

1A TELEPHONE REPORTING SET

IDENTIFICATION, INSTALLATION/CONNECTIONS, TEST, AND MAINTENANCE

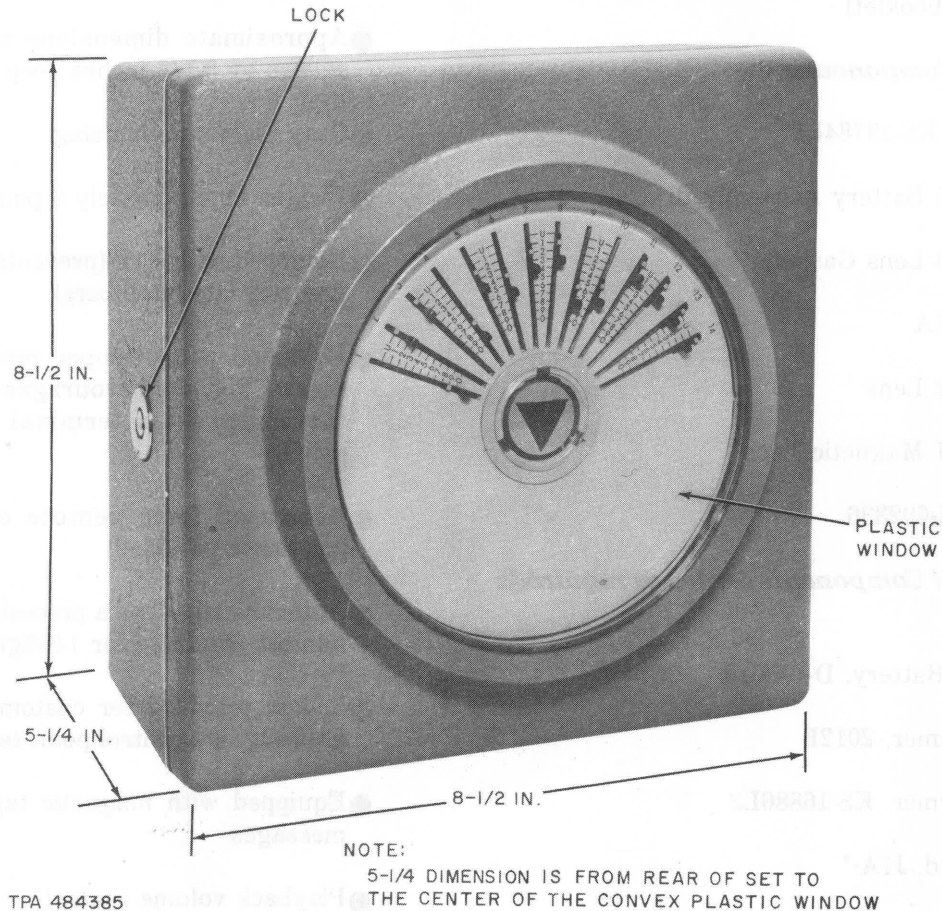


Fig. 1—1A Telephone Reporting Set

1. GENERAL

1.01 The 1A telephone reporting set (Fig. 1) is an instrument which is activated by a customer-provided contact closure and is programmed to dial a designated telephone number and report alarm conditions from a prerecorded magnetic tape.

1.02 The 1A telephone reporting set is not intended for use with key equipment, key telephone systems, or semipublic coin lines.

Since this reissue covers a general revision, arrows ordinarily used to indicate changes have been omitted.

1.03 This section is reissued to:

- Add instructions for initial charging of KS-19784L1 battery.
- Add protection and grounding information.
- Add ordering guide information.

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2. IDENTIFICATION

Ordering Guide

Set, Telephone, Reporting, 1A (includes battery, two keys, mounting template, and subscriber instruction booklet)

Replaceable Components:

- Battery, KS-19784L1
- P-29E965 Battery Assembly Bracket
- P-29E923 Lens Gasket
- Lamp, 51A
- P-29E922 Lens
- P-29E967 Magnetic Tape
- Key, RM-692336

2.02 Optional Components (order as required):

- Heater, Battery, D-180053
- Transformer, 2012B
- Transformer, KS-16886L2
- Set, Hand, J1A-*
- Unit, Control, 62A-*

2.03 Associated Telephone Sets (commonly used):

- Set, Telephone, 502B-*
- Set, Telephone, 511F/H-*
- Set, Telephone, 558D-*
- Set, Telephone, 558F-*

* Add color suffix.

Note: Any telephone set equipped per 2.11 may be used for a control point telephone set.

2.04 A subscriber instruction booklet (SIB-2437) is shipped loose with the 1A telephone reporting set and should be left with the customer.

Design Features

- Approximate dimensions are 8-1/2 inches square by 5-1/4 inches deep
- Gray aluminum housing
- Weighs approximately 9 pounds
- Equipped with lock (prevents tampering with predesignated numbers)
- Equipped with (tamper resistant) retaining screw, Fig. 2 (discourages customer from tampering with terminal behind control panel)
- Activated from remote contact closure (customer provided)
- Automatically dials a predesignated telephone number (capacity for 14 digit number)
- Sliders provided for customer to select and predesignate control point telephone number
- Equipped with magnetic tape for recording messages
- Playback volume control
- Transmits prerecorded message and disconnects and resets when properly signaled by control station
- Equipped with microphone for customer to record messages. Prior messages are erased when a new message is recorded.
- Equipped with lamp indicator to indicate when to record
- May be tested from control point telephone set.
- Operates from self-contained rechargeable nickel-cadmium battery. Battery has capacity for 30 to 40 call attempts in a 24 hour period.

- Operates satisfactorily within temperature range of -10°F to $+140^{\circ}\text{F}$ (operates below 0°F when equipped with a battery heater).
- Can be used with an associated telephone set (optional).

2.05 *Requirements for customer-provided equipment*

- (a) Customer-provided detecting device must provide a "dry" contact closure from a pair of normally-open contacts.
- (b) The contacts and customer-provided wiring between the detecting device and the Telephone Company-provided connecting block must be capable of carrying .015 amperes at 15VDC.
- (c) Maximum loop resistance from the 1A Telephone Reporting Set through the customer-provided contact closure shall be no more than 1000 ohms. With contacts open, loop resistance should exceed a megohm.
- (d) Customer-provided loop shall be free of any grounds, crosses, or external voltages.

Operating Features

2.06 *Dial Plate:* Position sliders (Fig. 2), beginning with No. 1, to successive digits of predesignated telephone number. Unused sliders shall be placed in "U" position. To allow time for a second dial tone, if needed, two or three sliders after the access code should be positioned to "U". Example: 9, U, U, U, 555-2368.

2.07 *RECORD/PLAY Switch (Fig. 2):* In "RECORD" position previous message is erased and a new message (up to 11.8 seconds long) may be recorded by speaking into the "RECORDING MICROPHONE" during the time the "RECORD LAMP" is on. In "PLAY" position recorded message is transmitted to the telephone line when the 1A Telephone Reporting Set is activated.

2.08 *VOLUME Control (Fig. 2):* Adjusts the level of playback to manually compensate for local loop conditions.

2.09 *INPUT Button (Fig. 2):* For locally testing operation of 1A Telephone Reporting Set. Depressing the button while set is idle will activate unit. Depressing the button while set is transmitting recorded message will cause unit to reset.

2.10 The 1A telephone reporting set responds only to bridged ringing.

2.11 The control point telephone set (station at predesignated telephone number) must be equipped with a J1A handset or associated with an externally mounted 62A control unit (Fig. 6).

Note: The J1A handset and the 62A control unit contain an oscillator producing a 1475 Hz tone. This tone is used to control the 1A Telephone Reporting Set from the control point telephone.

2.12 For a detailed description of the 1A Telephone Reporting Set refer to Division 812.

3. INSTALLATION/CONNECTIONS

Planning

3.01 The telephone reporting set should not be installed in a location directly exposed to sun and rain. The location chosen should allow visual inspection of the settings of the dial sliders and sufficient side clearance on both sides for opening the hinged cover and the hinged number coding assembly.

