

## LOCAL TEST DESK NO. 15B DESCRIPTIVE INFORMATION

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**1. GENERAL**

**1.01** This section contains descriptive information for the position console and equipment associated with the 15B local test desk (LTD).

**1.02** The 15B local test desk is intended primarily for testing wideband (1MHz) PICTUREPHONE® lines. It may be used to perform many of the

tests on 2-wire audio lines now performed from the 14- or 16-type LTD.

**1.03** Tests may be made from the No. 15B LTD on wideband PBX trunks, Wideband Remote Switch Unit (WRSU) links, and customer station equipment. Tests are made when connected through test trunks to a No. 5 crossbar central office.

**1.04** The test desk facilities (located at a test center) are used to service local (on premises) and remote (off premises) central offices in a prescribed area. One position console may be equipped for testing to a maximum of five central offices.

**2. GENERAL DESCRIPTION**

**2.01** The console test position (Fig. 1) has the following design features:

- 66 inches wide, 31 inches deep, and 46 inches high.
- Left pedestal contains two drawers and a pull-out writing shelf. The top drawer is equipped with a lock.
- Formica writing shelf.
- Two headset jacks. Jacks are designated TEL 1 (A and B) and TEL 2 (C and D).
- Jacks provided for use with external test equipment.
- Left, right, and center panel assemblies hold wideband test sets, a video telephone station, audio test equipment, and keys used to provide control functions.
- Two storage bins. Storage bins are located above left and right panel assembly.
- 12 keys for use with keyset circuit.

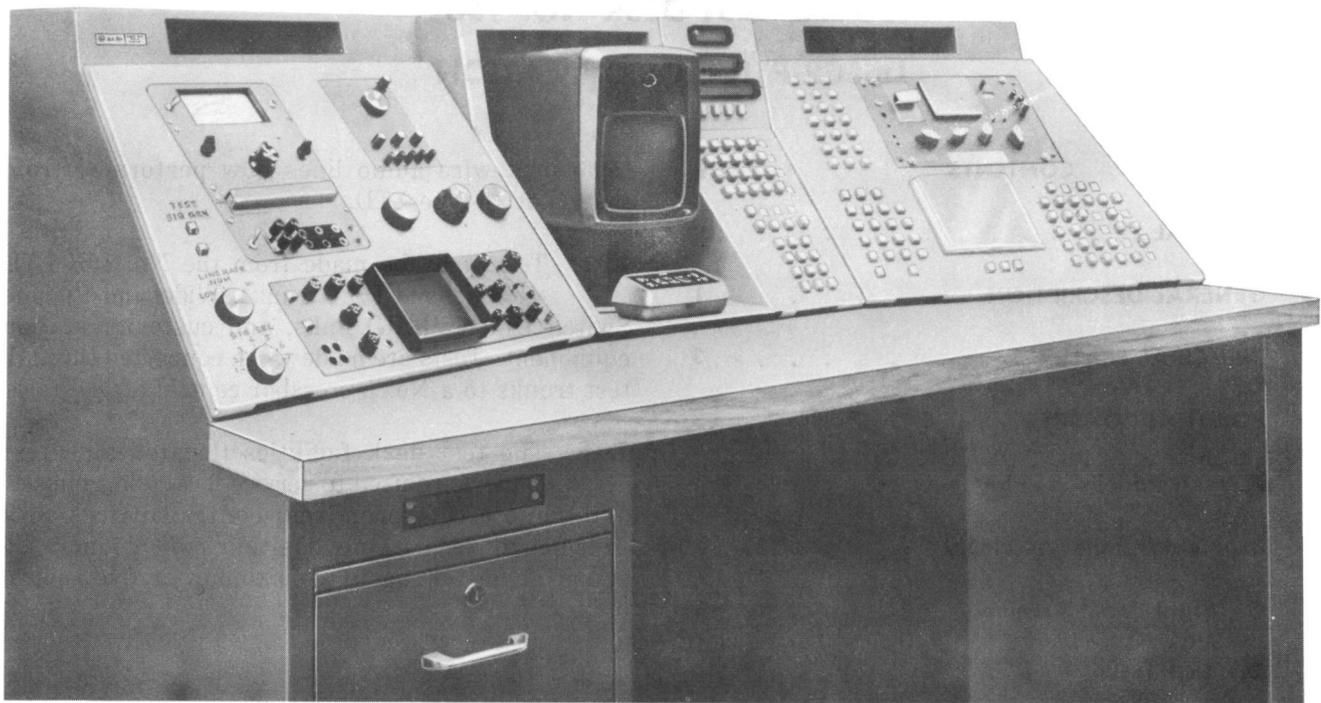


Fig. 1—15B Console Test Position

**2.02** The No. 15B LTD consists of one or more position consoles and the associated frame-mounted equipment.

**2.03** Connections to the subscribers line and test equipment are established with pushbutton keys. The pushbutton keys are either 624-(nonlocking) or 630-(push-to-operate, push-to-release) type and are equipped with M1 lamps, which are electrically connected to illuminate when the button on the key is in the operated position.

**2.04** Connection is made to customer lines from the LTD position console by means of crossbar switches. Two 100-point crossbar switches are required for each position console. When more than one LTD position is provided, test trunks are multipled to the horizontal of other crossbar switches.

**2.05** The verticals of the crossbar switches for each position console are multipled. The position console has two access circuits to these crossbar switches. The circuit from control relays to even numbered switch verticals is designated access A. The circuit from control relays to odd

numbered switch verticals is designated access B. Only one access circuit at a time may be seized to establish a connection. After the connection has been established, the second access circuit may be used to establish another connection.

**2.06** An LTD position is arranged to key-select a maximum of five different central offices. The CO test trunks are wired to the horizontals of the crossbar switch. The verticals of the switch (2.05) have access to all test trunks. Each LTD position may use one of the two access circuits (crossbar switch verticals) to seize a CO test trunk; eg, verticals 0 and 1 have access to central office A; verticals 2 and 3 have access to office B, etc.

**2.07** Wideband test sets used in the 15B LTD are portable test sets modified so they may be mounted in the position console. Brackets are fastened to test set cases so that each test set may be mounted on a subframe beneath the left and right panel assemblies. The brackets are fastened to the subframe by mounting screws. Handles have been provided on each test set to aid in removing the set for replacement or repair.

