

WORK SHEETS

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1. GENERAL

1.01 This section covers work sheets for use with work orders issued to cover key telephone systems, multiple line key cabinets, and similar key equipments. It is revised to cover revised work sheet forms.

1.02 "Square KTS" systems are covered in BSP C16.991 - F26.921 - M25.17.

2. FORMS

2.01 Work sheet forms are as follows:

| Form | Size and Description |
|-----------------|--|
| K2393 (Small) | 8-1/2" by 11" (10 lines and 12 stations) 4-page snap-out. |
| K2393C (Small) | 8-1/2" by 11" (10 lines and 12 stations) Sheets and carbons padded for single or snap-out use. |
| K2393A (Medium) | 11" by 17" (20 lines and 20 stations) 4-page snap-out. |
| K2393D (Medium) | 11" by 17" (20 lines and 20 stations) Sheets and carbons padded for single or snap-out use. |

3. PREPARATION

3.01 Key Telephone Service: Commercial will issue a work sheet for each installation and for later changes or additions which affect the remainder of the system or involve two or more stations. Work sheets will not be issued for:

- (a) Key arrangements which involve only cutting off an extension or extension bell, including alternate connection of bells on suburban service.
- (b) Installation of a one-way or two-way signaling circuit between a main station and an extension station where not already classified as a KTS, and no other features are involved.
- (c) Change of telephone number only.
- (d) Change of location or type of instrument without change of features.
- (e) Disconnection of stations not affecting the remainder of the KTS.
- (f) Complete disconnection of a KTS.
- (g) Addition of stations connected to one line only when service features are not involved.

3.02 Multiple Line Key Cabinet and Similar Services: Commercial will issue a work sheet for multiple line key cabinet service and similar services where more than one key cabinet is being installed and for any later changes involving more than one key cabinet.

3.03 Changes: Commercial will issue new work sheets if changes affect two or more stations. They will show the layout of the complete system after the changes are made. The RMKS space of change orders (that don't require work sheets) will detail the work to be done.

↖ 3.04 Figs. 1, 2, and 3 show how commercial will fill in work sheets.

3.05 Fig. 4 shows work sheet codes and schematics. (Also see BSP A802.090-
↙ C15.990 - F26.911 - M25.06.)

4. DISTRIBUTION

4.01 Commercial will forward three copies of work sheets to plant assignment. At locations where work orders are prepared on typewriters, commercial will forward the work sheets attached to the work order to plant assignment. In instances where the work sheets are forwarded separately from the work order, commercial will show "SEE WS" in the RMKS space of the work order.

↖ 4.02 Where some of the stations of a key equipment installation requiring a work sheet are off-premises, commercial will forward three extra copies of the work sheet for each off-premises address to the plant service center.

NOTE: No extra copies are needed where off-premises lines merely terminate on another key equipment system. For these lines commercial will show the line termination data in the RMKS space of the order.

4.03 Since plant must use the work sheet to order equipment, it is imperative that the work sheet be received by plant assignment on the day the order is taken. Or in no case later than the following work day. In order to meet this requirement, commercial normally will issue the work sheet on the same day as the taken date and in no case later than the first four hours of the next working day.

4.04 When plant assignment receives a new work sheet, they will refer to the old work sheet, if any. If material is needed, they will order it right away.

→ BSP M28.05 - SOP 22.111 covers Ordering and Shipping Equipment - Complex Equipment Ordering Plan.

4.05 Plant assignment shall forward:

→ (a) One copy of the work sheet, attached to each PR copy of the work order to the order desk.

→ (b) Two copies of the work sheet, attached to each IW copy of the work order to the field forces.

EXCEPTION: One copy of the work sheet may be sent to the field forces separately as an advance copy to make a job survey.

5. CORRECTIONS

5.01 Where commercial originates a correction after they have distributed the work sheet, the plant service center shall arrange to have all copies of the work sheet corrected and for the REMARKS space of the work sheet to show the date and initials of the commercial person authorizing the correction.

5.02 Where a correction develops in connection with a field craftsman's visit to the subscriber's premises, make no changes until authorized by the salesman. If authorized by the salesman, make the change and show the date and the salesman's initials in the REMARKS space of the work sheet.