3.02 The KS-19784L1 battery shipped with the telephone reporting set is not charged before shipment. It must be charged at a rate of 10 milliamperes for 24 hours using a KS-19921L1 rectifier, or a suitable equivalent. Use of the KS-19921L1 rectifier will insure the proper charge current and polarity. Fully charged battery should have a no-load measurement of 16-18 volts DC.

Caution: *Nickel-cadmium batteries can explode if subjected to a severe overcharge, a reverse charge, or a short circuit.*

3.03 It is intended that the battery charge is maintained by charging over the telephone line. However to do so, the following requirements must be met:

- (1) Loop resistance must be less than 1500 ohms.

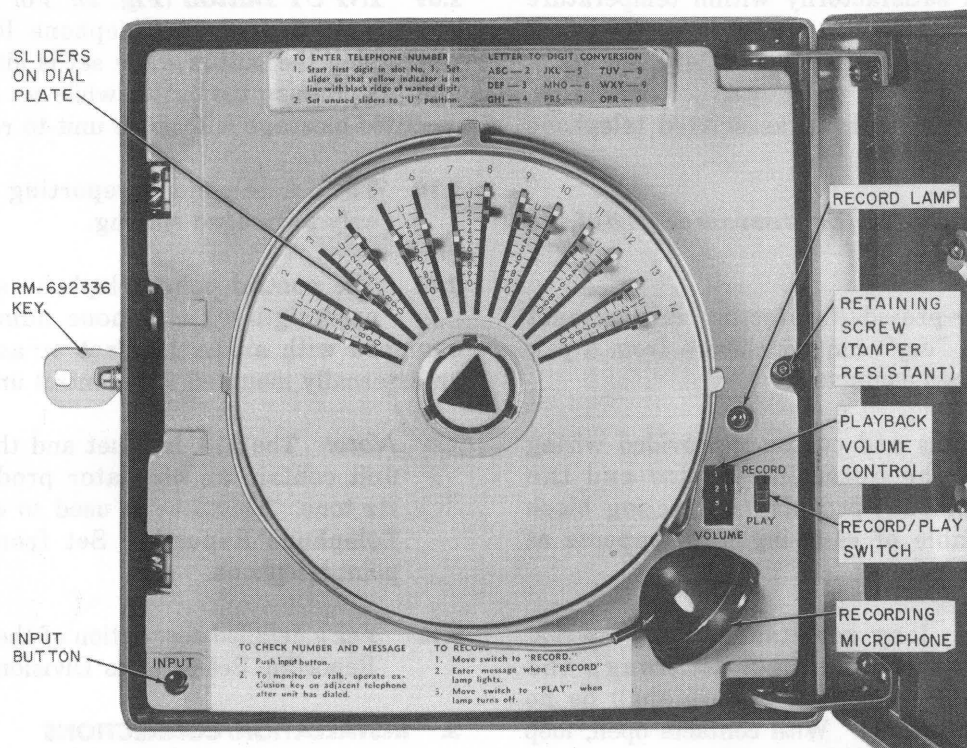


Fig. 2—1A Telephone Reporting Set, Controls

(2) Charging current plus line leakage must not cause CO or PBX line relays to operate falsely or keep the line relays operated after a call has been completed by the telephone reporting set or associated telephone set.

Note: When the line terminates in a dial CO, it should be assigned to a Class "A" line termination, to prevent line load control relay operation from denying originating service to the 1A Telephone Reporting Set.

(3) CO or PBX battery, if used, must be 48 volts (PBX battery must not be turned off at night).

(4) Associated telephone, if provided, must not be off-hook for more than 2 hours in any 24-hour period.

(5) Set must be operated in temperatures below 140°F and above 0°F.

(6) A notation of the total charging current in the circuit should be made on the line card for each installation.

If any requirement (1-4) cannot be met, install a 2012B transformer on the customer's premise for charging the battery. If requirement (5) cannot be met, a KS-16886L2 transformer and a D-180053 battery heater, Fig. 4 (replaces the regular battery holder) must be installed on the customer's premise. The KS-16886L2 transformer supplies power for maintaining the battery charge and operating the heater (Fig. 7).

3.04 When using a transformer for battery charging, the leads terminated on screw terminals 45 and 46 (battery charging leads) must be protected with a 123A1A protector if any of the following conditions exist:

(a) Location of power ground is unknown.

(b) The protector for CO or PBX line and control line are not grounded to power ground or

