MULTIFREQUENCY PULSING

RECEIVING EQUIPMENT

EQUIPMENT DESIGN REQUIREMENTS

COMMON SYSTEMS

1. GENERAL

Scope

1.01 This specification, with its supplementary information, covers the equipment design requirements for the framework, equipment, and circuits to be used in the manufacture and installation of the multifrequency pulsing receiving equipment.

1.02 This specification is reissued to make additions, to change the ratings of some items, and to clarify certain descriptions throughout the specification. These include the following:

(a) Correct error rating ED-92590-01, Group 1 "Mfr Disc."

(b) Correct error rating ED-92591-30, Group 2 as Standard instead of Group 1.

(c) Add Note B for ED-92590-30, ED-92591-30, and ED-92592-30.

Capacity

1.03 MF pulsing receiving units, J95102B, may be grouped on a separate bay or with their associated sender, register, test, or monitoring equipment as in No. 5 crossbar offices (see 1.09). In the first arrangement, twelve receivers, two 115-volt ac supply units, and the required adjusting tone supply equipment are mounted on an 11-foot 6-inch relay rack, J95102A. For other applications, the specific arrangements are as covered in the information for the associated sender, register, etc.

Description

1.04 The function of the multifrequency (MF) pulsing receiver, J95102B, is to convert incoming voice-frequency ac signals to dc pulses. These pulses are generally used to operate the digit relays in the associated senders and registers. The MF pulsing receiver is also used with key monitoring and other test equipment to check the integrity of MF pulse signals originating in operator keysets and senders.

1.05 The incoming signals to the MF pulsing receiver consist of a train of various combinations of two of six possible frequencies. The receiver output thus provides for 15 possible combinations of dc signals to convey digital or control information between installations. The frequency combinations used are as follows:

SIGNAL	FREQUENCY					
	700 (0)	900 (1)	1100 (2)	1300 (4)	1500 (7)	1700 (10)
KP			X			X
0				X	X	
1	X	X				
2	X		X			
3		X	X			
4	X			X		
5		X		X		
6			X	X		
7	X				X	
8		X			X	
9			X		X	
ST					X	X

1.06 Where an MF pulsing receiver unit is provided with its associated register, sender, or test frame, etc, the detailed arrangements are

as covered in the specifications for the equipment, as, for example, in No. 5 crossbar incoming register MF (IRMF) frames where the receiver is provided on a once per IRMF register basis.

1.07 The MF pulsing receiving unit is a panel mounted unit occupying the space of five 2- by 23-inch mounting plates. In addition to conventional apparatus, it accommodates five plug-in units of three types: one volume limiter unit ED-92590-30, one bias control unit ED-92591-30, and three channel units ED-92592-30. This arrangement simplifies maintenance.

1.08 All plug-in units employ a common housing 1-3/4 inches wide, 3-inches high, and 2-3/4 inches deep. This is enclosed on four sides but with an open top and bottom for heat venting. Miniature electron tubes extend horizontally from the front panel. The housing, the inner panel, the plug, and plug adapter are common to the three unit types. The adapter is required to orient the plug differently in each unit type to prevent insertion in any but its intended location on the receiver.

1.09 The J95102A MF pulsing receiver frame (for use in other than No. 5 crossbar offices) is a 23-inch bulb-angle relay rack framework, 11-feet 6-inches high. It provides mounting facilities for a maximum of twelve J95102B MF pulsing receiver units and comes equipped with two J95102C 115-volt ac supply units, and one ED-92621-31 adjusting supply jacks unit (when MF current supply is available in the office), or one J95102G adjusting supply jacks unit (when MF current supply is not available). This frame is normally used where a considerable number of receiving units is required (see Fig. 1).

1.10 The J95102C 115-volt ac supply unit is mounted on a 2- by 23-inch plate. It provides the receptacles for supplying ac power to six receivers and contains the associated fuses and fuse alarm equipment. Also included are the fuse and transformer used with the low-voltage transfer feature. This is required only on the first of six 115-volt ac supply units on the same branch circuit. This unit is designed to provide for termination of the branch circuit armored

