OF INFORMATION: 20 Mar 53.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in.) installed*	*Weight (lbs.)*
2	Projectors (each) (PH–408)	19.75 x 12.5 x 23	64
2	Speakers in case	18 x 10.75 x 16.25	29
1	Microphone and stand		
1	Turntable in case	7.5 x 13.5 x 15.5	
1	Film repair equipment		
1	Screen		

TECHNICAL CHARACTERISTICS

FILM SIZE: 16 mm.

OPERATING SPEED:
- PH–408: 24 (sound) or 16 (silent) frames per second.
- PH–408–A: Only 24 (sound) frames per second.

LIGHT SOURCE:
- PH–408: 1,000-w, 10-hr life projection lamp.
- PH–408–A: 1,000-w, 10-hr life projection lamp.

LENS:
- PH–408: 3½ in., f/2.5 lens (two lenses, one for each projector).
- PH–408–A: two 2-in., two 3-in., and two 4-in. projection lenses.

REEL CAPACITY:
- PH–408: 2,000 ft.
- PH–408–A: 2,000 ft.

AMPLIFIER CHARACTERISTICS:
- PH–408: Amplifier (PA–3) power output, 55 w. Number output channels, one loudspeaker outlet.
- PH–408–A: Amplifier power output, 20 w for single projector, 40 w when two are bridged. Output channels, two speakers.

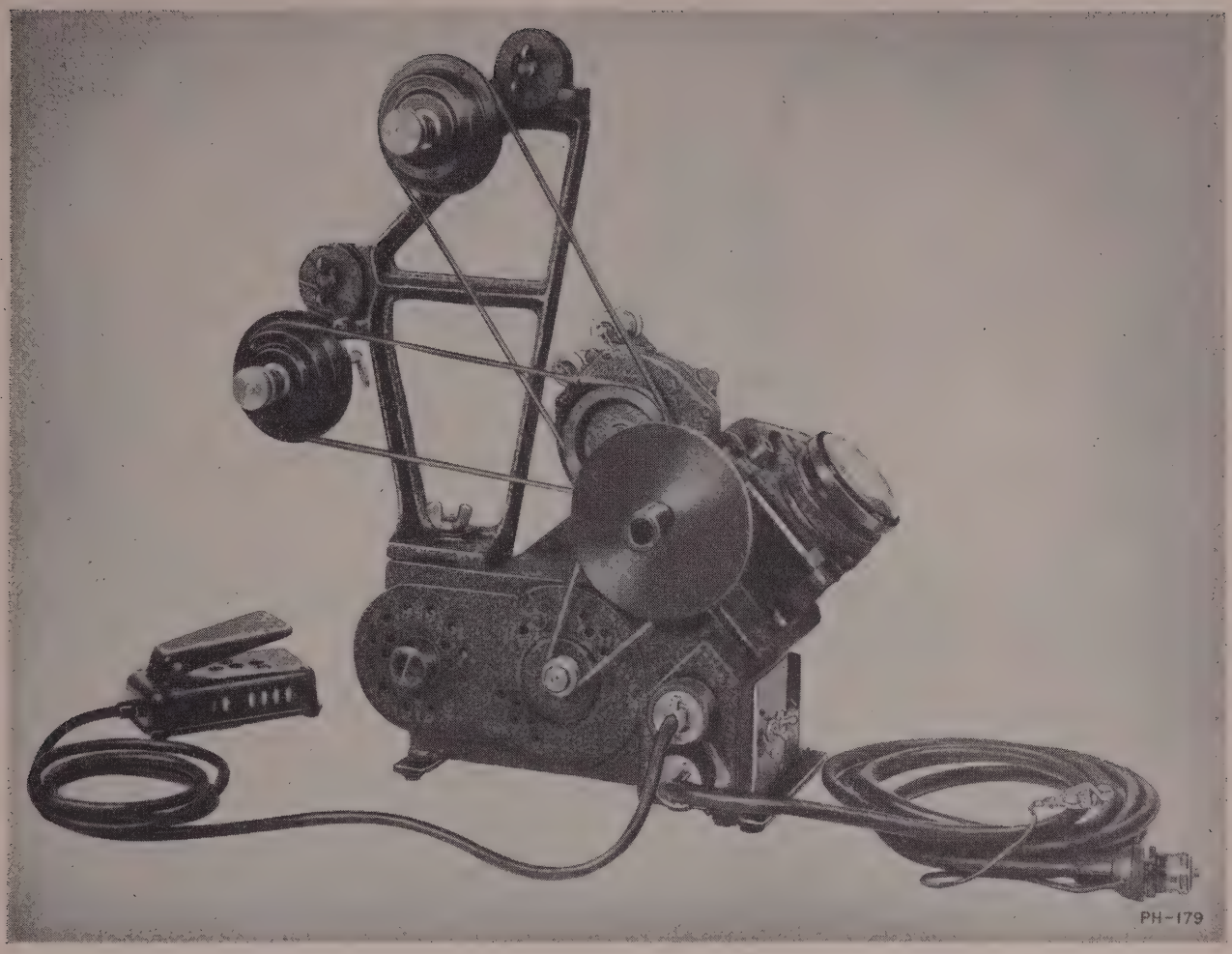
SPEAKER:
- PH–408: 12-in. permanent magnet type 15-ohm voice coil.
- PH–408–A: 25-w, 16-ohm voice coil, permanent magnet type.

VENTILATION PROVISIONS: Blower fan attached to motor armature.

POWER REQUIREMENTS:
- PH–408: 110- to 120-v, 50/50-cyc a-c.
- PH–408–A: 108- to 122-v, 50/60-cyc a-c.

DIMENSIONS: PH–408: in shipping case 41 x 30 x 46 in.

WEIGHT: PH–408, shipping case approximately 560 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 24 Mar 53; *Service type number:* PH–179. *Name of equipment:* Film Examining Machine.

FUNCTIONAL DESCRIPTION

Film Examining Machine PH–179 is a film-viewing equipment used for inspecting and editing 35-mm, motion-picture positive or negative film.

This equipment is essentially a commercial (Moviola model D) viewer and includes the machine base, a picture head, a reel bracket, Reel PH–235, and power controls.

It may be started, reversed, or stopped by means of toggle switches or by operating the speed control rheostat knob. It is equipped with a foot-operated speed-control switch.

The magnifying, viewing lens can be raised when necessary to mark specific frames of the film being viewed.

This viewer is intended to replace Film Examining Machine PH–279.

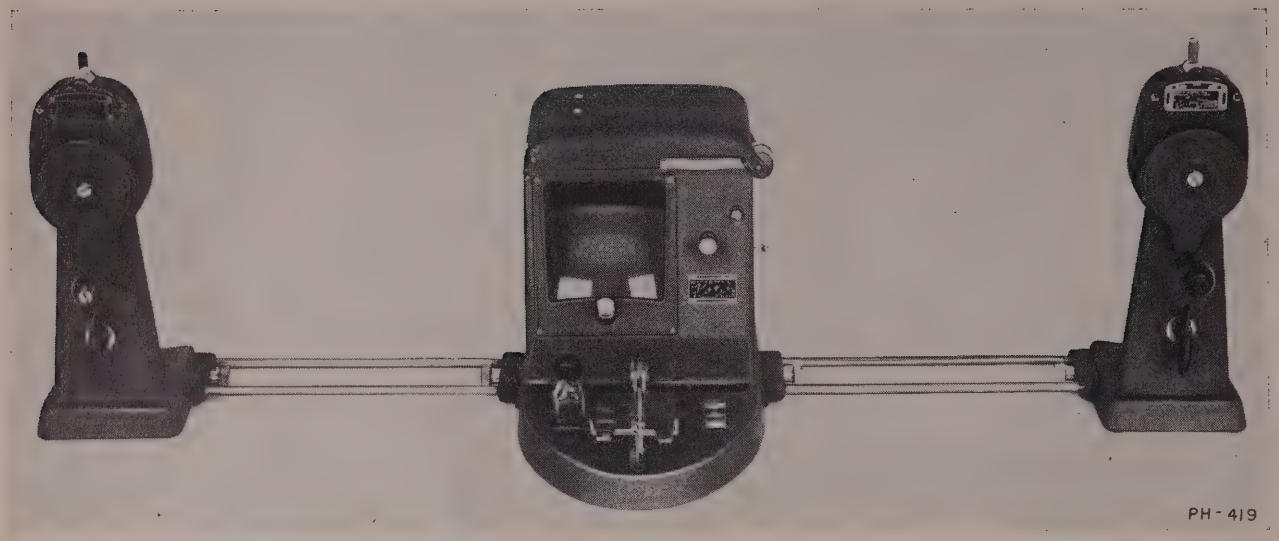
INSTRUCTION LITERATURE: TM 11–2388.
CURRENCY OF INFORMATION: 24 Mar 53.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

FILM SIZE: 35-mm positive or negative motion-picture film.
OPERATING SPEED: Variable.
LIGHT SOURCE: Incandescent lamp, 25 w, 115 v.
LENS: Viewing, 3-in. dia.
REEL CAPACITY: 1,000 ft. (maximum).
MOTOR CHARACTERISTICS: Universal, variable speed, reversible motor. Rheostat type 110-ohm, 25-w speed regulator.
POWER REQUIREMENTS: 110- to 120-v a-c or d-c.
DIMENSIONS: Packed, 27 x 15 x 24 in.
WEIGHT: Packed, 60 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–419. *Name of equipment:* Film Viewer.

FUNCTIONAL DESCRIPTION

Film Viewer PH–419 is a hand-operated, equipment used for viewing, splicing and rewinding 16-mm, motion-picture film.

This equipment is a unit consisting essentially of viewer, splicer, and rewinder assemblies.

CURRENCY OF INFORMATION: 2 Apr 53.

MAJOR COMPONENTS

This equipment consists of only one major operating component.

TECHNICAL CHARACTERISTICS

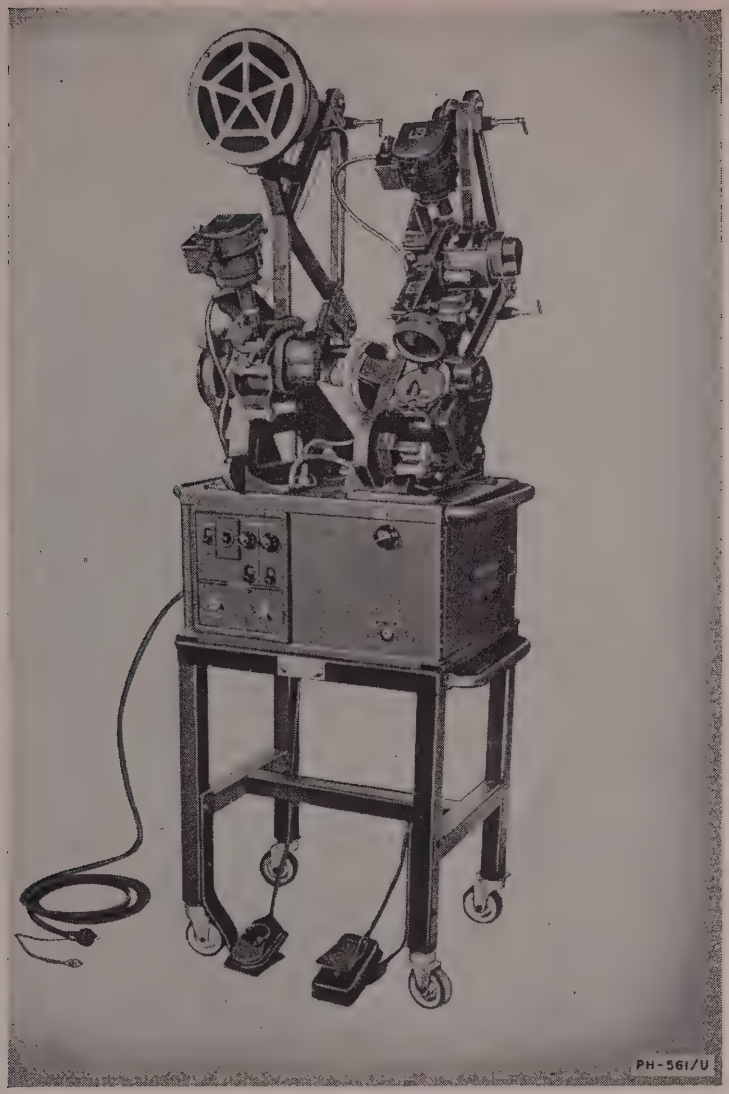
SIZE OF FILM: 16 mm.

FILM CAPACITY: 2,000 ft (maximum).

TYPE OF LIGHT SOURCE: 30-w, 100-v incandescent lamp.

SPECIAL FEATURES: Backward and forward film transmission.

DIMENSIONS: Unpacked, 11 x 30½ x 9 in.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53; *Service type number:* PH–561/U. *Name of equipment:* Film Examining Machine.

FUNCTIONAL DESCRIPTION

Film Examining Machine PH–561/U is a Modified 35-mm, positive motion-picture, film-viewing machine designed for simultaneously inspecting and editing picture and sound (composite) and the sound track only. It has two heads, permitting scanning either a push-pull or standard sound track.

This equipment is essentially a commercial (Moviola) viewer consisting of a stand, a base, a sound head, a combination head, and an amplifier and has foot pedal and manual controls.

INSTRUCTION LITERATURE: TM 11–2379.
CURRENCY OF INFORMATION: 2 Apr 53.

MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

FILM SIZE: 35-mm, positive motion-picture film.
CAPACITY: 2,000-ft reels (maximum).
OPERATING SPEED: Editing speed, 4 to 24 frames per second or manually, single frame.
LIGHT SOURCE:
One 115-v, 40-w lamp.
One 115-v, 25-w lamp (both for combination head).
One Mazda 6- to 8-v lamp for sound head.
LENS: Magnifying viewer lens for combination head.
MOTOR CHARACTERISTICS:
One constant speed motor, 1/6 hp (can be adjusted to 50-cyc current by installing larger pulley).
One variable speed motor, ⅛-hp.
POWER REQUIREMENTS: 110- to 120-v, 60-cyc a-c.
TOTAL VOLUME: Packed, 22 cu ft.
WEIGHT: Packed, 285 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–608/PFP. *Name of equipment:* Reader.

FUNCTIONAL DESCRIPTION

Reader PH–608/PFP is a reflecting-type microfilm reader designed to permit quick scanning of 16- or 35-mm perforated or unperforated 100-foot film rolls.

There are two models of this equipment: PH–608/PFP and PH–608A/PFP. PH–608/PFP is essentially a commercial (Recordak) reader and PH–608A/PFP is essentially a commercial (Diebold) reader. PH–608A/PFP consists of a reading cabinet, having a 200-watt projection lamp, a 3.15-inch, f/3.5 lens, a table, a revolving turret head, a control panel, a projection screen, and a motor. It may be used for 16-mm film by substituting an appropriate projection lens and film roller.

Both readers are functionally interchangeable but have different maintenance parts.

INSTRUCTION LITERATURE: TM 11–2344.

CURRENCY OF INFORMATION: 17 Mar 53.

MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

NEGATIVE (FILM) SIZE: 35-mm, perforated or unperforated (by substituting projection lens and film rollers, 16-mm perforated or unperforated microfilm can be read).

OPERATING SPEED: (SCANNING RATE): 100 ft. in 15 seconds.

LIGHT SOURCE: 200-w, 115-v incandescent projection lamp.

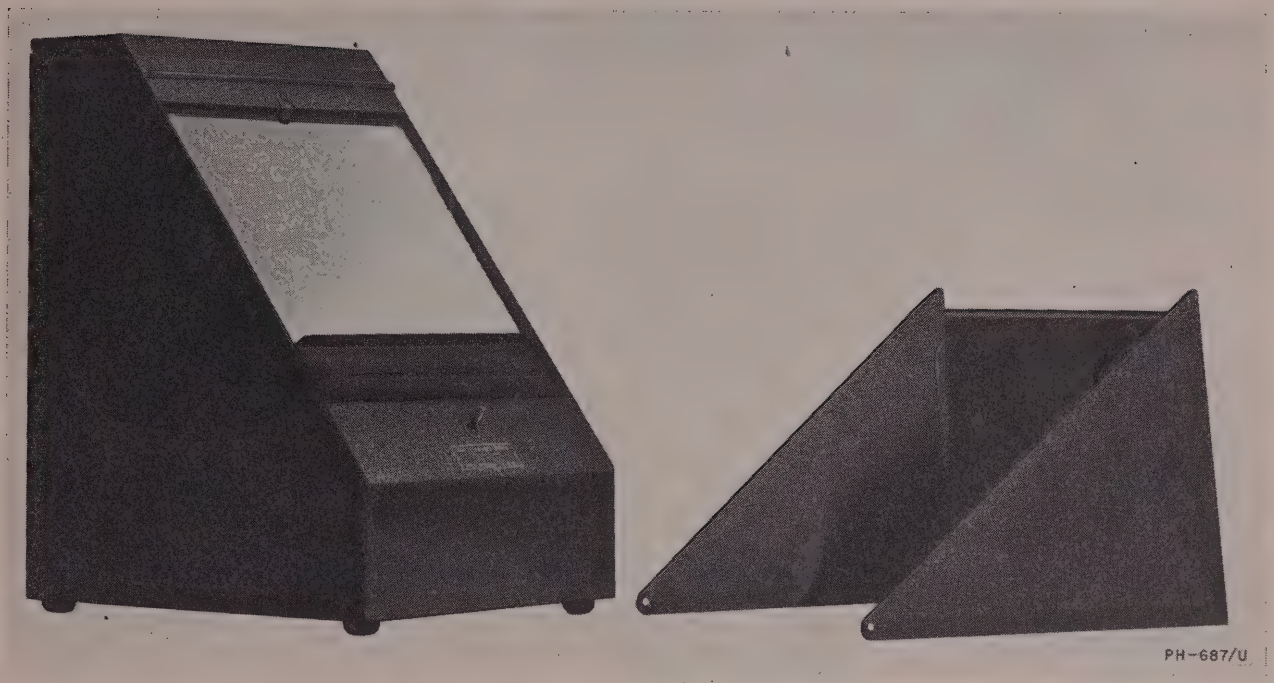
LENS: 3.15-in. lens.

REEL CAPACITY: 100 ft.

MOTOR CHARACTERISTICS: 4-amp, 115-v, 60-cyc, single-phase a-c.

POWER REQUIREMENTS: 4-amp, 105- to 120-v 60-cyc, single-phase a-c.

DIMENSIONS: Unpacked, 27 x 25 x 23 in.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53; *Service type number:* PH–687/U. *Name of equipment:* Viewer, Still Picture.

FUNCTIONAL DESCRIPTION

Viewer, Still Picture PH–687/U is a table top cabinet containing a light source and an opal glass designed to permit examination of transparencies, negatives, and X-rays up to 10 by 10 inches in size.

The equipment consists essentially of a housing, a light source, an opal glass, and a light shield to prevent stray light from reaching the viewing surface.

CURRENCY OF INFORMATION: 2 Apr 53.

MAJOR COMPONENTS

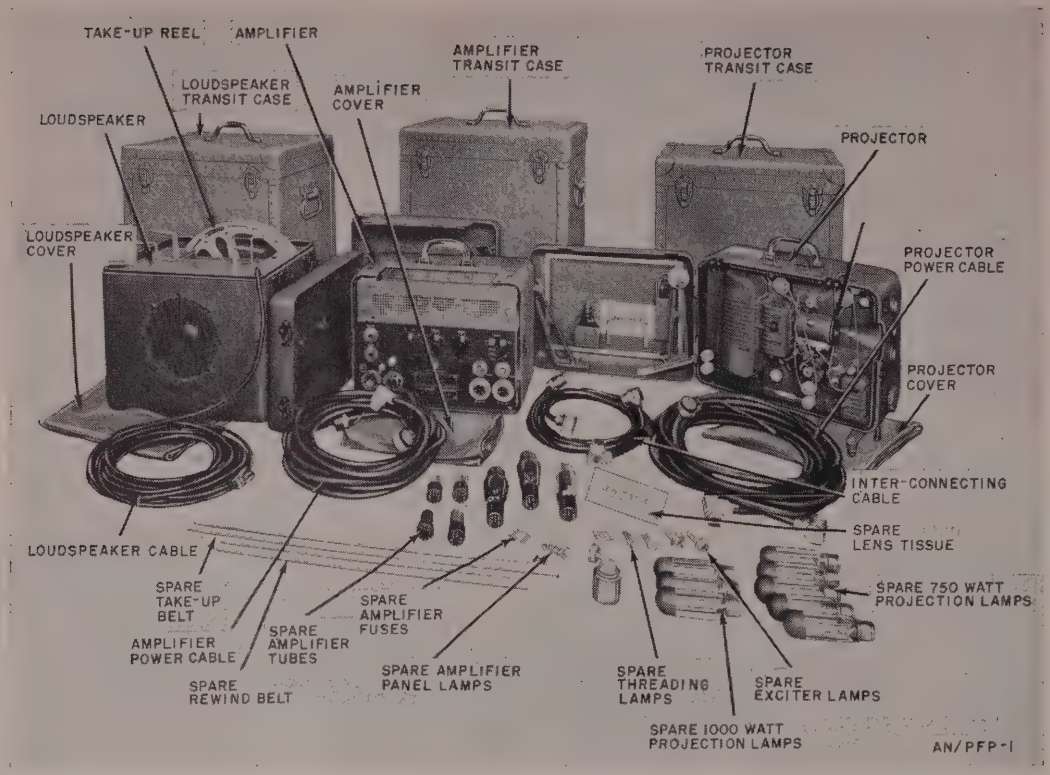
This equipment consists of only one major operating component.

TECHNICAL CHARACTERISTICS

FILM SIZE: 10 x 10 in. (maximum).

LIGHT SOURCE: Set of incandescent lamps, diffused by an opal glass which is used as the viewing surface.

HOUSING: Table top, metal housing, with slanting viewing surface.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* AS–2, and AS-type (AN/PFP–1). *Name of equipment:* Projection Set, Motion Picture, Sound.

FUNCTIONAL DESCRIPTION

Projection Set, Motion Picture, Sound AS–2 (previously designated AN/PFP–3) and Projector Set AN/PFP–1 are similar 16-mm, sound, motion-picture projectors having a 2,000-foot film capacity. They are used either indoors or outdoors for audiences of approximately 600.

These equipments are basically interchangeable (except for requirements as to maintenance parts) and are essentially commercial (DeVry) motion-picture projectors each consisting of a projector, an amplifier, a loudspeaker, and associated components. Three cases are used to house the AN/PFP–1, two cases for the AS–2.

These equipments have a single, 750- or 1,000-watt, prefocused base, projection lamp, and a 2-inch, f/1.6 projection lens.

INSTRUCTION LITERATURE: TM 11–2331A.

CURRENCY OF INFORMATION: 1 Feb. 54.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in.) installed*	*Weight (lbs.)*
1	Projector case (AN/PFP–1)	16½ x 13½ x 18¾	68
1	Amplifier case (AN/PFP–1)	16¼ x 12 x 17¾	67
1	Speaker case (AN/PFP–1)	16¼ x 12 x 17¾	50
1	Projector case (AS–2)	Not available	
1	Amplifier case (AS–2)	Not available	

TECHNICAL CHARACTERISTICS

FILM SIZE: 16-mm.

TYPE: Sound.

OPERATING SPEED: Fixed speed of 24 frames per second.

LIGHT SOURCE: 750-w (or 1,000-w) incandescent, prefocused base, projection lamp.

LENS: 2 in., f/1.6.

REEL CAPACITY: 2,000 ft (maximum).

AMPLIFIER CHARACTERISTICS:

POWER OUTPUT:

AS–2; 8 w (less than 2% distortion).

AN/PFP–1; 20 w (less than 2% distortion).

Number Output Channels:

AS–2; one loudspeaker.

AN/PFP–1; 2 loudspeakers.

SPEAKER:

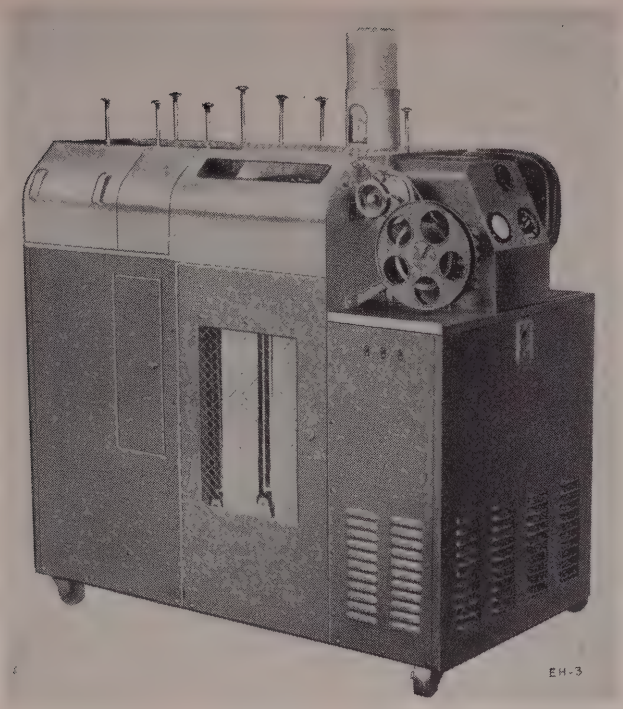
AS–2; 5 in. (10 w, permanent magnet).

AN/PFP–1; 8 in. dia (12 w, permanent magnet).

VENTILATION PROVISIONS: Ventilation motor, 24-blade cylindrical rotor.

MOTOR CHARACTERISTICS: Governor-controlled speed, 5,554 rpm.

POWER REQUIREMENTS: 1,425-w, 117-v, 60-cyc, single-phase a-c (operating tolerance, 108- to 122-v, 50/60-cyc a-c).



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* EH–3. *Name of equipment:* Developing Machine.

FUNCTIONAL DESCRIPTION

Developing Machine EH–3 (previously designated PH–413) is a self-contained continuous processing unit used for developing, fixing, and drying perforated or unperforated 16-mm, motion-picture film at a rate of 7 to 15 feet per minute.

There are three models of this equipment: PH–413, PH–413–A, and Developing Machine EH–3. PH–413 accommodates one 400-foot reel of positive or negative film and develops 600 to 900 feet of negative or reversal film per hour or 1,200 to 1,800 feet of positive film per hour, and operates on 115-volt, 60–cycle a-c; PH–413A is similar equipment but has no reversal processing tank and can be used only for processing negatives. It operates on 115-volt, 60-cycle a-c.

Developing Machine EH–3 is essentially a later model of this equipment and has a capacity of 1,000 feet of film and a production rate of 20 to 40 feet of film per minute and operates on 220-volt, 60-cycle a-c; it processes reversal film, positive film and negative film.

All models are equipped with automatic temperature control to keep solutions between 66° to 70° F. They can operate in daylight and under conditions of adverse ambient temperature.

INSTRUCTION LITERATURE: TM 11–2315.

CURRENCY OF INFORMATION: 2 Apr 53.

MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Self-contained, continuous processing unit.

SIZE OF MATERIAL HANDLED: 16-mm, perforated or unperforated, positive and/or negative motion-picture film.

OUTPUT CAPACITY:

- PH–413: 7 to 15 fpm.
- PH–413–A: 7 to 15 fpm.
- EH–3: 20 to 40 fpm.

TEMPERATURE CONTROL: 66° and 70°F. (automatic thermostatic control).

POWER REQUIREMENTS:

- PH–413 and PH–413–A: 115v, 50/60 cyc a-c.
- EH–3: 220-v, 60-cyc a-c.

OPERATIONAL SEQUENCE: Loading tank, developer tank, stop-bath tank, fixing tank, first wash tank, second wash tank, and glycerine-aerosol tank.

DIMENSIONS:

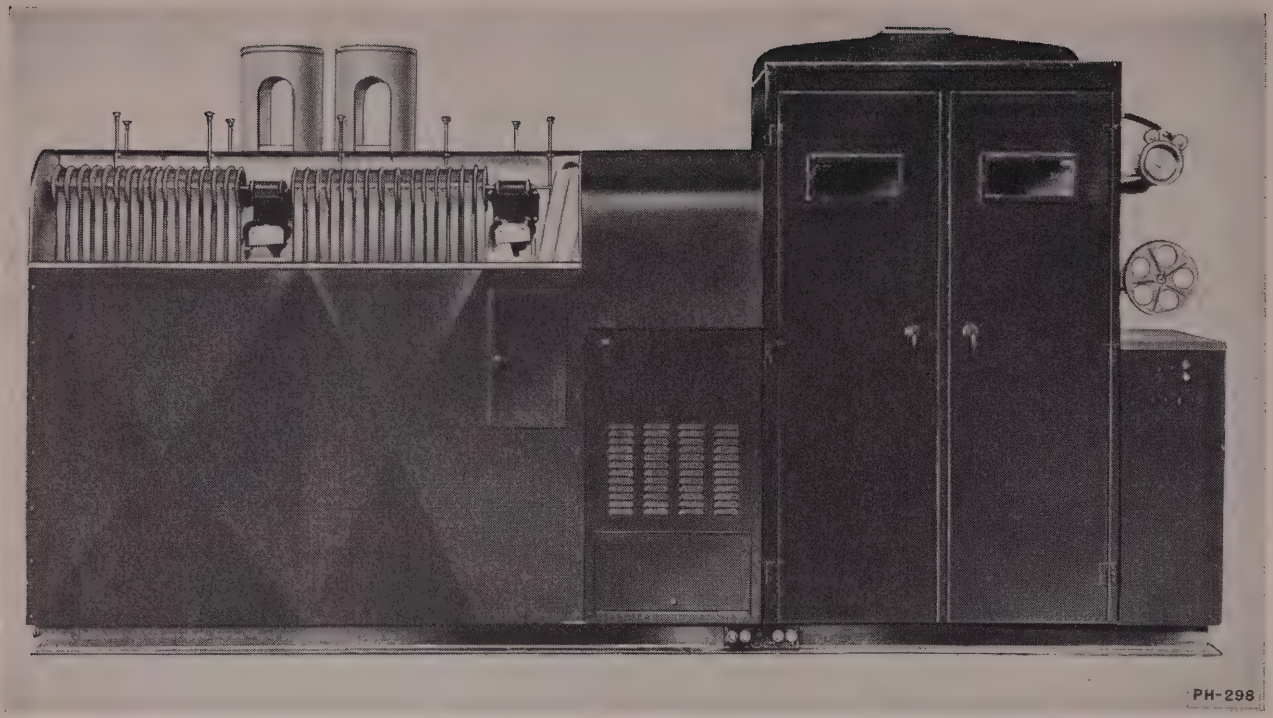
Unpacked:

- PH–413, PH–413–A: 51 x 26 x 56 in.
- EH–3: 76 x 66 x 26¼ in.

WEIGHT:

Unpacked:

- PH–413, PH–413–A: approximately 700 lb.
- EH–3: approximately 700 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53; *Service type number:* PH–298. *Name of equipment:* Developing Machine.

FUNCTIONAL DESCRIPTION

Developing Machine PH–298 is a complete, self-contained, transportable unit designed for processing 35-mm positive and negative, motion-picture film in the field.

This equipment is essentially a commercial (Houston-Fearless) developing machine comprised of the developing and drying units, power and refrigeration systems, air squeegees, a film feed-in section, developer circulation systems, tank sections, a valve compartment, a drying box, a take-off section, an air compressor, and related items.

Developing time is controlled by a variable speed transmission system. Temperature of the developing solutions is maintained at a preselected level by a thermostatically controlled refrigeration unit and heater elements.

It operates on 220- to 230-volt, 50/60-cycle, single-phase, a-c power and draws approximately 12 kilovolt-amperes.

Future procurements of this equipment will be designated Processing Machine, Photographic Film AN/TFQ–10 and will be interchangeable with PH–298 except for maintenance parts.

INSTRUCTION LITERATURE: TM 11–2376.

CURRENCY OF INFORMATION: 2 Apr 53.

MAJOR COMPONENTS

This equipment consists essentially of a single principal operating component.

TECHNICAL CHARACTERISTICS

TYPE: 35-mm negative and positive motion-picture film.

OUTPUT CAPACITY: 1,000-ft magazine darkroom loading; processes 10 to 20 ft of film per minute.

HEATING ELEMENT DATA: 18 heating lamps, 250-w, and three strip heaters, 500-w.

REFRIGERATION SYSTEM: ½-hp synchronous motor and 2-cylinder compressor.

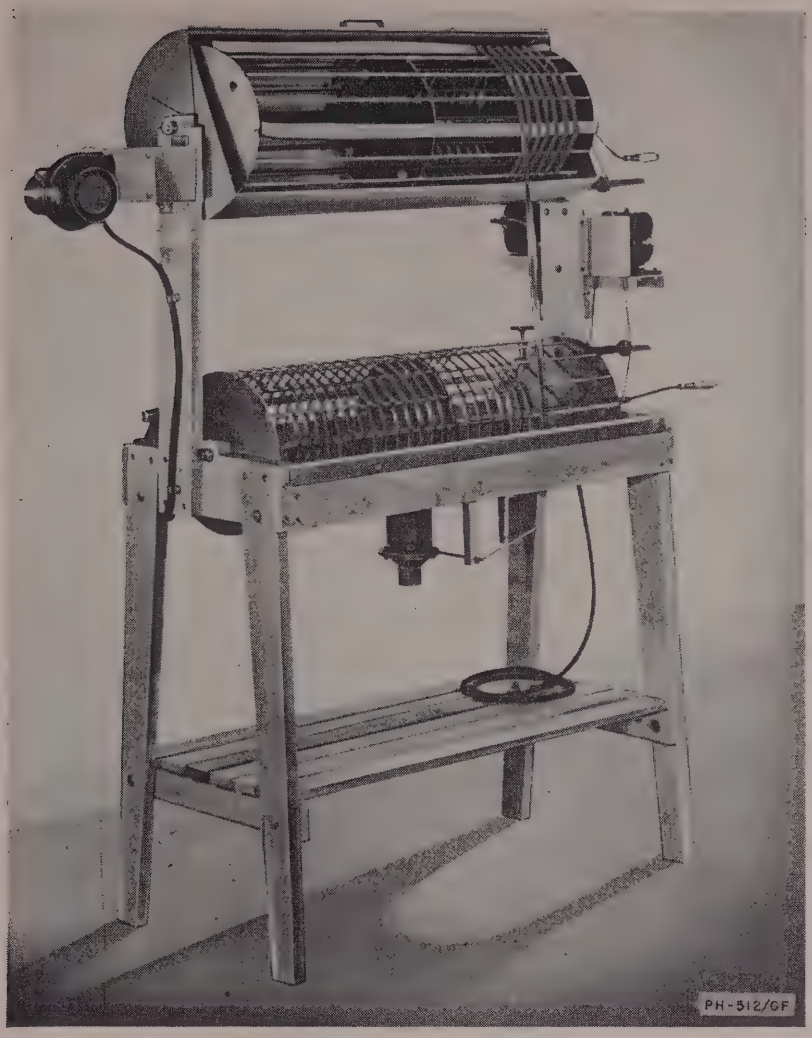
MAIN FILM DRIVE MECHANISM: ¼-hp synchronous main-drive motor.

THERMOSTAT:
Cut-off: 68°F.
Cut-in: 70°F.

POWER REQUIREMENTS: 220- to 230-v, 50/60 cyc, single-phase a-c.

DIMENSIONS: Assembled, 168 x 82 x 34 in.

WEIGHT: Net, 5,000 lb.



Status of equipment: L/Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–512/GF. *Name of equipment:* Developing Machine.

FUNCTIONAL DESCRIPTION

Developing Machine PH–512/GF is a drum-type, processing equipment having a capacity of 100 feet of 16-mm film or 50 feet of 35-mm film.

This equipment consists essentially of the frame, a tank assembly, developing and drying reels, a blower, a heater, reducer assemblies, a driving motor, and a drying compartment.

The two reels are motor driven and are placed one above the other; the lower reel revolves in a tank holding the processing solutions; the upper reel is covered and exposes the film to the heater and blower for drying.

Later models of this equipment provide for more rapid draining of the tank and include a motor of greater power.

