

**ESS FORMS 1504, 1505-1 AND -2, AND 1506  
2-WIRE NO. 1 ELECTRONIC SWITCHING SYSTEM**

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**NOTICE**

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**1. GENERAL**

**1.01** This section describes assignment forms ESS 1504, ESS 1505 -1 and -2, and ESS 1506 and the method for using these forms by plant assignment for a 2-wire No. 1 Electronic Switching System (ESS).

**1.02** This section is reissued to cover:

- (a) a new form, ESS 1505-2
- (b) the automatic transmission measuring system-local and tandem on forms ESS 1505-1 and -2
- (c) a new application of forms ESS 1505-1 and -2 with CTX-6 and later generic programs
- (d) five additional features to be entered on form ESS 1506
- (e) a new application of form ESS 1506 for trunk make-busy keys and carrier group in CTX-5 and later generic programs
- (f) additional codes for telephone companies
- (g) updated form formats.

**2. DESCRIPTION OF FORMS**

**2.01** These forms are used to list specific information about lines and trunks associated with a No. 1 ESS. Form ESS 1504, Outgoing

Automatic Trunk Testing Assignment, lists each trunk group number to be tested. This form also lists the test table number associated with each trunk group to be tested.

**2.02** Form ESS 1505 -1 and -2, Automatic Trunk Testing Table Record, is used to record outpulsing information necessary to reach certain test lines in the terminating office. It also indicates which of these test lines are to be used by the trunk automatic progression testing program. The test lines are as follows:

- Permanent Busy Test Number
- Synchronous Line Test Number
- Nonsynchronous Line Test Number
- ATMS (Automatic Transmission Measuring System) —Local
- ATMS—Tandem.

**2.03** Form ESS 1506, Miscellaneous Assignment Information Record, is used for fourteen assignments as follows:

- (a) No-test verticals to line link network terminations (except standard assignments)
- (b) Trunk groups to recorded announcement frame channels
- (c) Emergency manual lines to outgoing trunks
- (d) Cable pressure contactor list
- (e) Trunk make-busy keys
- (f) Carrier group alarms
- (g) Service link network
- (h) Centrex attendant consoles
- (i) Remote office test line (ROTL)
- (j) Automatic Queuing of trunks and lines (AQTL)
- (k) Network management pre-program
- (l) Network management indicator

(m) Trunk maintenance teletypewriters

(n) Operation with the switching control center.◆

Assignments (a), (b), ◆(j), (k), and (l) are the responsibility of the traffic department.◆

**2.04** The data contained on these forms is used for cutover of new offices. For this reason, the data is transferred to punched cards by Western Electric Company for processing on a computer. The small numbers on the forms identify the keypunch (KP) card columns that are to be punched.

**2.05** The letters O, I, and Z look very similar to numbers 0, 1, and 2. To avoid confusion, these letters should be written on the forms in the following manner:

Letter O	∅	
Letter I	I	(with serifs)
Letter Z	Z	

**2.06** In keypunching, dash marks and blank spaces are keypunched as blanks, and check marks are keypunched as asterisks. In some of the columns of the forms, it is desirable to use the dash mark as a reminder that an item has not been overlooked even though no entry is to be made in that column.

**2.07** ◆If vertical arrows are used, the arrows must stop at the last line associated with the entry and not pass through or extend into blank lines. These vertical lines shall be wavy lines.◆

### 3. USE OF FORMS

#### GENERAL

**3.01** Four items are common to all three forms covered in this section and are filled in for Western Electric Company's use when processing these forms (Fig. 1 through ◆12 and 14 through 16).◆ These items are the telephone company, Western Electric office base number and control group number, form code, and ESS unit.

#### TELEPHONE COMPANY

**3.02** The telephone company (TELCO) is a 3-digit code at the top of the forms and is placed in KP columns 3, 4, and 5. A list of the telephone companies and the 3-digit code for these companies are listed in Table A.

#### WESTERN ELECTRIC OFFICE BASE NUMBER AND CONTROL GROUP NUMBER

**3.03** The Western Electric office base number and control group number is used by the equipment engineer on the equipment specification. The office base number has four digits and is placed in KP columns 6 through 9. The control group number has two digits and is placed in KP columns 10 and 11.

#### FORM CODE

**3.04** The form code is ◆printed in◆ KP columns 14 and 15 to identify the type of form.

#### ESS UNIT

**3.05** The ESS unit designates the office which may be the name of the town, ◆district, or other locally understood terminology.◆

#### FORM ESS 1505 ◆-1 AND -2◆ —AUTOMATIC TRUNK TESTING TABLE RECORD

**3.06** Forms ESS 1505 ◆-1 (Fig. 1 and 3) and 1505-2 (Fig. 2) are◆ completed first since information from this form is used in filling out form ESS 1504.

