

UPKEEP WORK UNITS
CENTRAL OFFICE EQUIPMENT — CROSSBAR NO. 1 AND NO. 5
FORM E-4404

1. GENERAL

1.01 This section describes the method of counting and reporting equipment items for No. 1 and No. 5 crossbar central offices using Form E-4404 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 number of plant items and work units for Associated Manual Equipment.

1.02 This section is reissued to renumber it into the Plant Series and to cover a revised Form E-4404 (5-64). The revised form refers to the new section number and covers write-ins on lines 68 and 69. The revised form will not be available until present stock of Form E-4404 (1-63) is exhausted. Write in on Line 68, Column B, the figure 16.2 for Auxiliary Sender. Write in on Line 69, Column B, the figure 13.4 for Auxiliary Sender Link. Marginal arrows have been omitted in this process.

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 crossbar tandem and No. 4 crossbar offices should be inventoried on Form E-4405.

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 available. 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 is an alphabetical list of the more common frame names showing the line and form on which these frames should be counted. This list is supplementary to the description of the individual lines on this form.

1.08 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-4404

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 frame equipment designation. In some cases, however, such as line link frames, marker frames, incoming 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 relay 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.

No. 5 Crossbar — Non-Wire Spring Relay Frames

2.08 Line 1: Line and Trunk Link: A basic line link frame consists of a primary and a secondary bay having a capacity for 290 lines.

Count one frame for each full basic line link frame. 100- and 200-line supplementary line link frames should be counted on Line 5.

A basic trunk link frame consists of two bays — a junctor switch bay and a trunk switch bay.

Count one frame for each full basic trunk link frame. Connector frames should be inventoried on Line 4.

2.09 Line 2: Link: Covers basic incoming register links, outgoing sender links, and coin supervisory links. A frame consists of one bay.

Count one frame for each full basic incoming register link frame, each full outgoing sender link frame and each full coin supervisory link frame. Auxiliary, auxiliary supplementary, and supplementary frames of the above type should be counted on Line 5.

2.10 Line 3: Trunk Link Ext.: Count one frame for each full trunk link extension frame.

2.11 Line 4: Connector: Covers all types of connector frames except master test connector.

Count one frame for each connector frame equipped with a full complement of connectors. (Individual connectors need not be fully equipped.)

2.12 Line 5: Supplementary & Auxiliary: Covers all types of frames bearing the designation "Supplementary", "Auxiliary Supplementary", or "Auxiliary", including primary bays (100 or 200 point) supplementary to the basic line link frame and marker route relay frames supplementary to the original route relay frame.

Count one frame for each full frame.

2.13 Line 6: Out. Sender (Without AMA): An outgoing sender frame consists of two adjacent bays. Covers all types of sender frames not equipped for AMA.

Count one frame for each full sender frame (5 senders) not equipped for AMA.

2.14 Line 7: Out. Sender (With AMA): An outgoing sender frame consists of two bays. Covers all types of sender frames equipped for AMA.

Count one frame for each full sender frame (5 senders) equipped for AMA.

2.15 Line 8: Originating Register: An originating register frame consists of two bays.

Count one frame for each full originating register frame (5 registers).

2.16 Line 9: Dial Tone Marker: A dial tone marker frame consists of two bays.

Count one frame for each full dial tone marker frame.

2.17 Line 10: Combined Marker: Covers combined and completing marker frames. A combined or completing marker frame consists of two common equipment bays, one translator bay, and the original route relay bay. Marker route relay frames supplementary to the original marker route relay bay should be counted on Line 5.

Count one frame for each full combined marker frame and one frame for each completing marker frame.

2.18 Line 11: Incoming Register: An incoming register frame consists of two bays. Covers all types of incoming register frames.

Count one frame for each full incoming register frame (5 registers).

2.19 Line 12: Number Group & Translator: Covers number group frames and translator frames associated with AMA. (Marker translators are included with the marker on Line 10. Pretranslators and foreign area translators should be counted on Line 22.)

Count one frame for each full number group frame and for each full translator frame.

2.20 Line 13: Trunk Relay: Count one frame for each full trunk relay frame.

2.21 Line 14: AMA: Count one 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 AMA to be counted on Line 22 unless otherwise specified.

2.22 Line 15: Alarm & Test: Covers all alarm frames and test frames, such as trouble indicator, sender test, incoming register test, etc.

Includes line insulation test frames. Do not count portable test equipment unless such equipment is used in lieu of permanently installed automatic monitor frames, i.e., portable incoming register test set and portable sender test set.