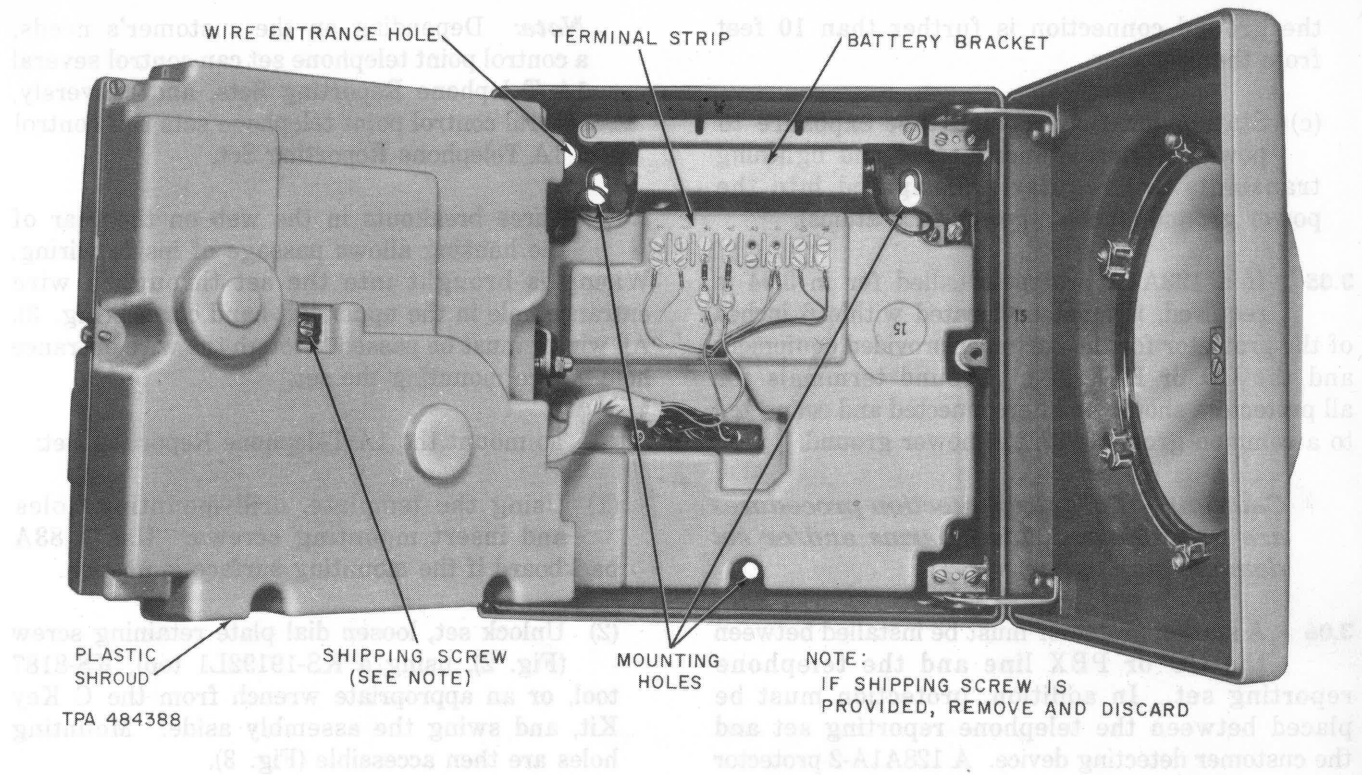


Fig. 3—Interior View of 1A Telephone Reporting Set

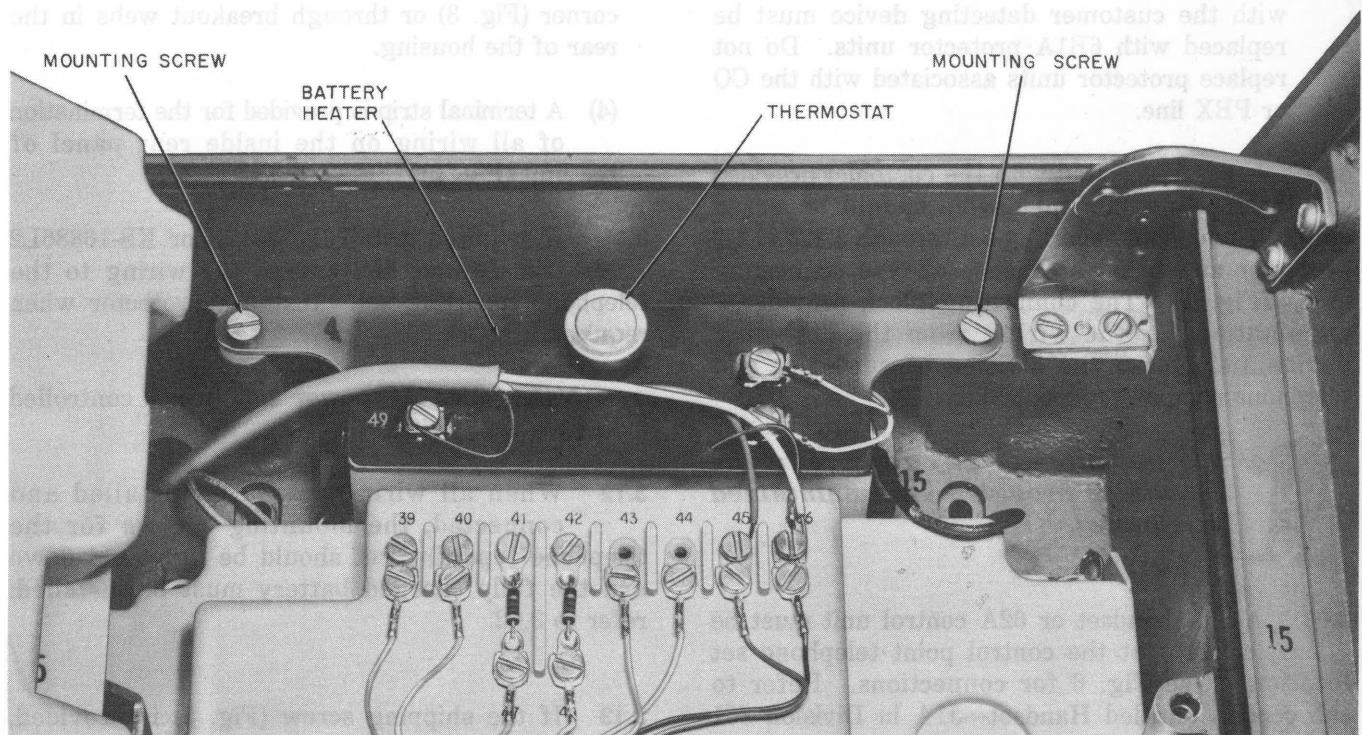


Fig. 4—D-180053 Heater, Installation

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the ground connection is further than 10 feet from the protector.

(c) Station location is such that exposure to power storms is encountered and lightning transients are regularly dissipated into the power ground (such as power substations).

3.05 If a 123A1A protector called for in 3.04 is required, it must be located within 6 inches of the protector for the customer-provided equipment and the CO or PBX line. Ground terminals for all protectors should be interconnected and connected to a common ground with the power ground.

Caution: *If proper protection procedures are not followed, false alarms and/or set damage may occur.*

3.06 A station protector must be installed between the CO or PBX line and the telephone reporting set. In addition, protection must be placed between the telephone reporting set and the customer detecting device. A 128A1A-2 protector would serve to protect both circuits.

Note: 2B1A (MD) or 2B2A protector units of the 128A1A-2 protector that are associated with the customer detecting device must be replaced with 6B1A protector units. Do not replace protector units associated with the CO or PBX line.

3.07 Leads associated with the customer-provided detecting (alarm) device should be wired from the telephone reporting set through a 128A1A-2 protector and terminated on a 42-type connecting block (Fig. 5). The connecting block provides a termination for the wiring from the detecting device and marks the division of customer and telephone company responsibility.



Do not attempt any repairs to the customer provided and maintained equipment.

3.08 A J1A handset or 62A control unit must be installed at the control point telephone set location. Use Fig. 6 for connections. Refer to the section entitled Handset—J1A in Division 501 and section entitled 62A Control Unit in Division 514 for a complete description of the handset or control unit.

Note: Depending on the customer's needs, a control point telephone set can control several 1A Telephone Reporting Sets, and conversely, several control point telephone sets can control a 1A Telephone Reporting Set.

3.09 Three breakouts in the web on the rear of the housing allows passage of inside wiring. Wiring is brought into the set through a wire entrance hole in the upper left-hand corner (Fig. 3). All wiring must be passed through the wire entrance hole before mounting the set.

3.10 To mount the 1A Telephone Reporting Set:

- (1) Using the template, drill mounting holes and insert mounting screws. Use a 83A backboard if the mounting surface is uneven.
- (2) Unlock set, loosen dial plate retaining screw (Fig. 2), using a KS-19192L1 tool, KS-8187 tool, or an appropriate wrench from the C Key Kit, and swing the assembly aside. Mounting holes are then accessible (Fig. 3).
- (3) Mount the set, but do not tighten the mounting screws since all wiring must be brought in through the entrance hole in the upper left-hand corner (Fig. 3) or through breakout webs in the rear of the housing.
- (4) A terminal strip is provided for the termination of all wiring on the inside rear panel of the unit (Fig. 3).

3.11 If required install the 2012B or KS-16886L2 transformer and extend the wiring to the telephone reporting set. Install a protector when required (Fig. 7).

Note: Use AC power supply not controlled by a wall switch.

3.12 When all wiring has been installed and connected, the mounting screws for the telephone reporting set should be tightened down and the fully charged battery must be installed; refer to 3.02.

3.13 If the shipping screw (Fig. 3) is provided, remove and discard. The telephone reporting set will not function with the shipping screw in place and tightened down.