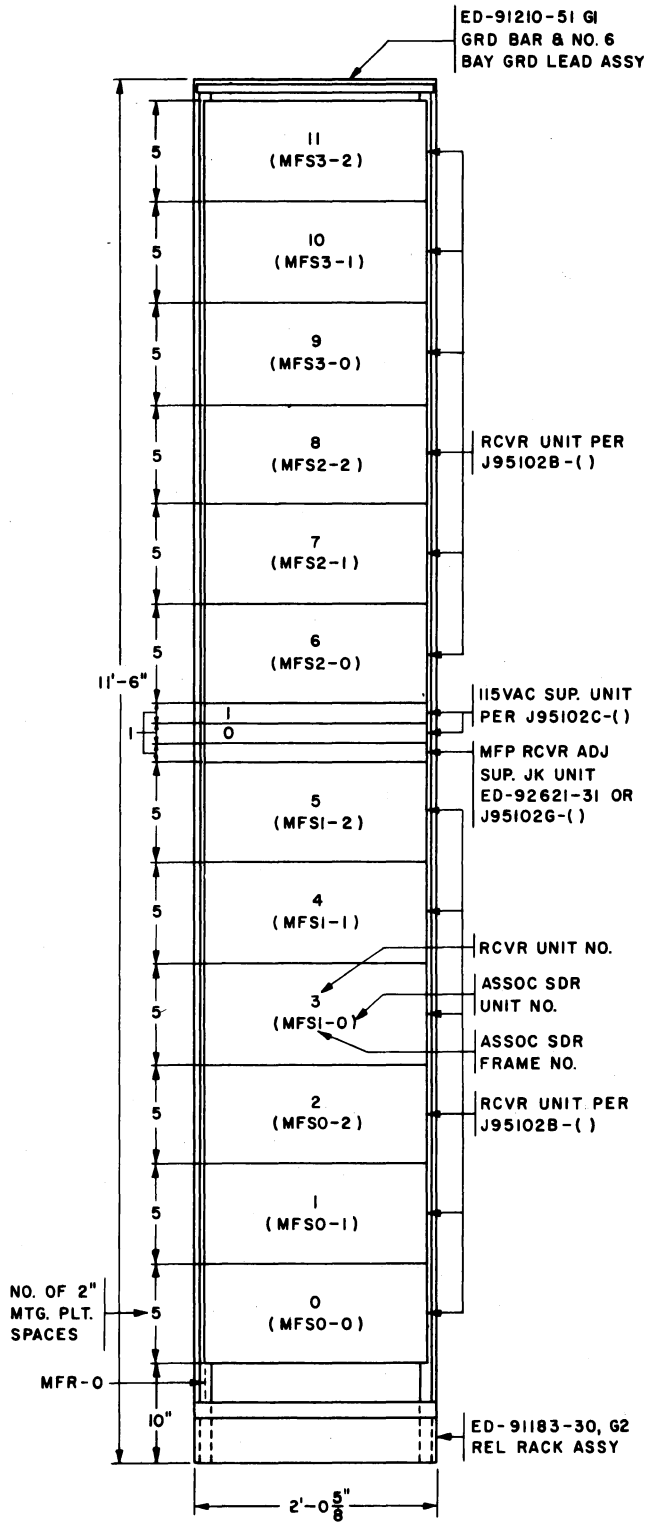

Fig. 1 — J95102A Multifrequency Pulsing Receiver Frame

cable wiring. All 115-volt ac wiring and connectors are enclosed (see 1.18).

1.11 The ED-92621-31 MF pulsing receiver adjusting supply jacks unit, for use with receivers having an MF current supply available as an adjusting tone source, is mounted on a 2- by 23-inch plate. It contains the equipment which provides jack appearances of the adjusting tones supplied through jacks on the ED-91976-31 unit (see 1.13) for patching to the J95102B MF pulsing receiver unit.

1.12 The ED-91976-31 test and/or MF pulsing receiver adjusting unit, for use with receivers having an MF current supply available as an adjusting tone source, are mounted on a 1-3/4 by 23-inch plate. It contains the equipment for delivering the adjusting tones supplied by the J98609A MF current supply oscillator group equipment to the ED-92621-31 unit for patching to the MF pulsing receiver.

1.13 The J95102G MF pulsing receiver adjusting supply jacks unit, for use with receivers ***not*** having an MF current supply available as an adjusting tone source, is mounted on a 2- by 23-inch plate. It contains equipment which provides jack appearances for the adjusting tones supplied through jacks on the J95102F unit for patching to the J95102B MF pulsing receiver unit.

1.14 The J95102F MF pulsing receiver adjusting unit, for use with receivers ***not*** having the MF current supply available as an adjusting tone source, is mounted on a 2- by 23-inch plate. It contains the equipment for delivering the adjusting tone supplied by a 1-mW 1000-Hz tone source to the J95102G unit for patching to the MF pulsing receiver.