Count one frame for each full single bay of alarm or test equipment. In the case of portable test equipment, count one frame for each test set which is in lieu of the equivalent automatic monitor frame.

2.23 Line 16: Message Register: Upkeep: Count one frame for each 1000 registers.

2.24 Line 17: Message Register: Photographing: The value in Column B is an extra value, in addition to that shown on Line 16, for photographing message registers. Use only when message registers are regularly photographed by the central office forces and time for this operation is charged to central office upkeep.

Count one frame for each 1000 message registers which are regularly photographed. Enter the total to the left of Column A and multiply this number by the value in Column B to derive added work units. Do not make an entry in Column A. When registers are photographed, normally the number indicated in parentheses will correspond to the number of message register frames reported. In no case should it be greater.

2.25 Line 18: Repeater Type "E": Count one frame for each 150 E-type repeaters.

2.26 Line 19: Repeater Type "V": Count one frame for each 150 V-type repeaters.

2.27 Line 20: 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.

2.28 Line 21: N Carrier: Repeater: An N carrier repeater frame, for inventory purposes, consists of one bay with a capacity of 20 repeaters.

Count one frame for each full N carrier repeater frame.

2.29 Line 22: Miscellaneous Relay: Covers frames mounting such equipment as switchboard trunks, time announcement equipment, weather announcement equipment and miscellaneous trunks, and all frames not specifically included on other lines of this form or other work unit forms. Also covers line concentrators installed in, or working in conjunction with, a central office. Count one-half a miscellaneous relay frame for each line concentrator located outside a central office. Line concentrators located inside a central office should be counted as a part of a miscellaneous frame. 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 18 and 19. 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 relays used.

No. 5 Crossbar — Wire Spring Relay Frames

2.30 Line 25: Line Link (190 Line) Basic: A line link frame consists of a 190-line basic unit mounted on two bays.

Count one frame for each full basic line link frame. 50-, 100-, and 200-line supplementary line link frames should be counted on Line 31.

2.31 Line 26: Line Lk. (290 Line) & Trk. Lk.: A line link frame consists of a 290-line basic unit mounted on two bays.

Count one frame for each full basic line link frame. 50-, 100-, and 200-line supplementary line link frames should be counted on Line 31.

A basic trunk link frame consists of two bays — a junctor switch bay and a trunk switch bay.

Count one frame for each full basic trunk link frame.

2.32 Line 27: Link Inc. Reg. & Coin Supv.: Covers incoming register links and coin

supervisory links (both nonbylink and bylink operation). A frame consists of one bay.

Count one frame for each full incoming register and each full coin supervisory link frame.

2.33 Line 28: Link — Trk. Ext. & Out. Sdr.: Covers trunk link extension and outgoing sender link frames. A frame consists of one bay.

Count one frame for each full trunk link extension and each full outgoing sender link frame.

2.34 Line 29: Connector: Covers all types of connector frames, except number group connectors and trunk link connectors.

Count one frame for each connector frame equipped with a full complement of connectors. (Individual connectors need not be fully equipped.)

2.35 Line 30: Conn. — No. Grp. & Lk. Cont.:

Covers number group connector, number group connector control, trunk link connector, and trunk link connector control frames. A frame consists of one bay. A fully equipped connector frame consists of a full complement of connectors although individual connectors need not be fully equipped.

Count one frame for each full number group connector frame, each full number group connector control frame, each full trunk link connector frame and each full trunk link connector control frame.

2.36 Line 31: Supplementary: Covers all types of frames carrying the designation "Supplementary", including primary frames (50-, 100-, or 200-point) supplementary to the basic line link frame, marker route relay frame supplementary to original route relay frame, and PBX allotter frame supplementary to basic PBX allotter frame.

Count one frame for each full supplementary frame.

2.37 Line 32: Out. Sender (Without AMA):

An outgoing sender frame consists of one bay. Covers all types of outgoing sender frames not equipped for AMA.

Count one frame for each full sender frame not equipped for AMA.

2.38 Line 33: Out. Sender (With AMA): An outgoing sender frame consists of one bay. Covers all types of outgoing sender frames equipped for AMA.

Count one frame for each full sender frame equipped for AMA.

2.39 Line 34: Originating Register: An originating register frame consists of two identical bays (8 registers).

Count one frame for each full originating register frame.

2.40 Line 35: Dial Tone Marker: A dial tone marker frame consists of one bay.

Count one frame for each full dial tone marker frame.

2.41 Line 36: Combined Marker: Covers combined and completing marker frames. A combined or completing marker frame consists of two common equipment bays, one translator bay, and the associated original route relay bay. Marker route relay frames supplementary to the original route relay bay should be counted on Line 31.

