Key Telephone Teletrainer System

Description and Maintenance

1-4-68

1 INTRODUCTION

1.01 This section covers the description and maintenance of the Key Telephone Teletrainer System.

2 GENERAL

2.01 This equipment is furnished by the Telephone Company for use in secondary schools as an aid in training students in the proper use of key telephones.

- School Relations Group will furnish equipment to the schools.
- Repairs will be handled through the Operations Department.

2.02 The teletrainer system provides the following features:

- Communications between one to four non-key telephones and one key telephone.
- Simulated one to four line key telephone system.
- Individual ringing of each telephone.
- Dial tone and buzy tone for each line.
- Line lamp, busy lamp and wink hold lamp on each line appearing on key telephone.
- Line holding on each line appearing on key telephone.

3 DESCRIPTION

3.01 The key telephone teletrainer system consists of the following components: (see Fig. 1)

- One six button key telephone set (565HDR)
- One to four non-key telephone sets (500CR)
- One to four teletrainer control units (KS16161 or KS16605)

- One modified key service unit (551A)

3.02 The following Bell System Practices shall be used when maintaining the key teletrainer system.

- Teletrainer KS16161 - Section 473-410-100
- Teletrainer KS16605 - Section 473-411-100
- Key Telephone Set 565HDR - Section 502-525-405
- Key Service Unit 551A - Section 518-255-101 and CD69476-01

4 MAINTENANCE

4.01 No modifications have been made to the teletrainer control units. For maintenance refer to the B.S.P.'s listed in Par. 3.02.

4.02 No modifications have been made to the key telephone set, however, the set ringer has been disconnected and a KS8109L1 buzzer connected to the RR & RB leads to provide an audible signal.

4.03 The following modifications have been made to the 551 Key Service Unit:

- One A25B cable connector has been mounted inside the cabinet and the pairs terminated on the clip terminal to allow the connection of one key telephone.
- Four three-conductor jacks (Switch Craft 12B) have been mounted inside the cabinet. These jacks allow the connection of the TIP, RING and SLEEVE (signal) leads from the teletrainer units to the key service unit.

4.04 The following modifications have been made to the 400B Key Telephone Units to permit ringing from the teletrainer to the key service unit over the S leads. (see Fig. 2, Note 1, and Fig. 3 and 7)

- The C4 capacitor lead to the tip side of the line has been cut.
- The C3 capacitor lead to the ring side of the line has been cut.
- A length of wire has been connected between the cut end of each C3 capacitor and the sleeve terminal of each associated line jack. (S lead)

4.05 The following modifications were made to the 400B Key Telephone Unit to allow the Q1 transistor to operate on 4 volts across the ring and tip, operating relay B to provide a holding shunt. (see Fig. 2- note 2)

- One 1300 ohm resistor has been connected in parallel with resistor R7.
- The RV2 resistor has been replaced with a 27 ohm one-half watt resistor.

4.06 To provide the 4 volts for the holding shunt the following load and dropping resistors were added to the circuit. (see Fig. 4, 5 and 6)

- One KS8512 L1C, 135 ohm resistor
- Two KS8512 L1C, 30 ohm resistors

These resistors are mounted in the bottom left side of the service unit cabinet.