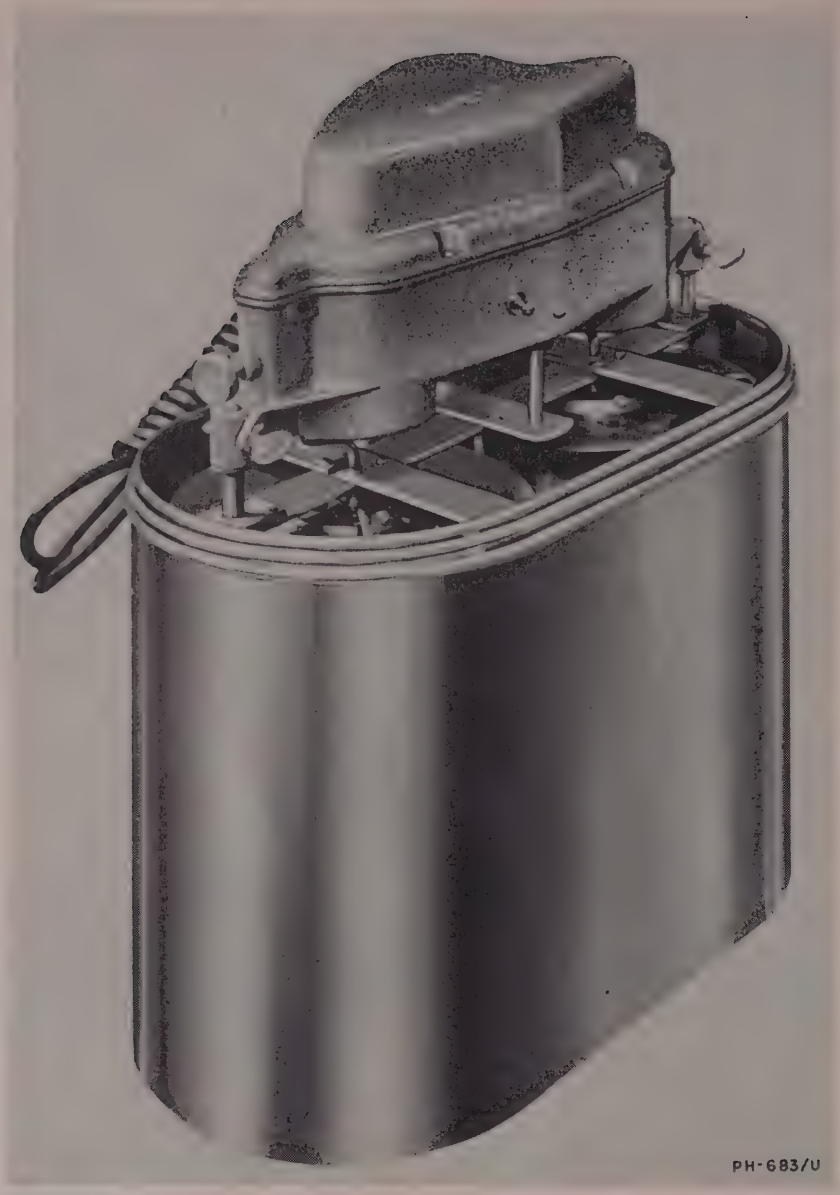
INSTRUCTION LITERATURE: TM 11–2305.
CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists essentially of a single principal operating component.

TECHNICAL CHARACTERISTICS

TYPE: Two-drum type.
NEGATIVE SIZE:
100 ft capacity, 16-mm motion picture film.
50 ft capacity, 35-mm motion picture film.
MOTOR: 1/10 hp.
Blower and Heater:
Blower: 115-v (motor-driven) a-c.
Heater: 300-w, 115-v a-c.
POWER REQUIREMENTS: 115-v, 50/60-cyc a-c.
DIMENSIONS:
Packed, 72 x 26 x 60 in.
Unpacked, 57 x 16 x 69 in.
WEIGHT:
Packed, 395 lb.
Unpacked, 290 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information.* 1 Feb. 54. *Service type number:* PH–683/U. *Name of equipment:* Processing Units, Photographic Film.

FUNCTIONAL DESCRIPTION

Processing Unit, Photographic Film PH–683/U is a portable roll processing unit accommodating film from 5 to 200 feet long and to 9½ inches wide.

This equipment consists of a motor and drive case assembly designed to drive film from one spool to the other and back, three processing tanks, and associated accessories.

The drive assembly and motor can be removed for manual operation. During initial 25 percent of development time the film is passed from reel to reel by hand. Tanks nest one within another for convenient storage.

INSTRUCTION LITERATURE: TM 11–2308.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

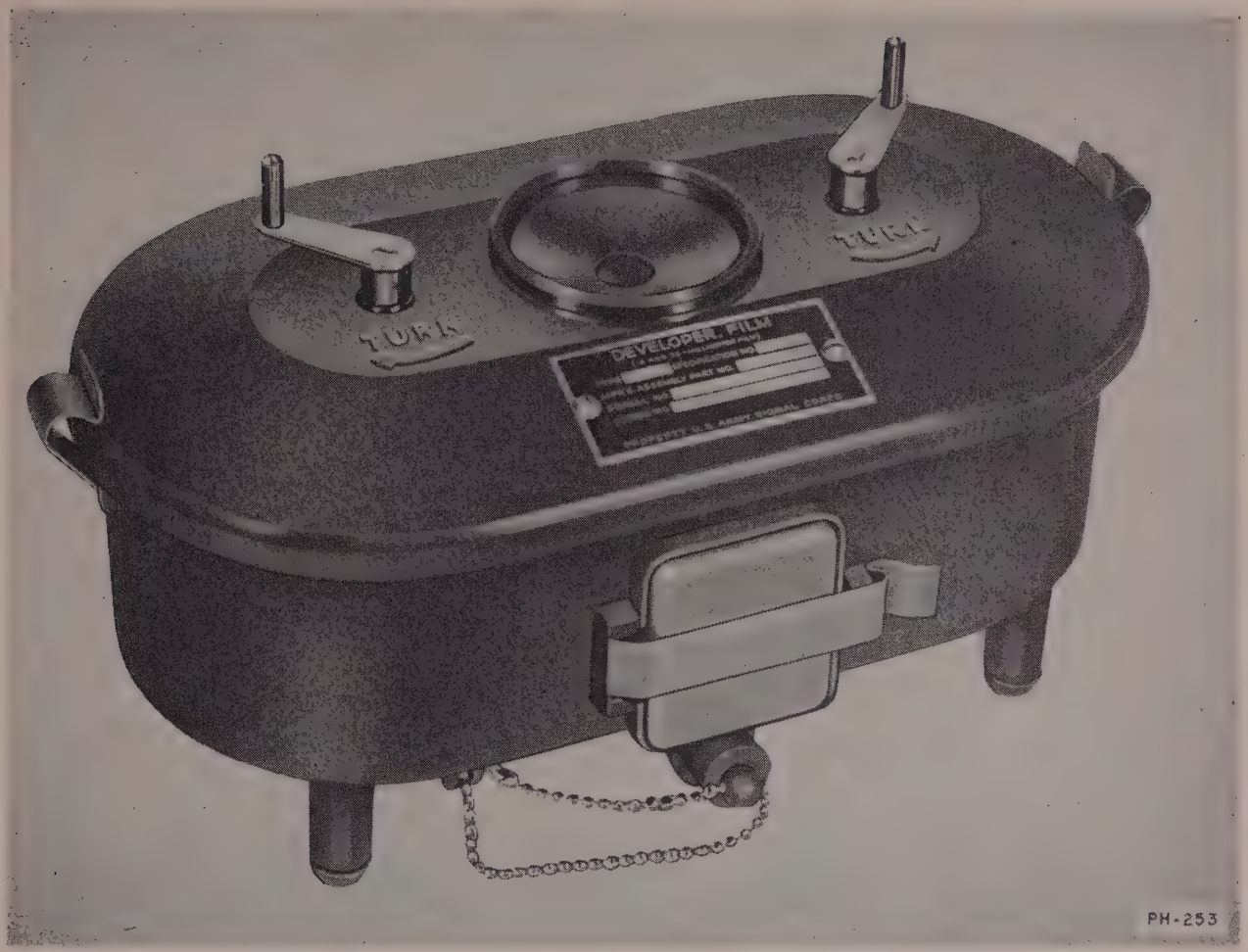
TYPE: Photographic film processing unit.

FILM SIZE: To 9½ in. wd and from 5 to 200 ft lg.

OPERATION: Manual and motor.

MOTOR CHARACTERISTICS: 1/16 hp 8,000 rpm, 115-v universal.

POWER SOURCE: 110–120-v, 60-cyc a-c.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53; *Service type number:* PH–253. *Name of equipment:* Developing Equipment.

FUNCTIONAL DESCRIPTION

Developing Equipment PH–253 is a portable, 16-mm or 35-mm film processing machine having a 100-foot capacity. It is used for negative and reversal-to-positive processing.

This equipment is essentially a commercial (Morse) developing machine consisting of a tank, two reels, and a case. It is hand-operated and must be loaded in a darkroom, but processing may be carried on in daylight.

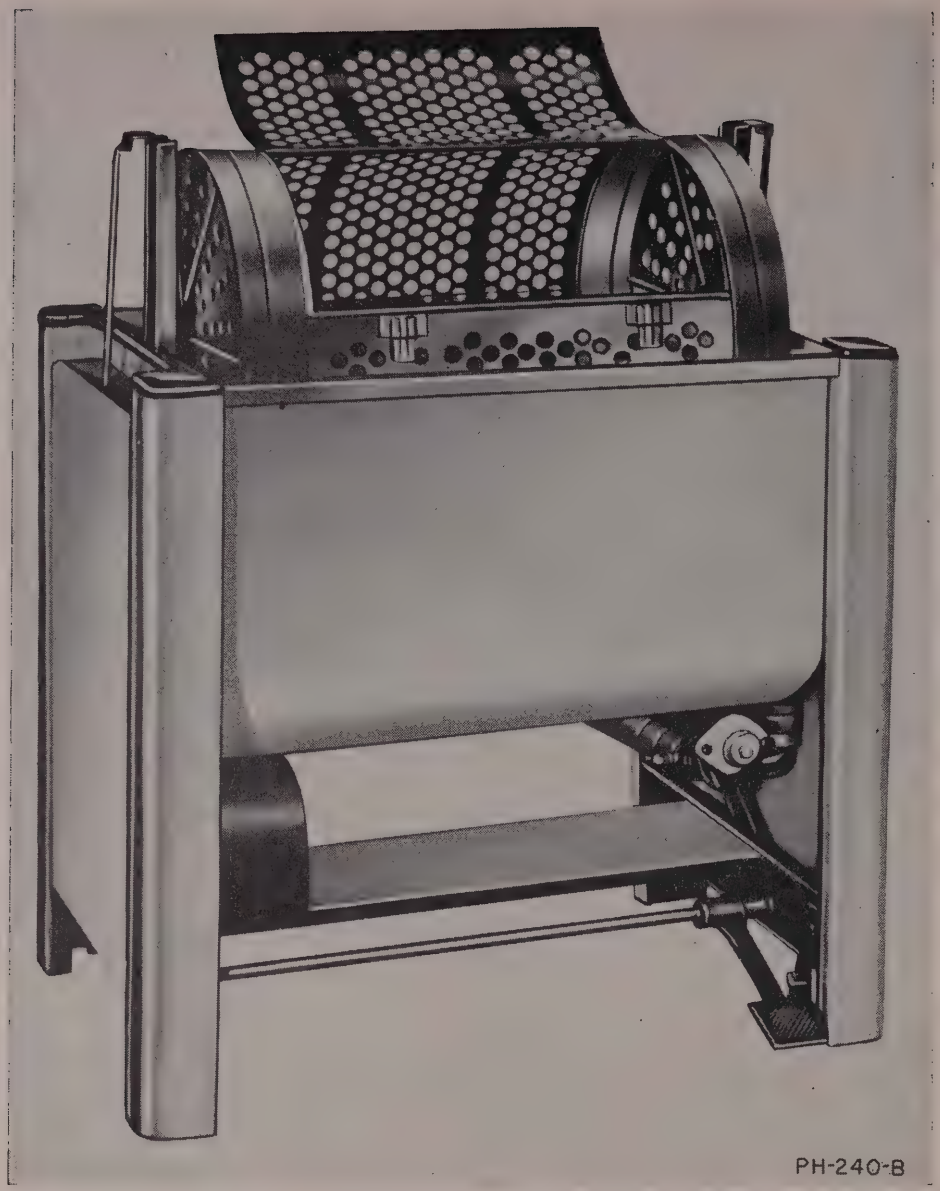
INSTRUCTION LITERATURE: TM 11–2394.
CURRENCY OF INFORMATION: 2 Apr 53.

MAJOR COMPONENTS

This equipment consists of only one major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Daylight, tank type; motion picture.
NEGATIVE SIZE: 35-mm and 16-mm motion-picture film.
CAPACITY: 100-ft reels.
TYPE OF OPERATION: Hand-operated.
DIMENSIONS: Unpacked, 12½ x 6½ x 6 in.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 24 Mar 53; *Service type number:* PH–240–A and –B. *Name of equipment.* Washer.

FUNCTIONAL DESCRIPTION

Washers PH–240–A and –B are motor-driven print washers of the revolving perforated-cylinder type.

This equipment is essentially a commercial washer consisting of a frame, a cylinder, a tank, a transmission gear assembly, and a motor. A steady flow of fresh water is maintained. The perforated cylinder rotates and can handle prints up to 11 by 14 inches in size.

INSTRUCTION LITERATURE: TM 11–2398 and TM 11–2398A.

CURRENCY OF INFORMATION: 24 Mar 53.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Rotating cylinder type; revolving type with double-cell siphon.

SIZE MATERIAL HANDLED: Maximum 11 x 14 in.

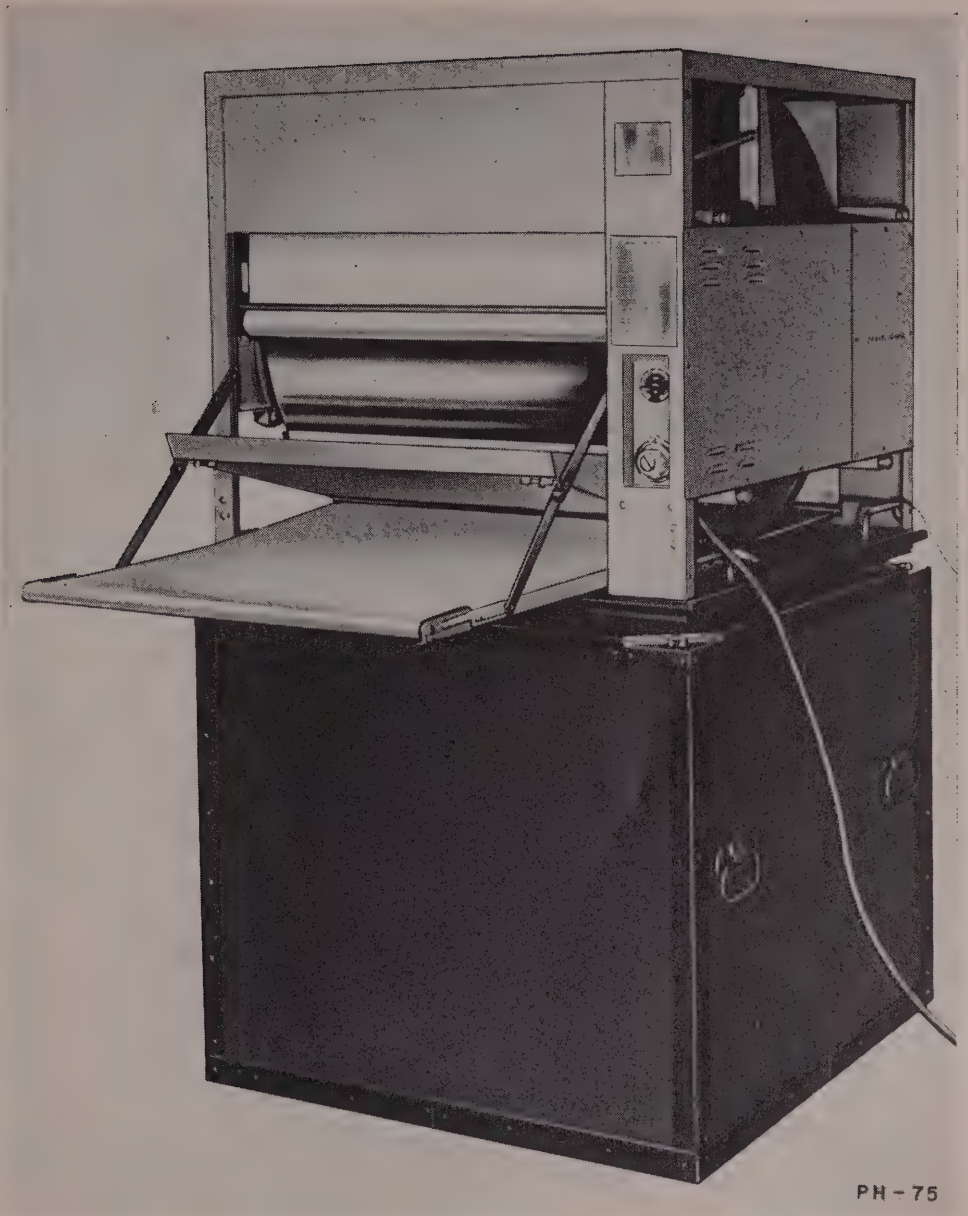
CAPACITY: 150 8 x 10 prints or 80 11 x 14 prints.

WATER REQUIREMENTS: Running water.

MOTOR CHARACTERISTICS: 1/20-hp split phase.

POWER REQUIREMENTS: 115-v, 60-cyc a-c.

DIMENSIONS: Unpacked, 23 x 36 x 35 in.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 20 Mar 53; *Service type number:* PH–75. *Name of equipment:* Dryer.

FUNCTIONAL DESCRIPTION

Dryer PH–75 is a motor-driven, drum-type, photographic print-drying equipment which is used for continuous drying of matte and glossy prints.

It is essentially a commercial (Pako) dryer and includes a chromium-plated rotary drum, a motor, a one-piece web apron, a receiving tray, and a thermostat-controlled heater assembly. There are three models of this equipment: PH–75, –A, and –B. All are interchangeable except for maintenance parts.

INSTRUCTION LITERATURE: TM 11–2354.

CURRENCY OF INFORMATION: 20 Mar 53.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Rotary drum for matte and glossy prints.

CAPACITY: Prints to 24 in. wd.

HEATING ELEMENT: Single-strip heater, 2,500 w (minimum of 4 minutes to maximum of 16 minutes drying time).

Type of Control: Thermostatic.

MOTOR CHARACTERISTICS: Variable speed motor.

POWER REQUIREMENTS: 115-v, 60-cyc a-c; or 115-v d-c.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53; *Service type number:* PH–176. *Name of equipment:* Dryer.

FUNCTIONAL DESCRIPTION

Dryer PH–176 is a motor-driven, floor-mounted equipment used for continuous drying of matte and semimatte photographic prints.

It consists essentially of a frame, a rotating drum, strip-type heaters, a fabric apron, and control assemblies.

There are three models of this equipment. PH–176–A and –B (illustrated) are equipped with a thermostatic heater control, which is not included in PH–176.

INSTRUCTION LITERATURE: TM 11–2355 and TM 11–2355A.

CURRENCY OF INFORMATION: 2 Apr 53.

MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Rotary-drum type.

CAPACITY: Matte and semimatte prints to 26 in. wd, (approximately 300 single weight 8 x 10-in. prints per hr).

HEATING ELEMENT: Two heater elements, 1,350 w each.

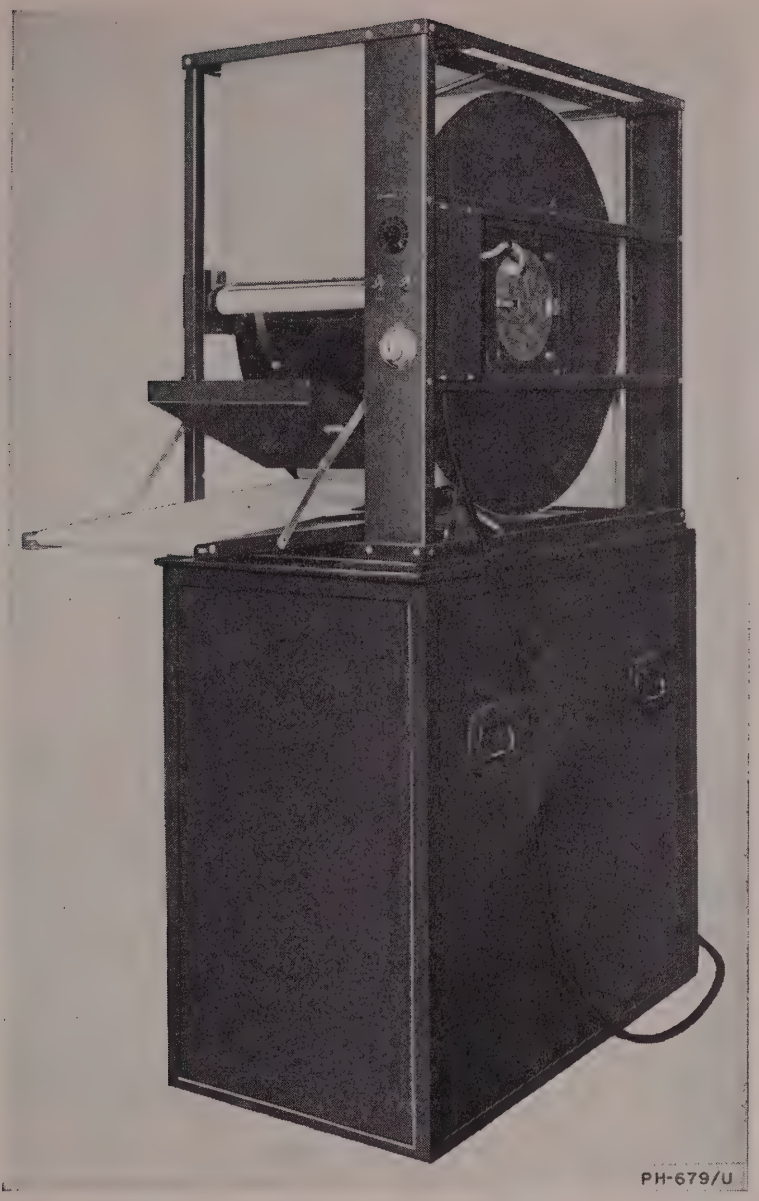
Type of Control: Thermostatically controlled heater assembly (PH–176–A, and –B).

MOTOR CHARACTERISTICS: 115-v a-c, or d-c, reduction-geared, electric motor, controlled by an ON-OFF switch and a speed SLOW-FAST rheostat.

POWER REQUIREMENTS: 110- to 120-v a-c, 60-cyc, single-phase, or 115-v d-c.

DIMENSIONS: Unpacked, 58 9/16 x 32 9/16 x 60¼ in.

WEIGHT: Unpacked, 180 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb. 54. *Service type number:* PH–679/U. *Name of equipment:* Dryer, Photographic Print.

FUNCTIONAL DESCRIPTION

Dryer, Photographic Print PH–679/U is a drum-type, electrically operated photographic print drying equipment. It is designed to dry, or ferrotype, single or double weight, matte or glossy prints.

This equipment consists essentially of a highly polished drum, an apron, a stand, and a variable speed driving motor and controlled heating coils.

It is intended to replace Dryer PH–288.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Rotary drum for matte and glossy prints.

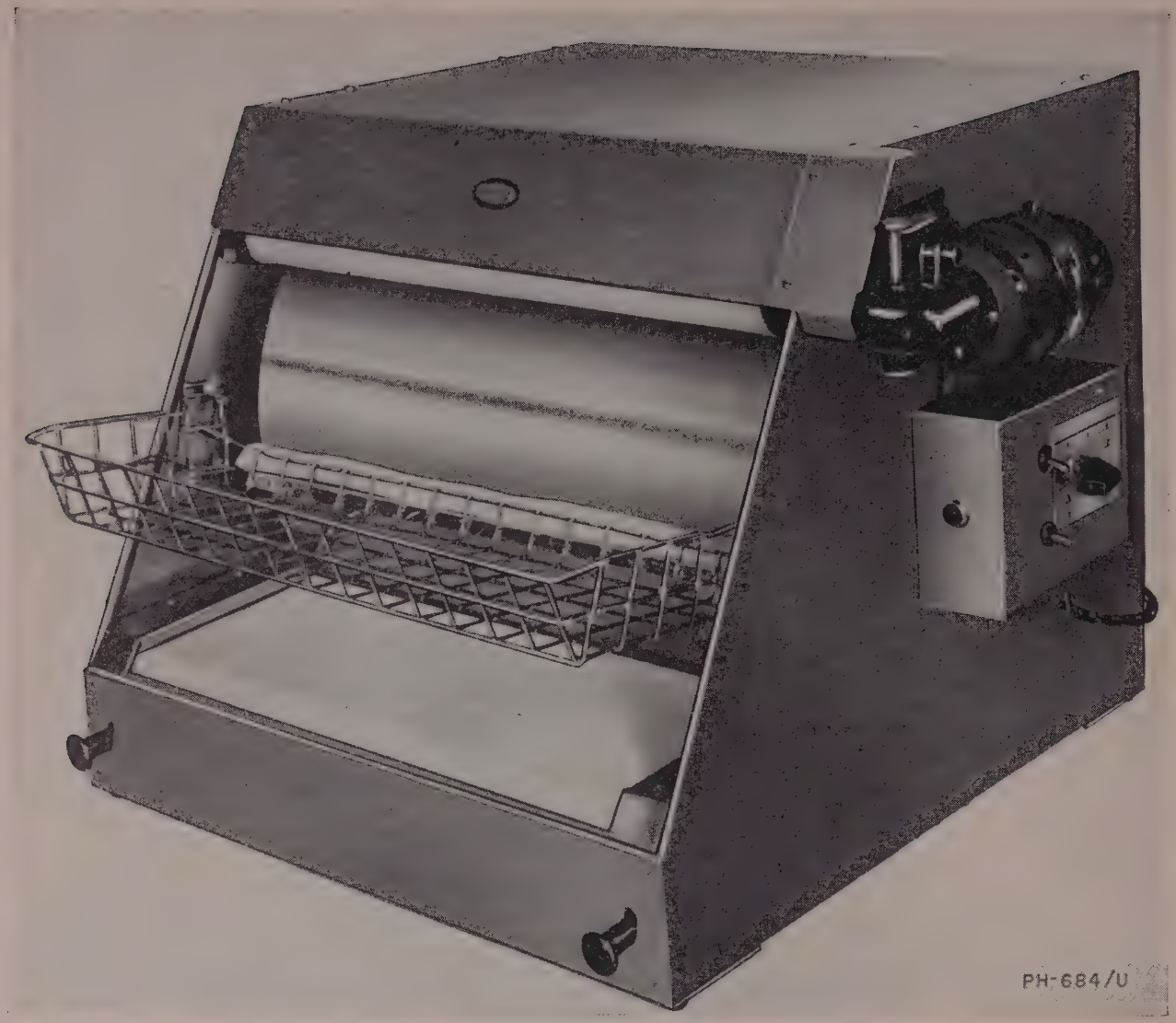
CAPACITY: 80 single weight 8 x 10 prints per hour.

HEATING ELEMENT: Three coil heaters, 360-w (each).

Type of Control: Variable heat, thermostatic control.

MOTOR CHARACTERISTICS: Variable speed motor.

POWER REQUIREMENTS: 115-v, a-c, 60-cyc, single-phase a-c.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb. 54. *Service type number:* PH–684/U. *Name of equipment:* Dryer, Photographic Print.

FUNCTIONAL DESCRIPTION

Dryer, Photographic Print PH–684/U is a motor-driven, drum-type, photographic print drying equipment that is used for continuous drying of glossy prints.

The equipment is essentially a commercial (Fedco) dryer consisting of a polished stainless-steel drum, a variable speed motor, a one-piece canvas belt, a speed control assembly, and a heater control switch.

This equipment will dry about forty 8- by 10-inch single-weight prints per hour.

INSTRUCTION LITERATURE: TM 11–2308.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists essentially of a single principal operating component.

TECHNICAL CHARACTERISTICS

TYPE: Rotary-drum type.

CAPACITY: Forty 8 x 10 in. single wt glossy prints per hr., up to 11 in. wd.

HEATING ELEMENT: One electrical element 350-w cylindrical.

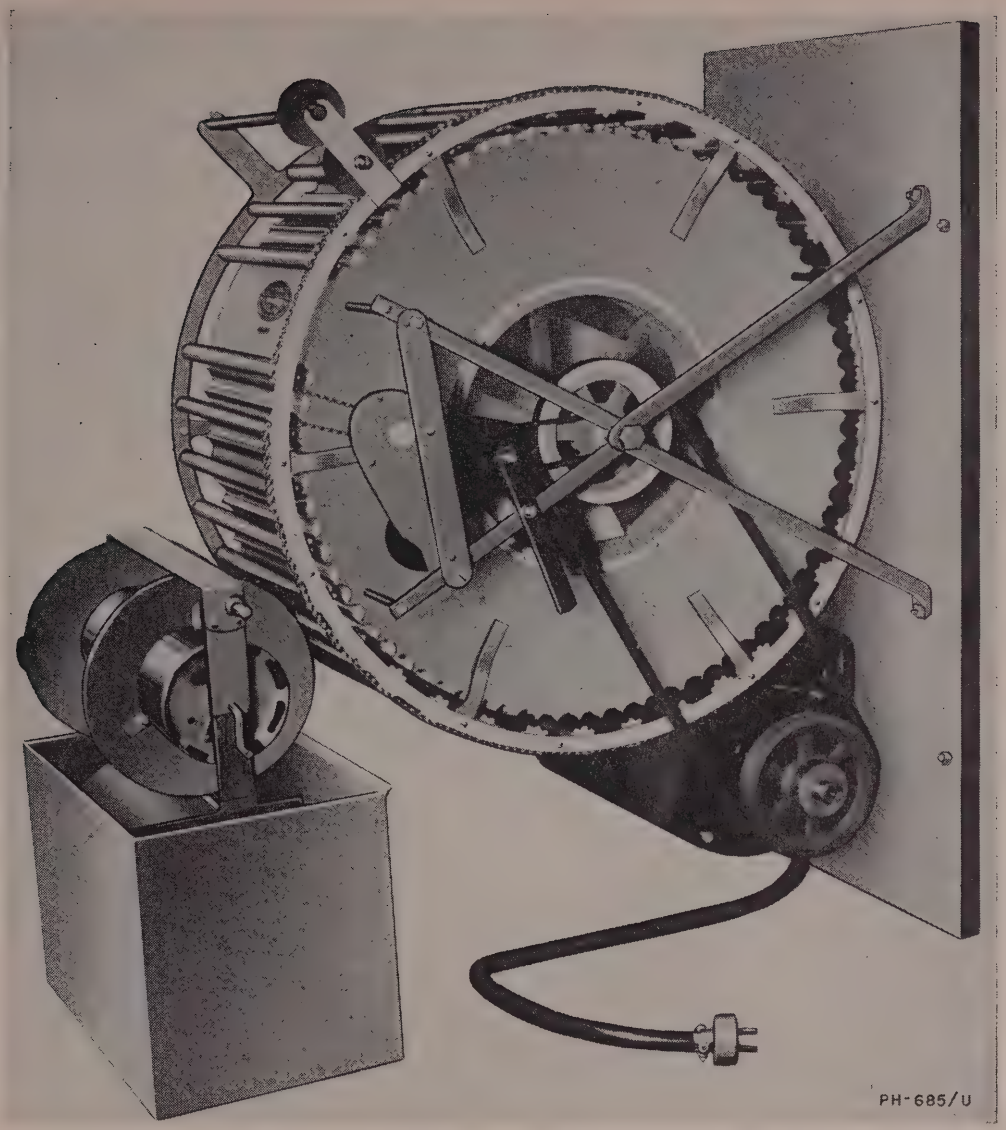
Type of Control: Thermostatically controlled.

MOTOR CHARACTERISTICS: Fractional hp, universal motor, variable speed.

POWER REQUIREMENTS: 110- to 125-v 60-cyc a-c, d-c.

DIMENSIONS: Unpacked, 15 x 24 x 22.

WEIGHT: Unpacked, 62 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–685/U. *Name of equipment:* Dryer, Photographic Film.

FUNCTIONAL DESCRIPTION

Dryer, Photographic Film PH–685/U is a motor driven, drum-type, photographic film drying equipment used for continuous drying of roll film from 5 to 200 feet long and to 9½ inches wide.

It consists essentially of a power-driven drum, film guide rollers, a motor and fan assembly, a speed control lever and related items. The speed control lever permits variable speed control from ½ to 3 feet of film per minute. The film is dried by numerous minute air streams forced through openings in the drum by the fan.

This equipment is part of Laboratory Darkroom AN/TFQ–7.

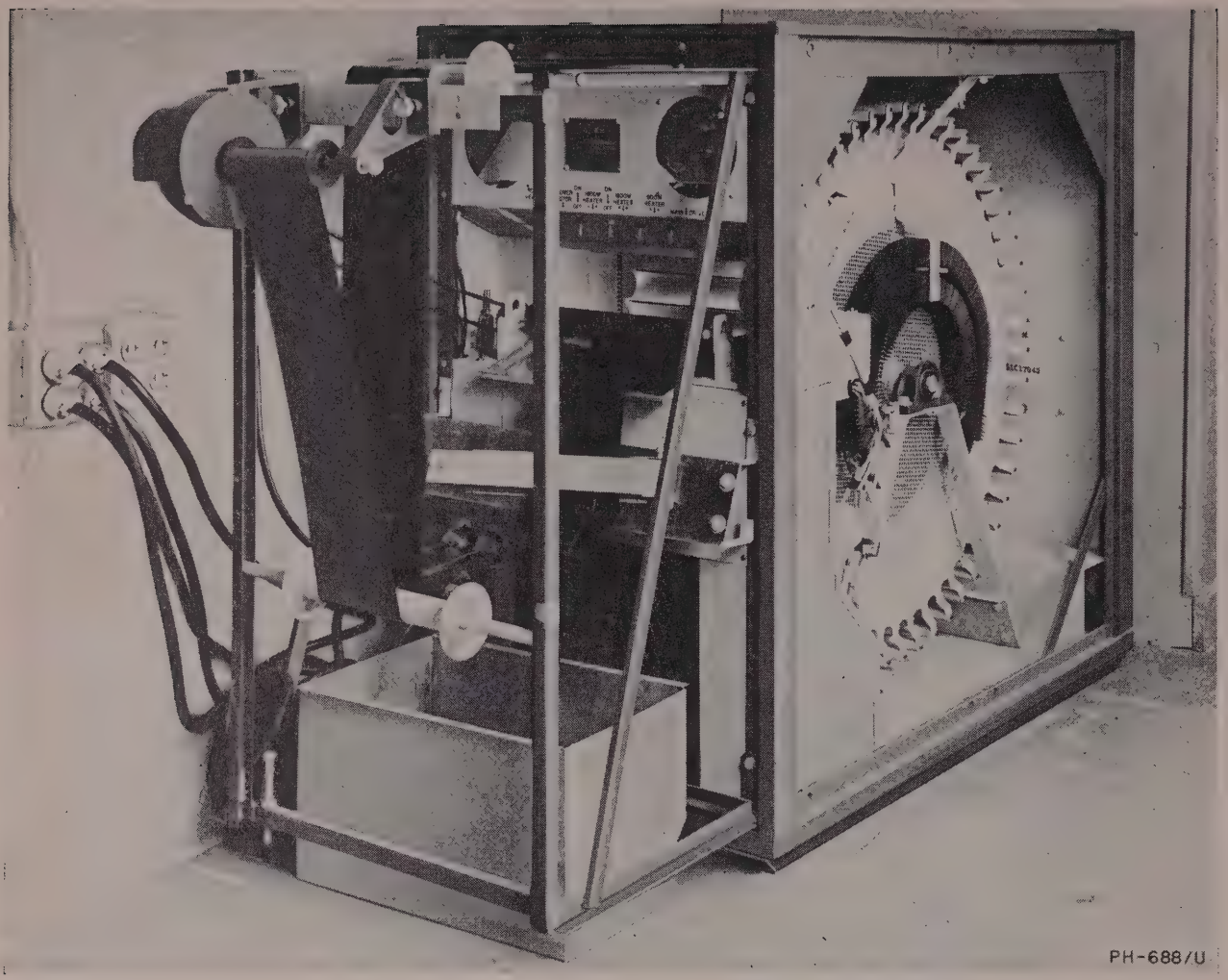
INSTRUCTION LITERATURE: TM 11–2308.
CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Rotary drum with external film guide rollers.
CAPACITY: 5 to 200 ft, to 9½ in. wd.
SPEED: ½ to 3 ft per minutes.
TYPE OF CONTROL: Variable speed.
DRYING METHOD: Forced air streams.
MOTOR CHARACTERISTICS: ¼hp, 373-w.
POWER REQUIREMENTS: 110-120v, 60-cyc a-c.
WEIGHT: Unpacked, 99 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb. 54. *Service type number:* PH–688/U. *Name of equipment:* Dryer, Photographic Film.

FUNCTIONAL DESCRIPTION

Dryer, Photographic Film PH–688/U is a portable, motor-driven, drum-type, photographic film drying equipment used for continuous drying of roll film from 5 to 400 feet long and from 5 to 9⅜ inches wide.

It consists essentially of a drum, power driven rollers, a two strip heater (900 w), a two strip heater (1,800 w), thermostat, centrifugal fan, and related items.

The film is dried by air streams, hot air, or both. Control permits operating speed from 6 to 8 feet per minute.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Rotary drum with external film guide rollers.

CAPACITY: 5 to 400 ft, 5 to 9⅜ in. wd.

SPEED: 6 to 8 ft per minute.

TYPE OF CONTROL: Thermostatically controlled.

DRYING METHODS: Air streams, hot air, or both.

TEMPERATURE REQUIREMENTS: 55° F. to 100° F.

