

OFFICE JUNCTOR CHANNEL TEST  
NO. 1 CROSSBAR ORIGINATING EQUIPMENT

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1. GENERAL INFORMATION

1.1 These tests consist of routing calls through each office junctor, or through each junctor which has been added or changed in connection with an addition or transition. The channels available between each district frame and each office frame are shown on the office junctor assignment chart specified for the job. The tests are made by dialing a series of simultaneous calls, preferably 2 or 3 digit operator class to idle trunks on the office link frames. On additions and transitions, the tests shall be made during a light load period and with the consent of the telephone company.

NOTE: Office junctors relocated on existing office and district frames and office junctors to new office and district frames may be involved in this test. If it is not possible to test all of these junctors at the time the test is made, a subsequent test is to be made only on those junctors omitted on the first test.

1.2 Test Interval: These tests are to be made within three weeks of the start of concentrated load test.

1.3 Manload: Two men are recommended for these tests.

2. RECORDS AND REQUIREMENTS

2.1 Records: ID-1313 and ID-1315 are required as outlined in Handbook 50 Section 3.

2.2 Requirements: Section 0.3 of this handbook lists the originating channel tests.

3. TESTING EQUIPMENT

3.1 Test Sets and Accessories Required

<u>Amt</u>	<u>Code</u>	<u>Description</u>	<u>With ITE</u>
(a) New Installations			
1	ITE-4081	Automatic Call Originating Test Set	
4	ITE-4075	Message Register Units	4081
As Req.	ITE-4087	Extension Jack Boxes	4081
" "	349A	Make Busy Plugs	#4023
" "	322A	Make Busy Plugs	#4023
" "	325C or 351C	Make Busy Plugs	#4023

<u>Amt</u>	<u>Code</u>	<u>Description</u>	<u>With ITE</u>
(b) Additions and Transitions			
1	ITE-4074	Multi-Call Test Set	
As Req.	ITE-4087	Extension Jack Boxes	#4023
" "	349A	Make Busy Plugs	#4023
" "	322A	Make Busy Plugs	#4023
" "	325C or 351C	Make Busy Plugs	#4023
" "	ITE-8507	Alligator Clips	#4023

# Crossbar Test Accessory Kit.

3.2 Cords Required

<u>Amt</u>	<u>ITE</u>	<u>Cdrs</u>	<u>Lath</u>	<u>Terminals</u>	<u>With ITE</u>
(a) New Installations					
10	9601	3	12'	2-310 Plugs	4081
11	9600	3	6'	2-310 Plugs	4081
11	9624	3	6'	309 Plug - #93 Cord Tips	4081
or 11	9605	3	12'	309 Plug - 310 Plug	Req.
10	9637	3	12'	310 and 325A Plugs	4081
(b) Additions and Transitions					
As Req.	9605	3	12'	309 Plug - 310 Plug	Req.
4	9637	3	12'	310 and 325A Plugs	4074
5	9600	3	6'	2-310 Plugs	4074
1	9598	2	12'	2-310 Plugs	4074

4. NEW INSTALLATIONS

4.1 Setup for Test: Locate the automatic call originator test set, ITE-4081 at either the SOJP or the OGT test frame. Refer to Figure 1 for the connections and TMO-4081 for test set operation. Connect 48V battery and ground to ITE-4081 using 14 BRC with a 5 ampere fuse in the battery feed.

4.1.1 At the line link frames, patch as many assigned lines, as there are junctors between any one district and any one office frame in the first junctor subgroup, to the TL jacks using ITE-9637 cords. (Refer to the ED-25012 or ED-25016 specified for the job to determine the number of junctors). Distribute the lines over the line link frames and make line link secondary switches busy so that at least one

call will be placed in each subgroup of ten subscriber district junctors on the first district frame under test. When there are more than ten junctors (eight when testing a district frame with a KP group) in the junctor subgroup, distribute the additional calls uniformly over the district frame being tested. Patch the TL jack appearances at the SOJP to the four groups of L jacks on ITE-4081 as required to agree with the trunk distribution as outlined in Paragraph 4.12. Use ITE-9601 cords for these patches.