1.15 A J95102G unit will be required when providing the J95102F unit, and an ED-92621-31 unit will be required when ordering the ED-91976-31 unit, except in a No. 5 crossbar office when associated receivers are located on an IRMF frame (comparable jacks are located in the frame upright). One J95102G unit or one ED-92621-31 unit is required per six MF pulsing receivers.

1.16 The J95102H 115-volt ac supply unit for CAMA MF receiver frame No. 5 crossbar is similar to the J95102C 115-volt ac supply unit described in 1.10 except for the addition of a KS-8512, List 3B resistor to obtain battery and the substitution of certain pieces of apparatus to upgrade equipment. This unit is mounted on a 2- by 23-inch plate.

1.17 The J95102J building-out capacitor unit is mounted on a 1-3/4 by 23-inch plate. It provides a building-out capacitor for each of six receivers for office cable balancing, where required.

1.18 In the event of commercial ac power failure, transfer control and emergency filament supply equipments provide transfer to central office battery operation. At such time, the paralleled filaments of a maximum of seven receivers are connected in a series chain. Six such chains are served by one emergency filament supply unit and its associated transfer control unit. As a seventh receiver in a chain is assigned only for test purposes, the emergency equipment is normally considered to have a capacity of 36 regular receivers. Only the first three of the six chains are arranged to accommodate a seventh receiver, making a maximum capacity of 39 receivers for one emergency filament supply equipment. Where installations are equipped with seven or fewer MF receivers and emergency operation is desired, a minimum of two series-filament groups should be provided. For other applications, the specific arrangements are as covered in the information for the associated sender, register, etc.

1.19 The J95102D transfer control unit, which occupies the space of two 2- by 23-inch mounting plates, controls the transfer of a maximum of six series-filament groups of receivers from ac power to the 48-volt central office battery when the ac voltage drops below 90 percent of its rated value. It also provides means for detecting trouble ground or battery or shorts in the receiver filament circuit and includes appropriate signaling equipment for these conditions.

1.20 The emergency filament supply unit, J92102E, which occupies the space of five 2- by 23-inch mounting plates, contains the fuses, dropping resistors, and cut-in relays for a maximum of six series-filament groups of receivers.

1.21 The transfer control unit, J95102D, and the emergency filament supply unit, J95102E, may be mounted on miscellaneous fuse or relay rack bays. The relay rack location is preferred with the emergency filament supply unit at the top of the bay, and the transfer control unit at a convenient height from the floor. Where miscellaneous relay rack location is used, arrangement is as shown in ED-92724-10 and ED-92724-30.

1.22 In systems using power feeder segregation, the fusing of the senders influences the association of their receivers with the commercial branch circuits, ac supply units, and transfer control and emergency filament supply units. Six ac supply units on one branch circuit, the associated transfer control unit, and emergency filament supply unit serve 36 to 39 regular receivers. The corresponding senders, the miscellaneous fuses for the receivers, ac supply unit, transfer control unit, and emergency supply for the latter must all be on the same power feeder. Additional miscellaneous receivers as described in 1.03 should be assigned accordingly.

Floor Plan Arrangement

1.23 Receiver frames are normally located close to the associated senders. For example, in No. 4 toll switching systems, the receiver frame is flanked on each side by two sender frames creating a 5-frame floor plan unit accommodating twelve senders and their twelve associated receivers.

1.24 Where the design of the associated equipment provides space for the receiver, the floor plan practices apply for the equipment.

1.25 Voltage drop limitations require that emergency filament supply units be so located that each supply and the associated series-filament group of receivers may be interwired with not more than a maximum of 280 feet of wiring.

Current Drain Data

1.26 For one J95102B MF pulsing receiver:

At +130 volts:	Steady State drain	50 mA
	Pulsing drain	160 mA
At −48 volts:		250 mA

For emergency operation, 6 amp at −48 volts must be available to the emergency filament supply unit, J95102E, for each series-filament group.

SUBDIVISIONS OF EQUIPMENT AND DETAILED INDEX

WECo J drawings listed should be ordered by referring to the prefix and base number and requesting the current dash (—) number.