### 3. PRINCIPAL FEATURES

#### POSITION CONSOLE

**3.01** This section provides a general description of all keys and lamps. Section 662-405-501 entitled operation and test procedures will provide information on the operating functions for these keys.

##### A. Left Panel Assembly

**3.02** The left panel assembly (Fig. 2) consists of a wideband voltmeter, wideband oscillator, waveform oscilloscope, five variable controls and two test signal generator control keys.

**3.03** The wideband voltmeter is a Hewlett-Packard Model 3555B-H10 telephone test meter which may be connected to the video receive path. Connection is made by operating a VTVM key associated with either access path. The voltmeter provides for measuring signal levels from  $-70$  to  $+50$  dBV in the 30 Hz to 1.0 MHz frequency range.

**3.04** The wideband oscillator is a Hewlett-Packard Model 209A-H10 oscillator which can be connected to the video transmit path. Connection is made by operating an OSC key associated with either access path. The oscillator provides a means of generating sine waves of varying frequencies and amplitudes. Front panel dials are calibrated in frequency settings with a maximum range of 2 MHz. The oscillator output is controlled by an attenuator which is labeled OSC LEV. The attenuator is in series with the oscillator output. The outer control is calibrated from  $-27$  to  $+3$  in 2.0 dBV steps. The inner control is calibrated from 0 to  $-2.0$  in 2.0 dBV steps. The inner control is used in conjunction with the outer control for intermediate settings.

**3.05** The waveform oscilloscope is an H07-193A oscilloscope. Because it is high impedance, the oscilloscope can be connected to the video receive path of an access path in conjunction with a different item of receive test equipment. The oscilloscope is connected to the receive path by means of a WAVE MON key.

**3.06** Four variable control knobs and two push-to-operate, push-to-release control buttons

are associated with the PICTUREPHONE Test Signal Generator (PTSG), as follows:

- **SIG GEN LEV:** Two control knobs are used to adjust the level of the PTSG signal. The right control is calibrated from 0 to  $+3$  dBV. The left control is calibrated from 0 to  $-30$ dBV
- **LINE RATE:** Controls the line rate of the PTSG. Three positions—LOW, NOM, and HI, correspond to line rates of 7999.2 Hz, 8000.0 Hz, and 8000.8 Hz, respectively.
- **SIG SEL:** A 7-position switch used to select any one of seven different signals to be transmitted by the PTSG.
- **INT MOD (internal modulation):** The push-to-operate, push-to-release button will add 512 KHz sine wave modulation to the stair-step test signal; or 256 KHz square wave modulation to the window test signal. Button illuminates when operated.
- **PRE EMP (pre-emphasis):** The push-to-operate push-to-release button provides for sending all the test signals except the 256 KHz square wave, with pre-emphasis. Button illuminates when operated.

##### B. Center Panel Assembly

**3.07** The center panel of the LTD consists of a compartment (Fig. 1) and an upper and lower panel assembly (Fig. 3). The compartment is a recessed area which contains the display and control units of a 2C video telephone station.

**3.08** The upper panel assembly contains three readout assemblies which provide a means of visually verifying digits which have been keyed on the keyset. The numerals 0 through 9 which appear in the top two readout assemblies correspond to the 12 MF digits of the PICTUREPHONE line or trunk. The address of the test line or the subscriber telephone number and the start signal appear in the address readout assembly.

**3.09** The four release keys provide a means of erasing sections of the readout display or all readouts which appear on the readout assemblies.