Count one frame for each full combined marker frame and one frame for each full completing marker frame.

2.42 Line 37: Incoming Register: An incoming register frame consists of one bay.

Count one frame for each full (3 registers) incoming register frame.

2.43 Line 38: Number Group & Translator: Covers number group frames and translator frames associated with AMA. (Marker translators are included with the marker on Line 10. Pretranslators and foreign area translators should be counted on Line 22.)

Count one frame for each full number group frame and each full translator frame.

2.44 Line 39: Orig. Reg. Line Memory: An originating register line memory frame consists of one bay.

Count one frame for each full originating register line memory frame.

2.45 Line 40: Trunk Relay: Count one frame for each full trunk relay frame.

2.46 Line 44: Total — This Column: Enter the 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.

No. 1 Crossbar

2.47 Line 45: Line Link: A basic line link frame consists of a primary and a secondary bay having a capacity of 190 lines.

Count one full frame for each basic line link frame. Supplementary 100- and 200-point line link frames should be counted on Line 48.

2.48 Line 46: Marker: Covers originating and terminating marker frames. A marker frame consists of common equipment and the original route relay bay.

Count one frame for each full originating marker frame and for each full terminating marker frame. Supplementary route relay bays should be counted on Line 48. Class of service relay frames which supplement the class of service relays located in the marker common equipment bay should be counted on Line 67.

2.49 Line 47: Connector: Covers all types of connector frames.

Count one frame for each connector frame equipped with a full complement of connectors. (Individual connectors need not be fully equipped.)

2.50 Line 48: Supplementary & Auxiliary: Covers all frames carrying the designation of "Supplementary" or "Auxiliary", such as supplementary (100 and 200) line link frames and supplementary route relay bays. Auxiliary terminating sender link frames, auxiliary incoming trunk frames and supplementary incoming trunk frames are to be counted on Line 54.

Count one frame for each full supplementary and each full auxiliary frame.

2.51 Line 49: District Group (Without AMA): Covers the subscriber's sender link frames, district link frames and district junctor frames

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not equipped for AMA. Each of these frames consists of two bays.

Count one frame for each full subscriber's sender link frame, each full district link frame and each full district junctor frame not equipped for AMA.

2.52 Line 50: District Junctor (With AMA): Covers district junctor frames equipped for AMA (two bays).

Count one frame for each full district junctor frame equipped for AMA.

2.53 Line 51: Orig. Sender (Without AMA): Covers all originating sender frames not equipped for AMA.

Count one frame (5 senders) for each full originating sender frame not equipped for AMA.

2.54 Line 52: Orig. Sender (With AMA): Covers all originating sender frames equipped for AMA.

Count one frame (5 senders) for each full originating sender frame equipped for AMA.

2.55 Line 53: Office Link: A basic office link frame consists of two bays.

Count one frame for each full basic office link frame.

2.56 Line 54: Incoming Group: Covers terminating sender link frames, auxiliary terminating sender link frames, incoming trunk frames, auxiliary incoming trunk frames, supplementary incoming trunk frames, and incoming link frames. Each of these frames consists of two bays.

Count one frame for each full terminating sender link frame, each full auxiliary terminating sender link frame, each full incoming trunk frame, each full auxiliary incoming trunk frame, each full supplementary incoming trunk frame, and each full incoming link frame.

2.57 Line 55: Inc. & Office Link Ext.: Covers incoming extension link frames and office link extension frames. These are single bay frames.

Count one frame for each full incoming extension frame and each full office link extension frame.

2.58 Line 56: Terminating Sender: Covers all types of terminating sender frames.

Count one frame (5 senders) for each full terminating sender frame.

2.59 Line 57: Coin Supv., K.P., Link & Cont.: Covers coin supervisory link frames and key pulsing sender link and control frames. Each of these frames consists of two bays.

Count one frame for each full coin supervisory link and control frame and each full key pulsing sender link and control frame.

2.60 Line 58: Block Relay & Translator: Covers block relay frames and translator frames used with AMA. These frames are single bay frames.

Count one frame for each full block relay frame and each full translator frame.

2.61 Line 59: Message Register: Upkeep: Count one frame for each 1000 registers.

2.62 Line 60: Message Register: Photographing: The value in Column B is an extra value, in addition to that shown on Line 59, for photographing message registers. Use only when message registers are regularly photographed by the central office forces and time for this operation is charged to central office upkeep.

