

**LOCAL TEST DESK TEST SELECTOR FRAME
FOR LOCAL TEST DESK NO. 14
EQUIPMENT DESIGN REQUIREMENTS
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 manufacture and installation of the local test desk test selector frame in panel offices having either battery or ground on the cut-off relays.

1.02 This specification is reissued to:

- (a) Add SD-21327-01, "S" & "T" wiring; SD-21642-01, "V" & "W" wiring, and note B to J21601D.
- (b) Add SD-21354-01, SD-21643-01, SD-21792-01, "V" & "W" wiring; SD-21927-01, "S" & "T" wiring and note Z to J21601E.
- (c) Change the rating of this specification from "AT&TCo Standard" to "A&M Only."
- (d) Bring it into conformity with the general plant series numbering plan.

Capacity

1.03 The local test desk test selector frame has a capacity of 6 test trunk first selectors and 15 test trunk second selectors, together with 7 additional sequence switch spaces and associated mounting plate capacity which may either be used for additional first selectors or second selectors to meet special conditions.

Description

1.04 The local test desk test selector frame is a steel structure of a type generally known as a single sided frame. It consists of two bays, one for sequence switches and the other for relays, with the terminal strips located at the side of the frame.

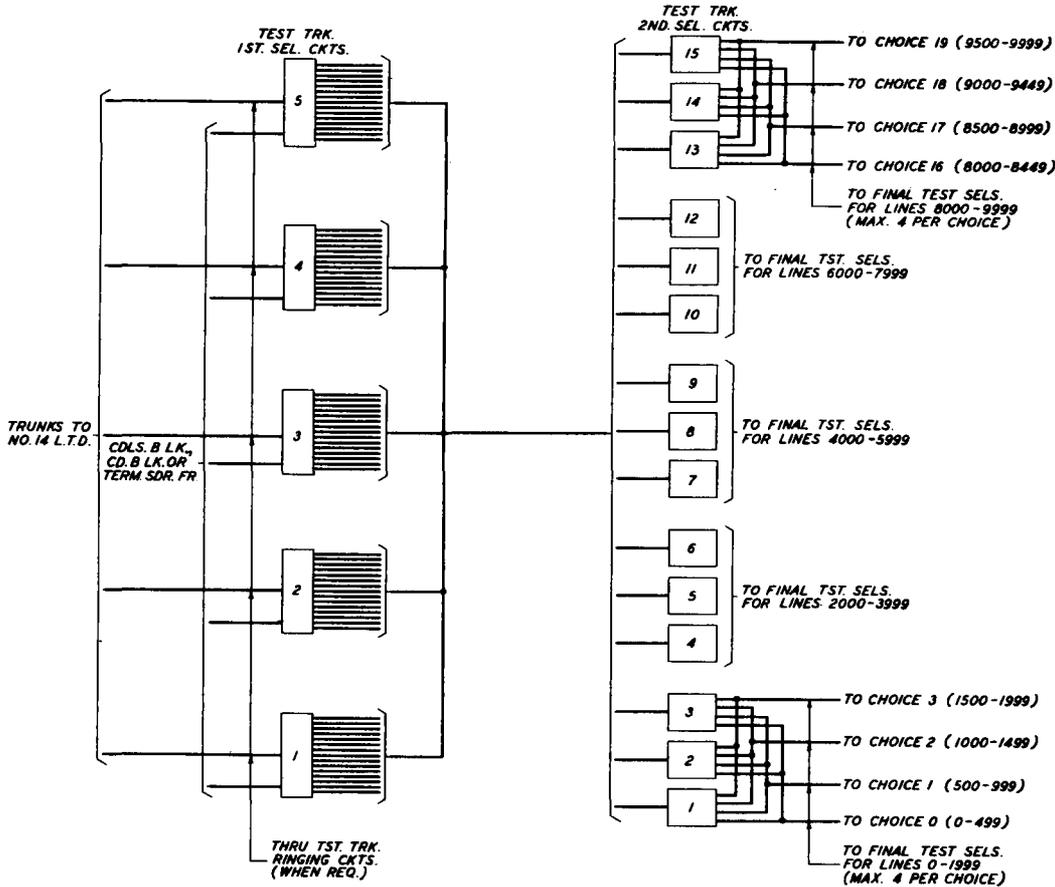
1.05 The function of this frame is to associate the local test desk No. 14 with the final selectors arranged for testing subscribers lines.

