

**UPKEEP WORK UNITS**  
**CENTRAL OFFICE EQUIPMENT — CROSSBAR TANDEM AND NO. 4**  
**FORM E-4405**

**1. GENERAL**

**1.01** This section describes the method of counting and reporting equipment items for crossbar tandem and crossbar No. 4 type toll central offices using Form E-4405 for the purpose of (1) developing the number of full frames of equipment and (2) determining the number of work units for this type of equipment. This section also includes the method of counting and reporting the number of plant items and work units for associated manual equipment.

**1.02** This section is reissued to renumber it in the Plant Series and to revise Form E-4405 (5-64) and the alphabetical list of frames to include work unit values for traffic service positions associated with crossbar tandems. Since there are so few changes in E-4405 the revised form will not be available until the present stock of Form E-4405 (2-63) is exhausted. Write-ins on Form E-4405 are as follows:

	COLUMN B
Line 25: Link and Connector (TSP)	32.0
Line 26: LK. and CONN. Supp. (TSP)	16.0
Line 27: Position, Control, Signaling	17.6
Line 76: TSP	7.9

**1.03** Section 015-100-010 covers general instructions applicable to all upkeep work unit forms. Section 015-000-000 contains a list of the sections describing the individual forms.

**1.04** Equipment in No. 1 and No. 5 crossbar offices should be inventoried on Form E-4404.

**1.05** Work unit values are generally expressed on a fully equipped frame basis with suitable classifications for the various types of equipment frames. Instructions for converting partially equipped frames to an equivalent fully equipped basis are given in the description of Column A.

**1.06** To facilitate the inventory of equipment frames, Form E-4313, Central Office Equipment Frame Record, has been made avail-

able. A facsimile copy of the form and a description of the method of using it are included as a part of this section.

**1.07** Included in this section are alphabetical lists of the more common frame names showing the line on the Form E-4405 on which these frames should be counted. Separate lists are shown for Crossbar Tandem, No. 4 Crossbar, and Manual Equipment. These lists are supplementary to the description of the individual lines on Form E-4405.

**1.08** The alphabetical list includes ANI and CAMA equipment and indicates the proper line, on Form E-4405, for inventorying the equipment.

**1.09** For work units for trunk testing see Form E-4401 for toll connecting and exchange trunks, and Form E-4417 for intertoll and tributary trunks.

**2. DESCRIPTION OF FORM E-4405**

**2.01 Column A: Number of Frames:** Basically a frame is the equipment between two vertical channels supporting equipment mounting plates and having an individual equipment frame designation. In some cases, however, such as marker frames, trunk and office link frames, sender link frames, etc, the equipment necessary for a circuit entity is distributed over two or more bays, and in such cases a frame is the equipment necessary to mount the circuit entity. Any case where a frame comprises two or more bays will be described in the notes for that frame. Show the number of equivalent fully equipped frames. In the case of partially equipped frames, determine the per cent fill on one of the following bases:

(a) **Circuit Capacity:** Where a frame is equipped with only one basic type of circuit, determine the ratio of circuits equipped to maximum capacity. For example, a sender frame equipped with three senders and having a capacity for five is 60% full.

(b) **Physical Mounting Space:** Where the equipment on the frame is not all the same, such as on a miscellaneous relay rack, determine the fill on the basis of the ratio of equipped mounting plates to total capacity. For example, a frame with 42 mounting plates equipped and a capacity for 60 mounting plates is 70% full. Do not count fuse panels.

**2.02** Where there are less than five identically equipped partially filled frames, it will be satisfactory to express the approximate fill in 10 per cent steps, i.e., 10%, 20%, 30%, etc. Where there are five or more identically equipped partially filled frames, determine the per cent fill as in 2.01(a) with more precision, e.g., 78% equipped. Multiply the number of such frames by the per cent filled and show one figure for the number of equivalent full frames in the group. For example, 14 frames each 78% equipped equals 10.9 full frames.

**2.03 Mixed Frames:** Where a rack-mounted frame has mixed equipment, i.e., part trunk relay and part miscellaneous, in general the frame should be classified according to the majority equipment. For example, if a frame has 55% trunk relay equipment and 45% miscellaneous equipment, it should be counted as a full trunk relay frame. An exception to this rule is a case where there is a very substantial difference in work unit values for the two types of equipment. For example, if a frame has some trunk equipment and some E-type repeaters, count the frame as two partially equipped frames.