Count one frame for each 1000 message registers which are regularly photographed. Enter the total to the left of Column A and multiply this number by the value in Column B to derive added work units. Do not make an entry in Column A. When registers are photographed, normally the number indicated in parentheses will correspond to the number of message register frames reported. In no case should it be greater.

2.63 Line 61: M.B., Alarm & Test: Covers all make-busy frames, alarm frames, and test frames, such as sender make-busy, trouble indicator, sender test, trunk test, etc. Includes line insulation test frames. Do not count portable test equipment.

Count one frame for each full *single bay*.

2.64 Line 62: AMA: Count one 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 AMA to be counted on Line 67 unless otherwise specified.

2.65 Line 63: Repeater Type "E": Count one frame for each 150 E-type repeaters.

2.66 Line 64: Repeater Type "V": Count one frame for each 150 V-type repeaters.

2.67 Line 65: 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.

2.68 Line 66: N Carrier: Repeater: An N carrier repeater frame, for inventory purposes, consists of one bay with a capacity of 20 repeaters.

Count one frame for each full N carrier repeater frame.

2.69 Line 67: Miscellaneous Relay: Covers frames mounting such equipment as switchboard trunks, time announcement equipment, weather announcement equipment and miscellaneous trunks, and all frames not specifically included on other lines of this form or other work unit forms. Also covers line concentrators installed in, or working in conjunction with, a central office. Count one-half a miscellaneous relay frame for each line concentrator located outside a central office. Line concentrators located inside a central office should be counted as a part of a miscellaneous frame. 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 63 and 64. 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 relays used.

2.70 Line 68: Auxiliary Sender: Covers auxiliary senders used on AMA calls.

Count one frame for each four auxiliary senders installed.

2.71 Line 69: Auxiliary Sender Link: Covers auxiliary sender links used with auxiliary senders. An auxiliary sender link frame consists of ten 200-point switches and associated relays.

Count one frame for each fully equipped auxiliary sender link frame.

2.72 Line 70: Total — This Column: Enter the total of all frames (Lines 45 through 69) in Column A, and the total of all work units (Lines 45 through 69) in Column C.

2.73 Line 71: Total Crossbar: Enter the total of all crossbar frames (Lines 44 plus 70) in Column A, and the total of all crossbar work units (Lines 44 plus 70) in Column C.

Associated Manual Equipment

2.74 The position work unit values shown on Lines 72 through 79 include the position equipment, cord circuits (whether located in the board or on a miscellaneous frame in the switchroom) and switchboard dials and keysets. They also contain an allowance for operators' headsets.

2.75 Combined toll and DSA boards and straight toll positions should be inventoried on Form E-4406, Central Office Equipment — Toll Switchboard.

2.76 Line 72: Key Pulsing "A": Count one plant item for each position installed.

2.77 Line 73: Other "A": Count one plant item for each "A" board position other than key pulsing positions.

2.78 Line 74: Call Distributing "B": Count one plant item for each call distributing "B" position.

2.79 Line 75: Service Observing: Count one plant item for each service observing position.

2.80 Line 76: Inf. & Intcpt: Count one plant item for each information and intercept position of the type indicated.

2.81 Line 77: Centralized AMA: Count one plant item for each centralized automatic message accounting position.

2.82 Line 78: Miscellaneous: Covers miscellaneous positions not provided for on Lines 72 through 77, such as test desks, repair clerks' desks, chief operators' desks, time announcement positions, etc.

Count one plant item for each miscellaneous position.

2.83 Line 80: Total Positions: Enter the total number of switchboard positions indicated on Lines 72 through 79.

2.84 Line 83: Total Manual: Enter the total of all work units (Lines 72 through 82) in Column C.

2.85 Line 84, Column F: Total Frames: Enter the total frames as shown on Line 71, Column A, plus the total switchboard positions as shown on Line 80, Column D.

2.86 Line 84, Column G: Total Work Units: This is the sum of work units on Lines 71 and 83, Column C.

2.87 Line 85: 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.

2.88 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 classifications 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-4404 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-4404.

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.