EQUIPMENT CODE	RATING OF UNIT	TITLE	SIZE INCHES	WEIGHT LB	WEIGHT OZ	EQUIPMENT DRAWING	CIRCUIT DRAWING	CKT PER UNIT	MTG PLT PER UNIT
ED-91976-31	AT&TCo Std	Receiver Adjusting Unit	1-3/4 by 23	77		ED-91976-( )	SD-95664-01	1	1(1-3/4)
ED-92590-30	AT&TCo Std	Volume Limiter Unit				ED-92590-( )	SD-95536-01		
ED-92591-30	AT&TCo Std	Bias Control Unit				ED-92591-( )	SD-95536-01		
ED-92592-30	AT&TCo Std	Channel Unit				ED-92592-( )	SD-95536-01		
ED-92621-31	AT&TCo Std	Adjusting Supply Jacks Unit	2 by 23			ED-92621-( )	SD-95664-01	1	1
J95102A	AT&TCo Std	MF Pulsing Receiver Frame	11'-6 High for 2 by 23 Mtg Plates			J95102A-( )	SD-95536-01	14	63
J95102B	AT&TCo Std	MF Pulsing Receiving Unit	10 by 23	45		J95102B-( )	SD-95536-01	1	5
J95102C	AT&TCo Std	115-Volt AC Supply Unit	2 by 23	8		J95102C-( )	SD-95676-01	1	1
J95102D	AT&TCo Std	Transfer Control Unit	4 by 23	7	8	J95102D-( )	SD-95676-01	1	2
J95102E	AT&TCo Std	Emergency Filament Supply Unit	10 by 23	25		J95102E-( )	SD-95676-01	1	5
J95102F	AT&TCo Std	MF Pulsing Receiver Adjusting Unit	2 by 23	5		J95102F-( )	SD-95779-01	1	1
J95102G	AT&TCo Std	MF Pulsing Receiver Adjusting Supply Jacks Unit	2 by 23	2		J95102G-( )	SD-95779-01	1	1
J95102H	AT&TCo Std	115-Volt AC Supply Unit for CAMA MF Receiver Frame No. 5 Crossbar	2 by 23	8		J95102H-( )	SD-95676-01	1	1
J95102J	AT&TCo Std	Building-Out Capacitor Unit	1-3/4 by 23	5	8	J95102J-( )	SD-95536-01	1	1(1-3/4)

Circuit Schematic Index

CIRCUIT DRAWING	J95102 EQUIP CODE
SD-95536-01	A,B,J,
SD-95664-01	ED-91976-31
	ED-92621-31
SD-95676-01	ED-26683-11
SD-95779-01	C,D,E,H, F,G,

2. SUPPLEMENTARY INFORMATION

800-600-000 — List of General Equipment Requirement Sections

801-000-000 — Equipment Design and General Equipment Requirements and Engineering Information — Common Systems

J23064 — 819-601-150 — Relay Rack — No. 5 Crossbar System

J97025 — 801-006-155 — Relay Rack — Common Systems

J97033 — 801-010-150 — Relay Rack Fuse Bays — Common Systems

J98609 — 801-620-151 — MF Current Supply — Common Systems

X-67459 — Manufacturing Testing Requirements for MF Pulsing Receivers per J95102B

Floor Plan Data — Section 7.1, Sheet 33 Section 10.3, Sheet 23

3. DRAWINGS

For additional drawings forming a part of this specification, see listings under Subdivisions of Equipment and Detailed Index.

Equipment

ED-92724-10 — Relay Rack Equipment Arrangement for Mounting of Emergency Filament Supply and Associated Transfer Control Equipment Used with J95102B MF Pulsing Receiving Units (Except No. 5 Crossbar)

ED-92724-30 — Jacks Mounting Assembly Arranged for Frame Line Jacks and Test Battery for Use with Emergency Filament Supply Equipment Associated with J95102B MFP Receiving Units

Wiring and Cabling

ED-25346-01 — Power Feeder Cabling, No. 1 Crossbar, and Tandem

ED-68066-01 — Power Feeder Cabling, Toll Switching Systems No. 4, A4A, 4A, and 4M

ED-91510-01 — Typical Switchboard Cabling — Angle-Type Relay Rack

ED-91523-01 — Typical Switchboard Cabling — Relay Rack Fuse Bay

4. EQUIPMENT

ED-91976-31 — AT&TCo Std — Test and/or Receiver Adjusting Unit (Arranged for Patching of Adjusting Tones to J95102B MF Pulsing Receiver Unit)

Equipment — ED-91976-( )

Group 1 — Equipment required for use with the test and/or adjusting circuits provided for in the J98609E MF current supply frame.