**3.07** Forms ESS 1505 ◆-1 and -2 are◆ primarily a record of tests that can be performed on outgoing trunk groups. The test code digits (listed under the four test columns) are the digits that would be outpulsed via a particular trunk group to initiate these tests in other offices. Since several central offices may require the same test code digits to test their trunk circuits, one test table would be used to record tests for all of these offices. A test table is designated by the table number (test table number) on forms ESS 1505 ◆-1 and -2,◆ and all information on the line of these forms constitutes the test table. The test table becomes a 2-line entry if more than five digits are required for the test code digits and a single-line entry if five or less digits are used for the test

TABLE A  
CODES FOR TELEPHONE COMPANIES

COMPANY	CODE
New England	001
New York	002
New Jersey	003
Pennsylvania	004
Chesapeake and Potomac, Washington	005
Chesapeake and Potomac, Maryland	006
Chesapeake and Potomac, Virginia	007
Chesapeake and Potomac, West Virginia	008
◆ South Central	009◆
Southern	010
Ohio	011
Michigan	012
Indiana	013
Wisconsin	014
Illinois	015
Northwestern	016
Southwestern	017
Mountain States	018
Pacific Northwest Bell	019
Pacific	020
Long Lines	022
Southern New England	024
Cincinnati and Suburban	025
Canada	027
◆ Diamond State	028
Nevada	029◆

code digits (specified by option). Examples of these two types of entries are shown in Fig. 1 ◆ and 3.◆ Test table 003 is a 2-line entry and the next test table is 005 which is a single-line entry. For 2-line entries no reference should be made to the test table number on the second line, such as test table number 004 in the example.

**3.08** ◆ The first six text tables should be used to assign the most frequently used tests. This should be done in the interest of conserving memory.

**3.09** ◆ Forms ESS 1505-1 and -2 are arranged with tens and units digits 00-49 on ESS Form 1505-1 (Fig. 1 and 3) and tens and units digits 50-99 on ESS Form 1505-2 (Fig. 2). A different set of ESS Forms 1505-1 and -2 are used for each hundred table number as indicated in KP column 21.◆

DATE \_\_\_\_\_

**AUTOMATIC TRUNK TESTING TABLE RECORD**  
NO. 1 ESS 2 WIRE

ESS 1505-11031TG-1A

TEL. CO 014  
3 4 5  
BASE 0123 CONT. GR CO  
6 7 8 9 10 11  
FORM CODE 7 2  
14 15

TABLE NUMBER 0 HUNDRED  
21

ESS UNIT DISTRICT

TENS UNIT	OPTION	PERMANENT BUSY TEST NUMBER					OPTION	SYNCHRONOUS LINE TEST NUMBER					OPTION	NON-SYNCHRO LINE TEST NUMBER					TYPE OF TEST LINE	ATMS TEST NUMBER LOCAL					TYPE OF TEST LINE	ATMS TEST NUMBER TANDEM					REMARKS					
		D1	D2	D3	D4	D5		D1	D2	D3	D4	D5		D1	D2	D3	D4	D5		D1	D2	D3	D4	D5		D1	D2	D3	D4	D5						
		25	26	27	28	29		30	31	32	33	34		35	36	37	38	39		40	41	42	43	44		45	46	47	48	49		50	51	52	53	54
00																																				
01		1	9	9	7	0	-	0	9	9	7	1	-						2	9	9	7	9	-												
02		1	4	9	9	7	0	0	4	9	9	7	0						2	4	9	9	7	9												
03		5	5	8	4	9	9							4	5	8	4	9	9																	
04			7	0	-	-	-							7	3	-	-	-																		
05		1	4	9	9	7	2												0	9	9	9	8	-												
06																																				
07																																				
08																																				
09																																				
10																																				
43																																				
44																																				
45																																				
46																																				
47																																				
48																																				
49																																				

Fig. 1—Form ESS 1505-1 Used for Automatic Trunk Testing Table Record, CTX-5 and Earlier Generic Programs