**2.04** Where a frame mounts equipment charged to two different accounts, e.g., 47R and 17R, count each part of the frame as partially equipped.

**2.05** Express the count of equivalent full frames to one decimal place.

**2.06 Column B: Work Units per Frame:** These are the work unit values applicable to fully equipped frames.

**2.07 Column C: Work Units per Qtr.:** Multiply Column A by Column B, and Column D by Column E. Express results to the nearest whole number.

#### Crossbar Tandem Frames

**2.08 Line 1: Marker 7 Digit:** A marker frame consists of two bays — a common equipment bay and the original marker route relay bay. Marker supplementary route relay frames (if any) should be counted on Line 20.

Count one frame for each 7 digit marker frame.

**2.09 Line 2: Marker 10 Digit:** A marker frame consists of two bays — a common equipment bay and the original marker route relay bay. Marker supplementary route relay frames (if any) should be counted on Line 20.

Count one frame for each 10 digit marker frame.

**2.10 Line 3: Connector:** Covers all types of connector frames. A connector frame consists of one bay.

Count one frame for each full connector frame of any type.

**2.11 Line 4: Trunk and Office Link:** A trunk link frame consists of two bays — a primary and a secondary bay.

Count one frame for each full trunk link frame.

An office link frame also consists of a primary and a secondary bay.

Count one frame for each full office link frame.

**2.12 Line 5: Office Link Extension:** An office link extension frame consists of one bay.

Count one frame for each full office link extension frame.

**2.13 Line 6: Sender Link:** A sender link frame consists of two bays.

Count one frame for each full sender link frame.

**2.14 Line 7: Position Link CAMA:** A position link frame is a two-bay frame mounting relays and crossbar switches.

Count one frame for each full position link frame.

**2.15 Line 8: Sender 7 Digit:** Covers all types of 7 digit sender frames. The usual types are revertive pulse, five senders per frame; dial pulse, four senders per frame; multifrequency

pulse, three senders per frame; PCI (AMA) three senders per frame.

Count one frame for each full 7 digit sender frame.

**2.16 Line 9: Sender 10 Digit:** Covers the following types of 10 digit sender frames: dial, pulse, four senders per frame; multifrequency pulse, three senders per frame.

Count one frame for each full 10 digit sender frame.

**2.17 Line 10: Trunk Relay:** Covers all types of trunk relay frames (single bay frames).

Count one frame for each full trunk relay frame.

**2.18 Line 11: M.B., Alarm and Test:** Covers all make-busy frames, alarm frames, and test frames, such as sender make-busy, trouble indicator, sender test, trunk test, etc. Do not count portable test equipment.

Count one frame for each full *single bay*.

**2.19 Line 12: Centralized Message Acctg.:**

Count one full frame for each full perforator cabinet (two perforators), each full master timing frame, each full recorder frame, and each full transverter frame. All other frames associated with centralized automatic message accounting, unless specifically covered on other lines or as covered in the Alphabetical List of Frames, should be counted on Line 12.

**2.20 Line 13: Repeater Type "E":** Count one frame for each 150 repeaters.

**2.21 Line 14: Repeater Type "V":** Count one frame for each 150 repeaters.

**2.22 Line 15: N Carrier: Terminal:** An N carrier terminal frame consists of one bay with a capacity of three complete N carrier systems. (A complete N carrier system consists of 12 channel units and one group unit.)

Count one frame for each full N carrier terminal frame.

**2.23 Line 16: N Carrier: Repeater:** An N carrier repeater frame consists, for inventory purposes, of one bay with a capacity of 20 repeaters.

Count one frame for each full N carrier repeater frame.

**2.24 Line 17: Trunk Concentrator:** Covers trunk concentrating systems consisting of concentrating frames (one bay) and, where required, supplementary frames (one bay).

Count one frame for each full concentrating frame and count one frame for each full supplementary frame.

**2.25 Line 18: Incoming Register Link:** An incoming register link frame consists of one bay.

Count one frame for each full incoming register link frame.