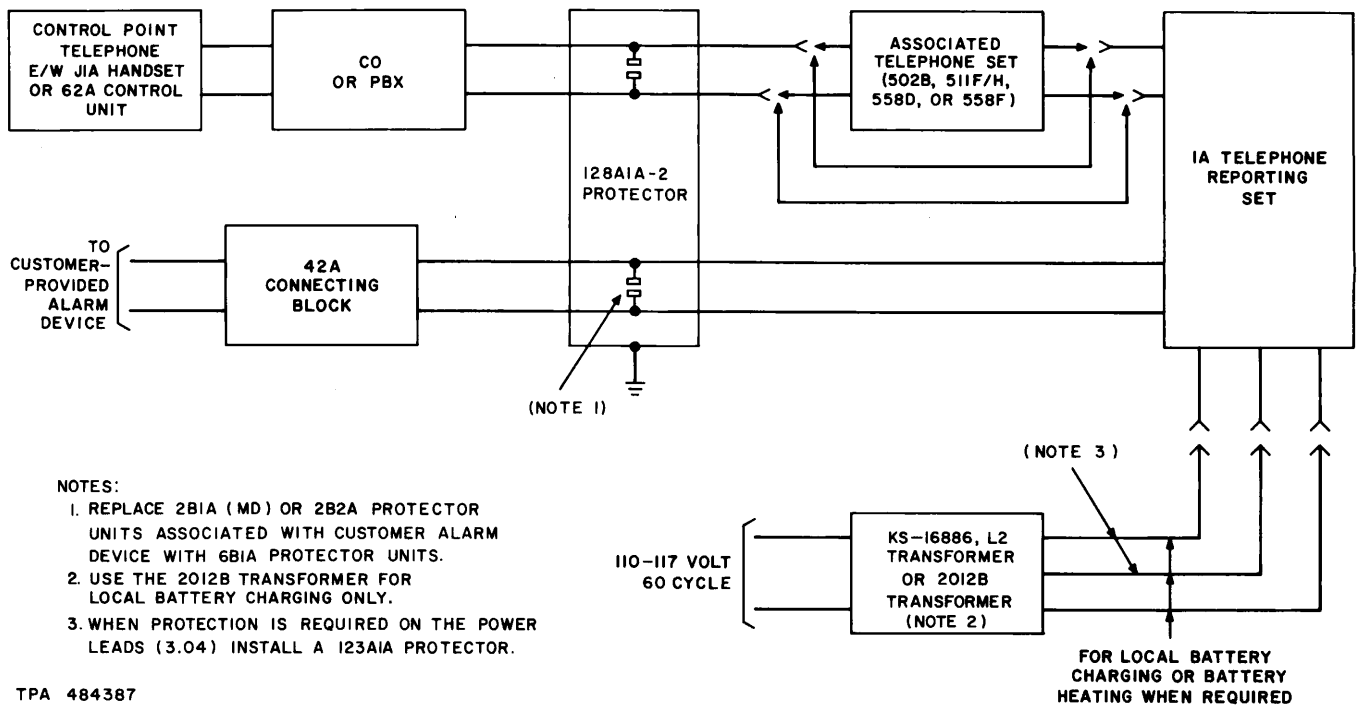


Fig. 5—Block Diagram of Typical Installation

3.14 To assure that all internal switches are in their proper operative positions, perform the following (Fig. 2):

- (1) Operate RECORD-PLAY switch to RECORD position.
- (2) After the RECORD lamp goes off, depress the INPUT button and hold for 2 seconds.
- (3) Return the RECORD-PLAY switch to the PLAY position.
- (4) After approximately 1 minute all internal switches should be in their home positions.

4. TEST

4.01 Perform initial setup as follows:

- (a) Set up the number of the control point telephone on the dial plate. Position the sliders on the dial plate (beginning with slider No. 1) to the successive digits of the telephone number. Set only as many sliders as are needed for the number to be dialed. Place the remaining sliders in the "U" (for unused) position.

Note: Extra sliders may be positioned to "U" to allow more time between digits, for example, set 9, U, U, U, 555-2368 to allow for a second dial tone, if needed for PBX access code.

- (b) Put the RECORD-PLAY switch in the RECORD position and wait for the RECORD lamp to light. Talk at a normal conversational level into the recording transmitter, holding the transmitter about 3 inches from the lips. The recorded message may be up to 11.8 seconds long. After the RECORD lamp goes out, **return the RECORD-PLAY switch to the PLAY position** and wait approximately 1.5 minutes. The 1A Telephone Reporting Set is now ready for test.

4.02 The 1A Telephone Reporting Set has two operating modes:

- (a) Alarm, in which the 1A Telephone Reporting Set calls the control point telephone.
- (b) Inquiry, in which the control point telephone calls the 1A Telephone Reporting Set.

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4.03 *To test the alarm mode:*

- (1) Connect a hand test set across the CO or PBX line with switch in **MONITOR** position to check the process of alarm test.
- (2) Short the pair from customer's detecting device at terminals 41 and 42. Maintain this short throughout test.
- (3) The 1A Telephone Reporting Set seizes telephone line and dials the number of the control point telephone. The triangular indicator in the center of the dial plate rotates during the dialing interval.
- (4) A few seconds after the last digit is dialed, the 1A Telephone Reporting Set will transmit to the control point telephone a portion of the prerecorded message with superimposed, **interrupted** tone. This identifying tone serves to indicate that the customer's detecting circuit is closed. The triangular indicator continues to rotate during this period.
- (5) After dialing interval is completed, the indicator ceases to rotate and an identifying continuous tone will be transmitted for 30 seconds.
- (6) Following the 30-second interval, the entire message will be transmitted twice with interrupted tone superimposed on the message. The indicator rotates.
- (7) At the control point telephone:
 - (a) Pick up when ringing is heard.
 - (b) Listen for continuous identifying tone, followed by two playings of the entire message with superimposed, interrupted tone. (If the voice message is not loud enough, adjust the volume control at the 1A Telephone Reporting Set.) The 1A Telephone Reporting Set will hang up.
 - (c) **Hang up the control point telephone.**
- (8) After 30 seconds 1A Telephone Reporting Set will seize telephone line, and dial the control point telephone again.

- (9) At the control point telephone:

- (a) Pick up when ringing is heard.
- (b) Signal the 1A Telephone Reporting Set by depressing the button in the 62A control unit or J1A handset. Depress button for at least one second.

- Signaling during the identifying continuous tone period will advance the 1A Telephone Reporting Set to the voice message period.
- Signaling during any voice message period will cause the 1A Telephone Reporting Set to hang up and reset.

Note: Failure to signal from the 62A control unit or J1A handset at the control point telephone during a voice message period will cause the 1A Telephone Reporting Set to make nine successive call attempts before resetting itself.

- (10) **Remove the short previously placed across the pair from the customer's detecting device.**

4.04 *To test the inquiry mode:*

- (1) Dial the telephone number of the 1A Telephone Reporting Set from the control point telephone.
- (2) After approximately eight or nine rings the 1A Telephone Reporting Set terminates ringing by seizing telephone line, and transmits identifying continuous tone for ten seconds.
- (3) Signal the 1A Telephone Reporting Set from the control point telephone by depressing switch in the 62A control unit or the J1A handset during the **ten second tone period**. This will shift the operating sequence to the alarm mode. The prerecorded message will be transmitted twice followed by hang-up by the 1A Telephone Reporting Set. If the 1A Telephone Reporting Set is signaled during the **message transmission** period, the 1A Telephone Reporting Set will drop the connection and reset. If the set is not signaled it will wait 30 seconds and initiate a call.

Note: If the 1A Telephone Reporting Set does not receive a signal from the control point telephone during the inquiry mode, the 1A Telephone Reporting Set will drop the connection and reset.

4.05 Repeat the test of 4.03. Instead of shorting the pair from the customer's detecting device, have the customer actuate the detecting device to simulate an alarm condition.

4.06 Test the unit from the associated telephone set (502B-, 511F/H-, 558D-, or 558F-type), if provided. Sequence is as follows:

- (a) Lift handset of associated telephone set, if telephone set is a 2-line pickup type, position turnbutton to line 1.
- (b) Dial the local central office number for a quiet termination.
- (c) Raise the exclusion key of the associated telephone and momentarily operate the INPUT button located in the lower left hand corner of the unit (Fig. 2). Unit will dial the number of the control point telephone but the dial pulses will not be effective because of the off-hook condition of the associated telephone set.

Note: The customer should be instructed **not** to operate the exclusion key, when originating or answering a call, on the line assigned to the 1A Telephone Reporting Set. However, when using line 2 (the line not assigned to the 1A Telephone Reporting Set) of a 2-line pickup telephone set, the exclusion key **should** be operated. Operation of the exclusion key, in this case, reconnects the 1A Telephone Reporting Set to line 1. On hangup the exclusion key is restored to normal and the 1A Telephone Reporting Set is now connected to line 1 through a line switch contact. (See Fig. 9 or 10.)

- (d) After the dialing sequence is completed, the unit will transmit the identifying continuous tone followed by the recorded message. This can be verified from the receiver of the associated telephone. Reset the unit by depressing the INPUT button for 2 to 3 seconds **during the message transmission period**. Failure to operate the INPUT button during this period, will cause

the unit to make 8 more successive calls to the control point telephone before resetting.

5. CONNECTIONS

5.01 Refer to Fig. 6 when connecting control unit to station sets equipped with 425- or 4010-type networks.

5.02 Connections to other station equipment will be included in the attendant position or telephone circuit in appropriate SDs.

6. MAINTENANCE

6.01 *Field maintenance of the 1A Telephone Reporting Set is limited to:*

- Cleaning or replacing the magnetic tape.
- Cleaning the record/reproduce head.
- Replacement of battery, battery heater if used, KS-16886L2 transformer, or 2012B transformer.
- Replacement of 51A lamp.
- Replacement of lens and gasket.
- Replacement of the complete unit.