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FORM E-4404
(5-64)

UPKEEP WORK UNITS
CENTRAL OFFICE EQUIPMENT - CROSSBAR No. 1 AND No. 5

NO. 5 CROSSBAR FRAMES		A	B	C	NO. 1 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	LINE AND TRUNK LINK		60.1		45	LINE LINK		63.0	
2	LINK		25.7		46	MARKER		28.1	
3	TRUNK LINK EXT.		26.9		47	CONNECTOR		10.2	
4	CONNECTOR		6.9		48	SUPPLEMENTARY & AUXILIARY		23.2	
5	SUPPLEMENTARY & AUXILIARY		15.1		49	DISTRICT GROUP (WITHOUT AMA)		50.8	
6	OUT. SENDER (WITHOUT AMA)		21.6		50	DISTRICT JUNCTOR (WITH AMA)		58.1	
7	OUT. SENDER (WITH AMA)		31.9		51	ORIG. SENDER (WITHOUT AMA)		56.1	
8	ORIGINATING REGISTER		35.6		52	ORIG. SENDER (WITH AMA)		59.8	
9	DIAL TONE MARKER		26.5		53	OFFICE LINK		55.3	
10	COMBINED MARKER		63.7		54	INCOMING GROUP		38.2	
11	INCOMING REGISTER		21.2		55	INC. & OFFICE LINK EXT.		26.8	
12	NUMBER GROUP & TRANSLATOR		4.1		56	TERMINATING SENDER		18.7	
13	TRUNK RELAY		18.8		57	COIN SUPV., K.P., LINK & CONT.		28.1	
14	A.M.A. *		34.4		58	BLOCK RELAY & TRANSLATOR		3.3	
15	ALARM & TEST *		21.6		59	MESSAGE REGISTER UPKEEP		26.4	
16	MESSAGE REGISTER UPKEEP		26.4		60	MESSAGE REGISTER PHOTOGRAPHING()	xxx	4.1	
17	MESSAGE REGISTER PHOTOGRAPHING()	xxx	4.1		61	M.B., ALARM & TEST		28.9	
18	REPEATER TYPE "E" 150/FRAME		210.0		62	A.M.A.		28.1	
19	REPEATER TYPE "V" 150/FRAME		210.0		63	REPEATER TYPE "E" 150/FRAME		210.0	
20	N CARRIER TERMINAL		101.0		64	REPEATER TYPE "V" 150/FRAME		210.0	
21	N CARRIER REPEATER		80.0		65	N CARRIER TERMINAL		101.0	
22	MISCELLANEOUS RELAY *		22.0		66	N CARRIER REPEATER		80.0	
23					67	MISCELLANEOUS RELAY		22.0	
24					68	AUXILIARY SENDER		16.2	
25	LINE LINK (190 LINE) BASIC		28.6		69	AUXILIARY SENDER LINK		13.4	
26	LINE LK. (290 LINE) & TRK. LK.		59.3		70	TOTAL - THIS COLUMN		xxx	
27	LINK INC. REG. & COIN SUPV.		20.4		71	TOTAL CROSSBAR (LINE 44 + LINE 70)		xxx	
28	LINK-TRK. EXT. & OUT. SDR.		26.9						
29	CONNECTOR		11.1						
30	CONN.-NO. GRP. & LK. CONT.		21.6						
31	SUPPLEMENTARY		17.6						
32	OUT. SENDER (WITHOUT AMA)		11.5						
33	OUT. SENDER (WITH AMA)		13.5		72	KEY PULSING "A"		14.1	
34	ORIGINATING REGISTER		42.1		73	OTHER "A"		12.8	
35	DIAL TONE MARKER		20.0		74	CALL DISTRIBUTING "B"		6.3	
36	COMBINED MARKER		62.5		75	SERVICE OBSERVING		12.4	
37	INCOMING REGISTER		13.9		76	INF. & INTCP.		13.2	
38	NUMBER GROUP & TRANSLATOR		4.5		77	CENTRALIZED AMA		7.6	
39	ORIG. REG. LINE MEMORY		20.0		78	MISCELLANEOUS		7.7	
40	TRUNK RELAY		20.4		79				
41					80	TOTAL POSITIONS		xx	xxx
42					81				
43					82				
44	TOTAL - THIS COLUMN		xx		83	TOTAL MANUAL (LINES 72 THRU 82)	xxx	xx	

84	TOTAL FRAMES (LINE 71 COL. A + LINE 80 COL. D)	F	TOTAL WORK UNITS (LINE 71 COL. C + LINE 83 COL. C)	G
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85	UPKEEP HOURS ON THIS EQUIPMENT CHARGED TO	CITY-OFFICE	
	ACCOUNT <input type="text"/>	DISTRICT	
		DIVISION	
		COMPANY-AREA	
		QTR. ENDING	