**AUTOMATIC TRUNK TESTING TABLE RECORD**  
NO.1 ESS 2 WIRE

DATE \_\_\_\_\_

ESS 1505-2(03)TG-1A

TEL. CO. 3 4 5  
 BASE 6 7 8 9 CONT GR 10 11  
 FORM CODE 7 2  
14 15

ESS UNIT \_\_\_\_\_

TABLE NUMBER 21 HUNDRED

TENS UNITS	OPTION	PERMANENT BUSY TEST NUMBER					OPTION	SYNCHRONOUS LINE TEST NUMBER					OPTION	NON-SYNCHRO LINE TEST NUMBER					TYPE OF TEST LINE	ATMS TEST NUMBER LOCAL					TYPE OF TEST LINE	ATMS TEST NUMBER TANDEM					REMARKS	
		D1	D2	D3	D4	D5		D1	D2	D3	D4	D5		D1	D2	D3	D4	D5		D1	D2	D3	D4	D5		D1	D2	D3	D4	D5		
22	23	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	
50																																
51																																
52																																
53																																
54																																
55																																
94																																
95																																
96																																
97																																
98																																
99																																

◆ Fig. 2—Form ESS 1505-2 Used for Automatic Trunk Testing Table Record ◆

DATE \_\_\_\_\_

**AUTOMATIC TRUNK TESTING TABLE RECORD**  
NO. 1 ESS 2 WIRE

ESS 1505-1(03)TG-1A

TEL. CO. 014  
BASE 0123 CONT. GR. 3 3  
6 7 8 9 10 11  
FORM CODE 7 2  
14 15

TABLE NUMBER 0 HUNDRED  
21

ESS UNIT DISTRICT

TENS UNIT	OPTION	PERMANENT BUSY TEST NUMBER					OPTION	SYNCHRONOUS LINE TEST NUMBER					OPTION	NON-SYNCHRO LINE TEST NUMBER					TYPE OF TEST LINE	ATMS TEST NUMBER LOCAL					TYPE OF TEST LINE	ATMS TEST NUMBER TANDEM					REMARKS	
		D1	D2	D3	D4	D5		D1	D2	D3	D4	D5		D1	D2	D3	D4	D5		D1	D2	D3	D4	D5		D1	D2	D3	D4	D5		
22	23	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	
00			2	2	4	1	2	3	4						2	2	4	5	2	3	4										105 TST CAMA	
01			1	9	9	7	0	-	0	9	9	7	1	-						2	9	9	7	9	-	2	9	9	8	9	-	
02			1	4	9	9	7	0	0	4	9	9	7	0						2	4	9	9	7	9	2	4	9	9	8	9	
03			5	5	8	4	9	9							4	5	8	4	9	9						1	5	8	4	9	9	
04				7	0	-	-	-							7	3	-	-	-								7	5	-	-	-	
05			1	4	9	9	7	2												0	9	9	9	8	-							
06																																
07																																
08																																
09																																
10																																
44																																
45																																
46																																
47																																
48																																
49																																

◆ Fig. 3—Form ESS 1505-1 Used for Automatic Trunk Testing Table Record, CTX-6 and Later Generic Programs with CAMA ◆

3.10 KP column 21 at the top of the form represents the hundreds digit of the table number while the tens and units digits (KP columns 22 and 23) are in the first blocked area at the left of the form. If the test table number is to be 001, the form should be filled in as follows:

COLUMN	NO. PUT IN COLUMN
21 (Hundreds)	0
22 (Tens)	0
23 (Units)	1

3.11 KP columns 26 through 30, 32 through 36, 38 through 42, 44 through 48, and 50 through 54 are used to assign test codes required to test a particular trunk group. If a test code requires more than five digits, the next line of the form is used. All trunk groups which use the same test codes are assigned the same test table as shown in Fig. 4. On the example in Fig. 4, test table 002 is used when testing trunk group 027, 054, or 035.

**Note:** Test table number 000 is not to be used with generic programs prior to CTX-6, since this number is used within the system to indicate that no automatic testing will be performed. Offices with CTX-6 and later generic programs, serving as a CAMA center, will use test table number 000 to list the directory numbers of the Code 105 test line. CAMA call processing will make a matching

ESS 1504 (02) TG-1A

**OUTGOING AUTOMATIC TRUNK**  
 TESTING ASSIGNMENT  
 NO. 1 ESS 2 WIRE

DATE \_\_\_\_\_

TEL. CO. 005  
3 4 5  
 BASE 1234 CONT. GR. CO  
6 7 8 9 10 11  
 FORM CODE 22  
14 15

ESS UNIT DISTRICT

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ITEM	TRUNK GROUP	TEST TABLE	REMARKS	ITEM	TRUNK GROUP	TEST TABLE	REMARKS
00	027	002		50			
01	031	003		51			
02	054	002		52			
03	129	005		53			
04	035	002		54			
05				55			
06				56			
07				57			
08				58			
09				59			
10							
44				94			
45				95			
46				96			
47				97			
48				98			
49				99			

Fig. 4—Form ESS 1504, Outgoing Automatic Trunk Testing Assignment

check of the called number before collecting the calling number. If the called number matches one of these stored directory numbers, the call will be routed to the test line without recording the calling number. As shown in Fig. 3, beginning in KP column 26, enter the 7-digit number for the tandem state test associated with Route Index 0108, and beginning in KP column 38 enter the 7-digit number for the local on-hook state test associated with Route Index 0173.