By the use of this selector frame the operation of the cut-off relay of the line circuit may be controlled from a key in the test desk.

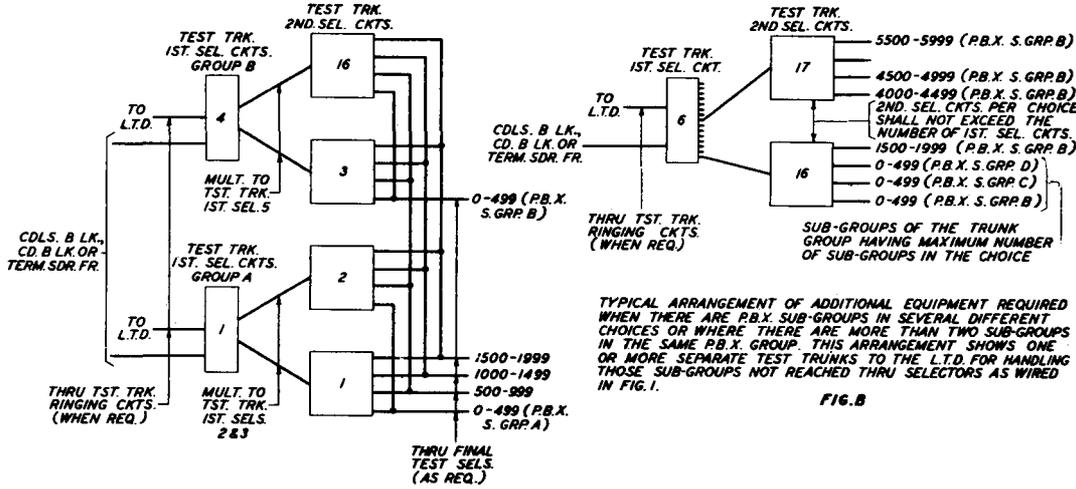
1.06 The "battery on the cut-off relay" office test selector frame covered by J21601D differs from J21601A in that a universally wired local cable is provided so that the frame may be associated with either call distributing "B" switchboards or terminating senders. This is done to facilitate conversion from call distributing "B" switchboard to terminating sender operation when the call distributing "B" switchboard is removed from service.

1.07 The test trunk test selector frame covered by J21601E is suitable for use in any type of "ground on the cut-off relay" panel office and differs from codes J21601B and J21601C in that the new frame can be arranged to work with key listening "B", position distributing "B", or call distributing "B" switchboards, or terminating senders. To change from one type to another requires the addition of a supplementary local cable and the addition and replacement of several pieces of apparatus in the test trunk first selector circuit as covered by the various lists in code J21601E.

1.08 The six first selector circuits which connect to trunk circuits in the test desk have access to any one of fifteen second selectors which terminate in final test selectors. One second selector is required for each 2000 final terminals or five second selectors for each 10,000 line unit. However, since two or more test men may wish to test in the same 2000 line group at the same time three second selectors per 2000 line group are provided for, or a total of fifteen for a 10,000 line office unit. Each set of three second selectors are multiplied together and connect to a maximum of sixteen final test selectors or four or less per each 500 subscriber lines. These connections are shown in schematic form in Fig. 1.



SCHEMATIC OF CONNECTIONS FOR L.T.D. TEST SELECTOR FRAME FIG. 1



TYPICAL ARRANGEMENT OF ADDITIONAL EQUIPMENT REQUIRED WHEN THERE ARE P.B.X. SUB-GROUPS IN SEVERAL DIFFERENT CHOICES OR WHERE THERE ARE MORE THAN TWO SUB-GROUPS IN THE SAME P.B.X. GROUP. THIS ARRANGEMENT SHOWS ONE OR MORE SEPARATE TEST TRUNKS TO THE L.T.D. FOR HANDLING THOSE SUB-GROUPS NOT REACHED THRU SELECTORS AS WIRED IN FIG. 1.

FIG. B

TYPICAL ARRANGEMENT FOR WIRING A 2000 LINE GROUP WHERE SPLIT P.B.X. TRUNK GROUPS OCCUR IN ONLY ONE CHOICE AND THERE ARE ONLY TWO SUB-GROUPS IN EACH TRUNK GROUP.