**2.26 Line 19: Sender Register Connector:** A sender register connector frame consists of one bay.

Count one frame for each full sender register connector frame.

**2.27 Line 20: Miscellaneous Relay:** Covers frames mounting such equipment as switchboard trunks, time announcement equipment, weather announcement equipment, and miscellaneous trunks, and all frames which are not specifically included on other lines of this form or other work unit forms. Count all miscellaneous relay rack bays except those on which equipment is inventoried on other work unit forms, e.g., E- and V-type repeaters or similar types of central office equipment. If, however, E- and V-type repeaters are used for exchange service, inventory them on Lines 13 and 14. Do not count bays of cord circuit relays or frames listed on the alphabetical list with an "X" instead of a line number. Work unit credit for cord circuit relays is included in the position value under Associated Manual Equipment.

Count one frame for each full frame as defined above regardless of the type of equipment used.

**2.28 Line 22: Register (CAMA, TSP):** Covers incoming register and link frame (CAMA or TSP). A frame includes the equipment apparatus for ten registers and ten register link units.

Count one frame for each full register frame.

**2.29 Line 23: Number Networks:** A single bay frame provides facilities for crossconnecting 2000 numbers.

Count one frame for each full number network frame.

**2.30 Line 24: Out Pulser:** A single bay frame mounts two outpulsers and associated MF signal generator equipment.

Count one frame for each full outpulser frame.

**2.31 Line 25: Link and Connector (TSP):** Count one frame for each full traffic service position link and connector frame.

**2.32 Line 26: Lk. and Conn. Supp. (TSP):** Count one frame for each full traffic service position link and connector supplementary frame.

**2.33 Line 27: Position, Control, Signaling:** Count one frame for each full position circuit and position control frame, position control and control signaling frame, and position circuit and position signaling frame.

*Note:* A frame, for inventory purposes, consists of one bay with the capacity to serve two traffic service positions.

**2.34 Line 44: Total — This Column:** Enter total of all frames (Lines 1 through 43) in Column A, and the total of all work units (Lines 1 through 43) in Column C.

#### Crossbar Toll Frames

**2.35 Line 45: Translator:** Covers home translators, foreign area translators, decoder translators, and emergency translators. The equipment for each is mounted on a table-type cabinet.

Count one frame for each cabinet-mounted card translator.

**2.36 Line 46: Marker:** Covers intertoll marker frames, toll completing marker frames, and combined marker frames. These markers consist of two common equipment bays and the original route relay bay. Supplementary route relay bays to be counted on Line 49.

Count one frame for each full intertoll marker frame, count one frame for each full toll completing marker frame, and count one frame for each full combined marker frame.

**2.37 Line 47: Connector:** Covers all types of connector frames.

Count one frame for each full connector frame.

**2.38 Line 48: Incoming & Outgoing Link:** Covers incoming link and outgoing link frames. These frames consist of two bays.

Count one frame for each full incoming link frame and each outgoing link frame.

**2.39 Line 49: Suppl. & Ext. Link.** Covers all types of supplementary frames and extension link frames. These frames consist of single bays.

Count one frame for each full supplementary frame and each full extension link frame.

**2.40 Line 50: Sender Link:** Covers outgoing and incoming sender link frames. These frames consist of two bays.

Count one frame for each full outgoing sender link frame and each full incoming sender link frame.

**2.41 Line 51: Sender:** Covers all types of sender frames. The usual types are incoming dial pulse, incoming multifrequency pulse, outgoing revertive, PCI, outgoing step-by-step and call announcer. Three senders of these types comprise a frame.

Count one frame for each full sender frame.

**2.42 Line 52: Block Relay:** A block relay frame consists of two bays.

Count one frame for each full block relay frame.

**2.43 Line 54: Trunk Relay:** Covers all types of trunk relay frames (single bay frames).

Count one frame for each full trunk relay frame.

**2.44 Line 55: M.B., Alarm and Test:** Covers all make-busy frames, alarm frames, and test frames, such as sender make-busy, trouble indicator, sender test, trunk test, etc. Do not count portable test equipment.

Count one frame for each full *single bay*.