3.12 KP columns 25, 31, and 37 represent the four options which may be used. (These options are either primary or secondary tests with either single- or double-line entries.) Primary tests are automatic and are programmed to start according to the schedule input by the plant maintenance forces. Secondary tests are not automatic and must be started by operating personnel. The following is a list of the options and the proper code to be inserted for each option:



OPTION	CODE*
Single line entry (less than 6 digits) — not a primary test	0
Single line entry — primary test	1
2-line entry (6 or more digits) — not a primary test	4
2-line entry — primary test	5

\* Number to be put in KP column 25, 31, or 37

**Note:** Only primary option (1 to 5) can be used per test table number; all other options may be used as required.

**3.13** KP columns 43 and 49 represent the three types of test lines that can be used by ATMS. The following is a list of the types of test lines and the code that should be used:

<u>Type</u>	<u>Code*</u>
100 Test Lines (Combination Milliwatt and Balance Termination)	0
102 Test Lines (Continuous Milliwatt)	2
105 Test Lines (2-Way Loss and Noise)	1

\* Number to be put in KP columns 43 or 49. ♦

**FORM ESS 1504—OUTGOING AUTOMATIC TRUNK TESTING ASSIGNMENT**

**3.14** Form ESS 1504 (Fig. 4) is used to list each trunk group number for trunk groups to be tested and to list its associated test table number (Fig. 1 and 3). ♦ The trunk group numbers are three digits and appear in KP columns 25 through 27. The trunk group numbers are available from KP columns 25 through 27 in form ESS 1202, Trunk Group Record, which is maintained as a permanent office record. The test table number associated with the trunk group is three digits

and appears in KP columns 28 through 30. Test table numbers are obtained from KP columns 21 through 23 of form ESS 1505 -1 and -2. ♦ The remarks portion of form ESS 1504 is made available for the operating personnel to place any pertinent remarks concerning the trunk group and the test table.

**FORM ESS 1506—MISCELLANEOUS ASSIGNMENT INFORMATION RECORD**

**A. Emergency Manual Lines to Outgoing Trunks**

**3.15** For this assignment, form ESS 1506 (Fig. 5) is used to record a group of lines that may have access to an outgoing operator trunk if the ESS office is out of service. Each of these manually switched paths is designated as an emergency manual line circuit (EML CKT). All of these EML CKTs are switched into service when a key is operated at the master control center. For this assignment, the letters EML CKT are recorded on form ESS 1506 under the UNIT TYPE column. The UNIT MEMBER NUMBER column designates a particular EML CKT. The letters T and L in the FIELD INDICATION columns signify trunk and line, respectively. The letter T is always recorded in the first FIELD INDICATION column to signify that the first information field contains the trunk network number (TNN) of the outgoing operator trunk. The letter L is recorded in the second FIELD INDICATION column to signify that the second information field contains the line equipment number (LEN) of the customer which has an emergency manual line assignment. The REMARKS column is for use by the maintenance personnel as required.

**3.16** For this assignment, EML CKT is recorded in KP columns 27 through 32 on form ESS 1506. The unit member number (EML CKT number), KP columns 33 through 35, is a 3-digit decimal number which may range from 000 through 127. The letter T is recorded in KP column 36, and the outgoing operator TNN is recorded in KP columns 37 through 47. The letter L is recorded in KP column 48, and the emergency manual LEN is recorded in KP columns 49 through 59.

**B. Cable Pressure Contactor List**

**3.17** For this assignment, form ESS 1506 is used to record all lines that have a pressure-sensitive contactor device bridged across the associated cable



pair. This end-point contactor (covered in Section 637-214-100) bridges high resistances across the cable pair so that the resistance changes when the cable gas pressure drops below the proper value. Tests are periodically performed in ESS offices by maintenance personnel, using the automatic line insulation test program, to ensure that all cables contain the proper gas pressure. The letters LEN LST are recorded in KP columns 27 through 32 to indicate the LEN list (Fig. 6). There is only one list of these lines for a particular office. The unit member number (LEN LST number) is 000 and is recorded in KP columns 33 through 35.