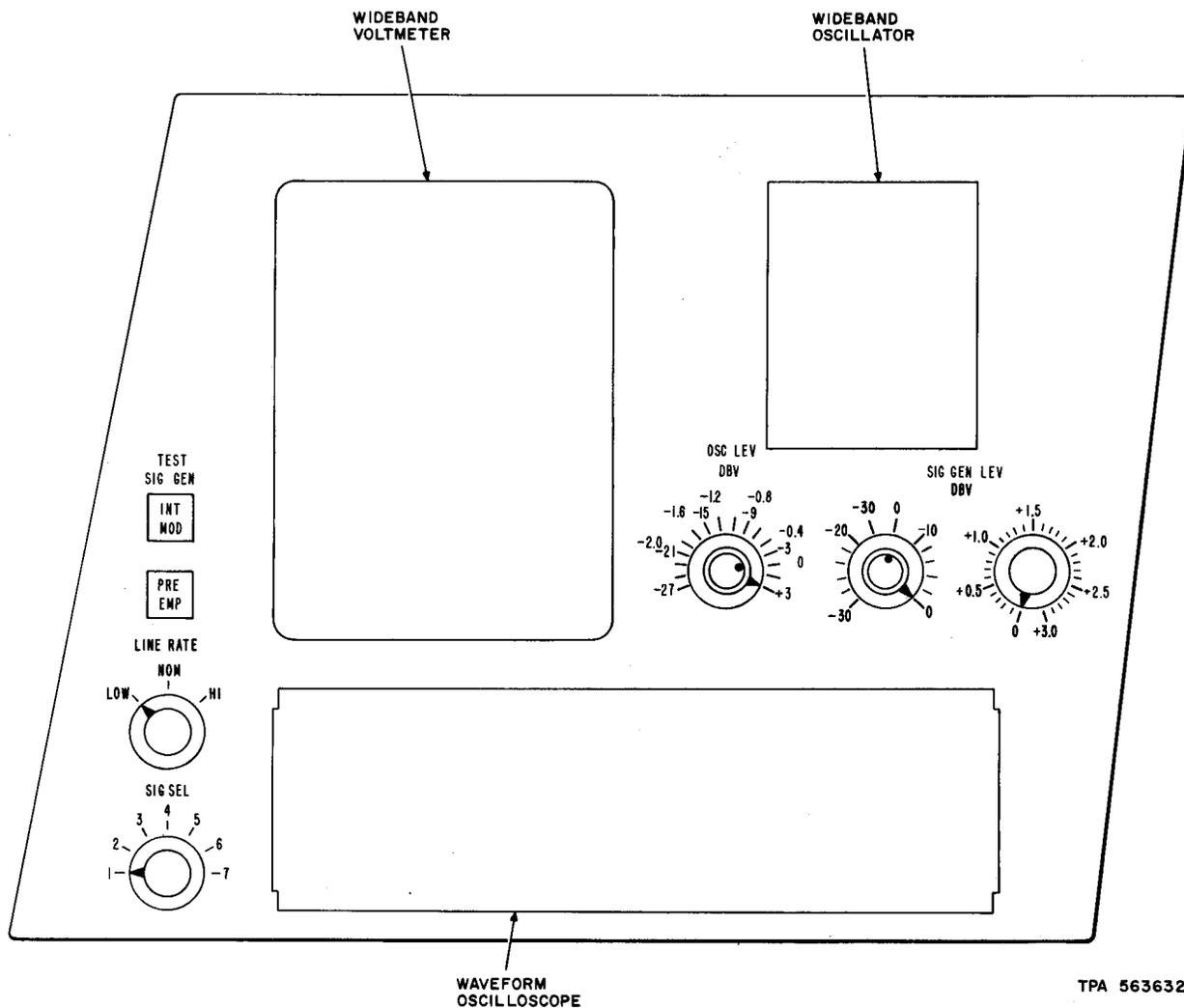


Fig. 2—Left Panel Assembly—No. 15B Local Test Desk

The release keys are nonlocking, nonilluminating buttons which perform the following functions:

- REL 1-5: Releases storage relays 1 through 5 and the associated readout numerals in the first readout assembly.
- REL 6-12: Release storage relays 6 through 12 and the associated readout numerals in the second readout assembly.
- REL ADD: Release the address portion of the storage relays, plus the start pulse. This includes anything stored on any of the

23 storage relays with a position number greater than 12.

- TOT REL: Releases all storage relays, and the associated readout numerals which appear on all three readout assemblies.

**3.10 WIDEBAND TEST keys:** The wideband test keys (Fig. 3) are push-to-operate, push-to-release keys which are electrically connected to illuminate when operated. Wideband test keys are used for connecting wideband test equipment to the subscriber video circuit. Two separate sets of keys designated WIDEBAND TEST A or

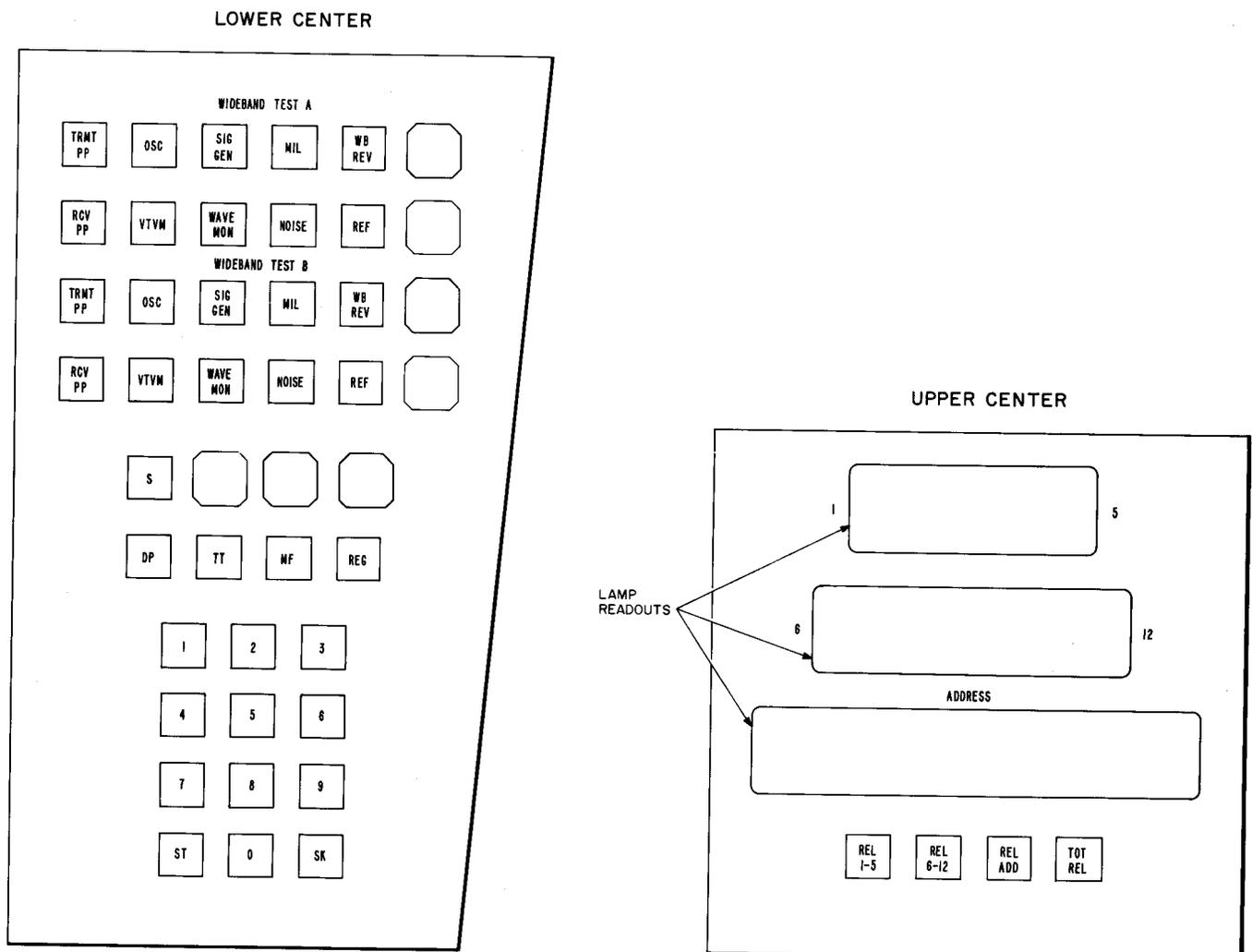
WIDEBAND TEST B are provided for connecting the test equipment to the subscriber circuit. Both sets of keys perform the same functions so the keys in wideband test A will be described. The keys perform the following functions:

- (a) **TRMT PP (transmit PICTUREPHONE) key:** Disconnects a terminating resistor from the input tip and ring of the transmit portion of the PICTUREPHONE Service Unit, connects the leads to the video transmit circuit, and applies power to the PICTUREPHONE set.
- (b) **RCV PP (receive PICTUREPHONE) key:** Disconnects a terminating resistor from the

receive leads of the service unit portion of the PICTUREPHONE set, connects the leads to the video receive circuit, and applies power to the PICTUREPHONE set.