Group 2 — Equipment and wiring required in addition to group 1 when the associated MF current supply is used to provide adjusting tones to one or more J95102B MF pulsing receivers of 600- or 900-ohm input impedance.

Group 3 — Equipment and wiring required in addition to group 2 for each aisle where J95102B MF pulsing receivers served by the associated MF current supply frame are located. (See Note B.)

Group 4 — Equipment and wiring required in addition to group 1 in No. 1 crossbar and crossbar tandem offices. (This group provides test battery jack and one set of telephone jacks.)

Group 5 — Equipment and wiring required in addition to group 1 in toll switching system No. 4 type offices. (This group provides test battery, one test battery jack, and one set of frame line telephone jacks.)

Group 6 — Equipment and wiring required in addition to group 1 to provide test battery in all offices except No. 1 crossbar, crossbar tandem, and toll switching system No. 4 type.

Notes

A. The test and/or MF pulsing receiver adjusting unit is installer-wired.

B. A maximum of nine group 3s shall be specified per each group 2 when ordering.

C. The complementary adjusting supply jacks unit, ED-92621-31, shall be specified in quantities as required with this unit.

ED-92590-30 — AT&TCo Std — Volume Limiter Unit

Equipment — ED-92590-( )

Group 1 — Framework, assembly, equipment, and wiring for one volume limiter unit per SD-95536-01, Fig. 2 (see Notes A and B).

ED-92591-30 — AT&TCo Std — Bias Control Unit

Equipment — ED-92591-( )

Group 1 — Framework, assembly, equipment, and wiring for one bias control unit per SD-95536-01, Fig. 3 (See Notes A and B).

ED-92592-30 — AT&TCo Std — Channel Unit

Equipment — ED-92592-( )

Group 1 — Framework, assembly, equipment, and wiring for one channel unit per SD-95536-01, Fig. 4 (see Notes A and B).

Notes

A. Electron tubes are not furnished with these subassemblies. They are required as listed in J95102B and are furnished only when ordered specifically by the telephone company.

B. Hardened plug-in units must be used in hardened locations.

ED-92621-31 — AT&TCo Std — Adjusting Supply Jacks Unit (for Providing Jack Appearances of the Adjusting Tones Supplied Through Jacks on the ED-91976-31 Unit for Patching to the J95102B MF Pulsing Receiver)

Equipment — ED-92621-( )

Group 1 — Assembly, equipment, and wiring for one MF pulsing receiver adjusting supply jacks unit required for patching of the adjusting tone supplied through jacks on the ED-91976-31. (See Note B.)

Notes

A. The adjusting supply jacks unit is installer-wired.

B. This unit shall be located within 8 feet of the MF receivers to be served so that these receivers may be patched to this unit by means of an 8-foot 3P6E cord assembly.

J95102A — AT&TCo Std — Multifrequency Pulsing Receiver Frame (for Use in Other Than No. 5 Crossbar Offices)

Equipment — J95102A-( )

List 1 — Framework, assembly, and equipment for one MF pulsing receiver frame (less receiving units and 115-volt ac supply units). Provides mounting for a maximum of twelve receiving units.

List 2 — Assembly and equipment required in addition to list 1 for one ED-92621-31 MF pulsing receiver adjusting supply jacks circuit per SD-95664-01, Fig. 4. This unit is installer-wired. (See Note A.)

List 3 — Assembly and equipment required in addition to list 1 for one J95102G, List 1 adjusting supply jacks unit per SD-95779-01, Fig. 2.

Note

A. List 2 is used when an MF current supply is available as the adjusting tone source. List 3 is used when this supply is not available. They are mutually exclusive, but one

or the other is furnished for each MF receiver bay.

J95102B — AT&TCo Std — Multifrequency Pulsing Receiving Unit (See 4.01 and 4.02)

Equipment — J95102B-( )

List 2 — Equipment required in addition to list 6 or 7 when transfer to battery operation on ac power failure is required per SD-95536-01, Fig. A.

List 3 — Equipment required in addition to list 6 or 7 when transfer to battery operation on ac power failure is not required per SD-95536-01, Fig. B.

List 6 — Framework, assembly, equipment, and wiring for one MF pulsing receiving unit equipped with ZD option per SD-95536-01. (See Notes A, B, and C.)