**2.45 Line 56: Delay Quote Ann. Machine:** Count one frame for each full delay quote announcement machine frame.

**2.46 Line 57: Repeater Type "E":** Count one frame for each 150 repeaters.

**2.47 Line 58: Repeater Type "V":** Count one frame for each 150 repeaters.

**2.48 Line 59: N Carrier: Terminal:** An N carrier terminal frame consists of one bay with a capacity of three complete N carrier systems. (A complete N carrier system consists of 12 channel units and one group unit.)

Count one frame for each full N carrier terminal frame.

**2.49 Line 60: N Carrier: Repeater:** An N carrier repeater frame consists, for inventory purposes, of one bay with a capacity of 20 repeaters.

Count one frame for each full N carrier repeater frame.

**2.50 Line 61: Trunk Concentrator:** Covers trunk concentrating systems consisting of concentrating frames (one bay) and, where required, supplementary frames (one bay).

Count one frame for each full concentrating frame and count one frame for each full supplementary frame.

**2.51 Line 62: Miscellaneous Relay:** Covers frames mounting such equipment as switchboard trunks, time announcement equipment, weather announcement equipment, and miscellaneous trunks, and all frames which are not specifically included on other lines of this form or other work unit forms. Count all miscellaneous relay rack bays except those on which equipment is inventoried on other work unit forms, e.g., E- and V-type repeaters or similar types of toll test room equipment. If, however, E- and V-type repeaters are used for exchange service, inventory them on Lines 57 and 58. Do not count bays of cord circuit relays or frames listed on the alphabetical list with an "X" instead of a line number. Work unit credit for cord circuit relays is included in the position value under Associated Manual Equipment.

Count one frame for each full bay as defined above regardless of the type of equipment used.

**2.52 Line 64: Translator—Trk Class (CAMA):**

A single bay frame contains equipment apparatus and cross-connect field for providing trunk class information.

Count one frame for each full translator trunk class frame.

**2.53 Line 66: Total — This Column:** Enter the total of all frames (Lines 45 through 65) in Column A, and the total of all work units (Lines 45 through 65) in Column C.

**2.54 Line 67: Total Crossbar:** Enter the total of all crossbar frames (Lines 44 plus 66) in Column A, and the total of all crossbar work units (Lines 44 plus 66) in Column C.

#### Associated Manual Equipment

**2.55** The position work unit values shown on Lines 68 through 77 include the position equipment, cord circuits (whether located in the board or on a miscellaneous frame in the switch-room) and switchboard dials and keysets. They also contain an allowance for operators' headsets. Combined toll and DSA boards and straight toll positions should be inventoried on Form E-4406, Central Office Equipment — Toll Switchboard.

**2.56 Line 68: Key Pulsing "A":** Count one plant item for each key pulsing "A" position.

**2.57 Line 69: No. 3, 5, 6 CLR:** Count one plant item for each position.

**2.58 Line 70: Other "A":** Count one plant item for each "A" position other than key pulsing and No. 3, 5, and 6 CLR position.

**2.59 Line 71: Call Distributing "B":** Count one plant item for each position installed.

**2.60 Line 72: Service Observing:** Count one plant item for each position installed.

**2.61 Line 73: Inf. & Intcpt.:** Count one plant item for each position installed.

**2.62 Line 74: Centralized AMA:** Count one plant item for each position installed.

**2.63 Line 75: Miscellaneous:** Covers miscellaneous positions not provided for on Lines 68 through 74, such as test desks, repair clerks' desks, chief operators' desks, time announcement positions, etc.

Count one plant item for each position.

**2.64 Line 76: TSP:** Count one plant item for each traffic service position installed.

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2.65 **Line 78: Total Positions:** Enter the total number of switchboard positions indicated on Lines 68 through 77.

2.66 **Line 80: Calculagraph:** Count one plant item for each Calculagraph when mounted on the above positions.

2.67 **Line 82: Total Manual:** Enter the total of all associated manual work units (Lines 68 through 81) in Column C.

2.68 **Line 83: Column F: Total Frames:** Enter the total frames as shown on Line 67, Column A, plus the total switchboard positions as shown on Line 78, Column D.