NOTE: The field craftsman shall arrange to have other copies of the work sheet corrected by telling the order desk about the authorized changes.

6. COMPLETED WORK SHEETS

6.01 When the work operations covered by the work sheet and the work order are completed, the field craftsman shall:

↖ (a) Enter the equipment code detail in the PLANT EQUIPMENT CODES and PLANT COM EQ spaces of his two copies of the work sheet. (See Figs. 5 and 6.) He shall also show the type of system at the top of the PLANT COM EQ space. Here are some examples: 1A, 1A1, 23A, 101A, and Teletalk.

- (b) Enter his name and the completion date in the space provided.
- (c) Place one completed copy of the work sheet in the apparatus box or cabinet for reference when doing future installation and maintenance work.
- (d) Send one completed copy of the work sheet to the plant service center.

6.02 Forward the plant service center copy of the work sheet with the completed "PR" copy of the work order to the employee responsible for posting the subscriber line card records. Make up the line card as far as possible (See 6.03). Then file the work sheet in the telephone number sequence, by central office units, in a pending file.

6.03 As soon as the plant service center receives the field copy of the completed work sheet, they shall remove the pending copy from file. Destroy the pending copy. Complete the line card (See 6.02). File the completed field copy of the work sheet in telephone number sequence, by central office units, in standard binders (for reference when doing future installation and maintenance work).

NOTE 1: File medium and large work sheets in envelopes (Form S-1432). Punch the envelope so it can be placed in the binder in telephone number sequence with the small work sheets. Place the telephone number on the envelope in the same location as on the small work sheets.

NOTE 2: In locations where commercial shows both the telephone number and a KS (key system) number, file the work sheets in KS number sequence by pilot telephone number.

6.04 Any time a work sheet is removed from the completed file, replace it with a temporary record. Show the telephone number, date, and new order number, if any, on this record. A new work sheet can supersede an existing work sheet. If it does, remove the old one from file and destroy it.

6.05 For existing systems, post work sheets to reflect changes and partial disconnects covered solely by work orders.

NOTE: If for any reason the work sheet for an existing system is not in the plant file, request another copy from commercial.

7. STATION NUMBER CARDS AND WINDOWS

7.01 Plant assignment shall attach to the field craftsman's copy of the work order or work sheet of a multi-station system:

- (a) Station number cards.
- (b) Windows (Forms E-2959) having the proper letters of the alphabet, for each separate station of the system. Windows shall correspond to the information shown on the work sheet in the STA spaces or similar information on work orders.

7.02 Where several station number cards and windows are involved, place them in the B.S. No. 13 Glassine Envelope and attach to the field copy of the work order or work sheet.

8. DESIGNATION AND DIRECTORY CARDS

8.01 Designation cards for KTS and other station systems are covered in BSP C37.321. C63.826 tells field craftsmen how to get them made up. If the plant service center makes them up, get them to the field craftsman before the field work is completed.

8.02 Form E-4097, Dial Selective Intercommunicating Directory Card (Fig. 7), is used at KTS stations that pick up intercommunicating lines arranged for dial selective signaling (see BSP C71.331).

8.03 Plant service centers shall make up Forms E-4097 for each station that picks up a dial selective intercom line. On the work sheet, commercial will show "DS COML". Also commercial will show:

- (a) Dialing code number assigned to each station.
- (b) Initials of the "User" at each station.

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SECTION F26.912
SECTION M25.77

8.04 When making up Form E-4097:

- (a) Type the telephone number in the large center space - use only the first two letters of the office name. Include PBX extension number, if there is one.
- (b) Refer to the work sheet. And type the KTS station letter in the space opposite number "1" of the dial, for each station.
- (c) In the spaces opposite numbers "2" to "0" of the dial (see Fig. 8), type the initials shown on the work sheet for each dialing code number assigned.

Also on the card for each station, type an asterisk below the initials of the "User" at that station (see Fig. 7).

8.05 Send several extra Forms E-4097 with each order. Type only the telephone number and PBX extension number on them. The subscriber will use them to replace the other cards when he has personnel changes. The field craftsman will show him how to replace them.

NOTE: Subscribers may call to ask for more Forms E-4097 to use in replacing others. When they do, type them and mail them.

