

**NATIONAL BUREAU OF STANDARDS REPORT**

3606

Appendix II  
to  
Instruction Book  
for  
Transmissometer Set  
AN/GMQ-10



**U. S. DEPARTMENT OF COMMERCE  
NATIONAL BUREAU OF STANDARDS**

U. S. DEPARTMENT OF COMMERCE

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**Radio Propagation Engineering.** Frequency Utilization Research. Tropospheric Propagation Research.

**Radio Standards.** High Frequency Standards. Microwave Standards.

# NATIONAL BUREAU OF STANDARDS REPORT

**NBS PROJECT**

**NBS REPORT**

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## Appendix II to Instruction Book for Transmissometer Set AN/GMQ-10

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For

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## APPENDIX II

## MAINTENANCE PARTS LIST

## B-1. GENERAL.

B-1.1. PURPOSE OF MAINTENANCE PARTS LIST. The maintenance parts list which follows may be used in two ways: (a) in conjunction with parts identification photographs and drawings to identify a part by reference symbol, name, function, and/or manufacturer's catalog number; (b) in conjunction with Sections V and VII in trouble shooting.

B-1.2. SCOPE. This maintenance parts list contains a listing of all electrical and electronic parts and most mechanical and structural parts of Transmissometer Set AN/GMQ-10.

B-1.3. ARRANGEMENT OF MAINTENANCE PARTS LIST. The maintenance parts list has the following primary divisions: (1) Major Units; (2) Transmissometer Receiver R-547/GMQ-10 and Amplifier-Power Supply AM-809/GMQ-10; (3) Transmissometer Indicator ID-353/GMQ-10; and (4) Transmissometer Projector ML-461/GMQ-10 and Power Supply PP-908/GMQ-10. Parts of Cable Terminal Chambers J-556/GMQ-10 are included with those of the receiver and projector.

B-1.3.1. Each primary division, except that for major units, is subdivided by alphabetical order of the symbol number. Within the symbol groups, the parts are arranged numerically.

B-1.3.2. Each page of the maintenance parts list has five columns.

In order, from left to right, they are:

a. SYMBOL. This is the reference symbol number given on schematic diagrams or parts identification figures.

b. NAME OF PART AND DESCRIPTION. This column contains a brief description which is sufficient for part identification. When there are identical parts, the description is entered the first time only in each primary division. In lieu of a repeated description the statement "Same as ---" is entered.

c. FUNCTION OF PART. This column contains a brief statement of the function of each part.

d. TYPE NUMBER (JAN or Mfr). This column contains the JAN or MIL part number or manufacturer's part number for each part for which such a number is applicable. In the case of very common items (screws, nuts, etc.) sufficient description has been included in the description column to procure a suitable replacement item without going back to the manufacturer of the Set.

e. OTHER IDENTICAL PARTS. The Symbol numbers of other identical parts are entered in this column opposite the symbol number the first time the part is entered in the list.

**B-2. REQUISITION OF SPARE PARTS.**

**B-2.1. AIR FORCE.**

B-2.1.1. Since this parts list is intended to be only a parts identification list, use the appropriate T.O. No. 16-55, "Spare Parts List" as indicated in Part I of T.O. No. 00-1-16, "Numerical Index of Technical Publications -- Electronic Equipment Publications,"

for information regarding requisitioning spare parts.

**B-2.2. OTHER AGENCIES.**

B-2.2.1. Requisitioning of spare parts should be done as prescribed by the responsible agency. For convenience, a column headed "Type Number (JAN or Mftr)" has been included.

## B-3. MAJOR UNITS OF TRANSMISSOMETER SET AN/GMQ-10.

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
U101	Unit, pulse amplifier.	Generates a pulse signal with a pulse rate proportional to the light incident on the receiver.	C-H FL3050	
U102	Unit, receiver amplifier: less cabinet.	Amplifies pulse signal before impressing it onto the transmission line.	C-H FL3061	
U103	Unit, cable terminal chamber.	Chamber for termination of field cabling.	C-H 46957	U303
U201	Unit, indicator: less cabinet and recorder.	Converts pulse signal to a meter reading proportional to the pulse rate.	C-H FL2807	
U301	Unit, projector power supply: less cabinet and voltage-regulating transformer.	Supplies power for lamp E301.	C-H FL2863	
U302	Unit, projector.	Housing for lamp E301.	C-H FL2862	
U303	Same as U103. (Unit, cable terminal chamber.)	Chamber for termination of field cabling.		

## B-4. IDENTIFICATION OF PARTS FOR TRANSMISSOMETER RECEIVER R-547/GMQ-10 AND AMPLIFIER-POWER SUPPLY AM-809/GMQ-10.

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
<b><u>STRUCTURAL PARTS</u></b>				
A101	Hood, lens: brass.	Reduces stray light; protects lens I101.	C-H FL3345	
A102	Barrel, lens: brass.	Joins lens diaphragm assembly and pulse-amplifier unit housing.	C-H FL3358	
A103	Yoke, mounting: U-shaped; brass.	Front mounting support for receiver telescope assembly.	C-H FL3307	
A104	Ring, mounting: front; cast brass.	Front mounting support for receiver telescope assembly with rotational freedom for alignment purposes.	C-H FL3208	
A105	Ring, mounting: rear; cast brass.	Rear mounting support for receiver telescope assembly; holds vertical and horizontal alignment adjustment screws.	C-H FL3206	
A106	Cover: rear; cast brass.	Cover for pulse-amplifier unit housing.	C-H FL3148	
A107	Cabinet: receiver amplifier; cast aluminum.	Cabinet for receiver amplifier unit.	C-H FL3402	
A108	Bracket, mounting: for pivot bar; L-shaped.	Mounting for receiver amplifier unit pivot bar. (2 required)	C-H FL3451	



B-4. IDENTIFICATION OF PARTS FOR TRANSMISSIONETER RECEIVER R-547/GMQ-10  
AND AMPLIFIER-POWER SUPPLY AM-809/GMQ-10. (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
A109	Bar, pivot: round steel rod.	Provides pivot support for receiver amplifier unit extension arms.	C-H FL3409	
A110	Arm, extension: steel.	Supports receiver amplifier unit when extended. (2 required)	C-H FL3412	
A111	Bracket, mounting: for receiver amplifier chassis; steel.	Mounts receiver amplifier chassis to extension arms. (2 required)	C-H FL3411	
A112	Bracket, shipping: for receiver amplifier chassis; steel.	Provides support for receiver amplifier unit in shipment. (4 required)	C-H FL3410	
A113	Mounting subassembly: front; cast aluminum.	Front mounting base for cabinet A107.	C-H FL3399	A309
A114	Mounting subassembly: rear; cast aluminum.	Rear mounting base for cabinet A107.	C-H FL3398	A310
A115	Plate, mounting: brass.	Mounting plate for thermostat in pulse amplifier.	C-H FL4226	
A116	Terminal box: with cover; gray cast iron.	Waterproof housing for terminal blocks E109 and E110 and circuit breaker K101.	C-H YWS886036	A311
A117	Hub plate, conduit: blank; gray cast iron.	Hub plate for A116.	C-H YYP800	A312
A118	Hub plate, conduit: one 2 1/2" threaded conduit hub; gray cast iron.	Hub plate for A116.	C-H YYP87	A313
A119	Hub plate, conduit: one 1" threaded conduit hub; gray cast iron.	Hub plate for A116.	C-H YYP83	A314
A120	Plate, mounting: sheet steel.	Mounting plate in A116 for terminal blocks and circuit breaker.	C-H CPYK1	A315

CAPACITORS

C101	Capacitor, fixed: silvered mica dielectric; 20 mmf $\pm$ 5%; 500 vdcw. (Value nominal; precise value determined at factory for individual pulse-amplifier units.)	Charging capacitor for V102; determines the sensitivity of pulse-amplifier unit.	Sprague Type MS	
C102	Capacitor, fixed: mica dielectric; 10,000 mmf $\pm$ 10%; 300 vdcw.	Bypass for R102.	CM35B103K	C209, C214
C103	Capacitor, fixed: mica dielectric; 470 mmf $\pm$ 10%; 500 vdcw.	Blocking capacitor for J105.	CM20B471K	C108, C109, C110, C201, C210
C104	Capacitor, fixed: paper dielectric; 50,000 mmf $\pm$ 10%; 600 vdcw.	Cathode bypass capacitor for V109.	CP53B1EF503K	
C105	Capacitor, fixed: paper dielectric; 4 mf $\pm$ 10%; 600 vdcw.	Filter capacitor in B+ supply.	CP70B1EF405K	C105A, C203, C211, C212