2.69 **Line 83: Column G: Total Work Units:** This is the sum of work units on Lines 67 and 82, Column C.

2.70 **Line 84: Upkeep Hours on this Equipment Charged to:** Enter the subaccount to which upkeep hours for repairs of equipment on this form are charged. Use one sheet for each subaccount.

2.71 **City-Office, District, Division, Company-Area, Qtr. Ending:** Complete form by filling in office, district, division, company and area. In quarter ending, show either March 31, June 30, September 30, or December 31, and the year.

**3. FORM E-4313 — CENTRAL OFFICE EQUIPMENT FRAME RECORD**

3.01 This form is designed to provide a convenient method for maintaining a constant inventory of equipment in all types of dial offices, except shelf-mounted equipment in step-by-step offices. Provision is made for grouping together all frames which are to be inventoried on a given line of one of the work unit forms, and for showing the equivalent number of full frames so that the total can be transcribed to the appropriate work unit form. Form E-4313 should be retained in the central office as a permanent record.

3.02 Fill in the central office designation and check the account code to which repairs on equipment to be listed are charged. If repairs on equipment in the office are charged to two different codes, use separate sheets for each code.

3.03 Enter the work unit form number and line on which the number of frames will be shown. Also enter the abbreviated frame classification shown on the corresponding line of the work unit form. These entries need be made only once for the entire group of frames in a single classification.

3.04 More than one group of frames may be listed on the same sheet. It is suggested that some blank spaces be left for future changes.

3.05 List the frames individually or in groups of identical frames, showing the frame designation and a brief description, if necessary, of the type of equipment. (See facsimile of Form E-4313.)

3.06 Show the per cent fill of each frame in accordance with the instructions under Column A of the description of Form E-4405 and record the equivalent full frame figure in the last column. Where there are a number of identically equipped partially full frames, bracket them and show single figures in the last two columns for the group. The number of full frames in this case would be obtained by multiplying the number of physical frames by the per cent fill.

3.07 When all the frames in a given classification have been listed, add the number of full frames and use this figure in Column A of Form E-4405.

3.08 Record the inventory date in the first blank space. When equipment is added, correct the record and the total and show a new inventory date.

**UPKEEP WORK UNITS**  
**CENTRAL OFFICE EQUIPMENT - CROSSBAR TANDEM AND NO. 4**

CROSSBAR TANDEM FRAMES		A	B	C	NO. 4 CROSSBAR FRAMES		A	B	C
		NUMBER OF FRAMES	WORK UNITS PER FRAME	WORK UNITS PER QTR. (A x B)			NUMBER OF FRAMES	WORK UNITS PER FRAME	WORK UNITS PER QTR. (A x B)
1	MARKER 7 DIGIT		37.2		45	TRANSLATOR		120.0	
2	10 DIGIT		53.6		46	MARKER		58.8	
3	CONNECTOR		8.8		47	CONNECTOR		15.2	
4	TRUNK AND OFFICE LINK		64.8		48	INCOMING & OUTGOING LINK		69.6	
5	OFFICE LINK EXTENSION		32.0		49	SUPPL. & EXT. LINK		32.4	
6	SENDER LINK		36.0		50	SENDER LINK		46.4	
7	POSITION LINK CAMA		64.0		51	SENDER		46.4	
8	SENDER	7 DIGIT	58.0		52	BLOCK RELAY		12.8	
9		10 DIGIT	69.6		53				
10	TRUNK RELAY		34.0		54	TRUNK RELAY		12.8	
11	M.B., ALARM AND TEST		47.2		55	M.B., ALARM AND TEST		30.0	
12	CENTRALIZED MESSAGE ACCTG.		30.0		56	DELAY QUOTE ANN. MACHINE		7.2	
13	REPEATER TYPE "E" 150/FRAME		210.0		57	REPEATER TYPE "E" 150/FRAME		210.0	
14	REPEATER TYPE "V" 150/FRAME		210.0		58	REPEATER TYPE "V" 150/FRAME		210.0	
15	N CARRIER	TERMINAL	101.0		59	N CARRIER TERMINAL		101.0	
16		REPEATER	80.0		60	REPEATER		80.0	
17	TRUNK CONCENTRATOR		36.0		61	TRUNK CONCENTRATOR		36.0	
18	INCOMING REGISTER LINK		51.2		62	MISCELLANEOUS RELAY		22.0	
19	SENDER REGISTER CONNECTOR		32.4		63				
20	MISCELLANEOUS RELAY		22.0		64	TRANSLATOR TRK CLASS (CAMA)		45.2	
21					65				
22	REGISTER (CAMA, TSP)		37.7		66	TOTAL - THIS COLUMN		xxx	
23	NUMBER NETWORKS		4.9		67	TOTAL CROSSBAR (LINE 44 + LINE 66)		xxx	
24	OUT PULSER		56.6				D	E	C
25	LINK AND CONNECTOR (TSP)		32.0			ASSOCIATED MANUAL EQUIPMENT	NUMBER OF PLANT ITEMS	WORK UNITS PER PLANT ITEM	WORK UNITS PER QTR. (D x E)
26	LK. AND CONN. SUPP. (TSP)		16.0						
27	POSITION, CONTROL, SIGNALING		17.6						
28									
29									
30					68	KEY PULSING "A"		14.1	
31					69	NO. 3, 5, 6 CLR		23.4	
32					70	OTHER "A"		12.8	
33					71	CALL DISTRIBUTING "B"		6.3	
34					72	SERVICE OBSERVING		12.4	
35					73	INF. & INTCP.		13.2	
36					74	CENTRALIZED AMA		7.6	
37					75	MISCELLANEOUS		7.7	
38					76	TSP		7.9	
39					77				
40					78	TOTAL POSITIONS		xx	xxx
41					79				
42					80	CALCULAGRAPH		6.6	
43					81				
44	TOTAL - THIS COLUMN		xx		82	TOTAL MANUAL (LINES 68 THRU 81)	xxx	xx	