6.02 Refer to Table D for possible trouble and corrective action to be taken.

6.03 *To clean magnetic tape:*

- (a) Open the unit and remove plastic shroud covering the mechanism. (See Fig. 3.)
- (b) Hold a dry, clean "Q-Tip" lightly against the tape as shown in Fig. 11. Momentarily move the RECORD-PLAY switch to the RECORD position, then back to the PLAY position. Move the "Q-Tip" back and forth across the dull face of the tape.

Caution: *Avoid using excessive pressure on the tape.*

6.04 *To clean the record/reproduce head:*

- (a) Remove tape tension spring per Fig. 12.

- (b) Hold pressure pad (Fig. 12) away from head. Care should be taken not to bend spring.
- (c) Remove tape from tape guide (Fig. 12). Exercise caution not to tear tape on the square corner of the guide.
- (d) Remove tape from sprocket wheel and idler rollers.
- (e) Clean the face of the record/reproduce head and outside roller surfaces, using Trichloroethane on a clean, lint-free cloth.

Caution: *Do not saturate the pressure pads. Use the Trichloroethane sparingly and in well ventilated area. Do not replace the tape until all the Trichloroethane has evaporated. Trichloroethane will remove the magnetic particles from the tape and render it useless.*

6.05 To reinstall a tape or install a new tape:

- (a) Clean head per 6.04.
- (b) Place the tape around the idler rollers as shown in Fig. 12.
- (c) The dull side of the tape must be placed against face of the record/reproduce head.
- (d) Position the splice of the tape approximately at the center of capacitor C-81 or between arrows above the word SPLICE (Fig. 12).
- (e) Engage the sprocket in the holes in the tape.
- (f) When placing the tape over the face of the record/reproduce head, be careful not to scratch or tear the tape on the square corner of the tape guide (Fig. 12).
- (g) Replace tape tension spring (Fig. 12).

- (h) Avoid touching the dull side of the tape.

Note: Replacement recording tape can be ordered as P-29E967.

6.06 To replace battery:

- (a) Loosen two captive screws holding battery bracket or battery heater (Fig. 4).
- (b) Unsnap connector from each end of the battery.

Caution: *Do not short circuit battery (3.02).*

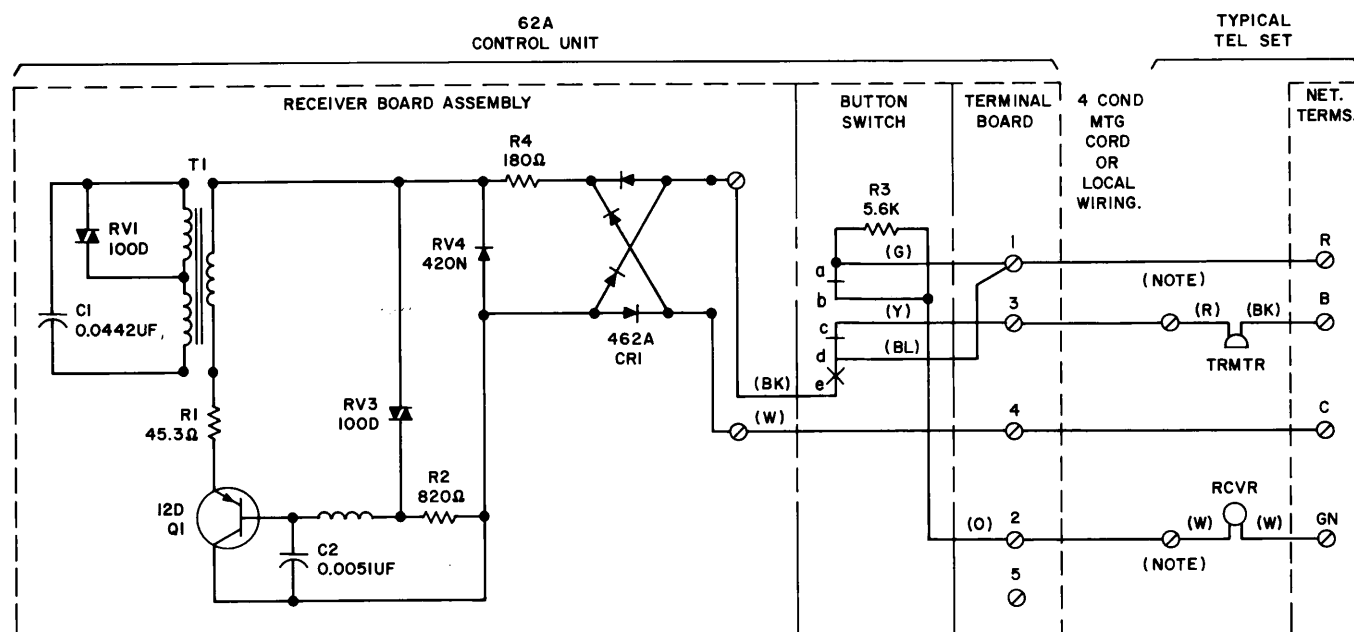
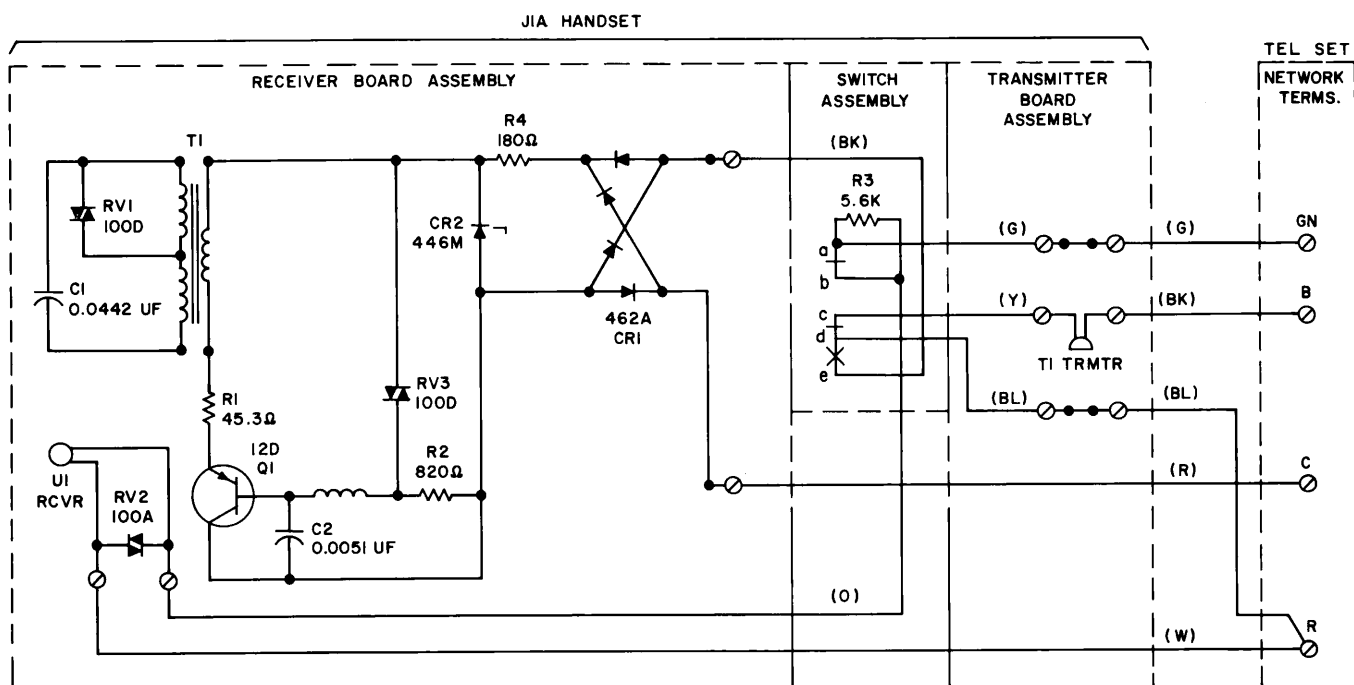
- (c) Roll battery out of battery bracket or slide battery out of heater.
- (d) Roll new battery into bracket or slide into heater.
- (e) Snap connectors onto terminals of battery; red lead to red end and black lead to black end of battery.
- (f) Place bracket or heater in housing.
- (g) Tighten two captive screws.