B-4. IDENTIFICATION OF PARTS FOR TRANSMISSOMETER RECEIVER R-547/GMQ-10  
AND AMPLIFIER-POWER SUPPLY AM-809/GMQ-10. (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
C105A	Same as C105.	Filter capacitor in B+ supply.		
C106	Capacitor, fixed: paper dielectric; 1 mf $\pm$ 10%; 400 vdcw.	Stabilizing capacitor for regulated B+ voltage.	CP53B1EE105K	
C107	Capacitor, fixed: paper dielectric, metallized; 20 mf $\pm$ 20%; 100 vdcw; 150 vdcv.	With R111, forms an RC circuit to smooth the current through M101.	Gudeman XMF-17164	
C108	Same as C103.	Charging capacitor for V107 during forward half-cycle and bypass capacitor for reverse half-cycle.		
C109	Same as C103.	Couples signal from calibrator to V108.		
C110	Same as C103.	Couples signal from V109 to V108.		
C111	Capacitor, fixed: paper dielectric; 100,000 mmf $\pm$ 10%; 600 vdcw.	Discharge capacitor for V108 - determines charge per pulse through V108.	CP53B1EF104K	C204
C112	Capacitor, fixed: paper dielectric; 2 mf $\pm$ 20% - 10%; 600 vdcw.	Blocking capacitor, prevents current from rectifier CR301 flowing through T102 and actuating relay K301.	CP41B1EF205V	C213

ELECTRICAL EQUIPMENT

E101	Insulator, feedthru: double ended conical shape; white porcelain, glazed.	Insulator for mounting C101.	Bud Rad I-436	
E102	Insulator, standoff: conical shape; white porcelain, glazed.	Insulator for mounting R101.	Bud Rad I-300	E103, E105, E304
E103	Same as E102.	Insulator for mounting R107.		
E104	Board, terminal: general purpose; 2 brass nickel pl screw term with solder tabs.	115 vac input terminals for use in bench tests.	Jones HB 2-141-3/4- W-B-2	E202
E105	Same as E102.	Insulator for mounting R118.		
E106	Board, terminal: general purpose; 7 brass nickel pl screw term.	Terminal board for interconnecting cables.	Jones HB 7-141-B-2	
E107	Holder, fuse: extractor post type for single 3AG fuse.	Fuse holder for F101.	Buss HKP	E201, E302
E108	Board, terminal: general purpose; 11 pairs solder lug term.	Mounting board for small components.	C-H FL3013	
E109	Board, terminal: general purpose; 8 brass screw term.	Terminal board for field cabling.	GE 16EB1A2	E305
E110	Board, terminal: general purpose; 4 brass screw term.	Terminal board for field power cable.	GE 16EB1A1	E306

B-4. IDENTIFICATION OF PARTS FOR TRANSMISSOMETER RECEIVER R-547/GMQ-10  
AND AMPLIFIER-POWER SUPPLY AM-809/GMQ-10. (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mftr)	Other Identical Parts
<u>FUSES</u>				
F101	Fuse, cartridge: 1-1/4 amp, 250 v; one time; high time lag.	Fuses ac power line input to receiver amplifier.	Buss MDL-1-1/4	F201
<u>HARDWARE PARTS</u>				
H101	Tool, aligning: for use on trans- missometer receiver; brass; has round glass disk for focusing aid.	Used for preliminarily aligning the optical system of the receiver telescope.	C-H FL3385	
H102	Wrench, lens retaining ring.	Removes lens retaining ring 0101.	C-H FL3391	
H103	Inhibitor, bird: consists of U- shaped drop and mtg clip; brass.	Discourages birds from roosting in lens hood A101.	C-H FL3362	
H104	Screw, machine: slot drive; Fil H; brass, cad pl; #12-24 tnd; 1/2" lg.	Set screw to hold lens hood A101 in proper orientation.		
H105	Screw, set: slot drive; headless; steel; #8-32 thd; 1/2" lg; flat point.	Set screw to maintain position of lens retain- ing ring 0101.		
H106	Gasket: fiber; 4" OD, 3-3/4" ID, 1/32" thk.	Gasket for lens I101. (2 required)	C-H FL4164	
H107	Fitting, conduit: conduit Type LB; brass; 1/4".	Junction box for hood heater HR101.	C-H LB287	
H108	Cover, conduit fitting: brass.	Cover for H107.	C-H 2870	
H109	Gasket: rubber.	Gasket for H107.	C-H 4728	
H110	Fitting, conduit: flexible cable to conduit; brass; 1/4"; male thd.	Watertight entrance fitting.	C-H FL3445	
H111	Bushing: reducer; rubber.	Bushing for fitting H110.	C-H HL6537	
H112	Screw, machine: hex head; brass; 1/4"-20 thd; 3/4" lg; threaded portion 1/2" lg.	Screw for mounting dia- phragm assembly Q101 to barrel A102. (6 required)		
H113	Screw, machine: hex head; brass; 3/8"-16 thd; 1" lg; all threaded.	Holds yoke A103 and mount- ing ring A104 together. (2 required)		
H114	Screw, machine: hex head; brass; 3/8"-16 thd; 1-1/2" lg; threaded portion 1" lg.	Holds mounting ring A104 and barrel A102 together. (2 required)		
H115	Screw, machine: hex head; brass, cad pl; 3/8"-16 thd; 1" lg; threaded portion 3/4" lg.	Mounts receiver telescope assembly to stand. (4 required)		
H116	Screw, machine: hex head; brass; 1/4"-20 thd; 1/2" lg; all threaded.	Retains pulse amplifier unit in housing. (4 required)		

B-4. IDENTIFICATION OF PARTS FOR TRANSMISSIONETER RECEIVER R-547/GMQ-10  
AND AMPLIFIER-POWER SUPPLY AM-809/GMQ-10. (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
H117	Screw, machine: hex head; brass; 1/4"-20 thd; 1-1/4" lg; threaded portion 7/8" lg.	Holds cover A106 to pulse- amplifier unit housing. (4 required)		
H118	Gasket: cover; silicone treated asbestos.	Gasket for cover A106.	C-H FL4304	
H119	Screw, set: Allen drive; headless; steel; 1/4"-20 thd; 1/2" lg; cup point.	Holds focusing ring 0103 in position.		
H120	Fitting, conduit: flexible cable to conduit; brass; 3/4"; male thd.	Watertight entrance fit- ting.	C-H CGB295	H139
H121	Bushing: reducer; rubber.	Bushing for H120.	C-H BUSH05	H140
H122	Washer, gland: steel, cad pl; 21/32" ID, 29/32" OD, 0.025" thk.	Permits tightening of H120 without distorting H121.	C-H GlandWash 94	H141, H145
H123	Nut, hexagon: brass, cad pl; 3/8"-16 thd; 3/8" thk; 11/16" wd across flats.	Nut for H115. (4 required)		
H124	Screw, machine: hex head; brass; 3/8"-16 thd; 2-1/2" lg; all threaded.	Vertical or horizontal alignment screw. (4 required)		
H125	Gasket: door; silicone treated asbestos.	Gasket for door of cabi- net A107.	C-H FL3774	H322
H126	Lock: key latch; ward mechan- ism.	Latch for cabinet A107.	Corbin Cabinet 0357SG	H318
H127	Key, lock: brass.	Key for H126.		H319
H128	Bolt, double ended: stainless steel; 1/4"-20 thd; 2-3/4" lg; 3/8" threaded length each end; less nuts.	Hinge bolt for door of cabinet A107. (2 required)	C-H FL3452	H328
H129	Nut, hexagon: steel, chromium pl; 1/4"-20 thd; 1/4" thk; 7/16" wd across flats.	Nut for H128. (4 required)	C-H KL5202	H329
H130	Pin, dowel: brass; 3/8" diam x 1-3/8" lg.	Fastens extension arm A110 to pivot bar A109. (2 required)	C-H FL3417	
H131	Screw, machine: hex head; steel, cad pl; 3/8"-16 thd; 1-3/8" lg; threaded portion 1" lg.	Fastens receiver ampli- fier chassis brackets to extension arms. (2 required)		
H132	Nut, hexagon: steel, cad pl; 3/8"-16 thd; 3/8" thk; 11/16" wd across flats.	Nut for H131. (2 required)	C-H KL4726	
H133	Clamp, shipping: steel, cad pl; L-shaped.	Clamps receiver ampli- fier chassis during shipment. (4 required)	C-H FL3545	
H134	Screw, machine: slot drive; RH; brass, cad pl; #10-32 thd; 3/4" lg; all threaded.	Screw for H133. (4 required)		