- (c) **OSC (oscillator) key:** Disconnects a terminating resistor from the output leads of a wideband oscillator in series with an attenuator network and connects the output leads to the video transmit circuit.

- (d) **VTVM (vacuum tube voltmeter) key:** Connects a wideband voltmeter to the video receive circuit.



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Fig. 3—Center Panel Assembly—No. 15B Local Test Desk

- (e) **SIG GEN (signal generator) key:** Disconnects a terminating resistor from the output leads of a PICTUREPHONE test signal generator in series with an adjustable attenuator and connects the leads to the video transmit circuit.
  - (f) **WAVE MON (waveform monitor) key:** Opens the video receive pair and reroutes the pair through a waveform oscilloscope. The output signals from the subscriber station may be monitored on the oscilloscope.
  - (g) **MIL (milliwatt) key:** Disconnects a terminating resistor from the output leads of a milliwatt generator and connects the leads to the video transmit circuit.
  - (h) **NOISE key:** Disconnects a terminating resistor from the input leads to a Noise Measuring Set and connects the leads to the video receive pair.
  - (i) **WB REV (wideband reverse) key:** Reverses the tip and ring leads of the video transmit circuit between the transmit test equipment and the test circuit to subscriber.
  - (j) **REF (reference) key:** The operated REF key opens the video transmit and receive circuits and connects a terminating resistor across the tip and ring of both circuits toward the test trunk. The key also connects the LTD side of the transmit circuit to the LTD side of the receive circuit. This arrangement permits transmit test equipment to be connected to receive test equipment at the same LTD position for check and calibration.
- 3.11** The group of eight key positions, below the wideband test keys, contains an S (supervisory) lamp, three apparatus blanks, and four signaling mode control keys. The keys perform the following functions:
- (a) **DP (dial pulse) key:** A push-to-operate, push-to-release key which illuminates when operated. The DP key is used to operate relays necessary to prepare the circuit for dialing into the test trunk and selector circuit or for dialing over a subscriber line communication circuit.
  - (b) **TT (TOUCH-TONE®) key:** A nonlocking key which illuminates when operated. The TT key is used to start circuit action for dialing

over a customer line communication circuit or dialing into a central office arranged for TOUCH-TONE signals over a 2-wire MDF test trunk.

- (c) **MF (multifrequency) key:** A nonlocking key which illuminates when operated. The MF key is used to prepare the circuit for testing over a nonwideband trunk arranged for multifrequency pulsing.
- (d) **REG (register) key:** A push-to-operate, push-to-release key which illuminates when operated. The REG key is used for testing over a wideband PICTUREPHONE line or trunk. The REG key is operated just prior to keying the digits necessary to establish a connection. Operating the REG key prepares the keyset register for the storage of digits as they are keyed on the keyset. Stored digits are outpulsed when the REG key is released.

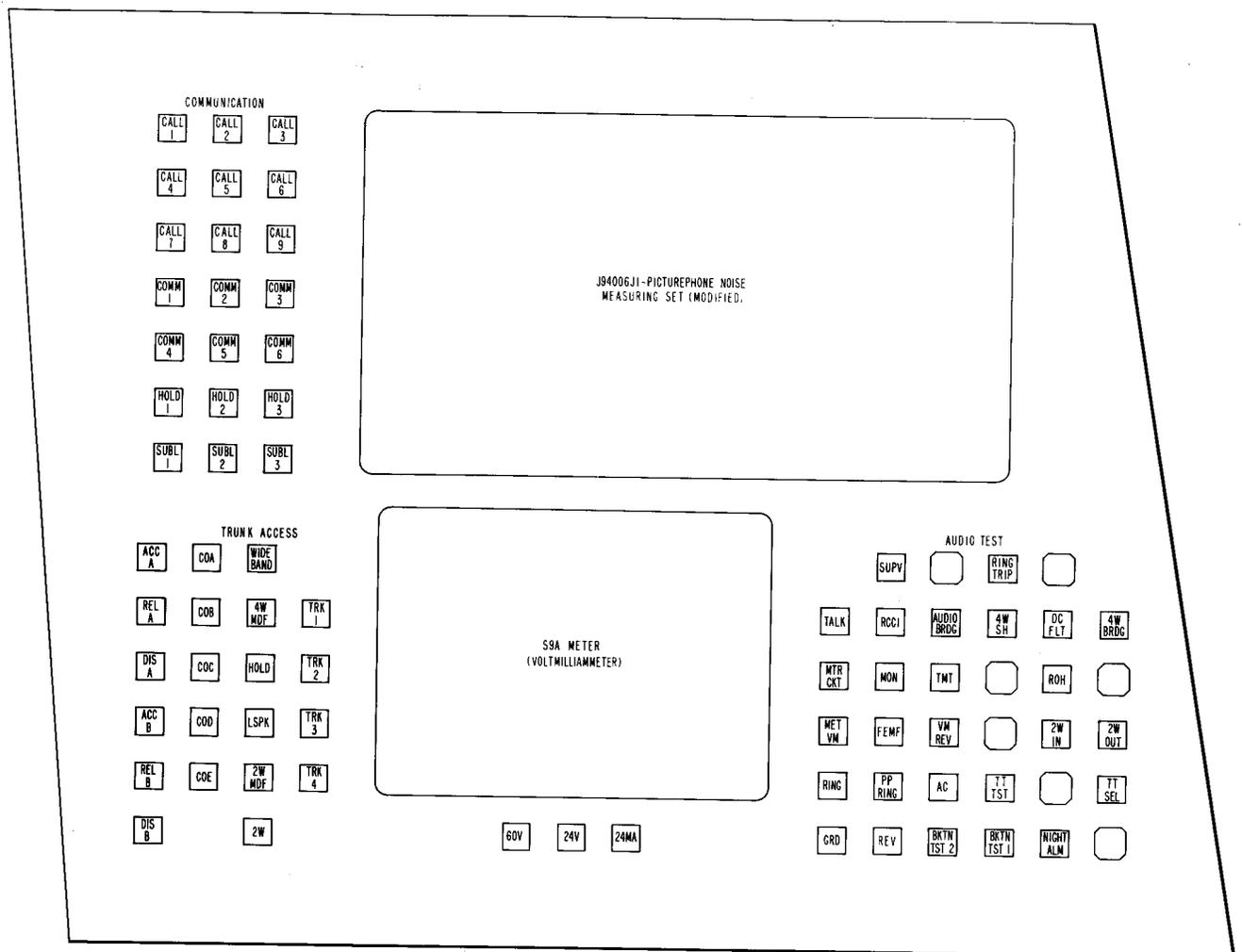
**3.12** A 12-button keyset provides the necessary keys for all three signaling modes. Digit keys designated 0-9 are used for signaling when in the dial pulse or TOUCH-TONE mode. Keys 0-9, SK, and ST are used to register all digit, skip, and start signals required for multi-frequency signaling over a wideband test trunk.