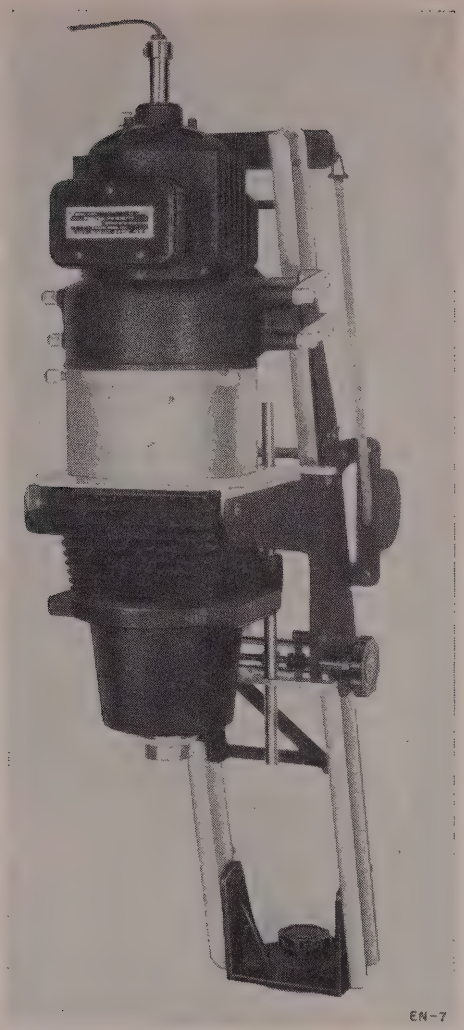
HEATING ELEMENTS: 2-strip heater, 900 w; 2-strip heater, 1,800 w.

MOTOR CHARACTERISTICS: 115-v, 60-cyc, a-c.

POWER REQUIREMENTS: 6,000-w, 115-v, 60-cyc, a-c.

DIMENSIONS: Unpacked, 24 x 64 x 40 in.

WEIGHT: Unpacked, 400 lb.



EN-7

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb. 54. *Service type number:* EN–7. *Name of equipment:* Printer, Projection, Photographic.

FUNCTIONAL DESCRIPTION

Printer, Projection, Photographic EN–7 (modified PH–639/TF) is an enlarger for 4- by 5-inch and 35-mm negatives.

This equipment is essentially a commercial (Simmon Bros.) projection-type printer consisting of an upright, a lamp housing, three condenser lens sets, three enlarging lenses, and a light source.

The printer is furnished without baseboard and designed to be mounted in Photographic Darkroom AN/TFQ–7.

INSTRUCTION LITERATURE: TM 11–2339.
CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Projection.
NEGATIVE SIZE: From 35-mm to 4 x 5 in.
MAGNIFICATION: 35-mm negatives, 16 dia; 4- x 5-in. negatives; 4 dia.
MAXIMUM PRINT SIZE: 60 x 20 in. Easel furnished: 8 x 10 in.
TYPE OF CONDENSING SYSTEM: Double condensers; for 35-mm negatives, two plano-convex lenses; for 70-mm negatives, two plano-convex lenses; for 4- x 5-in. negatives, two plano-convex lenses.
LENSES: 2 in., f/4.5; 3½ in., f/4.5; 6⅜ in., f/4.5
FOCUSING ARRANGEMENT: Manual, bellows.
TYPE OF LIGHT SOURCE: 75-w, 105- to 120-v, incandescent lamp, medium-screw-base, GE Mazda No. 211, and 6- to 8-v, 32-cp, bulb S–11, bayonet-base, GE Mazda No. 1723 lamp.
POWER REQUIREMENTS: 105- to 120-v, 60-cyc to 6-v a-c; (60-cyc 110 to 6-v step-down transformer part of enlarger, or 6-v d-c (battery).
DIMENSIONS: 38 x 18 x 27 in.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* EN–8. *Name of equipment:* Printer, Projection, Photographic.

FUNCTIONAL DESCRIPTION

Printer, Projection, Photographic EN–8 (previously designated PH–87) is a photographic enlarger for negatives up to 5 by 7 inches in size.

There are several models of this equipment. PH–87 is essentially a commercial (Eastman Kodak Model C) auto-focus equipment for enlarging negatives (up to 5 by 7 inches) from 1½ to 4 times. It consists of a diffusion enlarger having a 500-watt projection lamp, a negative carrier, a built-in red filter, an adjustable paper holder (which permits masking up to 17½ by 20½ inches) and has a 7½-inch, f/4.5 lens.

PH–87–A and –B are essentially commercial (Simmon Bros.) enlargers with which negatives (up to 5 by 7 inches) are enlarged from 1½ to 3 times.

PH–87–A is manually operated, has a magnetic shutter and an adjustable holder for paper up to 17½ by 20 inches, uses four 8-watt fluorescent lamps, has an 8¼ inch, f/4.5 lens, and an automatic focusing mechanism.

PH–87–B (illustrated above) has a motor driven shutter, a paper holder of 16- by 20-inch capacity, uses four 6-watt fluorescent lamps, and has a 7½-inch f/4.5 lens.

INSTRUCTION LITERATURE: TM 11–2374.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Projection.

NEGATIVE SIZE: All sizes to 5 x 7 in. (maximum).

MAGNIFICATION:

- PH–87: 4 times.
- PH–87–A –B: 3 times.

MAXIMUM PRINT SIZE:

- PH–87 and –A: 17½ x 20½ in.
- PH–87–B: 16 x 20 in.

TYPE OF DIFFUSION SYSTEM:

- PH–87: Ground glass.
- PH–87–A: Four 8-w, blue, flourescent lamps, and opal glass.
- PH–87–B: Four 6-w, daylight, flourescent lamps, and opal glass.

LENS:

- PH–87: 7½ in., f/4.5
- PH–87–A: 8¼ in., f/4.5
- PH–87–B: 7½ in., f/4.5

POWER REQUIREMENTS:

- PH–87: 110- to 120-v, or 230- to 250-v a-c.
- PH–87–A: 110- to 120-v, 60-cyc a-c or 110-v d-c.
- PH–87–B: 110- to 120-v, 60-cyc a-c.

TYPE OF LIGHT SOURCE:

- PH–87: 300-w projection lamp.
- PH–87–A: Four 8-w, blue, fluorescent lamps for a-c operation and four 25-w incandescent lamps for use on d-c power source.
- PH–87–B: Four 6-w, daylight, fluorescent lamps.

SHUTTER:

PH–87: Foot-switch operation.

- PH–87–A: Magnetic shutter used with or without Timer PH–426.
- PH–87–B: Motor-driven shutter may be used with or without Timer PH–426 exposure. (Only a 100- to 120-v, 60-cyc, a-c power source may be used).



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* EN–9. *Name of equipment:* Printer, Contact, Photographic.

FUNCTIONAL DESCRIPTION

Printer, Contact, Photographic EN–9 (previously designated PH–507/PF) is a portable, contact printing equipment for making photographic prints or copies of printed, written, or similar documentary material. It can also be used as a light box in retouching, for making prints from X-ray film, or for copying material up to 11 by 14 inches in size in either black on white or white on black.

This equipment consists essentially of the basic unit, a timing device, an amber lamacoid filter, a carrying case, lamps, and related accessories.

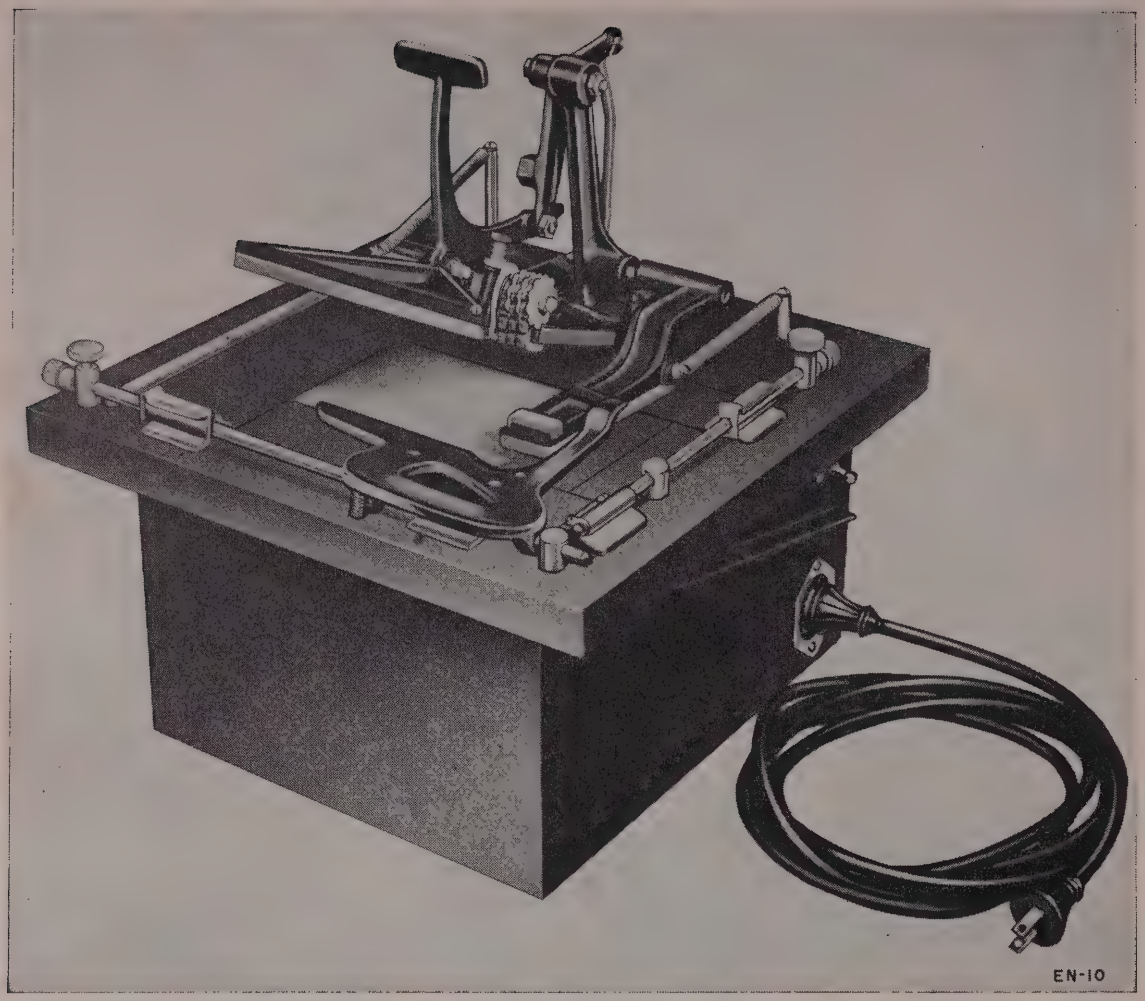
INSTRUCTION LITERATURE: TM 11-2362.
CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Contact (printing medium: roll of sensitive paper).
MAXIMUM NEGATIVE SIZE: 11 x 14 in.
TYPE OF DIFFUSION SYSTEM: Opal glass and amber, lamacoid filter.
TYPE OF LIGHT SOURCE: Six 25-w (12-v) lamps or six 60-w (120-v) lamps.
POWER REQUIREMENTS: 105- to 120-v a-c or d-c; or 12-v storage battery.
TOTAL VOLUME: Packed, 7 cu ft.
WEIGHT: Packed, 140 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* EN–10. *Name of equipment:* Printer, Contact Photographic.

FUNCTIONAL DESCRIPTION

Printer, Contact, Photographic EN–10 (previous models designated PH–192) is a manually operated contact printer with adjustable masking blades accepting negatives from 35-mm to 5 by 7 inches.

The equipment essentially consists of a box, a light source, a ground glass, a negative holder, an adjustable margin guide, a paper guide, and an automatic numbering device to stamp identifying numerals on the back of each print. The light (from two 40-watt bulbs) is diffused by the ground glass. A 10-watt ruby, incandescent lamp functions as a safelight.

The printer will operate from any 110-volt, a-c or d-c power source. Either a 32-volt or a 220-volt source may be used by the substitution of printing lamps of corresponding voltage.

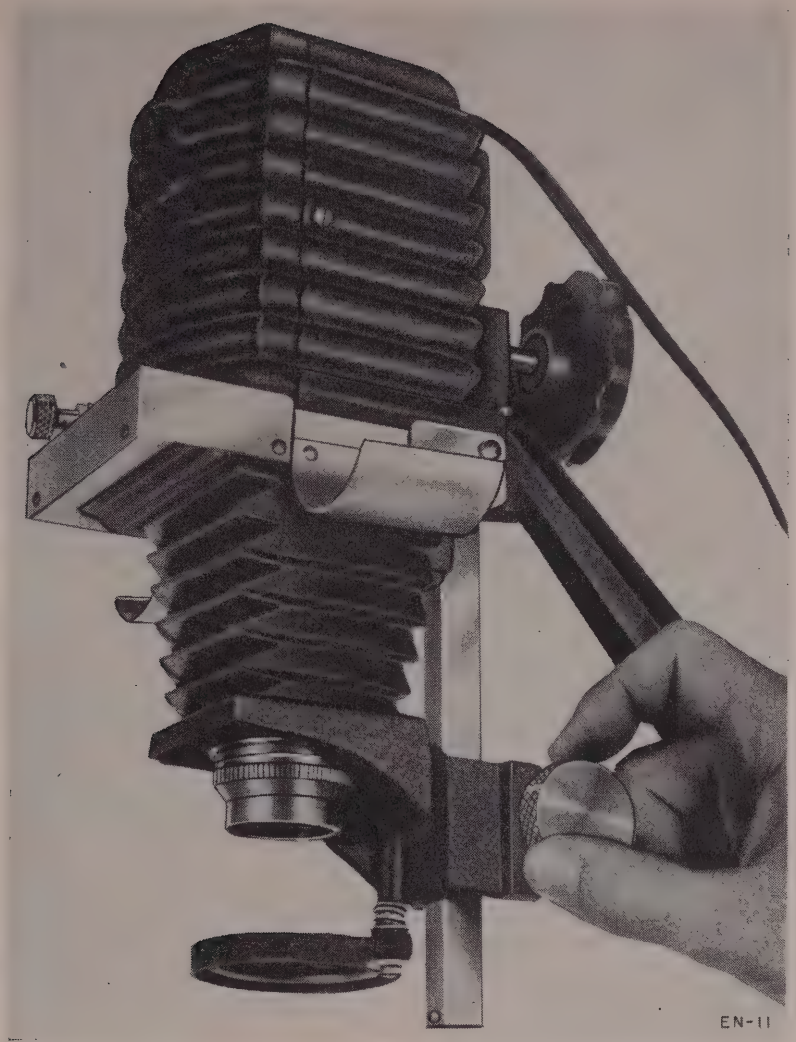
INSTRUCTION LITERATURE: TM 11–2385.
CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Contact.
MAXIMUM NEGATIVE SIZE: 5 x 7 in.
TYPE OF DIFFUSION SYSTEM: Ground glass.
TYPE OF LIGHT SOURCE: Two 40-w clear incandescent lamps (printing lamps are selected to correspond with existing voltage); one ruby safelight.
POWER REQUIREMENTS: 110-v a-c or 32- or 220-v d-c may be used (printing lamps must be selected to correspond with voltage).
DIMENSIONS:
Unpacked:
13½ x 13⅛ x 15 in. (platen up).
13½ x 13⅛ x 13 in. (platen down).
TOTAL VOLUME: Packed, 1.75 cu ft.
WEIGHT: Packed, 33 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* EN–11. *Name of equipment:* Printer, Projection, Photographic.

FUNCTIONAL DESCRIPTION

Printer, Projection, Photographic EN–11 (previous models designated PH–275 and PH–275–A) is a manually operated optical printing equipment for 35 mm film and is a component of Photographic Set ES–12.

This equipment is essentially a commercial (Sun Ray) 35-mm enlarger composed of a lamp housing, a projection lens, an adjustable arm, and an upright. The lamp housing includes a light source, condenser lenses, and a negative holder. The printer replaces Enlarger PH–275–A only and is designed to be mounted on the baseboard of Carrying Case, Photographic Equipment FM–22, as part of Photographic Set ES–12.

Enlarger PH–275 has been replaced by PH–642/TF.

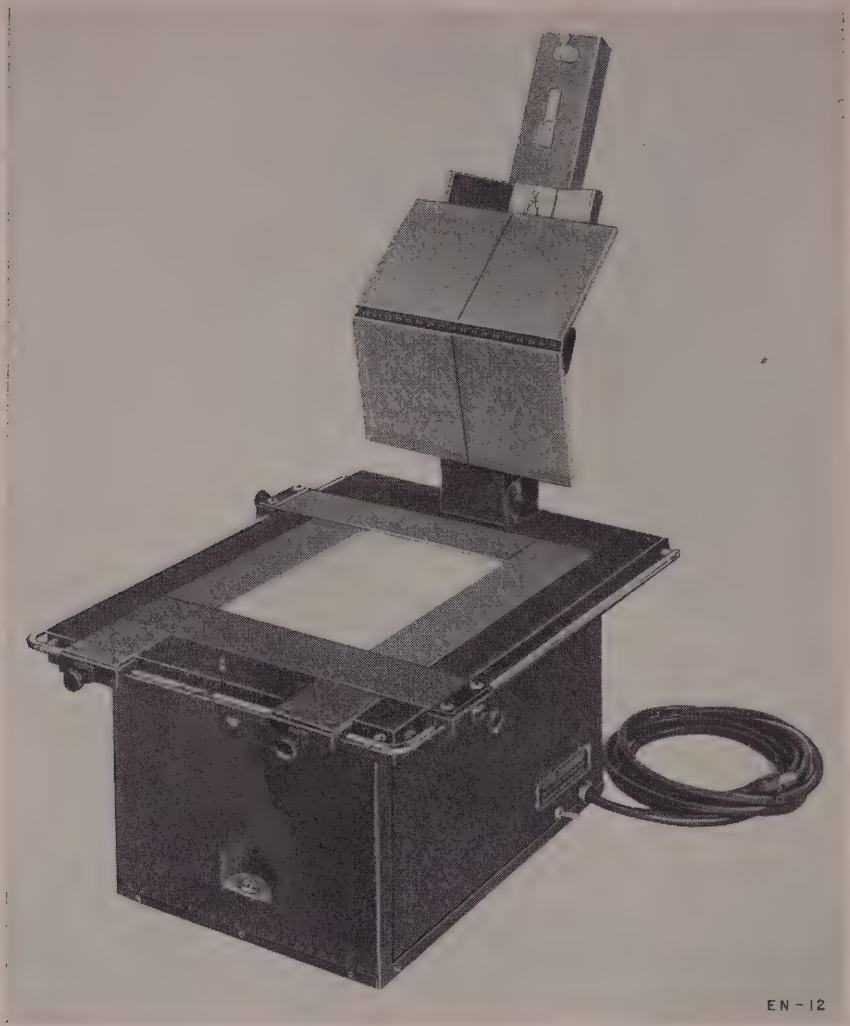
CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists of only one major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Projection.
NEGATIVE SIZE: 35-mm.
MAGNIFICATION: 2½ to 10 dia.
MAXIMUM PRINT SIZE: 8 x 10 in.
TYPE OF CONDENSING SYSTEM: Double condenser plus one heat-absorbing glass.
LENS: 2-in., f/4.5.
POWER REQUIREMENTS: 105- to 120-v a-c or d-c, 60-cyc, single phase.
TYPE OF LIGHT SOURCE: 50-w, incandescent enlarging lamp.
OPERATION: Manual.
WEIGHT: Unpacked, 7 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* EN–12. *Name of equipment:* Printer, Contact, Photographic.

FUNCTIONAL DESCRIPTION

Printer, Contact, Photographic EN–12 (previous models designated PH–13) is an 8- by 10-inch manually operated, contact printing equipment.

It is essentially a commercial (Beseler) printer and consists of a printing box, platen assembly, adjustable diffusion glass, masks, printing lamps, and one safe lamp. Previous models are similar commercial (Eastman Kodak or Burke and James) printers.

EN–12 has seven 40-watt printing lamps and a 25-watt ruby safe lamp. PH–13A, –B, and –D have four 40-watt lamps plus a 10-watt ruby safe lamp. EN–12 permits greater operational flexibility.

INSTRUCTION LITERATURE: TM 11–2391, TM 11–2391A.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Contact.

MAXIMUM NEGATIVE SIZE: 8 x 10 in.

TYPE OF DIFFUSION SYSTEM: Incandescent frosted lamps, adjustable diffusion glass, and provision for inserting translucent diffusion materials.

TYPE OF LIGHT SOURCE:

PH–13–A, –B, and –D: four 40-w frosted lamps and one 10-w ruby lamp.

EN–12: Seven 40-w frosted, printing lamps, and one 25-w ruby safe lamp.

POWER REQUIREMENTS: 110- to 120-v, 60-cyc a-c; or 110- to 120-v d-c.

DIMENSIONS: 20 x 21 x 13½ in.

WEIGHT: Unpacked, 30 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 24 Mar 53. *Service type number:* PH–95. *Name of equipment:* Printer.

FUNCTIONAL DESCRIPTION

Printer PH–95 is a photographic enlarger designed for permanent or semi-permanent installations. It can accept negatives up to 8 by 10 inches in size.

This equipment is essentially a commercial (Simmon Bros.) projection-type printer comprised of a baseboard, an upright and a lamp housing, a negative holder, a lens assembly, a paper holder, and associated items.

There are two models of this equipment: PH–95–A (illustrated above), which has a 12-inch, f/6.3 lens and uses four 14-watt blue fluorescent lamps, and PH–95–B, which has an 11⅞-inch enlarging lens and uses six 14-watt fluorescent lamps.

Both models are interchangeable except for maintenance parts.

INSTRUCTION LITERATURE: TM 11–2374, TM 11–2374A.

CURRENCY OF INFORMATION: 24 Mar 53.

MAJOR COMPONENTS

This equipment consists only of a single major operating conponent.

TECHNICAL CHARACTERISTICS

TYPE: Projection.

NEGATIVE SIZE: All sizes up to 8 x 10 in. (maximum).

MAGNIFICATION: 5 dia.

MAXIMUM PRINT SIZE: 17½ x 20½ in.

TYPE OF DIFFUSION SYSTEM:

PH–95–A: four 14-w fluorescent lamps plus a flashed opal glass.

PH–95–B: six 14-w fluorescent lamps plus a flashed opal glass.

LENS:

PH–95–A: 12-in., f/6.3.

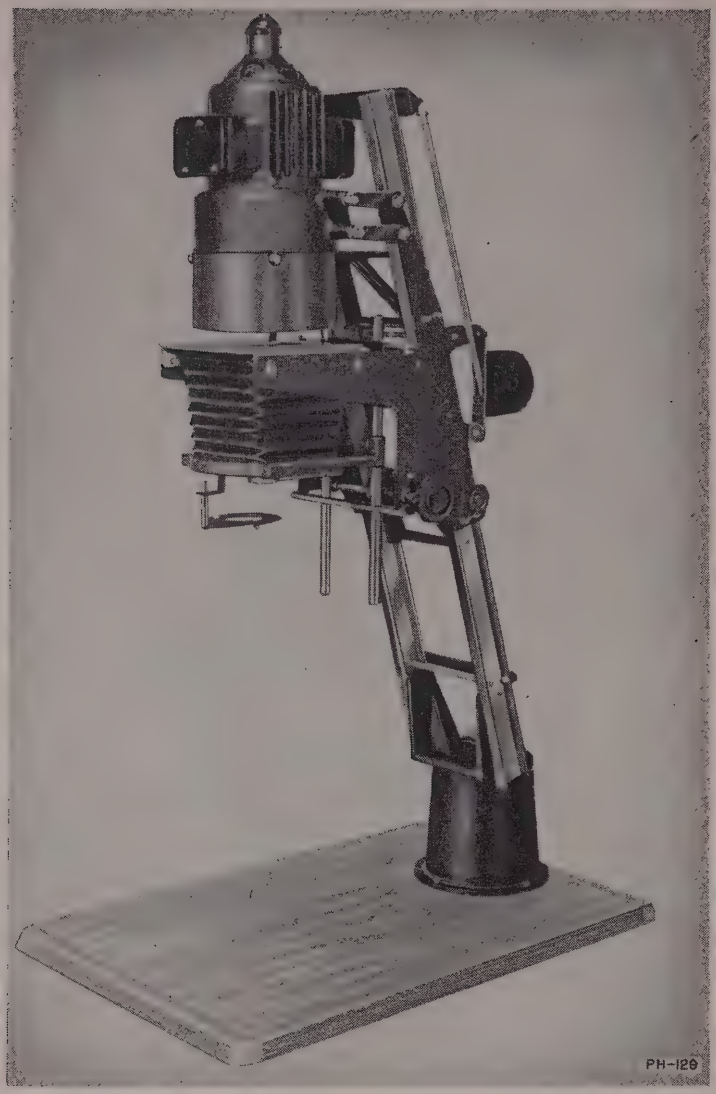
PH–95–B: 11⅞-in. lens.

POWER REQUIREMENTS: 110- to 120-v, 60 cyc a-c.

TYPE OF LIGHT SOURCE: Blue fluorescent lamps (tubes), 14-w—PH–95–A uses four and PH–95–B uses six.

SHUTTER: Exposure can be controlled by operating the magnetic shutter either manually or in conjunction with Timer PH–426, or by operating manually without the shutter, and using the red filter.

DIMENSIONS: Equipment is packed in two cases; column case measures 112 x 23 x 38 in. and weighs 595 lb; baseboard case measures 66 x 32 x 18 in. and weighs 237 lb.



Status of equipment: Standard: *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–129. *Name of equipment:* Printer.

FUNCTIONAL DESCRIPTION

Printer PH–129 is an enlarger for 4- by 5-inch and 35-mm negatives.

This equipment is essentially a commercial (Simmon Bros.) projection-type printer consisting of an upright support assembly, a lamp housing, two condenser lens sets, two enlarging lenses, a light source, a photographic paper easel, and associated items.

INSTRUCTION LITERATURE: TM 11–2339.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Projection printer.

NEGATIVE SIZE: From 35mm to 4 x 5 in.

MAGNIFICATION: 35-mm negatives, 16 dia; 4 x 5 in. negatives, 4 dia.

MAXIMUM PRINT SIZE: 11 x 14 in.

TYPE OF CONDENSER SYSTEM: Double condensers; for 35-mm negatives, two 5-in., focal-length, plano-convex lenses; for 4- x 5-in. negatives, two 9-in., focal-length, plano-convex lenses.

LENS: 2-in., f/4.5; 6 3/8-in., f/4.5.

FOCUSING ARRANGEMENT: Manual, bellows.

TYPE OF LIGHT SOURCE: 150-w medium-screw-base enlarging lamp.

POWER REQUIREMENTS: 105- to 120-v a-c or d-c.

DIMENSIONS: 43 x 18 x 27 in. (including baseboard).

TOTAL VOLUME:

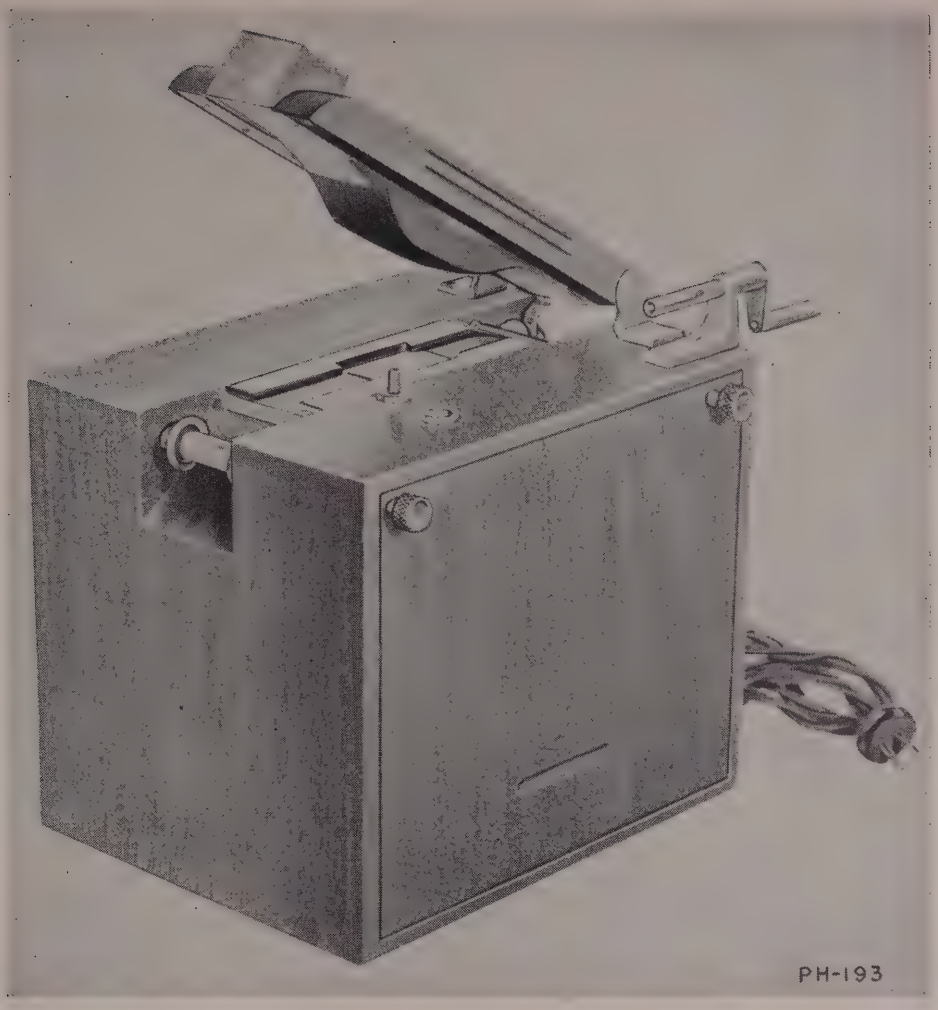
Unpacked, 9 cu ft.

Packed, 17 cu ft.

WEIGHT:

Unpacked, 129 lb.

Packed, 190 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–193. *Name of equipment:* Printer.

FUNCTIONAL DESCRIPTION

Printer PH–193 is a manually operated contact printer designed to make 24-mm by 38-mm prints from 35-mm perforated film on strips of perforated photographic paper or on 35-mm positive film.

This equipment consists essentially of a box with a light source, a clear glass printing aperture, spindles and winder to hold the negative film, and a planten arm assembly. The light source consists of one 40-watt frosted lamp for printing and a 10-watt ruby safelight.

INSTRUCTION LITERATURE: TM 11–2372.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists of only one major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Contact.

MAXIMUM NEGATIVE SIZE: 35-mm (24-mm x 36-mm).

TYPE OF DIFFUSION SYSTEM: Ground glass.

TYPE OF LIGHT SOURCE:

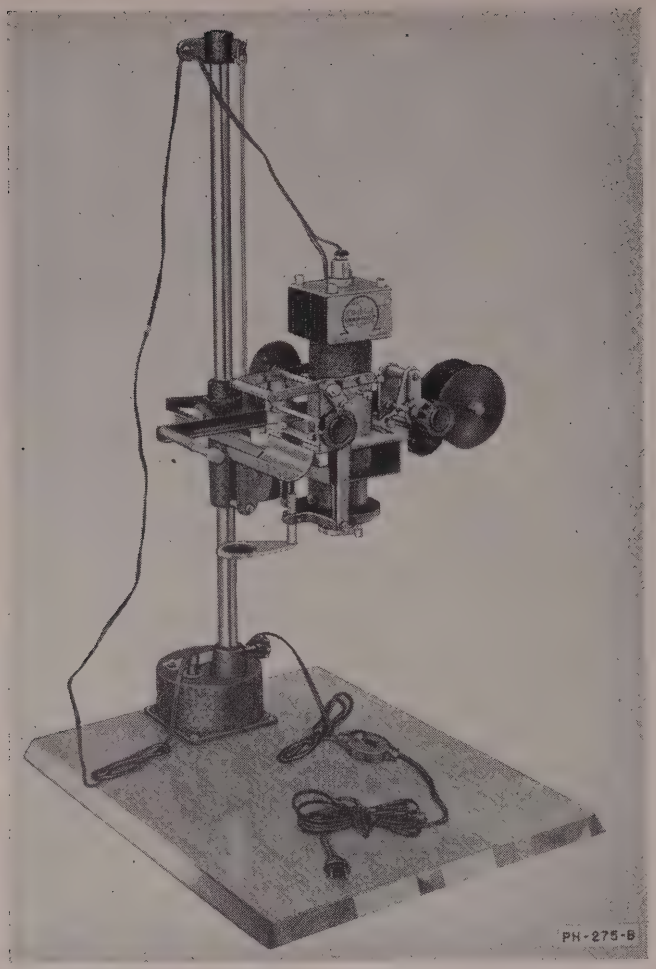
One 40-w frosted lamp.
One 10-w ruby safelight.

POWER REQUIREMENTS: 110- to 120-v a-c or d-c.

DIMENSIONS:

Unpacked, 8 x 10 x 9½ in.
Packed, 12½ x 12¼ x 12¼ in.

WEIGHT: Packed 14 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–275–B. *Name of equipment:* Enlarger.

FUNCTIONAL DESCRIPTION

Enlarger PH–275–B is a manually operated, 35-mm, optical printer.

This equipment is essentially a commercial (Simmon Bros. Omega Model No. AS (modified)) enlarger comprised of a baseboard, an upright, a lamp house assembly, a lens, a microfilm assembly, and related assemblies.

The lamp housing includes the light source, a double condenser, a film carrier, and associated items. Holder PH–349, an adjustable photographic paper holder for 11- by 14–inch (maximum) prints, is used with but is not part of this enlarger.

The microfilm assembly may be used to carry a 100-foot reel of 35-mm film.

This enlarger can be used interchangeably with Photographic Printer PH–642/TF but not with Printer, Projection, Photographic EN–11.

INSTRUCTION LITERATURE: TM 11–2368B.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Projection.

NEGATIVE SIZE: 35-mm.

MAGNIFICATION: 1½ to 16 times dia.

MAXIMUM PRINT SIZE: Depends on size of photographic paper holder available; enlarger baseboard assembly is 16 x 20 in.

TYPE OF CONDENSER SYSTEM: Double plano-convex condenser lenses (2).

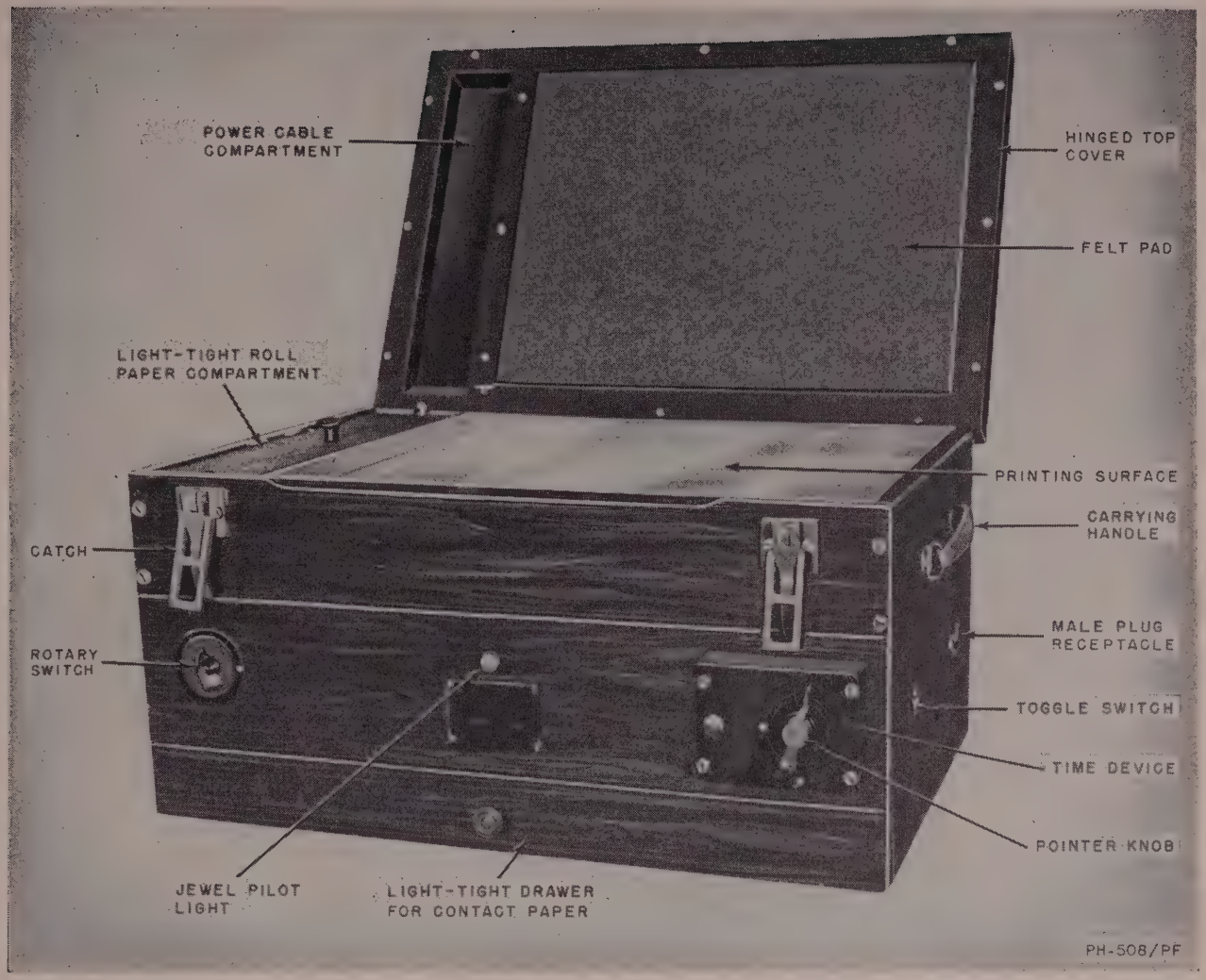
LENS: 2 in., f/4.5.