B-4. IDENTIFICATION OF PARTS FOR TRANSMISSIONETER RECEIVER R-547/GMQ-10  
AND AMPLIFIER-POWER SUPPLY AM-809/GMQ-10. (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
H135	Screw, machine: hex head; brass, nickel pl; 1/4"-20 thd; 5/8" lg; all threaded.	Fastens brackets A112 inside cabinet A107. (8 required)		
H136	Fitting, conduit: flexible cable to conduit; brass; 1", male thd.	Watertight entrance fitting. (2 required)	C-H CGB395	H336
H137	Bushing: reducer; rubber.	Bushing for H136. (2 required)	C-H BUSH95	H337
H138	Washer, gland: steel, cad pl; 1" ID, 1-3/8" OD, 0.025" thk.	Permits tightening of H136 without distorting H137. (2 required)	C-H GlandWash 95	H338
H139	Same as H120.	Watertight entrance fitting.		
H140.	Same as H121.	Bushing for H139.		
H141	Same as H122.	Permits tightening of A139 without distorting H140.		
H142	Fitting, conduit: reducer; steel, cad pl; 1-1/2" to 3/4".	Reduces diameter of hole in cabinet A107.	C-H RES2	
H143	Fitting, conduit: flexible cable to conduit; brass; 1/2", male thd.	Watertight entrance fitting.	C-H CGB193	
H144	Bushing: reducer; rubber.	Bushing for H143.	C-H BUSH93	
H145	Same as H122.	Permits tightening of H143 without distorting H144.		
H146	Strike, lock: steel; L-shaped.	Strike for latch H125.	C-H 4469N	H324
H147	Not used.			
H148	Mounting, switch: steel, cad pl.	Mounting for S108.	C-H FL3427	H201
H149	Cover: switch; steel, cad pl; L-shaped.	Protective cover for S108.	C-H FL3894	H202
H150	Screw, machine: hex head; brass, nickel pl; 5/16"-18 thd; 3/4" lg; all threaded.	Screw for mounting brackets A108. (4 required)		
H151	Screw, machine: slot drive; FH; steel, nickel pl; 3/8"-16 thd; 5/8" lg; all threaded.	Screw for mounting sub-assembly A113 to cabinet A107. (3 required)		
H152	Nut, hexagon: brass, cad pl; 1/2"-13 thd; 1/2" thk; 5/8" wd across flats.	Nut for studs on mounting subassemblies A113 and A114. (4 required)	C-H KL2705	H327
H153	Screw, machine: slot drive; hex head; steel, nickel pl; 3/8"-16 thd; 3/4" lg; all threaded.	Screw for mounting sub-assembly A114 to cabinet A107. (3 required)		H323
H154	Clamp: capacitor mounting; footed.	Clamp for mounting C105. (2 required)	CP07FB4	H155, H208, H209, H210



B-4. IDENTIFICATION OF PARTS FOR TRANSMISSOMETER RECEIVER R-547/GMQ-10  
AND AMPLIFIER-POWER SUPPLY AM-809/GMQ-10. (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
H155	Same as H154.	Clamp for mounting C105A. (2 required)		
H156	Knob: bar; black bakelite; for 1/4" shaft.	Knob for S104.	Mallory 366-1	H203, H332
H157	Washer, flat: steel; round; 7/16" ID, 3/4" OD, 1/16" thk.	Washer between extension arm A110 and mounting bracket A111. (2 required)	C-H 8238-N	
H158	Screw, set: Allen drive; steel cad pl; #8-32 thd; 1/4" lg; cup point.	Locks iris diaphragm ad- justment shaft.		H159
H159	Same as H158.	Locks lens retainer of pulse amplifier into position.		
H160	Washer, flat: fiber; round; 7/32" ID, 13/32" OD, 0.02" thk.	Makes screw H117 captive. (4 required)		
H161	Nut, check: hexagon; steel, cad pl; 1", pipe thd.	Locks H136 into place. (2 required)		H339
H162	Nut, check: hexagon; steel, cad pl; 1/2", pipe thd.	Locks H143 into place.		
H163	Not used.			
H164	Gasket: cover; rubber; 3/8" diam, 46" lg.	Gasket for cover of ter- minal box A116.		H340
H165	Gasket: hub; cork.	Gasket between hub plates and terminal box A116. (3 required)	C-H Gask140	H341
<u>HEATERS</u>				
HR101	Heating element, electrical; cartridge type; 115 v, 50 w.	Heats lens hood and lens to prevent condensation of moisture on lens.	Wiegand C-201A	HR102
HR102	Same as HR101.	Heats pulse-amplifier unit.		
<u>OPTICAL PARTS</u>				
I101	Lens, condensing: 4" diam, 32" focal length.	Objective lens for re- ceiver optical system.	C-H FL2907	
I102	Lens, condensing: 0.96" diam, 2.015" focal length.	Forms image of lens I101 on photosensitive surface of photoelectric cell V101.	C-H FL3063	
<u>JACKS AND CONNECTORS</u>				
J101	Connector, male contact: 6 round male contacts.	Connector at pulse-ampli- fier unit for lines to receiver amplifier.	AN3102A-22-5P	J103, J202

B-4. IDENTIFICATION OF PARTS FOR TRANSMISSOMETER RECEIVER R-547/GNQ-10  
AND AMPLIFIER-POWER SUPPLY AN-809/GNQ-10 (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
J102	Connector, female contact: 6 round female contacts.	Connector at receiver amplifier for lines to pulse-amplifier unit.	AN3102A-22-5S	
J103	Same as J101.	Connector at receiver amplifier for lines from terminal board E106.		
J104	Connector, female contact: 2 curved contacts; 10 amp, 250 v; accepts standard 2-rectangular-contact male plug.	Convenience outlet for ac power.	Hubbell 9218	J302
J105	Jack, telephone: for two cond 0.25" diam plug.	Input test jack.	JAN JJ103	J106, J203, J204, J301
J106	Same as J105.	Output test jack.		

RELAYS AND CIRCUIT BREAKERS

K101	Circuit breaker: magnetic; 2 pole; 125 vac, 5 amp; molded black bakelite case; toggle action, manual reset.	Circuit breaker for input power.	Heineman 2263H6-5AC3	K302
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INDUCTORS

L101	Reactor: filter choke; 12 hy, 105 ma; 150 ohms dc resistance; 2500 v RMS test; hermetically sealed metal case.	Filter choke in B+ supply.	Chi Trans RH-12105	L201
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METERS

M101	Meter, arbitrary scale: transmission; dc; range 0 to 100; one ma full scale deflection; accuracy 1% of full scale deflection.	Indicates transmission reading.	Weston Model #760	M201, M301
M102	Meter, frequency indicator: ac, 56 to 64 cycles; vibrating reed movement; hermetically sealed; scale calibrated in "CALIBRATION SETTING" of 84 to 96.	Indicates calibration setting corresponding to ac-line frequency.	Biddle 4975-ES	M202

MECHANICAL PARTS

0101	Ring, lens retaining; brass.	Retains lens I101 in position.	C-H FL3250	
0102	Insert, heater: brass.	Provides close thermal contact between heater H101 and diaphragm assembly Q101; connects conduit fitting H107 to Q101.	C-H FL3346	
0103	Ring, focusing: brass.	Provides means of focusing projector image on field stop in pulse-amplifier unit.	C-H FL3196	

B-4. IDENTIFICATION OF PARTS FOR TRANSMISSIONETER RECEIVER R-547/GMQ-10  
AND AMPLIFIER-POWER SUPPLY AM-809/GMQ-10 (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
0104	Bearing, sleeve: brass.	Bearing for pivot bar A109 and extension arm A110. (2 required)	C-H FL3408	
<u>PLUGS</u>				
P101	Connector, female contact: 6 round female contacts; has fiber spacer disk in milled cap.	Plug for J101 (on cable W101).	AN3106A-22-SS (modified)	
P102	Connector, male contact: 6 round male contacts; with cable clamp.	Plug for J102 (on cable W101).	AN3106A-22-5P w/AN3057-12	
P103	Connector, female contact: 6 round female contacts; with cable clamp.	Plug for J103 (on cable W103).	AN3106A-22-5S w/AN3057-12	P202
<u>DIAPHRAGMS</u>				
Q101	Diaphragm Assembly: iris type; brass; 1" min, 4" max aperture opening.	Changes quantity of light entering optical system from projector.	C-H FL3085	
<u>RESISTORS</u>				
R101	Resistor, fixed: composition; 1 meg $\pm$ 10%; 1/2 w.	Limits current through V101 in event of excessive illumination.	RC20BF105K	R102, R222, R225
R102	Same as R101.	Quenches discharge through V102.		
R103	Not used.			
R104	Resistor, fixed: wirewound; 4000 ohm; 12 w.	Ballast resistor for V104 and V105.	RW32F402 or RW32G402	
R105	Resistor, fixed: composition; 10,000 ohm $\pm$ 10%; 1 w.	Cathode bias resistor for V109.	RC30BF103K	R223
R106	Resistor, fixed: composition; 8,200 ohm $\pm$ 10%; 1 w.	Damps oscillations which affect characteristics of V102.	RC30BF822K	
R107	Resistor, fixed: composition; 47 ohm $\pm$ 10%; 1/2 w.	With R108, shunts meter M101 (and M301); limits range of calibration ad- justment provided by R108.	RC20BF470K	
R108	Resistor, variable: composition; 500 ohm $\pm$ 10%; 2 w; slotted round metal shaft; linear taper.	With R107, shunts meter M101 (and M301); pro- vides calibration ad- justment by varying the current bypassing these meters.	AB JLJ5011	
R109	Resistor, fixed: composition; 47,000 ohm $\pm$ 10%; 2 w.	Quenches discharge through V108.	RC41BF473K	R115