### C. Right Panel Assembly

**3.13** The right panel (Fig. 4) contains a noise measuring set, volt-milliammeter, communication keys, trunk access keys, audio test keys, and three keys associated with the volt-milliammeter.

**3.14** *The noise measuring set* is a J94006-J1 set. The input circuit provides 110 ohms balanced impedance, a network having PICTUREPHONE weighting, and a 115-volt ac power supply. The noise measuring set can be connected to the video receive path by operating the NOISE key for the selected access path. This arrangement provides a means of making both impulse and noise measurements on wideband circuits.

**3.15** *The volt-milliammeter (VMA)* is a Model S9A meter. It provides scales of 0-24, 0-60, and 0-120 volts; and 0-1.2, 0-24, and 0-480 milliamperes. Voltmeter test battery is +100 volts with all scale change keys normal. Test voltages of 60V, 24V, and 24MA are provided under control



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**Fig. 4—Right Panel Assembly—No. 15B Local Test Desk**

of the push-to-operate, push-to-release buttons located directly below the meter.

### Communication Keys

**3.16** The LTD may communicate with certain locations on a "no charge" basis over three types of communication circuits:

- Between LTD positions, (call circuits).
- Between the LTD and other telephone company employee locations, (dedicated communication circuits).

- Between the LTD and a customer location (communication and control circuits).

**3.17** The communication keys (Fig. 4) perform the following functions:

- (a) **CALL keys** are nonlocking, nonilluminating keys which are provided for use as call circuit keys. Call circuits are provided for intercommunicating between position consoles. Each self-designating CALL button is designated with a number corresponding to the number assigned to a position console. Operation of a CALL key bridges the intercommunicating circuit of the calling position to the talking circuit of the called position.

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- (b) **COMM keys** are push-to-operate, push-to-release keys which are equipped to illuminate on an incoming call to the associated line. Communication between the LTD and other employee locations is made by means of dedicated circuits controlled by COMM keys. An operated COMM key provides an off-hook signal to the communication circuit and places the LTD in the talking mode.
- (c) **HOLD keys** are push-to-operate, push-to-release keys which illuminate when operated. A HOLD key is associated with each SUBL key. Operating the HOLD key places a hold bridge across the connecting line. Operating the HOLD key extinguishes the lamp on the associated SUBL key.
- (d) **SUBL keys** are push-to-operate, push-to-release keys which illuminate when operated. The SUBL key is used to answer calls from subscribers or to originate audio calls to subscribers. The SUBL key lamp flashes on an incoming call, lights steady when the call is answered, and extinguishes when a call is placed on hold.

### Trunk Access Keys

- 3.18** The trunk access keys (Fig. 4) perform the following functions:
- (a) **ACCA or ACCB keys** are push-to-operate, push-to-release keys which illuminate when operated. The keys provide a means of selecting one of two control circuits. The control circuits are used to establish a connection to the test trunks.
- (b) **CO (A-E) keys** are nonlocking keys which illuminate when operated. Each CO key is associated with a central office. A maximum of five central offices may be selected by operating the proper CO key after a control circuit has been selected.
- (c) **WIDEBAND, 4W MDF, HOLD, LSPK, 2W MDF, and 2W keys** are nonlocking keys which illuminate when operated. These keys provide a means of selecting the type of test trunk required. The test trunk is selected after control and central office circuits are seized.
- (d) **TRK1, TRK2, TRK3, and TRK4 keys** are nonlocking keys. The TRK (1-4) keys are

used to seize an idle test trunk after one of the keys described in 3.18 are selected. The key lamp provides supervision for the TRK key selected. The lamp signal varies with the type test trunk seized. Refer to Section 662-405-500 for the operation of the TRK keys and the associated lamps.

- (e) **DIS A and DIS B keys** are nonlocking keys which illuminate when operated. DIS A and DIS B (disconnect) keys provide a means of disconnecting a test trunk from control circuit (access circuit) A or B without releasing the trunk connection through the LTD crossbar switch.
- (f) **REL A and REL B keys** are nonlocking keys which momentarily illuminate when operated. The REL (release) keys are used to disconnect the test trunk (except a holding trunk), and then release the trunk from the crossbar switch.

### Audio Test Keys

- 3.19** The audio test keys and lamps (Fig. 4) perform the following functions:
- (a) **SUPV lamp** illuminates to indicate a dc bridge has been placed across the tip and ring. The dc bridge is placed across the line when the subscriber station is in an off-hook condition.
- (b) **RING TRIP lamp** illuminates when a subscriber station goes off-hook in response to ringing from the LTD over a test trunk or when superimposed ringing has been tripped.
- (c) **TALK key** is a nonlocking key which illuminates when operated. Operating the TALK and RCC1 key provides the connection necessary to communicating over the subscriber line seized by the LTD.
- (d) **RCC1 (repeat coil cut-in) key** is a push-to-operate, push-to-release key which illuminates when operated. The RCC1 and TALK keys must be operated for communicating over a subscriber line seized by the LTD.
- (e) **AUDIO BRDG (audio bridge) key** is a push-to-operate, push-to-release key which illuminates when operated. The AUDIO BRDG

key provides for bridging circuits for a three-way conversation between a communication line, a subscriber line seized for testing, and the LTD position console.