**3.18** The letter L is recorded in KP column 36 or 48 to indicate that LENs are recorded in

the FIRST and SECOND INFORMATION FIELD columns. The LENs are recorded in the information fields as shown in Fig. 6. The LEN recorded on this form should always be left adjusted. This means the leftmost digit of the LEN should always be recorded in the column immediately following the letter L for each of the two information fields (KP column 37 or 49).

**C. Trunk Make-Busy Keys**

**3.19** For this assignment, form ESS 1506 (Fig. 7 and 8) is used to record the information necessary to make busy all the miscellaneous or universal trunks that are associated with a particular trunk make-busy (TMB) key. The letters TMB

ESS 1506 (03) TG-1A

**MISCELLANEOUS ASSIGNMENT  
INFORMATION RECORD**

DATE \_\_\_\_\_

TEL CO 014  
3 4 5  
BASE 0123 CONT. GR CO  
6 7 8 9 10 11  
FORM CODE 3 6  
14 15

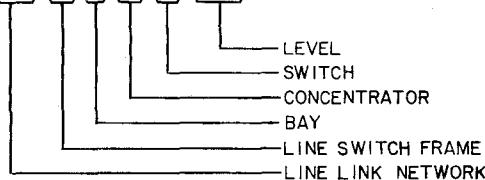
NO. 1 ESS 2 WIRE

ESS UNIT DISTRICT

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ITEM	UNIT		FIRST INFORMATION FIELD															SECOND INFORMATION FIELD										REMARKS
	TYPE	MEMBER NUMBER	FIELD IND.	36	37	38	39	40	41	42	43	44	45	46	47	FIELD IND.	48	49	50	51	52	53	54	55	56	57	58	
00	LEN	LST 000	L	0	6	4	0	0	0	1	2	*		L	0	1	4	0	0	0	0	1						
01	↕	↕	↕	0	2	3	0	0	0	0	1		↕	0	4	4	0	0	0	0	1							
02	↕	↕	↕	0	3	2	0	0	0	0	4		↕	0	0	4	0	0	0	0	1							
03	↕	↕	↕	0	1	0	0	0	0	0	3		↕	0	3	4	0	0	0	0	1							
04	↕	↕	↕	0	5	1	0	3	2	0	2																	
05																												
06																												
07																												
08																												
45																												
46																												
47																												
48																												
49																												

\* L (LINE EQUIPMENT NUMBER) 0 6 4 0 0 0 1 2



◆ Fig. 6—Form ESS 1506 Used for Cable Pressure Contactor List ◆

KEY are recorded in KP columns 27 through 32 to indicate the TMB key. The unit member number (TMB key number), KP columns 33 through 35, is a 3-digit decimal number. This number may range from 000 through 127 in CTX-4 and earlier generic programs and from 000 through 999 in CTX-5 and later generic programs. For the first line of the TMB key assignment, the field indication and first information field in KP columns 36 through 47 are left blank. The letter M is recorded in KP column 48 on the first line to indicate the master scanner number is recorded in KP columns 49 through 59 (first line only). The first line must identify the master scanner number which is associated with all trunks recorded for a particular TMB key. The master scanner number is a 6-digit number specifying the frame, row, and column number which designates the particular ferrod sensor in the master scanner associated with the make-busy key.

**3.20** The first and second information fields (KP columns 37 through 47 and 49 through 59, respectively) recorded on the next line below the master scanner number specify which trunks are to be made busy when the TMB key is operated. These trunks may be either universal trunks or miscellaneous trunks.

(a) In CTX-4 and earlier generic programs, as shown in Fig. 7, when a universal trunk is recorded the field indication (KP column 36 or 48) contains a U followed by the universal trunk circuit number in the information field. When a miscellaneous trunk is recorded, the field indication contains an M followed by the master scanner number in the master scanner associated with the miscellaneous trunk circuit. A particular TMB key may control up to 31 trunks.

(b) In CTX-5 and later generic programs, as shown in Fig. 8, the field indication (KP column 36 or 48) contains a T followed by the trunk network number of the trunk in the information field. A particular TMB key may control up to 511 trunks. To provide additional translations for future trunk network numbers associated with a TMB key, the field indications (KP columns 36 or 48) must contain a T followed by blanks in the information field.

**3.21** Universal trunk circuit numbers and master scanner numbers must be obtained from

the WECO engineering representative at the time of office installation.