6.07 To replace the lens (plastic window, Fig. 1), remove the six screws and washers from the inside of the upper housing.



Exercise caution when installing the new lens to ensure that the gasket is properly seated to give a watertight seal.

6.08 To replace RECORD lamp use a 553A tool to extract the defective lamp and replace the new 51A lamp. Align the lamp contacts with the lamp socket contacts.

**NOTE:**

BEFORE CONNECTING THE 62A CONTROL UNIT, REMOVE RED TRANSMITTER LEAD AND WHITE RECEIVER LEAD FROM TERMINAL R OF NETWORK AND CONNECT TO VACANT TIE POINTS. A D-161488 CONNECTOR MAY BE USED IF VACANT TIE POINTS ARE NOT AVAILABLE.

Fig. 6—J1A Handset and 62A Control Unit, Connections

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TABLE A
MODIFICATION OF 502B TELEPHONE SET

WIRE OR LEAD		FROM	TO
Line Switch	(W) [S-BR]	C	GN
	(G) [S-Y]	L2	3
	(R) [S-R]	GN	1
	(BK) [S-BK]	R	E1
	(BR) [S-W]	5	1
	(Y) [S-G]	6	C
Handset	(W)	GN	3
Exclusion Key	(W)	E2	1
	(BK) [G-Y]	L1	4
	(Y) [R-Y]	L2	5
Mounting Cord	(BK)	E2	2

() Current color code

[] MD color code

TABLE B
MODIFICATION OF 558D TELEPHONE SET

WIRE OR LEAD		FROM	TO
Line Switch	(W) [S-BR]	C	GN
	(G) [S-Y]	L2	E1
	(R) [S-R]	GN	1
	(BK) [S-BK]	R	5
	(Y) [S-W]	12	C
	(BR) [S-G]	9	L2
Handset	(W)	GN	E1
Exclusion Key	(BK) [G-Y]	6	*
	(Y) [R-Y]	5	*
Add Strap		1	6

() Current color code

[] MD color code

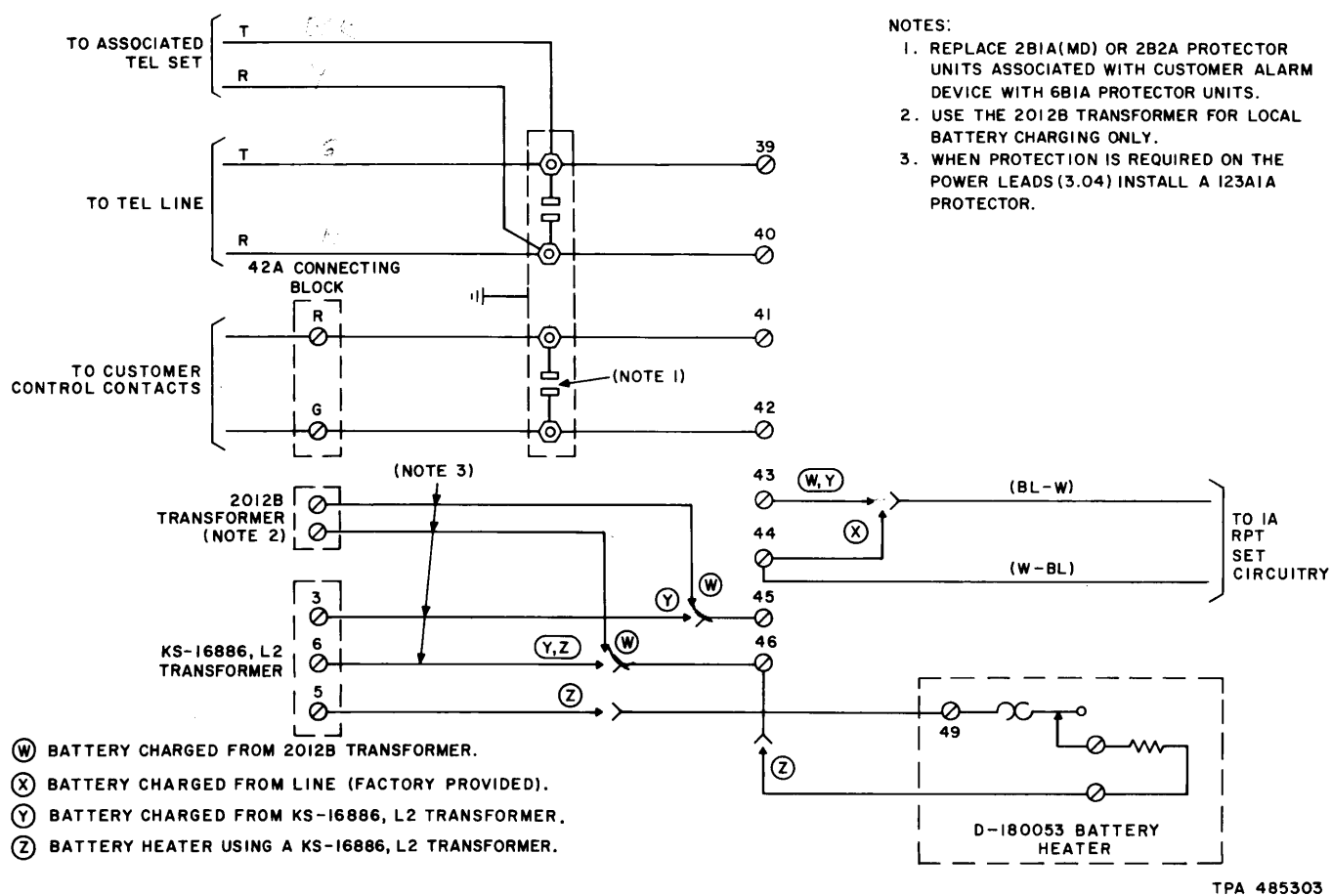
* Insulate and store

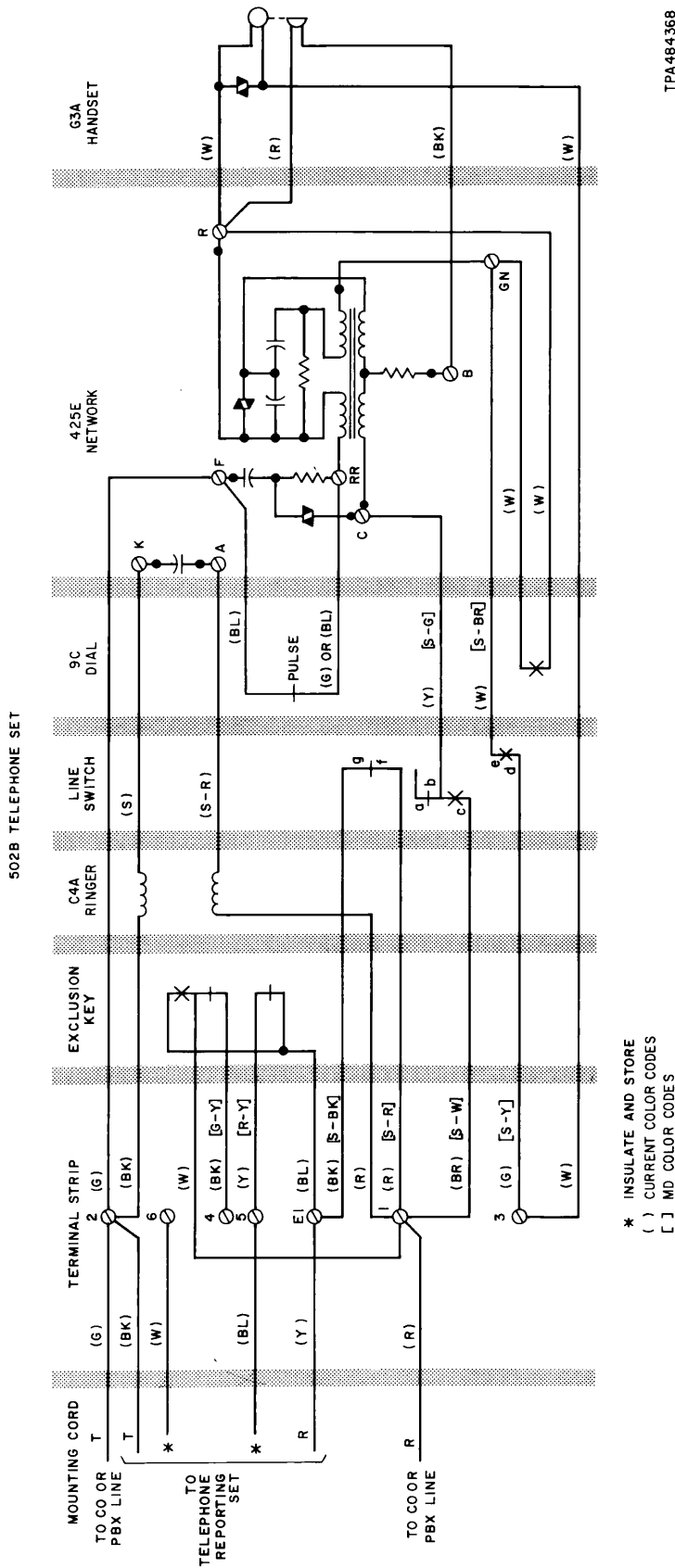
TABLE C
MODIFICATION OF 511F/H OR 558F TELEPHONE SET FOR USE WITH 1A TELEPHONE REPORTING SET