4.12 At the OGT jack panel, connect the switchboard cords (ITE-9624) that have been spliced to cable conductors, to the test jacks of outgoing trunks as follows:

(a) The number of trunks patched to, should equal the number of junctors in the junctor subgroup being tested and they should all be on the first office frame to be used for test.

(b) Distribute the trunks as much as possible over the ten secondary switches of the office frame, using from one to four full selector codes as required.

(c) Where split trunk levels are used be sure that there are as many right and left trunks available as there are right and left junctors in the junctor subgroup being tested. Do not use split and non-split trunk levels on the same test.

(d) Make busy the remaining trunks of the trunk groups used for test.

(e) Patch to an overflow trunk and make remaining overflow trunks busy.

4.13 At the SOJP, connect the extension jack box end of the trunks used for test to the test set TK jacks, so that calls originated on any of the five L jacks of a group will terminate on one of the five TK jacks associated with the same group. Connect the overflow trunk extension jack to an OFL jack of the test set.

4.14 At the test set, fasten the four ITE-4075 (message register units), two high to the upper side of the handle on the end near the CT jacks. Insert the CT and TBL plugs of an ITE-4075 in the CT and TBL jacks of each group. Set up the code and number to be dialed over the five lines in each group by inserting 322A plugs in the associated A, B, C, TH, H, T and U jacks. (Where two digit codes are used, insert plugs in the A and C jacks and operate the associated DGT key). Operate the group CN key when any of the calls in the group are to be originated on coin lines. Operate the REV key of any group originating calls on AMA lines. Operate the GRP keys associated with the unused groups of test set lines and trunks.

4.15 Block the junctor walking circuits in the originating markers so that the first junctor subgroup is used. Have all markers in service during these tests.

#### 4.2 Test Operation

4.21 Operate the ST key. Observe that as the calls are terminated the TK lamp associated with each trunk used for test lights and that the OFL lamp does not light.

4.22 When all calls have been completed satisfactorily, release the ST key and check that all calls are released.

4.23 Operate the ALM-HLD and AST keys and allow the test set to repeat the test five times before proceeding to test the next district or office frame.

4.24 Perform tests per Paragraph 4.11 and 4.21 to 4.23 on each district frame to the first office frame with the test trunks set up as covered in Paragraph 4.12 to 4.15.

4.25 Perform tests per Paragraph 4.11 to 4.24 from each district frame to each office frame changing the test trunk set up as covered in Paragraph 4.12 to 4.14 to reach the office frame under test.

4.26 Perform tests per Paragraph 4.11 to 4.25 on each junctor subgroup blocking the junctor walking circuits in the markers accordingly and limiting the number of simultaneous calls to the number of junctors in the junctor subgroup being tested.

### 5. ADDITIONS AND TRANSITIONS

#### 5.1 Setup for Test

5.11 Location of test equipment, using ITE-4087 Extension Jack Boxes, set up a temporary multiple of four 3-wire circuits between the line link frames and the district frames having added or relocated junctors. In a similar manner, extend one 3-wire circuit between the district frames and the OGT frame. Leave these cables long enough to reach any district frame involved in this test. Locate ITE-4074, multi-call test set, at the first district frame having junctors to be tested and make connections shown in Figure 2. Connect battery and ground to the test set by patching an ITE-9598 cord between the big jack of the test set and the A jack of the frame.

5.12 Assignment of Lines: It will be necessary to assign 4 subscribers lines on one line link frame (one per primary switch on one line link frame) through which each district frame may be reached. Directing of calls to the particular district frame required is accomplished by inserting. Make Busy plugs in jacks S50 to S59 as required. Moving of assigned lines to another link frame may be necessary during the progress of the test as each Line Link Frame may not have access to all District Frames involved in the test.