#### D. Carrier Group Alarms

**3.22** For this assignment, form ESS 1506 (Fig. 9 and 10) is used to record the information associated with a particular carrier group alarm (CGA). When a carrier failure occurs, the program and circuit actions must be performed to ensure that all outgoing trunk lines (normally foreign exchange lines) and associated with the carrier will be made busy to subsequent seizure attempts. The letters CGA LRM are placed in KP columns 27 through 32 to indicate the carrier group alarm. For the first line of the CGA assignment, the same member number and information field format that is used for the trunk make-busy key assignment (3.19) is valid.

**3.23** Outgoing trunks assigned in carrier systems that are to be associated with the CGA feature utilize the first and second information fields (KP columns 37 through 47 and 49 through 59, respectively) in the same manner as the trunk make-busy keys (3.20).

(a) In CTX-4 and earlier generic programs:

(1) As shown in Fig. 9, when a LEN associated with foreign exchange line is recorded, the field indication (KP column 36 or 48) contains an L followed by the LEN in the information fields.

(2) When a miscellaneous trunk is recorded, the field indication (KP column 36 or 48) contains an M followed by the first supervisory master scanner point associated with the trunk.

(3) When a universal trunk is recorded, the field indication (KP column 36 or 48) contains a U followed by the universal trunk circuit number in the information field.

(4) A particular CGA member may control up to 256 entries in the information field. Entries may be either LENs, master scanner points, universal trunk circuits, or combinations of these.













ESS 1506 (03) TG-1A

MISCELLANEOUS ASSIGNMENT  
INFORMATION RECORD

DATE \_\_\_\_\_

TEL CO 005  
3 4 5

BASE 1234 CONT. GR. CO  
6 7 8 9 10 11

FORM CODE 3 6  
14 15

NO. 1 ESS 2 WIRE

ESS UNIT DISTRICT

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19 21

ITEM	UNIT		FIRST INFORMATION FIELD															SECOND INFORMATION FIELD															REMARKS
	TYPE	MEMBER NUMBER	FIELD IND.	36	37	38	39	40	41	42	43	44	45	46	47	FIELD IND.	48	49	50	51	52	53	54	55	56	57	58	59					
00	CØN	SØL	000	P	6				0	4	1	5					0	0	0	1										CØN OR CORP CONS 0			
01			001		6				0	4	1	6					0	0	0	1										" " " 1			
02			002		6				0	4	1	7					0	0	0	1										" " " 2			
03																																	
04																																	
05																																	
06																																	
07																																	
08																																	
09																																	
10																																	
11	CØN	SØL	010	P	6				0	4	5	4					0	0	0	2										CUST "X" - CONS 0			
12			011						0	4	5	4					T	0	0	0	2										" TRK BUSY MEM		
13			012		6				0	4	5	5					0	0	0	2										" CONS 1			
14			013		6				0	4	5	6					0	0	0	2										" " 2			
15																																	
16																																	
17																																	
18																																	
19																																	
20																																	
21																																	
22																																	
23	CØN	SØL	020	P	4				0	5	0	3					C	0	0	0	3										CUST "Y" - CONS 0		
24			021		4				0	5	0	4						0	0	0	3										" " " 1		
25			022		4				0	5	0	5						0	0	0	3										" " " 2		
26			023		4				0	5	0	6						0	0	0	3										" " " 3		
27			100		4				0	5	0	7						0	0	0	3										" " " 4		
28			101		4				0	5	0	8						0	0	0	3										" " " 5		
29			102		4				0	5	0	9						0	0	0	3										" " " 6		
30																																	
31																																	
32																																	
33																																	
34																																	
35																																	
36	CØN	SØL	040	P	6				0	6	0	2						0	0	0	4										CUST "E" - CONS 0		
37			041						0	6	0	2					T	0	0	0	4										" TRK BUSY MEM		
38			042		6				0	6	0	3						0	0	0	4										" CONS 1		
39			043		6				0	6	0	4						0	0	0	4										" " 2		
40			110		6				0	6	0	5						0	0	0	4										" " 3		
41			111		6				0	6	0	6						0	0	0	4										" " 4		
42			112		6				0	6	0	7						0	0	0	4										" " 5		
43			113		6				0	6	0	8						0	0	0	4										" " 6		
44			200		6				0	6	0	9						0	0	0	4										" " 7		
45			201		6				0	6	1	0						0	0	0	4										" " 8		
46			202		6				0	6	1	1					C	0	0	0	4										" " 9		
47																																	
48																																	
49																																	

◆ Fig. 12—Form ESS 1506 Used for Centrex Attendant Consoles ◆

be assigned as the primary console, a P entered in column 36. Console position 1 of the same data link must be used for trunk busy memory. Column 36 on console position 1 must be left blank.