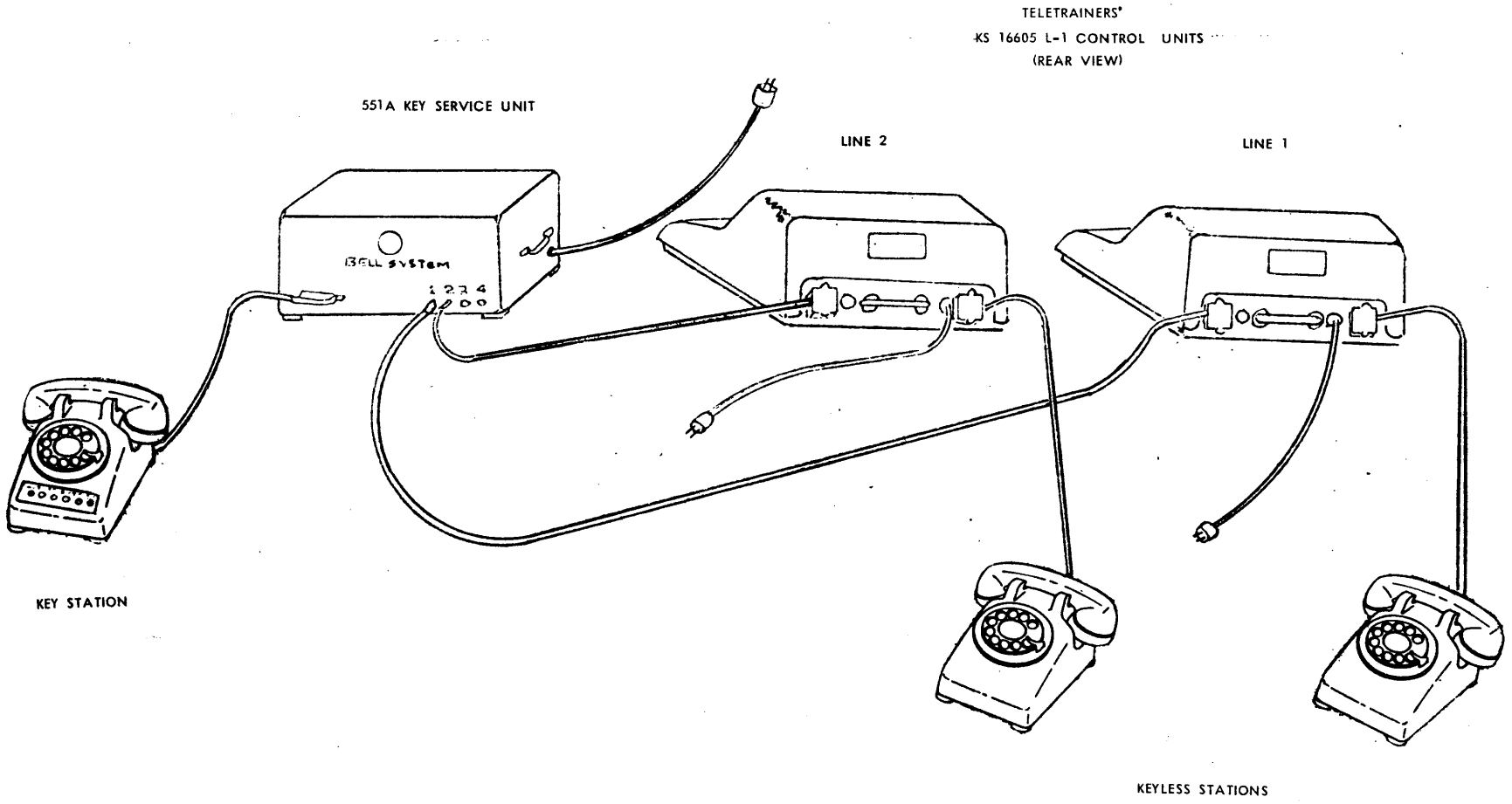