POWER REQUIREMENTS: 6- to 8-v d-c (100-amp hr) storage battery, or 110 to 120-v, 60-cyc a-c.

TYPE OF LIGHT SOURCE: 6- to 8-v, 32-cp opal lamp, bayonet-base, incandescent lamp; built-in, step-down transformer supplies required 6-v to the lamp; on d-c operation, transformer is by-passed and lamp is connected directly to power source.

OPERATION: Manual.

DIMENSIONS: Approximately 14 x 19 x 36 in.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 24 Mar 53; *Service type number:* PH–508/PF. *Name of equipment:* Printer.

FUNCTIONAL DESCRIPTION

Printer PH–508/PF is a portable contact printing equipment capable of making prints from photographic negatives or from X-ray film. It can also copy printed or written (or equivalent) documentary material up to 14 by 19 inches in size in either black on white or white on black. It can also be used as a light box for retouching.

This equipment consists essentially of the basic contact printer component which accommodates the roll of sensitized photographic paper, a cutting device, an orange-amber filter, a timer, and related accessory items.

INSTRUCTION LITERATURE: TM 11–5513.

CURRENCY OF INFORMATION: 24 Mar 53.

MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Contact.

MAXIMUM NEGATIVE SIZE: 14 x 19 in.

TYPE OF DIFFUSION SYSTEM: Opal glass.

TYPE OF LIGHT SOURCE:

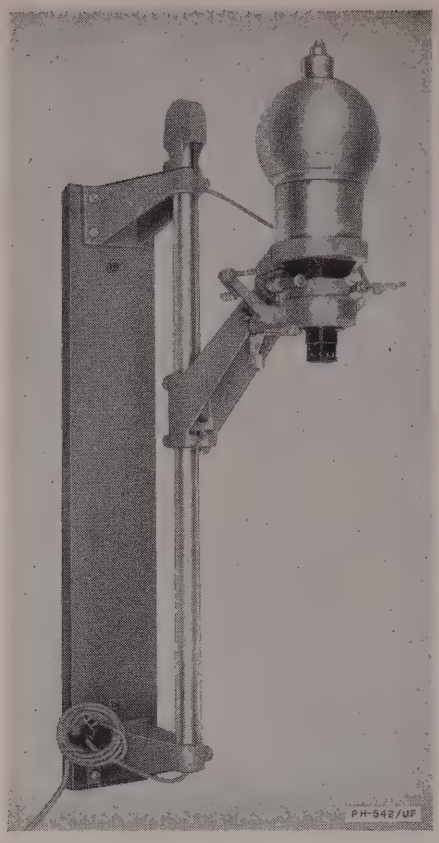
Eight 60-w white lamps.

Eight 60-w orange-amber lamps.

POWER REQUIREMENTS: 105- to 120-v a-c or d-c.

TOTAL VOLUME: Packed, 7 cu ft.

WEIGHT: Packed, 112 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–542/UF. *Name of equipment:* Enlarger.

FUNCTIONAL DESCRIPTION

Enlarger PH–542/UF is a manually operated projection printer, capable of handling 100-foot reels of 35-mm film.

This equipment is wall-mounted precision equipment and consists essentially of a mounting board, an enlarger head, an illumination system, and optical complement. The lamp housing is mounted on a support attached to the mounting board and has a counterbalanced offset support arm.

There are two models of this equipment: PH–542/UF and PH–542A/UF. PH–542/UF has a 63.5-mm, f/8 lens and a double condenser assembly and can handle both 16-mm and 35-mm film; PH–542A/UF has a 60-mm, f/6.8 lens and a double condenser assembly and can handle only 35-mm film.

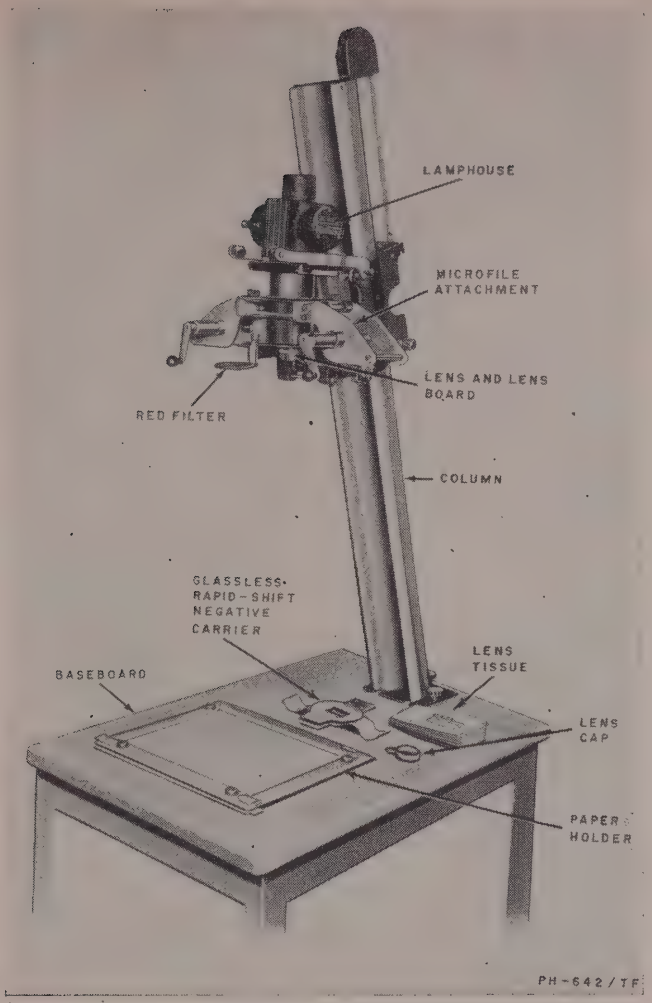
INSTRUCTION LITERATURE: TM 11–2300.
CURRENCY OF INFORMATION: 2 Apr 53.

MAJOR COMPONENTS

This equipment consists of only one major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Projection.
NEGATIVE SIZE:
PH–542/UF: 16-mm and 35-mm film strips, negative or positive.
PH–542A/UF: 35-mm film.
MAGNIFICATION: Correctly mounted, 8 to 30 dia (PH–542/UF).
MAXIMUM PRINT SIZE: Limited only by the size of available auxiliary photographic paper holder (easel).
TYPE OF CONDENSING SYSTEM: Set of double plano-convex condensers.
LENS:
PH–542/UF: 63.5 mm, f/8.
PH–542A/UF: 60 mm, f/6.8.
TYPE OF LIGHT SOURCE:
PH–542/UF: 150-w, Mazda, photo-enlarger lamp No. 212.
PH–542A/UF: 75-w enlarging lamp.
POWER REQUIREMENTS: 110- to 120-v a-c or d-c.
OPERATION: Manual.
DIMENSIONS: Packed, (PH–542/UF), 46 x 26 x 27 in.
TOTAL VOLUME: Packed 12 cu ft.
WEIGHT:
Unpacked, 30 lb.
Packed, 60 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–642/TF. *Name of equipment:* Printer, Projection, Photographic.

FUNCTIONAL DESCRIPTION

Printer, Projection, Photographic PH–642/TF is a manually operated, 35-mm, enlarger of great flexibility and can be used for the widest range of 35-mm optical printing.

This equipment is essentially a commercial (Simmon Bros.) enlarger comprised of a baseboard, an upright, a lamp house and carriage assembly, a lens, a microfilm attachment, a light source, a paper holder, and related items.

The lamp house contains a light source and a double plano-convex condenser lens set. The carriage assembly holds the interchangeable glasses rapid-shift negative carrier or the microfilm attachment.

The paper holder is not adjustable; however, it has provision for accepting photographic paper 2¼ by 3¼, 4- by 5, 5- by 7, and 8- by 10 inches.

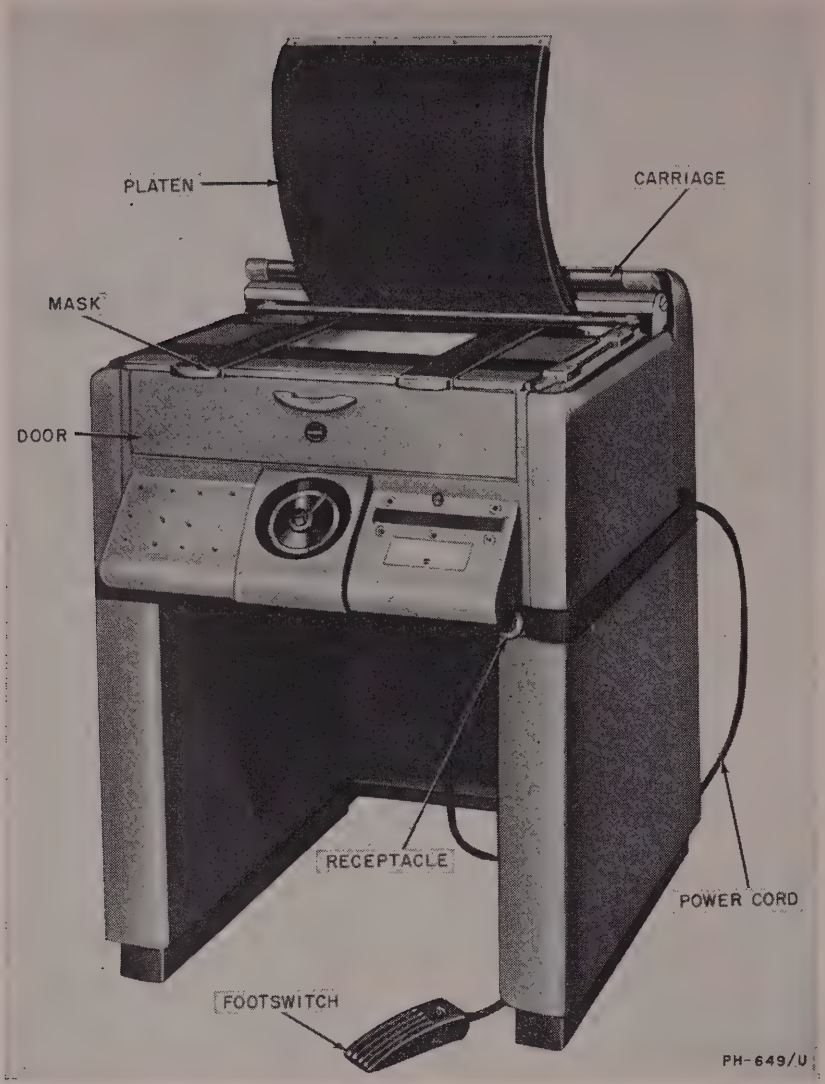
INSTRUCTION LITERATURE: TM 11–2322.
CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Projection.
NEGATIVE SIZE: 35mm.
MAGNIFICATION: 2.75 to 10 times dia.
MAXIMUM PRINT SIZE: 8 x 10, and 5 x 7, 4 x 5, and 2¼ x 3¼ in.
TYPE OF CONDENSING SYSTEM: One set of two plano-convex condenser lenses.
LENS: 2 in., f/4.5.
POWER REQUIREMENTS: 105- to 120-v, 60-cyc a-c; 105- to 120-v d-c; or 6-v d-c.
TYPE OF LIGHT SOURCE: 75-w, incandescent lamp, or a 32-cp, 6-v incandescent lamp.
OPERATION: Manual.
DIMENSIONS: o/a, 18 x 26 x 30⅜ in.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–649/U. *Name of equipment:* Printer, Contact, Photographic.

FUNCTIONAL DESCRIPTION

Printer, Contact, Photographic PH–649/U is a semiautomatic contact printer that accommodates film up to 11 by 14 inches (maximum).

This equipment is essentially a commercial (Eastman Kodak "Master Power Printer") contact printer consisting of a cabinet, a platen, a ground glass diffusing screen, twelve 25-watt 120-volt lamps, one red safelight, a motor, a built-in timer, a driving mechanism, an adjustable safety clutch, and individual lamp control switches.

The platen can be manually or foot operated.

INSTRUCTION LITERATURE: TM 11–2320.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Contact.

MAXIMUM NEGATIVE SIZE: 11 x 14 in.

TYPE OF DIFFUSION SYSTEM: Ground glass.

TYPE OF LIGHT SOURCE:

Twelve 25-w medium-screw-base lamps.
One red, safelight, 7½-w, S–11, medium-screw-base lamp.

MOTOR: 105- to 129-v, 50/60-cyc, single-phase a-c.

POWER REQUIREMENTS: 105- to 129-v, 50/60-cyc single-phase a-c.

DIMENSIONS: 26 x 33 x 55 in.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–680/U. *Name of equipment:* Printer, Contact, Photographic.

FUNCTIONAL DESCRIPTION

Printer, Contact, Photographic PH–680/U is a contact printer that accommodates aerial roll film sizes up to 9½ by 10 inches. Film spool brackets are adjustable to take film spools from 5¼ to 9½ inches wide.

The printer consists of a light box, a platen, film spool brackets and crank, a printing and a diffusion glass, an interval timer, 39 argon printing lamps, 2 viewing lamps, and 4 safe lamps. Printing lamps may be controlled by individual toggle switches or may be used in pattern groups. Viewing lamps are controlled by one toggle switch. Safe lamps are also controlled by one switch. Exposure time may be controlled manually or by use of interval timer.

INSTRUCTION LITERATURE: TM 11–2308.
CURRENCY OF INFORMATION: 1 Feb 54.

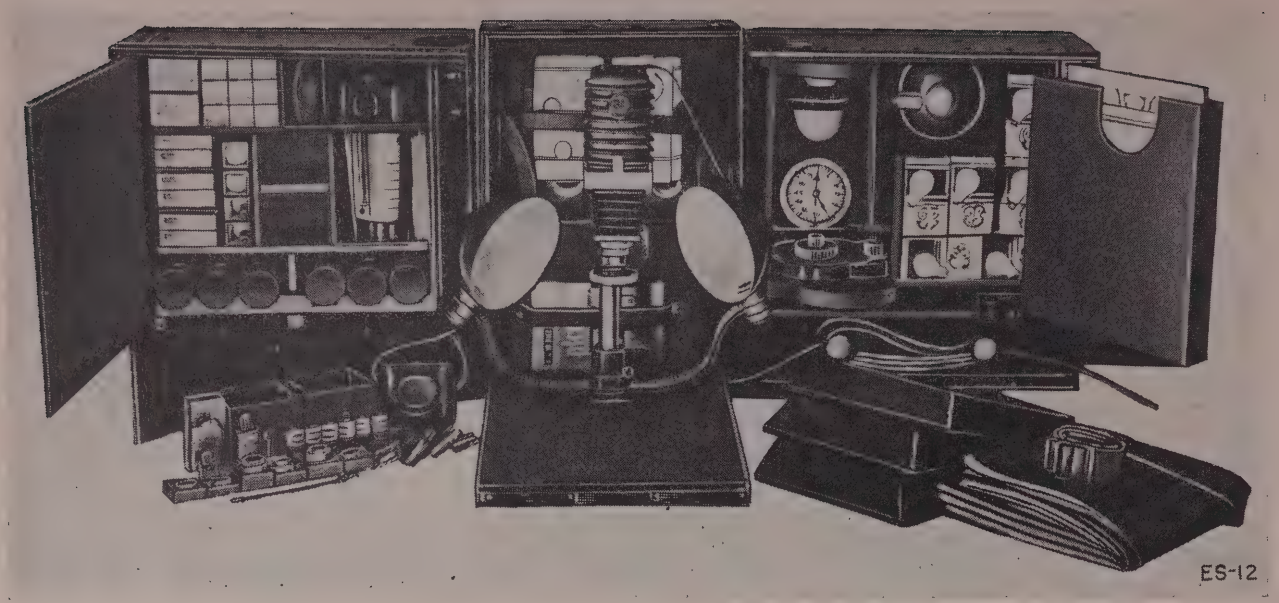
MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Contact.
MAXIMUM NEGATIVE SIZE: 9½ x 10 in.
TYPE OF DIFFUSION SYSTEM: Ground glass.
TYPE OF LIGHT SOURCE:
- 39 7½-w argon printing lamps.
- 2 25-w viewing lamps.
- 4 7½-w safe lamps.

POWER REQUIREMENTS: 110- to 115-v, 60-cyc a-c.
DIMENSIONS: 21⅞ x 27¼ x 12¾ in.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Type number:* ES–12. *Name of equipment:* Photographic Set.

FUNCTIONAL DESCRIPTION

Photographic Set ES–12 (previous model designated PH–261) is a portable photographic equipment packed in one carrying case.

It consists essentially of a 35-mm camera, copying lights, processing equipment, and a photographic enlarger.

Camera PH–324–A, a principal component, uses 35-mm, black-and-white-daylight-loading cassettes. It has a 44-mm, f/3.2 lens and a between-the-lens shutter with a speed range from 1/10 to 1/200 second, time and bulb.

Photographic Projection Printer EN–11 is a compact unit for 35-mm negatives only. It is equipped with a 2-inch, f/4.5 lens. The upright of the printer is mounted on baseboard of Carrying Case, Photographic Equipment FM–22.

Tank PH–322 is a daylight-loading and processing unit, permitting processing of film in daylight.

Other accessories include case, synchronizer, filter, attachment lenses, exposure meter PH–260–A; space is provided for film, chemicals, paper, flash lamps and related items.

Differences between ES–12 and PH–261 are: Carrying Case, Photographic Equipment FM–22 replaces Case PH–318; Printer Projection, Photographic EN–11 replaces Enlarger PH–275–A, and Exposure Meter PH–260–A replaces Exposure Meter PH–77–D.

INSTRUCTION LITERATURE: TM 11–400.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

Quantity	*Name of component*
1	Carrying Case, Photographic Equipment FM–22 containing all accessories

TECHNICAL CHARACTERISTICS

Camera PH–324–A

NEGATIVE SIZE AND TYPE OF FILM: 35-mm

LENS: 44-mm, f/3.2

TYPE OF SHUTTER AND RANGE: Between-the-lens, from 1/10 to 1/200 second; T (time); B (bulb).

TYPE OF FOCUSING: Coupled rangefinder and distance scale on lens mount.

TYPE OF VIEWFINDER: Direct vision, internal, optical finder.

Enlarger EN–11

NEGATIVE SIZE: 35-mm.

LENS: 2 in., f/4.5

MAGNIFICATION: 2½ to 10 times.

TYPE: Double condenser system, plus one heat absorbing glass.

DIMENSIONS: Unpacked, overall dimension of Carrying Case, Photographic Equipment FM–22, 24 x 16½ x 22½ in.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 20 Mar 53. *Service type number:* AN/TFQ–7. *Name of equipment:* Laboratory Darkroom.

FUNCTIONAL DESCRIPTION

Laboratory Darkroom AN/TFQ–7 is a transportable photographic processing laboratory contained in a field shelter which can be installed upon a 2½-ton cargo truck or at a ground location. It is used at Division or higher headquarters.

This equipment includes a water supply system, temperature control and ion-exchange water-conditioning equipment, tanks, printers, timers, a drier, a print-straightener, safelights, and auxiliary items.

It operates on 115-volt, 60-cycle a-c supplied by its trailer-borne power unit. It requires 10 kilowatts of 110- to 120-volt, 60-cycle, a-c power.

INSTRUCTION LITERATURE: TM 11–2308.

CURRENCY OF INFORMATION: 20 Mar 53.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in.) installed*	*Weight (lbs.)*
1	Shelter S–71/G (complete processing laboratory).	138 x 72½ x 80	3486
1	Generator Set, Gasoline Engine Trailer Mounted PU–256/U or Power Unit PE–95.	90 x 69 x 144	4118

TECHNICAL CHARACTERISTICS

TYPE: Transportable, or ground.

SIZE OF MATERIAL HANDLED: 35-mm, 70-mm, No. 120, 5-in., or 9½-in. roll film; 4 x 5-in. cut film.

WATER PROVISIONS: 50-gal storage tank.

Water temperature control system; Circulating pump, refrigeration system, and thermostat-controlled heating equipment.

Ion-exchange water conditioner (used to purify water contaminated by photographic processes).

VENTILATION:

Air conditioner (includes sealed refrigeration compressor and heat exchanger; one switch controls the blower and compressor simultaneously, or the blower individually; the other switch permits either thermostatic or manual control of the air conditioner).

Laboratory Heating Unit: Gasoline heater rated at 60,000 btu and blowers.

POWER SUPPLY:

From Generator Set, Gasoline Engine, Trailer Mounted PU–256/U (or Power Unit PE–95); 110-v, 60-cyc a-c.

For emergency use, a special cable is supplied for connection to outside trailer receptacle and 6-v storage battery.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* AN/TFQ–9. *Name of equipment:* Processing Unit, Photographic Print.

FUNCTIONAL DESCRIPTION

Processing Unit, Photographic Print AN/TFQ–9 is a complete, transportable, field unit for processing and printing 35-mm film.

This equipment consists essentially of a commercial (Simmon Bros.) enlarger designated Photographic Projection Printer PH–642/TF, Timer PH/426–A, a paper holder, trays, a safelight, and associated accessories. It is capable of enlarging, printing, and finishing prints from 35-mm film; includes a microfilm attachment; and can be used with Identification Equipment PH–385.

This equipment was previously designated Processing Equipment PH–395, consisting of Enlarger PH–275–B, Timer FN–5, trays, Board PH–425, a safelight, and associated accessories and is generally interchangeable with AN/TFQ–9 except for several components and maintenance parts.

INSTRUCTION LITERATURE: TM 11–404, TM 11–404A.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists essentially of a single operating component.

TECHNICAL CHARACTERISTICS

TYPE: Projection.

NEGATIVE SIZE: 35mm.

MAGNIFICATION:

AN/TFQ–9: 2¾ to 10 times.

PF–395: 1½ to 16 times.

MAXIMUM PRINT SIZE: AN/TFQ–9, PH–395 16 x 20 in.; easel furnished 2¼ x 3¼ in.

TYPE OF CONDENSING SYSTEM: Two plano-convex condenser lenses.

LENS: 2 in., f/4.5

POWER REQUIREMENTS:

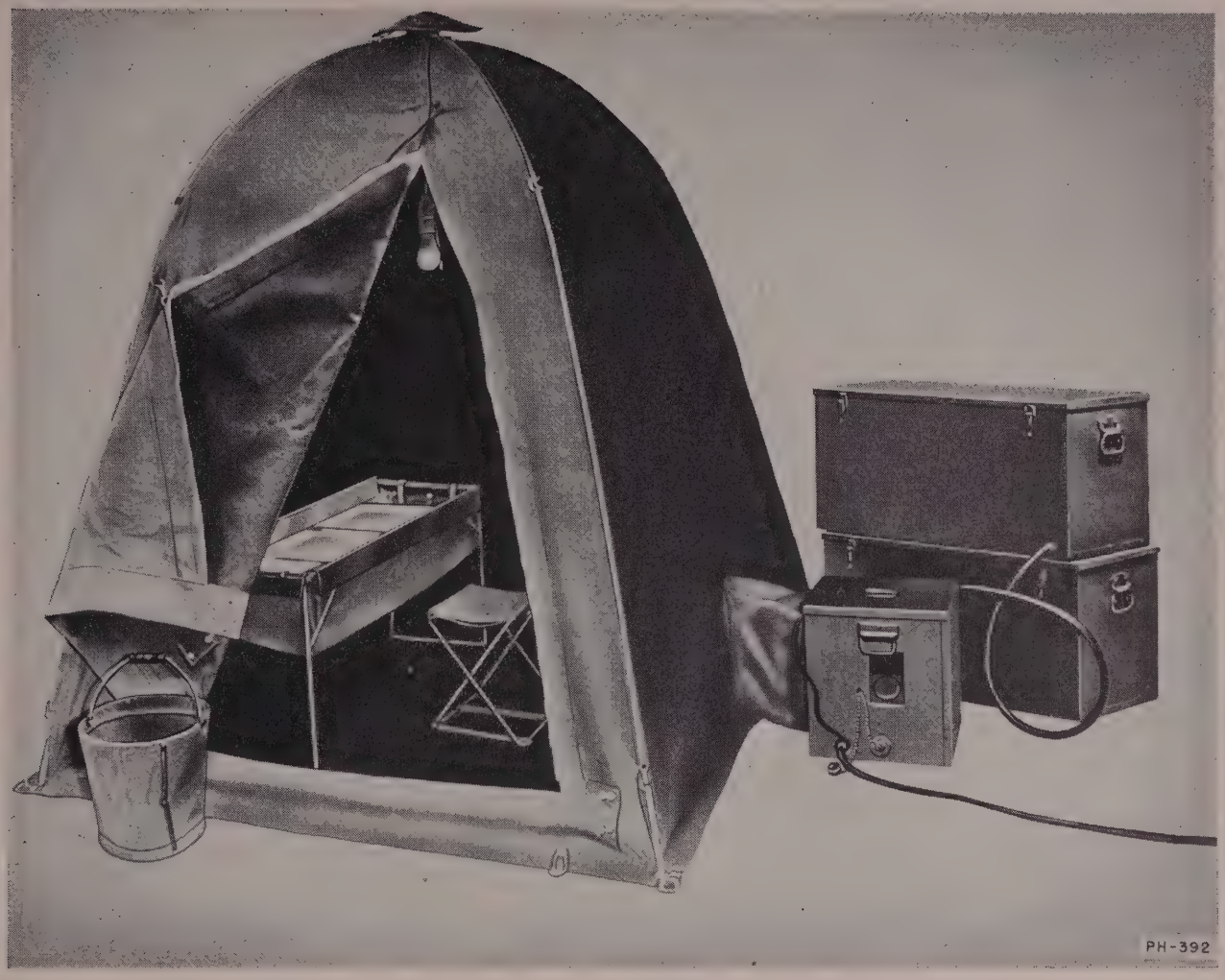
AN/TFQ–9: 105- to 120-v, 60-cyc a-c; or, 105- to 120-v d-c; or 6-v d-c.

PH–395: 6 to 8-v d-c, 100-amp hr storage battery, or 110- to 120-v, 60-cyc a-c.

TYPE OF LIGHT SOURCE:

AN/TFQ–9: 75-w, 125-v incandescent lamp for 105- to 120-v operation; and 32-cp, 6-v incandescent lamp for 6-v d-c operation (cp).

PH–395: 6- to 8-v, 32-cp opal, bayonet-base, incandescent lamp. Built-in step-down transformer supplies the required 6-v to the lamp. On d-c operation transformer is bypassed and lamp is connected directly to power source.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–392. *Name of equipment:* Darkroom.

FUNCTIONAL DESCRIPTION

Darkroom PH–392 is a portable, field photographic laboratory facility. It is transported in two steel cases.

This equipment consists essentially of a light-tight tent having a 5-foot-square floor and requiring (with the heater) a total of 5 by 7 feet of ground space. It includes a collapsible sink and heater-ventilators (consisting of a gasoline heater and electrical motor-driven blower) and is about 6 feet in height.

There are two models of this equipment: PH–392, which includes blower equipment of 50-cubic-feet-per-minute capacity requiring 115-v a-c; and PH–392–X, which has the same a-c power requirements but can also be operated on 6-v d-c and has a blower of a circulation capacity of 125 cfm.

INSTRUCTION LITERATURE: TM 11–2363.
CURRENCY OF INFORMATION: 2 Apr 53.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in.) installed*	*Weight (lbs.)*
2	Steel field cases holding tent, power cables, cameras sink basin, collapsible tray supports, heater, and related items.	14 x 14 x 34 (each case)	140

TECHNICAL CHARACTERISTICS

TYPE: Portable tent, heater ventilated.

VENTILATION, HEATING, AND COOLING PROVISIONS: PH–392, 50 cfm; PH–392–X, 125 cfm Heater equipped with blower, and lightproof vent in peak of tent.

POWER REQUIREMENTS:
PH–392: 115-v a-c only.
PH–392–X: 115-v a-c or 6-v d-c.

HEATER: Gasoline combustion type, with electrically operated blower; 5- to 8-hr continuous operation.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–406. *Name of equipment:* Processing Equipment.

FUNCTIONAL DESCRIPTION

Processing Equipment PH–406 is a manually operated photographic printing and processing equipment capable of handling film from 35-mm to 4 by 5 inches in size, and projection prints up to 8 by 10 inches.

This equipment consists essentially of Printer PH–129 and auxiliary and accessory items.

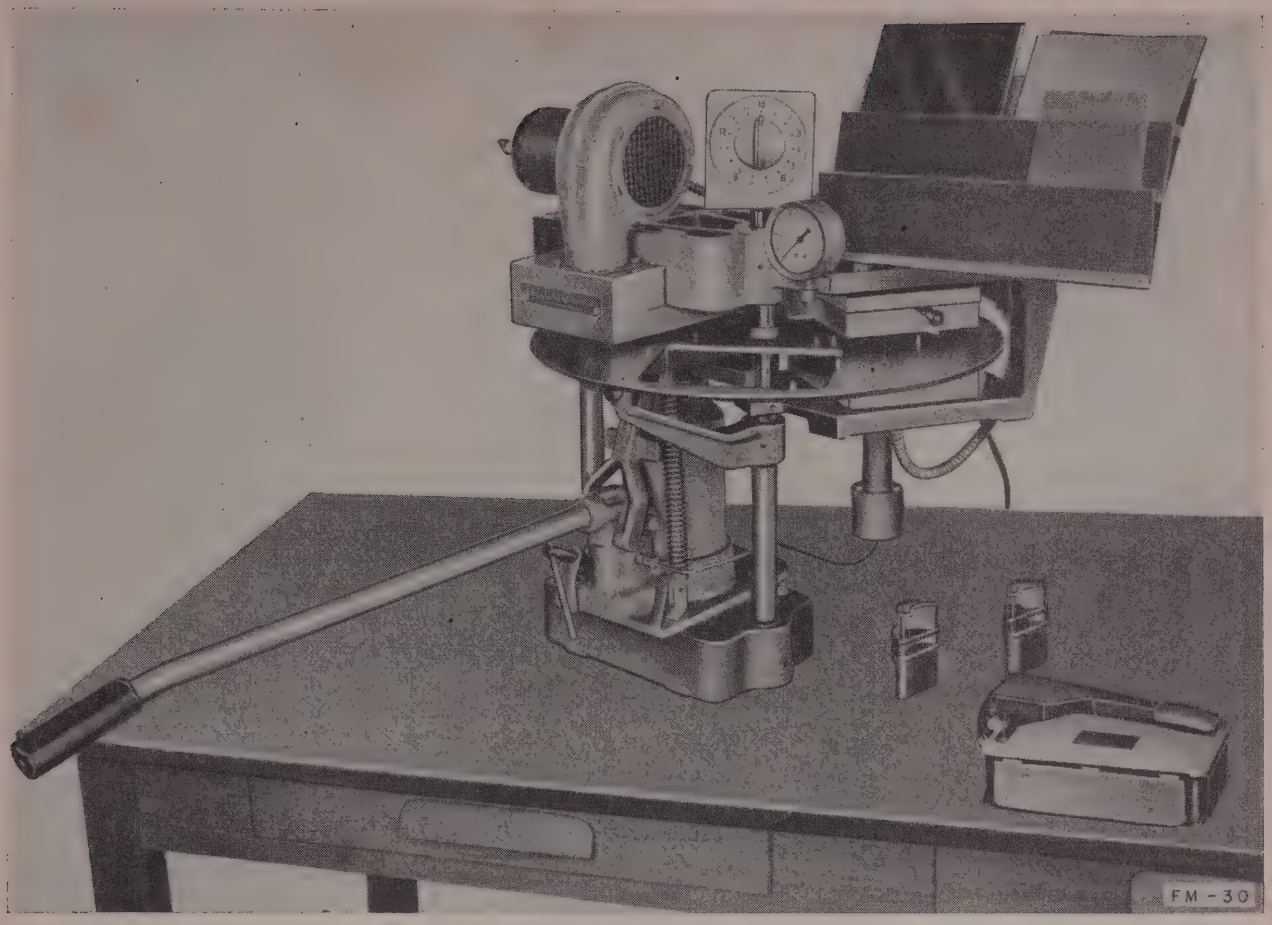
INSTRUCTION LITERATURE: TM 11–405.
CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists essentially of a single principal operating component.

TECHNICAL CHARACTERISTICS

TYPE: Projection.
NEGATIVE SIZE: From 35-mm to 4 x 5 in.
MAGNIFICATION: 35-mm negatives, 16 times; 4 x 5 in. negatives, 4 times.
MAXIMUM PRINT SIZE: 16 x 20 in.; easel furnished, 8 x 10 in.
TYPE OF CONDENSING SYSTEM: 35-mm: 2 plano-convex condensing lenses; 4 x 5 inches: 2 plano-convex condensing lenses.
LENS: One 2 in., f/4.5; one 5½-in., f/4.5
FOCUSING ARRANGEMENT: Manual, bellows.
TYPE OF LIGHT SOURCE:
75-w, incandescent lamp, medium screw-base.
GE Mazda No. 211, and 6-8 v, 32-cp, bulb S–11, bayonet base.
GE Mazda No. 1723 lamp.
POWER REQUIREMENTS: 105- to 120-v, 60-cyc a-c, or 6-v d-c; (60-cyc, 110-v or 6-v transformer is mounted on the enlarger baseboard; equipment can also be used with 6-v battery).



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Type number:* FM–30. *Name of equipment:* Photographic Laminating Press.

FUNCTIONAL DESCRIPTION

Photographic Laminating Press FM–30 (previously designated PH–682/U is a hand-operated, thermostatically controlled, electrically heated, laminating press. It is used to seal identification cards and similar material between sheets of acetate.

This equipment is essentially a press plus a corner-cutting machine. It includes a press, pressure gage, thermometer, corner rounder, two rounder attachments, and related items.

The corner cutting machine produces rounded corners of ⅛- or ¼-inch radius, on identification cards, or other documents.

INSTRUCTION LITERATURE:

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Electrically heated laminating press, sealing identification cards and other documents by pressure and heat.

SIZE MATERIAL HANDLED: 5 x 6 in., maximum; rounded corners ⅛-in. and ¼-in.

TEMPERATURE RANGE: Heating platens temperature range.

THERMOMETER RANGE:
100° to 600° F.
250° to 450° F.

HYDRAULIC PRESSURE RANGE: 0 to 5,000 psi.

PRESSURE GAGE RANGE: 0 to 5,000 psi.

BLOWER: Motor type, 1/50 hp, 3,000 rpm, 60-cyc, 1 ph, 115-v, a-c.

TIMER RANGE: 0 to 15 minutes.

POWER SUPPLY: 115-v, a-c, 60-cyc, 2,000-w.

DIMENSIONS: Unit placed in modified standard 55 gal steel drum 35 x 23 in.

WEIGHT: Total, 62 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–125. *Name of equipment:* Press.

FUNCTIONAL DESCRIPTION

Press PH–125 is an 11- by 14-inch, electrically heated, thermostatically controlled, hand-operated, dry-mounting press. It is used to affix photographic prints or other copy to mounts or back to back.

This equipment is essentially a commercial (Eastman Kodak) dry-mounting press, consisting of the press assembly, power cable, and an electric tacking iron. A thermometer indicates temperatures from 150° to 250° F. Heat, from OFF to LOW to HIGH, is controlled by a switch.

There are two models of this equipment: PH–125 and PH–125–A. Both models are interchangeable except for maintenance parts.

INSTRUCTION LITERATURE: TM 11–2375.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Electrically heated, hand-operated dry-mounting press.

SIZE MATERIAL HANDLED: Maximum size 11 x 14 in.

TYPE OF HEATING PROVISIONS: 2 heating elements, 300-w and 1,200-w; 120-v.

Type of Control: Thermostatic and Off-Low-High switch.

POWER CONSUMPTION: 1,100-w (10 amp).