* ALSO COVERS WIRE SPRING RELAY FRAMES OF THIS TYPE

ALPHABETICAL LIST OF FRAMES

NO. 5 CROSSBAR (NON-WIRE SPRING RELAYS) — FORM E-4404

FRAME NAME	LINE NO.	FRAME NAME	LINE NO.
Audichron Equipment	22	Line Distributing	X
Automatic Monitor Test	15	Line Insulation Test	15
Automatic Progression Trunk Test	15	Link Auxiliary Coin Supervisory	5
Auxiliary Register and Sender Test	15	Link Auxiliary Incoming Register	5
Battery Distributing	X	Link Auxiliary Suppl. Coin Supervisory	5
Bells and Lights (CADW)	22	Link Auxiliary Suppl. Incoming Register	5
Call Identity Indexer	14	Link Coin Supervisory	2
Camera TUR (1/2 Frame)	22	Link Extension Trunk	3
Carrier Repeater "N"	21	Link Incoming Register	2
Carrier Terminal "N"	20	Link Line (290 Line) Basic	1
Class of Service	5	Link Line Suppl. (100 Line)	5
Code Conversion and Route Relay	22	Link Line Suppl. (200 Line)	5
Coin Dial Trunk	13	Link Outgoing Sender	2
Concentrator-Subscriber		Link Supplementary Coin Supervisory	5
Line (1/2 Frame if Outside)	22	Link Supplementary Incoming Register	5
Connector Auxiliary Master Test	15	Link Trunk	1
Connector Auxiliary Outgoing Sender	4	Main Distributing	X
Connector Auxiliary Register Marker	4	Manual Outgoing Trunk Test	15
Connector Foreign Area Translator	4	Marker Combined	10
Connector Incoming Register Marker	4	Marker Completing	10
Connector Line Link	4	Marker Dial Tone	9
Connector Line Link Marker	4	Master Control	15
Connector Master Test	15	Master Recorder	15
Connector Number Group	4	Master Register and Sender Test	15
Connector Originating Register Marker	4	Master Test	15
Connector Outgoing Sender	4	Master Timing	14
Connector Suppl. Aux. Outgoing Sender	4	Message Register Upkeep	16
Connector Supply. Inc. Register Marker	4	Miscellaneous Relay Rack	22
Connector Suppl. Line Link	4	Multifrequency Current Supply	22
Connector Suppl. Line Link Marker	4	Multifrequency Receiving	22
Connector Suppl. Master Test	15	Multifrequency Sig. Rec. (No. 12 Ser. Obs.)	22
Connector Suppl. Number Group	4	Number Group	12
Connector Suppl. Orig. Register Marker	4	Number Group Connector Control	22
Connector Suppl. Outgoing Sender	4	Number Group Cross-Connecting	X
Connector Suppl. Trunk Link	4	Office Interrupter	22
Connector Transverter	4	Outgoing Trunk Jack	X
Connector Trunk Link	4	PBX Allotter	22
Connector Trunk Test Lead	4	PBX Allotter Supplementary	5
Dial Long Line Circuits	22	Perforator Cabinet	14
Emergency Alarm	15	Perforator Emergency Cabinet	14
Floor Alarm	15	Pretranslator	22
Fuse Panel	X	Recorder	14
Juncture Grouping	X	Recorder Emergency	14
Juncture Supplementary Grouping	X	Recorder Trouble Test	15
		Register and Sender Test	15
		Register Incoming	11

Note: X indicates no individual work unit value.

ALPHABETICAL LIST OF FRAMES

NO. 5 CROSSBAR (NON-WIRE SPRING RELAYS) — FORM E-4404 (Cont)

FRAME NAME	LINE NO.	FRAME NAME	LINE NO.
Register Incoming Central "B"	11	Tandem Code Screening	22
Register Incoming Dial Pulse	11	Time Announcement (Including Amplifier)	22
Register Incoming Multifrequency	11	Traffic Recorder Midget Busy Counter and	
Register Incoming Revertive Pulse	11	Totalizer Frame	22
Register Incoming Tandem Revertive Pulse	11	Traffic Register	X
Register Originating	8	Traffic Register Cross-Connecting	X
Repeater Type E	18	Traffic Register Relay Rack	22
Repeater Type V	19	Traffic Totalizer Type "A"	22
Secretarial Service Concentrator	22	Traffic Totalizer Type "B"	22
Sender Inter-Marker Group	6 or 7	Traffic Usage Recorder	22
Sender Outgoing Dial Pulse	6 or 7	Translator (AMA)	12
Sender Outgoing Multifrequency	6 or 7	Translator and Route Relay	10
Sender Outgoing P.C.I.	6 or 7	Translator Foreign Area	22
Sender Outgoing Revertive Pulse	6 or 7	Transverter	14
Sender Outgoing Test	15	Trunk Relay Rack	13
Service Observing Equipment	22		
Speed of Dial Tone Test	22		
Supplementary Route Relay	5	Weather Announcement (Including	
Supplementary Service Treatment Bay	5	Amplifier)	22
Switchboard Cord Circuit Relay Bay	X		

