OUTGOING TRUNK TESTBOARD
FRAME MOUNTED
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 outgoing trunk testboard for use in local panel offices.

1.02 This specification is reissued:

(a) To change Groups 19 and 21 and to add Group 23 of ED-20674-13.

(b) To rate Groups 20 and 22 of ED-20674-13 Mfr Disc.

(c) To change Note B and to add Note C of ED-20674-13.

(d) To change list 1 of J28502C.

(e) To rate List 12 of J28502C Mfr Disc.

(f) To add lists 15 and 16 to J28502C.

Capacity

1.03 The capacity of the outgoing trunk testboard is as follows:

OGT Testboard — Test Bay

Test circuit	1
Continuity and reversal test circuit	1
Test trunks from local test desk	5
Trunk and tie line keys	21

OGT Testboard — Jack Bay

Jack panels per bay	2
Test and make-busy jacks per panel	1000

Description

1.04 The outgoing trunk testboard consists of two single-bay frameworks, one called the test bay and the other the jack bay. This equipment replaces the switchboard section type covered by J28501 for all new work.

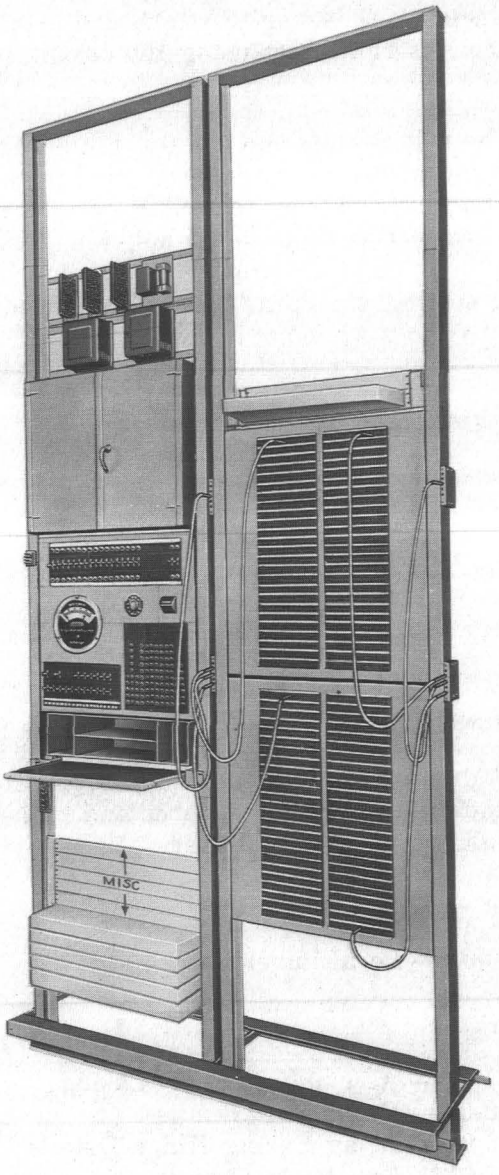

Fig. 1 – Outgoing Trunk Testboard — Frame Mounted

1.05 The test bay is arranged to mount all of the equipment associated with the voltmeter test cord and the associated sender circuit with the exception of the two sequence switches which are mounted on the miscellaneous interrupter frame. A key and lamp panel and a relay casing for housing the relay equipment are provided as well as a writing shelf and a ticket and plug receptacle.

1.06 The jack bay is arranged to mount the test and make-busy jacks and consists of two jack panels, each panel having a capacity for 1000 test and make-busy jacks. The jack panel is arranged to mount jacks of the 92 type, 20 per strip, two panels wide, in a metal casing which encloses the rear. Switchboard cabling to the jacks is run direct using 100 circuit (300 conductor) cables.

1.07 The test circuits and the test trunks from the local test desk are terminated in jacks located on the jack bay, patching cords being used for connecting them to the individual trunk jacks. Dummy jacks are provided for each patching cord so that the cords can be connected to the dummy jacks when not in use.