83	TOTAL FRAMES (LINE 67 COL. A + LINE 78 COL. D)	F	TOTAL WORK UNITS (LINE 67 COL. C + LINE 82 COL. C)	G
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84	UPKEEP HOURS ON THIS EQUIPMENT CHARGED TO  ACCOUNT <input type="text"/>	CITY-OFFICE	
		DISTRICT	
		DIVISION	
		COMPANY-AREA	
		QTR. ENDING	



**ALPHABETICAL LIST OF FRAMES**  
**CROSSBAR TANDEM — FORM E-4405**

FRAME NAME	LINE NO.	FRAME NAME	LINE NO.
Audichron Equipment	20	Line Observing (CAMA)	12
Battery Distributing	X	Line Verification Equip.	20
Bells and Lights (CADW)	20	Link — Coin Trunk Timer	20
Billing Indexer (CAMA)	12	Link and Connector — TSP	25
Call Identity Indexer (CAMA)	12	Link and Connector — Supp. — TSP	26
CAMA Sender	9	Link Controller	20
Carrier Repeater "N"	16	Link Office	4
Carrier Terminal "N"	15	Link Office Extension	5
Charge Computer	20	Link Position (CAMA)	7
Connector Billing Indexer (Part of Trans- verter Frame) CAMA	12	Link Register (CAMA)	22
Connector — Data Transfer — Position	3	Link Sender	6
Connector — Data Transfer — Register	3	Link Sender (CAMA)	6
Connector — Data Transfer — Sender	3	Link Trunk	4
Connector — Data Transfer — Trunk	3	Main Distributing	X
Connector — Decoder (CAMA)	3	Marker Class of Service	20
Connector Incoming Trunk Test (Part of Incoming Trunk Test Frame)	11	Marker Cross-Connecting	X
Connector Marker	3	Marker Frame 7 Digit	1
Connector — Outpulser	3	Marker Frame 10 Digit	2
Connector Recorder (Part of Recorder Frame) CAMA	12	Marker Supplementary Route Relay	20
Connector — Sender Register	19	Master Timing (CAMA)	12
Connector Sender Test (Part of Sender Test Frame)	11	Miscellaneous Relay Rack	20
Connector Transverter (CAMA)	3	Multifrequency Current Supply	20
Connector Transverter — Supplement	3	Multifrequency Pulsing Receiving	20
Connector Transverter Test (Part of Trans- verter Trouble Indicator) CAMA	11	Number Networks (ANI)	23
Connector Trunk Test (Part of Trunk Test Frame)	11	Office Interrupter	20
Control Pulsing	20	Office Junctor Grouping	X
Data Transfer — Data Channel	20	Outgoing Trunk Jack	X
Decoder (CAMA)	12	Outgoing Trunk Test	11
Emergency Alarm	11	Outpulser	24
Floor Alarm	11	Outpulser — Identifier Trunk Test (ANI)	20
Fuse Panel	X	Perforator Cabinet (CAMA)	12
Incoming Trunk Test	11	Position Circuit and Circuit Control	27
Incoming Register Link	22	Position Circuit and Position Signaling	27
Indexer — Call Identity (CAMA)	12	Position Control and Control Signaling	27
		Position Display	20
		Rater	20
		Rater Supplement	20
		Recorder	12
		Recorder (CAMA)	12
		Register Link (CAMA)	22
		Repeater Type "E"	13
		Repeater Type "V"	14