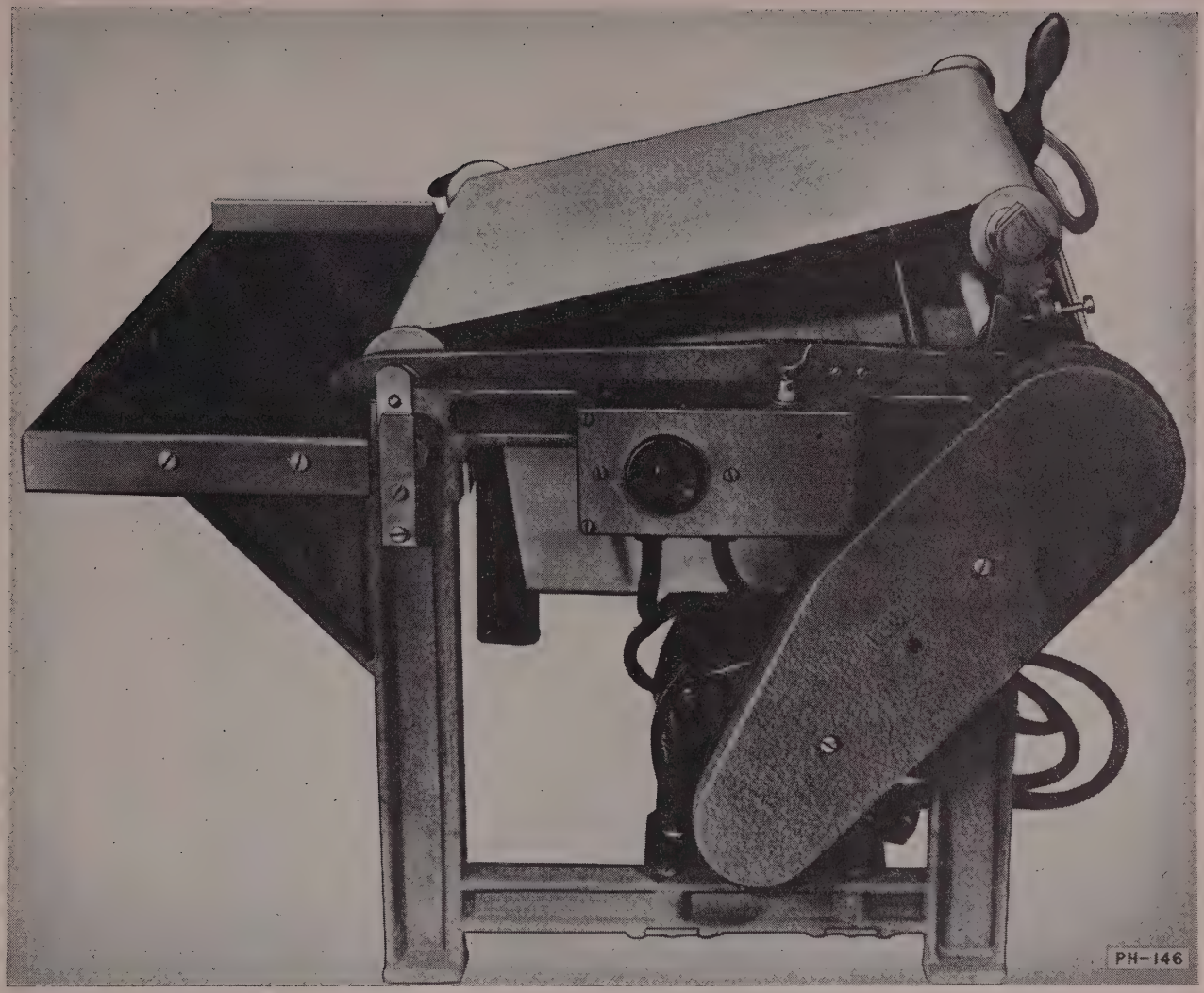
TEMPERATURE:

Press 10° F. to 235° F.

Tacking iron 10° F. to 250° F.

POWER REQUIREMENTS: 1,100-w (10 amp) 110-v, 60-cyc a-c.

DIMENSIONS: Unpacked, 18 x 16½ x 14 in.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 24 Mar 53; *Service type number:* PH–146. *Name of equipment:* Print Straightener.

FUNCTIONAL DESCRIPTION

Print Straightener PH–146 is a continuous type, electrically heated, print straightener used to remove the curl from single- or double-weight prints up to 14 inches wide.

This equipment is essentially a commercial (Eastman) print straightening equipment consisting of a base, a belt frame assembly, a water pan, a screen assembly, and a motor.

The prints are carried through a water vapor on the apron and rollers.

INSTRUCTION LITERATURE: TM 11–2382.

CURRENCY OF INFORMATION: 24 Mar 53.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Continuous.

SIZE MATERIAL HANDLED: To 14 in. wd single- or double-weight).

WATER REQUIREMENTS: Only enough hot water to fill pan within an inch of top.

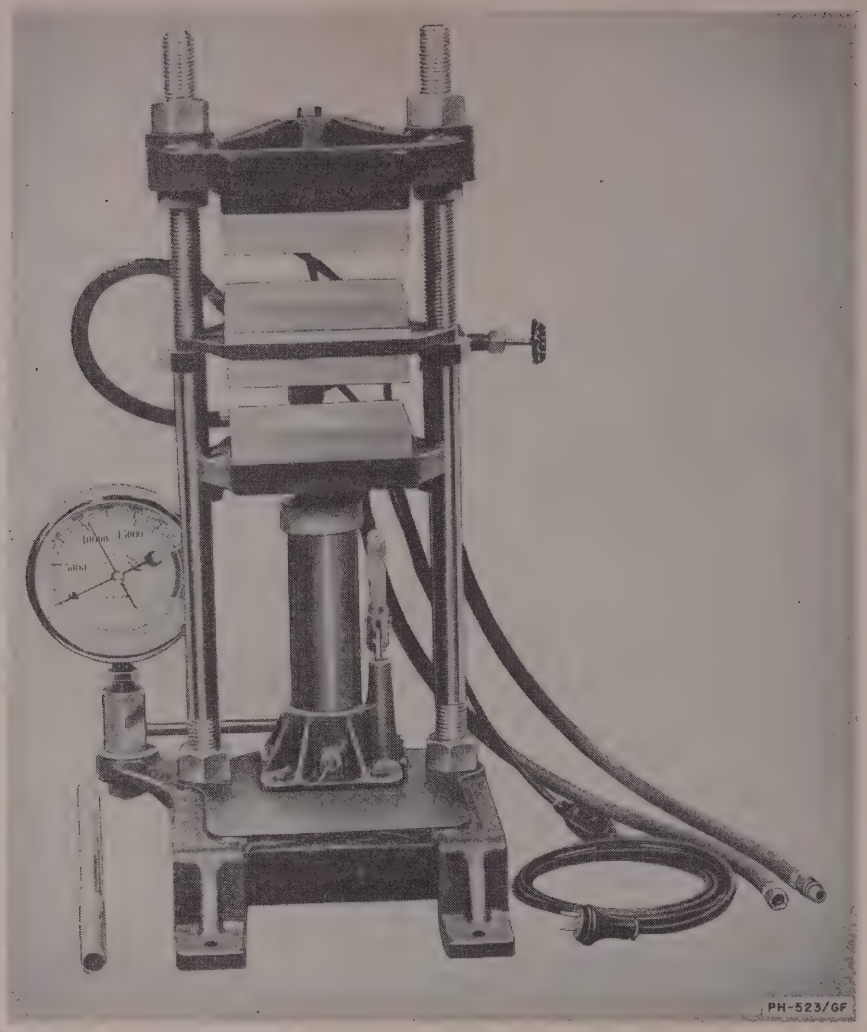
TYPE OF HEATING PROVISIONS: Electrically heated.

MOTOR CHARACTERISTICS: 115-v, 60-cyc a-c.

POWER REQUIREMENTS: 110- to 120-v, 60-cyc, single-phase a-c.

DIMENSIONS: Unpacked, 20 x 12 x 15 in.

WEIGHT: Unpacked, 50 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 24 Mar 53. *Service type number:* PH–523/GF. *Name of equipment:* Laminating Equipment.

FUNCTIONAL DESCRIPTION

Laminating Equipment PH–523/GF is a hand-operated, thermostatically controlled, electrically heated, laminating press. It is used to seal identification cards and similar material between sheets of acetate.

This equipment is essentially a commercial (Carver No. 126) press plus a (Model 20) corner-cutting machine. It includes a press, pressure gage, thermometer, corner rounder, and related items.

The corner cutting machine produces rounded corners of ¼-inch radius, on identification cards.

INSTRUCTION LITERATURE: TM 11–2369.

CURRENCY OF INFORMATION: 24 Mar 53.

MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Electrically heated laminating press, sealing identification cards by pressure and heat.

SIZE MATERIAL HANDLED: Up to approximately 4 x 5 in.; rounded corners ¼-in. radius.

TYPE OF HEATING PROVISIONS: Cartridge-type heating units 285 w, 115 v, each.

TEMPERATURE RANGE: 100° to 500° F.

OPERATING TEMPERATURE: 335° to 340° F.

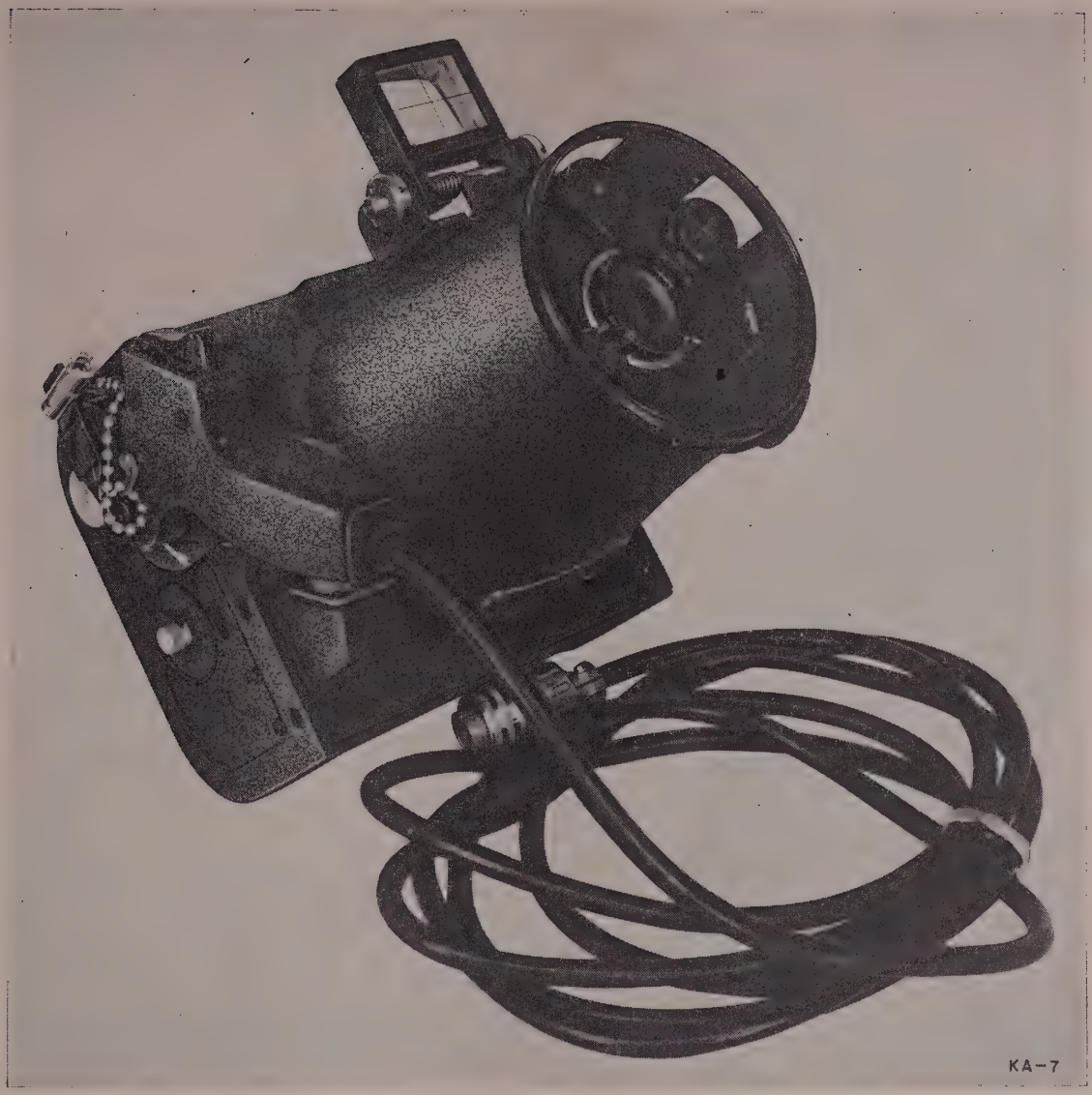
PRESSURE LOAD: 10,000 lb.

POWER RATING: 1,140 w.

POWER REQUIREMENTS: 110/115-v, a-c.

DIMENSIONS: Packed, 18 x 18 x 32 in.

WEIGHT: Packed, 234.25 lb.



Status of equipment: S/Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Type number:* KA–7. *Name of equipment:* Camera, Still Picture.

FUNCTIONAL DESCRIPTION

Camera, Still Picture KA–7 is an automatic, 4- by 5-inch motor-driven aerial camera equipment that can also be used for single-exposure, hand-held photography. It is intended for use in army aircraft for Signal Corps aerial photography.

This equipment is essentially a modified US Air Force Camera K–25 and is similar to Camera K–20 (Signal Corps type PH–691/U) except that it operates from 24-v d-c.

It differs from the K–20 by having specially provided rollers that hold the film flat instead of the vacuum back of the K–20.

INSTRUCTION LITERATURE:

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 4 x 5 in.

LENS: 6⅜ in., f/4.5; permanently focused at infinity.

TYPE OF SHUTTER: Between-the-lens.

Shutter Range: 1/125, 1/250, and 1/500 second.

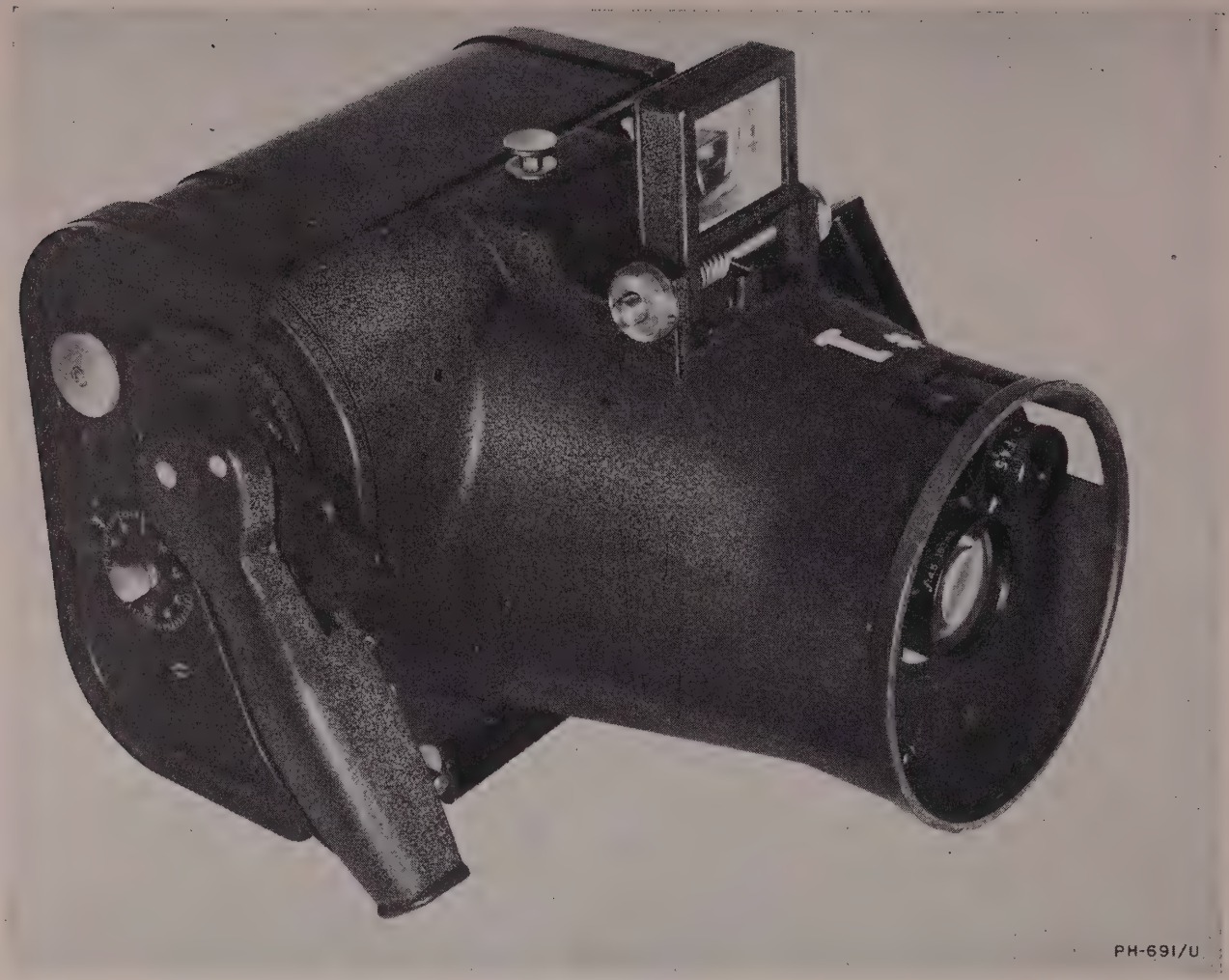
TYPE OF FOCUSING: None.

TYPE OF VIEWFINDER: 90° prism attachment.

TYPE OF FILM USED: Roll film; 5¼ in. wd x 20 ft lg, 55 exposures.

OPERATION: Single exposure or automatic, motor operated.

WEIGHT: Unpacked, 12½ lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 17 Mar 53. *Service type number:* PH–691/U. *Name of equipment:* Camera, Still Picture.

FUNCTIONAL DESCRIPTION

Camera, Still Picture PH–691/U is a 4- by 5-inch, manually operated, roll film, aerial camera equipment. It is used primarily for low altitude aerial reconnaissance photography.

This equipment consists essentially of Air Force model K–20 aerial camera with a lens, a film-loading guide, two spools, a lens cap, a red and a yellow filter in bayonet mounts, a wall-bracket, and a carrying case.

The camera has a between-the-lens shutter and uses 5¼-inch-wide and 20-foot-long, 50-exposure, roll film.

Special features include a double-exposure prevention device, a vacuum back, a lens fixed at infinity, and a lever-action film transport.

INSTRUCTION LITERATURE:

CURRENCY OF INFORMATION: 17 Mar 53.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in.) installed*
1	Carrying case containing camera, film loading guide, filter set, spool, and wall bracket.	15½ x 11½ x 8¾

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 4 x 5 in.

LENS: 6⅜ in., f/4.5.

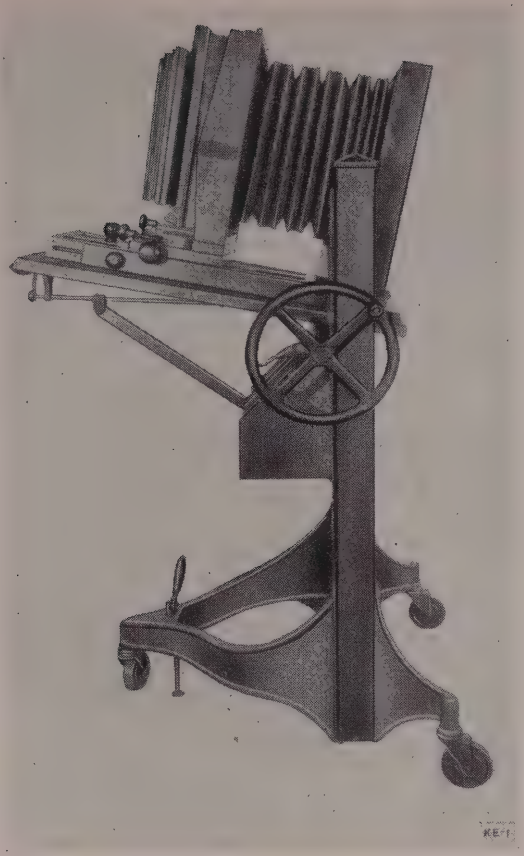
TYPE OF SHUTTER: Between-the-lens.

Shutter Range: 1/125, 1/250, and 1/500 second.

TYPE OF FOCUSING: None; lens permanently fixed at infinity.

TYPE OF VIEWFINDER: Eye level, direct vision, folding, optical viewfinder.

TYPE OF FILM USED: Roll film; 5¼ in. wd x 20 ft lg, 50 exposures.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Type number:* KE–1. *Name of equipment:* Camera, Still Picture.

FUNCTIONAL DESCRIPTION

Camera, Still Picture KE–1 (previously designated PH–150) is an 8- by 10-inch portrait camera used in a studio or laboratory and includes either a Century Master, a Century No. 4A studio-type, or a Burke and James (Rembrandt Portrait Camera) camera component.

KE–1 consists of the camera, a sliding ground glass carriage, a studio stand, 8- by 10-inch and 5- by 7-inch reversible adapter backs, a focusing cloth, Lens PH–350, and associated accessories.

Lens PH–350 is a 14½-inch, f/6.3 lens mounted on a studio shutter. Shutter settings are I (instantaneous) and B (bulb).

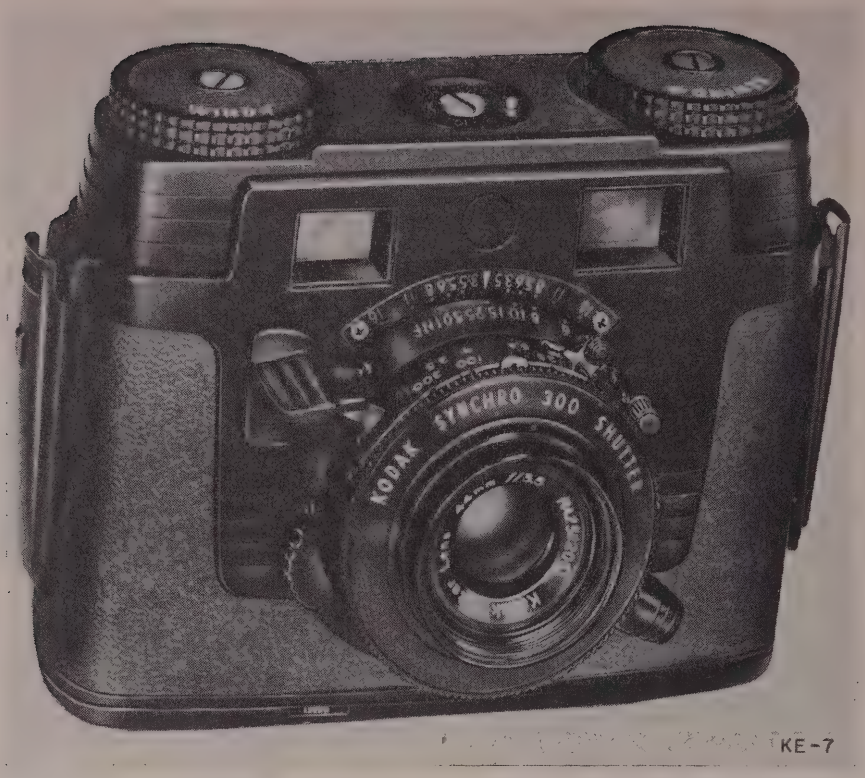
INSTRUCTION LITERATURE: TM 11–2327.
CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 8- x 10- and 5- x 7-in.
LENS: 14½-in. f/6.3 mounted on a studio shutter.
TYPE OF SHUTTER: Front shutter.
Shutter Range: I (instantaneous, 1/15 second) and B (bulb).
TYPE OF FOCUSING: Ground glass.
TYPE OF FILM USED: Cut film, and plates.
Horizontal Swing-back (Right or Left from Center):
Century Master Studio type: 11°.
Century No. 4A Studio type: 7½°.
Vertical Swing or Tilt (Forward or Backward from Center):
Century Master Studio type: 7°
Century No. 4A Studio type: 13°.
Bellows Draw:
Century Master Studio type: 35-in.
Century No. 4A Studio type: 28-in.
Elevation of Stand:
Century Master Studio type: 22-in. (minimum) to 48-in. (maximum).
Century No. 4A Studio type: 29½-in (minimum) to 48-in. (maximum).
Tilt of Camera Stand Top:
Century Master Studio type: 53° forward, 6° backward.
Century No. 4A Studio type: None.
Horizontal Swing or Tilt of Stand Platform:
Century Master Studio type: None.
Century No. 4A Studio type: 16°.



KE-7

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Type number:* KE–7. *Name of equipment:* Camera, Still Picture.

FUNCTIONAL DESCRIPTION

Camera, Still Picture KE–7 (previous types designated PH–324) is a 35-mm, candid-type, still camera. The KE–7 consists of a commercial (Kodak Signet) 35-mm camera with a lens, and a between-the-lens shutter, a camera case, and a carrying strap.

Camera PH–324 is essentially a commercial (Kodak 35, or Bolsey) camera with a lens and a between-the-lens shutter, a camera case, and a carrying strap.

Camera, Still Picture KE–7 (illustrated) has a 44-mm, f/3.5 lens, and a shutter (Kodak Synchro 300 Shutter).

There are two models of the PH–324: PH–324, which has a 51-mm, f/4.5 lens, and a shutter (Kodak No. 1 Diomatic); and PH–324–A which has a 44-mm, f/3.2 lens and a between-the-lens shutter.

Except for maintenance parts models of this equipment are interchangeable.

INSTRUCTION LITERATURE: TM 11–2361, TM 11–2361A.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Roll film (cartridge), 20 or 36 exposures.

NEGATIVE SIZE: 35-mm (24-mm wd, 36-mm lg).

LENS:
- KE–7: 44-mm, f/3.5.
- PH–324: 51-mm, f/4.5.
- PH–324–A: 44-mm, f/3.2.

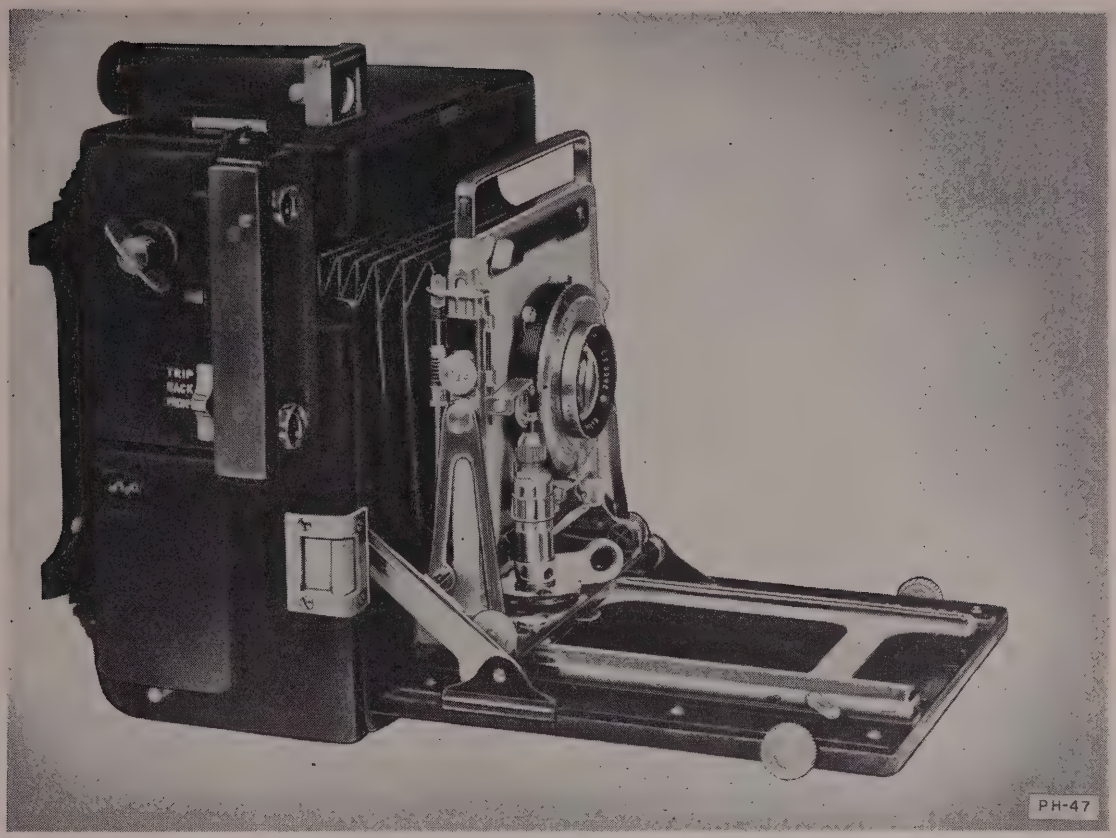
TYPE OF SHUTTER: Between-the-lens.

Shutter Range:
- KE–7: 1/25 to 1/300 second; B (bulb); synchronized for class M flash lamps at all shutter speeds.
- PH–324: 1/25 to 1/150 second; T (time); B (bulb).
- PH–324–A: 1/10 to 1/200 second; T (time); B (bulb).

TYPE OF FOCUSING:
- KE–7: Coupled rangefinder and distance scale on lens mount.
- PH–324: Distance scale on lens mount.
- PH–324–A: Coupled rangefinder and distance scale on lens mount.

TYPE OF VIEWER:
- KE–7: Negative, eye-level, inclosed, combined with rangefinder.
- PH–324: Folding, optical, eye-level finder.
- PH–324–A: Direct vision, internal, optical finder.

TYPE OF FILM USED: 35-mm, black and white, or color, issued in daylight-loading cassettes.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–47. *Name of equipment:* Camera.

FUNCTIONAL DESCRIPTION

Camera PH–47 is a general-purpose 4- by 5-inch, still, press-type camera and is the principal operating component of Camera Set, Still Picture KS–4.

This equipment consists essentially of a commercial (Speed-Graphic) camera having a double-extension bellows, between-the-lens and focal-plane shutters, a coupled rangefinder, and a ground glass. Flash equipment, filters, film holders, and related accessories are included.

There are several models of this equipment. PH–47–E and –F are identical except that PH–47–E has a 127-mm, f/4.7 lens with a 1 to 1/400-second front shutter; PH–47–F has a 5½-inch, f/4.5 lens with a 1- to 1/200-second front shutter. PH–47–H (illustrated above) and PH–47–J have other refinements, such as a body shutter release and more flexible front support, and PH–47–J has a Graflok back.

Future procurements of this equipment will be designated Camera, Still Picture KE–9 and may include models that are essentially similar commercial (Busch Pressman) cameras. These have a self-capping focal plane shutter, a separate wide-angle-lens focusing knob, and similar technical refinements.

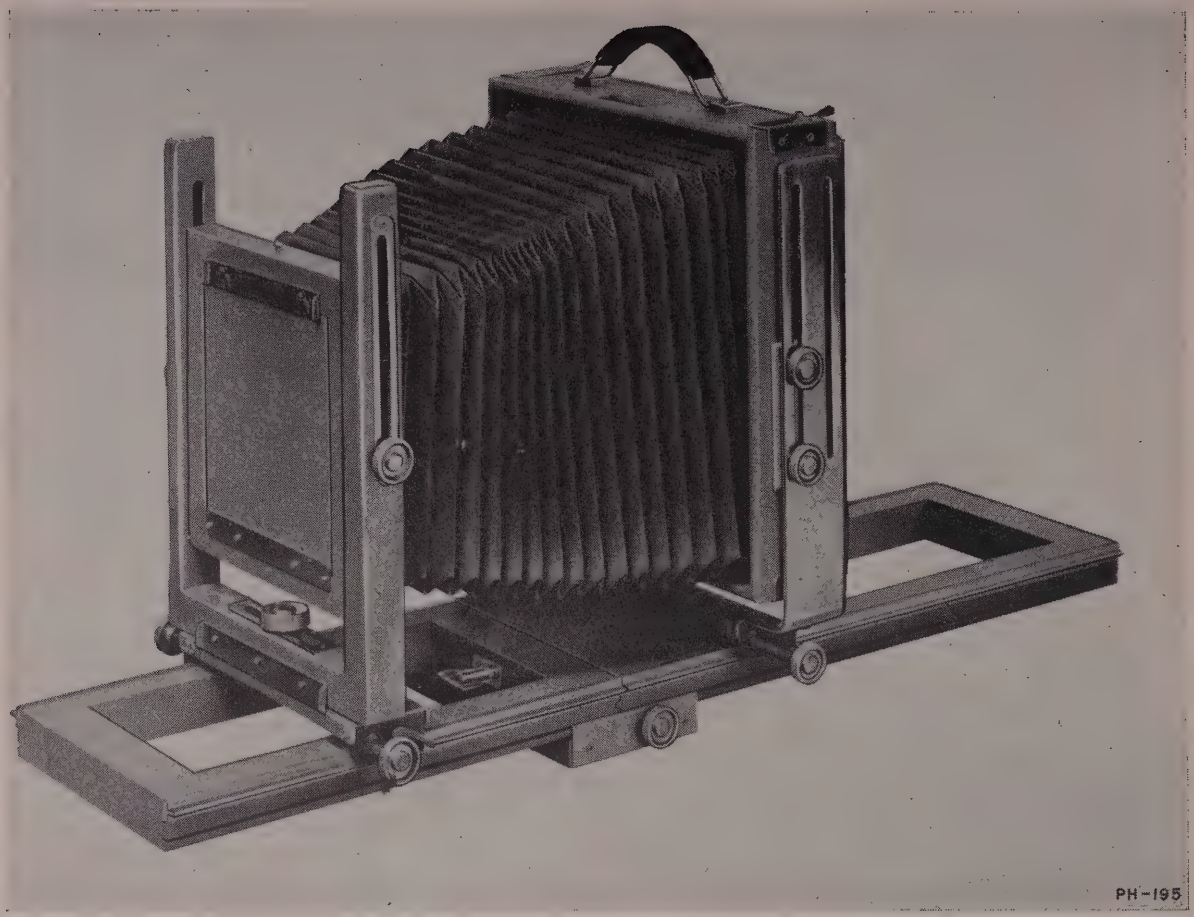
INSTRUCTION LITERATURE: TM 11–2352.
CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists of essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 4 x 5 in.
LENS:
PH–47–E, –H, and –J: 127-mm, f/4.7.
PH–47–F: 5½-in., f/4.5.
SHUTTER SPEED RANGE:
Focal plane shutters in all models: 1/10 to 1/1000 second.
Between-the-lens-shutter: PH–47–E, –H, and –J, 1 to 1/400 second; PH–47–F. 1 to 1/200 second.
TYPE OF FOCUSING: Coupled rangefinder, ground glass, and scale.
TYPE OF VIEWFINDER: Optical viewfinder, wire frame finder, and ground glass back.
TYPE OF FILM USED: Film pack or cut film.
TYPE OF FLASH EQUIPMENT: PH–47–E, –H, and –J have synchronizer assembly used with solenoid release; PH–47–F has a shutter with built-in mechanical synchronizing device.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–195. *Name of equipment:* Camera.

FUNCTIONAL DESCRIPTION

Camera PH–195 is an 8- by 10-inch-view camera used for studio or for field work, where maximum camera adjustment and negative size are required. There are two models of this equipment.

PH–195–A and PH–195–B (illustrated) consist essentially of a wooden camera body having a swing back, a bellows, a front standard, bed assemblies, a sliding bed block, and reversible backs, which permit use of both 8- by 10-inch or 5- by 7-inch film.

Both cameras are functionaly interchangeable. The removable bed extension is located on the rear of Camera PH–195–A; on Camera PH–195–B it is on the front of the camera. Camera PH–195–A has a rising front; Camera PH–195–B is equipped with a rising, tilting, and shifting front.

This camera does not include either a lens or a shutter.

Camera PH–195–B is the major operating component of Camera Set, Still Picture AN/PFH–4 which does include lenses, shutters, and operating accessories.

INSTRUCTION LITERATURE: TM 11–2365.
CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 8- x 10- or 5- x 7-in.
LENS: No lens issued with PH–195. (Camera Set, Still Picture AN/PFH–4 of which it is a part includes a 12¼-in., f/7 and a 6¼-in., f/16 lens).
TYPE OF SHUTTER: No shutter issued with PH–195. (Camera Set, Still Picture AN/PFH–4 includes No. 4 and No. 3 Betax shutters).
TYPE OF FOCUSING: Ground glass.
TYPE OF VIEWFINDER: Ground glass.
TYPE OF FILM USED: Sheet film.
TILT: 8° forward; 5° backward.
TOTAL VOLUME: 1.5 cu ft.
DIMENSIONS: Unpacked, 13- x 8.5-in.
WEIGHT 15.75 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–503/PF. *Name of equipment:* Camera.

FUNCTIONAL DESCRIPTION

Camera PH–503/PF is a 2¼- x 3¼-inch fingerprint camera used to photograph fingerprints, portions of documents, and other small, flat objects.

There are two models of this equipment: PH–503/PF and PH–503A/PF. PH–503/PF is essentially a commercial (Graflex Finger-Print) camera consisting of a self-contained unit that houses an f/6.3 lens, a shutter, a diaphragm assembly, a complete lighting system operated by batteries, a focusing panel and a film holder. PH–503A/PF (illustrated) is of slightly different design but generally consists of the same complete housing and additional accessory items, an f/4.5 lens, six film holders, 1 film-pack adapter, and a carrying case.

Future procurements of this camera will be designated Camera, Still Picture, Identification KE–3.

