RECORDER FRAME
EQUIPMENT DESIGN REQUIREMENTS
NO. 1 CROSSBAR, CROSSBAR TANDEM AND PANEL SYSTEMS

1. GENERAL

SCOPE

1.01 This specification, together with the supplementary information listed herein, covers the equipment design requirements for the framework, equipment, and circuits to be used in the engineering, manufacture, and installation of the recorder frame for use with various automatic test frames in panel, No. 1 crossbar, and crossbar tandem offices.

1.02 This specification is reissued to:

(a) Add requirements to the recorder frame which permits operation with No. 1 crossbar or crossbar tandem incoming trunk test frames and No. 1 crossbar district junctor test frame.

(b) Change the J specification rating from "A&M Only" to "AT&TCo Standard."

CAPACITY

1.03 The recorder frame equipment provides facilities for operating the panel selector automatic routine test frames, such as office, incoming district and final selector test frames and No. 1 crossbar or crossbar tandem incoming trunk test frames and No. 1 crossbar district junctor test frame and has the capacity to serve up to a maximum of ten of a combination of these types of test frames in an office.

DESCRIPTION

1.04 The recorder frame is used in conjunction with panel office, incoming; district and final selector test frames (not all vintages in all types) and No. 1 crossbar or crossbar tandem incoming trunk test frames and No. 1 crossbar district junctor test frame for the purposes of recording on a message ticketer test frame timeouts and indicating whether the timeouts were caused by busy conditions or by failures during tests.

1.05 Basically, the recorder frame equipment is arranged:

(a) To start the automatic selector test frame at a preselected time.

(b) To provide for seizure of the recorder by any automatic test frame encountering a trouble or busy condition.

(c) To direct a 1A message ticketer to print a ticket recording which automatic test frame seized the recorder, whether it was a trouble condition or busy condition.

(d) To identify the equipment under test at the time; the progress of the test or the type of test, whichever is applicable.

(e) To advance the automatic test frame by performing the functions of the control advance key or pass-busy key of the automatic test frame.

(f) To detect the end of the cycle of the automatic test frame and to restore the test frame.

1.06 The recorder frame may be started either manually or automatically to perform its functions with an associated test frame.

(a) ***For manual start,*** the keys at the automatic test frame selecting the type of test desired and the start key are operated. At the recorder frame the manual start (MST) key associated with the specific test frame is operated starting the test frame.

(b) For automatic start, the keys at the automatic test frame necessary to perform the desired test are operated. At the recorder frame, the time is set at a preselected starting

time and the automatic start (AST) key associated with the particular test frame is operated. When the timer contacts close, the start relays of the recorder frame operate and perform the function of the start key in the automatic test frame thereby starting the test frame.

General Equipment Arrangements

1.07 The recorder frame is given arbitrary position numbers (POS [0] through POS [9]) with each number being assigned to the start and connector unit associated with a specific type of test frame to be served. The arbitrary position numbers are assigned for equipment location only and are as follows.

TYPE OF AUTOMATIC TEST FRAME SERVED	ARBITRARY POSITION NUMBER ASSIGNED
Panel Office Selector	POS [0]
Panel Incoming Selector	POS [1] and [2]
Panel District Selector	POS [3] and [4]
Panel Final Selector	POS [5] and [6]
Panel Incoming, District, Final No. 1 Crossbar Incoming Trunk, District Junctor, and/or Crossbar Tandem Incoming Trunk	POS [7], [8], and/or [9]

1.08 Initially, the recorder frame is equipped to serve one office selector test frame, POS [0], one incoming selector test frame, POS [1], one district selector test frame, POS [3], and one final selector test frame, POS [5], with POS [2, 4, and 6] reserved for the specific types of test frames as listed in 1.07. POS [7, 8 and 9] are universally arranged to serve any combination of panel incoming, district and/or final selector test frames and/or No. 1 crossbar incoming trunk, district junctor, and/or crossbar tandem incoming trunk test frames. Therefore, only a maximum of five panel incoming selector test frames or five panel district selector test frames or five panel final selector test frames or three No. 1 crossbar incoming trunk test frames or three No. 1 crossbar district junctor test frames or three crossbar tandem incoming trunk test frames can be handled by the recorder frames in any given office.

