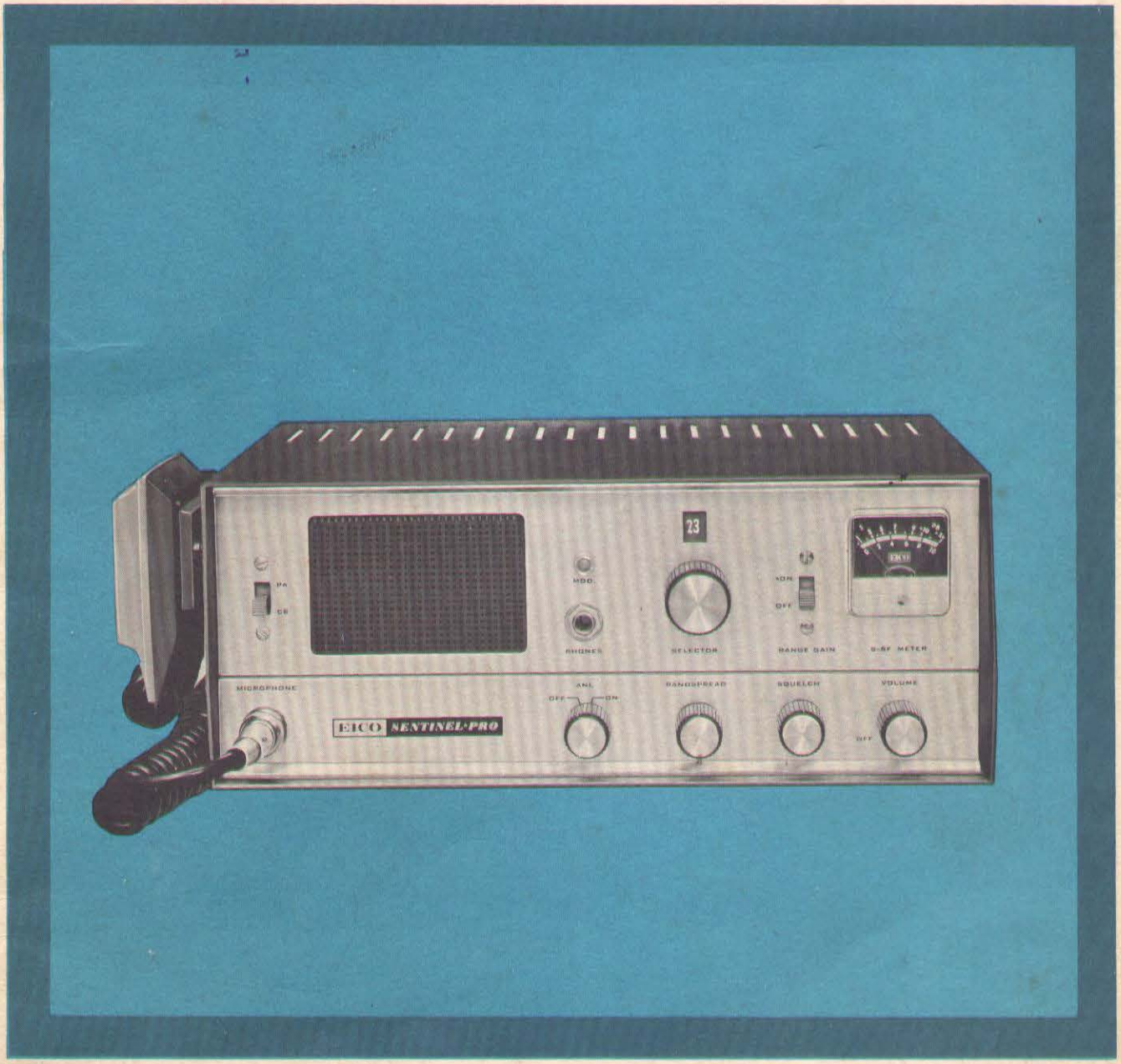
EICO

779A/Sentinel Pro CB Transceiver



OPERATING MANUAL

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SECTION 1. GENERAL DESCRIPTION

The EICO 779A/Sentinel Pro is a full 5-watt input (legal limit) CB transceiver incorporating a modern highly efficient 23-channel frequency synthesizer circuit capable of providing crystal-controlled transmit and receive on all authorized CB channels, with no further crystals ever needed. A single control selects the transmit and receive channels with channel numbers 1 through 23 appearing in an illuminated window. Provisions are made for the addition of extra channels if and when authorized by the FCC.

The receiver is a dual conversion superheterodyne incorporating full electronic switching in the antenna circuit (eliminating possible noisy and arcing relays), a 27 MC preselector, a crystal-controlled 6 MC converter, one stage of high-gain 6 MC IF, a crystal-controlled 455 KC converter, followed by two high-gain 455 KC IF's. Sensitivity is rated at 0.25uV for 10db signal-to-noise ratio. Excellent adjacent channel rejection is achieved without excessive narrowing of the desired channel bandpass since the 6db down points of the selectivity curve are only 3 KC from the desired carrier frequency. Primary image rejection is better than 60db (better than 1 million times). A front-panel bandspread control permits accurate tuning of stations that may be transmitting slightly off frequency.

The wide dynamic range of the AGC circuit prevents overloading on strong local signals while an automatic impulse noise limiter and an adjustable squelch are provided for operator comfort. An illuminated front-panel dual-function meter serves as an "S" (signal strength) meter when receiving. In addition to the built-in 4-inch loudspeaker, headphones or an external remote speaker may be connected simply by plugging into a front-panel phone jack. This automatically silences the built-in speaker.

The efficient 5-watt transmitter, of the latest frequency-synthesis type, provides in excess of 3 watts output. An exclusive feature, "Finger-Tip Tuning", is provided so that the operator can, at any time, without tools, tune the transmitter output to match almost any antenna between 30 and 100 ohms impedance so as to get maximum transmitter RF output. An adjustable TVI filter permits attenuation of any harmonics that might interfere with local TV reception on the lower VHF channels.

When the exclusive "Range Plus" feature is switched in (via a front-panel switch), a very high average level of modulation can be used thus increasing the effective output power of the signal, making it more readable at a distance. This exclusive feature also automatically compensates for various operator voice levels so that whether the operator speaks in a normal voice or shouts, or if two or more operators having vastly different voice levels use a common 779A/Sentinel Pro, the modulation will remain high, yet will not overmodulate.

A PA/CB panel switch permits the receiver's audio amplifier to serve as a 3.5-watt public-address (PA) amplifier when an external speaker (or bullhorn) is plugged into the rear receptacle thus marked. For use as a PA system, simply depress the mike push-to-talk (ptt) switch. With the mike button untouched, incoming signals on the selected CB channel can be heard over the PA system if desired. In certain base station operation, this permits incoming messages to be heard at remote points in the base station area. In mobile operations, it permits incoming messages to be heard while the operator is outside and some distance away from his vehicle.

The EICO 779A/Sentinel Pro uses a high-efficiency transistor switching power supply and can be operated either from a source of 117 VAC, or from a source of 12 VDC (such as in a car or boat) having a negative ground. Individual power cords for both modes of power input are provided. For positive-ground vehicles, or where it is desired to keep the 779A/Sentinel Pro independent of ground polarity, the EICO DCS-5 conversion kit is available. See your local EICO dealer.

UNPACKING

This equipment has been thoroughly tested and inspected before packing. If you find visible damage upon unpacking, notify the dealer at once. If the unit was shipped, you must file a claim with the carrier, since only you can recover for shipping damages. Your dealer and EICO will cooperate.

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WARRANTY POLICY

Please read the EICO WARRANTY and note that the registration card accompanying each unit should be filled in and returned to the company within 10 days of the date of purchase. The warranty applies only if we have your registration card on file.

CITIZENS RADIO LICENSE

If you do not have a Citizens Radio License, fill out FCC Application Form 505 (supplied) and mail it immediately to the Federal Communications Commission, Gettysburg, Pennsylvania 17325. As of March 17, 1964, payment of a fee of $8.00* is required upon filing this application, and a check or money order for this amount must accompany the application. (As the fee situation may change, it would be wise to check with your dealer at the time of filing the license application). You may expect to receive your license within 10-14 days.

In filling out Form 505, note that this equipment is intended for Class D service. Note also that you must certify that you have in your possession (or have ordered from the Government Printing Office, Washington, D.C.) a current copy of Part 95 concerning the rules and regulations of the Citizens Radio Service. Attached to Form 505 is an Order Blank for Part 95 which you must mail to the Government Printing Office to meet this requirement if you do not already have a copy. When you receive your copy of Part 95, read it carefully (and be sure you understand it) for your own protection.

*Government entities are exempt.

WARNING

It is absolutely forbidden to transmit with your equipment until you have received your license and call sign from the FCC. There are severe penalties for such illegal operation. (Using your equipment for receiving only, however, is perfectly legal).

Note that any U.S. Citizen 18 years or older may obtain a Citizens Radio license. There are no requirements for understanding of radio theory or mastery of Morse Code. Corporations, partnerships, and associations as well as government entities and organizations operated by their authority, may also be licensed in the Citizens Radio Service.

The units of any Class D station licensed in the Citizens Radio Service are authorized primarily to communicate with other units of the same station; secondarily, units of Class D stations are authorized to intercommunicate with units of other stations in the Citizens Radio Service only when necessary for exchange of substantive messages related to the business or personal activities of the individuals concerned.

TRANSMITTER IDENTIFICATION CARD

When you have received your license, fill out the Transmitter Identification Card FCC Form 452-C (supplied) and attach it to your equipment (required by law).

CALLING PROCEDURE

The proper calling procedure, including the required use of the station call sign and the permissible length of a transmission exchange and other matters relating to correct operation, are described in Part 95 referred to above.

USEFULNESS OF 23-CHANNEL OPERATING CAPABILITY

Licensees in the Citizens Radio Service are authorized to transmit or receive on all of the 23 Citizens Band channel frequencies. The EICO 779A Sentinel Pro is capable of doing so just as supplied; with no additional crystals needed. As there are no channel assignments to particular stations, the twenty-three channel capability is entirely useful. It provides the fullest possible assurance that conflict may be avoided with existing or future stations in the area. Furthermore, certain channels

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have been established, by mutual agreement of licensee groups, as the channel that would be monitored by all of a particular group for a specific purpose. These channels and their specific purposes are listed below:

Channel 9: National calling and emergency channel for all stations. Officially adopted by REACT (Radio Emergency Associated Citizens Teams) which has about 600 teams, and 700 to 800 other individual clubs across the country. The members of REACT and the other individual clubs are committed to monitoring Channel 9 to provide emergency contact for travelers and others, wherever and whenever needed.

Channel 13: Unofficial monitoring channel for non-commercial (pleasure) vessels.

As of this writing, there are proposed FCC rulings which it is believed will become official shortly, concerning the permitted use of each of the 23 Citizens Radio channels. If these rulings become official, they will be incorporated in the current Part 95. The substance of the new rulings is to permit only seven channels (9, 10, 11, 12, 13, 14, 23) to be used for communications between units of different stations (inter-station communication) while permitting all channels (1 through 23) to be used for communication between units of the same station (intra-station communication). However, any channel in this service may be utilized during an emergency involving the immediate safety of life, or the immediate protection of property, for the transmission of emergency communications, provided notice and an explanation is given as soon as possible thereafter to the FCC in Washington, D.C. and the Engineer in Charge of the Radio District in which the station is located.