INSTRUCTION LITERATURE: TM 11–2377 and TM 11–2377A.
CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

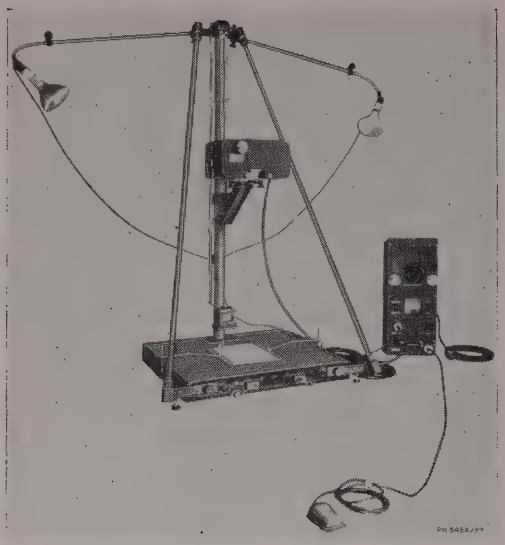
This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 2¼- x 3¼-in.
LENS:
- PH–503/PF: 72-mm, f/6.3.
- PH–503A/PF: 72-mm, f/4.5.

TYPE OF SHUTTER: Between-the-lens.
- Shutter Range:
  - PH–503/PF: T (time).
  - PH–503A/PF: 1/25 to 1/150 second; T (time); B (bulb).

TYPE OF FOCUSING: Fixed focus.
TYPE OF VIEWFINDER: Ground glass (focusing panel).
TYPE OF FILM USED: Cut film and film pack.
TOTAL VOLUME: PH–503/PF (packed), 1 cu ft.
WEIGHT: PH–503/PF (packed), 18 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–545A/PF. *Name of equipment:* Camera.

FUNCTIONAL DESCRIPTION

Camera PH–545A/PF is a semiautomatic copying equipment used for recording, bound or unbound, documents on 16- or 35-mm unperforated microfilm.

There are two models of this equipment: PH–545/PF and PH–545A/PF. Camera PH–545/PF consists essentially of a commercial (Recordak microfilm unit model E) camera, a power control unit, lamps, a tripod, a converter, an exposure meter assembly, and related items. It permits the use of 16- or 35-mm perforated or unperforated film.

Camera PH–545A/PF consists essentially of a commercial (Viewlex) camera, light meter, copy holder assembly, conversion kit, lighting assembly, control panel assembly, camera stand, 16- and 35-mm film spools, control cable, foot switch, and two carrying cases.

These equipments are electrically operated and photograph small documents (20 x 27 in.) in vertical position, or larger documents (37 x 42 in.) in horizontal position.

INSTRUCTION LITERATURE: TM 11–2312.
CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in.) installed*	*Weight (lbs.)*
1	Camera Stand Carrying Case Assembly	34 x 12 x 9	50
1	Camera Carrying Case and Easel Assembly	28 x 24 x 9½	90

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 16-mm or 35-mm.

LENS:
- PH–545/PF: 63-mm, f/4.5; fixed lens aperture.
- PH–545A/PF: 75-mm, f/4.5; Extar enlarger lens.

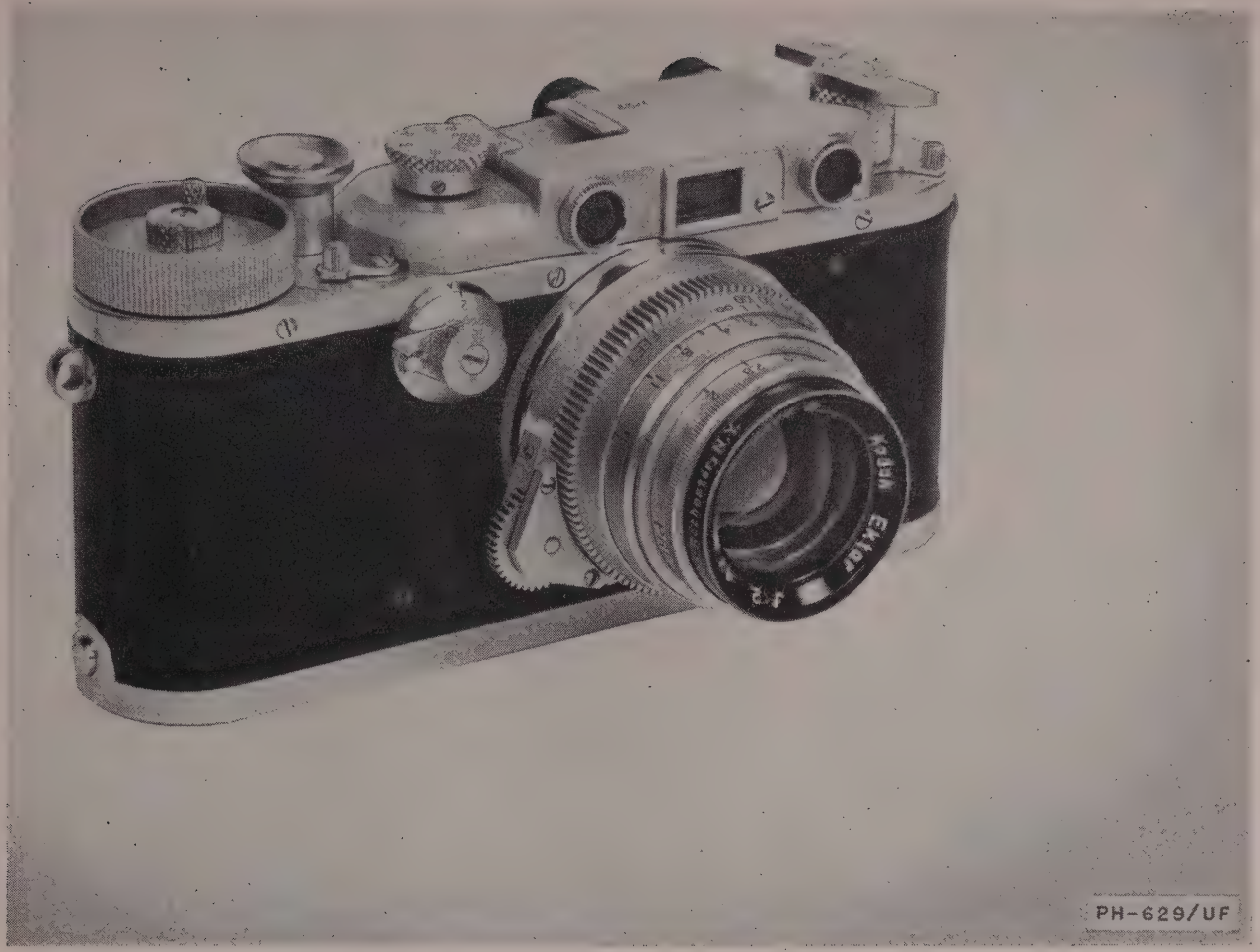
TYPE OF SHUTTER:
- PH–545/PF: Mirror shutter behind lens; speed 4/10 second.
- PH–545A/PF: Optical system used for copying and projecting rectangle of light indicating exact field of view of camera at any distance. Shutter speed is .05 second.

TYPE OF FOCUSING:
- PH–545/PF: Tripod and easel are integral parts of focusing system. Lens focus must coincide with tripod leg calibration. Reproduction reduction factor is basis for adjusting lens and tripod.
- PH–545/APF: Reduction scale on lens and upright.

TYPE OF VIEWFINDER:
- PH–545/PF: Field of view is indicated by a projected rectangle of light and by a visual optical finder.
- PH–545A/PF: Field of view is indicated by a projected rectangle of light.

LIGHT SYSTEM:
- PH–545/PF: Camera has fixed lens aperture and fixed shutter speed; changes are accomplished by varying light intensity, by means of rheostat on the control panel.
- PH–545A/PF: Two 300-w, 90-v, reflector flood lamps operated from 115-v, 60 cycle, a-c, or 115-v, d-c. Rheostat control knob on control panel provides variable light intensity.

WEIGHT:
Unpacked:
- PH–545/PF: 125 lb.
- PH–545A/PF: 140 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–629/UF. *Name of equipment:* Camera.

FUNCTIONAL DESCRIPTION

Camera PH–629/UF is a 35-mm, candid-type, still camera used primarily for black-and-white photography under conditions where lens speed, depth of field, and ease of operation are most important. It is designed to operate in tropical climates and at temperatures as low as –65° F.

This equipment consists essentially of a commercially (Kardon) camera, one standard lens, and a carrying case.

The camera has a built-in, coupled rangefinder, a focal-plane shutter, and an exposure counter and uses a 36-exposure film magazine (cassette). The standard lens has a screw-in mounting.

Lenses supplied with Camera Equipment AN/GFQ–2 can be used interchangeably with the lens of this camera.

INSTRUCTION LITERATURE: TM 11–2334.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists of only one major operating component.

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 35-mm.

LENS: 47-mm, f/2.

TYPE OF MOUNT: Screw-in mounting, noncollapsible.

TYPE OF SHUTTER: Focal plane.
Shutter Range: 1 to 1/1,000 second; T (time); B (bulb).

TYPE OF FOCUSING: Coupled rangefinder; coincident type.

TYPE OF VIEWFINDER: Direct vision, optical.

TYPE OF FILM USED: 35-mm, standard perforated film in 36-exposure magazine.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Type number:* KF–2. *Name of equipment:* Camera, Motion Picture.

FUNCTIONAL DESCRIPTION

Camera, Motion Picture KF–2 (previous models designated PH–330) is a hand-held, silent, single lens mount, 35-mm motion-picture equipment. It is essentially a commercial (Bell and Howell 71 RM) camera with a 2-inch, f/2 lens. It is part of Camera, Motion Picture KS–5. A special feature of the KF–2 is a provision for mounting a motor drive and a 400-foot film magazine. Camera, Motion Picture KF–2 plus tripod, two 400-foot: film magazines, motor drive, two batteries, transformer and associated accessories is designated Camera, Motion Picture KS–5.

Camera PH–330 has been procured in eight models. These are PH–330–A, –C, –D, –E, –F, –G, –H, and –J.

KF–2, PH–330–A, –H, and –J have a single lens mount; PH–330–C, –D, –E, –F, and –G have three-lens turrets. All models have a spring-motor drive; KS–2, PH–330–F, –G, –H, and –J can also be driven by the 12-volt d-c electric motor, issued with these models, from the 12-volt storage battery supplied with each. All eight models have 100-foot film-load chambers; KS–5, PH–330–F, –G, –H, and –J also include separate 400-foot film magazines.

Differences in models include variations in design details of such features as the viewfinder, the operating speeds, the film-load capacity, focusing devices, and similar considerations; or they may reflect differences in the quantity and type of certain accessory items issued with each model.

Camera KG–1 (modified model of previously designated PH–330–K) is radically different in design and manufacture and serves a special purpose only; it is part of Radar Sets MPQ–12 and MPQ–23.

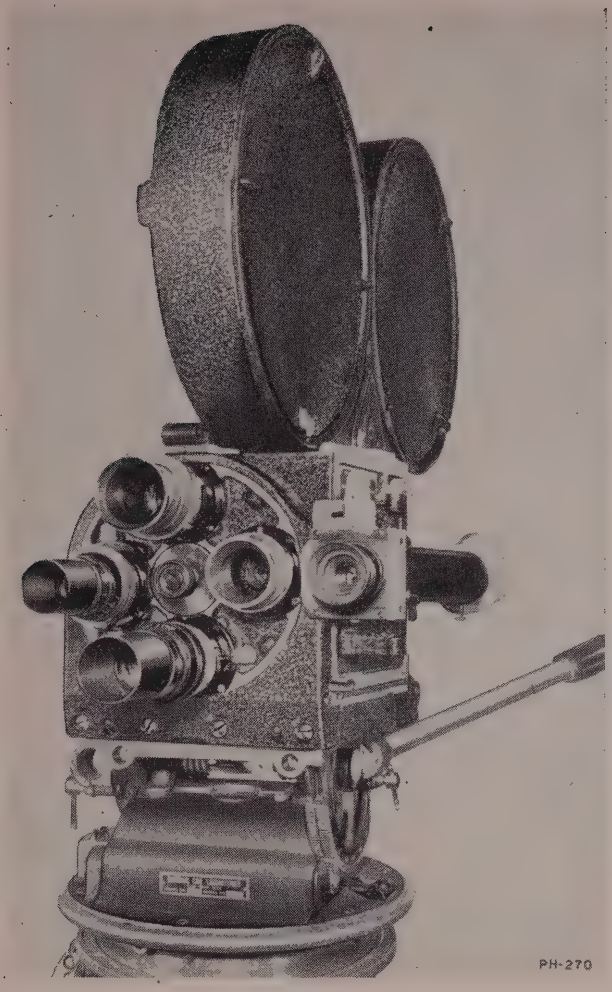
INSTRUCTION LITERATURE: TM 11–2396.
CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

Motion Picture Camera (PH–330–G)
NEGATIVE SIZE: 35-mm.
LENS: 35-mm, f/2.3; 75-mm, f/2.3; 152-mm, f/2.7, 254-mm, f/4.5.
Lens Mount: Type C.
SHUTTER:
Range of Shutter Opening: Permanent open segment, 160°.
Frames per second: 8, 12, 16, 24, 32, and 48 frames per second. (With 110- to 120-v a-c synchronous motor: 24 frames per second. *only*).
TYPE OF FOCUSING: Ground glass and prismatic focusing magnifier, or distance calibration on lens barrels.
TYPE OF VIEWFINDER: Positive type; optical; turret viewfinder; and auxiliary viewfinder tube.
SOUND RECORDING PROVISION: Exposure aperture plate is of sound dimensions (.868 x .631 in.), or standard Academy size.
MOTOR CHARACTERISTICS:
Spring Motor: One full winding can drive 43 feet of film (minimum) at any speed.
Electric Motor: For field use; 12-v, battery-operated, d-c, from portable storage battery, (110-v, universal (a-c or d-c) motor; or 110- to 120-v, 60-cyc, a-c, synchronous motor may be used).
POWER REQUIREMENTS: 12-v from Battery BB–53.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–270. *Name of equipment:* Camera.

FUNCTIONAL DESCRIPTION

Camera PH–270 is a 35-mm, single-system, sound, motion-picture camera equipment used for newsreel and similar motion-picture photography.

This equipment consists essentially of a camera, lenses, three 1,000-foot film magazines, a tripod, and related items and is contained in appropriate carrying cases.

There are two models of this equipment: PH–270, which includes six lenses and can be used in conjunction with Recorder PH–271; and PH–270–A, which has five lenses and is used with Sound Recorder RD–126/TFH–3. When Sound Recorder RD–126/TFH–3 is used with Camera PH–270–A, the overall system is designated Motion Picture Camera Set AN/TFH–3.

Both models are operated on 24-volt, d-c from a storage battery.

INSTRUCTION LITERATURE: TM 11–2353.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 35-mm.

LENS:

PH–270: 35-mm, or 40-mm f/2.3; 50-mm, f/2.3; 75-mm, f/2.3; 100-mm, f/2.3; 152-mm, f/2.7.

PH–270–A: 35-mm, f/2.3; 50-mm, f/2.3; 75-mm, f/2.3; 100-mm, f/2.3; 209-mm, f/4.5.

Lens Mount: Speed bayonet mounting.

SHUTTER:

Range of Shutter Opening: From 20° to 190°.

Frames per second: 24.

TYPE OF FOCUSING: Ground glass and focusing magnifier, or distance calibrations on lens barrels.

TYPE OF VIEWFINDER: Ground glass and optical viewfinder.

Sound Recording Provision:

PH–270 used in conjunction with Receiver PH–271.

PH–270–A used in conjunction with RD–126/TFH–3.

MOTOR CHARACTERISTICS: PH–270 and PH–270–A employ a 24-v, d-c, direct drive motor.

POWER REQUIREMENTS: Cameras are battery driven; power requirements depend on temperature at which camera is employed; at 40° F below zero, 50-w are needed; with higher temperatures power requirements decrease.

TOTAL VOLUME: 20 cu ft.

WEIGHT: 347 lb; ship tons, .5.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–274. *Name of equipment:* Camera.

FUNCTIONAL DESCRIPTION

Camera PH–274 is a 35-mm, motion-picture camera equipment which can be used for silent or sound photography in studio or field applications. It is operated in conjunction with Sound Recorder Equipment PH–346 for double-system sound recording.

This equipment consists essentialy of a commercial type (Mitchell) camera with a motor, a set of eight lenses, tripod equipment, batteries, and related accessories.

It is packed in several carrying cases which contain the camera, the eight lenses, three 1,000-foot film magazines, the motor with a tachometer, a view-finder and related lenses, and accessory items. Two battery cases each contain 2 storage batteries.

Three models of this equipment are available: Camera PH–274, which has steel gears; Camera PH–274–A, which uses fiber gears against steel gears; and Camera PH–274–B, which has an automatic shutter, automatic and hand-operated dissolve, built-in 4-way mattes and a built-in iris.

INSTRUCTION LITERATURE: TM 11–2386.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 35-mm.

LENS: 25-mm, f/2.3; 35-mm, f/2.3; 50-mm, f/2.3; 75-mm, f/2.3; 100-mm, f/2.3; 152-mm, f/2.7; 250-mm, f/5.6; 375-mm, f/4.5, (or 355-mm, f/4.5).

Lens Mount: Keycatch with setscrew; lenses set in focusing mounts, having micromatric adjustments.

SHUTTER:

Range of Shutter Opening: Maximum opening of 170°; can be closed down to any smaller angle.

Frames per second: Any speed to 24 frames per second.

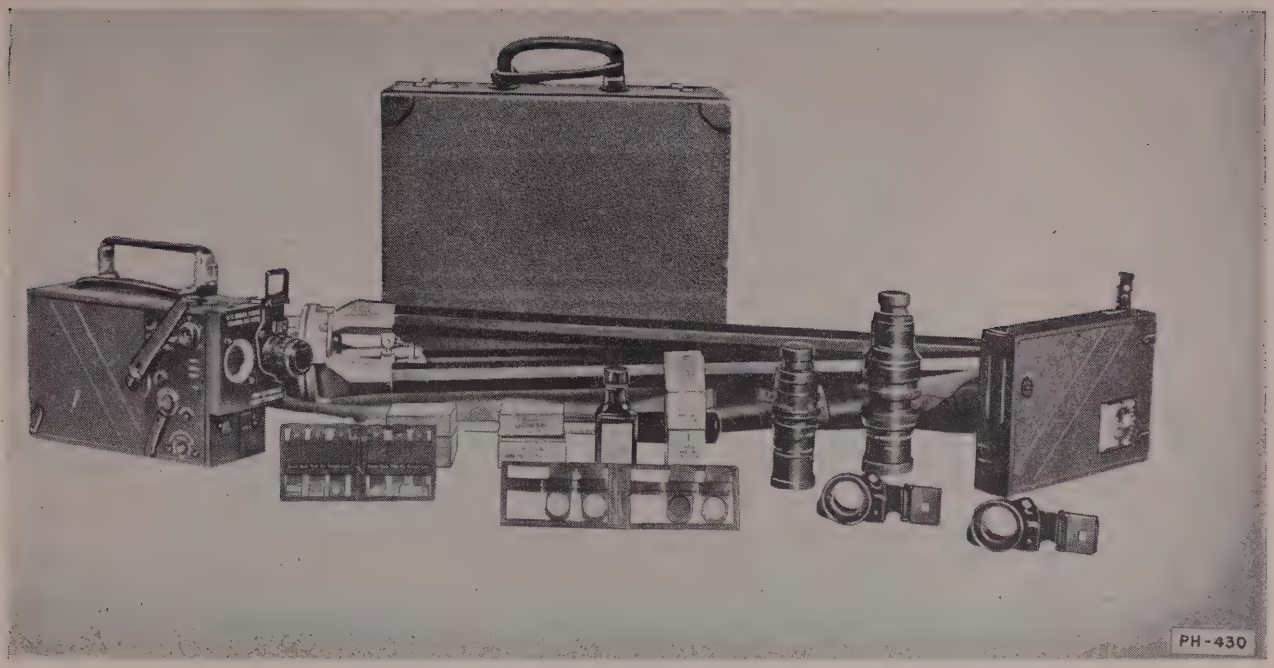
TYPE OF VIEWFINDER: Magnifying prismatic viewfinder and focusing telescope through taking lens and ground glass.

TYPE OF FOCUSING: Ground glass and focusing telescope, or distance calibrations on lens barrels.

SOUND RECORDING PROVISION: Camera PH–274 may be used with Sound Recording Equipment PH–346 (double-system sound).

MOTOR CHARACTERISTICS: 12-v d-c.

POWER REQUIREMENTS: 12-v, 34-amp-hr storage batteries.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–430. *Name of equipment:* Camera.

FUNCTIONAL DESCRIPTION

Camera PH–430 is a 16-mm, silent, motion-picture camera which can be used for either black-and-white or color photography.

It consists essentially of a commercial (Kodak Cine Special) camera and includes 4 lenses, two-100-foot film chambers, a tripod, a filter set, and related accessories.

It has an adjustable shutter for exposure control and dissolves, a two-lens turret, a reflex viewfinder which permits focusing through the taking lens, a single-picture device, a spring motor, and a hand crank.

This camera is similar in purpose and use to Camera PH–430–A and PH–430–B, but is radically different in design and manufacture.

INSTRUCTION LITERATURE: TM 11–2380.
CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 16-mm.

LENS: 15-mm, f/2.7; 25-mm, f/1.9; 63-mm, f/2.7; 152-mm, f/4.5.

Lens Mount: Lens adapters and locking plate.

SHUTTER:

Range of Shutter Opening: Fully open 165°, ½ open, ¼ open, and closed.

Frames per second: 8, 16, 32, and 64, or any desired intermediate speed by setting the speed indicator dial at intermediate points.

TYPE OF FOCUSING: Reflex finder permits focusing directly through taking lens; also, distance calibration on lens barrels.

TYPE OF VIEWFINDER: Each lens adapter has a hinged eye-level finder; in addition, reflex finder can be used for focusing and framing.

SOUND RECORDING PROVISIONS: None.

MOTOR CHARACTERISTICS:

Spring Motor: About 38 feet of film can be exposed with motor fully wound.

Electric Motor: An electric motor drive is available but is not part of standard equipment; electric motor drive will run the camera at any speed from 1 to 64 frames per second.

TOTAL VOLUME: Packed, 4 cu ft.

WEIGHT: Packed, 80 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–431. *Name of equipment:* Camera.

FUNCTIONAL DESCRIPTION

Camera PH–431 is a compact, portable, 16-mm, daylight magazine-loaded (50 feet) equipment used for black-and-white or color photography.

This equipment consists essentially of a hand-held camera, a tripod, lenses, filters, and associated items.

There are three models of this equipment: PH–431, PH–431–A, and PH–431–B, PH–431 is a commercial (Magazine Cine-Kodak) camera and is issued with three lenses, filters, a tripod, and a carrying case; PH–431–A and –B (illustrated) are commercial (Bell and Howell) cameras which include four lenses, filters, a tripod, and carrying cases. These models have disk-type shutters with a 133° opening and positive optical viewfinders with interchangeable objectives to match the four camera lenses.

INSTRUCTION LITERATURE: TM 11–2383A.
CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 16-mm.

LENS:

PH–431: 25-mm, f/1.9; 63-mm, f/2.7; 102-mm, f/2.7.

PH–431–A, and –B: 17-mm, f/2.5; 25-mm, f/1.9; 50-mm, f/3.5; 100-mm, f/4.5.

SHUTTER:

Range of Shutter Opening:

PH–431: nonadjustable 107° open segment.

PH–431–A, and –B: nonadjustable 133° open segment.

Frames per second:

PH–431: 24, 32, and 38.

PH–431–A, and –B: 16, 24, 32, 48, and 64.

TYPE OF FOCUSING: PH–431–A, and –B: distance calibration on lens barrel.

TYPE OF VIEWFINDER:

PH–431: viewfinder assembly adjustable for each lens by means of sliding adjustment.

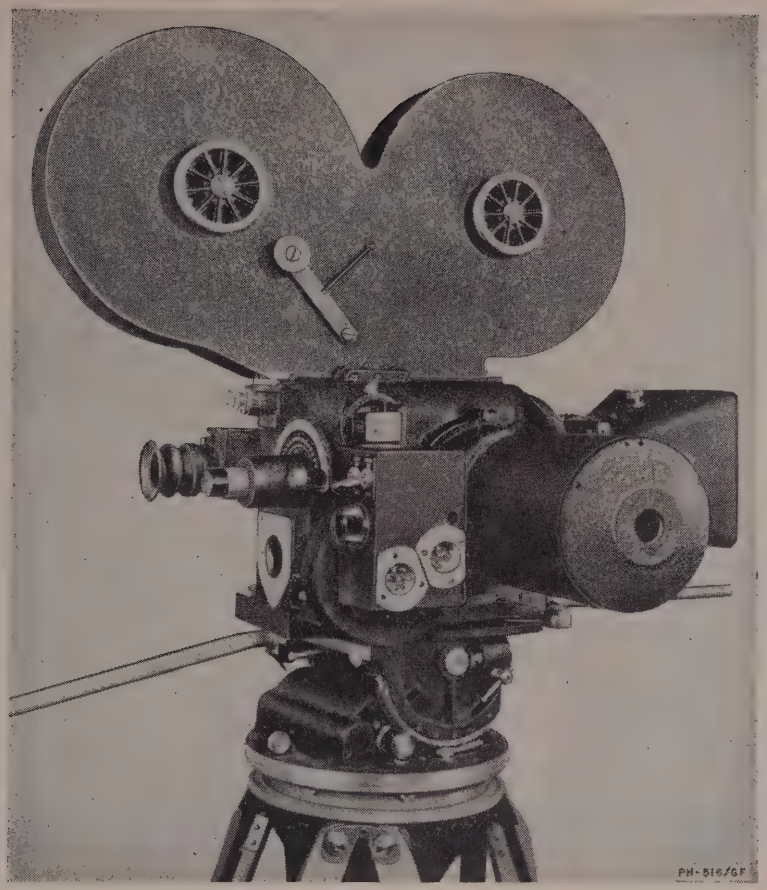
PH–431–A, and –B: positive viewfinder with separate, interchangeable, objective for each lens used.

SOUND RECORDING PROVISIONS: None.

MOTOR CHARACTERISTICS:

PH–431: spring motor, which, when fully wound runs approximately 11 ft of film.

PH–431–A, and –B: spring motor, which, when fully wound, runs approximately 12 ft of film.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–516/GF. *Name of equipment:* Camera.

FUNCTIONAL DESCRIPTION

Camera PH–516/GF is a single-system, sound-on-film, 35-mm newsreel-type camera equipment which records sound and picture simultaneously.

It consists essentialy of a commercial type (Mitchell) camera with a 12-volt, d-c motor, a set of eight lenses, a commercial-type heavy duty friction-head tripod, three cases, and related accessories.

It is operated in conjunction with Recorder PH–271, or Sound Recorder RD–126/TFH–3 when recording sound.

This equipment can be operated by means of the 12-volt, d-c motor issued with it or by 24-volt, d-c or 110-volt, a-c motors which are available.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 35-mm.

LENS: 25-mm, f/2.3; 35-mm, f/2.3; 50-mm, f/2.3; 75-mm, f/2.3; 100-mm, f/2.3; 152-mm, f/2.7; 250-mm, f/5.6; 375-mm (or 355-mm) f/4.5.

Lens Mount: Keycatch with setscrew; lenses are mounted in focusing mounts having micrometric adjustments.

SHUTTER:

Range of Shutter Opening: Maximum opening of 170°; can be closed down to any smaller angle.

Frames per second: Any speed to 24 frames per second.

TYPE OF VIEWFINDER: Magnifying prismatic viewfinder, and focusing telescope through taking lens and ground glass.

TYPE OF FOCUSING: Ground glass and focusing telescope, or distance calibrations on lens barrel.

SOUND RECORDING PROVISIONS: Single-system, motion-picture, sound camera used with Recorder PH–271.

MOTOR CHARACTERISTICS: 12-v, d-c.

POWER REQUIREMENTS: 12-v, 34-amp-hr storage batteries.

TOTAL VOLUME: Packed, 16 cu ft.

WEIGHT: Packed, 281.7 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Type number:* KS–4. *Name of equipment:* Camera Set, Still Picture.

FUNCTIONAL DESCRIPTION

Camera Set, Still Picture KS–4 (previous models designated PH–104) is a general-purpose, 4- by 5-inch, press-type, still camera consisting of Camera PH–47, flash equipment, a tripod, filters, film holders, and related items.

Future procurements of this equipment may include Camera KE–9.

INSTRUCTION LITERATURE: TM 11–2352.
CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in.) installed*	*Weight (lbs.)*
1	Camera PH–47 and accessories contained in carrying case	11.25 x 9.25 x 19.50	9.125

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 4 x 5 in.

LENS:
PH–47–E, –H, and –J,: 127-mm f/4.7.
PH–47–F: 5½-in., f/4.5.

TYPE OF SHUTTER: All models have both focal-plane and between-the-lens shutter.
Shutter Range: Focal plane shutter: 1/10 to 1/1000 second (similar in all models).
Between-the-lens shutter:
PH–47–E, 1 to 1/400 second; T (time); B (bulb).
PH–47–F, 1 to 1/200 second; T (time); B (bulb).
PH–47–H, 1 to 1/400 second; T (time); B (bulb).
PH–47–J, 1 to 1/400 second; T (time); B (bulb).

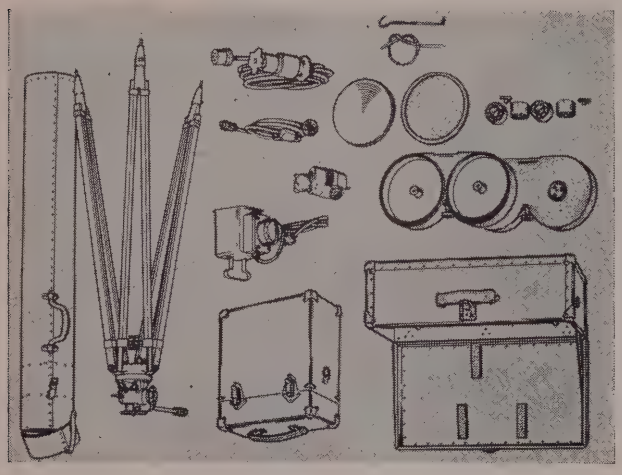
TYPE OF FOCUSING: Coupled rangefinder, ground glass, and scale.

TYPE OF VIEWFINDER: Optical viewfinder, wire frame finder, and ground glass back.

TYPE OF FILM USED: Film pack or cut film.

TYPE FLASH EQUIPMENT: PH–47–E, –H, and –J have synchronizer assembly used with solenoid release; PH–47–F has shutter with built-in mechanical synchronizing device.





Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Type number:* KS–5. *Name of equipment:* Camera, Motion Picture.

FUNCTIONAL DESCRIPTION

Camera, Motion Picture KS–5 is a hand-held, silent, single lens mount, 35-mm motion-picture equipment.

The equipment consists essentially of a commercial (Bell and Howell 71 RM) camera (Camera, Motion Picture KF–2), three lenses with C-type mount, filter kits, slate, chalk, carrying case, and Photographic Accessory Kit LF–1.

Photographic Accessory Kit LF–1 includes necessary items for the electrical operation of Camera, Motion Picture KF–2, using either a 24-volt battery or a 115-volt a-c power source. The kit consists of Tripod PH–520/U, two 400-foot film magazines, camera motor drive (24-volt d-c, 32-volt a-c), cable assembly, transformer, case, and related accessories.

Film load capacity of the KF–2 is 100-foot daylight, 120-foot darkroom and 200- 400- foot magazine loads.

INSTRUCTION LITERATURE: TM 11–2396.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in.) installed*	*Weight (lbs.)*
1	Camera Motion Picture KF–2 in Accessory Carrying Case		
1	Photographic Accessory Kit LF–1		

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 35-mm.

LENS: 25.5-mm, f/2; 50-mm, f/2; 152-mm, f/3.5.

Lens Mount: Type C.

SHUTTER:

Range of Shutter Opening: Permanent open segment, 160°.

FRAMES PER SECOND: 8, 16, 24, 32, 48 frames per second.

TYPE OF FOCUSING: Focusing collar on lens barrel.

TYPE OF VIEWFINDER: Positive-type turret viewfinder with three lenses that match the fields of the three camera lenses.

MOTOR CHARACTERISTICS:

Spring Motor: 51 ft per winding.

Electric Motor: 12-v, battery-operated, d-c, for field use; a step-down transformer permits operation with 115-v, 60-cyc, a-c.

POWER REQUIREMENTS: Two BB–53, 12-v batteries (24-v) or 115-v, a-c.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Type number:* KS–6. *Name of equipment:* Camera Set, Still Picture.

FUNCTIONAL DESCRIPTION

Camera Set, Still Picture KS–6 (previously designated PH–518/PF) is a rugged, portable, 70-mm (2 1/5- by 2¾-inches) still camera (Camera, Still Picture KE–4), especially designed for combat photography.

This equipment consists essentially of a camera, two lenses, a flash unit, daylight-loading film magazines (cassettes), a carrying case, a filter set, and two cable releases.

It has a built-in, one-window type rangefinder and optical viewfinder, a focal-plane shutter, interchangeable lenses w/automatic viewfinder adjustment, and a film cutoff knife. It is spring-motor operated.

Magazines hold 15 feet of 70-mm film, providing a maximum capacity of 50 exposures.

Camera Lens PH–666/PF (wide angle, 63-mm, f/4.5) is used with this camera.

INSTRUCTION LITERATURE:

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in.) installed*	*Weight (lbs.)*
1	Carrying Case holding camera, lenses, flash gun, filters and cassettes.	18 x 13 x 6½	

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 70-mm roll film (each negative 2 1/5- x 2¾-in.)

LENS:

Standard 4-in., f/2.8.

Long focal length, 8-in., f/4.

TYPE OF SHUTTER: Focal plane.

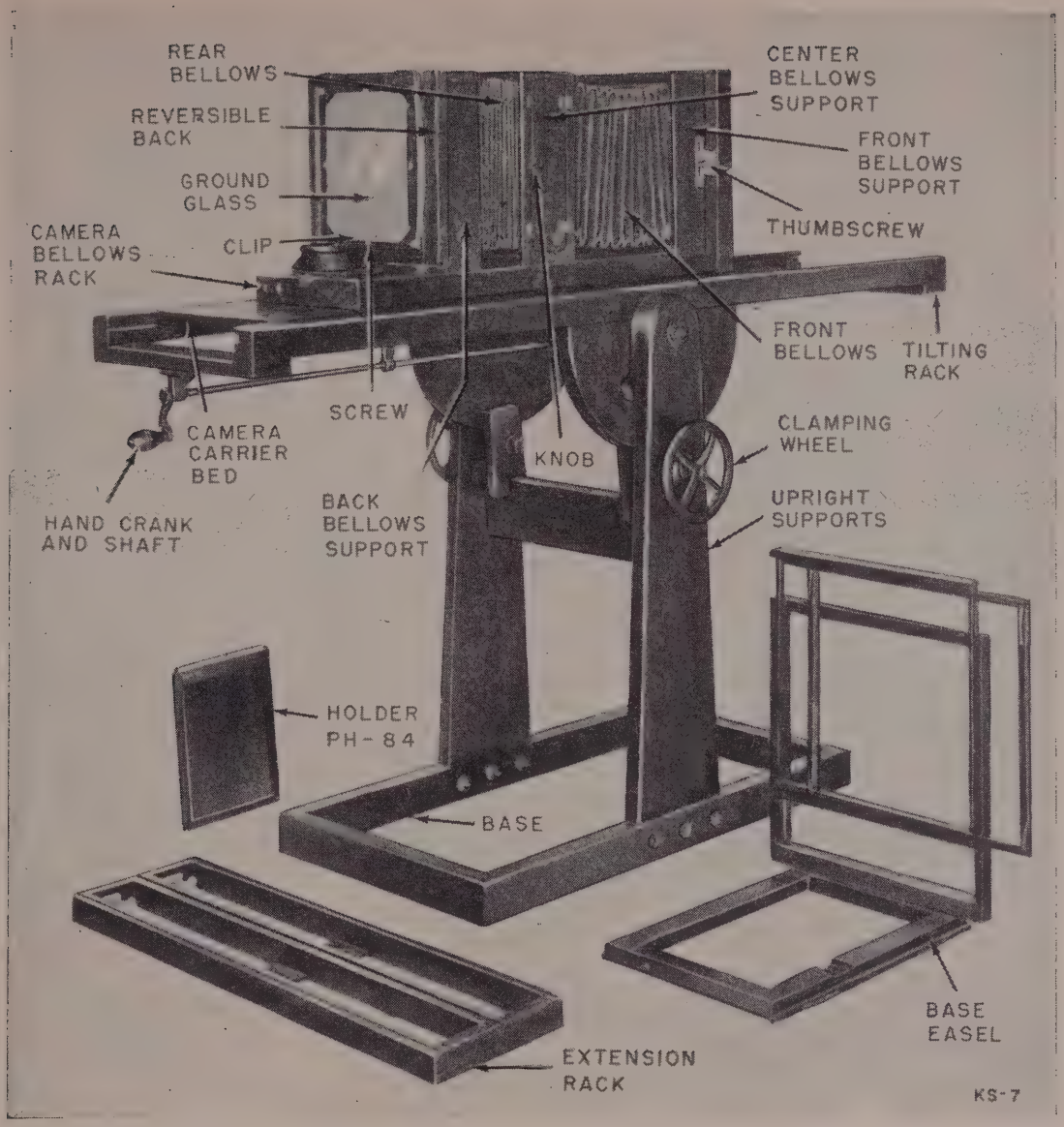
Shutter Range: 1 to 1/500 second; T (time); B (bulb).