- (f) **4W SH (4-wire short circuit test) key** is a push-to-operate, push-to-release key which illuminates when operated. The 4W SH key is used in conjunction with a 4-wire MDF test trunk to permit testing out of the central office.
- (g) **DC FLT (dc fault) key** is a nonlocking key which illuminates when operated. The key is used in conjunction with the 4W SH key and a 4-wire MDF test trunk to locate dc faults in the subscriber video loop.
- (h) **4W BRDG (4-wire brige) key** is a push-to-operate, push-to-release key which illuminates when operated. The 4W BRDG key is used in conjunction with a 4-wire MDF test trunk to permit the LTD to establish a bridging connection to the video path from central office to subscriber station.
- (i) **MTR CKT (meter circuit) key** is a nonlocking key which illuminates when operated. The key connects the volt-milliammeter into the audio circuit.
- (j) **MON (monitor) key** is a nonlocking key which illuminates when operated. The operated MON key disables the talk circuit and connects the LTD telephone receive circuit to the monitor repeat coil.
- (k) **TMT (transmission test) key** is a nonlocking key which illuminates when operated. Instead of the TALK key, the TMT key is operated to talk with a subscriber when 21 dB of loss is desired in the talk circuit.
- (l) **ROH (receiver off-hook) key** is a push-to-operate, push-to-release key which illuminates (flashing) when operated. The ROH key is used to apply tone on a subscriber line. The tone is applied to the line when a station is off-hook and an effort is being made to draw attention to this condition. The button lamp changes from flashing light to a steady light when the station goes to an on-hook condition.
- (m) **MET VM (metallic voltmeter) key** is a push-to-operate, push-to-release key which illuminates when operated. The MET VM key places the VMA meter in series with the test voltage supply circuit and bridges this series combination across the tip and ring of the audio circuit.
- (n) **FEMF (foreign EMF) key** is a push-to-operate, push-to-release key which illuminates when operated. This key is used to read foreign potential on the ring or tip of the subscriber audio line.
- (o) **VM REV (voltmeter reverse) key** is a push-to-operate, push-to-release key which illuminates when operated. The key is used in conjunction with the FEMF key to reverse polarity of the VMA meter.
- (p) **2W IN (2-wire into central office) and 2W OUT (2-wire toward suscriber) keys** are push-to-operate, push-to-release keys which illuminate when operated. These keys provide a means of splitting the audio circuit and permits the LTD to test the circuit toward the central office or toward the subscriber station depending on which key is operated.
- (q) **RING (ringing) key** is a nonlocking, nonilluminating key. The RING key provides the LTD with a means of applying ringing voltage on a 2-wire test trunk or the audio circuit of a wideband test trunk.
- (r) **PP RING (PICTUREPHONE ringing)** is a nonlocking, nonilluminating key. The PP RING key provides the LTD with a means of applying ringing voltage only via the wideband test trunk ringing circuit.
- (s) **AC (alternating current) key** is a push-to-operate, push-to-release key which illuminates when operated. Operating the key connects the VMA meter to the ring side of the subscriber audio line through the AC rectifier and under control of the operated MTR CKT key. Refer to 3.19 (i).
- (t) **TT TST (TOUCH-TONE test) key** is a push-to-operate, push-to-release key which illuminates when operated. This key is operated when a station TOUCH-TONE dial is to be tested for correct TOUCH-TONE frequencies.

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(u) **TT SEL (test trunk and selector) key** is a push-to-operate, push-to-release key which illuminates when operated. The TT SEL key provides a means of selecting a test trunk and selector circuit for the purpose of connecting to permanent signal holding trunks, plugging-up line circuit, and line insulation test control circuits.

(v) **GRD (ground) key** is a push-to-operate, push-to-release key which illuminates when operated. The GRD key grounds the tip side of the audio circuit.

(w) **REV (reverse) key** is a push-to-operate, push-to-release key which illuminates when operated. This key reverses the tip and ring conductors of the audio circuit.

(x) **BKDN TST1 (breakdown test 1) and BKDN TST2 keys** are nonlocking keys which illuminate when operated. BKDN TST1 provides for making a breakdown test on the ring side of the audio line with the REV key normal. BKDN TST2 key applies the test to both the tip and ring conductors.

(y) **NIGHT ALM (night alarm) key** is a push-to-operate, push-to-release key which illuminates when operated. The night alarm key connects a buzzer to the "A" lead of 2-way trunk circuits and communication circuits.

### D. Test Jacks

**3.20** A 10-position jack strip is located at the left front of the writing shelf. The right jack position is vacant. From left to right, jack designations and principal functions are as follows:

- A RCV, A TRMT, B RCV, and B TRMT—Used to connect external test equipment to the video receive or transmit paths of access path A or B.
- TEL 1 (A and B), and TEL 2 (C and D)—Used to connect one or two telephone headsets to the LTD telephone circuit.
- EXT MOD—Used to connect a signal generator to the PTSG to provide an external modulation signal to the PTSG.

### E. Associated Apparatus and Equipment

**3.21** The apparatus located in the position console is interconnected with factory formed local cable (Fig. 5). The necessary wiring will be provided for a full complement of key features and testing circuits.

**3.22** The equipment in the rear of the position console is mounted on 23-inch mounting plate units and this equipment is protected with a cover on the back of the position console. The cover is fastened with ten twist-lock fasteners.