WORK SHEET CODES AND SCHEMATICS

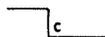
LINE SIGNALS

T Telephone connected to one line only.
 P Pickup.

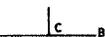


Line Hold

MANUAL CUTOFF



Cutoff.



Cutoff with bell transfer.

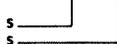
LOCAL SIGNALS

PB — Z Selective signal (MKC system).
 PB = Push button.
 Z = Buzzer.

S — Z Selective signal (KTS).
 S = Signal.
 Z = Buzzer.

SZ — SZ — SZ Code signal.

SZ — SZ — SZ Combined code and selective signal.



AS1 — Z Automatic Signaling -- One way.

Z — AS2 — Z Automatic Signaling -- Two way.

EXCLUSION

E Exclusion (switch hook key) for control of one or more stations on one line only.

AUT E Automatic Exclusion -- One for each line arranged to permit one station to exclude one or more other stations.

EA Exclusion Automatic -- See "Work Sheet Codes Only" for explanation.

B Bell on line.



Common Bell (CZ for common buzzer).

CB (OR CZ)



Busy Lamp.



Line Lamp.



Combined line and busy lamp.



Station Busy lamp assoc. with talking circuit only of another station.

WORK SHEET CODES ONLY

EXCLUSION AUTOMATIC:

Codes (A) (B) (C) or (D) are shown on a line in the station column to indicate the type of exclusion automatic applicable on that line at that station. Types of operation indicated by code are as follows:

(A) If line not in use -- Excludes this line from stations having this line coded (A) (B) or (C)

If line in use --

By another station having this line coded (A) this station is locked out from the line.

By station having this line coded (B), comes in on line but does not cut off call in progress.

By station having this line coded (C), seizes line and cuts off conversation in progress.

(B) Cut off by stations coded (A) on this line if not using the line. Not cut off if using line.

(C) Cut off by stations coded (A) on this line even when using the line.

(D) Indicates line not affected at this station by exclusion automatic feature. Is not excluded and does not exclude.

KEY TERMINATIONS -- MKC -- 10L KU -- 10L KC

K -- Indicates line terminates on key equipment where not billed as pickup -- See "type set" For Service Order Code."

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 SECTION F26.912
 SECTION M25.77

Fig. 4

| K 2393 (6-58) | | MKC KEY TELEPHONE WORK SHEET | | | | | | | | | | TEL. NO. TA7-1815 | | |
|---|--|------------------------------|--|----------------------------------|--|----------------------------------|-----------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|--|
| SUB HALL HARDWARE | | S 22 | | O/N 249173 | | EXCHANGE ALPHA | | | | SYSTEM # | | | | |
| ADDR 18 BEALE | | D 29 | | R/O | | SEE MRS JONES | | | | DATE 9-10 1958 | | | | |
| LINE | USER → | MRS JONES | MISS GREEN | MR BROWN | MR WHITE | MR HALL | MR JOHNSON | MR BLACK | | | | | | COM'L EQ |
| | STA → | A | B | C | D | E | F | G | H | J | K | L | M | |
| TA7-1815 | LBL LH | K | K | K | K | K | K | P | | | | | | H |
| TA7-1816 | LBL LH | K | K | K | K | K | K | P | | | | | | 3 P |
| TA7-1817 | LBL LH | K | K | K | K | K | K | P | | | | | | S |
| | LBL LH | CZ | | | | | | | | | | | | V |
| CA CRT | LBL LH | | | K | | K | | | | | | | | Z |
| | LBL LH | | | | | | | | | | | | | DSZ |
| | LBL LH | | | | | | | | | | | | | DSB |
| | LBL LH | | | | | | | | | | | | | LH |
| | LBL LH | | | | | | | | | | | | | COML |
| | LBL LH | | | | | | | | | | | | | DS BL |
| HOLD - VISUAL | → | H V | H V | H V | H V | H V | H V | H V | H V | H V | H V | H V | H V | BL CU |
| NEW - CHANGE | → | (N) C | (N) C | (N) C | (N) C | (N) C | (N) C | (N) C | N C | N C | N C | N C | N C | LBL CU |
| OTHER STA EQUIPMENT | → | 2H-X-ATD 2 POS 3L-MKC | | 1H-X-ATD 1 POS 3L-MKC | 1H-X-ATD 1 POS 3L-MKC | 1H-X-ATD 1 POS 3L-MKC | 1H-X-ATD 1 POS 3L-MKC | EXH KI SEP | | | | | | LBL CEQ |
| | AUDIBLE SIG | Z | Z | (Z) | Z | (Z) | Z | Z | Z | Z | Z | Z | Z | DS CEQ |
| S I G N A L I N G | SIG OR PB TO STAS CIRCLED | BCD EFG HJK LM | ACD EFG HJK LM | ABD EFG HJK LM | ABC EFG HJK LM | ABC DFG HJK LM | ABC DEG HJK LM | ABC DEF HJK LM | ABC DEF GJK LM | ABC DEF GHK LM | ABC DEF GHJ LM | ABC DEF GHJ KM | ABC DEF GHJ KL | 3-1MBL MKC 2-EXL MKC 12 MKCL MKC CA CRT 2PBZ |
| | OTHER SIG ARRANGEMENTS | | | | | | | | | | | | | |
| | DESCRIPTION OF CHANGE OF STA | | | | | | | | | | | | | If Customer Requests Change Contact: |
| REMARKS | | | | | | | | | | | | | | MR. RUSSELL TEL. 7A7-9000 EXT. 2659 |
| 100 MKC SYSTEM | 1-30263 12-4C 1K BOX J53103A, L1 106116 SW KA8966HH | 1-30A63 | 1-30263 1K BOX J53103A, L1 12-7B 1K-551A | 1-30263 1K BOX J53103A, L1 | 1-30263 12-7B 1K-551A 1K BOX J53103A, L1 | 1-30263 1K BOX J53103A, L1 | 1-30263 1K-6017E | | | | | | | I. KUREM INSTLR. 9-29-58 COMPL. DATE |