FIG. A MODIFICATION OF FIG. 1

Fig. 1 - Schematic of Connections

1.09 Test trunk ringing circuits are furnished for long loop conditions or where the ringing current at the centralized desk is different from that required at the distant office. This equipment is inserted in series with the first selectors and is located on relay rack units.

1.10 One local test desk test selector frame shall be furnished for each office unit of 10,000 lines.

Subdivisions of Equipment

- J21601D (A&M Only) — LTD Test Selector Frame — Battery on the Cut-Off Relay Offices
- J21601E (A&M Only) — LTD Test Selector Frame — Ground on the Cut-Off Relay Offices

2. SUPPLEMENTARY INFORMATION

- 815-000-000 — Panel Systems Index
- AA128.006 — List of General Equipment Requirement Sections
- X-61200 — List of Engineering Requirement Specifications — Ground on the Cut-off Relay
- X-61400 — List of Engineering Requirement Specifications — Battery on the Cut-off Relay
- Floor Plan Data — Section 4.3, Sheet 29

3. DRAWINGS

Keysheets — Panel Systems

- SD-21300-01 — Battery on the CO Relay
- SD-21680-01 — Ground on the CO Relay

Framework

- ED-20373-01 — Assembly of Frame
- ED-20509-01 — Assembly of Fuse Panel
- ED-20081-01 — Sequence Switch Framework Details
- ED-20150-01 — Framework Limits

Equipment and Numbering

- ED-20374-01 — Equipment of Frame, Battery on the Cut-Off Relay Offices
- ED-20905-01 — Equipment of Frame, Ground on the Cut-Off Relay Offices

Wiring and Cabling

- ED-20376-01 — Local Cabling Plan
- ED-20377-01 — Switchboard Cabling Plan
- ED-20622-01 — Method of Running and Supporting Frame Battery and Ground Leads

4. EQUIPMENT

J21601D (A&M Only) — LTD Test Selector Frame — Battery on the Cut-Off Relay Offices

- Equipment — ED-20374-01
- Local Cable — ED-20376-01

List 1 — Framework, assembly, common wiring, and equipment of one local test desk test selector frame for battery on the cut-off relay offices with or without a "B" switchboard (Less variable apparatus)

	WIRE	EQUIP	SEE NOTES
Framework ED-20373-01	-	1	
Fuse Panel ED-20509-01, Item 32	-	1	
1st Selector Ckts.			
SD-21327-01 with "S" & "T" Wiring and SD-21642-01 with "V" & "W" Wiring	6	As Spec	A&B 5.01
2nd Selector Ckts.			
SD-21328-01	15	Spec	5.01
Misc. Ckt. SD-21253-01:			
Fuse Alarm Fig. 1	1	1	
Test Bat. Sup. Fig. 4	1	1	5.08
Frame Line Jacks Fig. 6	1	1	
Spare Jack Fig. 7	1	1	
Motor Stop Fig. 8	1	1	

Note

- A. The frame local cable shall be universally wired so that either circuit may be equipped as required.
- B. Connect "S" wiring of SD-21327-01 and "V" wiring of SD-21642-01 when TOUCH-TONE Frequency Test Applique feature is furnished otherwise connect "T" and/or "W" respectively.

J21601E (A&M Only) — LTD Test Selector Frame — Ground on the Cut-Off Relay Offices

- Equipment — ED-20905-01, Fig. 1
- Local Cable — ED-20376-01

List 1 — Framework, assembly, wiring, and common equipment of one LTD test selector frame for use in ground on the cut-off relay offices with or without a "B" switchboard (See note 5.09)

	WIRE	EQUIP	SEE NOTES
Framework ED-20373-01	-	1	
Fuse Panel ED-20509-01, Item 32	-	1	
Test Trunk First Sel. Ckts. (K.L. "B" Swbd.)	6	0	A,B
SD-21354-01 with "V" & "W" Wiring			Z
(Term. Sdr.) SD-21643-01 with "V" & "W" Wiring (C.D. "B" Swbd.)			Z
SD-21927-01, Fig. 1 with "S" & "T" Wiring (P.D. "B" Swbd.)			Z
SD-21792-01 with "V" & "W" Wiring			Z
Second Test Sel. Ckt. SD-21355-01	15	0	C
Fuse Alarm Ckt. SD-20241-01, Fig. 1 or ES-226189, Figs. 1 & 13	1	1	
Motor Stop Ckt. SD-20143-01, Fig. 6 or ES-226349, Fig. 6	1	1	5.07
Talking Jacks ES-20360-01, Fig. 2	1	1	
Test Bat. Sup. ES-226716	1	1	
Battery Jack "A" ES-239626, Fig. 1	1	1	
Spare Jack "B" ES-20213-01, Fig. 1	1	1	