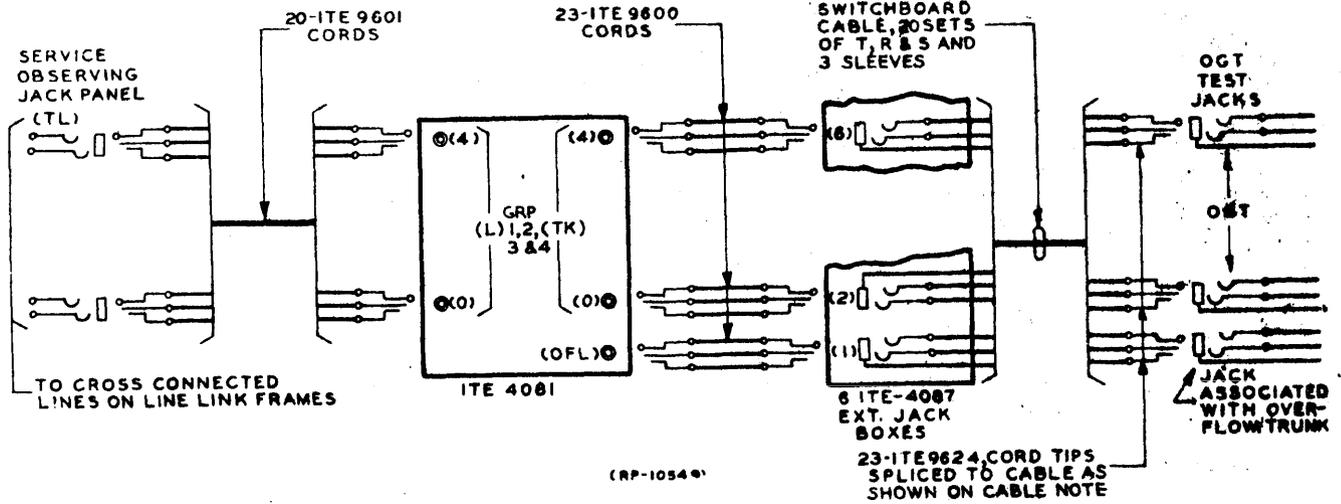


FIG. 1 SETUP FOR TESTS OF PARAGRAPH 4

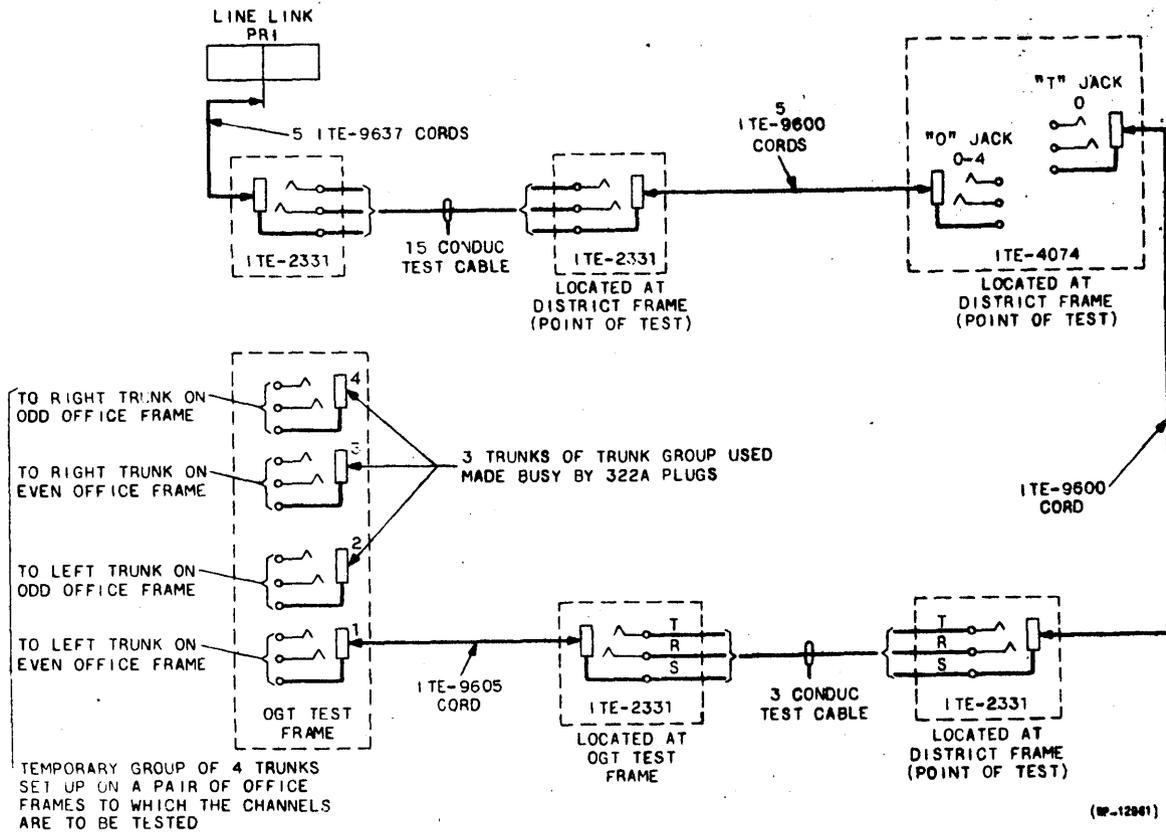


FIG. 2 SETUP FOR TESTS OF PARAGRAPH 5

5.13 Assignment of Temporary Route Relay: It will be necessary to establish a temporary trunk group on each pair of office frames to which a test is to be made. In case the office link frame secondary multiple is partially split, locate the trunk group in the non-split levels. A temporary route relay on each marker to be used during this test will be required and is to be cross-connected in a class other than operator class. Trunk groups should be assigned vacant code numbers which can be reached by dialing three digits in a three digit area and two digits in a two digit area. Disconnect the codes used from the vacant code signal. Assigned route relay is to be equipped with ITE-8507 alligator clips on those cross-connections most likely to be changed during the progress of the test (ST, GS, GE, TL, etc.)

NOTE 1: A Temporary Route relay is required only on the marker or markers which will be in service during the light load period in which this test is made. Use as few markers as possible.

NOTE 2: Since this test does not check all office links, it is not necessary to provide temporary trunk groups on both the regular and extension frames.

NOTE 3: Trunk groups of 4 trunks are recommended. Choose unused trunks so that the first trunk in the group is located on the left half of the office link secondary switch on an even office link frame.