SECTION 2. INSTALLATION

VENTILATION

In all installations, consideration should be given to adequate ventilation in placing the unit. The slotted vents in the top and rear of the cabinet, and the vent holes in the bottom plate, must not be blocked at any time if the normal heat generated by the tubes is to be removed by convective air movement. If heat removal is prevented, an excessive temperature rise will occur in this unit which can damage components. In any installation, avoid placing the unit in or near a hot air stream.

BASE & MOBILE POWER CONNECTIONS

The 779A/Sentinel Pro may be used as a base station (fixed location) in which case, AC power (117 VAC, 60 cps) is normally used; or it may be used as a mobile station on a land vehicle or boat of any type, in which case 12 volt battery power is used. Individual AC and DC (battery) power cables are supplied and the appropriate one must be selected for the type of operation. Both AC and DC power cables are terminated at one end by an octal socket for insertion in the rear octal plug on the transceiver. They may easily be distinguished by the line outlet plug terminating the other end of the AC power cable, and the bare wire ends terminating the other end of the DC power cable (which also incorporates an in-line fuse for DC operation). Please note that the 779A/Sentinel Pro may be used in 12 VDC negative ground vehicles only. For positive-ground vehicles, or where it is desired to keep the "779/Sentinel Pro" independent of ground polarity, the EICO DCS-5 conversion kit is made available. See your local EICO dealer.

In mobile installations, the fused (red) lead of the DC power cable may be connected to the ACC terminal of the ignition switch or fuse panel only if the full battery voltage is available at this point with no losses due to ballast resistors. If full battery voltage is not available at the ignition switch, connect the fused (red) lead to the starter relay terminal, which has a direct low-loss connection to the battery positive terminal. In all cases, connect the unfused (black) lead of the DC power cable to the nearest good chassis ground in the vehicle. Note that, with the ignition switch connection, there is no danger that the battery will be run-down if you forget to turn the unit off before leaving the vehicle, nor is there risk of unauthorized operation of the unit while you have the key. However, the ignition switch connection will always introduce more power losses than the "hot" lead (starter relay) connection because of the smaller cable and the extra connections between unit and battery.

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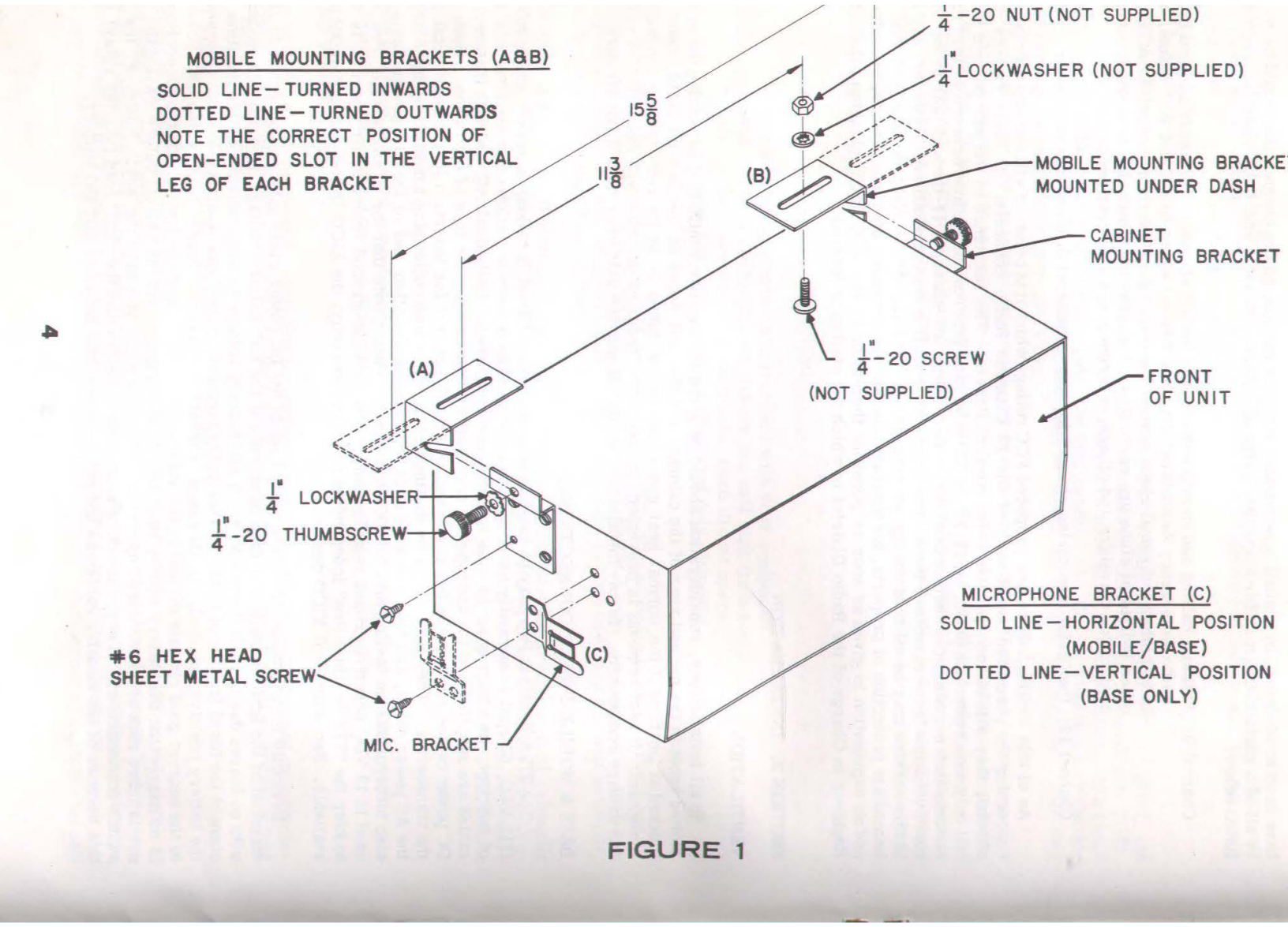

FIGURE 1

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MICROPHONE BRACKET MOUNTING

The microphone bracket and the required mounting hardware are supplied separately for mounting by the installer. The mounting is shown in Fig. 1. Note that there are two possible mounting positions for this bracket, one permitting the microphone to slip in and out vertically and the other permitting the microphone to slip in and out horizontally. In base installations, the vertical bracket mounting is probably more convenient. In mobile installations, horizontal mounting of the bracket is usually the only one practical.

MOBILE INSTALLATION MOUNTING

The method of mobile mounting devised for the 779A/Sentinel Pro, as shown in Fig. 1, permits the unit to be installed and locked in place, or released and lifted out, all in a few moments without the need for tools. This facilitates servicing, or, if desired, double use of the 779A/Sentinel Pro as both mobile and base station. It also makes it easy to transfer the trunk of the vehicle (or remove it entirely) to safeguard it from theft. The mobile mounting hardware consists of two different L-brackets to be mounted usually on the underlip of the dash directly over the center hump. The brackets may be mounted either both turned outwards or both turned inwards, depending on the positions of existing holes, or space limitations.

Having decided on either the outward or inward configuration, it may be determined which bracket is left and which is right by noting the angled hooking slots in the vertical legs of the brackets, and choosing which bracket is to be left and which is to be right by the criterion that the closed end of the slot must be lower than the open end so that the unit can not drop out if the locking screws referred to below should loosen.

The horizontal leg of each bracket has a slot rather than a single mounting hole in order to permit convenient positioning adjustment and to make the locations of the drilled holes in the dash less critical. In Fig. 1 the distance between centers of the slots in the two mounting brackets is given for both the inward and outward bracket mounting positions.

The bracket-mating attachments to the unit and the required mounting hardware are also supplied separately for mounting by the installer. The mounting is shown in Fig. 1. When the locking screws are loosened, the unit may be hung on the mounting brackets and the locking screws tightened to secure it.

In determining the positions of the mounting brackets, be sure they are placed far enough forward so that there is enough room behind the unit for the power cable plug and that there is no chance of the power supply transistors, mounted on the rear, coming into contact with a metal part of the vehicle (firewall) and thereby causing a short circuit.

MOBILE INSTALLATION NOISE & INTERFERENCE SUPPRESSION

Surrounding noise, in mobile installations is usually much greater than in base installations. For this reason, the units location should be chosen so that it is possible to hear all messages distinctly.

Furthermore, engine interference may be encountered in mobile operation. This type of interference varies with different vehicles. It is generally caused by either the ignition system, the generator system, or the voltage regulator. Should such interference be encountered, several suggestions for noise suppression are offered:

a) Ignition noise is characterized by regular popping or snapping as heard in the speaker. It will vary with the speed of the engine. This type of interference may be reduced by proper vehicular preventative maintenance, plus the addition of proper noise suppression component items. Check the ignition system connections and the distributor cap and points. If necessary, replace worn ignition components, and clean and adjust the spark plugs. Replacement of standard equipment ignition wire with resistance ignition wire may prove helpful. Ignition interference may also be reduced by the

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installation of spark plug suppressors, or replacement of standard spark plugs with resistor-type spark plugs. The installation of a condenser on the primary side of the ignition coil, will also be of value.

b) Generator noise is characterized by a high pitched whine and varies with engine speed. While the vehicle is in motion, tune a weak signal in on the transceiver, and alternately engage and disengage the clutch (shift between "neutral" and "drive" on automatic cars). This will cause the engine to drive the generator at various speeds. A change in the pitch of the whine (heard on the speaker) should definitely establish the fact that the generator was causing the interference. To eliminate the above interference, clean the generator commutator. Install coaxial condensers on the generator, in series with the armature lead. Also install coaxial condensers on the regulator armature terminal, and on the regulator battery terminal. Do not use standard by-pass capacitors. Only the coaxial type will be effective. The leads of the capacitors must be kept as short as possible.

c) Voltage regulator interference is characterized by a rasping sound on the speaker. It is generally caused by arcing of the voltage regulator contacts. This noise may be reduced by installing a non-inductive, carbon, 3.3 ohm resistor, in series with a 0.002mfd capacitor. This combination should be installed in the lead from the field terminal of the voltage regulator, to a common ground. Never use a capacitor across the field contact of the regulator, or between the field terminal and ground, unless the resistor is used. Failure to use the resistor could result in serious regulator damage.

Although there is no specific cure for radio interference, the high selectivity and noise limiting circuits which are built into the unit will minimize the effects of such interference.

SECTION 3. ANTENNA SYSTEMS, CABLES & GROUNDING

BASE STATION ANTENNA SYSTEMS

There are various types of base station roof-top antennas: ground plane; coaxial; beam; hybrid. The most common basic type is the vertical ground plane, consisting of a 108" vertical radiator insulated from several similar length rods arranged in a single horizontal plane; a variant with better radiation characteristics has additional horizontal rods 9 feet below the base of the vertical radiator to improve radiation characteristics. The coaxial antenna is a version of the latter antenna requiring far less clearance. While the previous antennas are omnidirectional and therefore have no gain, beam antennas of the familiar "Yagi" type are directional and do provide gain (directionality and gain both increasing with the number of elements). Beam antennas are best suited for communication between two base stations (fixed locations), although they may be used for base-to-mobile communication if equipped with rotators. Hybrid antennas are a late development from the ground plane type in which certain techniques are used to angle more of the radiation into a horizontal plane and less in the vertical direction. The effect is to produce an omnidirectional antenna with substantial gain.