B-4. IDENTIFICATION OF PARTS FOR TRANSMISSIONETER RECEIVER R-547/GMQ-10  
AND AMPLIFIER-POWER SUPPLY AM-809/GMQ-10 (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
R110	Resistor, fixed: composition; 47,000 ohm $\pm$ 10%; 1/2 w.	Current limiting resistor for V107.	RC20BF473K	R228, R229
R111	Resistor, fixed: composition; 4700 ohm $\pm$ 10%; 1/2 w.	With C107 (and R116 and R117) forms an RC circuit to smooth current through M101.	RC20BF472K	
R112	Resistor, fixed: composition; 100,000 ohm $\pm$ 10%; 1/2 w.	Grid resistor for V108.	RC20BF104K	R113, R204
R113	Not used.			
R114	Resistor, fixed: composition; 100 ohm $\pm$ 10%; 1/2 w.	Limits peak current through V108 during dis- charge.	RC20BF101K	
R115	Same as R109.	With R116 and R117 (and R111) forms voltage divider to provide grid bias for V108.		
R116	Resistor, fixed: composition; 1000 ohm $\pm$ 10%; 1/2 w.	With R115 and R117 (and R111) forms voltage divider to provide grid bias for V108; deter- mines minimum grid bias of V108.	RC20BF102K	
R117	Resistor, variable: composition; 1000 ohm $\pm$ 10%; 2 w; slotted round metal shaft; linear taper.	With R115 and R116 (and R111) forms voltage divider to provide grid bias for V108; grid bias adjustment potentiome- ter for V108.	AB JLJ1021	R207
R118	Resistor, fixed: composition; 82 ohm $\pm$ 10%; 1/2 w.	Substitutes for resistance of meter M301 (at pro- jector).	RC20BF820K	
<u>SWITCHES</u>				
S101	Switch, thermostatic: SPST; operating temp 90°F $\pm$ 5°; 12 amp, 120 vac.	Regulates temperature in pulse-amplifier unit.	Spencer Thermo C4370-3-67	
S102	Switch, toggle: DPST.	Switches B+ supply to metering circuit (one pole only used).	ST22K	S105, S106, S107, S204, S301
S103	Switch, toggle: SPDT.	Switches meter M301 in or out of circuit.	ST12D	S201
S104	Switch, rotary: position #1-- 1C; position #2--1A; 3 amp, 110 vac; momentary contact in position #2.	Energizes calibrator and replaces pulse-amplifier signal on grid of V108 with calibrator signal.	Mossman DP 4402TN-NT- DPDT	S203
S105	Same as S102.	Opens B+ circuit to pulse- amplifier unit.		
S106	Same as S102.	Switches ac power to pulse-amplifier unit heater HR102.		
S107	Same as S102.	Main ac power switch.		
S108	Not used.			



B-4. IDENTIFICATION OF PARTS FOR TRANSMISSION RECEIVER R-547/GMQ-10  
AND AMPLIFIER-POWER SUPPLY AM-809/GMQ-10. (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
<u>TRANSFORMERS</u>				
T101	Transformer, AF: input type; primary 20,000 ohms impedance CT; drawnsteel upright, shielded case; laminated iron core; turns ratio of 1/2 primary to secondary 3:4.	Interstage coupling transformer between V102 and V109.	Chi Trans PHD-25	
T102	Transformer, pulse: used as output transf in receiver amplifier; hermetically sealed metal case; primary to secondary turns ratios of 40:1, 20:1, and 10:1 by secondary taps; 1250 v test.	Tube to transmission line output transformer from V109.	Chi Trans 16306	
T103	Transformer, power: filament and plate type; input 117 v, 50/60 cyc, single ph; sec#1, 740 vCT at 150 ma, sec #2, 5 vCT at 3 amp, sec #3, 6.3 vCT at 4 amp, sec #4, 6.3 vCT at 1 amp; hermetically sealed metal case.	Supplies ac power to filaments and B+ rectifier.	Chi Trans PHC-150	T201
<u>VACUUM TUBES</u>				
V101	Cell, photoelectric: type 919; vacuum phototube.	Produces a current proportional to amount of light incident on the photosensitive surface.	Type 919	
V102	Tube, electron: Wemco WL-759; cold cathode gas triode.	Pulse generator and pre-amplifier; pulse rate proportional to current through V101.	Wemco WL-759	
V103	Tube, electron: JAN-5Y3GT; duo-diode rectifier.	B+ rectifier.	JAN-5Y3GT	V208
V104	Tube, electron: JAN-OC3; diode voltage regulator.	With V105, regulates B+ for V101, V102, and V108.	JAN-OC3	V203
V105	Tube, electron: JAN-OD3; diode voltage regulator.	With V104, regulates B+ for V101, V102, and V108.	JAN-OD3	V209, V210
V106	Tube, electron: JAN-6H6; duo-diode rectifier.	Half-wave rectifier for calibrator.	JAN-6H6	V206
V107	Lamp, glow: 115v, 1/4 w; bulb T-4 1/2 clear; double contact bayonet base.	Generates calibration pulses.	Type Ne-48	V207
V108	Tube, electron: JAN-2050; thyatron.	Electronic switch; discharges C111 once for each pulse, producing a current whose average value is proportional to the pulse rate.	JAN-2050	V201
V109	Tube, electron: JAN-6B4G; triode power amplifier.	Amplifies signal for transmission.	JAN-6B4G	

B-4. IDENTIFICATION OF PARTS FOR TRANSMISSOMETER RECEIVER R-547/GMQ-10  
AND AMPLIFIER-POWER SUPPLY AM-809/GMQ-10 (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
<u>WIRES AND INTERCONNECTING CABLES</u>				
W101	Cable assembly, special purpose: 6 #16 AWG stranded copper cond; 600 v working; type S0 neoprene jacket; 12 ft lg excluding ter- minations; AN3106A-22-5P con- nector w/AN3057-12 cable clamp on one end, AN3106A-22-5S connector w/milled cap at other end.	Cable between pulse-ampli- fier unit and receiver amplifier.	C-H FL3048	
W102	Cable assembly, power: type S0 cable; 2 #16 AWG stranded copper cond; 600 v working; 16 1/2 ft lg excluding terminations; stripped 1/2" on one end and solder lugs on other.	Carries ac power to hood heater HR101.	C-H FL4123	
W103	Cable assembly, special purpose: 6 #16 AWG stranded copper cond; 600 v working; type S0 neoprene jacket; 3 ft lg excluding ter- minations; AN3106A-22-5S con- nector w/AN3057-12 cable clamp on one end, other end terminated with solder lugs.	Cable between receiver amplifier and terminal block E106.	C-H FL2955	
W104	Not used.			
<u>SOCKETS</u>				
X101	Socket, tube: 4 contact, 2 large and 2 medium; round molded steatite body; silver pl phosphor bronze contacts.	Socket for V101.	Amphenol 49-RSS4	X102
X102	Same as X101.	Socket for V102.		
X103	Socket, tube: octal.	Socket for V103.	TSB8T101	X104, X105, X106, X108, X109, X201, X202, X203, X204, X205, X206, X208, X209, X210, X301
X104	Same as X103.	Socket for V104.		
X105	Same as X103.	Socket for V105.		
X106	Same as X103.	Socket for V106.		
X107	Socket, tube: neon lamp; double contact candelabra bayonet; brass body; 105- 125 v, 1/4 w.	Socket for V107.	Dialco 65-10	X207
X108	Same as X103.	Socket for V108.		
X109	Same as X103.	Socket for V109.		