**3.29** Enter the number of console loops in column 37 that are associated with the particular console for which the entry is being made. The number entered in this column must be equal to the number of attendant loop circuits assigned to the specific console on form ESS 1202. In the case of 2B consoles, column 37 is left blank for the item representing console position 1, trunk busy memory.

**3.30** In columns 40 through 43, enter the four-digit route index number for the attendant loop circuits associated with the console. In the case of 2B consoles, the route index for console position 1 will be the same as the primary console (console position 0).

**3.31** A T is entered in column 48 for console position 1 (trunk busy memory) for primary 2B consoles. A primary 2B console occupies two positions on a data link. Console position 0 (primary console) is left blank. The above entry is required only for trunk busy memory for the primary 2B console. Console positions 0, 2, and 3 of 2B consoles, and positions 0 through 3 of 1B consoles, should have a blank in column 48 except for consoles equipped for conference privileged. Such consoles require the letter C entered in column 48.

**3.32** A four-digit centrex group number is assigned to the particular customer group in columns 49 through 53. This number is taken from columns 25 through 28 on form ESS 1109.

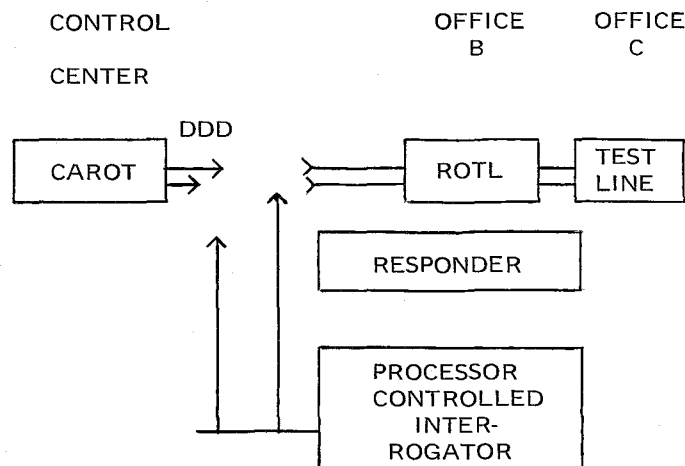
**3.33** In Fig. 12 are examples for different type console arrangements using the assumptions as follows:

ITEM	CONSOLE		ATTEN LOOP CKTS PER ATTEN TRK	NO. OF CENTREX DATA LINK-FRS INSTALLED
	TYPE	NO.		
00-02	1B	3	6	1
11-14	2B	3	6	1
23-29	1B	7	4	2
36-46	2B	10	6	3

**G. Remote Office Test Line (ROTL)**

**3.34** The ROTL feature provides the ability to originate transmission test calls under automatic control of a centralized automatic reporting on trunks (CAROT) system located at a remote location, or under manual control by using a processor controlled interrogator (PCI) unit located at the testing office. Although the PCI unit is optional, it is probable that for efficient CAROT/ROTL operation the central office will have at least one PCI unit.

**3.35** The transmission tests are conducted between office B, equipped with a ROTL, and office C, equipped with a type 100, 102, or 105 test line (Fig. 13).



◆ Fig. 13—CAROT/ROTL Operation ◆

**3.36** In the CAROT mode of operation, if the CAROT system determines that a trunk has exceeded a certain preset transmission limit, it can make the trunk busy. For system integrity, a security call back directory number is used to prevent unauthorized locations from placing trunks on make-busy.

**3.37** When the PCI unit is being used to control the testing, the tester must manually make busy trunks that have exceeded a reference limit.

**3.38** The CTX-7 generic program provides for the CAROT system to have access to a ROTL in a No. 1 ESS system without line equipment (toll tandem) by using FX lines from a nearly class 5 office. See BSP 231-118-104 on routing and charging for information on fixed route index 0105 and the associated trunk equipment required.

**3.39** Form ESS 1506 is used to record trunk network numbers (TNNs) for the ROTL test and access ports, a maximum of eight security call back directory numbers, and a TNN for the PCI access port if the ROTL frame is so equipped. Refer to Fig. 14 for an example of the maximum number of form ESS 1506 entries for one ROTL frame.

**3.40** *Entries for ROTL access port 0 and access port 1.* Enter ROTL in KP columns 27 through 30. Enter the ROTL frame number in KP columns 33 through 35. Enter a T in KP column 36 followed by the TNN assignment in KP columns 37 through 42 for access port 0. Enter a T in column 48 followed by the TNN assignment in KP columns 49 through 54 for access port 1.