List 7 — Framework, assembly, equipment, and wiring for one MF pulsing receiving unit equipped with ZF option per SD-95536-01. (See Notes A, B, and C.)

List 8 — Equipment required in addition to list 6 or 7 to meet the requirements of Section 800-610-157, relating to equipment for use at hardened sites.

Notes

A. Plug-in relays and plug-in subassemblies are furnished with list 6 or 7 and are shipped separately. Subassemblies include:

One volume limiter per ED-92590-30
One bias control unit per ED-92591-30
Three channel units per ED-92592-30

B. Electron tubes are not furnished with the equipment. They must be specifically ordered. A full receiver complement is as follows:

	TUBES
Receiving Unit	One 415A
Volume Limiter Unit	Two 403B
Bias Control Unit	One 396A
Three Channel Units	Three 396A Six 2D21

C. Separately shipped receivers are provided with 12 feet of power cord except when ordered for No. 5 crossbar applications where no power wiring is provided.

J95102C — AT&TCo Std — 115-Volt AC Supply Unit (for Use in Other Than No. 5 Crossbar Offices)

Equipment — J95102C-( )

List 1 — Framework, assembly, wiring, and equipment for one 115-volt ac supply unit per SD-95676-01, one Fig. 5 with N wiring, and six Fig. 6.

List 2 — Wiring and equipment required in addition to list 1 to arrange one 115-volt ac supply unit for low-voltage alarm and transfer control per SD-95676-01, Fig. 7. (See Note A.)

Note

A. One list 2 is required with the first of six list 1s on the same branch circuit.

J95102D — AT&TCo Std — Transfer Control Unit

Equipment — J95102D-( )

List 10 — Assembly, equipment, and surface wiring for one transfer control unit.

	WIRE	EQUIP	NOTES
SD-95676-01:			
Fig. 1	1	1	A,B
Fig. 2	1	1	

List 11 — Equipment and wiring required in addition to list 10 to arrange one transfer control unit for use with series-filament groups 1 to 6 with a maximum of six receivers each.

	WIRE	EQUIP	NOTES
SD-95676-01, Fig. 10	6	6	D

List 12 — Equipment and wiring required in addition to list 10 to arrange one transfer control unit for use with series-filament groups 1 to 6 where group 1 consists of seven receivers, and groups 2 to 6 a maximum of six receivers each.

	WIRE	EQUIP	GROUPS	NOTES
SD-95676-01:				
Fig. 10	5	5	2 to 6	D
Fig. 11	1	1	1	

List 13 — Equipment and wiring required in addition to list 10 to arrange one transfer control unit for use with series-filament groups 1 to 6 where groups 1 and 2 consist of seven receivers, and groups 3 to 6 a maximum of six receivers each.

	WIRE	EQUIP	GROUPS	NOTES
SD-95676-01:				
Fig. 10	4	4	3 to 6	D
Fig. 11	2	2	1,2	

List 14 — Equipment and wiring required in addition to list 10 to arrange one transfer control unit for use with six series-filament groups 1 to 6 where groups 1, 2, and 3 consist of seven receivers each, and groups 4, 5, and 6 a maximum of six receivers.

	WIRE	EQUIP	GROUPS	NOTES
SD-95676-01:				
Fig. 10	3	3	4,5,6	D
Fig. 11	3	3	1,2,3	

List 15 — Equipment required in addition to list 11, 12, 13, or 14 for each series-filament group 1 to 6 per SD-95676-01, Fig. 10 for six receivers per group, R apparatus and TR lamp and lamp cap only.

List 16 — Equipment required in addition to list 11, 12, 13, or 14 for each series-filament group 1 to 6 per SD-95676-01, Fig. 10 for five receivers per group, S apparatus and TR lamp and lamp cap only.

List 17 — Equipment required in addition to list 11, 12, 13, or 14 for each series-filament group 1 to 6 per SD-95676-01, Fig. 10 for four receivers per group, T apparatus and TR lamp and lamp cap only.

List 18 — Equipment required in addition to list 11, 12, 13, or 14 for each series-filament group 1 to 6 per SD-95676-01, Fig. 10 for three receivers per group, U apparatus and TR lamp and lamp cap only.

List 19 — Equipment required in addition to list 11, 12, 13, or 14 for each series-filament group 1 to 6 per SD-95676-01, Fig. 10 for two receivers per group, V apparatus and TR lamp and lamp cap only.