PLANT COM EQ

PLANT EQUIPMENT CODES

Fig. 5

K 2393 (6-58)

KEY TELEPHONE WORK SHEET

TEL. NO. TA7-1810

SUB BRIM HAT CO S 10-2 O/N 812347 EXCHANGE ALPHA SYSTEM #
 ADDR 151 STETSON WY D 10-9 R/O SEE MR BROWN DATE 9-25 19 58

| LINE | USER → | SECTY | MGR | SUPT | D | E | F | G | H | I | K | L | M | COM'L EQ |
|----------|-------------|--------------|------|------|---|---|---|---|---|---|---|---|---|----------|
| ↓ | STA → | A 23 | B 24 | C 16 | | | | | | | | | | |
| TA7-1810 | (BL) LH | P | P | P | | | | | | | | | | 3 H |
| TA7-1811 | (BL) LH | P | P | P | | | | | | | | | | 14 P |
| TA7-1812 | (BL) LH | P | P | P | | | | | | | | | | 6 S |
| | LBL LH | CZ | | CZ | | | | | | | | | | 3 V |
| COML | LBL LH (BL) | P | P | P | | | | | | | | | | 3 Z |
| | LBL LH | *BL | | | | | | | | | | | | DSZ |
| | LBL LH | | | | | | | | | | | | | DSB |
| | LBL LH | USTAN IN ARR | | | | | | | | | | | | 3 LH |
| | LBL LH | P | | | | | | | | | | | | 1 COML |
| | LBL LH | P | | | | | | | | | | | | DS BL |

| | | | | | | | | | | | | | | |
|---------------------|---|---------|---------|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|
| HOLD - VISUAL | → | (H) (V) | (H) (V) | (H) (V) | H V | H V | H V | H V | H V | H V | H V | H V | H V | 1 BL CU |
| NEW - CHANGE | → | (N) C | (N) C | (N) C | N C | N C | N C | N C | N C | N C | N C | N C | N C | 3 LBL CU |
| OTHER STA EQUIPMENT | → | BL DI | | | | | | | | | | | | 1 LBL CEQ |
| | | KI SEP | | | | | | | | | | | | DS CEQ |