**3.41** *Entries for ROTL test port:* The ROTL test port entries are made in the next item following the access ports. Enter ROTL in KP columns 27 through 30. Enter the ROTL frame number in KP columns 33 through 35. Enter a T in KP column 36, followed by the TNN assignment in columns 37 through 42 for the test port.

**3.42** *Entries for ROTL security call back directory numbers:*

The security call back directory numbers are used for verification of trunk make-busy control. A maximum of eight call back numbers, serving up to eight separate users, can be assigned. The call back numbers can be seven, eight, ten, or eleven digits. The security call back numbers must be entered on form ESS 1506 in the order determined by the single-digit code (1 to 8) assigned to a particular user. Enter a D in the field indicator KP column 36. Call back numbers that are eight or eleven digits have a 0 or a 1 prefix digit as the first digit. These DNs are entered in KP columns 37 through 47, left adjusted, with the prefix digit in KP column 37. Call back numbers of seven or ten digits are entered, left adjusted, in KP columns 38 through 47. If the user location for which a call back number has been assigned is to have an override ability over the automatic trunk maintenance limits, enter MB in KP columns 49 and 50. KP column 51 is used to indicate the types of trunks that a user will have the ability to make-busy. Use the following list to determine the proper digit to be entered in KP column 51:

TYPE TRUNKING	CODE
Local and Long Lines Trunks	0
Local Trunks Only	1
Long Lines Trunks Only	2

**3.43** *Entries for processor controlled interrogator port:*

When a ROTL frame is equipped with a PCI unit, the last item on form ESS 1506 for the ROTL frame will contain entries for the PCI access port. Enter a T in KP column 36, and enter the TNN associated with the PCI access port in KP columns 37 through 42.

**H. Trunk Maintenance Teletypewriters**

**3.44** Prior to CTX-7 generic programs, the trunk and line test panels (TLTP) and supplementary trunk test panels (STTP) were able to perform trunk testing. With the advent of CTX-7 generic programs, this ability has also been given to the trunk maintenance teletypewriters (TTYs) (using a KSR or ASR TTY). In order to provide the same



restrictions as TLTP and STTP (access by labor force A and/or labor force B), information regarding these TTY channels must be entered on form ESS 1506.

**3.45** Each TTY channel is assigned a channel member number in translations. In general, this channel member number bears no relationship to the TTY channel number but is determined by a parameter set card. The following information is necessary to determine the member numbers of these channels:

<u>CHANNEL NO.</u>	<u>NAME</u>	<u>MEM NO.</u>	<u>SET CARD</u>
0	Local Maintenance	000	
5	Remote Maintenance	008	
12	4th Trunk Maintenance	—	Value of STT4
13	1st Trunk Maintenance	—	Value of STY
14	2nd Trunk Maintenance	—	Value of STT2
15	3rd Trunk Maintenance	—	Value of STT3

**3.46** As shown in Fig. 15, enter TTY in KP columns 27 through 29 and the member number (000 through 015) in KP columns 33 through 35 as determined from the previous information. Enter in KP column 37 a code (0 through 2) as determined from the following:

<u>ACCESS TO</u>	<u>CODE</u>
Both Local and Long lines trunks (labor force A and labor force B)	0
Local Trunks only (labor force A)	1
Long Lines Trunks (labor force B)	2

If these entries are not provided on form ESS 1506, code 0 will be provided by default.

**I. Operation with Switching Control Center**

**3.47** The CTX-7 generic program allows the transfer of the master test line (MTL) to a switching control center (SCC). The transfer capability requires in software the assignment of a psuedo LEN (ØMAJ 04, TMAJ 22) on form ESS 1101 with a nonworking directory number. The psuedo LEN must have the call transfer feature.

**3.48** The MTL is associated with the pseudo LEN via form ESS 1506 (Fig. 16) and referred to as MCC SCC in KP columns 27 through 32. Member number 001 is assigned in KP columns 33 through 35. The psuedo LEN which was defined on form ESS 1101 is entered in KP columns 40 through 47. KP columns 49 through 59 will contain the directory number to which the MTL is being transferred. This directory number may be a 7- or 10-digit number and must include the access code 1 if it is required. (This is *not* the directory number of the psuedo LEN.) The directory number in KP columns 49 through 59 may be either intraoffice or interoffice and an entry must be put in KP column 48 to indicate the type: I for internal or intraoffice, or E for external or interoffice.

**3.49** MCC SCC requires the assignment of a CPD and SD point. Additional hardware and central office modifications are necessary to interface with an SCC.♦