NO. 5 CROSSBAR (WIRE SPRING RELAYS) — FORM E-4404

FRAME NAME	LINE NO.	FRAME NAME	LINE NO.
Audichron Equipment	22	Emergency Alarm	15
Automatic Monitor Test	15	Floor Alarm	15
Automatic Progression Trunk Test	15	Fuse Panel	X
Auxiliary Register and Sender Test	15	Juncture Grouping	X
Battery Distributing	X	Juncture Supplementary Grouping	X
Bells and Lights (CADW)	22	Line Distributing	X
Call Identity Indexer	14	Line Insulation Test	15
Camera TUR (1/2 Frame)	22	Link Coin Supervisory	27
Class of Service	31	Link Extension Trunk	28
Code Conversion and Route Relay	36	Link Incoming Register	27
Connector Foreign Area Translator	29	Link Line (190 Line) Basic	25
Connector Incoming Register Marker	29	Link Line (290 Line) Basic	26
Connector Line Link	29	Link Line Suppl. (50 Line)	31
Connector Line Link Marker	29	Link Line Suppl. (100 Line)	31
Connector Number Group	30	Link Line Suppl. (200 Line)	31
Connector Number Group Control	30	Link Outgoing Sender	28
Connector Originating Register Marker	29	Link Trunk	26
Connector Outgoing Sender	29		
Connector Transverter	29	Main Distributing	X
Connector Trunk Link Control	30	Manual Outgoing Trunk Test	15
Connector Trunk Link Frame	30	Marker Combined	36
Connector Trunk Test Lead	29	Marker Completing	36

Note: X indicates no individual work unit value.

ALPHABETICAL LIST OF FRAMES
NO. 5 CROSSBAR (WIRE SPRING RELAYS) — FORM E-4404 (Cont)

FRAME NAME	LINE NO.	FRAME NAME	LINE NO.
Marker Cross-Connecting	X	Repeater Type E	18
Marker Dial Tone	35	Repeater Type V	19
Master Control	15	Secretarial Service Concentrator	22
Master Recorder	15	Sender Inter-Marker Group	32 or 33
Master Test	15	Sender Outgoing Multifrequency	32 or 33
Master Timing	14	Sender Outgoing P.C.I.	32 or 33
Message Register Upkeep	16	Sender Outgoing Revertive Pulse	32 or 33
Miscellaneous Relay Rack	22	Sender Outgoing Test	15
Multifrequency Receiving	22	Service Observing Cord and Jack	X
Multifreq. Sig. Rec. (No. 12 Ser. Obs.)	22	Service Observing Equipment	22
Number Group	38	Speed of Dial Tone Test	22
Number Group Cross-Connecting	X	Supplementary Route Relay	31
Office Interrupter	22	Switchboard Cord Circuit Relay	X
Originating Register Line Memory	39	Tandem Code Screening	22
Outgoing Trunk Jack	X	Time Announcement (Including Amplifier)	22
PBX Allotter	22	Traffic Recorder Midget Busy Counter and Totalizer	22
PBX Allotter Supplementary	31	Traffic Register	X
Perforator Cabinet	14	Traffic Register Cross-Connecting	X
Perforator Emergency Cabinet	14	Traffic Register Relay Rack	22
Pretranslator	22	Traffic Totalizer Type "A"	22
Recorder (AMA)	14	Traffic Totalizer Type "B"	22
Recorder Trouble Test	15	Traffic Usage Recorder	22
Register and Sender Test	15	Translator	38
Register Incoming	37	Translator and Route Relay	38
Register Incoming Central "B"	37	Translator Foreign Area	22
Register Incoming Dial Pulse	37	Transverter	14
Register Incoming Multifrequency	37	Trunk Relay Rack	40
Register Incoming Revertive Pulse	37	Weather Announcement (Including Amplifier)	22
Register Incoming Tandem Revertive Pulse	37		
Register Originating	34		

NO. 1 CROSSBAR — FORM E-4404

FRAME NAME	LINE NO.	FRAME NAME	LINE NO.
Audichron Equipment	67	Coin Dial Trunk	67
Auxiliary Incoming Trunk	54	Concentrator-Subscriber Line (1/2 Frame if Outside)	67
Auxiliary Sender	68	Connector District Group	47
Auxiliary Sender Link	69	Connector Incoming Trunk Test (Part of Incoming Test Frame)	61
Battery Distributing	X	Connector Line Choice	47
Bells and Lights (CADW)	67	Connector Line Junctor	47
Block Relay	58	Connector Master Test	47
Block Relay Cross-Connecting	X	Connector Number Group	47
Call Identity Indexer	62	Connector Originator Marker	47
Calling Line Register	62	Connector Terminating Marker	47
Carrier Repeater N	66	Connector Transverter	47
Carrier Terminal N	65		

Note: X indicates no individual work unit value.