1.09 The recorder frame arrangements also pre-fix the location of the progress selectors and their associated progress units which are required for each incoming selector test frame being served. The progress units are assigned arbitrary position numbers corresponding to those assigned to the start and connector units associated with specific incoming selector frames and are equipped in accordance with the fixed locations on the frame.

1.10 A direct association exists between the arbitrary position numbers and the numbering assigned to the multicontact connector relay groups and to the start keys and indicating lamps on the jack, key, and lamp panels. In this regard, the numbering [0 to 9, inclusive] represents the maximum of the ten automatic test frames capable of being handled by the recorder frame. Except for the connector relay groups and the related keys and lamps provided as part of the initial recorder frame arrangements, these equipments are to be ordered in accordance with the type of test frame to be served and equipped in the positions corresponding to the arbitrary position numbers of the associated start and connector units.

1.11 The recorder frame is of bulb-angle construction 11 feet, 6 inches high, 2 feet, 0-5/8 inch long with a 12-inch sheet metal base and is arranged for 23-inch mounting plates. As shown in Fig. 1, the frame is equipped with a fuse panel, three rows of multicontact connector relays, a plate mounting a frame D-type terminal strip, five progress units for use with incoming selector test frames, one digit control and steering unit basic to all types of test frames to be served, and ten start and connector units. In addition, the frame is equipped with three jack, key, and lamp panels which include the telephone jacks, test posts, and spare jack of the miscellaneous circuit, a 1A message ticketer, and a writing shelf. Immediately below the writing shelf are mounted five progress selectors associated with the incoming selector frames to be served and a timing device which automatically starts the recorder frame equipment at a predetermined time.

1.12 All units on the recorder frame are surface wired and are equipped with terminal strips which are used exclusively for terminating switchboard cables. These units are interconnected by a frame local cable which contains the leads to the frame terminal strip