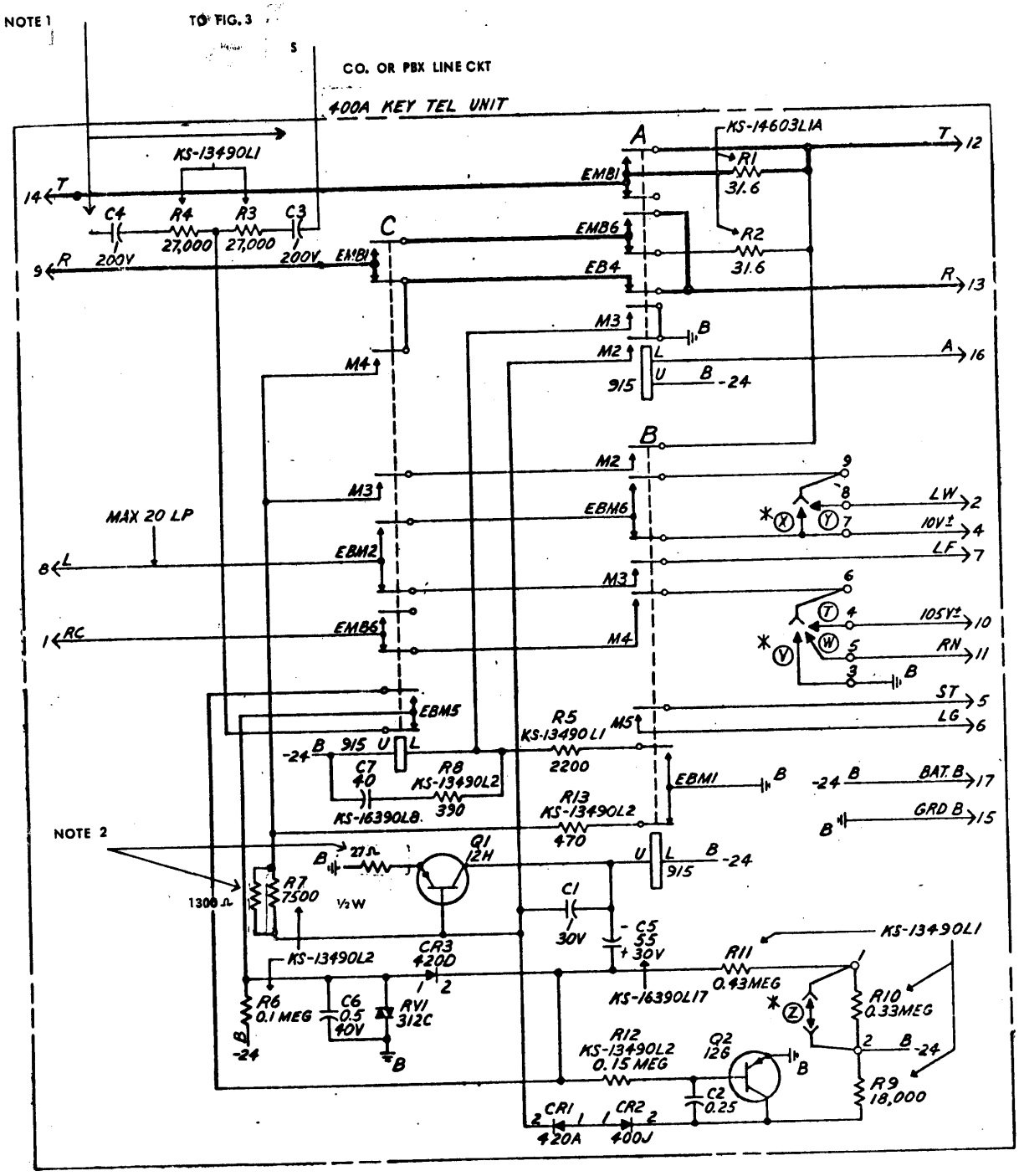