MOBILE ANTENNA SYSTEMS

There are various types of mobile antennas; full 108" whip, either stainless steel or wire encased fiberglass; short-length fiberglass for cowl mounting, specially wound of insulated wire to resonate in the 27mc Citizens Band; cowl-mounting diplex antennas that operate both for CB and AM broadcast reception with a special dividing harness that provides separate connections for CB rig and AM radio and permit even simultaneous use.

For the 108" whip types, bumper and trunk lid mounts are available, and an antenna clip is normally supplied which attaches over the front door of the vehicle to hold down the antenna when there is head room limitations. Cowl-mounting antennas can fit into the hole provided for the car radio antenna.

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MARINE ANTENNA SYSTEMS

For marine use, it is possible to use quarter-wave mobile antennas with a ground plate of tin-foil or copper installed on the underside below the water line. A recent type of base station antenna particularly suitable for marine use is the fiberglass half-wave coaxial, which does not require any grounding provisions, since the antenna effectively contains its own ground. One maker offers both a full-length type (18-1/2 feet), requiring support a few feet up from its base, and a shortened coaxial with embedded loading coil (10-1/2 feet) that is somewhat less efficient but requires no support other than its base and is more suitable for smaller boats that have no cabin.

GROUNDING

Scrupulous attention should be given to the grounding instructions given with your antenna, both for personal safety and equipment safety in electrical storms, as well as optimized performance. The shield of the coax cable from the antenna may serve as both operating and protective ground, but this coax shield must be connected to a good earth ground, which may be a nearby cold water pipe, rigid conduit, metal building frame, or a metal ground rod (at least 8 feet long) driven into the ground for this purpose. The ground lead should be at least No. 8 aluminum or No. 10 copper wire (which need not be insulated) and run it as short and direct as possible from a chassis ground terminal* at the rear of the unit. Note that lightning arrestors are not necessary when the coax cable shield serves a ground and the unit itself is grounded as described above, but co-ax type arrestors may be used for the protection they offer the shield. If a co-ax arrestor is used, it should be placed near where the coax enters the house (but away from combustible material), and a ground wire must be connected to it so that it will serve its purpose. In addition, the antenna mast should be grounded, also with No. 8 aluminum or No. 10 copper wire. In making ground wire connections to a cold water pipe or ground rod, use clamps to assure positive contact.

*ground lug on rear panel mounting screw.

ANTENNA CABLE

If the antenna base is within 2 feet of the unit, as may frequently occur in mobile or marine installations, connect #16 standard insulated wire from the center terminal in the antenna base to the center pin terminal of the coax plug (PL259) going to the unit. Then run No. 8 aluminum or No. 10 copper wire from a chassis ground terminal on the rear of the unit directly to the nearest good ground point in the vehicle.

If a longer run is required, use RG58/U coax cable. It is possible to obtain various lengths (20, 50, or 100 feet for example) with a PL-259 coax connector at one end. To insure proper transmitter loading and the best results for various types of antennas, the coax cable must be trimmed to 11 feet 9 inches (1/2 wavelength) or any multiple thereof (23 feet 6 inches, 35 feet 2 inches, 47 feet, etc.). Select the nearest multiple that will meet the required run distance, with allowance for routing, and trim the cable to this length. On the antenna end, prepare the cable and connect it to the antenna as stipulated by the antenna manufacturer. On the set end, plug the PL-259 coax connector into the antenna connector on the rear of the unit. Be sure to observe grounding instructions.

SECTION 4. OPERATION

FUNCTIONS OF CONTROLS & TERMINALS

OFF switch/VOLUME control — Combined power on-off switch and receiving volume control. Volume control has no effect in transmit or PA use.

MICROPHONE receptacle — Mates with connector of ceramic noise-cancelling mike provided. Polarized to prevent wrong insertion.

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12. For PA (Public Address) use, an external speaker must be connected to the PA OUTPUT phono jack at the rear and the PA/CB switch on the panel set to PA. The panel VOLUME control has no control of the external speaker volume in PA operation and should be turned clockwise from OFF to the minimum volume position. If control of the external speaker volume is desired, use a 4-ohm or 8-ohm L-pad, depending on the external speaker impedance. PA operation is obtained with the mike p-t-t button held down; incoming signals on the selected channel will be heard over the external speaker with the mic p-t-t button up. The internal speaker is not used in PA operation.

NOTE: Use the microphone properly to avoid distorted transmissions. Hold it about 4 inches away and angled slightly toward the mouth. Speak past the microphone rather than at it.

*Asterisk denotes initial set-up or adjustment step not part of normal operating procedure.

13. To take advantage of the RANGE PLUS feature, place the RANGE PLUS switch in the ON position.

NOTE: For maximum efficiency, an output power/field strength/V.S.W.R. meter, such as the EICO 715 Trans-Match should be used in accordance with its instructions.

SECTION 5. MAINTENANCE

REMOVAL FROM CABINET

To remove the instrument from the cabinet, first disconnect it from the power line and remove four #6 sheet metal screws from the bottom. Unit can be removed from front or rear of cabinet.

WARNING

The voltages in this instrument are dangerous. Take caution to avoid personal contact with these voltages when the instrument is being operated outside of its cabinet.

SERVICE

The unit is accurately aligned and adjusted at the factory and should remain so in normal use. Wax or glyptol has been placed on the alignment and adjustment points and evidence of tampering shall void the warranty. People without electronic knowledge or experience, should confine their own servicing to tube or fuse replacement. (Please note that the 6BQ5 tube V4 is replaceable only by an RCA 6BQ5 or an EICO-supplied replacement.) People with electronic knowledge and experience may, in addition, undertake replacement of the relay or parts in the power supply, audio section, and meter-circuits, as well as any of the crystals, providing (and only providing) that these are EICO-supplied replacement crystals for this unit. Only qualified technicians with proper equipment may undertake realignment or tuning adjustments of either the receiver or transmitter sections. Note, furthermore, that FCC regulations require that any transmitter adjustments (other than output/antenna tuning) be made by, or under the supervision of a person holding a 1st or 2nd class commercial radiotelephone license.

The chart below shows the crystal pair used for each of the 24 channels. Each row and column is the group of channels that will be "out" if the particular crystal heading that row or column is defective.

MC \ MC	4.635	4.625	4.615	4.595
37.60	1	2	3	4
37.65	5	6	7	8
37.70	9	10	11	12

MC \ MC	4.635	4.625	4.615	4.595
37.75	13	14	15	16
37.80	17	18	19	20
37.85	21	22	22A	23

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VOLTAGE CHART

	Pin #1		Pin #2		Pin #3		Pin #4		Pin #5		Pin #6		Pin #7		Pin #8		Pin #9	
	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T
V1 6GH8	75	75	-5.5	-5.5	75	75	0	0	6.3 AC	6.3 AC	90	90	0	0	0	0	-2	-2
V2 6GH8	-3	50	-2	-3	-3	50	6.3 AC	6.3 AC	12.6 AC	12.6 AC	-3	225	0	0	0	0	-5	-13
V3 6BH6	-.4	-.2	0	.7	6.3 AC	6.3 AC	0	0	-3.2	240	-3.2	200	0	0				
V4 6BQ5	1.6	1.6	-105	*-6	0	0	6.3 AC	6.3 AC	12.6 AC	12.6 AC	1.6	1.6	280	240	1.6	1.6	280	230
V5 6GH8	110	0	-1	-50	85	0	6.3 AC	6.3 AC	0	0	250	0	.6	0	3.2	.8	0	0
V6 12BEG	*-12	0	0	0	12.6 AC	12.6 AC	0	0	*80	-.45	*75	0	-.4	0				
V7 6BA6	-.3	-50	0	0	0	0	6.3 AC	6.3 AC	130	0	70	0	.65	0				
V8 6BA6	-.2	-50	0	0	12.6 AC	12.6 AC	6.3 AC	6.3 AC	250	-.45	100	-.45	2.5	0				
V9 6EU7	6.3 AC	6.3 AC	0	0	0	0	0	0	-.3	-.6	28	38	68	75	‡ -6 to 27	0	0	0
V10 6AQ5	0	0	12.5	12.5	6.3 AC	6.3 AC	12.6 AC	12.6 AC	280	260	250	255	0	0				

NOTES: 1. R = Receive T = Transmit
2. All readings are in volts DC unless AC is stated
3. *Indicates voltage is variable, depending upon alignment of unit
4. All other voltages may vary ±10% with 117VAC line voltage

‡ Variable on Squelch Control

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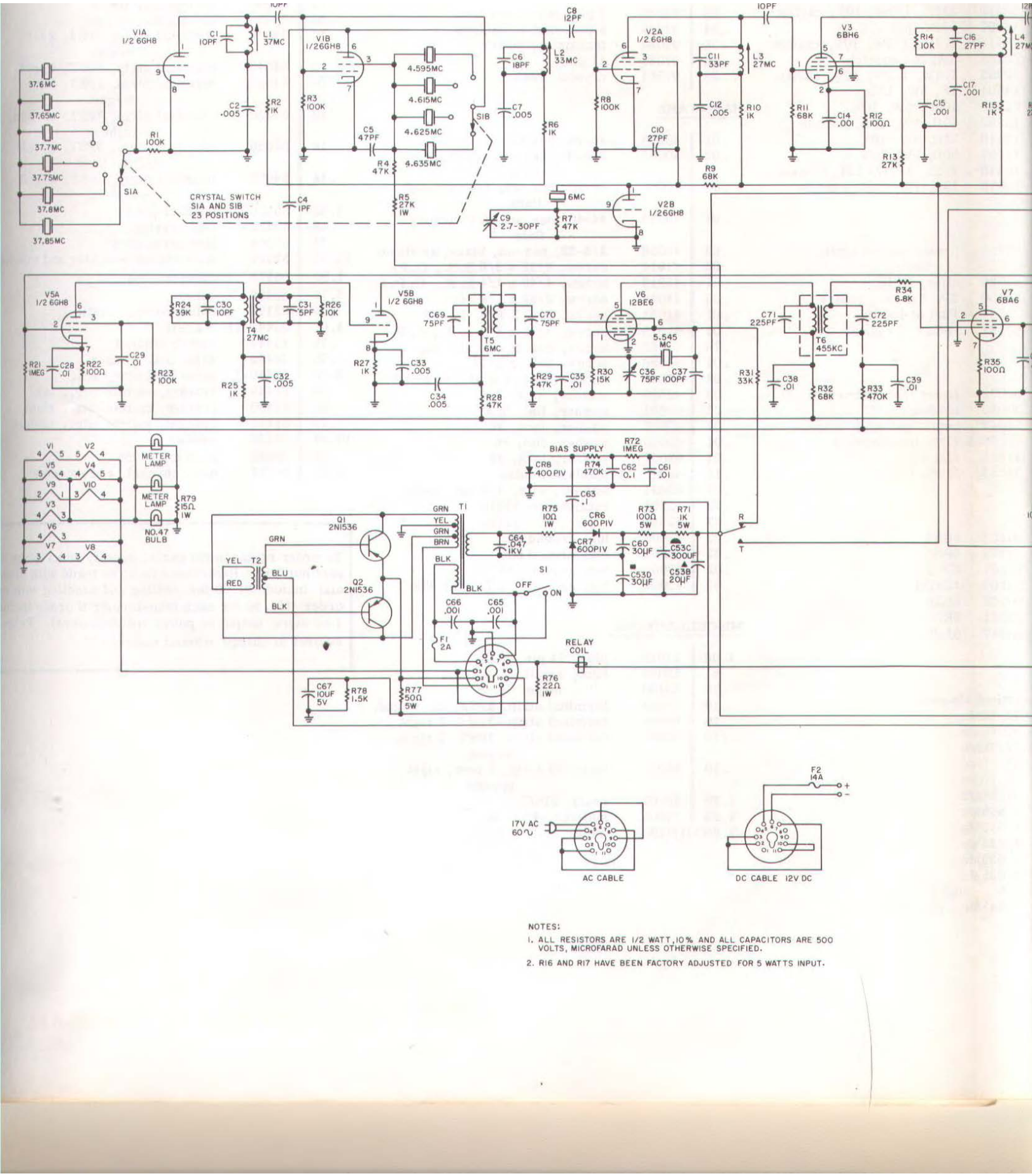

NOTES:

1. ALL RESISTORS ARE 1/2 WATT, 10% AND ALL CAPACITORS ARE 500 VOLTS, MICROFARAD UNLESS OTHERWISE SPECIFIED.
2. R16 AND R17 HAVE BEEN FACTORY ADJUSTED FOR 5 WATTS INPUT.