| | | | | | | | | | | | | | | |
|---|---------------------------|---------------------------------|---------------------------------|---------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|---------------------|
| S I G N A L I N G | AUDIBLE SIG | (Z) | (Z) | (Z) | Z | Z | Z | Z | Z | Z | Z | Z | Z | 1 BL DI |
| | SIG OR PB TO STAS CIRCLED | (B) (C) (D) EFG HJK LM | (A) (C) (D) EFG HJK LM | (A) (B) (D) EFG HJK LM | ABC EFG HJK LM | ABC DFG HJK LM | ABC DEG HJK LM | ABC DEF HJK LM | ABC DEF GJK LM | ABC DEF GHK LM | ABC DEF GHJ KM | ABC DEF GHJ KL | ABC DEF GHJ KL | 1 C 1 BL CU COML |
| | OTHER SIG ARRANGEMENTS | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|------------------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESCRIPTION OF CHANGE OF STA | → | | | | | | | | | | | | | |
|------------------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|

REMARKS * ASSOC WI TEL CIRCUIT OF STA C

| | | | | | | | | | | | | | | |
|--------------------------|----------|----------|----------|--|--|--|--|--|--|--|--|--|--|--|
| 1A KEY TEL SYSTEM | 1-4646C3 | 1-4646C3 | 1-4646C3 | | | | | | | | | | | |
| 1-UNIT TEL 50B-27 | 1Z-4C | 1Z-7A | 1Z-4C | | | | | | | | | | | |
| 1-POWER UNIT J86731A, L4 | 1Z-7A | 2K-551A | 1Z-7A | | | | | | | | | | | |
| 1-6A RTU | 2K-551A | | 2K-551A | | | | | | | | | | | |
| | 1K-6017B | | | | | | | | | | | | | |
| | 18L-1523 | | | | | | | | | | | | | |

I. I. STUTTER
 INSTLR.
 10-9-58
 COMPL. DATE

PLANT COM EQ

PLANT EQUIPMENT CODES

SECTION C16.990
 SECTION F26.912
 SECTION M25.77

Fig. 6

TCI Library https://www.telephonerecollectors.info/

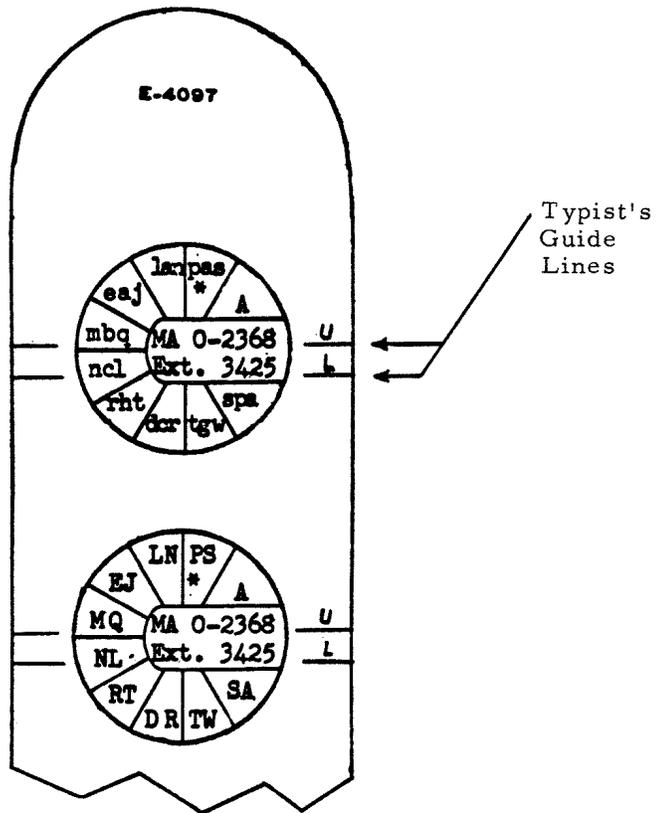


Fig. 7

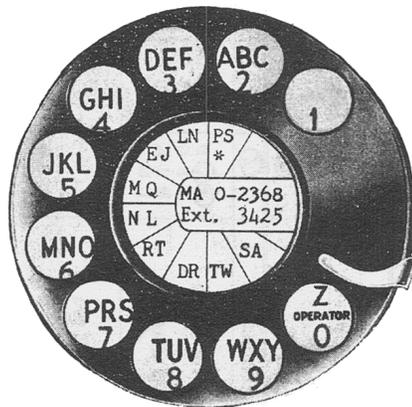


Fig. 8