FIG. 1

KEY TELEPHONE TELETRAINER SYSTEM



FEATURE		WRG	QUANTITY
TIME-OUT CONTROL	LONG TIME DELAY		1 PER LINE
	SHORT TIME DELAY	(Z)	
VISUAL HOLD CKT	LAMP WINK	(Y)	AS REQD
	LAMP STEADY	X	
AUDIBLE SIGNALING	INTERRUPTED RING	(W)	
	COMMON & CONTROL	V	
	STEADY RINGING	T	

MODIFICATIONS

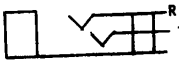
NOTE 1 C-4 CAPACITOR REMOVED FROM TIP SIDE OF LINE.

C-3 CAPACITOR REMOVED FROM RING SIDE OF LINE. STRAP PLACED BETWEEN C-3 CAP. AND SLEEVE OF LINE JACK.

NOTE 2 RV2 VARISTOR REPLASED WITH A 27Ω ½ WATT RESISTOR.

A 1300 OHM RESISTOR PLACED IN PARALLED WITH RESISTOR R7

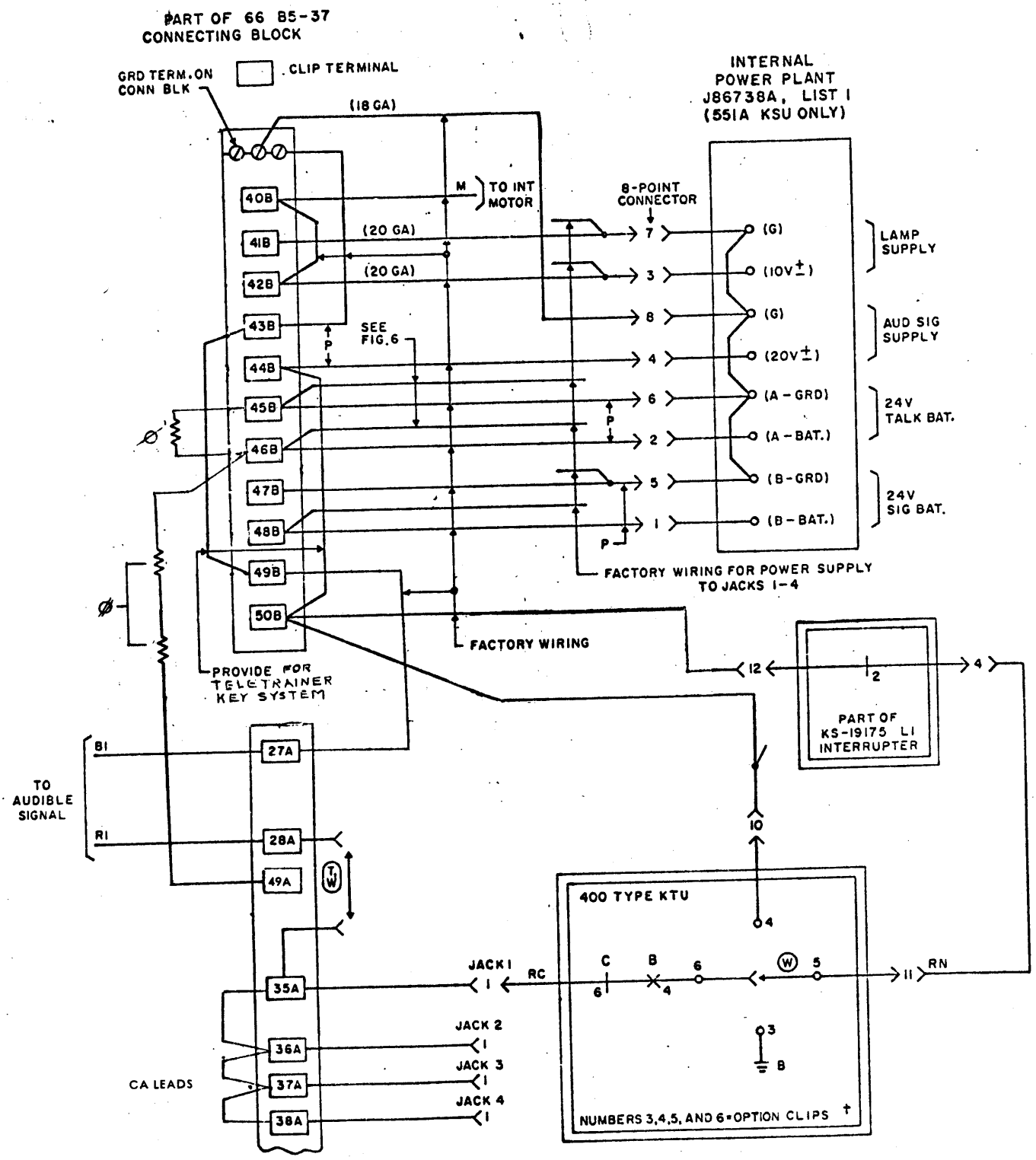
FIG. 3



LINE JACK

- TO FIG. 2

FIG. 2 - CIRCUIT SCHEMATIC - 400B KTU MODIFIED FOR OPERATION WITH TELETRAINERS.