2. SUPPLEMENTARY INFORMATION

815-000-000 — Panel Systems Index
AA128.002 — List of Equipment Design Requirements Sections
AA128.006 — List of General Equipment Requirements Sections
Floor Plan Data — Section 4.3, Sheet 35

3. DRAWINGS

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

Key Sheet

SD-21300-01 — Local Panel

Framework

ED-20087-01 — Assembly of Relay Casing
ED-20150-01 — Framework Limits
ED-20219-01 — Relay Casing Hinge Details
ED-20587-01 — Key Panel Casing
ED-20660-30 — Writing Shelf
ED-20664-70 — Assembly of Jack Panel
ED-20665-10 — Assembly of Casing for Jack Panel
ED-20668-10 — Ticket and Plug Receptacle
ED-20728-10 — Assembly of Key and Lamp Panel
ED-21679-70 — Assembly of Test Bay and Jack Bay

Equipment

ED-20033-01 — Apparatus Designation Chart
ED-20674-13 — Jack Bay Equipment
J28502C-( ) — Equipment of Frame — Arranged for Universal Trunks

Wiring and Cabling

ED-20667-01 — Local Cabling Plan
ED-20669-01 — Switchboard Cabling Plan
ED-20761-01 — Cabling Schematic for Test and Make-Busy Jacks
ED-90093-01 — Method of Grounding

4. EQUIPMENT

ED-20664-70 — Outgoing Trunk Testboard — Jack Panel for Jack Bay (See 5.09 to 5.13)

Group 1 — One jack panel assembly.

ED-20665-10 — Outgoing Trunk Testboard — Jack Panel Casing

Group 1 — Material for one panel.

Note

A. This panel is to mount on jack bays per ED-20679-70, G2 and does not include the jack mountings and associated designation strips.

ED-20674-13 — Outgoing Trunk Testboard — Jack Bay Equipment

Group 1 — Framework and common parts for one jack bay with one jack panel, arranged for 900 test and MB jacks and 140 MB jacks and test line equipment. (One group 1 required for each OGT test frame.)

Group 2 — Supplementary jack panel arranged for 1000 test and MB jacks required in addition to group 1 when more than 900 test and MB jacks are required.

Group 3 — Designation strips for test and MB jacks required for each 100 circuits or five strips of 20 jacks numbered 0 to 99. (See 5.13.)

Group 4 — Designation strips for test and MB jacks required for each strip of 20 jacks, numbered 0 to 19, 20 to 39, 40 to 59, or 60 to 79. (See 5.13.)

Group 5 — Designation strips for test and MB jacks required for each strip of 20 jacks numbered 80 to 99. (See 5.13.)

Group 6 — Designation strips for permanent signal holding jacks required for each strip of 20 jacks. (See 5.13.)

Group 7 — Jack and cord equipment for transmission test required once per jack bay when tandem office is equipped with or local office connects to tandem office transmission testboard.

Group 8 — Mounting plates and adapters for test trunk from LTD required once for each five trunk circuits.

Group 10 — Relay equipment for test trunk from LTD required for each trunk circuit equipped.

Group 13 — Equipment per SD-96540-01, Fig. 2 and 4 required in addition to group 12 for each additional jack bay for test termination equipment arranged for reverse battery supervision.

Group 14 — Equipment per SD-96540-01, Fig. 5 (M and LN jacks only) required in addition to group 12 where transmission measuring equipment does not have 900 ohm impedance termination.

Group 15 — Equipment per SD-21532-01, Fig. 5 required in addition to group 1 for 2-way transmission test jack TM.

Group 16 — Equipment per SD-96540-01, Fig. 8 and "S" option required in addition to group 12 for making transmission measurements using the frame mounted transmission and noise measuring equipment.

Group 17 — Equipment per SD-96540-01, Fig. 9 and "U" option required in addition to group 16 when open wire circuits are to be tested.

Group 18 — Equipment per SD-96540-01, Fig. 12, with "M" option, required in addition to group 19 to provide means of controlling the remote office test line (ROTL).

Group 19 — Equipment per SD-96540-01, Fig. 1, 2, 3, and 4 (jacks and keys) "X" option required in addition to group 1 test termination equipment for testing trunks arranged for reversed battery supervision.