List 2 — Wiring only for six circuits per SD-21354-01, required in addition to list 1 to arrange the first selector test circuit to work with a key listening "B" switchboard (See notes D and E)

List 3 — Equipment per SD-21354-01, for *one* first test selector for use with a key listening "B" switchboard to be mounted on a LTD test selector frame per lists 1 and 2 (See notes F, G, H, and J)

List 4 — Equipment per SD-21354-01, (NT) resistance, "Z" apparatus only, required in addition to list 3 when the "No

Test" feature is required and the associated "B" link circuit is wired per SD-20291-01 (See note F)

List 5 — Equipment per SD-21354-01, (NT) resistance, "K" apparatus only, required in addition to list 3 when the "No Test" feature is required and the associated "B" link circuit is not wired per SD-20291-01 (See note F)

List 6 — Wiring only for six circuits per SD-21643-01, required in addition to list 1 to arrange the first selector test circuit to work with terminating senders (See notes K and L)

List 7 — Equipment per SD-21643-01 for *one* first test selector for use with terminating senders, to be mounted on a LTD test selector frame per lists 1 and 6 (See notes M and N)

List 8 — Wiring only for six circuits per SD-21927-01, Fig. 1, required in addition to list 1 to arrange the first selector test circuit to work with a call distributing "B" switchboard (See notes P and R)

List 9 — Equipment per SD-21927-01, Fig. 1 for *one* first test selector for use with a call distributing "B" switchboard, to be mounted on a LTD test selector frame per lists 1 and 8 (See notes J and N)

List 10 — Wiring only for six circuits per SD-21792-01, required in addition to list 1 to arrange the first selector test circuit to work with a position distributing "B" switchboard (See notes S and T)

List 11 — Equipment per SD-21792-01 for *one* first test selector for use with a position distributing "B" switchboard, to be mounted on a LTD test selector frame per lists 1 and 10 (See notes J and N)

List 12 — Equipment per SD-21355-01 for one second selector test circuit to be mounted on a LTD test selector frame per list 1 (See notes U and W)

List 13 — Equipment per SD-21355-01, (AD) and (H1) relays, "K" apparatus only, required in addition to list 12 to work with final selectors that await subscriber release on all types of calls (See note Y)

Notes

- A. The local cable shall contain all the wires used in common by all types of service. The wiring that is not used in common by all types of test trunk first selector shall be ordered per lists 2, 6, 8, or 10 as required.
- B. These circuits shall be equipped per lists 3, 4, 5, 7, 9, and 11 as specified.
- C. These circuits shall be equipped per lists 12 and 13 as specified.
- D. Only the wiring peculiar to key listening "B" operation shall be provided with this list. These wires shall be sewed in the same cable with the wires ordered in list 1.
- E. These circuits shall be equipped per lists 3 and 4 or 5 as required.
- F. Where the "No Test" feature is required furnish the (NT) resistance per list 4 or 5. When the "No Test" feature is not required connect "L" wiring.
- G. Connect "D" wiring when the associated trunk finder hunts for an open circuit.
- H. Connect "E" wiring when the associated trunk finder hunts for ground.
- J. Furnish and connect the "X" strap at the (FS) relay when the earth potential between offices does not exceed 15 volts. Otherwise connect to ground in the distant office ("Y" wiring).
- K. Only the wiring peculiar to terminating sender operation shall be provided with this list. These wires shall be sewed in the same local cable with the wires ordered in list 1 except when modifying an existing frame in which case they shall be made up as a supplementary local cable which shall be superimposed on the regular frame local cable.
- L. These circuits shall be equipped per list 7 as required.
- M. Furnish and connect the "X" strap at the terminal strip when the earth potential between offices does not exceed 15 volts. Otherwise connect to ground at the distant office ("Y" wiring).
- N. Connect "Z" wiring when the "No Test" feature is required.
- P. Only the wiring peculiar to call distributing "B" switchboard operation shall be provided with this list. These wires shall be sewed in the same local cable with the wires ordered in list 1 except when modifying an existing frame, in which case they shall be made up as a supplementary local cable which shall be superimposed on the regular frame local cable.
- R. These circuits shall be equipped per list 9 as required.
- S. Only the wiring peculiar to position distributing "B" switchboard operation shall be provided with this list. These wires shall be sewed in the same local cable with the wires ordered in list 1 except when modifying an existing frame, in which case they shall be made up as a supplementary local cable which shall be superimposed on the regular local cable.
- T. These circuits shall be equipped per list 11 as required.
- U. Connect "Y" and "Z" wiring except when list 13 is specified.
- W. "K" apparatus shall be ordered per list 13 when required.
- Y. Connect "W" and "X" wiring.
- Z. Connect "V" wiring of SD-21354-01, SD-21643-01, SD-21792-01, or "S" wiring of SD-21927-01 when TOUCH-TONE Frequency Test Applique feature is furnished otherwise connect "W" wiring for SD-21354-01, SD-21643-01, SD-21792-01 and "T" wiring for SD-21927-01.