## B-5. IDENTIFICATION OF PARTS FOR TRANSMISSOMETER INDICATOR ID-353/GMQ-10.

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
<u>STRUCTURAL PARTS</u>				
A201	Cabinet: steel, painted gray; indicator recorder.	Cabinet for indicator unit and recording meter M203.	C-H FL2944	
A202	Panel: mounting for recording meter; steel; 17 1/2" high x 19" wd x 1/8" thk.	Mounting panel for recording meter M203.	C-H FL4305	
A203	Panel: blank; steel; 7" high x 19" wd x 1/8" thk.	Blank panel covering voltage-regulating transformer T202.	C-H FL3646	
A204	Bracket, mounting: for transformer; steel; 19 3/4" lg x 1 1/4" wd x 5/16" thk.	Mounting bracket for transformer T202. (2 required)	C-H FL3647	
<u>CAPACITORS</u>				
C201	Same as C103. (Capacitor, fixed: mica dielectric; 470 mmf $\pm$ 10%; 500 vdcw.)	Coupling between V205 and V201.		
C202	Capacitor, fixed: silvered mica dielectric; 2700 mmf $\pm$ 5%; 500 vdcw.	Discharge capacitor for V201; with R217 determines charge per pulse through V201.	Sprague Type MS	
C203	Same as C105. (Capacitor, fixed: paper dielectric; 4 mf $\pm$ 10%; 600 vdcw.)	Smooths current flow through R206 (also R205 and R205A).		
C204	Same as C111. (Capacitor, fixed: paper dielectric; 100,000 mmf $\pm$ 10%; 600 vdcw.)	With R211, forms an RC circuit which smooths the voltage applied to grid of V202.		
C205	Capacitor, fixed: mica dielectric; 1000 mmf $\pm$ 10%; 500 vdcw.	Couples feed-back signal developed across R204 to control grid of V204.	CM30B102K	C301
C206	Capacitor, fixed: mica dielectric; 100 mmf $\pm$ 10%; 500 vdcw.	Couples signal at S203 to control grid of V204.	CM20B101K	C207
C207	Same as C206.	Coupling capacitor between V204 and V205.		
C208	Capacitor, fixed: mica dielectric; 4700 mmf $\pm$ 10%; 500 vdcw.	Blocking capacitor for J203.	CM35B472K	
C209	Same as C102. (Capacitor, fixed: mica dielectric; 10,000 mmf $\pm$ 10%; 300 vdcw.)	Charging capacitor for V207 during forward half-cycle and bypass capacitor for reverse half-cycle.		
C210	Same as C201.	With R229, forms a high-pass filter circuit.		
C211	Same as C203.	Filter capacitor in B+ supply.		
C212	Same as C203.	Filter capacitor in B+ supply.		
C213	Same as C112. (Capacitor, fixed: paper dielectric; 2 mf $\pm$ 20% - 10%; 600 vdcw.)	Blocking capacitor; prevents current from rectifier CR301 from flowing through R232 or S206 and actuating relay K301.		

B-5. IDENTIFICATION OF PARTS FOR TRANSMISSOMETER INDICATOR ID-353/GMQ-10. (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
C214	Same as C209.	Bypasses to ground any high frequency components present in output of T202 which might disturb calibrator; stabilizes pulse frequency of calibrator on HIGH sensitivity range.		

ELECTRICAL EQUIPMENT

E201	Same as E107. (Holder, fuse: extractor post type for single 3AG fuse.)	Fuse holder for F201.		
E202	Same as E104. (Board, terminal: general purpose; 2 brass nickel pl screw term with solder tabs.)	115 vac input terminals for use in bench tests.		
E203	Board, terminal: general purpose; 9 brass nickel pl screw term.	Terminal board for interconnecting cables.	Jones HB 9-141-B-2	
E204	Lamp, incandescent: switchboard; 145 v, 15 w; bulb T6 clear; candelabra screw base.	Illuminates record chart in M203.	Code 15T6, 145 volt	
E205	Board, terminal: general purpose; 9 pairs solder lug term.	Mounting board for small components.	C-H FL3011	
E206	Board, terminal: general purpose; 14 pairs solder lug term.	Mounting board for small components.	C-H FL3012	

FUSES

F201	Same as F101. (Fuse, cartridge: 1-1/4 amp, 250 v; one time; high time lag.)	Fuses ac power line input to indicator.		
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HARDWARE PARTS

H201	Same as H148. (Mounting, switch: steel, cad pl.)	Mounting for S207.		
H202	Same as H149. (Cover, switch: steel, cad pl; L-shaped.)	Protective cover for S207.		
H203	Same as H156. (Knob: bar; black bakelite; for 1/4" shaft.)	Knob for S202 and S203. (2 required)		
H204	Fastener: latch; cabinet; steel, cad pl.	Fastener for doors of cabinet A201.	ParMet Prod DL-Latch	
H205	Handle: door; steel, chrom pl.	Handle for doors of cabinet A201.	ParMet Prod DL-DoorPull	
H206	Screw, machine: slot drive; RH; steel, nickel pl; 1/4"-20 thd; 3/8" lg; all threaded.	Screw for mounting T202 to bracket A204. (6 required)		H326
H207	Shaft lock: brass, nickel pl; 3/8"; locks 1/4" shafts.	Lock for potentiometers R209, R217, and R224 (as required).	Millen 10061	
H208	Same as H154. (Clamp: capacitor mtg; footed.)	Clamp for mtg C203. (2 required)		
H209	Same as H208.	Clamp for mtg C211. (2 required)		



## B-5. IDENTIFICATION OF PARTS FOR TRANSMISSOMETER INDICATOR ID-353/GMQ-10. (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
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H210	Same as H208.	Clamp for mounting C212. (2 required)		
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JACKS AND CONNECTORS

J201	Connector, female contact: 4 round female contacts.	Connector at indicator for M203.	AN3102A-18-4S	
J202	Same as J101. (Connector, male contact: 6 round male contacts.)	Connector at indicator for lines from terminal board E203.		
J203	Same as J105. (Jack, telephone: for two cond 0.25" diam plug.)	Test jack for output of amplifier stages.		
J204	Same as J203.	Test jack for input signal.		

INDUCTORS

L201	Same as L101. (Reactor: filter choke; 12 hy, 105 ma; 150 ohms dc resistance; 2500 v RMS test; hermetically sealed metal case.)	Filter choke in B+ supply.		
L202	Reactor: filter choke; 0.8 hy, 350 ma; 19.5 ohm dc resistance; 2500 v RMS test; hermetically sealed metal case.	Blocks pulse signal from S205.	GE 7481579	

METERS

M201	Same as M101. (Meter, arbitrary scale: transmission; dc; range 0 to 100; one ma full scale deflection; accuracy 1% of full scale deflection.)	Indicates transmission reading.		
M202	Same as M102. (Meter, frequency indicator: ac, 56 to 64 cycles; vibrating reed movement; hermetically sealed; scale calibrated in CALIBRATION SETTING of 84 to 96.)	Indicates calibration setting corresponding to ac line frequency.		
M203	Meter, ammeter: dc; recording; 0 to 1 ma; metal flush mtg case; accuracy 1% of full scale reading; 1500 ohms resistance; self-contained chart drive, 7-day spring-wound motor.	Records transmission reading.	Esterline-Angus Model A.W.	

CHARTS

M201	Chart: for recording transmission; time graduated in 15 min intervals with hours indicated by blue numerals, transmission axis graduated in 2% intervals to 100% with 10% intervals indicated by bold lines; suitable for 15 days record; 5 31/32" w x 103 ft lg.	Record chart for M203.	Gubelman Publishing Co. Chart 554313-C or Esterline-Angus Chart 4313-C	
M202	Scale, transmission conversion: recorder type; for 500-ft. baseline; has scales for DAY and NIGHT, LOW and HIGH sensitivity ranges; methyl methacrylate with bracket mtg.	Permits conversion of transmission reading to visual range at recorder.	(Not commercially manufactured.)	
M203	Scale, transmission conversion: desk type; for 500-ft baseline; has scales for DAY and NIGHT, LOW and HIGH sensitivity ranges and percent TRANSMISSION; methyl methacrylate.	Permits conversion of transmission reading to visual range at desk.	(Not commercially manufactured.)	