**Note:** X indicates no individual work unit value.

## ALPHABETICAL LIST OF FRAMES (Cont'd)

FRAME NAME	LINE NO.	FRAME NAME	LINE NO.
Secretarial Service Concentrator Equipment	20	Traffic Register Relay Rack	20
Sender (CAMA)	9	Traffic Totalizer Type "A"	20
Sender Dial Pulse	8 or 9	Traffic Totalizer Type "B"	20
Sender Make Busy	11	Traffic Usage Recorder	20
Sender Multifrequency	8 or 9	Translator — Foreign Area (CAMA)	20
Sender PCI (CAMA)	8	Transverter (CAMA)	12
Sender Revertive Pulse	8	Trouble Indicator	11
Sender Test	11	Trouble Ticker & Test Frame (CAMA)	11
Sender Test (CAMA PCI Senders)	11	Trouble Ticker (ANI)	20
Service Observing Cord and Jack	X	Trunk Concentrator	17
Service Observing Equipment	20	Trunk Finder	20
Suppl. Billing Indexer (CAMA)	20	Trunk Non-Zone Composite Signal	10
Suppl. Reg. & Reg. Lk.	20	Trunk Non-Zone Repeated Supervision	10
Suppl. Route Relay	20	Trunk Remote Control Zone	10
Test Frame — 17C	11	Trunk Test	11
Test Frame — Rater Computer	11	Trunk Test — Supplement	11
Time Announcement Equipment	20	Trunk Test (CAMA)	11
Traffic Recorder Midget Busy Counter and Totalizer	20	Trunk Through Supervision Toll Tandem	10
Traffic Register Cross-Connecting	X	Weather Announcement Equipment	20

## ALPHABETICAL LIST OF FRAMES

## No. 4 CROSSBAR — FORM E-4405

FRAME NAME	LINE NO.	FRAME NAME	LINE NO.
Alternate Route Traffic Control	62	Connector Marker Combined Train	47
Audichron Equipment	62	Connector Marker Separate Train	47
Automatic Outgoing Toll Connecting Trunk Test	55	Connector Sender Link	47
Battery Distributing	X	Controller Trouble Indicator	55
Bells and Lights (CADW)	62	Decoder	46
Block Relay	52	Delay Quote Announcement Machine	56
Block Relay Intertoll	52	Emergency Alarm	55
Block Relay Toll Completing	52	Emergency Filament Supply	62
Camera	X	Emergency Translator Connector and Frame Identification	62
Carrier Repeater "N"	60	Floor Alarm	55
Carrier Terminal "N"	59	Frame Identification Frequency Control	62
Connector Controller	47	Frame Identification Frequency Supply	62
Connector Decoder	47	Frequency Control	62
Connector Decoder Supplementary	47	Fuse Panel	X
Connector Emergency Translator	47	Incoming Sender Test (Includes Connector)	55
Connector Foreign Area Supplementary	47	Intertoll Test Connector (Part of Auto- matic Outgoing Intertoll Trunk Test)	55
Connector Foreign Area Translator	47		
Connector Incoming or Outgoing Link	47		
Connector Marker	47		

Note: X indicates no individual work unit value.