WIRE OR LEAD		FROM	TO
Line Switch	(BK)	R	10
	(R)	GN	2
	(BR)	20	15
	(Y)	4* L2†	C
	(W)	C	GN
	(G)	15	G
Exclusion Key	(BK)	1	19
	(Y)	2	16
	(BL)	10	16
Turn Key	(V)	2	17
Handset	(W)	GN	G
Mounting Cord 511F/H Set Only	(S-V)	18	16
Add Strap		2	9

* 558F Telephone Set

† 511F/H Telephone Set





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Fig. 8—502B Telephone Set, Connection Modification

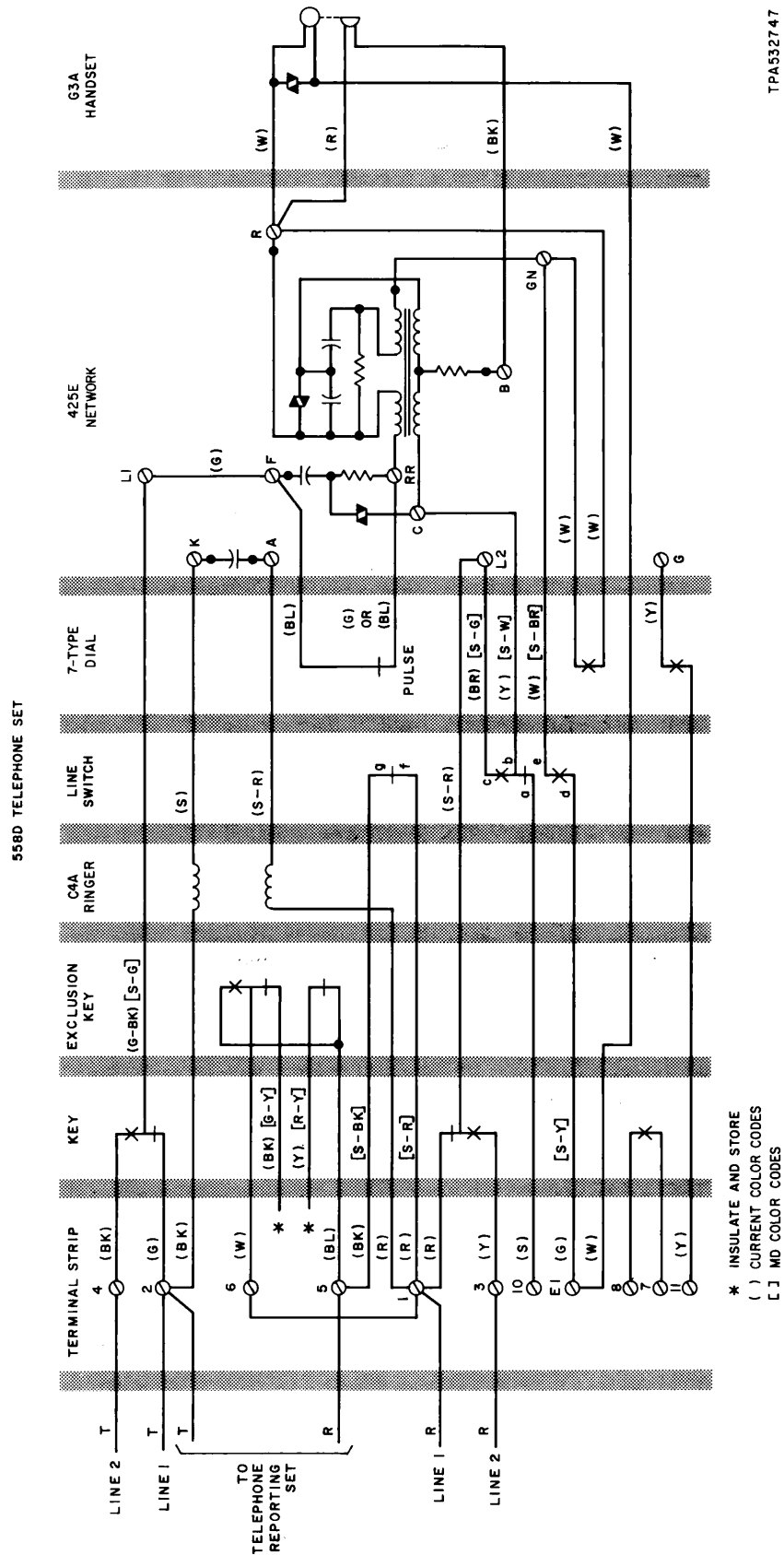


Fig. 9—558D Telephone Set, Connection Modification

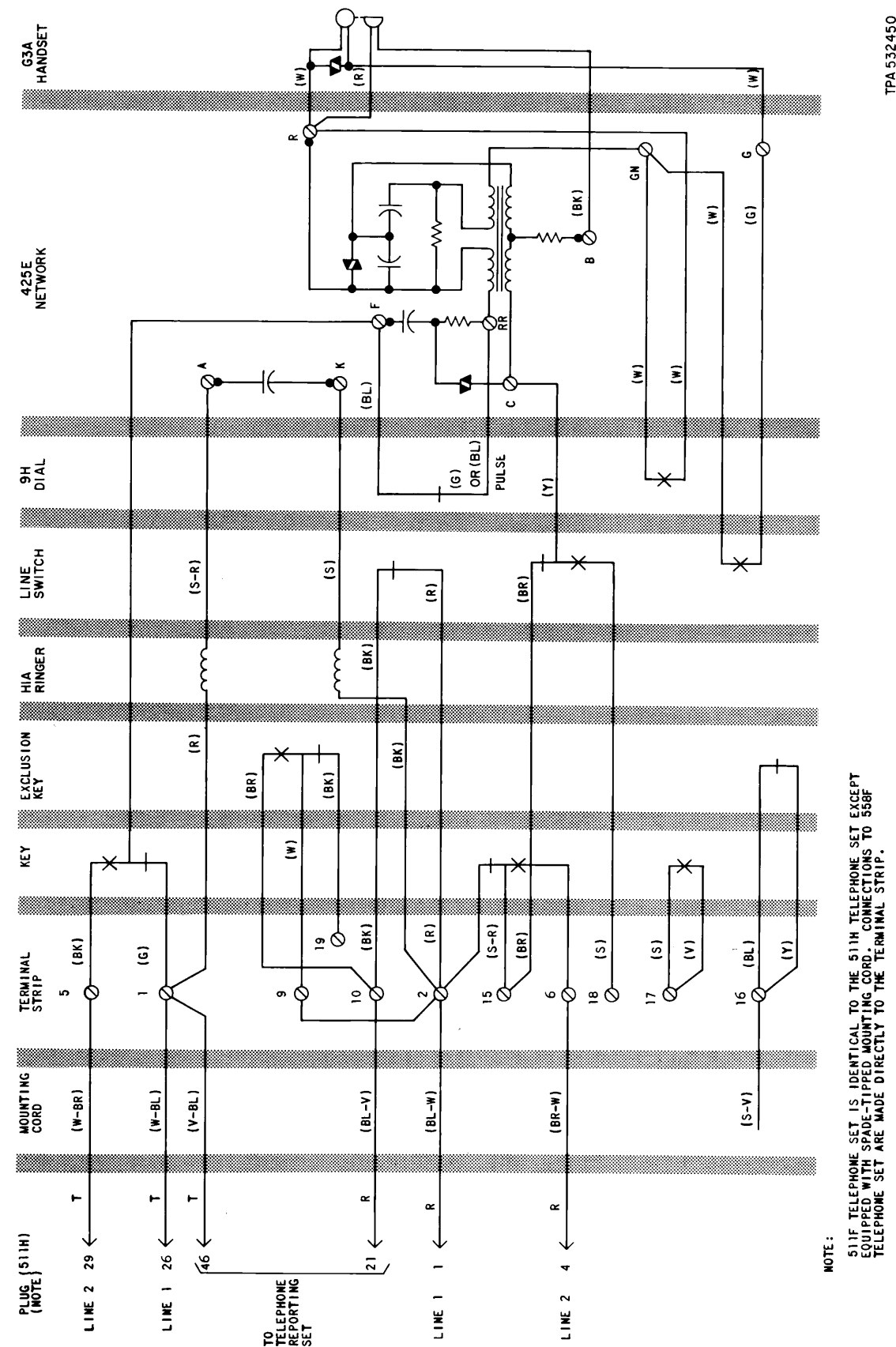


Fig. 10—511F/H or 558F Telephone Set, Connection Modification

TPA 532450

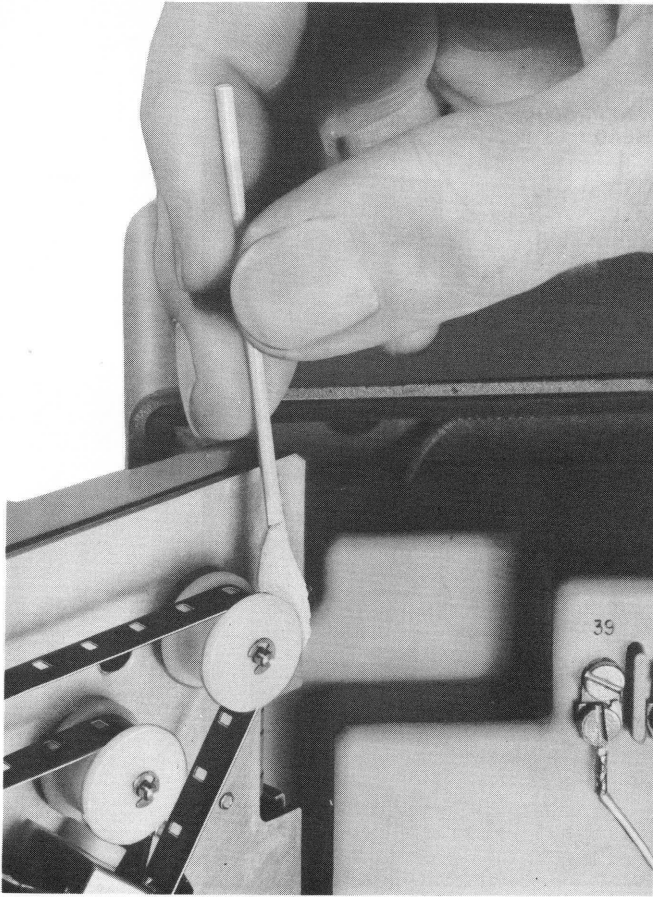


Fig. 11—Details of Cleaning Tape

TABLE D

POSSIBLE TROUBLE	CORRECTIVE ACTION