ϕ 1 - KS8512 LIC 135 RESISTOR

ϕϕ 2 - KS8512 LIC 30 RESISTOR

OPTION

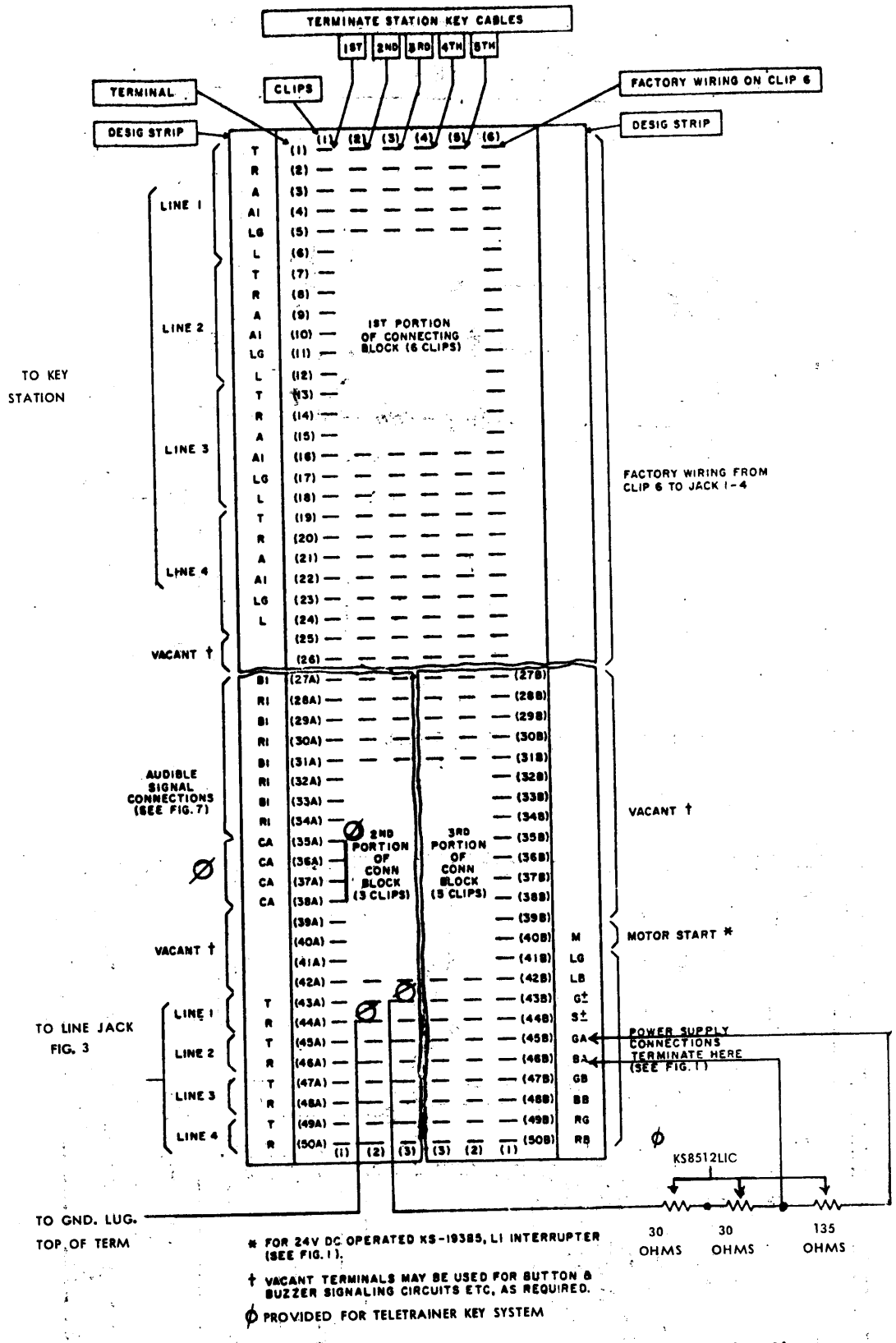
* RC. RING CONTROL.