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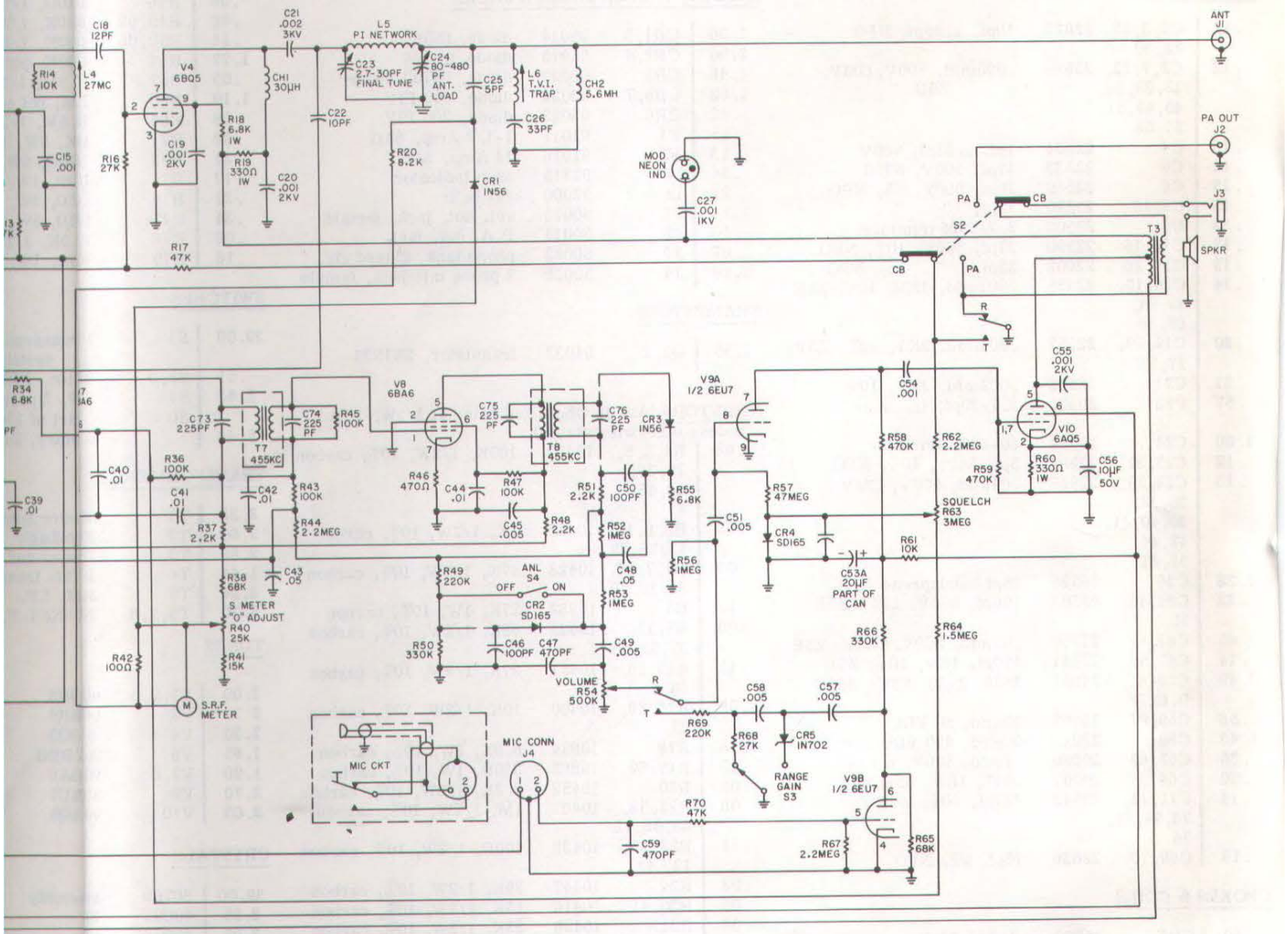

779A SCHEMATIC DIAGRAM

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PRICE EACH	SYM. #	STOCK#	DESCRIPTION
CAPACITORS (Are in UFD unless stated otherwise)			
.42	C1, 3, 13, 22, 30	22017	10pf, ±.25pf, NPO
.12	C2, 7, 12, 32, 33, 34, 45, 49, 51, 57, 58	22526	.005mfd, 500V, GMV, Z5U
.13	C4	22604	1pf, ±.25pf, 500V
.12	C5	22533	47pf, 500V, N750
.15	C6	22569	18pf, 500V, 5%, NPO
.15	C8, 18	22570	12pf, " " "
.33	C9	29503	2.7-30pf trimmer
.12	C10, 16	22590	27pf, 500V, 10%, NPO
.15	C11, 26	22603	33pf, " 5%, NPO
.14	C14, 15, 17, 54, 65, 66	22555	.001mfd, 1KV, 10%, Z5E
.20	C19, 20, 27, 55	22557	.001mfd, 2KV, 20%, Z5P
.31	C21	22582	.002mfd, 3KV, 10%
.57	C23	29523	2.7-30pf, trimmer
1.00	C24	29524	60-460, trimmer
.12	C25, 31	22594	5pf, 500V, 10%, NPO
.13	C28, 29, 35, 38, 39, 40, 41, 42, 44, 52, 61	22505	.01mfd, 500V, GMV
2.28	C36	29525	75pf bandspread
.12	C37, 46, 50	22509	100pf, 500V, 10%, Z5E
.45	C43, 48	22560	.05mfd, 500V, GMV, Z5E
.14	C47, 59	22541	470pf, 1KV, 10%, Z5E
3.49	C53-A, B, C, D	24037	2x20, 2x30, NPO, 450V
.58	C56, 67	23065	10mfd, 50 VDC
1.43	C60	23016	30mfd, 400 VDC
.35	C62, 63	20089	.1mfd, 400V, mylar
.50	C64	20097	.047, 1KV, tubular
.14	C71, 72, 73, 74, 75, 76	22543	225pf, 10%, Z5E
.19	C69, 70	22636	75pf, 5%, NPO
CHOKES & COILS			
.60	CH1	35079	choke, 30uh
.72	CH2	35078	choke, 5.6uh
1.02	L1, 23	36057	37-33-27 Mc Osc. coil
1.08	L4	36058	27Mc buffer coil
.90	L5	35080	ant. pi network coil
.72	L6	36059	TVI trap

PRICE EACH	SYM. #	STOCK#	DESCRIPTION
DIODES, FUSES, BULBS & JACKS			
1.00	CR1, 3	95014	diode, IN56
2.60	CR2, 4	95015	diode, SD165
1.48	CR5	93032	diode, IN702 Zener
1.62	CR6, 7	93022	diode, 600 PIV
.82	CR8	93023	diode, 200 PIV
.15	F1	91017	1-1/2 Amp, 3AG
.13	F2	91016	14 Amp, 3AG
.54	I1	97715	neon indicator
.21	I2	92000	#47 bulb
1.74	J1	50023	ant. out, jack, female
.10	J2	50014	P.A. out. jack
.67	J3	50022	phone jack, closed cir.
1.80	J4	50036	2 prong mic jack, female
TRANSISTORS			
1.95	Q1, 2	94032	transistor, 2N1536
RESISTORS (Are in Ohms and rated at 1/2W, 10% unless otherwise stated)			
.08	R1, 3, 8, 23, 36, 43, 45, 47	10410	100K, 1/2W, 10%, carbon
.08	R2, 6, 10, 15, 25, 27,	10432	1K, 1/2W, 10%, carbon
.09	R4, 7, 17, 28, 29, 70	10428	47K, 1/2W, 10%, carbon
.18	R5	10832	27K, 1W, 10%, carbon
.09	R9, 11, 32, 38, 65	10422	68K, 1/2W, 10%, carbon
.11	R13, 16, 68	10451	27K, 1/2W, 10%, carbon
.08	R14, 26, 61	10400	10K, 1/2W, 10%, carbon
.18	R18	10854	6.8K, 1W, 10%, carbon
.18	R19, 60	10862	330Ω, 1W, 10%, carbon
.08	R20	10452	8.2K, 1/2W, 10%, carbon
.08	R21, 52, 53, 56, 72	10407	1M, 1/2W, 10%, carbon
.11	R22, 35, 12, 42	10439	100Ω, 1/2W, 10%, carbon
.08	R24	10447	39K, 1/2W, 10%, carbon
.08	R30, 41	10416	15K, 1/2W, 10%, carbon
.08	R31	10426	33K, 1/2W, 10%, carbon
	R33, 58, 59, 74	10431	470K, 1/2W, 10%, carbon
.08	R34, 55	10421	6.8K, 1/2W, 10%, carbon
.08	R37, 48, 51	10423	2.2K, 1/2W, 10%, carbon
1.18	R40	18158	25K, "O" set pot
.11	R39	10424	22K, 1/2W, 10%, carbon
.08	R44, 62, 67	10434	2.2M, 1/2W, 10%, carbon

PRICE EACH	SYM. #	STOCK
.08	R46	10429
.08	R49, 69	10417
.11	R50, 66	10412
1.77	R54	18002
.09	R57	10418
1.19	R63	18168
.08	R64	10455
.33	R71	14501
.31	R73	14519
.17	R75	10885
.31	R76	14518
.34	R77	14507
.08	R78	10442
.18	R79	10870
SWITCHES		
39.00	S1	86709
.51	S2, 3	62029
2.43	S4	60180
	S6	
5.46		60167
TRANSFORMERS		
8.28	T1	30079
2.60	T2	30080
2.88	T3	32043
1.44	T4	36060-
3.24	T5	34652
5.10	T6, 7, 8	34653
TUBES		
3.00	V1, 2, 5	90103
2.75	V3	90079
2.30	V4	90107
1.65	V6	90104
1.90	V7, 8	90062
2.70	V9	90091
2.00	V10	90047
CRYSTALS		
39.00	86709	switch
3.95	49095	37.60
3.95	49096	37.65
3.95	49097	37.70
3.95	49098	37.75
3.95	49099	37.80
3.95	49100	37.85
3.95	49101	4.595
3.95	49102	4.615
3.95	49103	4.625
3.95	49104	4.635
3.95	49104	4.635
3.95	49105	6Mc -
3.95	49106	5.545