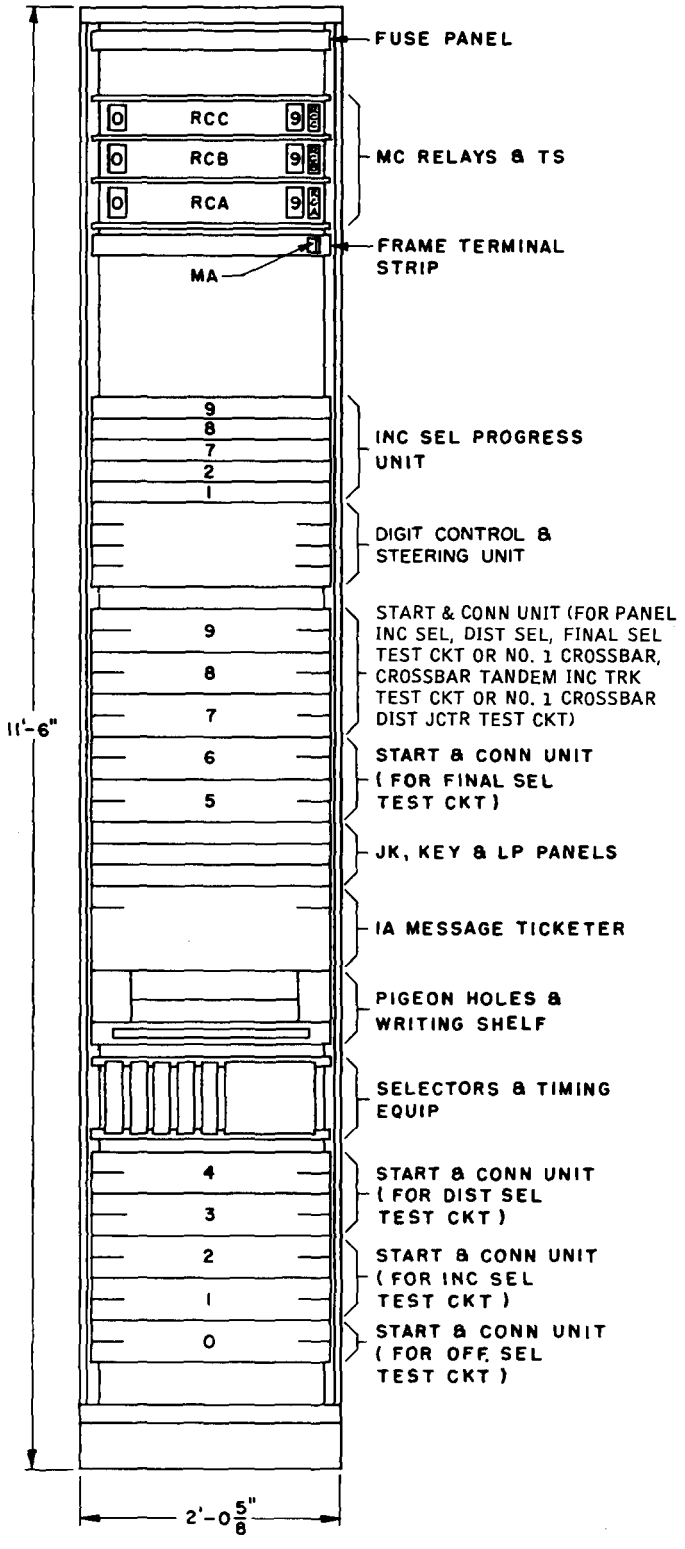

Fig. 1 – Recorder Frame, J24004A

and to the progress selectors and timing equipment, the leads from the connector relays and their associated terminal strips, and the leads to the start keys and indicating lamps and to the fuse panel.

2. SUPPLEMENTARY INFORMATION

815-000-000 — Panel Systems Index
816-000-000 — No. 1 Crossbar System Index
817-000-000 — Crossbar Tandem System Index
AA128.006 — List of General Equipment Requirements Sections
KS-9784 — Ticket Paper

3. DRAWINGS

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

ED-20928-( ) — Switchboard Cabling Plan and Details — Recorder Frame — J24004A
ED-25346-14 } Method of Running Power
ED-25346-15 } Feeders
ED-25529-70 — Guard Rail Junction Details
J24004A-( ) — Recorder Frame — For Use With Automatic Test Frames
J24004B-( ) — Digit Control and Steering Unit
J24004C-( ) — Start and Connector Unit
J24004D-( ) — Incoming Selector Progress Unit
J24004E-( ) — Fuse Panel
SD-21300-01 — Panel Systems — Battery Cut-off Relay Office
SD-21680-01 — Panel System — Ground Cut-off Relay Office

4. EQUIPMENT

J24004A (AT&TCo Standard) — Recorder Frame — For Use With Automatic Test Frames

Equipment and Local Cable — J24004A-( )

List 1 — Framework, assembly, wiring, and common equipment for one recorder frame arranged, but not equipped, for operating a maximum of ten automatic test frames. (See Table A and note A.)

	WIRE	EQUIP	SEE NOTES
Frame Local Cable Wiring			F,G
Recorder Circuit, SD-21978-01:			
Digit Control and Steering Circuit, Fig. 1	1	0	
Start and Connector Circuit, Fig. 2	10	0	
Incoming Selector Progress Circuit, Fig. 3 with "H" Option	5	0	
Start Keys, Indicating Lamps, and Multicontact Connector Relays, Fig. 5	10	4	A,B, D,E
Progress Selectors, Fig. 6	5	1	A,C
Ticketer & Timing Circuit, Fig. 7	1	1	
Miscellaneous Circuit, SD-21979-01:			
48V Fuse Alarm, Fig. 1, "FA" lead only	1	0	
48V Frame Test Battery, Spare Jack, and Telephone Jacks, Fig. 3	1	1	

List 2 — Equipment per SD-21978-01, Fig. 5, start keys, indicating lamps, and multicontact connector relays required in addition to list 1 for each additional automatic test frame being served. (See note B.)

List 3 (A&M Only) — Equipment per SD-21978-01, Fig. 6, progress selector, required in addition to list 1 for each incoming selector test frame being served. (See note C.)