#### Frame-Mounted Test Equipment

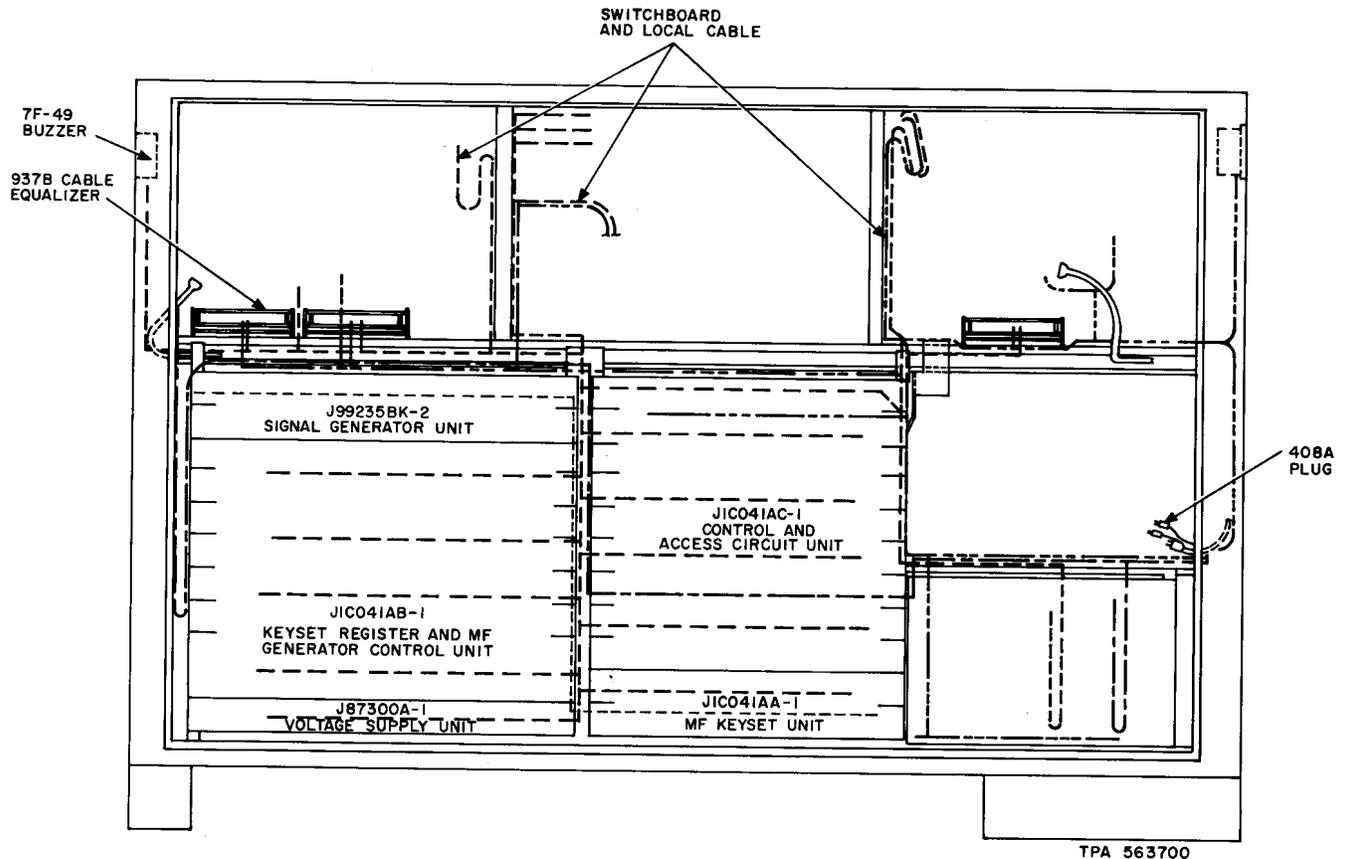
**3.23** Two items of wideband test equipment, controlled from the LTD, are mounted on an equipment frame remote from LTD positions. These items are:

- A milliwatt generator to be used as a reference for calibrating video test equipment. The generator is connected to the video transmit path by operation of a MIL key.
- A PICTUREPHONE Test Signal Generator (PTSG) to provide reference test patterns for adjusting and diagnosing wideband test equipment displays. The PTSG is connected to the wideband receive path by a SIG GEN key and controlled by keys INT MOD and PRE EMP, and rotary switches LINE RATE, SIG SEL, and SIG GEN LEV.

#### 1A Service Unit

**3.24** The 1A service unit has the following design features:

- Wall mounted.
- 11 3/4 inches wide, 7 1/4 inches deep by 5 3/4 inches high.
- Interconnects 1A display unit and 72A control unit with audio and video lines.
- Contains power supply and fuses for audio and video functions.
- AC power cord plugs into 1A service unit and the subscribers AC outlet.



**Fig. 5—Rear View of Cable and Equipment Arrangement for Position Console**

- Provides plug-in mounting facilities for circuit packs, cable equalizers and/or buildout networks.
- Service unit is equipped with a connector which mates with the plug of the D50AF cord from the display unit or the plug from a B25A connector cable.
- Service unit is electrically connected to the position console through a 6-pair inside wiring cable. Cable terminates on screw terminals in the service unit.

#### 4. TEST TRUNKS

**4.01** Test trunks provide the LTD with the means of connecting to customer lines. Six types of test trunks may be provided. Test trunks are wired to horizontals of the SV (video) and SA (audio) crossbar switches (Fig. 6). The maximum

number of test trunks that can be provided on each pair of crossbar switches is as follows:

- One MDF loudspeaker trunk (audio) per central office
- One 2-wire MDF test trunk (audio) per central office
- Two 4-wire MDF test trunks (video) per central office
- Three 2-wire outgoing (audio) test trunks per central office. Two of these trunks are "no test" type and one is the "test trunk and selector" type
- Four 6-wire outgoing test trunks (audio and video) per central office. However, if a single LTD position is provided, the maximum number is two per central office

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- Four outgoing holding test trunks per central office.

### A. Outgoing Holding Test Trunk

**4.02** A holding test trunk permits a connection to be made to defective PBX trunks and WRSU links. The connection removes the trunk or link from service until a maintenance busy condition can be placed on the circuit at the central office.

### B. MDF Test Trunk, 4-Wire

**4.03** A 4-wire MDF test trunk permits connecting to the video pair of a customer line without routing the call through central office switching equipment. The connection is established at the MDF by manually using an MDF test cord to connect the customer line to jacks associated with the 4-wire test trunk. The trunk is controlled from the LTD by varying sleeve current. Only low frequency measurements will be made using this test trunk.