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rs list

ɛ#	DESCRIPTION
	470Ω, 1/2W, 10%, carbon
	220K, 1/2W, 10%, carbon
	330K, 1/2W, 10%, carbon
	500K, pot V.C.
	4.7M, 1/2W, 10%, carbon
	3M, pot squelch
	1.5M, 1/2W, 10%, carbon
	1K, 5W, 10%
	100Ω, 5W, 10%
	10Ω, 1W, 10%, carbon
	22Ω, 5W, 10%
	50Ω, 5W, 10%
	1.5K, 1/2W, 10%, carbon
	15Ω, 1W, 10%, carbon
	preassembled synth.
	switch
	slide, DPDT,
	2P, 2 posn., rotary
	Part of 18002
	rotary, 24 posn.
	power transformer
	feedback "
	output and mod. trans.
2	27Mc transformer
	6Mc I.F. "
	455Kc I.F. "
	6GH8
	6BH6
	6BQ5
	12BEG
	6BA6
	6EU7
	6AQ5
	assembly
	Mc
	Mc
	Mc
	Mc
	Mc
	Mc
	Mc
	Mc
	Mc
	Mc
	Mc
	plug in
	Mc - plug in

PRICE EACH	STOCK#	DESCRIPTION
SOCKETS		
.19	97035	7 pin, min., low loss
.24	97039	9 pin, min., low loss
.15	97084	transistor, power
.85	97085	11 pin
.23	97501	crystal socket
HARDWARE		
.01	40000	#6-32, hex nut
.02	40001	3/8-32, hex nut, 1/2" across flats
.01	40007	#4-40, hex nut, 1/4" across flats
.01	40022	#4-40, hex nut, 3/16 across flats
.02	40058	3/8-32, hex nut, black, anodized
.01	41014	screw, 6/32 x 3/8 B.H., C.P.
.01	41016	screw, 4/40 x 1/4 B.H., C.P.
.03	41024	screw, 8/32 x 1/4 set
.01	41034	screw, #6 x 3/8 P.H., PK.
.01	41075	screw, 4/40 x 3/8 B.H., C.P.
.78	41085	screw, thumb, mobile mtg.
.01	41086	screw, 6/32 x 5/16
.02	41145	screw, 6 x 1/2 H.H., w/slot PK.
.02	42000	washer, lock, 3/8
.01	42001	washer, flat, 3/8
.01	42002	washer, lock, #6
.01	42005	washer, flat, #6
.01	42007	washer, lock, #4
.11	42048	insulator, mica
.05	42051	washer, lock, 1/4 ext. tooth
.02	42501	retainer for 51019
.02	42511	" " 97715
.02	43000	lug, ground #6
.02	43001	lug, ground pot
.02	43006	lug, ground, #4
.03	43007	lug, ground, #4 Zierick 355
MISCELLANEOUS		
1.08	51019	plug, 11 pin, male
.81	53099	knob, small
.79	53100	" large
.10	54005	terminal strip, 2PST, rt. w/gnd.
.10	54006	terminal strip, 3PST, 2 right
.10	54007	terminal strip, 3PST, 2 right, w/gnd.
.10	54010	terminal strip, 2 post, right, upright
7.20	39007	relay, 3PDT
4.23	55005	speaker, 4" P.M.
7.88	(M1)71008	meter, S-RF, 0-1 mic.

PRICE EACH	STOCK#	DESCRIPTION
.47	97730	pilot light assembly
.42	97802	fuseholder, black
.40	97808	fuseholder, in line
.10	54015	terminal strip, 3PST, 2 left, w/gnd.
.10	54018	terminal strip, 4PST, w/gnd.
.10	54023	terminal strip, 2PST, left, w/gnd.
.10	54030	terminal strip, 3PST, upright, right
.18	54029	terminal strip, 3PST, 2 right, w/gnd. strip
.14	54027	terminal strip, 2PST, w/gnd., stand-up
1.62	55400	speaker grill
.18	56529	clip crystal
.77	57004	line cord, grey
11.91	51504	microphone with plug and bracket
1.50	66178	operating manual
8.75	80198	panel
.06	81175	cable clamp, plastic
8.00	81443-11	chassis
.75	81444	switch bracket
.55	81445	27Mc coil bracket
4.00	81446-2	panel heat sink back.
.50	81449	bracket, mobile mtg., left
.50	81450	bracket, mobile mtg., right
.50	81451	bracket, mobile mtg., cabinet
10.00	88135	cabinet
.38	89655	hood for 97085
2.22	89764	dial, channel, red selector

To order replacement parts, specify description and part number. Remittance must be made with order, and include $1.00 for mailing and handling with each order ($1.50 for each transformer if order includes 1 or more output or power transformers). Prices subject to change without notice.

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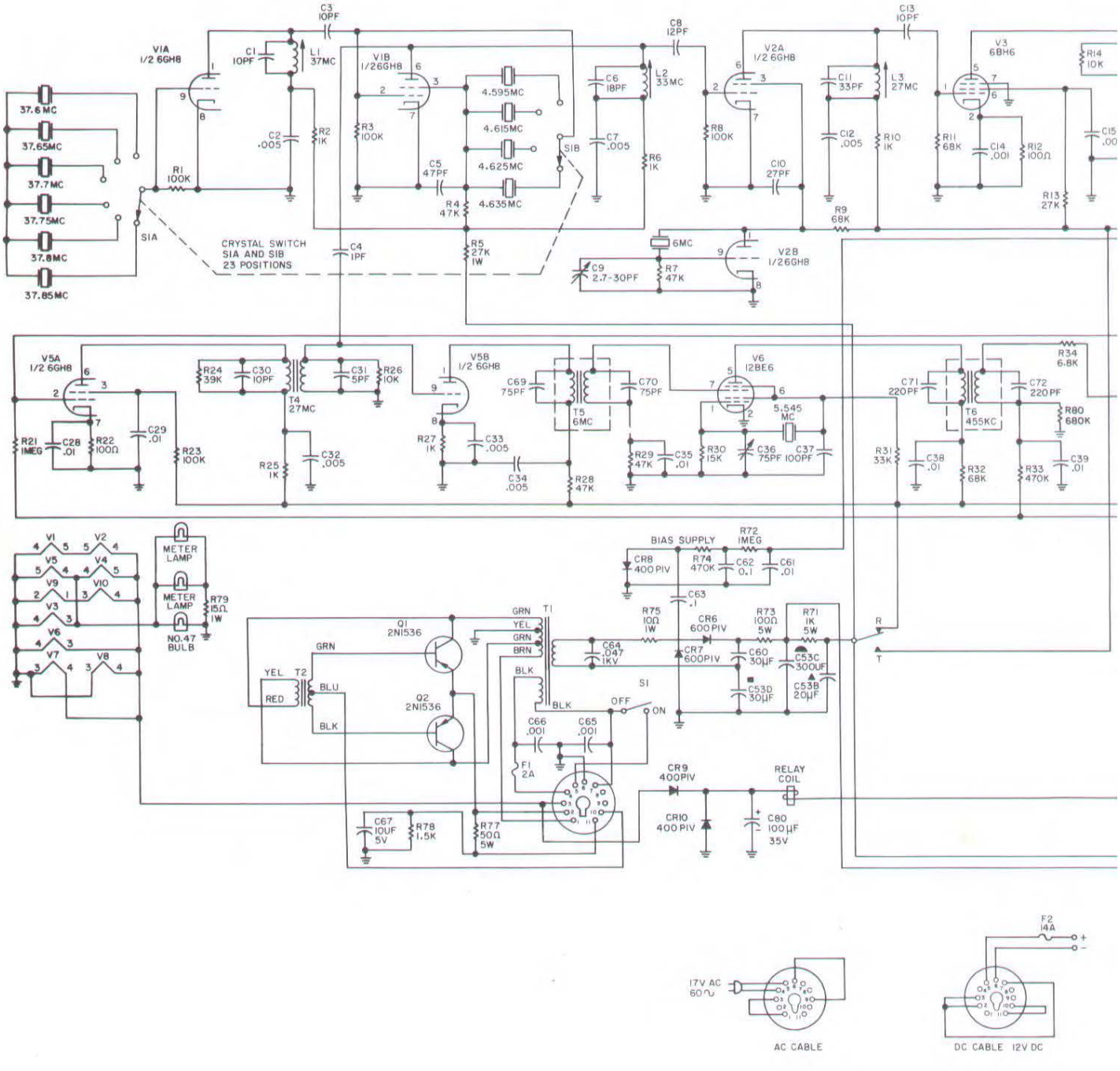

NOTES:

1. ALL RESISTORS ARE 1/2 WATT, 10% AND ALL CAPACITORS ARE 500 VOLTS, MICROFARAD UNLESS OTHERWISE SPECIFIED.
2. R16 AND R17 HAVE BEEN FACTORY ADJUSTED FOR 5 WATTS INPUT.

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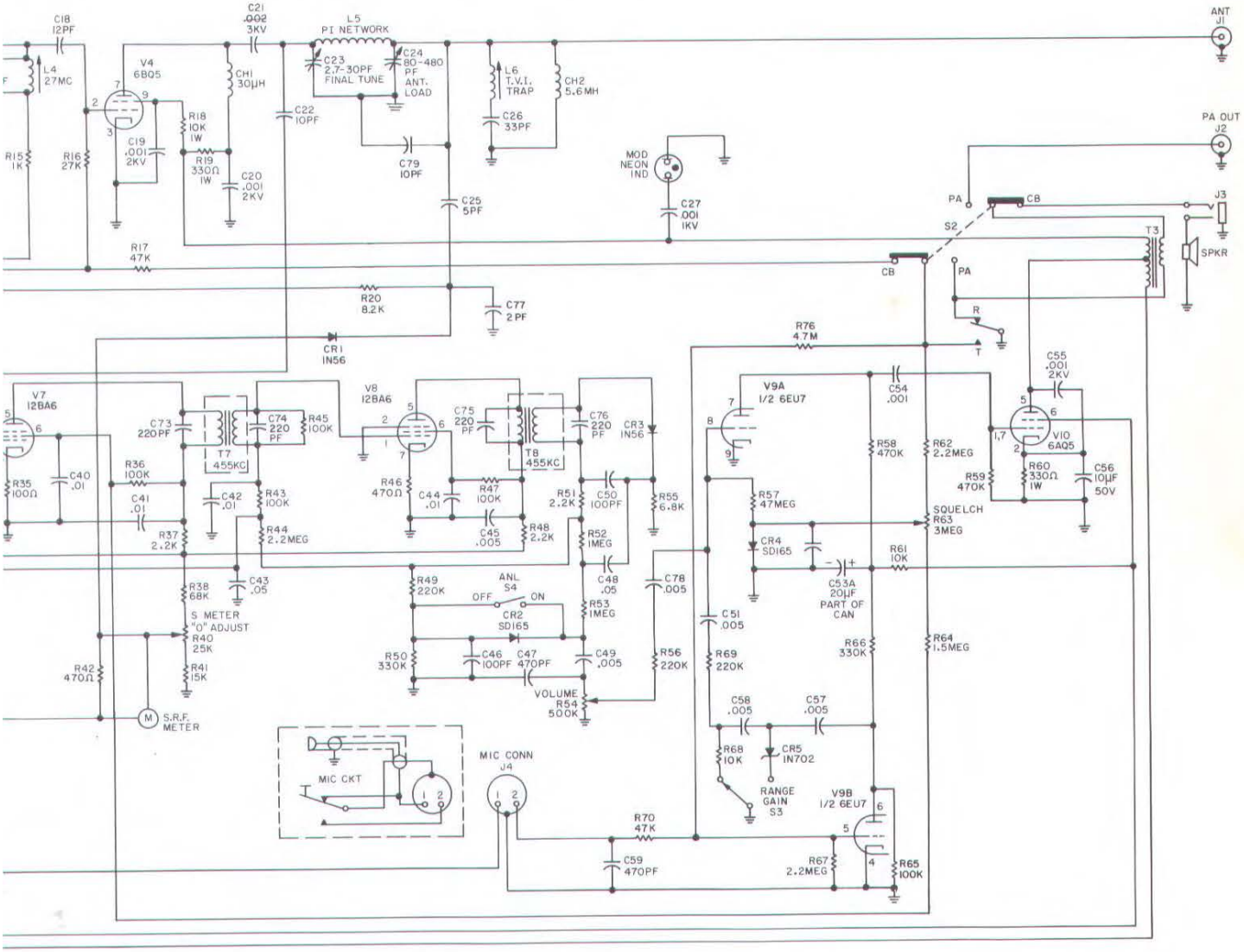
MODEL 779A ADDENDUM

Design changes have been introduced to improve your unit's performance. Please disregard the Schematic Diagram and Parts List found in your manual, and use those attached. Also, on Page 11, Voltage Chart, and Page 12, Figure 4, change V7 and V8 from 6BA6 to 12BA6. All other information in the manual is correct.