B-5. IDENTIFICATION OF PARTS FOR TRANSMISSOMETER INDICATOR ID-353/GMQ-10. (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
<u>PLUGS</u>				
P201	Connector, male contact: 4 round male contacts; with cable clamp.	Plug for J201 (on cable W201).	AN3106A-18-5P w/AN3057-10	
P202	Same as P103. (Connector, female contact; 6 round female contacts; with cable clamp.)	Plug for J202 (on cable W204).		
P203	Connector, male contact: 2 rectangular parallel contacts; straight; 15 amp, 115 v; part of W205.	Plugs into ac power source.	Hubbell 7057	
<u>RESISTORS</u>				
R201	Resistor, fixed: composition; 18 meg $\pm$ 10%; 1/2 w.	Grid resistor for V201.	RC20BF186K	
R202	Resistor, fixed: composition; 2.2 meg $\pm$ 10%; 1/2 w.	Stopping resistor for V201; reduces grid current during periods of conduction of the tube.	RC20BF225K	R230
R203	Resistor, fixed: composition; 270,000 ohm $\pm$ 10%; 1/2 w.	Quenches discharge through V201.	RC20BF274K	
R204	Same as R112. (Resistor, fixed: composition; 100,000 ohm $\pm$ 10%; 1/2 w.)	Limits suppressor grid current in V201 during discharge; develops feed-back signal.		
R205	Resistor, variable: composition; 100,000 ohm $\pm$ 10%; 2 w; slotted, round metal shaft; linear taper.	With R205A makes sensitivity of indicator on HIGH sensitivity range five times as sensitive as on LOW sensitivity range.	AB JLU1041	
R205A	Resistor, fixed: wirewound; precision; 550,000 ohms $\pm$ 1%; 1/2 w.	With R205 makes sensitivity of indicator on HIGH sensitivity range five times as sensitive as on LOW sensitivity range.	RB13B55002F	
R206	Resistor, fixed: wirewound; precision; 150,000 ohms $\pm$ 1%; 1/2 w.	LOW range sensitivity resistor.	RB13B15002F	
R207	Same as R117. (Resistor, variable: composition; 1000 ohm $\pm$ 10%; 2 w; slotted round metal shaft; linear taper.)	Grid bias adjustment potentiometer for V201.		
R208	Resistor, fixed: wirewound; 100 ohm $\pm$ 5%; 1 w.	Determines minimum grid bias of V201.	RU48101J	R210
R209	Resistor, variable: wirewound; 50 ohm $\pm$ 10%; 2 w; taper A; slotted round shaft.	Permits adjustment of electrical zero of the bridge circuit by varying the "no-signal" voltage on grid of V202.	RA20A1SD500AK	
R210	Same as R208.	Limits range of zero adjustment (R209).		

## B-5. IDENTIFICATION OF PARTS FOR TRANSMISSOMETER INDICATOR ID-353/GMQ-10. (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
R211	Resistor, fixed: composition; 4.7 meg $\pm$ 10%; 1/2 w.	With C204, forms an RC circuit which smooths the voltage applied to grid of V202.	RC20BF475K	
R212	Resistor, fixed: composition; 3000 ohm $\pm$ 10%; 1/2 w.	Introduces degeneration in V202 to improve linearity.	RC20BF302K	
R213	Resistor, fixed: wirewound; precision; 200,000 ohm $\pm$ 1%; 1/2 w.	Fixed arm in the bridge; plate load of V202.	RB13B20002F	
R214	Resistor, fixed: wirewound; 10,000 ohm $\pm$ 5%; 30 w.	Fixed arm in the bridge; plate load of V203.	RW34F103	
R215	Resistor, fixed: composition; 1500 ohm $\pm$ 5%; 1 w.	Substitutes for resistance of M203.	RC30BF152J	
R216	Resistor, fixed: wirewound; pre- cision; 50,000 ohms $\pm$ 1%; 1/2 w.	With R217 and R218, forms B+ potential divider.	RB13B50001F	R218
R217	Resistor, variable: composition; 50,000 ohm $\pm$ 10%; 2 w; slotted, round metal shaft; linear taper.	With R216 and R218, forms B+ potential divider; ad- justs calibration by vary- ing B+ to plate of V201.	AB JLU5031	R224
R218	Same as R216.	With R216 and R217, forms B+ potential divider.		
R219	Not used.			
R220	Resistor, fixed: composition; 100,000 ohm $\pm$ 10%; 1 w.	Plate load resistor for V204.	RC30BF104K	
R221	Resistor, fixed: composition; 470,000 ohm $\pm$ 10%; 1/2 w.	Dropping resistor for po- tential on screen grid of V204.	RC20BF474K	
R222	Same as R101. (Resistor, fixed: composition; 1 meg $\pm$ 10%; 1/2 w.)	Grid resistor for V204.		
R223	Same as R105. (Resistor, fixed: composition; 10,000 ohm $\pm$ 10%; 1 w.)	Cathode bias resistor for V204.		
R224	Same as R217.	Plate load resistor for V205; adjusts signal strength to grid of V201.		
R225	Same as R222.	Grid resistor for V205.		
R226	Resistor, fixed: composition; 470 ohm $\pm$ 10%; 1/2 w.	Cathode bias resistor for V205.	RC20BF471K	
R227	Resistor, variable: composition; 5 meg $\pm$ 20%; 2 w; slotted, round metal shaft; linear taper.	With R230, adjusts frequen- cy of the HIGH sensitivity range calibration signal to one-fifth of LOW sensitivity range calibration frequency.	AB JLU5052	
R228	Same as R110. (Resistor, fixed: composition; 47,000 ohm $\pm$ 10%; 1/2 w.)	Limits current through V207 when R227 and R230 are shorted.		
R229	Same as R228.	With C210, forms a high- pass filter circuit.		

B-5. IDENTIFICATION OF PARTS FOR TRANSMISSOMETER INDICATOR ID-353/GMQ-10. (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
R230	Same as R202.	With R227, adjusts frequency of the HIGH sensitivity range calibration signal to one-fifth of LOW sensitivity range calibration frequency.		
R231	Resistor, fixed; wirewound; 3500 ohm $\pm$ 5%; 12 w.	Ballast resistor for V209 and V210.	RW32F352 or RW32G352	
R232	Resistor, fixed; wirewound; 500 ohm $\pm$ 5%; 10 w.	Loads transmission line to reduce effects of line noise.	RW31F501	
<u>SWITCHES</u>				
S201	Same as S103. (Switch, toggle: SPDT.)	Switches recording meter M203 in or out of circuit.		
S202	Switch, rotary; position #1 -- 3A; position #2--3A; 3 amp, 110 vac.	Selects range of sensitivity for operation; actuates marker pen on M203 to indicate range of operation; determines frequency of calibrator.	Mossman DP 4402TL-NT- 3PDT	
S203	Same as S104. (Switch, rotary: position #1--1C, position #2--1A; 3 amp, 110 vac; momentary contact in position #2.)	Energizes calibrator and replaces pulse-amplifier signal on grid of V204 with calibrator signal.		
S204	Same as S102. (Switch, toggle: DPST.)	Main ac power switch.		
S205	Switch, toggle: SPST; normally off, momentarily on.	Actuates power relay K301 at projector power supply.	ST12C	S206
S206	Same as S205.	Shorts input signal to amplifier for check on electrical zero of bridge circuit.		
S207	Not used.			

TRANSFORMERS

T201	Same as T103. (Transformer, power: filament and plate type; input 117 v, 50/60 cyc, single ph; sec #1, 740 vCT at 150 ma, sec #2, 5 vCT at 3 amp, sec #3, 6.3 vCT at 4 amp, sec #4, 6.3 vCT at 1 amp; hermetically sealed metal case.)	Supplies ac power to filaments and B+ rectifier.		
T202	Transformer, power regulating: fixed; input 95-125 volts, 57-63 cyc, single phase, 0.120 kva; output 115 v, 1.04 amp; regulation $\pm$ 1-1/2% on 57-63 cyc; 1500 v insulation test voltage; vacuum varnish impregnated; enclosed, steel case; compensated for variable input frequency.	Regulates voltage of input ac power.	Sola Elec 6088	T301



## B-5. IDENTIFICATION OF PARTS FOR TRANSMISSOMETER INDICATOR ID-353/GMQ-10. (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
<u>VACUUM TUBES</u>				
V201	Same as V108. (Tube, electron: JAN-2050; thyratron.)	Electronic switch; discharges C202 once for each pulse, producing a current whose average value is proportional to the pulse rate.		
V202	Tube, electron: JAN-6J5; triode.	Produces a current through M201 proportional to the voltage developed in the cathode circuit of V201.	JAN-6J5	V205
V203	Same as V104. (Tube, electron: JAN-OC3; diode voltage regulator.)	Permits elimination of the "no-signal" current through M201; regulates voltage across V202.		
V204	Tube, electron: JAN-6SJ7; pentode.	First-stage pulse signal amplifier.	JAN-6SJ7	
V205	Same as V202.	Second-stage pulse signal amplifier.		
V206	Same as V106. (Tube, electron: JAN-6H6; duo-diode rectifier.)	Half-wave rectifier for calibrator.		
V207	Same as V107. (Lamp, glow: 115 v, 1/4 w; bulb T-4 1/2 clear; double contact bayonet base.)	Generates calibration pulses.		
V208	Same as V103. (Tube, electron: JAN-5Y3GT; duo-diode rectifier.)	B+ rectifier.		
V209	Same as V105. (Tube, electron: JAN-OD3; diode voltage regulator.)	With V210, regulates B+ for V201, V202, and V203.		
V210	Same as V209.	With V209, regulates B+ for V201, V202, and V203.		