5. GENERAL NOTES

Equipment

- 5.01 The variable apparatus in code J21601D shall be wired for in all cases, but equipped as required for each particular job.

5.02 The test selector frame shall be located near the final frames since most of the switchboard cabling consists of wiring from the second test selectors on this frame to the test selectors located on the final frames.

5.03 When subscriber line numbers of a final choice for which equipment is not provided are assigned in another equipped final choice, it will be necessary to strap the "T", "R", "S", and "SC" leads of the first or second test selector circuits or both as follows in order to enable the test man to reach the actual line using the fictitious number.

5.04 When the second selectors involved are equipped, strap on the switchboard cable side of the terminal strips the circuits which would normally have access to the fictitious numbers to the circuits having access to the actual lines.

5.05 When the second selectors which normally would have access to the fictitious numbers are not equipped and the difference between the fictitious and actual line numbers is 2000 or a multiple thereof, strap the proper (R2) sequence switch brush terminals of the last first selector circuit in order to connect to the group of second test selectors which have access to actual lines. Where the difference is not a multiple of 2000, strapping is required at the (R2) sequence switch to gain access to the proper group of 2000 lines and in addition strapping is required at the terminal strip to gain access to the proper group of 500 lines.

5.06 In order to provide access to sub-groups of PBX trunks in several different choices or where there are more than two subgroups in the same PBX group, additional first or second test selectors or both shall be furnished. The space at the top of the frame, consisting of seven spare sequence switch positions and associated mounting plate capacity may be used for the additional circuits when required.

5.07 Drive and motor equipment shall not be furnished as a part of the lists in this specification but should be furnished separately.

In offices where two local test desk selector frames are located adjacent they may be driven by the same motor.

5.08 One 24V battery and high resistance ground supply shall be furnished in each office for the local test desk test selector frame.

5.09 Local test desk test selector frames per J21601E may be converted to terminating sender, call distributing "B" or position distributing "B" switchboard operation by cutting certain leads dead, adding, removing, and replacing certain apparatus, and adding a supplementary local cable per lists 6, 8, or 10 respectively.

Wiring

Local

5.10 The local test desk test selector frame shall be wired for six first and fifteen second selector circuits. When necessary wiring shall be provided for additional selector circuits as required.

Cabling

5.11 The code numbers of the switchboard cables ordinarily used in cabling to the various frames shall be as shown on the switchboard cabling drawing listed herein. The circuits should however be checked to insure that the proper codes are specified to meet the latest circuit requirements.

5.12 Cables shall be 22 gauge wire except battery leads requiring 20 gauge wire.

List of "A&M Only" and "Mfr Disc." Equipment

5.13 The following equipment has been replaced as indicated.

EQUIPMENT	RATING	DETAILS	
		LAST SHOWN IN ISSUE	REPLACING EQUIPMENT
J21601A	Mfr Disc.	2	J21601D
J21601B	Mfr Disc.	3	J21601E
J21601C	Mfr Disc.	3	J21601E
J21601E	A&M Only	4	-

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