### C. MDF Test Trunk, 2-Wire

**4.04** A 2-wire MDF test trunk permits connection to the audio pair of a customer line without routing the call through central office switching equipment. The connection is established at the MDF by manually using an MDF test cord to connect the customer line to jacks associated with the 2-wire test trunk. The trunk is controlled from the LTD by varying the sleeve current.

### D. MDF Loudspeaker Trunk

**4.05** This trunk provides a means for voice communication between the LTD and MDF in a central office. The loudspeaker trunk is associated with trunk selection key and lamp number 1. This lamp will be dark if the trunk is idle and will light steadily if trunk is busy. Trunk

selection lamps 2, 3, and 4 light to indicate there is no available loudspeaker trunk associated with the keys. An incoming call to the LTD over the loudspeaker trunk flashes the LSPK lamp and the associated CO lamp.

### E. Test Trunk and Selector Circuit

**4.06** The test trunk and selector circuit permits the LTD to have access to permanent signal holding trunks, plugging-up line circuits, and line insulation test control circuits. Dial impulses from the LTD operate a selector to connect the LTD to the required circuit. The test trunk and selector appears as a 2-wire test trunk associated with trunk number selection key 3, (TRK 3).

### F. Wideband Test Trunk

**4.07** The wideband test trunk is a combination of a 2-wire audio trunk and a 4-wire wideband (video) trunk. The audio trunk controls the video trunk. The audio trunk provides tone signals to indicate busy, overflow, and other equipment conditions which may prevent completion of a test call. At the central office, the audio pair is connected to the existing telephone switch. The video pairs are connected to a separate 4-wire switch under control of the existing telephone switching machine. Wideband test trunks are regular (non-no test) type trunks.

### G. Outgoing Test Trunk, 2-Wire Audio

**4.08** Two-wire outgoing test trunks provide access from the LTD, through the central office, to subscriber lines. Two-wire test trunks are "no-test" trunks which provide access to busy lines through a no-test connector. When a busy line is called over a no-test trunk, a busy indication is not returned and PBX hunting does not take place. Two trunks of this type, in addition to one trunk of the test trunk and selector type, may be provided.

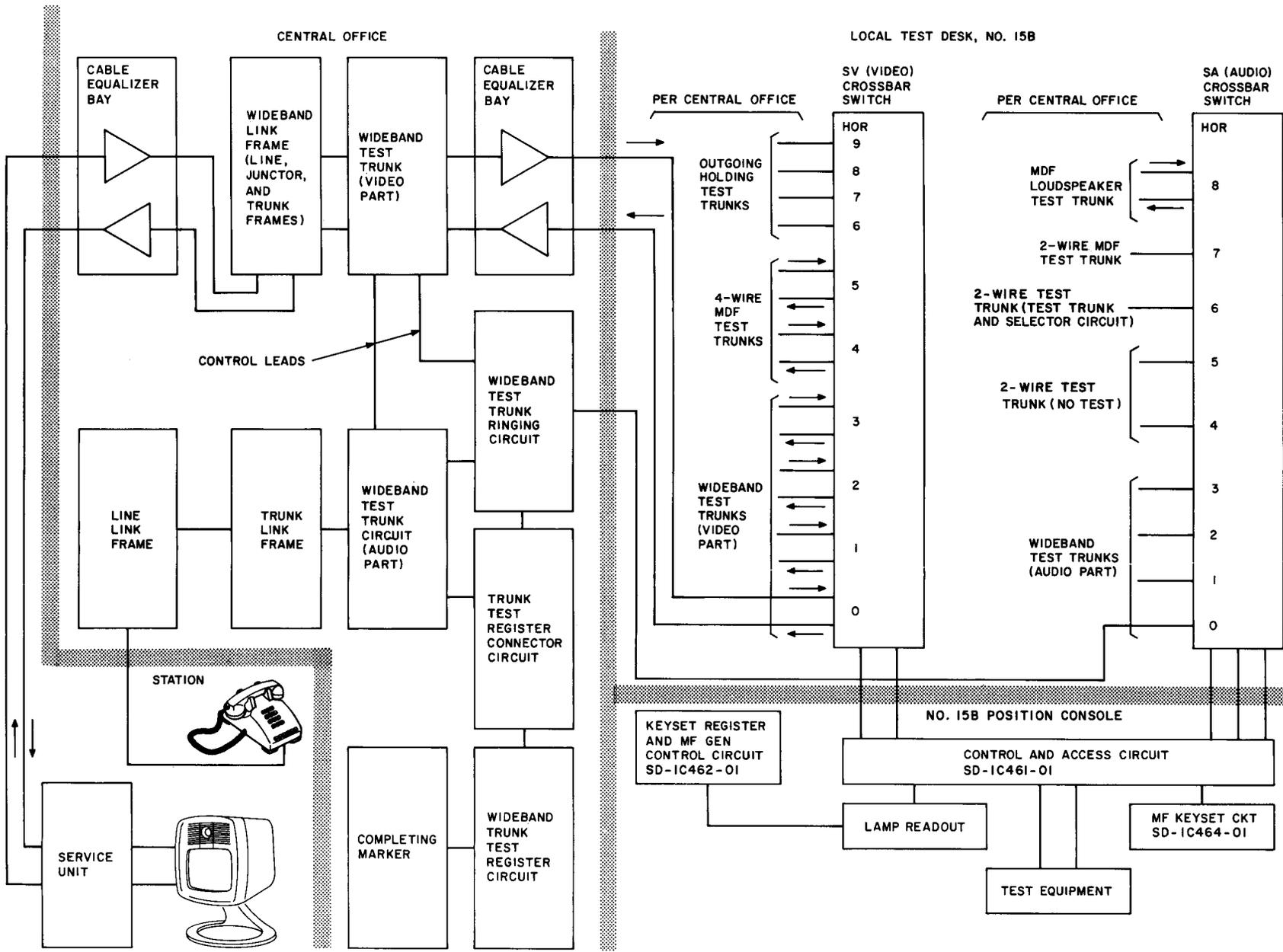


Fig. 6—Typical Arrangement for PICTUREPHONE Testing From No. 15B Local Testing Desk.