WIRES AND INTERCONNECTING CABLES

W201	Cable assembly, special purpose: 4 #16 AWG stranded copper cond; 600 v working; type S0 neoprene jacket; 43" lg excluding terminations; AN3106A-18-5P connector with AN3057-10 cable clamp on one end, other end terminated with solder lugs.	Cable between indicator and M203.	C-H FL2941	
W202	Cable assembly, power: type S0 cable; 2 #16 AWG stranded copper cond; 600 v working; 44" lg excluding terminations; solder lugs on one end, other end stripped 1/2".	Cable between E203 and E204.	C-H FL3064	
W203	Not used.			

B-5. IDENTIFICATION OF PARTS FOR TRANSMISSOMETER INDICATOR ID-353/GMQ-10. (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
W204	Cable assembly, special purpose: 6 #16 AWG stranded copper cond; 600 v working; type S0 neoprene jacket; 50" lg excluding terminations; AN3106A-22-5S connector with AN3057-12 cable clamp on one end, solder lugs on other end.	Cable between indicator and terminal block E203.	C-H FL2942	
W205	Cable assembly, power: 2 #16 AWG stranded copper cond; type S0 cable; 600 v working; 10 ft. lg excluding terminations; Hubbell connector #7057 on one end, solder lugs on other end.	Cable from power source to E203.	C-H FL4367	

SOCKETS

X201	Same as X103. (Socket, tube: octal.)	Socket for V201.
X202	Same as X201.	Socket for V202.
X203	Same as X201.	Socket for V203.
X204	Same as X201.	Socket for V204.
X205	Same as X201.	Socket for V205.
X206	Same as X201.	Socket for V206.
X207	Same as X107. (Socket, tube: neon lamp; double contact candleabra bayonet; brass nickel pl body; 105-125 v, 1/4 w.)	Socket for V207.
X208	Same as X201.	Socket for V208.
X209	Same as X201.	Socket for V209.
X210	Same as X201.	Socket for V210.

B-6. IDENTIFICATION OF PARTS FOR RECORDER.

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
M203A	Pen, recorder: glass capillary-tubing point; capillary tube brass, nickel pl; indicator target above pen point; part of meter M203.	Records reading of meter M203.	Esterline-Angus 8510	
M203B	Pen, marker: glass capillary-tubing point; brass, chromium pl; part of meter M203.	Records indication of sensitivity range of indicator.	Esterline-Angus 9892	
M203C	Accessory kit, recorder: consists of one 2-ounce bottle red recording ink, one ink reservoir filler, one pen filler, one glass pen tip.	Inking kit for meter M203.	Esterline-Angus "AW" Accessory Kit Code ZEMHO	

## B-6. IDENTIFICATION OF PARTS FOR RECORDER. (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
M203D	Pen tip, recorder: glass capillary-tubing point; part of meter M203.	Replacement tip for recorder pen.	Esterline-Angus 82C	
M203E	Reservoir, ink: brass, tin pl; part of meter M203.	Holds ink for recorder pen.	Esterline-Angus 8516	

## B-7. IDENTIFICATION OF PARTS FOR TRANSMISSOMETER PROJECTOR ML-461/GMQ-10 AND POWER SUPPLY PP-908/GMQ-10.

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
<u>STRUCTURAL PARTS</u>				
A301	Housing: lamp; cast aluminum, anodized.	Holds projector lamp.	C-H FL3144	
A302	Hood: lamp; sheet aluminum, anodized.	Stray light shield; protects lamp E301.	C-H FL3317	
A303	Cover: rear; cast aluminum, anodized.	Cover for A301.	C-H FL3145	
A304	Plate, base: brass.	Mounting base for projector.	C-H FL3296	
A305	Table, mounting: brass.	Mounting table for projector.	C-H FL3295	
A306	Ring, retainer: steel, cad pl.	Holds projector lamp E301 in position.	C-H FL3644	
A307	Cabinet: projector power supply; cast aluminum.	Cabinet for projector power supply unit.	C-H FL3609	
A308	Bracket, mounting: for transformer.	Mounting bracket for transformer T301.	C-H FL3606	
A309	Same as A113. (Mounting sub-assembly: front; aluminum.)	Front mounting base for cabinet A307.		
A310	Same as A114. (Mounting sub-assembly: rear; aluminum.)	Rear mounting base for cabinet A307.		
A311	Same as A116. (Terminal box with cover: gray cast iron.)	Waterproof housing for terminal blocks E205 and E306 and circuit breaker K302.		
A312	Same as A117. (Hub plate, conduit: blank; gray cast iron.)	Hub plate for A311.		
A313	Same as A118. (Hub plate, conduit: one 2 1/2" threaded conduit hub; gray cast iron.)	Hub plate for A311.		
A314	Same as A119. (Hub plate, conduit: one 1" threaded conduit hub; gray cast iron.)	Hub plate for A311.		
A315	Same as A120. (Plate, mounting: sheet steel.)	Mounting plate in A311 for terminal blocks and circuit breaker.		

B-7. IDENTIFICATION OF PARTS FOR TRANSMISSOMETER PROJECTOR ML-461/GMQ-10  
AND POWER SUPPLY PP-908/GMQ-10. (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
<u>MOTORS</u>				
E301	Motor, ac: synchronous type; 20 ounce-inches torque at 1/60 rpm; 115 v, 60 cyc, single phase, 2.5 w; sealed-in lubrication; high starting torque.	Opens S302A hourly.	Hayden 1600A	
<u>CAPACITORS</u>				
C301	Same as C205. (Capacitor, fixed: mica dielectric; 1000 mmf $\pm$ 10%; 500 vdcw.)	Blocking capacitor for J301.		
<u>RECTIFIERS</u>				
CR301	Rectifier, metallic: input 26 vac, 60 cyc; output 19 vdc, 225 ma.	Supplies dc power to operate K301.	Fed Tel & Rad 102B1EX1	
<u>ELECTRICAL EQUIPMENT</u>				
E301	Lamp, incandescent: 6 v, 120 w; bulb PAR-64 clear; C-6 filament; burn filament vertical.	Projector lamp.	GE 120 PAR Transmis- someter	
E302	Same as E107. (Holder, fuse: extractor post type for single 3AG fuse.)	Fuse holder for F301.		
E303	Board, terminal: general purpose; 12 brass nickel pl screw term.	Terminal board for interconnecting cables.	Jones HB 12-141-B-2	
E304	Same as E102. (Insulator, stand-off: conical shape; white porcelain glazed.)	Insulator for mounting C301.		
E305	Same as E109. (Board, terminal: general purpose; 8 brass screw term.)	Terminal board for field cabling.		
E306	Same as E110. (Board, terminal: general purpose; 4 brass screw term.)	Terminal board for field power cable.		
<u>FUSES</u>				
F301	Fuse, cartridge: 2 amp, 250 v; one time; high time lag.	Fuses ac power line input to projector power supply.	Buss MDL-2	
<u>HARDWARE PARTS</u>				
H301	Pin, hinge: aluminum; 1/4" diam x 6 5/32" lg; drilled with 3/32" diam hole 3/32" from each end.	Hinge pin for cover A303.	C-H FL3302	
H302	Screw, machine: hex head; slot drive; captive; brass, nickel pl; 5/16"-18 thd; 1-1/8" lg; necked portion 7/32" diam; 3/8" threaded portion.	Holds cover on housing A301. (4 required)	C-H FL3303	