Group 21 — Equipment per SD-96540-01, Fig. 7, 14, and 17 required in addition to group 19 or 23 when office is arranged for 900 ohm termination. (See Notes B and C.)

Group 23 — Equipment per SD-96540-01, Fig. 1, 2, 3, and 4 (jacks and keys only) "Y" option required in addition to group 1 for test termination equipment for testing trunks arranged for reverse battery supervision.

Notes

A. Designation strips and jack mountings per Fig. K and L shall be located in spare jack spaces as specified by the telephone company.

B. When group 21 is furnished, a variable frequency oscillator per KS-19260 and/or a transmission measuring set per J94023C is required as specified.

C. When group 21 is furnished, an Amphenol No. 126-215-1000 connector is required and should be frame mounted and installer wired to provide access for the 23C transmission measuring set. The socket in-line connector which is furnished with the 23C transmission measuring set should be discarded.

ED-20679-70 — Outgoing Trunk Testboard — Jack Bay (See 5.07 and 5.08)

Group 2 — Material for one bay.

Group 3 — Adapters for mounting LTD test trunk equipment.

Note

A. This bay is a bare framework and does not include the jack mountings.

J28502C (A&M Only) — Outgoing Trunk Testboard — Test Bay — Local

Equipment — J28502C-( )
Local Cable — ED-20667-01, Fig. 1

List 1 — Framework, assembly, wiring, and equipment for a test bay for the outgoing trunk testboard for local panel offices.

	WIRE	EQUIP	SEE NOTES
OGT Testboard Test Bay Framework, ED-20679-70, G1		1	
Key and Lamp Panel Framework, ED-20728-10		1	
Key and Lamp Panel Casing, ED-20587-01, Item 2		1	
Relay Casing, ED-20087-01, Item 29-R		1	
Writing Shelf, ED-20660-30, Item 2		1	
Ticket and Plug Receptacle, ED-20668-10		1	
Test Ckt, SD-21610-01, Fig. 1, 2 & D & "ZB" Option	1	1	A
Fig. K and P with "ZQ" and "ZR" Wiring	1	0	
Fig. N and Q with "ZS" and "ZT" Options	1	0	E
Tel Ckt, SD-21635-01, Fig. 1	1	1	
Fig. 1 and 6 with "W" and "V" Wiring	1	0	F
Clock Ckt, SD-90409-01, Fig. A or SD-96343-01, Fig. 2	1	1	5.06
Aux Sig Ckt, SD-96410-01:			
Fig. 2, "Y" App	1	0	5.04
Fig. 5, "W" or "X" App	1	0	5.04
Fig. 17, "W" or "X" App	1	0	5.04
Trunk Key and Lamp Ckt, SD-21635-01, Fig. 2, 3, or 4	34	0	5.01, 5.02, & 5.03
Continuity and Reversal Test Ckt, SD-96370-01, Fig. 1, with "Q" & "S" Options, and Fig. 3	1	1	
Misc Frame Ckt, SD-21532-01	1	1	
Test Trunk Ckt From Local Test Desk, SD-96367-01, Fig. 2	5	5	
Grounding Ckt, ED-90093-01, Fig. 6	1	1	
Transmission Test Jack Ckt, SD-96013-01, Fig. 3	1	0	5.12

List 4 — Wiring and equipment per SD-21610-01, Fig. 4 with "ZE" option per Fig. 2 or 3 required in addition to list 1 to provide a repeat test feature.

List 5 — Wiring and equipment per SD-21610-01, Fig. 5 and C with "ZA" and either "ZL" or "ZM" options required in addition to list 1 for testing multifrequency pulsing trunks that are arranged for "Wink" start and/or for "Delay" start signals. (See Note D.)

List 6 — Wiring and equipment per SD-96370-01, Fig. 4 to provide for testing trunks with battery on the ring and ground on the tip.

List 7 — Wiring and equipment per SD-21610-01, Fig. E required in addition to list 1 for providing tone on a coin zone dial trunk to indicate to the operator that the call is a test call. (See Note D and G.)