† SEE FIG. 7 FOR CIRCUIT OPTION CLIP CONFIGURATION.

Ⓦ INTERRUPTED RING

REF: SD-69477-01

FIG. 4 - AUDIBLE SIGNAL



* FOR 24V DC OPERATED KS-19385, L1 INTERRUPTER (SEE FIG. 1).

† VACANT TERMINALS MAY BE USED FOR BUTTON & BUZZER SIGNALING CIRCUITS ETC, AS REQUIRED.

ϕ PROVIDED FOR TELETRAINER KEY SYSTEM

Fig. 5 — Connections to 66B5-37 Connecting Block for Incoming Lines and Station Key Cables

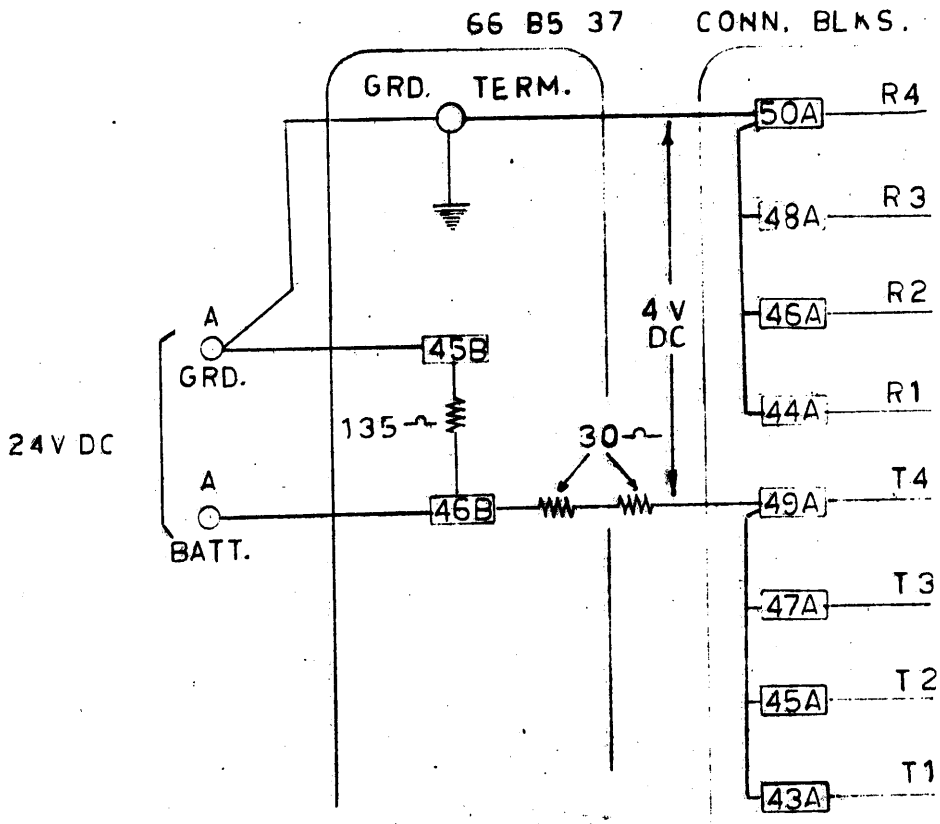


FIG. 6 VOLTAGE DROPPING CCT.