I.E. 1712 EICO Electronic Instrument Co., Inc., 131-01 39th Avenue, Flushing, N.Y. 11352



779A SCHEMATIC DIAGRAM

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PRICE EACH	SYM. #	STOCK#	DESCRIPTION
CAPACITORS (Are in UFD unless stated otherwise)			
.42	C1, 3, 13, 22, 30, 79	22017	10pf, ±.25pf, NPO
.12	C2, 7, 12, 32, 33, 34, 45, 49, 51, 57, 58, 78	22526	.005mfd, 500V, GMV, Z5U
.13	C4	22604	1pf, ±.25pf, 500V
.12	C5	22533	47pf, 500V, N750
.15	C6	22569	18pf, 500V, 5%, NPO
.15	C8, 18	22570	12pf, " " "
.33	C9	29503	2.7-30pf trimmer
.12	C10, 16	22590	27pf, 500V, 10%, NPO
.15	C11, 26	22603	33pf, " 5%, NPO
.14	C14, 15, 17, 54, 65, 66	22555	.001mfd, 1KV, 10%, Z5E
.20	C19, 20, 27, 55	22557	.001mfd, 2KV, 20%, Z5P
.31	C21	22582	.002mfd, 3KV, 10%
.57	C23	29523	2.7-30pf, trimmer
1.00	C24	29524	60-460, trimmer
.12	C25, 31	22594	5pf, 500V, 10%, NPO
.13	C28, 29, 35, 38, 39, 40, 41, 42, 44, 52, 61	22505	.01mfd, 500V, GMV
.30	C77	22023	2pf, ±.25pf, NPO
2.28	C36	29525	75pf bandspread
.12	C37, 46, 50	22509	100pf, 500V, 10%, Z5E
.45	C43, 48	22560	.05mfd, 500V, GMV, Z5E
.14	C47, 59	22541	470pf, 1KV, 10%, Z5E
3.49	C53-A, B, C, D	24037	2x20, 2x30, NPO, 450V
.58	C56, 67	23065	10mfd, 50 VDC
1.43	C60	23016	30mfd, 400 VDC
.35	C62, 63	20089	.1mfd, 400V, mylar
.50	C64	20097	.047, 1KV, tubular
.14	C71, 72, 73, 74, 75, 76	21258	220pf, 300V, 5%
.19	C69, 70	21265	75pf, 5%, NPO
1.00	C80	23079	100mfd, 35VDC
CHOKES & COILS			
.60	CH1	35079	choke, 30uh
.72	CH2	35078	choke, 5.6uh
1.02	L1, 2, 3	36057	37-33-27 Mc Osc. coil
1.08	L4	36058	27Mc buffer coil
.90	L5	35080	ant. pi network coil
.72	L6	36059	TVI trap

PRICE EACH	SYM. #	STOCK#	DESCRIPTION
DIODES, FUSES, BULBS & JACKS			
1.00	CR1, 3	95014	diode, IN56
2.60	CR2, 4	95015	diode, SD165
1.48	CR5	93032	diode, IN702 Zener
1.62	CR6, 7	93022	diode, 600 PIV
.82	CR8, 9, 10	93023	diode, 400 PIV
.15	F1	91017	1-1/2 Amp, 3AG
.13	F2	91016	14 Amp, 3AG
.54	I1	97715	neon indicator
.21	I2	92000	#47 bulb
1.74	J1	50023	ant. out, jack, female
.10	J2	50014	P.A. out. jack
.67	J3	50022	phone jack, closed cir.
1.80	J4	50036	2 prong mic jack, female
TRANSISTORS			
1.95	Q1, 2	94032	transistor, 2N1536
RESISTORS (Are in Ohms and rated at 1/2W, 10% unless otherwise stated)			
.08	R1, 3, 8, 23, 36, 43, 45, 47, 65	10410	100K, 1/2W, 10%, carbon
.08	R2, 6, 10, 15, 25, 27,	10432	1K, 1/2W, 10%, carbon
.09	R4, 7, 17, 28, 29, 70	10428	47K, 1/2W, 10%, carbon
.18	R5	10832	27K, 1W, 10%, carbon
.09	R9, 11, 32, 38,	10422	68K, 1/2W, 10%, carbon
.11	R13, 16,	10451	27K, 1/2W, 10%, carbon
.08	R14, 26, 61, 68	10400	10K, 1/2W, 10%, carbon
.18	R18	10853	10K, 1W, 10%, carbon
.18	R19, 60	10862	330Ω, 1W, 10%, carbon
.08	R20	10452	8.2K, 1/2W, 10%, carbon
.08	R21, 52, 53, 72	10407	1M, 1/2W, 10%, carbon
.11	R22, 35, 12,	10439	100Ω, 1/2W, 10%, carbon
.08	R24	10447	39K, 1/2W, 10%, carbon
.08	R30, 41	10416	15K, 1/2W, 10%, carbon
.08	R31	10426	33K, 1/2W, 10%, carbon
	R33, 58, 59, 74	10431	470K, 1/2W, 10%, carbon
.08	R34, 55	10421	6.8K, 1/2W, 10%, carbon
.08	R37, 48, 51	10423	2.2K, 1/2W, 10%, carbon
1.18	R40	18158	25K, "O" set pot
.11	R39	10424	22K, 1/2W, 10%, carbon
.08	R44, 62, 67	10434	2.2M, 1/2W, 10%, carbon
.08	R80	10408	680K, 1/2W, 10% car.

PRICE EACH	SYM. #	STOC
.08	R42, 46	1042
.08	R49, 56, 69	1041
.11	R50, 66	1041
1.77	R54	1800
.09	R57, 76	1041
1.19	R63	1816
.08	R64	1045
.33	R71	1450
.31	R73	1451
.17	R75	1088
.34	R77	1450
.08	R78	1044
.18	R79	1087
SWITCHES		
39.00	S1	8670
.51	S2, 3	6202
2.43	S4	6018
	S6	
5.46		6016
TRANSFORMERS		
8.28	T1	3007
2.60	T2	3008
2.88	T3	3204
1.44	T4	3606
3.24	T5	3465
5.10	T6, 7, 8	3465
TUBES		
3.00	V1, 2, 5	9010
2.75	V3	9007
2.30	V4	9010
1.65	V6	9010
1.00	V7, 8	9010
2.70	V9	9009
2.00	V10	9004
CRYSTALS		
39.00	86709	switc
3.95	49095	37.60
3.95	49096	37.65
3.95	49097	37.70
3.95	49098	37.75
3.95	49099	37.80
3.95	49100	37.85
3.95	49101	4.595
3.95	49102	4.615
3.95	49103	4.625
3.95	49104	4.635
3.95	49104	4.635
3.95	49105	6Mc
3.95	49106	5.545

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LIST

DESCRIPTION
)Ω, 1/2W, 10%, carbon
)K, 1/2W, 10%, carbon
)K, 1/2W, 10%, carbon
)K, pot V.C.
7M, 1/2W, 10%, carbon
, pot squelch
5M, 1/2W, 10%, carbon
, 5W, 10%
)Ω, 5W, 10%
Ω, 1W, 10%, carbon
Ω, 5W, 10%
5K, 1/2W, 10%, carbon
Ω, 1W, 10%, carbon
assembled synth.
switch
le, DPDT,
2 posn., rotary
t of 18002
ary, 24 posn.
er transformer
lback "
ut and mod. trans.
lc transformer
I.F. "
Kc I.F. "
8
6
5
EG
A6
7
5
bly
n
ug in

PRICE EACH	STOCK#	DESCRIPTION
SOCKETS		
.19	97035	7 pin, min., low loss
.24	97039	9 pin, min., low loss
.15	97084	transistor, power
.85	97085	11 pin
.23	97501	crystal socket
HARDWARE		
.01	40000	#6-32, hex nut
.02	40001	3/8-32, hex nut, 1/2" across flats
.01	40007	#4-40, hex nut, 1/4" across flats
.01	40022	#4-40, hex nut, 3/16 across flats
.02	40058	3/8-32, hex nut, black, anodized
.01	41014	screw, 6/32 x 3/8 B.H., C.P.
.01	41016	screw, 4/40 x 1/4 B.H., C.P.
.03	41024	screw, 8/32 x 1/4 set
.01	41034	screw, #6 x 3/8 P.H., PK.
.01	41075	screw, 4/40 x 3/8 B.H., C.P.
.78	41085	screw, thumb, mobile mtg.
.01	41086	screw, 6/32 x 5/16
.02	41145	screw, 6 x 1/2 H.H., w/slot PK.
.02	42000	washer, lock, 3/8
.01	42001	washer, flat, 3/8
.01	42002	washer, lock, #6
.01	42005	washer, flat, #6
.01	42007	washer, lock, #4
.11	42048	insulator, mica
.05	42051	washer, lock, 1/4 ext. tooth
.02	42501	retainer for 51019
.02	42511	" " 97715
.02	43000	lug, ground #6
.02	43001	lug, ground pot
.02	43006	lug, ground, #4
.03	43007	lug, ground, #4 Zierick 355
MISCELLANEOUS		
1.08	51019	plug, 11 pin, male
.81	53099	knob, small
.79	53100	" large
.10	54005	terminal strip, 2PST, rt. w/gnd.
.10	54006	terminal strip, 3PST, 2 right
.10	54007	terminal strip, 3PST, 2 right, w/gnd.
.10	54010	terminal strip, 2 post, right, upright
6.76	39011	relay, 2PDT
4.23	55005	speaker, 4" P.M.
7.88	(M1)71008	meter, S-RF, 0-1 mic.