5.14 Removal of Ground at M.D.F.: It will be necessary to remove the "unused trunk ground" on the trunks to be used in this test. This ground is applied either at the M.D.F. or with 350A plugs at the OGT jack bay.

5.15 Patching Trunk to Test Set: Patch one trunk of the group chosen to the ITE-4087 extension jack box at the OGT Test Frame by means of an ITE-9605 Cord (309 plug of cord into jack of OGT test frame). Determine the trunk to be patched as follows according to which junctors it is desired to check.

(a) First Trunk: To check all junctors in a subgroup to an even office frame with non-split or partially split trunk levels or to check left junctors to an even office frame with split trunk levels.

(b) Second Trunk: To check all junctors in a subgroup to an odd office frame with non-split or partially split trunk levels or check left junctors to an odd office frame with split levels.

(c) Third Trunk: To check right junctors to an even office frame with split trunk levels.

(d) Fourth Trunk: To check right junctors to an odd office frame with split trunk levels.

Patch the desired trunk to the ITE-4087 extension jack box and make busy the other 3 trunks in the group by means of 322A make busy plugs.

5.16 Temporary Test Leads or Cables: Install temporary test leads or cables between extension jack box at the OGT Test Frame (TDF or HMDF if used) and the point of test. These leads or cables are to extend the tip, ring and sleeve of the trunk, to the test set.

5.161 Install temporary 15 conductor cable between extension jack box ITE-4087 at line link frame and extension jack box at point of test for extending cords from "O" jacks of ITE-4074 Multiple Call Test Set.