B-7. IDENTIFICATION OF PARTS FOR TRANSMISSOMETER PROJECTOR ML-461/GMQ-10  
AND POWER SUPPLY PP-908/GMQ-10. (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
H303	Screw, machine: hex head; brass, nickel pl; 1/2"-13 thd; 1-3/4" lg; threaded portion 1-1/4" lg.	Mounting screw to hold housing A301 in yoke of base plate A304. (2 required)		
H304	Screw, machine: slot drive; RH; steel, cad pl; #8-32 thd; 3/8" lg; all threaded.	Mounts hood A302 to housing A301. (9 required)		
H305	Gasket: lamp; fiber.	Gasket between lamp E301 and housing A301.	C-H FL3308	
H306	Screw, machine: slot drive; Fil H; brass, nickel pl; #10-24 thd; 3/8" lg; all threaded.	Mounts retaining ring A306 in housing A301. (3 required)		
H307	Washer, flat: fiber; round, 11/64" ID, 25/64" OD, 0.02" thk.	Makes H306 captive. (3 required)		
H308	Fitting, conduit: flexible cable to conduit; aluminum; 3/4" male thd.	Watertight entrance fitting.	C-H CGY2352	H333
H309	Bushing: reducer; rubber.	Bushing for fitting H308.	C-H Bush113D	H334
H310	Fitting, conduit: reducer; steel, cad pl; 1" to 3/4".	Reduces size of threaded hole.	C-H RE32	H335
H311	Gasket: cover; silicone-treated asbestos; round.	Gasket for cover A303.	C-H FLA306	
H312	Screw, machine: slot drive; hex head; bronze, nickel pl; 3/8"-24 thd; 2" lg; all threaded; oval point.	Horizontal alignment adjustment screw. (2 required)	C-H FL3301	
H313	Nut, hexagon: bronze, nickel pl; 3/8"-24 thd; 3/8" thk; 11/16" wd across flats.	Locking nut for horizontal adjustment screws. (4 required)	C-H FL1847	H315
H314	Screw, machine: hex head; bronze, nickel pl; 3/8"-24 thd; 2-3/4" lg; all threaded; oval point.	Vertical alignment adjustment screw. (2 required)	C-H FL3300	
H315	Same as H313.	Locking nut for vertical adjustment screw. (4 required)		
H316	Nut, hexagon: brass, nickel pl; 1/2"-13 thd; 1/2" thk; 5/8" wd across flats.	Nut for studs on mounting table A305. (4 required)		
H317	Nut, hexagon: bronze, nickel pl; 5/8"-11 thd; 5/8" thk; 1" wd across flats.	Nut for center stud on mounting table A305.		
H318	Same as H126. (Lock: key latch; ward mechanism.)	Latch for cabinet A307.		
H319	Same as H127. (Key, lock: brass.)	Key for H318.		
H320	Screw, machine: slot drive; RH; steel, nickel pl; 3/8"-16 thd; 1" lg; all threaded.	Fastens mounting brackets A308 inside cabinet A307. (4 required)		

B-7. IDENTIFICATION OF PARTS FOR TRANSMISSOMETER PROJECTOR ML-461/GMQ-10  
AND POWER SUPPLY PP-908/GMQ-10. (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
H321	Nut, hexagon: steel, nickel pl; 3/8"-16 thd; 5/16" thk; 5/8" wd across flats.	Nut for screws H320. (4 required)		
H322	Same as H125. (Gasket: door; silicone-treated asbestos.)	Gasket for door of cabinet A307.		
H323	Same as H153. (Screw, machine: slot drive; hex head; steel, nickel pl; 3/8"-16 thd; 3/4" lg; all threaded.)	Screw for mounting sub- assemblies A309 and A310 to cabinet A307. (6 required)		
H324	Same as H146. (Strike, lock: steel; L-shaped.)	Strike for latch H318.		
H325	Not used.			
H326	Same as H206. (Screw, machine: slot drive; RH; steel, nickel pl; 1/4"-20 thd; 3/8" lg; all threaded.)	Screw for mounting volt- age-regulating trans- former T301 to bracket A308. (6 required)		
H327	Same as H152. (Nut, hexagon: brass, cad pl; 1/2"-13 thd; 1/2" thk; 5/8" wd across flats.)	Nut for studs on mount- ings A309 and A310. (4 required)		
H328	Same as H128. (Bolt, double end- ed: stainless steel; 1/4"-20 thd; 2-3/4" lg; 3/8" threaded length each end; less nuts.)	Hinge bolt for door of cabinet A307. (2 required)		
H329	Same as H129. (Nut, hexagon: steel, chromium pl, 1/4"-20 thd; 1/4" thk; 7/16" wd across flats.)	Nut for H328. (4 required)		
H330	Screw, machine: slot drive; RH; steel, nickel pl; 5/16"-18 thd; 3/4" lg; all threaded.	Screw for mounting pro- jector power supply unit in cabinet A307. (3 required)		
H331	Nut, hexagon: steel, nickel pl; 5/16"-18 thd; 5/32" thk; 9/16" wd across flats.	Nut for H330. (3 required)		
H332	Same as H156. (Knob: bar; black bakelite; for 1/4" shaft.)	Knob for S303.		
H333	Same as H308.	Watertight entrance fitting.		
H334	Same as H309.	Rubber bushing for H333.		
H335	Same as H310.	Reduces size of thread- ed hole.		
H336	Same as H136. (Fitting, conduit: flexible cable to conduit; brass; 1" male thd.)	Watertight entrance fitting. (2 required)		
H337	Same as H137. (Bushing: reducer; rubber.)	Bushing for H336. (2 required)		
H338	Same as H138. (Washer, gland: steel, cad pl; 1" ID, 1 3/8" OD, 0.025" thk.)	Permits tightening of H336 without distorting H337. (2 required)		

B-7. IDENTIFICATION OF PARTS FOR TRANSMISSOMETER PROJECTOR ML-461/GMQ-10  
AND POWER SUPPLY PP-908/GMQ-10. (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
H339	Same as H161. (Nut, check; hexagon; steel, cad pl; 1", pipe thd.)	Locks fitting H336 in place. (2 required)		
H340	Same as H164. (Gasket: cover; rubber; 3/8" diam, 46" lg.)	Gasket for cover of terminal box A311.		
H341	Same as H165. (Gasket: hub; cork.)	Gasket between hub plates and terminal box A311. (3 required)		

JACKS AND CONNECTORS

J301	Same as J105. (Jack, telephone: for two cond 0.25" diam plugs.)	Signal line test jack.		
J302	Same as J104. (Connector, female contact: 2 curved contacts; accepts standard 2-rectangular contact male plug.)	Convenience outlet for ac power.		

RELAYS AND CIRCUIT BREAKERS

K301	Relay, armature: contact arrangement 1B; contact rating 1.5 amp at 115 v, 60 cyc inductive load; single wound coil, 6 vdc, 7.5 ma; 300 ohm dc resistance; octal socket base; hermetically sealed metal envelope.	Breaks ac power to voltage-regulating transformer T301 for back-ground check (actuated by S205).	WL Model 108-Special	
K302	Same as K101. (Circuit breaker: magnetic; 2 pole; 125 vac, 5 amp; molded black bakelite case; toggle action, manual reset.)	Circuit breaker for input power.		

METERS

M301	Same as M101. (Meter, arbitrary scale: transmission; dc; range 0 to 100; one ma full scale deflection; accuracy 1% of full scale deflection.	Indicates transmission reading (in series with M101).		
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SWITCHES

S301	Same as S102. (Switch, toggle: DPST.)	Main ac power switch.		
S302	Switch subassembly: for adjustable periodic lamp cutoff; consists of synchronous motor (B301) and SPST normally off sensitive switch (S302A); motor 115 v, 60 cyc, 1/60 rpm.	Consists of B302 and S302A.	Hayden Series 5800 Repeat Interval Timer	

B-7. IDENTIFICATION OF PARTS FOR TRANSMISSOMETER PROJECTOR ML-461/GMQ-10  
AND POWER SUPPLY PP-908/GMQ-10. (cont.)

Symbol	Name of Part and Description	Function of Part	Type Number (JAN or Mfr)	Other Identical Parts
S302A	Switch, sensitive: SPST; 125 v, 10 amp; momentary action, normally closed.	Breaks ac power to voltage-regulating transformer T301.	Micro Sw BZ-2RW13	
S303	Switch, rotary: 1 pole, 5 position; 10 amp, 150 v; silver alloy cont; ceramic body; solder lng term.	Selects operating voltage for lamp E301.	Ohmite 111-5	

TRANSFORMERS

T301	Same as T202. (Transformer, power regulating: fixed; input 95-125 volts, 57-63 cyc, single phase, 0.120 kva; output 115 v, 1.04 amp; regulation $\pm 1/2\%$ on 57-63 cyc; 1500 v insulation test voltage; vacuum varnish impregnated; enclosed, steel case; compensated for variable input frequency.)	Supplies regulated ac voltage to T303.		
T302	Transformer, power: filament; 115 v, 60 cyc, single ph; 1 outpnt winding; sec 20 v, 0.05 amp; 2500 v insulation; hermetically sealed metal case.	Supplies ac power to CR301.	GE 7481529	
T303	Transformer, power: filament; 115 v, 60 cyc, single ph; 1 input winding, tapped to give outputs of 4.8, 5.4, 6.0, 6.6, and 7.2 v at 25 amp; 1750 v insulation; hermetically sealed metal case.	Reduces output voltage of T301 to the operating voltage of lamp E301.	Raytheon 292-1602G1	

WIRES AND INTERCONNECTING CABLES

W301	Cable assembly, power: type SE, style U; 2 #6 AWG stranded copper cond, with #6 AWG stranded copper concentric sheath; type RH rubber insulation; 600 v working; 10 ft lg excluding terminations; solder lugs on both ends.	Connects ac power to E301.	C-H FL4122	
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SOCKETS

X301	Same as X103. (Socket, tube: octal.)	Socket for K301.		
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