100 KEY EQUIPMENT

MAINTENANCE

1.00 GENERAL

1.01 Maintenance of associated station apparatus such as telephone sets, buzzers and bells, dials, etc is covered in the respective C Sections.

1.02 Detailed circuit information is provided in the CDs and SDs corresponding to the particular equipment.

1.03 Make a visual inspection of apparatus for defects such as worn, displaced, or broken components.

2.00 KEY BOX

LAMP FAILURE

2.01 Check that A3-type lamps are used. Replace defective lamps. Remove lamp cap with 319B tool. Use 553A tool to remove lamp.

- Repeated lamp failures may be due to high voltage or lamps burning continuously when equipment is unattended.

DIRTY KEY CONTACTS

2.02 Usually this condition is evidenced by a noisy or line-dead report at an individual key box. Verify by listening on associated telephone set while tapping key handle lightly. Other keys to the left should be tapped similarly since the telephone circuit is multipled. Key with dirty contacts or insufficient follow will sound noisy. Clean contacts with 265 tool.

2.03 An individual key can be withdrawn from key box by removing:

1. Key handles.
2. Wood front cover.
3. Key unit from box.
4. Faceplate (two nuts underneath).
5. Four screws holding particular key.

2.04 Key adjustments should be made with proper tools and methods outlined in Bell System Practices covering the particular type key.

2.05 When key box faceplate is removed, check that 38H dust shields are in place over keys.

2.06 Friction pads KS-8035 may be applied to base to overcome slipping on desk surface.

2.07 Older type key boxes where faceplate must be removed for lamp replacement can be modified with new type faceplates listed below:

P-423612 3-line single-sided.

P-423613 3-line double-sided.

P-423614 6-line single-sided.

P-423615 6-line double-sided.

3.00 RELAY EQUIPMENT

3.01 A typical composite circuit drawing is shown in Fig. 1. This drawing is provided as a supplement to standard SDs and is not intended to replace them.

3.02 Common troubles in relay equipment are usually traced to relay contacts. Analysis of condition should be made by talking to customer, observing equipment operation, and consulting CD and SD drawings.

- Manually operating certain relays to simulate functions may aid in locating trouble.
- Visual inspection, when required, may detect broken, loose wiring or improper relay contact separation, make, and break.
- Relay adjustment should be in accordance with the Bell System Practice covering particular relay.

3.03 Slow release of busy lamp may be due to residual magnetism in core of *TA* relay in line circuit. Check that paper armature stop is in place on relay.

CROSSTALK

3.04 Crosstalk may be encountered if there are any unusual lengths of cable between the relays and the keys. This is due to the arrangement of the holding circuit, and where encountered in central office and PBX lines at existing installations, the line circuit should be checked and arranged as specified below.

- Connect a 439A capacitor (2 mf) across the winding of the B1083 holding relay *H*. Connect the *H1* lead to the tip side of the line at each key box. This will be satisfactory if the total station cable lengths from the apparatus cabinet to any station key does not exceed 850 feet of lead cable or 350 feet of fabric covered cable. Space is available on the line unit for the required 2-mf capacitor. The capacitor is furnished on new central office and PBX line units.
- The permissible station cable length between the apparatus cabinets and keys may be increased to 1150 feet of lead cable and 550 feet of fabric covered cable if a 4-mf capacitor. Where the additional capacity is required, space must be provided locally due to limitations of the apparatus units.

3.05 Where crosstalk is encountered on existing tie lines, the *H1* lead shall be removed from the circuit.

FILTER

3.06 A 61A filter is used to suppress radio frequency induction on central office or PBX line circuits. It is connected across contacts of *S* relay as shown in SD-69000-01.

AC BUZZER SUPPLY (WHEN REQD)

GRD
GI
TO RING SUPPLY
12B LAMP
+
B

DC BUZZER SUPPLY

47N
GI
B
(638 B MTG PLATE)

DC COMMON BUZZER

CUTOFF KEY WHEN SPEC
GI
G
4-TYPE BUZZER
LEADS B, G, GI STRAPPED TO OTHER UNITS

ATTENDANT TEL CKT

24A KTU
L2Y
101A IND COIL
T
R
LI
C
BK
GN
37B
R
215A
361C
A
B
289B
NI
HC3
6A DIAL
5
4
3
2
1
BBRW
R
BKRY
52- OR 53- TYPE HEAD TEL SET
32A KTU WHEN SPEC
R
T

7-TYPE BUZZER
A
GI
TO LINE UNIT

T
R

TS A - 1
TS B - (1)
INDIVIDUAL LINE SIGNAL
A
B
CO OR PBX LINE UNIT (J 53103 V)
BAT. 13 14-26V GRD 16
TIP 1
(R)
TO CO
2M
1M
AC
(R)
(RI)
SO
2RB
3RT
(H)
4RB
(TA)
SR
(S)
RING 2
USED WITH TIMING UNIT (J53103W)
GROUND CUTOFF KEY
TS A - 1
TS B - (1)
TI
L
HI
RI
L
H

DOUBLE - SIDED KEY BOX
FIRST LINE
FRONT
REAR
T
R
B
H
(LINE)
(BUSY)
HOLD
TALK
NORM
532-B-6
10 TO CABINET LAMP GRD

TIE LINE AND AUXILIARY SIGNAL CIRCUIT UNIT (J 53103 AB)

TIP 1
(T)
2 (L)
54H
4
3
1M
2M
2
A
(L)
(CO) 2
3RT
2RB
(TB)
3LT
2LB
RING 2
(R)
15
5
6
8
GI
B
CR
G
BUZZER LEADS
TO TIE LINE CKT AT DISTANT KEY EQUIP.
BAT. 13 14-26V GRD 16
TI
L
R
B
H

SECOND LINE
THIRD LINE
TO SUCCEEDING KEYS

INTERCOMMUNICATING SIGNALING

551- OR 549- TYPE KEY
7-TYPE BUZZER OR BELL
D
A
C

INTERCOMMUNICATING LINE

2A KTU
(BF)
TIP
RING
T
R
TO OTHER STATIONS

Fig. 1 — Composite Circuit Drawing