## ALPHABETICAL LIST OF FRAMES (Cont'd)

FRAME NAME	LINE NO.	FRAME NAME	LINE NO.
Junctor Grouping	X	Sender Multifrequency	51
Link Controller	62	Sender Outgoing	51
Link First Primary Extension	49	Sender Panel Call Indicator	51
Link First Secondary Extension	49	Sender Position	51
Link Incoming	48	Sender Revertive and PCI	51
Link Outgoing	48	Sender Traffic Control Frame	62
Link Primary Extension	49	Service Observing	62
Link Secondary Extension	49	Service Observing Cord and Jack	X
Link Secondary Primary Extension	49	Speed of Dial Tone Test	62
Link Second Secondary Extension	49	Supplementary Alternate Route Traffic Control	62
Link Sender Incoming	50	Switched In Repeat	62
Link Sender Operator	50	Test Frame — 17C	55
Link Sender Outgoing	50	Traffic Register	X
Link Sender Repeater	50	Traffic Register Cross-Connecting	X
Link Supplementary Primary Extension	49	Traffic Register Relay Rack	62
Link Supplementary Secondary Extension	49	Traffic Usage Recorder	62
Link Third Primary Extension	49	Translator Decoder Foreign Area	45
Main Distributing	X	Translator Emergency	45
Manual Outgoing Toll Connecting Trunk Test and Make Busy	55	Translator Foreign Area	45
Marker Busy Time Control	62	Translator Home	45
Marker Cross-Connecting	X	Translator — Trk Class (CAMA)	64
Marker Intertoll	46	Trouble Indicator Marker	55
Marker Supplementary Route Relay	49	Trouble Recorder	55
Marker Toll Completing	46	Trouble Recorder Perforator	62
Miscellaneous Relay Rack	62	Trouble Tracing Selector	55
Multifrequency Current Supply	62	Trunk Assignment Distributing	X
Multifrequency Pulsing Receiving	62	Trunk Concentrator	61
Multifrequency Receiving Test	62	Trunk Delay Quotation	54
Office Interrupter	62	Trunk Incoming Toll Connecting Service	54
Outgoing Sender Test (Sender Test Connector Included)	55	Trunk Incoming Toll Connecting Tandem	54
Outgoing Toll Connecting Trunk Test Connector (Part of Automatic Outgoing Trunk Test)	55	Trunk Interposition	54
Position (CAMA)	74	Trunk Intertoll Incoming	54
Position Link (CAMA)	7	Trunk Intertoll Outgoing	54
Repeater Type "E"	57 ←	Trunk Intertoll Two-Way	54
Repeater Type "V"	58 ←	Trunk Monitoring	54
Secretarial Service Concentrator	62	Trunk O.G.T. Toll Connecting Service	54
Sender Dial Pulse	51	Trunk O.G.T. Toll Connecting Switching	54
Sender Key Pulsing	51	Trunk O.G.T. Toll Connecting Tandem	54
Sender Load Control	62	Trunk O.G.T. Toll Connecting T.X.	54
Sender Make Busy	55	Trunk Overflow	54
		Trunk Recorder	54
		Trunk Relay	54
		Trunk Service	54
		Trunk Test	54
		Trunk Testing Jack	X
		Weather Announcement Equipment	62

Note: X indicates no individual work unit value.

## ALPHABETICAL LIST OF POSITIONS

## ASSOCIATED MANUAL EQUIPMENT — FORM E-4405

POSITION NAME	LINE NO.	POSITION NAME	LINE NO.
Call Distributing "B"	71	Intercept — No. 23A	73
Centralized AMA	74	Intercept — Other	75
Chief Operator's Desk	75		
Combined Line — No. 3	69	Key Pulsing "A"	68
Combined Line — No. 5	69		
Combined Line — No. 6	69	Local Test Desk	75
Cordless "B"	71	Other "A" (Not key pulsing)	70
Dispatch Desk	75	Private Line Patch Board	75
Information — No. 3	73	Repair Clerk's Desk	75
Information — No. 4	73		
Information — No. 6	73	School Board	75
Information — No. 23A	73	Sender Monitor	75
Information — Other	75	Service Observing	72