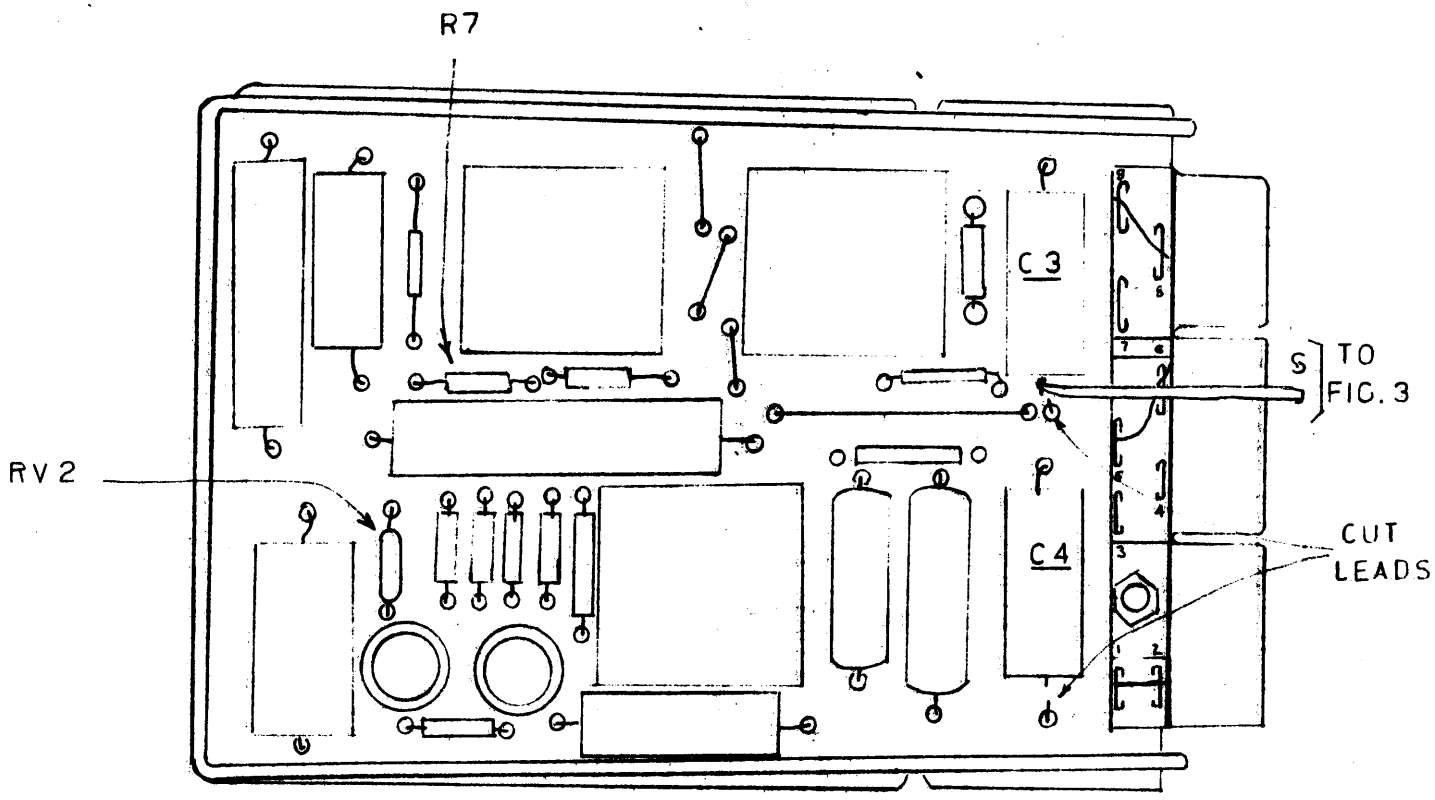


FIG. 7 400 B KEY TEL. UNIT MODIFIED