List 20 — Equipment required in addition to list 11, 12, 13, or 14 for each series-filament group 1 to 6 per SD-95676-01, Fig. 10 for one receiver per group, W apparatus and TR lamp and lamp cap only.

List 21 — Equipment and wiring required in addition to list 10 to arrange one transfer control unit for use in No. 5 crossbar offices per SD-95676-01, Fig. 1, M wiring and apparatus only.

Notes

A. Electron tube 313C is required but not furnished with this equipment and must be ordered specifically.

B. Lists 11, 12, 13, and 14 are mutually exclusive. One of these lists must be specified with each list 10.

C. Where stations are equipped with seven or less MF receivers and emergency transfer is desired, more than one series-filament group should be used.

D. Furnish lamp socket associated with TR lamps and terminals associated with J resistors only.

J95102E — AT&TCo Std — Emergency Filament Supply Unit

Equipment — J95102E-( )

List 10 — Framework, assembly, wiring, and equipment for one emergency filament supply unit.

	WIRE	EQUIP	NOTES
SD-95676-01:			
Fig. 4	6	6	
Fig. 8	1	1	

List 11 — Equipment and surface wiring required in addition to list 10 to arrange one emergency filament supply unit for use with series-filament groups 1 to 6 with a maximum of six receivers each.

	WIRE	EQUIP	NOTES
SD-95676-01, Fig. 9	6	6	C

List 12 — Equipment and surface wiring required in addition to list 10 to arrange one emergency filament supply unit for use with series-filament groups 1 to 6 where group 1 consists of seven receivers, and groups 2 to 6 a maximum of six receivers each.

	WIRE	EQUIP	NOTES
SD-95676-01:			
Fig. 9	1	1	A,D
Fig. 9	5	5	B,C

List 13 — Equipment and surface wiring required in addition to list 10 to arrange one emergency filament supply unit for use with series-filament groups 1 to 6 where groups 1 and 2 consist of seven receivers each, and groups 3 to 6 a maximum of six receivers each.

	WIRE	EQUIP	NOTES
SD-95676-01:			
Fig. 9	2	2	A,D
Fig. 9	4	4	C

List 14 — Equipment and surface wiring required in addition to list 10 to arrange one emergency filament supply unit for use with series-filament groups 1 to 6 where groups 1 to 3 consist of seven receivers each, and groups 4 to 6 a maximum of six receivers each.

	WIRE	GROUP	NOTES
SD-95676-01:			
Fig. 9	3	3	A,D
Fig. 9	3	3	C

List 15 — Equipment required in addition to list 11, 12, 13, or 14 for each series-filament group 1 to 6 per SD-95676-01 for six receivers per group, Fig. 9, R apparatus and E relay only.

List 16 — Equipment required in addition to list 11, 12, 13, or 14 for each series-filament group 1 to 6 per SD-95676-01 for five receivers per group, Fig. 9, S apparatus and E relay only.

List 17 — Equipment required in addition to list 11, 12, 13, or 14 for each series-filament group 1 to 6 per SD-95676-01 for four receivers per group, Fig. 9, T apparatus and E relay only.

List 18 — Equipment required in addition to list 11, 12, 13, or 14 for each series-filament group 1 to 6 per SD-95676-01 for three receivers per group, Fig. 9, U apparatus and E relay only.

List 19 — Equipment required in addition to list 11, 12, 13, or 14 for each series-filament group 1 to 6 per SD-95676-01 for two receivers per group, Fig. 9, V apparatus and E relay only.

List 20 — Equipment required in addition to list 11, 12, 13, or 14 for each series-filament group 1 to 6 per SD-95676-01 for one receiver per group, Fig. 9, W apparatus and E relay only.

Notes

A. Use K wiring and apparatus.

B. Use J wiring and apparatus.

C. Furnish electron tube sockets associated with E relays and K resistors only.

D. Lists 11, 12, 13, and 14 are mutually exclusive. One of these lists must be specified with each list 10.

J95102F — AT&TCo Std — Multifrequency Pulsing Receiver Adjusting Unit

Equipment — J95102F-( )

List 1 — Assembly, equipment, and wiring for one MF pulsing receiver adjusting unit per SD-95779-01, Fig. 1, required when an MF current supply is not available as the adjusting tone source to the receiver.

Note

A. This unit shall be located at or near the adjusting tone source. When this unit is provided, the complementary adjusting supply jacks unit, J95102G, is required except when this unit is used to adjust the MF pulsing receivers on an IRMF frame in a No. 5 crossbar office (the IRMF frame has equivalent jacks and keys in the frame upright otherwise located on the J95102G unit).