TYPE OF FOCUSING: Coupled rangefinder and viewfinder (one-window type), interchangeable lenses automatically coupled to rangefinder, and automatic adjustment of field of optical viewfinder.

TYPE OF VIEWFINDER: Optical viewfinder and metal frame finder.

TYPE OF FILM USED: 70-mm, 15-foot, 50-exposure roll film.

FLASH DELAY: 0 to 20 milliseconds.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Type number:* KS–7. *Name of equipment:* Camera Set, Still Picture.

FUNCTIONAL DESCRIPTION

Camera Set, Still Picture KS–7 (previous models designated PH–120) is an 8- by 10-inch copying camera used for copying photographs, line drawings, and other flat copy, or for making lantern slides and for photographing small objects.

It consists essentially of camera KE–10, four film holders PH–84, film kits, copying frames, an opal glass, a reversible camera back, Camera Stand LE–3 and Lens, Camera, Copying LE–5.

INSTRUCTION LITERATURE: TM 11–2348.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in.) installed*	*Weight (lbs.)*
1	Camera, Still Picture KE–10		
4	Holders PH–84		
1	Lens LE–5		
1	Stand, Camera LE–3		

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 8 x 10, 6½ x 8½, 5 x 7, 4 x 5, and 3¼ x 4¼ in.

LENS: LE–5: 12-in., f/6.3 lens (mounted in compound or Betax shutter).

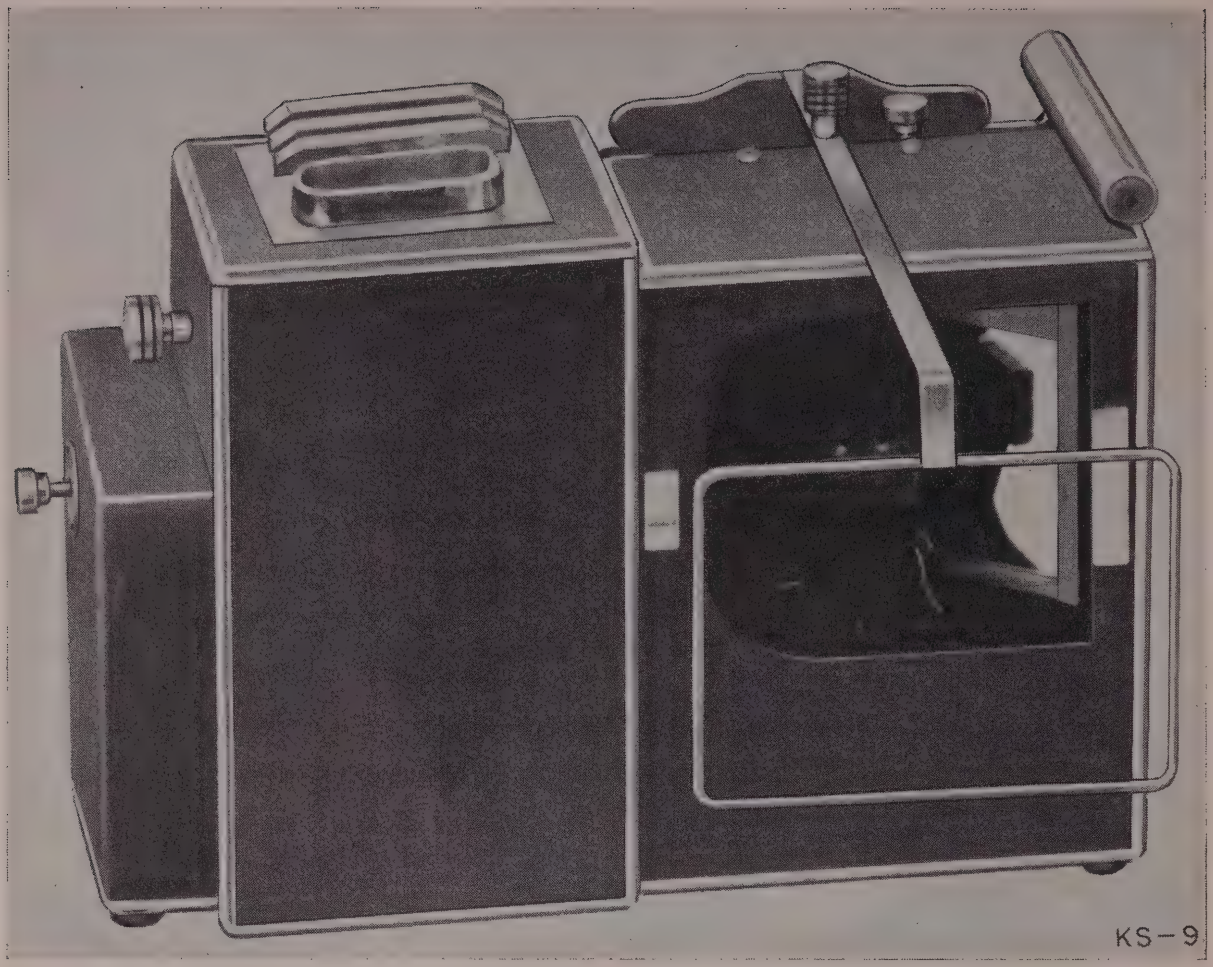
BELLOWS: 67 13/16 in. extended; 12 in. collapsed.

TYPE OF SHUTTER: Betax, behind-the-lens.

Shutter Range: 1 to 1/50 second; T (time); B (bulb).

TYPE OF FOCUSING: Ground glass.

TYPE OF FILM USED: Cut film and plates.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Type number:* KS–9. *Name of equipment:* Camera Set, Still Picture.

FUNCTIONAL DESCRIPTION

Camera Set, Still Picture KS–9 (previously designated AN/TFH–2) is an automatic, hand-held, clinical camera, using No. 828 (eight-exposure) color roll film. It is designed for medical, dental, and surgical photography of body cavities and internal views during, prior to, or after, medical examination or surgery.

This equipment is essentially a camera box and a color-balanced light source, special interchangeable focusing applicators which indicate both the field of coverage and automatically adjust the lens for maximum sharpness, a perioscopic reflex-type finder, and related accessories.

The camera is operated by an internal electrical mechanism.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: No. 828 color roll film; each transparency 28- x 40-mm.

LENS: 48-mm, f/6, fixed at f/32 for maximum depth of field.

TYPE OF SHUTTER: Between-the-lens.
Speed Range: Fixed at 1/25 second.

TYPE OF FOCUSING: Automatic focusing applicators, giving both field of coverage and correct lens distance setting.

TYPE OF VIEWFINDER: Periscopic reflex type.

TYPE OF FILM USED: No. 828 color roll film, 8-exposures.

TYPE OF FILM TRANSPORT: Automatic; by means of internal electrically operated mechanism.

SPECIAL FEATURES: Automatic; hand-held; color-balanced light source.

DIMENSIONS: Unpacked, 4½ x 11 x 7 in.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Type number:* KS–10. *Name of equipment:* Camera Set, Motion Picture.

FUNCTIONAL DESCRIPTION

Camera Set, Motion Picture KS–10 (previously designated PH–430–A (or –B)) is a 16-mm, silent, motion-picture camera equipment that can be used for black-and-white or color photography.

This equipment consists essentially of a commercial (Bell and Howell-Filmo) turret-type camera (Camera, Motion Picture KF–3), 4 lenses, a set of matching view-finder objectives, a set of filters, Tripod PH–520–A/U, and other items.

It has a rotary-type, nonadjustable shutter with an open segment of 204°, a critical focuser, a viewfinder, and a spring-motor drive.

Camera PH–430–A has a revolving, drum-type viewfinder that matches the angle of view of six lenses of different focal lengths; PH–430–B has a positive optical viewfinder having turret-mounted objectives matched to the lenses in the lens turret of the camera. It also provides for hand-crank operation when the spring motor is fully run down and may be used to wind film backward to make lap dissolves and double-exposures. Camera, Motion Picture KF–3 is similar to PH–430–B but in addition is designed to accommodate a 400-foot magazine and an electric motor.

These cameras are similar in purpose and use to Camera PH–430, but are of radically different design and manufacture.

INSTRUCTION LITERATURE: TM 11–2390, TM 11–2390A.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists essentially of a single major operating component.

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 16-mm.

LENS: 17-mm, f/2.5; 25-mm, f/1.9; 50-mm, f/3.5; 100-mm, f/4.5; all equipped with lens shades.

Lens Mount: Threaded screw-in mount.

SHUTTER:

Range of Shutter Opening: Nonadjustable 204° open segment.

Frames per second: 8, 12, 16, 24, 32, 48, and 64.

TYPE OF FOCUSING: Critical focuser permits focusing directly through any of lenses also, distance calibration on lens barrels.

TYPE OF VIEWFINDER: Positive viewfinder with turret, holding lenses matched to photographic lenses mounted on main lens turret; individual viewfinder objectives can be removed (screw-in mount) and replaced by others, to match lens combination used on main turret.

SOUND RECORDING PROVISIONS: None.

MOTOR CHARACTERISTICS: Designed to accommodate electric motor and 400-ft magazine.

Spring Motor: Spring-driven motor with built-in governor, 1 complete winding drives approximately 22-ft of film.



Status of equipment: S/Standard. *Classification of equipment*: Unclassified. *Currency of information*: 12 Mar 53. *Service type number*: AN/GFQ–2. *Name of equipment:* Camera Equipment.

FUNCTIONAL DESCRIPTION

Camera Equipment AN/GFQ–2 is a 35-mm, candid-type, still camera used primarily for black-and-white and color photography, under conditions where lens speed, depth of field, and ease of operation are most important.

This equipment consists essentially of a commercial (Leica) camera, three lenses, universal (Vidom) viewfinder, and related items.

The camera has a built-in coupled rangefinder, a focal-plane shutter, and an exposure counter and is loaded by means of a film magazine (cassette) of 36-exposure capacity.

The standard lens is collapsible and can be interchanged with any one of the two long focal-length lenses.

The three lenses supplied with this camera can also be used with Camera PH–629/UF and Telephoto Lens and Photocopying Kit MX–989/PF.

INSTRUCTION LITERATURE: TM 11–2342.

CURRENCY OF INFORMATION: 12 Mar 53.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in.) installed*	*Weight (lbs.)*
1	Carrying Case w/camera ((Leica), 50-mm, f/2 or f/3.5 lens; 90-mm, f/4 or f/4.5 lens; 127-mm, or 135-mm. f/4.5 lens, and associated accessories.	12 x 10 x 6	

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 35 mm.

LENS: 50 mm, f/2 or f/3.5; 90 mm, f/4 or f/4.5; 127 or 135 mm, f/4.5.

TYPE OF MOUNT: Only the 50-mm lens is collapsible; all three lenses have a screw-in mount.

TYPE OF SHUTTER: Focal plane.

Shutter Range: 1 to 1/1000 second; T (time); B (bulb).

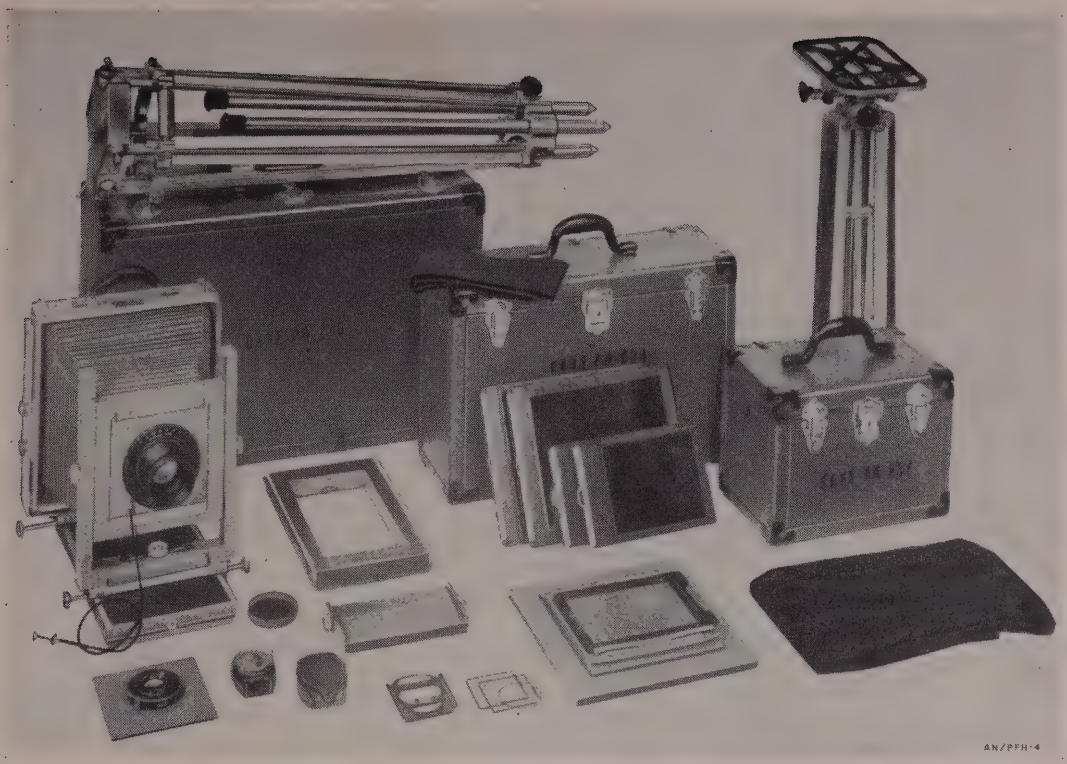
TYPE OF FOCUSING: Coupled rangefinder, coincident type.

TYPE OF VIEWFINDER: Direct vision, optical; Vidom type universal viewfinder, adjustable for field coverage and parallax for any lens used.

TYPE OF FILM USED: 35-mm standard negative film in a 36-exposure magazine.

TOTAL VOLUME: .5 cu ft.

WEIGHT: Packed, 25 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* AN/PFH–4. *Name of equipment:* Camera Set, Still Picture.

FUNCTIONAL DESCRIPTION

Camera Set, Still Picture AN/PFH–4 (previously designated PH–205) is an 8- by 10-inch view camera with associated accessories. Camera PH–195–B, the major component, produces 8- by 10-inch or 5- by 7-inch negatives. It is used both for studio and general-view photography.

This equipment consists essentially of the camera component, two lenses, a filter set, two tripods, an exposure meter, a film changing bag, and related items. Cameras PH–195–A and PH–195–B are functionally interchangeable, however, the removable bed extension on Camera PH–195–A is located on the rear of the camera; on Camera PH–195–B the removable bed extension is located on the front of the camera. Camera PH–195–A is equipped with a rising front; Camera PH–195–B has a rising, tilting, and shifting front.

The camera has a swing-back assembly, a carriage assembly, a bellows, a front standard assembly, a bed assembly, a sliding bed block, and an 8- by 10-inch reversible back. A special reducing back is designed to accept 5- by 7-inch film.

INSTRUCTION LITERATURE: TM 11–2365.
CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in.) installed*	*Weight (lbs.)*
	Camera PH–195–B, 2 lenses, Tripod MT–1193/UF, Tripod MT–1194/UF, and related accessories packed in three carrying cases:		
1	Case PH–236	16.75 x 9.50 x 27	
1	Case PH–237	8 x 10 x 13.375	
1	Case PH–238	7.5 x 13.75 x 21	

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 8 x 10 or 5 x 7 in.

LENS: 12¼-in., f/7 convertible lens is mounted in No. 4 Betax shutter; rear element alone may be used as 19.0-in., f/12.5 lens; front element alone may be used as 26½-in., f/16 lens; 6¼-in., f/9.5 (working aperture f/16) lens is typical wide-angle lens mounted in No. 3 Betax shutter.

TYPE OF SHUTTER: Both lenses mounted in between-the-lens Betax shutters.

Shutter Range: Both shutters have speed range of ½ to 1/50 second; T (time); B (bulb).

TYPE OF FOCUSING: Ground glass.

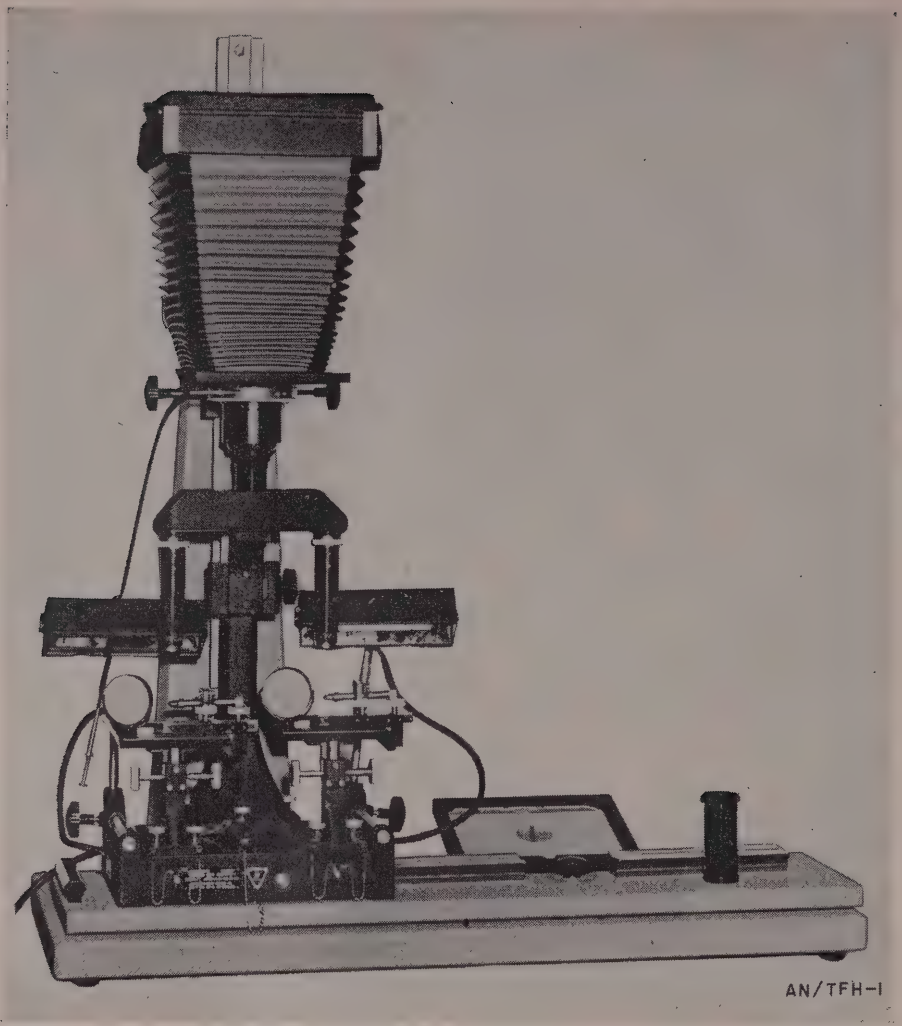
TYPE OF VIEWFINDER: Ground glass.

TYPE OF FILM USED: Sheet film.

TRIPOD EXTENSION:

MT–1193/UF: 24 to 53 in.

MT–1194/UF: 30 to 81 in.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* AN/TFH–1. *Name of equipment:* Camera Set.

FUNCTIONAL DESCRIPTION

Camera Set AN/TFH–1 is a still camera capable of making microphotographs 3¼ by 4¼, 4 by 5, and 5 x 7 inches in size. It is used for comparative photomicrography in criminal investigations.

This equipment consists essentially of a commercial (Bausch and Lomb) Photomicrographic camera, a commercial (Bausch and Lomb model 31–29–26) bullet comparison microscope, and related accessory items. It includes (besides the camera, lens, and comparison microscope) lights, base plates and supports, bullet ducks, microscope objectives, and related components.

It can be used (in addition to routine ballistic studies) for comparative examination of fingerprints, signatures, handwriting, and similar material.

INSTRUCTION LITERATURE:

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 3¼ x 4¼, 4 x 5, and 5 x 7 in.

LENS: 48 mm, f/4.5.

MICROSCOPE: Comparative, with two 48-mm and two 32-mm objectives.

LAMPS: Four 4-w, 115-v a-c fluorescent lamps.

TYPES OF SHUTTER: Behind-the-lens type.

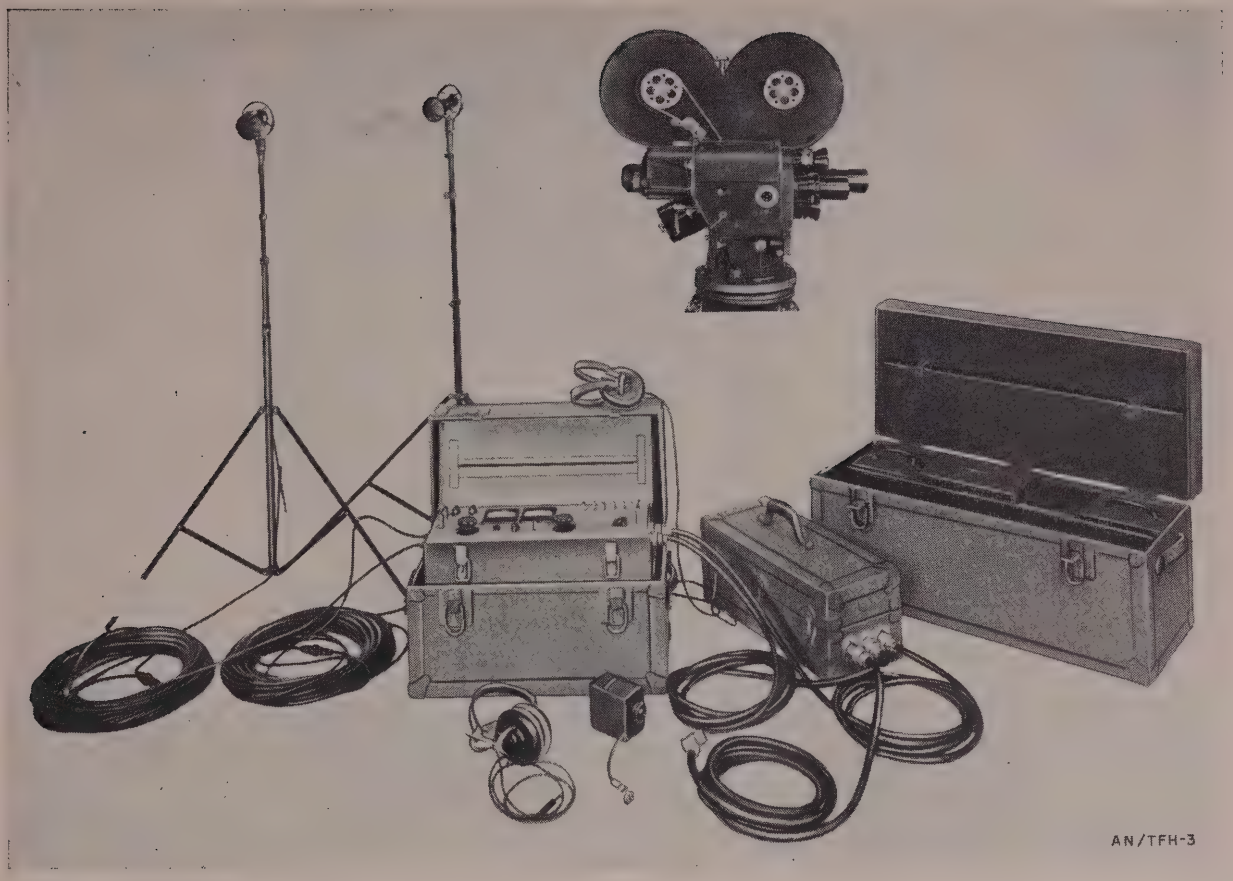
Shutter Range: 1, ½, 1/5, 1/10, 1/125, 1/50 second; T (time), B (bulb).

TYPE OF FOCUSING: Ground glass; magnifying eyepiece for critical focusing.

TYPE OF VIEWFINDER: Ground glass.

TYPE OF FILM USED: Cut film, film pack, or plates.

DIMENSIONS: Case holding equipment 32 x 17 x 37 in.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* AN/TFH–3. *Name of equipment:* Camera Set, Motion Picture.

FUNCTIONAL DESCRIPTION

Camera Set, Motion Picture AN/TFH–3 is a 35-mm, single system, sound, motion picture system containing Camera PH–270–A and Sound Recorder RD–126/TFH–3. The unit is used for newsreel and similar motion picture photography.

Camera PH–270–A consists essentially of a 35-mm motion picture camera, five lenses, three 1,000-foot film magazines, a tripod, and related items contained in appropriate carrying cases.

Sound Recorder RD–126/TFH–3 consists essentially of a recording amplifier, a sound recording unit, two microphone sets, batteries, and associated accessories.

This equipment is a portable, self-contained recording system designed to record a 100-mil (.1-inch) variable density sound track directly on film and synchronized with motion pictures.

Power for the complete system is supplied by four 6-volt batteries.

INSTRUCTION LITERATURE: TM 11–5302, 11–2353, C2.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in.) installed*	*Weight (lbs.)*
1	Camera PH–270–A		
1	Sound Recorder RD–126/TFH–3		347
	Amplifier carrying case	15¾ x 11¼ x 22¼	55
	Accessory case	15¼ x 13 x 32¼	67
	Battery box	8½ x 8⅝ x 19½	50

TECHNICAL CHARACTERISTICS

FILM SIZE: 35-mm.

TYPE CAMERA: Single-system sound.

FILM DRIVE MECHANISM: 90 ft per minute.

RECORDING SYSTEM: 100-mil (.1-inch) variable density sound track.

POWER SUPPLY: Four 6-v batteries (Battery BB–246/U).

AMPLIFIER CHARACTERISTICS:

Type: a-f (audio-frequency) amplifier.

Microphone Input Receptacles: Two.

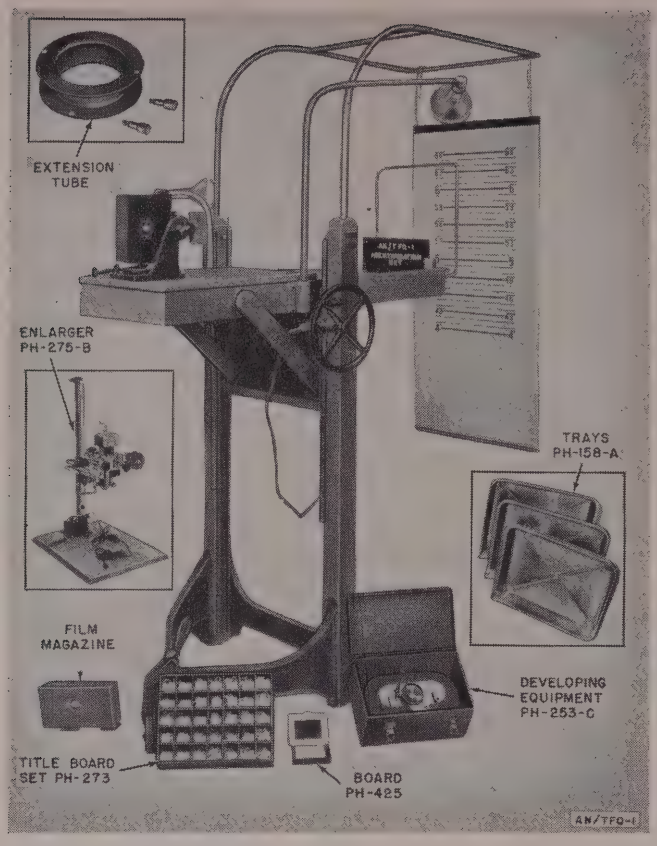
Dialog Control: 0 to 12 db of loss at 100 cps.

MICROPHONES: Two Dynamic Microphones M–45/U.

WEIGHT:

Unpacked, Camera, complete 347 lb.

Unpacked, Sound Recorder, complete 172 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 12 Mar 53. *Service type number:* AN/TFQ–1. *Name of equipment:* Identification Equipment.

FUNCTIONAL DESCRIPTION

Identification Equipment AN/TFQ–1 is a prefocused, 35-mm, still camera used exclusively for identification photography. It is designed to produce head-and-shoulder photographs of personnel.

This equipment consists essentially of an identification camera, a stand, lamps, developing equipment, an enlarger, and related items.

The camera is magazine-loaded with 100 feet of double perforated 35-mm film.

There are two models of this equipment: AN/TFQ–1, and AN/TFQ–1A. These models are practically identical except that AN/TFQ–1A includes a fingerprint assembly, and Projection Printer PH–642/TF.

INSTRUCTION LITERATURE: TM 11–2340.
CURRENCY OF INFORMATION: 12 Mar 53.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in.) installed*	*Weight (lbs.)*
1	Camera, w/magazine, housing, lens, and base.	13 x 7 x 8½	10.5
1	Stand, metal or wooden base	54 x 65 x 30½	91 or 129
1	Developing Equipment PH–253–C.	10.75 x 4 x 5.75	
1	Enlarger PH–275–B	38 high	
	Projection Printer PH–642/TF (for AN/TFQ–1A).	30½ high	

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 35 mm (25 x 33 mm).
LENS: 84 mm, f/5, mounted in Betax shutter.
TYPE OF SHUTTER: Between-the-lens, heavy-duty Betax No. 2.
Shutter Range: ½ to 1/50 second; T (time); B (bulb).
TYPE OF FOCUSING: Lens is prefocused (fixed).
TYPE OF VIEWFINDER: Wire frame (part or stand), and focusing panel (ground glass).
TYPE OF FILM USED: 35-mm negative film, 100-ft load.
LIGHTING SYSTEM: One 300-w and one 150-w, 120-v, reflector-flood lamp.
TOTAL VOLUME:
Unpacked, 15 cu ft.
Packed, 22 cu ft.
WEIGHT:
Unpacked, 360 lb.
Packed, 575 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* MX–989/PF. *Name of equipment:* Telephoto Lens and Photocopying Kit.

FUNCTIONAL DESCRIPTION

Telephoto Lens and Photocopying Kit MX–989/PF is an assemblage of items that adapt Camera PH–629/UF for copying, telephotography, and macrophotography. However, Camera PH–629/UF is not part of MX–989/PF.

This equipment consists essentially of a long focal-length lens, a copying device with extension tubes, a universal (Leitz Imarect) viewfinder, a tripod, a filter set, a carrying case, a flash synchronizer, and related items.

When used with Camera PH–629/UF, the copying unit permits direct ground-glass focusing and coverage of small objects in great detail. The long focal-length lens is used for photography of distant subjects.

The viewfinder component is essentially a commercial (Leitz, universal) finder that can be used with Camera PH–629/UF, or the camera component of Camera Equipment AN/GFQ–2.

INSTRUCTION LITERATURE: TM 11–2328.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in.) installed*	*Weight (lbs.)*
1	Equipment consists of an assemblage of accessory items contained in a single carrying case.	6¼ x 14⅛ x 18	9.5

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 35-mm (size of camera used with this equipment).

LENS: Long focal length, 135-mm, f/4.5.

TYPE OF VIEWFINDER: Universal, variable rectangular diaphragm permits adjustment to cover exact field of lens used; adjustable for 3.5, 5, 8.5, 9, and 13.5 cm lenses; parallax adjustment is controlled by bottom lever.

TYPE OF UNIT: Unit permits direct ground-glass focusing and makes it particularly valuable for copy and macrophotography. A magnifier facilitates critical focusing.

FLASH SYNCHRONIZER: Battery and capacitor arrangement; speeds below 1/60 are not recommended.

FILTERS AND SUPPLEMENTARY LENSES: Five filters, X1, K2, A25, G15, and C5 supplementary lenses –1, –2, –3, and –4 are part of the equipment.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–385. *Name of equipment:* Identification Equipment.

FUNCTIONAL DESCRIPTION

Identification Equipment PH–385 is a prefocused, 35-mm, still camera and associated accessories. It is used exclusively for identification photography of personnel in the field.

This equipment consists essentially of an identification camera, a tripod, lamps, background, carrying cases, and related items. It uses a magazine which holds 100 feet of double-perforated, 35-mm film.

The camera equipment is identical with that used in Identification Equipment AN/TFQ–1.

INSTRUCTION LITERATURE: TM 11–403.
CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in.) installed*	*Weight (lbs.)*
1	Camera with magazine, lighting and accessory items in Case B.	29¾ x 20 x 9	71
1	Tripod, title board, set, and related items in Case B.	29¾ x 20 x 9	46

TECHNICAL CHARACTERISTICS

NEGATIVE SIZE: 35-mm (double frame size, 25 x 33-mm).
LENS: 84-mm, f/5; mounter in Betax (or Alpha) shutter.
TYPE OF SHUTTER: Between the lens.
Shutter Range: ½ to 1/50 second; T (time); B (bulb).
TYPE OF FOCUSING: Fixed; prefocused.
TYPE OF VIEWFINDER: Focusing panel (ground glass) and reflex, brilliant viewfinder.
TYPE OF FILM USED: 35-mm negative film, 100-ft load.
LIGHT SYSTEM: One 300-w and, one 150-w, 120-v GE R–40 reflector-flood lamp.
TOTAL VOLUME: 4.5 cu ft.
WEIGHT: Packed, 130 lb.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–271. *Name of equipment:* Recorder.

FUNCTIONAL DESCRIPTION

Recorder PH–271 is a single-system sound recording equipment used for 35-mm newsreel photography.

It consists essentially of a recording amplifier, an optical system, a tripod, a microphone, batteries, and associated accessories.

This equipment has interchangeable masks for the sound optical system, for producing standard, class A or class AB, variable-area sound tracks.

There are two models of this equipment: PH–271, a commercial (RCA) unit, which can be used with Camera Equipment PH–270 or PH–516/GF; PH–271–A, a commercial (RCA or Westrex) equipment which can be used with camera equipment PH–270–A.

Recorder PH–271 will be replaced by Recorder RD–126/TFH–3, which is part of Camera Set, Motion Picture AN/TFH–3.

INSTRUCTION LITERATURE: TM 11–2353.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in.) installed*	*Weight (lbs.)*
1	Recording amplifier	15½ x 9⅛ x 4⅞	25
1	Optical system		
1	Tripod and Microphone	36 lg	5
4	Batteries (in two containers) each	17⅛ x 7¾ x 3	52.5

TECHNICAL CHARACTERISTICS

FILM SIZE: 35-mm.

SYNCHRONIZING CONTROLS: Five-stage, high-gain amplifier, and galvanometer used as modulator to produce one of three kinds of variable-area sound track, depending on recording mask employed.

POWER SOURCE: 12-v to 24-v d-c (battery).

Note. The carrying case, bags, and chests provided with Recorder PH-271 are not standard and vary with different shipments of equipment.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Service type number:* PH–346. *Name of equipment:* Sound Recording Equipment.

FUNCTIONAL DESCRIPTION

Sound Recording Equipment PH–346 is a sound-on-film recorder used in conjunction with a 35-mm motion-picture camera (such as Camera PH–274).

This recording equipment consists essentially of a commercial (RCA PM–46) recorder designated PH–346 or PH–346–B, or a similar commercial (Stevens) recorder designated PH–346–A (illustrated above).

Models PH–346 and PH–346–B are heavier, more elaborate equipments having additional amplifiers (and other units) to permit greater flexibility of operation and use.

Model PH–346–A is a lighter, more portable equipment designed primarily for field use and can be operated as a sound recorder only or in conjunction with a camera for production of double-system sound films. It can also be used as a monitor of a microphone channel and as a camera drive, without recording sound.

INSTRUCTION LITERATURE: TM 11–2350.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in. installed)*	*Weight (lbs.)*
1	Recorder Unit	10 x 26 x 13	93
1	Film Unit	10 x 26 x 13	40
1	Accessory Unit	10 x 26 x 13	60
1	Battery Unit	7 x 20¾ x 12⅝	174
1	Camera Motor Unit	8¾ x 10⅜ x 9¼	24¾

TECHNICAL CHARACTERISTICS

FILM SIZE: 35-mm.

SYNCHRONIZING CONTROLS:

PH–346–A; conventional film drive; 90-fpm rate (24 frames per second).

Records unilateral variable-area sound track.