PRICE EACH	STOCK#	DESCRIPTION
.47	97730	pilot light assembly
.42	97802	fuseholder, black
.40	97808	fuseholder, in line
.10	54015	terminal strip, 3PST, 2 left, w/gnd.
.10	54018	terminal strip, 4PST, w/gnd.
.10	54023	terminal strip, 2PST, left, w/gnd.
.10	54030	terminal strip, 3PST, upright, right
.14	54027	terminal strip, 2PST, w/gnd., stand-up
1.62	55400	speaker grill
.18	56529	clip crystal
.77	57004	line cord, grey
11.91	51504	microphone with plug and bracket
1.50	66178	operating manual
8.75	80198	panel
.06	81175	cable clamp, plastic
8.00	81443-11	chassis
.75	81444	switch bracket
.55	81445	27Mc coil bracket
4.00	81446-2	panel heat sink back.
.50	81449	bracket, mobile mtg., left
.50	81450	bracket, mobile mtg., right
.50	81451	bracket, mobile mtg., cabinet
10.00	88135	cabinet
.38	89655	hood for 97085
2.22	89764	dial, channel, red selector

To order replacement parts, specify description and part number. Remittance must be made with order, and include $1.00 for mailing and handling with each order ($1.50 for each transformer if order includes 1 or more output or power transformers). Prices subject to change without notice.

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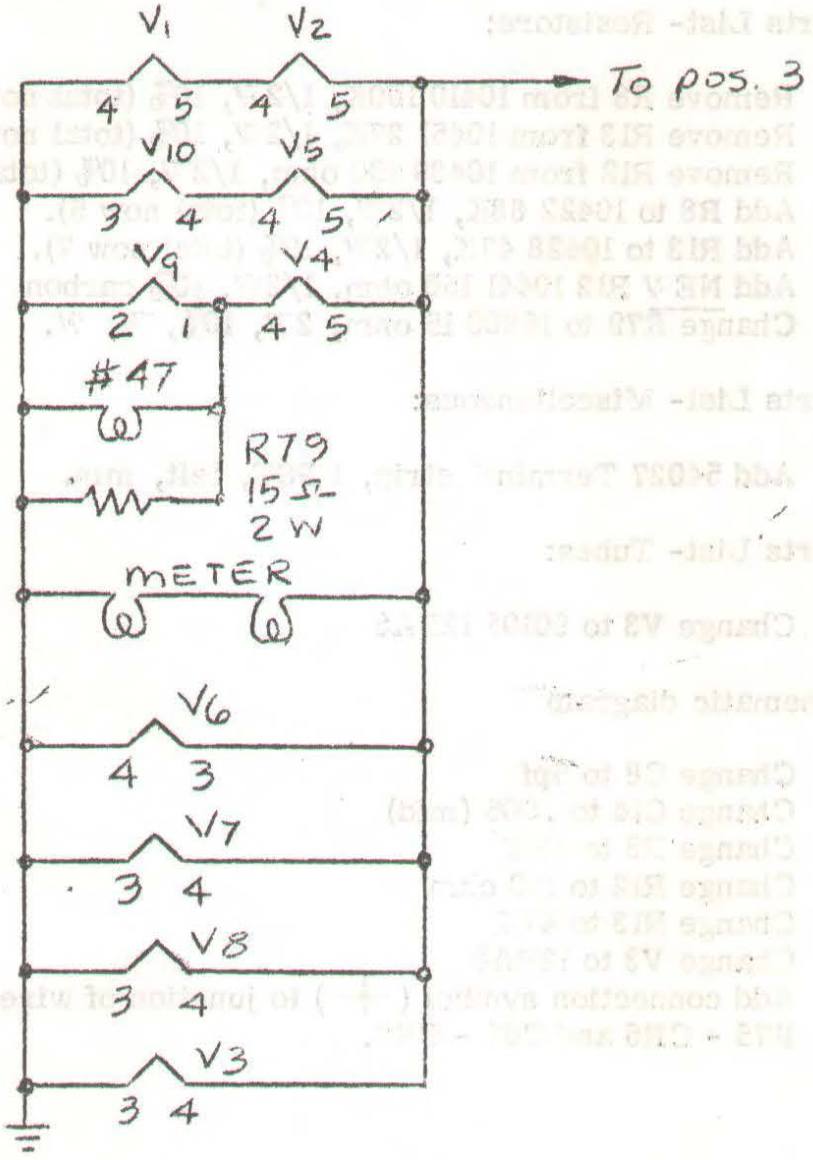
Schematic diagram (contd)

Add ground symbol (⏚) to wire between 37.8 mc and 37.85 mc crystals on switch S1A.

Remove the connection of C79 from the junction of C25 and L6, and reconnect to the junction of C22 and C21.

Remove the complete circuit of the filaments of V1 to V10 (including meter bulbs, #47 bulb and R79).

Add the following circuit as shown, including R79 value change.



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Model 779A Addendum

Please make the following additional changes to the NEW schematic diagram and parts list supplied with your manual (I.E. 1712).

Parts List- Capacitors:

Remove C8 from 22570 12pf, 500V, 5%, NPO (total now 1).
Remove C14 from 22555 .001mfd, 1KV, 10% Z5E (total now 5).
Add C8 to 22594 5pf, 500V, 10% NPO (total now 3).
Add C14 to 22526 .005mfd, 500V, GMV, Z5U (total now 13).

Parts List- Resistors:

Remove R8 from 10410 100K, 1/2W, 10% (total now 8).
Remove R13 from 10451 27K, 1/2W, 10% (total now 1).
Remove R12 from 10439 100 ohm, 1/2W, 10% (total now 2).
Add R8 to 10422 68K, 1/2W, 10% (total now 5).
Add R13 to 10428 47K, 1/2W, 10% (total now 7).
Add NEW R12 10441 150 ohm, 1/2W, 10% carbon
Change R79 to 15800 15 ohm, 2W, 10%, W. W.

Parts List- Miscellaneous:

Add 54037 Terminal strip, 1 PST, left, min.

Parts List- Tubes:

Change V3 to 90105 12BA6

Schematic diagram

Change C8 to 5pf
Change C14 to .005 (mfd)
Change R8 to 68K
Change R12 to 150 ohm
Change R13 to 47K
Change V3 to 12BA6
Add connection symbol (⊕) to junction of wires between R75 - CR6 and C63 - CR7.

(cont'd)

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EICO
Service Policy

PARTS REPLACEMENT

If it appears that a component is defective, and you desire a replacement, contact your nearest EICO Authorized Service Agency or our Customer Service Department.

If you are claiming the right to a no-charge replacement under the terms and conditions of the warranty, it is required that you shall have sent in the registration card within 10 days of the date of purchase, and that you send back the defective part transportation prepaid. In claiming warranty service or parts, please send or show your **original sales slip** plus the IBM card from the carton. EICO or its authorized agency will make the necessary replacement at no charge for parts eligible under the terms and conditions of the warranty. In returning tubes, pack them very carefully to avoid breakage in shipment. Broken tubes will not be replaced. Please read the warranty on the subject of parts eligible for replacement.

Further information required on a part returned for a no-charge replacement under the terms and conditions of the warranty is as follows:

a) Model number and serial number, if any, of unit. Also any code numbers in red under the words INSTRUCTION MANUAL on the cover of the book supplied with the unit.

b) **Stock number and description of part as given on the parts list. If the part is not listed (of itself) in the parts list, it means that the part is integral with a sub-assembly, which we consider replaceable only as an entity. Parts integral with a sub-assembly may be listed in the parts list, so identified, if we consider that some or all of the parts may be individually replaced in the field under appropriate circumstances. If your unit is out of warranty, you are generally advised to order a replacement sub-assembly.**

c) Describe as completely as possible the nature of the defect, or reason for requiring replacement.

REPAIR SERVICE

EICO maintains a national network of authorized service agencies for in-warranty or out-of-warranty repair of EICO equipment. It is intended to serve those customers who are not sufficiently familiar with electronics to make use of the EICO Service Consultation facilities, or whose difficulties cannot be solved by correspondence.

For all out-of-warranty units, there is a minimum labor and handling fee. Charges for parts replaced are additional to the minimum fee.

For in-warranty completed kit units, there is a minimum labor and handling fee. There is no charge for a replaced defective part provided that the terms and conditions of the warranty for no charge replacement are not violated in the judgement of EICO.

For in-warranty factory-wired units, there is no charge for labor or parts if the unit complies with the terms and conditions of the warranty in the judgement of EICO. However, if the terms and conditions of the warranty are violated there will be a charge for labor plus parts.

In all cases, the unit must be sent to the factory or service agency transportation prepaid, and the unit will be returned to the customer transportation collect.

On kits, the services rendered for the minimum labor and handling fee are the correction of any minor wiring errors (not extensive corrections or rewiring), the labor involved in replacing defective parts, and any adjustments, alignment, or calibration procedures that would normally be performed on a factory-wired unit. Units not wired according to instructions, or modified in any way, or showing evidence of the use of acid core solder, will not be serviced and will be returned to the customer forthwith.

SEE OUR SCHEDULE OF SERVICE CHARGES

Units requiring extensive corrections or rewiring will incur an additional labor charge. An advance estimate will be submitted.

Please note: minimum labor and handling fees and service charges are subject to revision at any time.

LOCAL REPAIR FACILITIES

A list of authorized service stations is provided with this manual. The roster of stations may change from time to time, and if considerable time has elapsed since you purchased your unit, you are advised to contact the station you choose before sending the unit to them for repair. Use of a local service station will often result in faster service, and, usually, lower transportation costs.

It is necessary that you comply with the Shipping Instructions that follow when sending in a unit for service.

SHIPPING INSTRUCTIONS

You are strongly advised to retain the original shipping carton and inserts should reshipment be required for service or any other purpose. The carton may be collapsed for storage in as small a space as possible. In very many cases, the same carton is used for kit and factory-wired units so that the kit carton will serve for reshipment of the completed kit.

When sending a unit for service pack the unit very carefully, preferably in the original shipping carton **with the original inserts.**

If this is not possible, use a strong oversize carton, preferably wood, and using at least 3 inches of resilient packing material such as shredded paper or excelsior inserted between all sides of the unit and the carton. Seal the carton with strong gummed paper tape or strong twine or both. Attach a tag to the instrument on which is printed your name and address and brief reference to the trouble experienced. Affix "FRAGILE" or "HANDLE WITH CARE" labels to at least four sides of the carton or print these words large and clear with a bright color crayon. Ship prepaid.

Include your name and address on the outside of the carton. Return shipment will be made transportation charges collect. Note that a carrier cannot be held liable for damage in transit, if packing, IN HIS OPINION, is insufficient.

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THE EICO WARRANTY

The Electronic Instrument Company, Inc., hereafter referred to as EICO, warrants that, for a period of 90 days from the date of purchase, any EICO kit will be free of defects in parts, and that any EICO factory-wired unit will be free of defects in parts and workmanship. For an EICO kit, EICO's obligation is limited to those parts which are returned transportation prepaid to the factory or authorized service agency without further damage, and in the judgement of EICO are either originally defective or have become defective in normal use. EICO's obligation does **not** include any labor required to locate trouble in or repair a kit. For an EICO factory-wired unit, EICO's obligation is limited to replacement or repair, at EICO's option, of those parts, sections, or entire units returned transportation prepaid to the factory or authorized service agency without further damage, and in the judgement of EICO are either originally defective or have become defective in normal use.

The warranty does not apply to any parts damaged in the course of handling, assembling, or wiring by the customer, or damaged due to abnormal usage or in violation of instructions or reasonable practice, or further damaged to a consequential degree in return shipment. Furthermore, the foregoing warranty is made only to the original customer, and is and shall be in lieu of all other warranties, whether expressed or implied, and of all other obligations or liabilities on the part of EICO, and in no event shall EICO be liable for any anticipated profits, consequential damages, loss of time, or other losses incurred by the customer in connection with the purchase or operation of EICO products or components thereof.

The registration card, which accompanies each EICO kit or factory-wired unit, must be filled in and returned to the company within 10 days after the date of purchase. This warranty applies only to registered units.