J95102G — AT&TCo Std — Multifrequency Pulsing Receiver Adjusting Supply Jacks Unit

Equipment — J95102G-( )

List 1 — Assembly, equipment, and surface wiring for one MF pulsing receiver adjusting supply jacks unit per SD-95779-01, Fig. 2 required for patching of the adjusting tone supply provided through jacks on the J95102F unit, to the MF pulsing receiver. (See 4.01 and Note A.)

Notes

A. This unit shall be located within 8 feet of the MF receivers to be served so that these receivers may be patched to this unit by means of an 8-foot 3P6E cord assembly.

B. This unit is not required for use with MF receivers mounted on an IRMF frame in a No. 5 crossbar office (IRMF has equivalent jacks in the frame upright).

C. A 32A test set should be provided on a one-per-office basis with this unit.

J95102H — AT&TCo Std — 115-Volt AC Supply Unit for CAMA MF Receiver Frame No. 5 Crossbar

Equipment — J95102H-( )

List 1 — Framework, assembly, equipment, and wiring for one 115-volt ac supply unit per SD-95676-01, one Fig. 5 and D, and six Fig. 6 with H wiring.

List 2 — Wiring and equipment required in addition to list 1 to arrange one 115-volt ac supply unit for low-voltage alarm and transfer control per SD-95676-01, Fig. 7. (See Note B.)

Notes

A. This unit is used only for CAMA MF receiver frames in No. 5 crossbar offices.

B. One list 2 is provided with the first of six list 1s on the same branch circuit.

J95102J — AT&TCo Std — Building-Out Capacitor Unit (for Use with MF Receivers J95101B and J95102B)

Equipment — J95102J-( )

List 1 — Assembly and equipment for one capacitor unit.

List 2 — Equipment required in addition to list 1 for additional building-out capacitors.

Notes

A. Apparatus per list 1 only is for use with J95101A MF receiver frame, and lists 1 and 2 are for use with J95102A MF receiver frame.

B. When this frame is associated with J95101B, the associated SD will be SD-95087-01, and when associated with J95102B receiver unit, the associated SD will be SD-95536-01, Fig. 5.

C. All wiring on this unit shall be run by the installer.

Miscellaneous Equipment

4.01 ***3P6E Cord Assembly:*** These cords should be provided one per office as required by the MFP receiver adjusting supply jacks circuit provided in J95102A or per 4.02. This cord is used to patch the adjusting supply jacks units, J95102G or ED-92621-31, to the receiver under adjustment. Storage for this cord is to be provided for by the telephone company.

4.02 ***SD-95664-01, Fig. 4, MFP Receiver Adjusting Supply Jacks Circuit:*** When the receiver is not mounted on a J95102A receiver frame and an MF current supply is available as an adjusting tone source to the receiver, provide MFP receiving adjusting supply jacks circuit per SD-95664-01, Fig. 4, in the quantity necessary so that it may be patched to the receivers served by means of the 8-foot 3P6E cord assembly provided in accordance with 4.01. The equipment for this circuit is shown in J95102A, Fig. 3, and is installer-wired.

4.03 ***ED-26683-11 MF Signaling AC Power Transformer Unit:*** One of these units is provided per 36 or less MFP receivers mounted as a mixed group in No. 5 crossbar frames where some of the receivers may be associated with IRMF frames and others with CAMA frames associated with CAMA senders. Where association is only with CAMA senders and no IRMF frames are used, substitute the J95102H unit for the above.

4.04 ***ED-92190-01:*** The mounting arrangements for the tube pin straightener shall be located as required by the telephone company. In those installations specifying the framework of J95102A, Note 2 of this drawing may be used as a guide for locating the tube pin straightener.

List of A&M Only and Mfr Disc. Equipment

EQUIPMENT	RATING	DETAILS LAST SHOWN IN ISSUE	REPLACING EQUIPMENT
J95102B, L4 & L5	Mfr Disc.	1	J95102B, L1
J95102B, L1	Mfr Disc.	4	J95102B, L6 or L7
J95102D, L1 to L9	Mfr Disc.	2	J95102D, L10 to L18
J95102E, L1 to L9	Mfr Disc.	2	J95102E, L10 to L18

The above equipment has been replaced as indicated. Where A&M Only items appear, the issue numbers shown are those of the issue in which the rating was first applied.

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