Notes

A. The recorder frame provides facilities for operating panel office, incoming, district, and final selector, No. 1 crossbar or crossbar tandem incoming trunk test frames and No. 1 crossbar district junctor test frames and has the capacity to serve up to a maximum of ten of a combination of these types of test frames in an office. This frame is arranged with arbitrary position numbers (POS [0] through POS [9]) which are used as equipment locations for units assigned to the various types of test frames as indicated below.

TYPE OF AUTOMATIC TEST FRAME SERVED	ARBITRARY POSITION NUMBER ASSIGNED
Panel Office Selector	POS [0]
Panel Incoming Selector	POS [1] and [2]
Panel District Selector	POS [3] and [4]
Panel Final Selector	POS [5] and [6]
Panel Incoming Selector and/or Panel District Selector and/or Panel Final Selector and/or No. 1 Crossbar Incoming Trunk and/or No. 1 Crossbar District Junctor and/or Crossbar Tandem Incoming Trunk	POS [7], [8], and/or [9]

Initially, the recorder frame is equipped to serve one office selector test frame, POS [0], one incoming selector test frame, POS [1], one district selector test frame, POS [3], and one final selector test frame, POS [5] with POS [2, 4, and 6] reserved for the types of test frames as listed above. POS [7, 8, and 9] are universally arranged for any combination of panel incoming, district and final selector, and/or No. 1 crossbar incoming trunk, district junctor, and/or crossbar tandem incoming trunk test frames. Therefore a maximum of five panel incoming selector test frames or five panel district selector test frames or five panel final selector test frames or three No. 1 crossbar incoming trunk test frames or three crossbar tandem incoming trunk test frames or three No. 1 crossbar district junctor test frames can be handled by the recorder frame in any given office.

B. The start keys, indicating lamps, and multicontact connector relays when required shall be equipped on the respective mountings and in their assigned positions. The numerical part of the functional stamping for the above mentioned apparatus corresponds to the arbitrary position numbers assigned as covered in note A.

C. The progress selectors when required shall be equipped in their assigned positions on the selector and timer assembly. The numerical part of the functional stamping for these selectors corresponds to the arbitrary position numbers assigned to the associated incoming selector test frames as covered in note A.

D. The bare wire strapping for the multicontact connector relays shall be furnished for the full complement of relays. No. 99A apparatus blanks shall be provided at unequipped relay positions to support the horizontal bare wire strapping. This strapping shall be insulated as illustrated in the cabling and wiring specification.

E. The No. 39B and 40B apparatus blanks shall be provided at all unequipped lamp and key positions respectively on the jack, key, and lamp panels.

F. The frame local cable includes the wiring between the individual surface-wired units, the battery and ground leads from the fuse panel, all leads looped at unequipped positions, and all start keys, indicating lamps, selectors, and multicontact relays and their terminal strips.

G. Wiring per SD-21978-01, "V" option, shall be provided in all arbitrary equipment positions, except POS [1] and [2] and connected when other than incoming selector test frames are being served by these positions. When arbitrary equipment POS [7, 8, and/or 9] are arranged to serve No. 1 crossbar incoming trunk or district junctor test frames or crossbar tandem incoming trunk test frame "V" option shall not be connected.

J24004B (AT&TCo Standard) — Digit Control and Steering Unit

Equipment — J24004B-( )

List 1 — Assembly, wiring, and equipment for one digit control and steering unit per SD-21978-01, Fig. 1.

J24004C (AT&TCo Standard) — Start and Connector Unit

Equipment — J24004C-( )

List 1 (A&M Only) — Assembly, wiring, and equipment for one start and connector unit for use in testing one ***office selector*** test circuit per SD-21978-01, Fig. 2, with "Z" apparatus and wiring.

List 2 (A&M Only) — Assembly, wiring, and equipment for one start and connector unit for use in testing one ***incoming selector*** test circuit per SD-21978-01, Fig. 2 with "X" apparatus and wiring.

List 3 (A&M Only) — Assembly, wiring, and equipment for one start and connector unit for use in testing one ***link district selector*** test circuit per SD-21978-01, Fig. 2 with "W" apparatus and wiring.