Unit does not run from closure of customer's contacts (triangular indicator does not rotate)	<ol style="list-style-type: none"> 1. Check loop resistance of customer's circuit to detecting device [2.05(c)]. 2. Check condition of battery (3.02).
Unit runs continuously	<ol style="list-style-type: none"> 1. Check RECORD-PLAY switch. Should be in PLAY position.
Noisy voice message	<ol style="list-style-type: none"> 1. Clean tape and/or record head. 2. Replace tape if scratched or torn.
No or weak voice message level	<ol style="list-style-type: none"> 1. Turn up volume control. 2. Voice message recorded at too low a level — re-record voice message. 3. Check for broken tape. 4. Check.

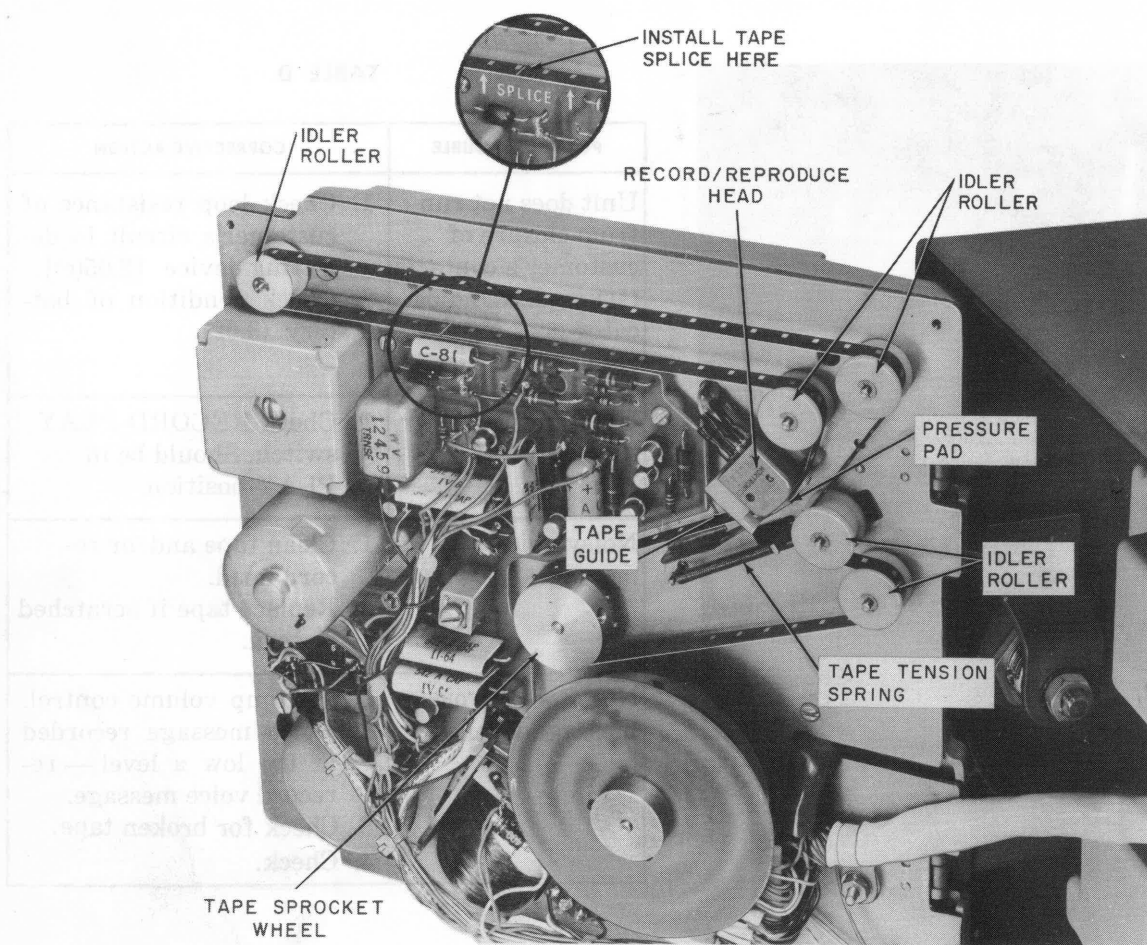


Fig. 12—Details of Tape Installation