ALPHABETICAL LIST OF FRAMES
NO. 1 CROSSBAR — FORM E-4404 (Cont)

FRAME NAME	LINE NO.	FRAME NAME	LINE NO.
Connector Zone Registration District	47	Orig. Trouble Indicator	61
Controller Trouble Indicator	61	Outgoing Trunk Jack	X
District Junctor Grouping	X	Outgoing Trunk Test	61
District Junctor Test	61	Perforator Cabinet	62
District Junctor (With AMA)	50	Recorder	62
District Junctor (Without AMA)	49	Repeater Type E	63
Emergency Alarm	61	Repeater Type V	64
Emergency Line Link Controller	67	Secretarial Service Concentrator	67
Floor Alarm	61	Sender and Position Finder	67
Fuse Panels	X	Sender Key Pulsing	51 or 52
Incoming Trunk	54	Sender Make Busy	61
Incoming Trunk Test (Includes Test Connector)	61	Sender Number Checking	67
Line Insulation Test	61	Sender Subscriber	51 or 52
Line Junctor Grouping	X	Sender Terminating "B"	56
Link Auxiliary Terminating Sender	54	Sender Terminating Dial Pulse	56
Link Coin Supervisory	57	Sender Terminating Full Selector	56
Link District	49	Sender Terminating Multifrequency	56
Link Incoming	54	Service Observing	67
Link Incoming Extension	55	Service Observing Cord and Jack	X
Link Key Pulsing Sender	57	Speed of Dial Tone Test	67
Link Line Basic 190 Point Switch	45	Supplementary Incoming Trunk	54
Link Line Suppl. 100 Point Switch	48	Supplementary Route Relay	48
Link Line Suppl. 200 Point Switch	48	Switchboard Cord Circuit	X
Link Office	53	Terminating Sender Test	61
Link Office Extension	55	Terminating Trouble Indicator	61
Link Subscriber Sender	49	Time Announcement (Including Amplifier)	67
Link Terminating Sender	54	Traffic Control Test	61
Main Distributing	X	Traffic Recorder Midget Busy Counter and Totalizer	67
Maintenance Recorder	62	Traffic Register	X
Marker Originating	46	Traffic Register Cross-Connecting	X
Marker Terminating	46	Traffic Register Relay	67
Master Timing	62	Traffic Totalizer Type "A"	67
Message Register Upkeep	59	Traffic Totalizer Type "B"	67
Miscellaneous Relay Rack	67	Traffic Usage Recorder	67
Multifrequency Current Supply	67	Translator (AMA)	67
Multifreq. Key Pulsing Sig. and Testing	61	Transverter	62
Multifrequency Receiving (5 per frame)	67	Weather Announcement (Including Amplifier)	67
Multifreq. Sig. Rec. (No. 12 Ser. Obs.)	67	Zone Registration Control	67
Office Interrupter	67	Zone Registration Test	61
Office Junctor Grouping	X	Zone Registration Timing Interrupter	67
Orig. Marker Cross-Connecting	X		
Orig. Sender Test (Includes Test Connector)	61		

Note: X indicates no individual work unit value.

**ALPHABETICAL LIST OF POSITIONS
ASSOCIATED MANUAL EQUIPMENT — FORM E-4404**

POSITION NAME	LINE NO.	POSITION NAME	LINE NO.
Call Distributing "B"	74	Intercept — No. 23A	76
Centralized AMA	77	Intercept — Other	78
Chief Operator's Desk	78	Key Pulsing "A"	72
Combined Line — No. 3	73	Local Test Desk	78
Combined Line — No. 5	73	Miscellaneous	78
Combined Line — No. 6	73	Other "A" (Not Key Pulsing)	73
Cordless "B"	74	Private Line Patch Board	78
Dispatch Desk	78	Repair Clerk's Desk	78
Information — No. 3	76	School Board	78
Information — No. 4	76	Sender Monitor	78
Information — No. 6	76	Service Observing	75
Information — No. 23A	76		
Information — Other	78		