List 4 (A&M Only) — Assembly, wiring, and equipment for one start and connector unit for use in testing one ***final selector*** test circuit in a ground cutoff office per SD-21978-01, Fig. 2 and 4 with "Y" apparatus and wiring.

List 5 (A&M Only) — Assembly, wiring, and equipment for one start and connector unit for use in testing one ***final selector*** test circuit in a battery cutoff office per SD-21978-01, Fig. 2 and 4 with "T" apparatus and wiring.

List 6 (A&M Only) — Assembly, wiring, and equipment for one start and connector unit for use in testing one ***subscriber district selector*** test circuit, line finder sender selector type per SD-21978-01, Fig. 2 with "S" apparatus and wiring.

List 7 — Assembly, wiring, and equipment per SD-21978-01, Fig. 2 "R" option for one start and connector unit for use in testing No. 1 crossbar or crossbar tandem incoming trunk test circuit.

List 8 — Assembly, wiring, and equipment per SD-21978-01, Fig. 2 "N" and "K" options for one start and connector unit for use in testing No. 1 crossbar district junctor test circuit.

J24004D (A&M Only) — Incoming Selector Progress Unit

Equipment — J24004D-( )

List 1 — Assembly, wiring, and equipment for one incoming selector progress unit per SD-21978-01, Fig. 3 for each incoming selector test circuit being served.

J24004E (AT&TCo Standard) — Fuse Panel

Equipment — J24004E-( )

List 1 — Assembly, wiring, and equipment for one frame fuse panel (17-fuse capacity) per SD-21978-01 and SD-21979-01.

5. GENERAL NOTES

5.01 For cabling reasons, the preferred location of the recorder frame shall be as near as practicable to the office selector, incoming selector, district selector, or final selector test frames.

5.02 This specification is rated A&M Only for Panel Systems.

TABLE A — RECORDER FRAME — J24004A

COMPONENT EQUIPMENT UNITS SHALL BE EQUIPPED AS FOLLOWS

UNIT		QUANTITY TO BE PROVIDED		ARBITRARY POSITION NUMBER	TYPE OF AUTOMATIC TEST FRAME SERVED		DESCRIPTION OF OPTION
J CODE	LIST NO.	ALWAYS	FOR OPTION INDICATED				
J24004B	1	1			All		
J24004C	1	1		0	Office Selector		
	2	1		1	Incoming Selector		
	2		1	2			When office has a 2nd Incoming Selector Test Frame
	3		1	3	District Selector	Link Type	
	3		1	4			When office has a 2nd District Selector Test Frame
	6		1	3		Subscriber, Line Finder Sender Selector Type	
	6		1	4			When office has a 2nd District Selector Test Frame

TABLE A (Contd)

UNIT		QUANTITY TO BE PROVIDED		ARBITRARY POSITION NUMBER	TYPE OF AUTOMATIC TEST FRAME SERVED		DESCRIPTION OF OPTION
J CODE	LIST NO.	ALWAYS	FOR OPTION INDICATED				
J24004C	4		1	5	Final Selector	GCO Office	
	4		1	6			When office has a 2nd Final Selector Test Frame
	5		1	5		BCO Office	
	5		1	6			When office has a 2nd Final Selector Test Frame
	2,3,4, 5, or 6		1	7,8, or 9	Incoming Selector and/or District Selector and/or Final Selector		When office has a 3rd, 4th, or 5th Incoming Selector Test Frame and/or District Selector Test Frame and/or Final Selector Test Frame
	7		1	7,8, or 9	No. 1 Crossbar or Crossbar Tandem Incoming Trunk Test		When office has No. 1 Crossbar or Crossbar Tandem Incoming Trunk Test Frames
	8		1	7,8, or 9	No. 1 Crossbar District Junctor Test		When office has No. 1 Crossbar District Junctor Test Frames
J24004D	1	1		1	Incoming Selector		
	1		1	2,7,8, or 9			When office has a 2nd, 3rd, 4th, or 5th Incoming Selector Test Frame
J24004E	1	1			All		

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