List 8 — Wiring and equipment per SD-96540-01, Fig. 1 (S lamp only) required in addition to list 1 for test termination equipment for testing trunk arranged for reverse battery supervision. (See Note C.)

List 10 — Wiring and equipment per SD-21610-01, Fig. H required in addition to list 5 to provide for testing the operation of outgoing trunk circuits that are used with panel MF non-AMA trunks.

List 11 — Wiring and equipment per SD-21610-01 Fig. K and "ZQ" option required in addition to list 1 to provide for testing of ANI outgoing trunk circuit MF pulsing to a 4A toll and/or dial zero trunks to crossbar tandem TSP.

List 13 — Wiring and equipment per SD-21610-01 Fig. K and option and Fig. P required in addition to list 1 to provide for connection to the first ANI number network when testing of ANI trunks is specified. (See Notes G and H.)

List 14 — Wiring and equipment per SD-21610-01 Fig. P required in addition to list 13 to provide for connection to each additional ANI number network (max. 8).

List 15 — Wiring and equipment per SD-21610-01 Fig. Q required in addition to list 1 to provide for access to tone detector unit for recognition of line busy tone as well as busy back flash.

List 16 — Wiring and equipment per SD-21610-01 "ZT" option only required in addition to list 15 when use of tone detector unit is shared with a test termination unit. (See Note I.)

Notes

A. When list 5 is provided, SD-21610-01, Fig. D and "ZB" option shall be omitted.

B. Provide "ZC" option for connection to multifrequency signal generator circuit per SD-95867-01 when no multifrequency current supply and distribution equipment per J98609 is available.

C. The test termination units per J98501S and T and the tone detector unit per J93020AH shall be mounted on a miscellaneous relay rack bay near the OGT frame.

D. Where testing of crossbar CAMA outgoing trunks is required and list 7 is furnished, provide "ZL" wiring. Where testing of crossbar CAMA outgoing trunks is required and list 7 is not furnished, provide "ZL" wiring and apparatus. Otherwise provide "ZM" wiring.

E. Provide Fig. N wiring when list 15 is not specified.

F. Connect "V" wiring when the telephone circuit dial also serves the test termination circuit, otherwise connect "W" wiring.

G. When list 7 and/or list 13 is specified, a 189A mounting plate must be furnished.

H. When list 13 is specified, a 3P7D cord assembly is required and must be ordered separately.

I. Provide "ZS" wiring when list 15 is specified and list 16 is not provided.

5. GENERAL NOTES

5.01 The talking trunk circuits shall be wired universally so that either a trunk circuit requiring one half of the key or a trunk circuit requiring the whole key may be connected to any key. The relay equipment is located on the relay rack and cabled to either the MDF or IDF for cross connection to the key and lamp equipment. These circuits are the same as those used in other maintenance frames or desks and may be a part of a group of trunks serving these frames or desks.

5.02 When talking trunk circuits are multipled to other test bays, the keys shall be located in the same relative location in both bays unless otherwise specified. The lamp and key shall be located in relation to each other so that the lamp will be at the end of the key toward which the key lever operates when in a talking position. The keys shall be equipped as required.

5.03 The subscriber set for the code ringing line to other offices, when specified, shall be located adjacent to the auxiliary signal circuit subset in the first test bay as shown on the equipment drawing.

5.04 The auxiliary signal circuit shall be equipped as specified by the telephone company. Associated relays, etc, per J93016 shall be equipped in accordance with job requirements and located on the miscellaneous relay rack.

5.05 The resistance lamps associated with the ringing circuit shall be located on the fuseboard.

5.06 In offices without A switchboards and with no zone and overtime equipment, a standard Telechron electric clock shall be furnished and located adjacent to the subsets shown on the equipment drawing. Otherwise a No. 1A clock shall be provided in the outgoing trunk testboard in accordance with either SD-90409-01, Fig. A or SD-96343-01, Fig. 2 depending upon which circuit covers the clock equipment in the office. In the case of SD-90409-01, this clock shall be connected to the office clock equipment either at the relay rack or at a preceding frame in the same clock group. A group relay clock circuit shall be provided, when necessary, and located with the office clock equipment. When SD-96343-01 is used, connect the clock to the interrupter supply at the relay rack.