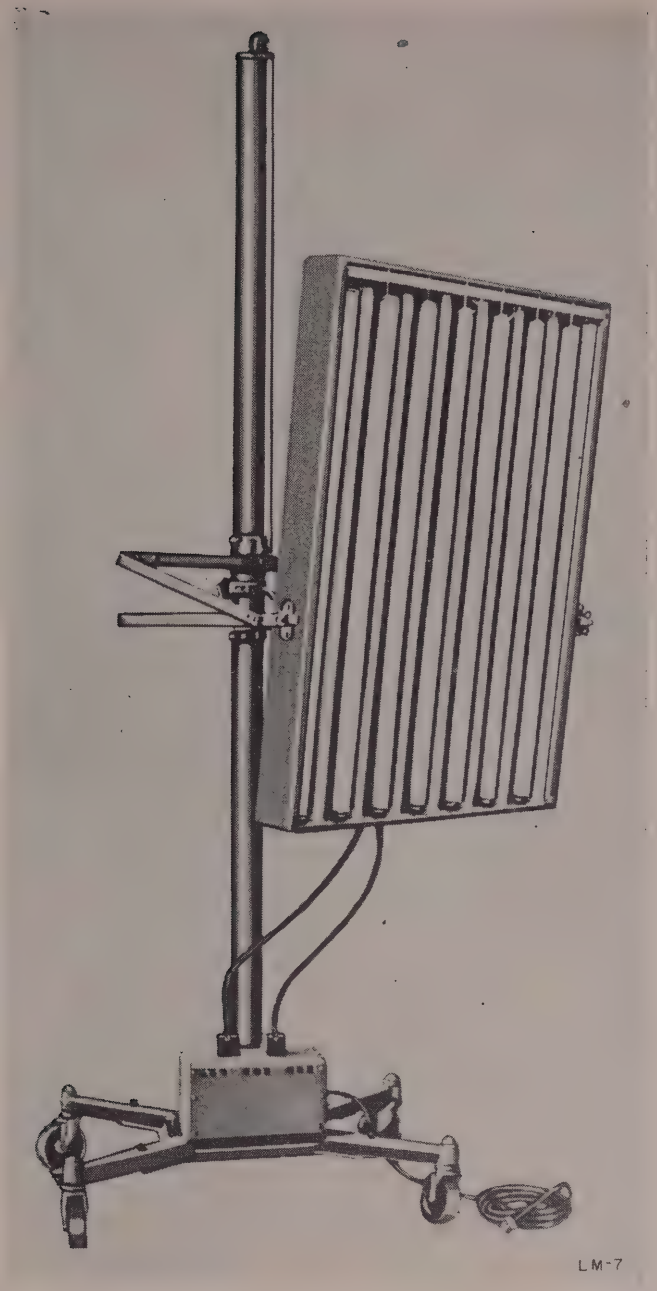
Noise reduction of 6 decibels is supplied by galvanomoter bias controlled by the amplifier and its associated noise reduction circuit.

PH–346 and PH–346–B are basically similar double-system sound recorders for recording sound in synchronization with applicable motion-picture cameras.

POWER SOURCE:

PH–346, and PH–346–A: 12- to 24-v d-c.

PH–346–B: 220-v, 3 phase, 60 cyc a-c.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 1 Feb 54. *Type number:* LM–7. *Name of equipment:* Floodlight, Electric.

FUNCTIONAL DESCRIPTION

Floodlight, Electric LM–7 (previous models designated PH–209) is a fluorescent light designed for portrait or other types of photography requiring cool, diffused illumination.

The equipment consists essentially of seven mounted 40-watt fluorescent lamps, a reflector, a stand, a base, a power pack, and associated accessories.

CURRENCY OF INFORMATION: 1 Feb 54.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

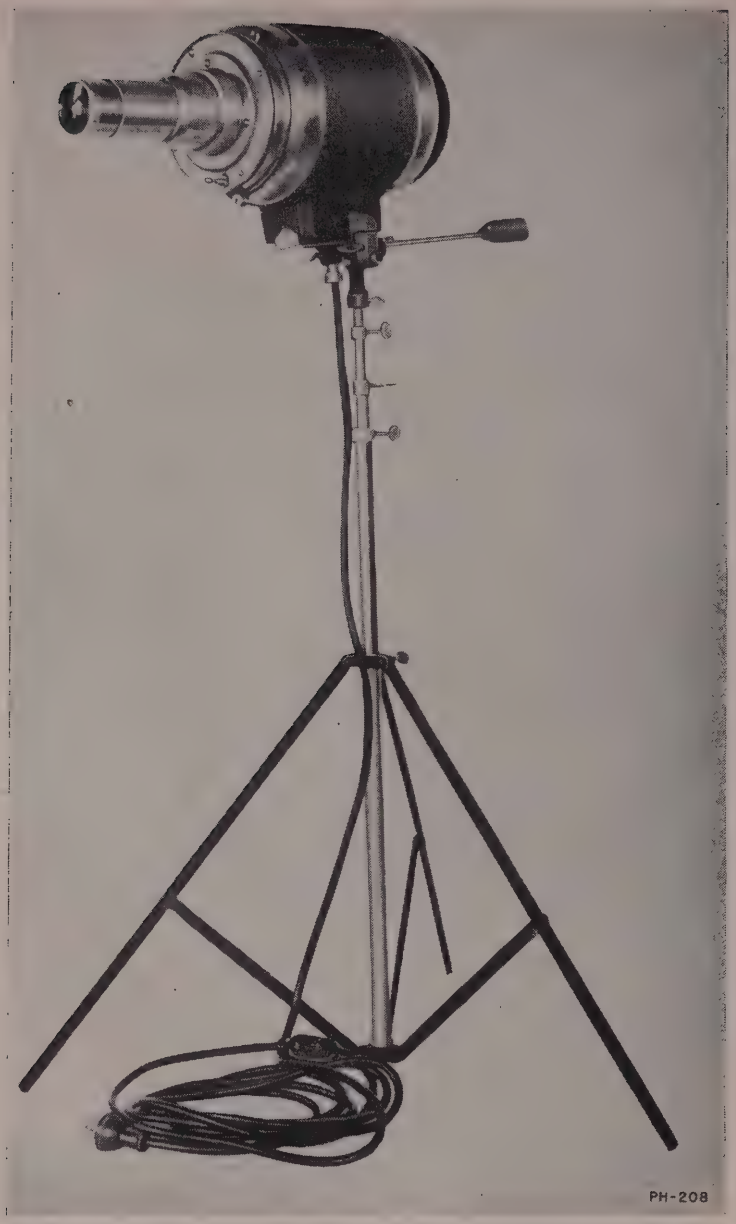
TECHNICAL CHARACTERISTICS

TYPE: Floodlight.

CONTROLS AND ADJUSTMENTS: Four casters on base and two brackets on stand permit placement and movement of lamp.

LAMPS: Seven 40-w fluorescent lamps.

POWER SOURCE: 105- to 125-v, 60-cyc a-c.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 24 Mar 53. *Service type number:* PH–208. *Name of equipment:* Lamp.

FUNCTIONAL DESCRIPTION

Lamp PH–208 is a focusing-type spotlight equipped with magnifying lens.

This equipment is essentially a commercial (Testrite) spotlight and includes a lamp housing with vents, cable, an adjustable diaphragm aperture, a tilting device, a tripod, and a No. 1 photoflood (or a 500-watt T–20) medium-screw-base lamp.

Later procurements of this equipment are designated PH–696/U. These equipments are operationally interchangeable but differ in maintenance parts requirements.

CURRENCY OF INFORMATION: 24 Mar 53.

MAJOR COMPONENTS

This equipment consists only of a single major operating component.

TECHNICAL CHARACTERISTICS

TYPE: Spotlight.

CONTROLS AND ADJUSTMENTS: Adjustable diaphragm aperture and tilting device.

LAMP: No. 1 photoflood, or 110-v, 500-w, medium-screw-base projection lamp.

DIMENSIONS: Set up, 12 x 7 x 90 in.



Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 24 Mar 53. *Service type number:* PH–218. *Name of equipment:* Lamp Equipment.

FUNCTIONAL DESCRIPTION

Lamp Equipment PH–218 is a photographic floodlight set consisting of two portable units complete with a reflector, a tripod, a side shield, and cables. It is used to provide uniform illumination for various photographic requirements.

This equipment is composed of two complete lamps, reflectors, and tripods and a carrying case. The reflectors have Mogul-base sockets, two double-face diffusing curtains, and an extension cord.

CURRENCY OF INFORMATION: 24 Mar 53.

MAJOR COMPONENTS

Quantity	*Name of component*	*Dimensions (in.) installed*
1	Carrying case, holding 2 reflectors tripods, lamps, and related items.	33 x 17 x 6

TECHNICAL CHARACTERISTICS

TYPE: Photoflood floodlight.

CONTROLS AND ADJUSTMENTS: Adjustable tripods; tilting devices on reflector base.

LAMPS: Two 1,000-w, No. 4 flood lamps, 110-v a-c or d-c.

DIMENSIONS: 144 in. lg when tripod is extended; 25½ in. when telescoped.

CHAPTER 2
MISCELLANEOUS PHOTOGRAPHIC ITEMS

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–441. *Name of equipment:* Lens.

Lens PH–441 is a 3-inch, f/1.8, Wollensak series 0 lens, mounted in a slip spiral mount. It is used with Projector PH–222. Refer to TM 11–408.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Type number:* BM–1. *Name of equipment:* Screen.

Screen BM–1 (previously designated PH–358) is a portable, roll-type, medium size (50- by 60-inch viewing area) projection screen having a collapsible tripod and carrying bag. It is designed to be used indoors. Refer to TM 11–2329.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Type number:* BM–2. *Name of equipment:* Screen, Projection.

Screen, Projection BM–2 (previously designated Daylight Projection Box PH–420) is an assembly of projection screen and light shield arranged to permit projection in subdued daylight by reducing the effect of stray light.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–555/GF. *Name of equipment:* Screen.

Screen PH–555/GF is a portable projection screen having a semidiffusing surface of water-repellent material and an effective viewing area of 7 feet, 1 inch by 9 feet, 5 inches. It is suspended by coil springs from metal supporting frames and may be used out of doors. Its overall size is 7 feet, 6 inches by 9 feet, 11 inches. Refer to TM 11–2336.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–556/GF. *Name of equipment:* Screen.

Screen PH–556/GF is a portable projection screen having a semidiffusing surface of water-repellent material and an effective viewing area of 10½ by 14 feet. It is suspended by coil springs from metal supporting frames and may be used out of doors. Its overall size is 10 feet, 11 inches by 14 feet, 5 inches. Refer to TM 11–2336.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–676/U. *Name of equipment:* Projection Screen.

Projection Screen PH–676/U is a portable, projection screen, spring roll-up type, 8½ feet square and mounted in a slotted metal case which can be suspended from a wall or ceiling by hanger loops.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–281. *Name of equipment:* Transformer.

Transformer PH–281 is a self-contained, portable, autotransformer used to step down 130- to 160-volt, 50/60-cycle a-c to 2 kilovolt-amperes of 115-volt a-c required to operate 16-mm projectors and similar equipment. It has a 12-point, rotary, voltage-control switch and a 0- to 150-volt a-c voltmeter. Refer to TM 11–2341.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–409. *Name of equipment:* Developing tank.

Developing Tank PH–409 is a cylindrical,

developing tank designed to accommodate 7- by 9-inch film or paper copy exposed by Facsimile Transceiver FX–1. It measures 3½ by 11 inches.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–594/PFQ. *Name of equipment:* Tank.

Tank PH–594/PFQ is a stainless-steel, daylight-developing tank with reels accommodating five 35-mm or two No. 120 standard roll films.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–71. *Name of equipment:* Hanger.

Hanger PH–71 is a 4- by 5-inch film-developing frame having four perforated channels. The top channel is hinged to aid loading of sheet films or plates.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–72. *Name of equipment:* Hanger.

Hanger PH–72 is a 5- by 7-inch film-developing frame having four perforated channels. The top channel is hinged to aid loading of sheet films or plates.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–74. *Name of equipment:* Hanger.

Hanger PH–74 is an 8- by 10-inch film-developing frame having four perforated channels. The top channel is hinged to aid loading of sheet films or plates.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–143. *Name of equipment:* Box.

Box PH–143 is a hard-rubber tank having a floating lid and is used for developing photographic negatives. It has a maximum capacity of twenty 4 by 5 or 5 by 7 films, or twelve 8 by 10 films, in film hangers.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Type number:* FK–1. *Name of equipment:* Tank.

Tank FK–1 (previously designated PH–127) is a film-washing tank having two hanging racks to accommodate 4- by 5-inch, 5- by 7-inch, and 8- by 10-inch cut film in Hangers PH–71, PH–72, and PH–74. The water intake is at the bottom of the tank.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Type number:* FM–1. *Name of equipment:* Film Cleaning Machine.

Film Cleaning Machine FM–1 (previously designated PH–646/U) is an electrically operated (110-volt a-c or d-c) automatic cleaning and renovating machine which cleans, polishes, and rewinds film in one operation. It operates at a uniform speed of 135 feet per minute and is essentially a commercial (Neumade Model CL–16 equipment).

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Type number:* FM–2. *Name of equipment:* Motion Picture Film Rewinder.

Motion Picture Film Rewinder FM–2 (previously designated PH–647/U) is a motor-driven (115-volt a-c or d-c), 16-mm motion-picture rewinding equipment having a film reel capacity of 2,000 feet. It includes a manually operated, geared rewinder with a hand brake, and an electrically operated foot-switch-controlled rewinder mounted on an enamel board which measures 40 by 13 by 1 inches.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Type number:* FM–3. *Name of equipment:* Film Splicer.

Film Splicer FM–3 (previously designated PH–651/U) is a manualy operated 8-mm and 16-mm (Bell and Howell straight splice type) film splicer. It includes a 115-volt a-c or d-c heating element and a cement bottle.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Mar 53. *Type number:* FM–4. *Name of equipment:* Trimmer.

Trimmer FM–4 (previously designated PH–

220) is a 24-inch-square, metal paper-cutting equipment used for cutting or cropping photographic paper or prints.

Status of equipment: L/Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Type number:* FM–7. *Name of equipment:* Thermometer.

Thermometer FM–7 (previously designated PH–28) is a tank-type mercury thermometer that is 5 inches long and has scale calibrations of 20° to 120° F. Refer to TM 11–405 and TM 11–2315.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Type number:* FM–8. *Name of equipment:* Tank Processing, Photographic.

Tank, Processing, Photographic FM–8 (previously designated PH–256) is a plastic photographic-processing equipment used for processing 4- by 5-inch and smaller cut film and film pack.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Type number:* FM–9. *Name of equipment:* Tank.

Tank FM–9 (previously designated PH–185) is a hard-rubber, developing and fixing tank equipment with a lightproof cover. It has a maximum capacity of twenty 5- by 7-inch or twelve 8- by 10-inch sheet films in film hangers.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Type number:* FM–10. *Name of equipment:* Scale.

Scale FM–10 (previously designated PH–14) is a two-pan, balance-type scale having a calibrated beam and a sliding weight. It is used to weigh chemicals of 1 grain to 2 ounces (avoirdupois) or 1 to 50 decigrams (metric).

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Type number:* FM–12. *Name of equipment:* Tank.

Tank FM–12 (previously designated PH–186) is a stainless steel, 35-mm roll-film developing tank with a bakelite lid and having a core for one 5½-foot roll of 35-mm film. It must be loaded in a darkroom but permits processing in daylight.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Type number:* FM–13. *Name of equipment:* Heater, Immersion, Electric.

Heater, Immersion, Electric FM–13 (previously designated PH–418) is a 1,000-watt, immersion-type device used to heat photographic solutions to normal operating temperature.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Type number:* FM–17. *Name of equipment:* Timer.

Timer FM–17 (previously designated PH–109) is an interval timer with an alarm which can be set to ring at any selected time interval up to 30 minutes. Refer to TM 11–2366.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Type number:* FM–19. *Name of equipment:* Timer, Interval.

Timer, Interval FM–19 (previously designated PH–29) is a mechanical photographic timer which measures minutes and seconds up to 1 hour. A START and STOP switch is located on the base of the dial. Refer to TM 11–400, TM 11–405, and TW 11–2426.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* AN/TFM–1. *Name of equipment:* Film Repair Set.

Film Repair Set AN/TFM–1 is a complete 16-mm film splicing equipment that measures 40 by 13 by 12½ inches.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–8. *Name of equipment:* Trimmer.

Trimmer PH–8 is a cutting board with a paper knife attached and is used for cutting photographic paper. It is 15 inches square and weighs 20 pounds.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–10. *Name of equipment:* Graduate.

Graduate PH–10 is an 8-ounce, beaker-shaped, glass container marked off in ounces and cubic centimeters.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–11. *Name of equipment:* Graduate.

Graduate PH–11 is a 16-ounce beaker-shaped glass container marked off in ounces and cubic centimeters.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–39. *Name of equipment:* Graduate.

Graduate PH–39 is a 32-ounce, beaker-shaped glass container, marked off in steps of 1 or 2 ounces.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–50. *Name of equipment:* Knife.

Knife PH–50 is a 5¾-inch etching knife, complete with case. It is used in connection with photographic negative retouching.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–56. *Name of equipment:* Perforator.

Perforator PH–56 is an automatic spacer used to perforate numbers in film and is 11 inches deep, 5 inches wide, and 4½ inches high.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–91. *Name of equipment:* Splicer.

Splicer PH–91 is a 35-mm film splicing equipment and consists essentially of a commercial (Griswold Model "T") splicer composed of a cast-iron frame, a base with a lamp, a scraper holder and blade, a cement applicator and includes accessory items. It measures 8¼ by 5½ by 3¾ inches. Refer to TM 11–434.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–102. *Name of equipment:* Table.

Table PH–102 is a steel motion-picture film inspection table. The 30- by 60-inch top is equipped with a film rack, a rewinder, and a splicer.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–115. *Name of equipment:* Scale.

Scale PH–115 is a photographic scale with a removable scoop and a balancing bar marked to 5 pounds, in steps of 1 ounce. Three extra disk-type weights supply a total measuring capacity of 24 pounds.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–122. *Name of equipment:* Tank.

Tank PH–122 is a stainless-steel photographic fixing tank 30 inches long, 24 inches wide, and 6 inches deep.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of equipment:* 2 Apr 53. *Service type number:* PH–147. *Name of equipment:* Rack.

Rack PH–147 is a stainless-steel assembly which can accommodate 19 hangers for 4- by 5-inch or 5- by 7-inch, or 14 for 8- by 10-inch photographic negatives, during washing, drying, fixing, or similar photographic processes. It is used with, but not part of, Box PH–143.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–152. *Name of equipment:* Plate.

Plate PH–152 is a chrome-plated ferrotype plate measuring 14 by 20 inches and is used for drying glossy prints.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–158. *Name of equipment:* Tray.

Tray PH–158 is a stainless-steel laboratory tray 12⅛ by 10⅛ by 1¾ inches and is used

for processing 8- by 10-inch photographic plates or paper.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–160. *Name of equipment:* Tray.

Tray PH–160 is a stainless–steel photographic tray 14⅝ by 12⅝ by 1¾ inches, and is used for processing 10- by 12-inch plates.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–161. *Name of equipment:* Tray.

Tray PH–161 is a 17½- by 14½- by 2½-inch stainless-steel, photographic-processing tray used for 11- by 14-inch plates or paper.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–164. *Name of equipment:* Tray.

Tray PH–164 is a stainless-steel photographic tray used for processing paper or plates 14 by 17 inches. It measures 20¾ by 17¾ by 2½ inches.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–166. *Name of equipment:* Tray.

Tray PH–166 is a stainless-steel photographic tray for processing paper or plates 16 by 20 inches. It measures 24 by 20 by 2½ inches.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–173. *Name of equipment:* Tray.

Tray PH–173 is a stainless-steel photographic tray used for processing plates or paper measuring 23 by 28 inches. It is 31⅛ by 26⅝ by 2⅝ inches.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of equipment:* 2 Apr 53. *Service type number:* PH–190. *Name of equipment:* Desk.

Desk PH–190 is a light box containing a light source and a mirror and is fitted with a ground-glass surface, which is used for retouching negatives up to 8 by 10 inches.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of equipment:* 2 Apr 53. *Service type number:* PH–204. *Name of equipment:* Roller.

Roller PH–204 is a double-roller squeegee 8 inches wide and is used for pressing excess water from photographic prints and for rolling them onto ferrotype plates.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of equipment:* 2 Apr 53. *Service type number:* PH–206. *Name of equipment:* Film Repair Equipment.

Film Repair Equipment PH–206 is a 16-mm, 2,000-foot capacity, rewinding and splicing equipment mounted on a wooden platform 40 by 13 inches. It includes two geared rewinders, Splicer PH–239, a scraper, and a moistening pad. There are two models of this equipment: PH–206, which is essentially a commercial (Bell and Howell) equipment, and PH–206–A, which is essentially a commercial (Neumade) set. Refer to TM 11–407.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–216. *Name of equipment:* Lamp.

Lamp PH–216 is a metal, darkroom lamp housing that may be suspended from the ceiling or fastened to a wall or shelf. It has three interchangeable 10- by 12-inch Wratten safelight filters and uses a 25-watt, 115-volt lamp. It will replace Lamp PH–211.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–224–A. *Name of equipment:* Wringer.

Wringer PH–224–A is a double-roller, laundry-type wringer which is 20 inches wide and is used to squeegee photographic prints onto ferrotype tins.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–239. *Name of equipment:* Splicer.

Splicer PH–239 is a 16-mm sound or silent motion-picture film repair equipment. It provides a $\frac{1}{10}$-inch overlap for positive film and a $\frac{1}{16}$-inch overlap for negative film.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–242. *Name of equipment:* Rewinder Set.

Rewinder Set PH–242 is a 16-mm and 35-mm film-rewinding equipment having a maximum capacity of 2,000-foot film reels. It consists of two geared rewinder units, one of which has a gear ratio of $2\frac{1}{2}$ to 1 and the other has a brake.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–244. *Name of equipment:* Siphon.

Siphon PH–244 is an automatic device used in connection with the washing of photographic prints in standard processing trays. It siphons water out of the bottom of the tray while fresh water is supplied to the surface.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–326. *Name of equipment:* Densitometer.

Densitometer PH–326 is a visual-comparison type, light-transmission meter for measuring the density of the silver deposits on photographic negatives. It is used in connection with exposure of negatives and processing control and for checking exposures of color-separation negatives. Refer to TM 11–2301.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–348. *Name of equipment:* Squeegee.

Squeegee PH–348 is a 10-inch rubber blade used to press wet photographic prints onto ferrotype plates.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–363. *Name of equipment:* Safelight.

Safelight PH–363 is a 5- by 7-inch, clear-yellow, safelight filter for darkroom processing of contact printing papers. It is used with Safelight PH–207–A.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–364. *Name of equipment:* Safelight.

Safelight PH–364 is a 5- by 7-inch, greenish-yellow, safelight filer used during enlarging, contact printing, and preparation of lantern slides. It is used with Safelight PH–207–A.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–365. *Name of equipment:* Safelight.

Safelight PH–365 is a 5- by 7-inch, deep-red, safelight filter for darkroom processing of orthocromatic film. It is used with Safelight PH–207–A.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–366. *Name of equipment:* Safelight.

Safelight PH–366 is a 5- by 7-inch, green, safelight filter for darkroom processing of panchromatic film. It is used with Safelight PH–207–A.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–386. *Name of equipment:* Safelight.

Safelight PH–386 is a 10- by 12-inch, green, safelight filter for darkroom processing of panchromatic film.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–388. *Name of equipment:* Safelight.

Safelight PH–388 is a 10- by 12-inch, greenish-yellow, safelight filter used in a darkroom during processing of either enlarging papers, contact papers or lantern slides.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–393. *Name of equipment:* Safelight.

Safelight PH–393 is a 10- by 12-inch, deep-

red, safelight filter used in darkrooms while processing orthocromatic films.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–422. *Name of equipment:* Lamp.

Lamp PH–422 is a darkroom safelight composed of a conical lamp housing with bracket and cord. It includes a set of three 5½-inch diameter Wratten filters and can be operated from either a 115-volt (a-c or d-c) or 6-volt d-c source, by selection of one of the two 10-watt lamps supplied with the equipment.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–424. *Name of equipment:* Foot Switch.

Foot Switch PH–424 is a circular, treadle-type switch with a grooved-bakelite foot-plate, metal case and a 6-foot rubber-covered extension cord. The switch is used in a darkroom, on a 10-ampere, 110-volt circuit, for operating printers and similar equipment.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 3 Mar 53. *Service type number:* PH–517/TF. *Name of equipment:* Sensitometer.

Sensitometer PH–517/TF is a testing machine used for making standard-step exposures for measuring characteristics of film and gamma of development. There are two models of this equipment: PH–517/TF which operates on 110- to 120-volt a-c; and PH–517A/TF, which operates on 95- to 125-volt, 60-cycle, a-c.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–539/GF. *Name of equipment:* Immersion Heater.

Immersion Heater PH–539/GF is a thermostatically controlled unit used to maintain the normal processing temperature of photographic developing baths.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–550/GF. *Name of equipment:* Exposure Timer.

Exposure Timer PH–550/GF is a time-interval control instrument used to control exposure time of photographic printers, enlargers, or other photographic equipment. It provided time intervals of ⅕ second to 55 seconds and controls equipments requiring up to 1,500 watts, 115-volts, 50/60-cycle a-c. Refer to TM 11–2395.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–566/UF. *Name of equipment:* Safelight Equipment.

Safelight Equipment PH–566/UF is a rectangular, metal lamp housing with a 10-watt clear or frosted lamp, plus a set of Wratten filters that are used for varying darkroom safelight requirements.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–660/U. *Name of equipment:* Thermometer.

Thermometer PH–660/U is an immersion-type, dial-indicating photographic thermometer made of stainless steel, for recording temperatures of 25° to 125° F., and is designed to replace Thermometer FM–7.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Type number:* FN–5. *Name of equipment:* Timer, Interval.

Timer, Interval FN–5 (previously designated PH–426) is an automatic device used for timing photographic enlarging and printing procedures. It operates on 110-volt 60-cycle a-c. There are two models of this equipment: PH–426 which is calibrated in intervals of 0 to 55 second; and PH–426–A, which is scaled from 0 to 60 seconds. Refer to TM 11–405 and TM 11–2374.

Status of equipment: L/Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–171. *Name of equipment:* Reducing Attachment.

Reducing Attachment PH–171 is an attach-

ment used with Printer, Projection, Photographic EN–8 (enlarger) for reduction of negative image size beyond the scale normally permitted by the equipment with which it is used.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–317. *Name of equipment:* Board.

Board PH–317 is an adjustable metal easel with a nonslip base used to hold photographic paper up to 8 by 10 inches.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–349. *Name of equipment:* Holder.

Holder PH–349 is an 11- by 14-inch photographic easel (paper holder), used with enlargers. It has adjustable metal masking blades and an adjustable border mask.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–623/UF. *Name of equipment:* Holder.

Holder PH–623/UF is a photographic-enlarger easel accommodating paper to 20½ by 22½ inches. It has adjustable tension arms and an alinement guide.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–648/U. *Name of equipment:* Projection Printer Attachment.

Projection Printer Attachment PH–648/U is a colorhead attachment for Projection Printers PH–129 and PH–639/TF. It is comprised essentially of a commercial (Simmon Bros.) color reproduction head that is designed to hold filters, when making prints from color transparencies.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Type number:* LE–2. *Name of equipment:* Lens Assembly.

Lens Assembly LE–2 (previously designated PH–277) is a 10-inch, f/4.5, telephoto-type lens-in-barrel which has a diaphragm (f/4.5 to f/22) and is mounted in a lens board (PH–119). It covers 4- by 5-inch film and includes two lens caps, a lens hood, a finder mask, and a carrying case and is used with, but not part of, Camera PH–47. Refer to TM 11–2352.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 53. *Type number:* LE–3. *Name of equipment:* Stand.

Stand LE–3 (previously designated PH–196) is a photographic laboratory camera support designed particularly for the 8- by 10-inch copying Camera which is part of Set, Still Picture KS–7. This equipment consists essentially of a solid base, a tilting track to support the camera, a vertical easel, and associated components.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* *Type number* LE–5. *Name of equipment:* Lens, Camera, Copying.

Lens, Camera, Copying LE–5 (previously designated PH–332) is a 12-inch, f/6.3 photographic objective mounted in a compound or Betax shutter, on an 11-inch square lens board. Shutter speeds 1, 1/2, 1/5, 1/10, 1/25, 1/50, 1/100, 1/150, B (bulb) and T (time).

Lens PH–332–A is a 13-inch, f/6.8 lens mounted in a Betax shutter, on an 11-inch square lens board.

Lens, Camera, Copying LE–5 is part of Set, Still Picture KS–7.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information: Type number:* LE–6. *Name of equipment:* Lens, Camera, General, Photographic.

Lens, Camera, General Photographic LE–6 (previously designated PH–653/U) is a wide-angle lens assembly used with Camera PH–47. It has a focal length of 90-mm with a maximum aperture of f/6.8. It is mounted in a synchronized between-the-lens shutter with speed settings ranging from 1 to 1/400 second, Time, and Bulb. It has a lens cap, a lens board, a solenoid release, and a separate optical view finder with mask.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of*

information: 2 Apr 53. *Service type number:* PH–81. *Name of equipment:* Holder.

Holder PH–81 is a 4- by 5-inch cut film holder having bakelite slides, metal septums, and hinged retaining strips for positioning the film.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–82. *Name of equipment:* Holder.

Holder PH–82 is a black hardwood, 5- by 7-inch, film holder having two aluminum septums and provided with rotatable slide-retaining locks to prevent their accidental removal.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–84. *Name of equipment:* Holder.

Holder PH–84 is a black hardwood 8- by 10-inch film holder having two aluminum septums and provided with rotatable slide-retaining locks to prevent their accidental removal.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–88. *Name of equipment:* Holder.

Holder PH–88 is a 3¼- by 4-inch plate holder used in the making of lantern slides.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–106. *Name of equipment:* Lens Hood and Filter Holder.

Lens Hood and Filter Holder PH–106 is essentially a light-metal assembly consisting of a sunshade and collar which can be slipped over a camera lens and which can accommodate unmounted photographic filters. It is part of Camera PH–47.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–110. *Name of equipment:* Adapter.

Adapter PH–110 is an all-metal device for adapting Camera PH–47 to film pack use. Refer to TM 11–2352.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–184. *Name of equipment:* Holder.

Holder PH–184 is an adjustable filter holder for 4-inch square filters. It can be attached to any lens barrel from 2⅜ to 3⅞ inches in diameter.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 15 Apr 53. *Service type number:* PH–191. *Name of equipment:* Timer.

Timer PH–191 is essentially a portable, self-contained commercial (Mendelsohn) instrument designed to check the accuracy of adjustment of electromagnetic photoflash synchronizers.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–197. *Name of equipment:* Back.

Back PH–197 is a reducing back which permits the use of 5- by 7-inch films in 8- by 10-inch Camera PH–195.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–350. *Name of equipment:* Lens.

Lens PH–350 is a 14½-inch, f/6.3 anastigmat, covering 8- by 10-inch film. It is mounted in a lens board which sets into a studio-type shutter housing. Its diaphragm has f/stops of 6.3, 8, 11, 16, 22, 32, and 45. Its shutter speeds are I (instantaneous approximately 1/15 second) and B (bulb). Refer to TM 11–2327.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–666/PF. *Name of equipment:* Camera Lens.

Camera Lens PH–666/PF is a 63-mm, f/4.5 wide-angle lens specifically designed to cover 70-mm film and is used with Camera KE–4. It has a bayonet mount and is directly coupled to the rangefinder and viewfinder of the camera.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of*

information: 31 Mar 53. *Service type number:* PH–384. *Name of equipment:* Slate.

Slate PH–384 is a metal plate having a black background and appropriate white numerals, letters, and markings for displaying scene-identification data in connection with motion-picture photography. There are two models of this equipment: PH–384, which is 9 by 12 inches and PH–384–A which is 9 by 13½ inches.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–520/U. *Name of equipment:* Tripod.

Tripod PH–520/U is an adjustable motion-picture camera tripod having a tilting head and adjustable legs. It can be extended to 84 inches or telescoped to 33 inches and is part of Camera, Motion Picture KS–5. Refer to TM 11–2396.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–524/PF. *Name of equipment:* Tripod.

Tripod PH–524/PF is essentially a commercial (Professional Jr.) motion-picture tripod head having three special legs similar to those of a standard machine gun tripod. Two of the legs are 12 inches long; the third is 14 inches. It may be carried in one hand and operated as a unipod. It is used with Camera PH–330. Refer to TM 11–2396.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–579/PF. *Name of equipment:* Slate.

Slate PH–579/PF is a 5⅛ by 4⅛-inch black, fiberboard used for identifying each roll of 16-mm film or individual scenes during motion-picture photography.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 3 Apr 53. *Type number:* LM–8. *Name of equipment:* Tripod.

Tripod LM–8 (previously designated PH–121) is a lightweight, three-legged metal support for still-picture cameras. It folds to 16¼ inches but can be extended to 50 inches. Refer to TM 11–2352.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* MT–1193/UF. *Name of equipment:* Tripod, Photographic.

Tripod, Photographic MT–1193/UF (previously designated PH–202) is a light-metal camera support consisting essentially of three legs, a pneumatically controlled central telescoping tube, and a tilting head. It can be folded to 8 by 13 inches, raised to a height of 52½ inches, or telescoped to 24 inches. It is used with Camera PH–195 and similar equipment.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* MT–1194/UF. *Name of equipment:* Tripod, Photographic.

Tripod, Photographic MT–1194/UF (previously designated PH–203) is a cast, light-metal camera support which can be adjusted to heights of 30 inches to 81 inches. It has metal spurs with detachable rubber tips for use on smooth surfaces and is secured by means of bolted and locked vise-type handle clamps.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–70. *Name of equipment:* Brush.

Brush PH–70 is a flat camel's-hair brush measuring 2 inches wide and is used for dusting photographic equipment.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–93. *Name of equipment:* Attachment.

Attachment PH–93 is used with Camera PH–120 to enable use of 3¼ by 4-inch lantern slides.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–105. *Name of equipment:* Bag.

Bag PH–105 is a fungi-proofed, zipper-type changing bag for daylight loading and unload-

ing of film holders (to 8 by 10 inches) and film magazines (to 1,000 feet).

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–207. *Name of equipment:* Lamp.

Lamp PH–207 is a photographic-darkroom lamp having three removable 5- by 7-inch safelight filters (OA greenish-yellow, No. 2 deep-red, and No. 3 green). The lamp housing is made of steel, has a medium-screw-base lamp socket, is mounted on an adjustable bracket, and operates on 25-watt 115-volt a-c.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–218–A. *Name of equipment:* Lamp equipment.

Lamp Equipment PH–218–A consists essentially of an 18-inch diameter parabolic reflector, a tripod which can be extended to a height of 12½ feet, two light brackets, a Mogul-base-to-medium-base reducer and a carrying case. It may be used with a 500-watt or a No. 4 photoflood lamp for general photographic illumination.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 2 Apr 53. *Service type number:* PH–219. *Name of equipment:* Lamp Equipment.

Lamp Equipment PH–219 is an illumination assembly consisting essentially of a single parabolic reflector, an adjustable socket, a diffusion screen and tripod, and a carrying case. It is designed for general photographic lighting. It uses a No. 1 or No. 2 Photoflood or a 500-watt, T-20, Mazda bulb.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–254. *Name of equipment:* Film Winder.

Film Winder PH–254 is an equipment designed to daylight-load 35-mm, still-camera cartridges (cassettes) from a 100-foot roll of double perforated 35-mm film stock. It has a 100-foot capacity chamber, a frame counter, and a removable lighttight cover and back.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 53. *Service type number:* PH–260. *Name of equipment:* Exposure Meter.

Exposure Meter PH–260 is a photoelectric-type light measuring instrument having a meter movement and related data scales. It is used to register incident and reflected light and provides data in terms of lens aperture and shutter speeds. There are two models of this equipment: PH–260 which is used primarily for still-camera photography; and PH–260–A, which is calibrated for use with either still- or cine-type cameras. Refer to TM 11–2356.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–374 through PH–381. *Name of equipment:* Filters.

Filters PH–374 through PH–381 are 4-inch square, colored filters used with panchromatic materials to produce various tonal effects of colored subjects. Filter PH–374 is red, Filter PH–375 is deep yellow, Filter PH–376 is light green, Filter PH–377 is yellow, Filter PH–378 is blue, Filter PH–379 is red, Filter PH–380 is light yellow, and Filter PH–381 is green.

Status of equipment: L/Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* PH–504/PF. *Name of equipment:* Exposure Computer.

Exposure Computer PH–504/PF is a pocket-size booklet with snap fastener, containing photographic film-exposure data for most films under a great variety of light conditions.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 53. *Service type number:* PH–568/GF. *Name of equipment:* Background.

Background PH–568/GF is a 6- by 8-foot, portable, photographic background with one clear-white surface, the other side having a simulated cloud effect.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:*

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TK–25/GF. *Name of equipment:* Tool Equipment.

Tool Equipment TK–25/GF consists of a set of tools and associated items used for higher echelon maintenance and repair of 16-mm and 35-mm motion-picture cameras. It is contained in a hard-vulcanized fiber case measuring 10⅞ by 7 by 9⅜ inches.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* TK–26/GF. *Name of equipment:* Tool Equipment.

Tool Equipment TK–26/GF consists of a set of tools and associated items used for higher echelon maintenance and repair of still cameras and is contained in a hard-vulcanized fiber case measuring 10⅞ by 7 by 7⅝ inches.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* TK–27/GF. *Name of equipment:* Tool Equipment.

Tool Equipment TK–27/GF is a tool set used for higher echelon maintenance and repair of 16-mm projectors. The tools are contained in a hard-vulcanized fiber case measuring 12⅞ by 9 3/16 by 9¾ inches.

Status of equipment: Standard. *Classification of equipment:* Unclassified. *Currency of information:* 31 Mar 53. *Service type number:* TK–28/GF. *Name of equipment:* Tool Equipment.

Tool Equipment TK–28/GF is a tool set for organizational emergency repair of general photographic equipment. The tools are contained in a canvas bag measuring 18½ by 11½ inches, unrolled.

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[AG 413.44 (15 Apr 54)]

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