5.17 Blocking of Marker or Markers for Checking Particular Channel Subgroups: On jobs having more than one subgroup of office junctors, the walking circuit is employed. On these jobs it will be necessary to block to the desired subgroup the marker or markers used during this test by blocking operated a CBB relay. For example if the subgroup which takes the A choice is required the CBB1 relay should be blocked operated. It should be borne in mind that during this test any traffic through the office will be limited in Channel Selection, however, as this test is to be made during a light load period, no difficulty should be encountered.

## 5.2 Test Operation

5.21 Station man at office link frame on which are located the first group of trunks to which office junctors are to be tested.

5.22 Operate the TT, TO and "D" O-3 keys of ITE-4074 Test Set to the dialing position. Operate the "G" Key. The lamps "O" O-3 light as each line is attached to a sender.

NOTE: If coin lines are assigned it will be necessary to operate the CN key until senders are attached. CN key is released when "O" lamps O-3 light.

5.23 Dial the temporary test code and the four numerical digits 1111. Four calls will be dialed simultaneously and one will be completed to the test set. The remaining three will go to overflow.

5.24 Observe that the hold magnet on both district and office link frames corresponding to the first available channel to this group, are operated.

**NOTE 1:** Refer to the office junctor assignment chart for the particular office to determine the junctors available to the patched trunk used per Paragraph 5.15 (a), (b), (c) or (d). The channel numbers "OL" and "OR" and etc., refer to the District and Office frame Half switches Left or Right on which the junctor is located. The first digit in each box to the right of the channel number represents the district vertical and second the office vertical to which the junctor is attached. The first available junctor for non-split or partially split trunk levels is the lowest numbered channel listed. For split trunk levels with a left trunk patched to the test set, the lowest numbered left channel listed is the first available junctor, with a right trunk patched to the test set the lowest numbered right channel listed is the first available junctor. If the marker channel testing sequence has been changed as outlined in Note No. 2 some other junctor will be used first. Should any other hold magnet operate (except as above) a trouble condition is present.

**NOTE 2:** Rearrangement of Cross-Connections to distribute wear on marker channel relays is covered on note of marker schematic drawing. If a channel other than that indicated in Note 1 operates on the first call, an investigation should be made to determine if cross-connections have been changed.

5.25 Operate and release the REV key. Restore G key to normal and insert a 325C make busy plug in the vertical just used at either the district link or office link frame.

5.26 Repeat operations described in Paragraph 5.22 to 5.25. Observe that next available channel shown on Office Junctor assignment ED drawing is used. Restore Test Set G Key to normal and insert 2nd 325C Make Busy Plug in vertical just used.

5.27 Repeat operations covered in Paragraph 5.22 to 5.25 until all available channels between District Frame and Office Frame have been tested. Each junctor must be selected by the marker in proper sequence per Paragraph 5.24, Notes 1 and 2. By proper patching of the trunk per Paragraph 5.15 the junctors to both odd and even office frames of a pair may be checked using one group of 4 trunks. Remove 325C Make Busy Plugs.

5.28 In a manner similar to that covered in preceding paragraphs all office junctors that have been added or rearranged in connection with a transition or an addition are to be tested.

**NOTE:** It will probably be found convenient to complete all the tests required to one pair of office frames before setting up the trunk group on another pair of office frames. (Any other order of test may be used if more convenient). This will require in some cases, changing the CBB relay of the marker walking circuit or circuits which is blocked operated during the test.

5.29 Following completion of test remove block from operated CBB relay of marker walking circuit or circuits. Restore busied markers to service. Remove cross-connections from temporary route relay if subsequent tests per Paragraph 1.1 of this section are not required. Remove make busy plugs in trunk jacks on the OGT Test Frame - restore the ground on trunks at MDF.

R. E. RAHMES

Engineer of Installation

Reason for Reissue:  
To add Paragraph 4 which was previously Section 1 Paragraph 5.3.

Replaces Section 142 dated 9-16-48.