5.07 One ground lead shall be wired to each group of 100 test and make-busy jacks, and loop straps shall be furnished between the jack mountings to facilitate removal of the jacks for maintenance. The ground leads shall be wired to No. 6 bare tinned wire which shall be fastened to the framework on each side of the jack bay. For method of grounding, see ED-90093-01, Fig. 6.

5.08 Jack mountings have been provided on each side of the jack bay uprights for terminating the test circuits and trunks so that patching cords may be used for connecting them to the individual outgoing trunk circuits. Specifically, these mountings are arranged to be equipped with:

(a) Two sets of T1 and T2 jacks for terminating the test circuits of two bays.

(b) One CT jack for terminating the continuity and reversal test circuit (associated relay equipment per Fig. 1 of SD-96370-01 to be equipped only in the first of two test bays).

(c) Five LTD jacks for terminating the local test desk test trunks which may be multipled through two or more testboards when desired.

Arrangements have been made also for mounting the LTD test trunk relay equipment per Fig. 3 of SD-96367-01 immediately above the jack panels. This and the various jack equipment shall be wired to a terminal strip in the test bay by means of switchboard cable. Ground supply for the test trunk relays shall be obtained via a lead run and connected to the No. 6 bare wire mentioned in 5.07.

5.09 The jack bay panels shall be equipped from top down with the jack equipment growing from bottom up in the upper panel and from top down in the lower panel. Test and make-busy jacks per Fig. 4 of SD-96376-01 are required for each 3-wire trunk outgoing from the district or office multiple. These jacks are required also for the miscellaneous outgoing trunks such as subscriber recording completing trunks, special service trunks, and information desk trunks. All standard cabling and cross-connecting arrangements, with respect to both panel jack connections and multipling of panel and crossbar outgoing trunks, are covered on ED-20761-01 and SD-96376-01.

5.10 The miscellaneous make-busy jacks for the various circuits such as permanent signal holding trunks and local incoming selectors, shall be grouped together and located as specified by the telephone company. The equipment for the test termination circuit per SD-96476-01 shall also be located as specified by the telephone company.

5.11 The jack panel numbering shown in the jack bay is typical and applies to the first bay only. Subsequent bays shall be numbered in sequence when the bays grow from right to left. When growth is from left to right, the numbering shall be specified by the telephone company.

5.12 When transmission test jacks are required, they shall be mounted on the jack bay as covered by Fig. F and G of the equipment drawing. The holding coil for local offices shall be mounted on the test bay and wiring from the test bay terminal strip to the jacks on the jack bay shall be run by the installer. All wiring shall be run with switchboard cable direct to the jacks.

5.13 The switchboard cables for the test and make-busy jacks shall be soldered to the jacks in the shop. The rear portion of the jack panel casing is removable so as to facilitate installation of the jacks and associated cabling by the installer.

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

The following 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.

EQUIPMENT	RATING	DETAILS LAST SHOWN IN ISSUE	REPLACING EQUIPMENT
ED-20674-13,			ED-20674-13,
G9	Mfr Disc.	—	G10
G11	Mfr Disc.	9	—
G12	Mfr Disc.	10	—
G20	Mfr Disc.	10	—
G22	Mfr Disc.	10	—
J28502A	Mfr Disc.	8	J28502C
L2	Mfr Disc.	5	—
J28502B	Mfr Disc.	6	—
L2	Mfr Disc.	5	—
J28502C, L2	Mfr Disc.	5	—
L3	Mfr Disc.	9	—
L9	Mfr Disc.	9	—
L12	Mfr Disc.	10	—
J28502D	Mfr Disc.	6	—
L2	Mfr Disc.	5	—

Note: Additions to existing equipment shall be furnished to agree with the original installation. This is necessary because the telephone and auxiliary signal circuits furnished with code J28502C are arranged to function with the universal trunk and the tie line circuit for all maintenance frames and desks and will not function with non-universal trunk and tie line circuits already installed.

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