SCHEDULE OF SERVICE CHARGES

1. Same prices for wired units or completed kits.
2. Charges are based on the schedule of minimum charges above. Some exceptions are noted below.
3. If the published rate is $ 5.00-$ 6.00, this covers up to 1 hour of labor time (minimum $5.00).
   If the published rate is $ 6.50-$ 8.00, this covers up to 1½ hours.
   If the published rate is $ 9.00-$10.00, this covers up to 2 hours.
   If the published rate is $11.00-$14.50, this covers up to 2½ hours.
   If the published rate is $15.00-$20.00, this covers up to 3½ hours.
4. Time required in excess of these minimum charges is calculated at $5.00 per hour.
5. Above prices are for labor only. Parts are additional.
6. Miscellaneous prices not published in manuals are:
   Probes - $2.00
   CRA & CRU - $3.00
   RP-100 Playback amp. only or Power Supply only or Record amp. only ...$5.00
   2536 Printed Circuit Board - $5.00.
7. ESTIMATES: An estimate for repairs will be given before repairs are made where repairs will exceed stated minimum charges. If you choose not to have your unit repaired, a charge of $3.00 for estimating time will be made.
8. All prices are subject to change without notice.

MINIMUM LABOR AND HANDLING FEES

AF4	$ 7.50	488	5.00
RA6	5.00	495	5.00
HF12	7.50	526	5.00
HF14	5.00	536	5.00
HF20	10.00	540	5.00
HF22	5.00	555	5.00
HF30	5.00	556	5.00
HF32	9.50	565	5.00
HF35	5.00	566	5.00
ST40	15.00	584	5.00
HF50	5.00	610	5.00
HF52	10.00	612	5.00
HF60	5.00	625	6.00
HF61	6.00	628	7.00
HF61A	6.00	630	5.00
HF65	6.50	632	7.00
HF65A	6.50	666	10.00
ST70	15.00	667	10.00
HF81	13.50	680	6.00
ST84	10.00	706	5.00
HF85	8.00	710	5.00
HF86	9.00	720	13.50
HF87	9.00	722	9.00
HF89	9.00	723	10.00
HFT90	7.50	730	10.00
HFT92	9.00	740	9.00
HFT94	7.50	753	25.00
ST96	13.50	760	9.00
ST97	13.50	761	9.00
MX99	7.50	762	9.00
RP100*	*	770	12.00
		771-2	12.00
145	5.00	777	20.00
145A	5.00	779	20.00
147	5.00	790	20.00
214	6.00	803	5.00
221	6.00	902	25.00
222	7.00	944	5.00
232	6.00	950	5.00
249	6.00	955	6.00
250	7.00	965	15.00
255	7.00	1020	5.00
260/261	7.00	1050	5.00
315	6.00	1055	5.00
320	5.00	1060	5.00
322	5.00	1064	6.00
324	5.00	1073	5.00
342	15.00	1078	5.00
352	5.00	1100	5.00
360	5.00	1120	5.00
368	12.50	1140	5.00
369	12.50	1171	5.00
377	6.00	1180	5.00
380	16.00	2036	13.50
425	6.00	2050	13.50
427	12.50	2080	13.50
430	12.50	2200	10.00
435	15.00	2400*	*
460	15.00	2510	12.00
470	15.00	2536	17.50
		2715/16	10.00
		3566	25.00
		4000	20.0

* Model RP100 and Model 2400 will be billed on the basis of $10.00 for the first hour and $5.00 each additional hour, with a maximum unauthorized repair of $50.00 for the kit and $25.00 for a wired unit.

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EICO ELECTRONIC INSTRUMENT CO., INC.
131-01 39th Ave., Flushing, N.Y. 11352

AUTHORIZED WARRANTY SERVICE AGENCIES

ALABAMA

Birmingham
Godwin Radio Co.
3131-4th Avenue S.

Prince Radio Co., Inc.
2208-2nd Ave. N.

Mobile
Universal Electronics & Instr. Svce.
3058 Brookline Dr. W.
(Instr., CB & Ham Only)

ARIZONA

Phoenix
Stereo Specialists
4807 North Central
(Hi-Fi Only)

Tucson
Park Music Shop
1702 E. Speedway

CALIFORNIA

Anaheim
United Sound & TV Co.
2010 W. Lincoln Ave.

Barstow
Roy's Communications Svce.
615 E. Main St.

Los Angeles
Electronic Instrument Service
8907 So. Vermont Ave.

United Sound & TV Co.
5036 Venice Blvd.

San Diego
Lewton's Radio & TV
4251 University Ave.
(High Fidelity Only)

San Francisco
Prompt Radio & TV Co.
3143 Mission St.
(Hi-Fi & Tape Recorders only)

COLORADO

Colorado Springs
Clyde N. Still
2630 W. Kiowa St.

Denver
A. B. & K. Service, Inc.
1459 South Pearl St.

CONNECTICUT

West Hartford Center
Herbert Electronics
959½ Farmington Ave.

New Haven
Baltimore Electronics
546 Whalley Ave.
(Hi-Fi Only)

Norwich
La Course Radio-Electric Svce.
184 Franklin St.

DISTRICT OF COLUMBIA

Washington
Sylvan Radio & TV Co.
306 Kennedy St., N. W.

FLORIDA

Miami
Southern Authorized Factory Service
62 N. W. 27th Ave.

Spire Audio-Visual Co.
24 N. W. 36th St.

North Miami Beach
Southeastern Communications, Inc.
2055 N. E. 151st St.

Orlando
Electronic Service Labs.
1024 N. Mills

Electro-Tech., Inc.
307-27th St.
(Instruments Only)

Tampa
Maurice Wood
5812 Gomez St.

GEORGIA

Hapeville
Electro-Tech, Inc.
3020 Commerce Way
(Instruments Only)

HAWAII

Honolulu
CAATEX Corp.
1223 Hopaka St.

IDAHO

Twin Falls
TV Tuner Service
P. O. Box 793

ILLINOIS

Oak Park
B & S Electronics, Inc.
6326 W. Roosevelt Rd.

Chicago
Electronic Engineers, Inc.
5615 W. Division St.

Springfield
Stelte Communication Engineers
1700 East Jackson St.

INDIANA

Indianapolis
Aid TV & General Appliance
4145 North College Ave.

Component Electronics
319 W. Maryland St.

La Grange
Westview Electronics
R. R. 4

IOWA

Sioux City
Ma[illegible]-Bon, Inc.
Route 2, Box 138
(CB & Ham Only)

KANSAS

Wichita
Alan Appliance Servic
339 North Main St.

KENTUCKY

Louisville
Maury's Fluorescent &
962 South 3rd St.

LOUISIANA

Kenner
Coastal Electronics
2114 Williams

Lake Charles
TEK Service, Inc.
212 Ridge View Drive
(Instruments Only)

Metairie
Airline Electronic Svc
3626 Airline H'way

MAINE

Portland
Air-Tronics
987 Westbrook St.

MARYLAND

Baltimore
Clayton Electronics, I
4723 Gwynn Oak Ave.

Bethesda
American Technical S
4961 Bethesda Ave.

MASSACHUSETTS

Boston
Park Armature Co.
1218-30 Columbus Av

Medford
Electron Service Ctr.
229 Salem St.

Pembroke
South Shore Instrumen
20 Chapel St.
(Instruments Only)

Somerville
Electronic Repair Svce
206-208 Highland Ave

Worcester
Audio-Visual Associat
8 Boylston St.

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MINNESOTA

Minneapolis
Andersen Audio Laboratory
4145 Minnehaha Ave. South

MISSOURI

Kansas City
Carroll Electronics
2410 Grand Ave.

St. Louis
Scherrer Instruments
5449 Delmar Blvd.

A. A. Kelley Radio & Elect. Svce.
4181 Manchester

NEBRASKA

Lincoln
Northland Electronics
1601 "P" St.

Omaha
Hi-Pix Stereo Service
3427 S. 42nd St.

NEW JERSEY

Jamesburg
Universal Television Svce.
39 E. Railroad Ave.

Newark
Associated Electronics
464 Orange St.
(Hi-Fi & Tape Recorders Only)

Warranty Radio & TV
750 S. Orange Ave.
(Instruments, CB & Ham Only)

Riverside
Dixey-Bonas TV
52 Scott St.

Wayne
Hosica Laboratories
100 Parish Drive

NEW MEXICO

Albuquerque
Ed's TV & HI-FI
301 Maple Ave. N. E.

NEW YORK

Albany
Baker Electronics
514 Second St.

Binghamton
Ross' Radio & TV Service
116 Main St.

Hastings on the Hudson
(Westchester County)
Central TV & HI-FI Service
543 Warburton Ave.

Huntington Station
Suffolk Sound Repair, Inc.
1671 New York Ave.

New Hyde Park
Ethical Electronic Service
3330 Hillside Ave.

New York City
Manhattan
Winters' Radio Laboratory
11 Warren St.

Brooklyn
G. M. T. V.
252 Prospect Park West

Queens
H & E Clock and Elect. Corp.
144-33 Jamaica Ave.

Syracuse
Radio & Electronic Svce.
401 N. Townsend St. at Willow

Vestal
Compton Industries, Inc.
333 Vestal P'kway East

West Hempstead
Audotronic, Inc.
96 Hempstead Turnpike

NORTH CAROLINA

Charlotte
Electro-Tech, Inc.
3107 Cullman Ave.
(Instruments Only)

Tryon Repair Service
3125 Tuckaseegee Rd.

Raleigh
Speed Instrument Co.
3028 E. Rothgeb Dr.
(For Instruments Only)

OHIO

Cleveland
Bob Whitlow Radio & TV
13914 St. Clair Ave.

Dayton
Far Hills Service Center
51 W. Whipp Rd.

Toledo
Don's Electronics
1682 Belmont Ave.
(Hi-Fi & Tape Recorders Only)

OREGON

Lebanon
Lines Communications
RR Box 226X
(C-B Only)

PENNSYLVANIA

Delmont
Eltron Electronics
P. O. Box 99

Havertown
Michael's TV & Radio Service
1127 West Chester Pike

Lehighton
Lehighton Electronics
P. O. Box 281

Philadelphia
Electronic Servicenter
13 S. 21st St.

Transistor Eqpt. Service
2212 Glendale St.

Pittsburgh
Scott's Electronic Svce.
2280 Lutz Ave.

Woodlyn
(Suburban Philadelphia)
Altron Electronics Co.
1309 Jefferson Ave.

TEXAS

Austin
Park Forest TV
2601 South First

Dallas
Electromec Co.
926 Industrial Blvd.

El Paso
Test Equipment Co.
5319 Harlan Dr.

La Feria
La Feria Radio & TV Serv

San Antonio
Electronics Unlimited
4404 San Pedro

Texas City
Ham's Communication Sv
3001 Somerset Ave.

Wichita Falls
Ken Dixon Radio & TV
2612 Grant St.

UTAH

Bountiful
Anderton Electronic Lab.
129 E. 1800 South

VIRGINIA

Arlington
Washington Electronic Se
122 South Wayne St.

WASHINGTON

Seattle
Ron Merritt Co.
1320 Prospect St.

CANADA

Toronto, Ontari
John R. Tilton, Ltd.
51 McCormack St.

Vancouver
National TV Service Co.
2145 Commercial Drive

NEW ZEAL

Auckland
John Gilbert & Co., Ltd.
Anzac Ave.

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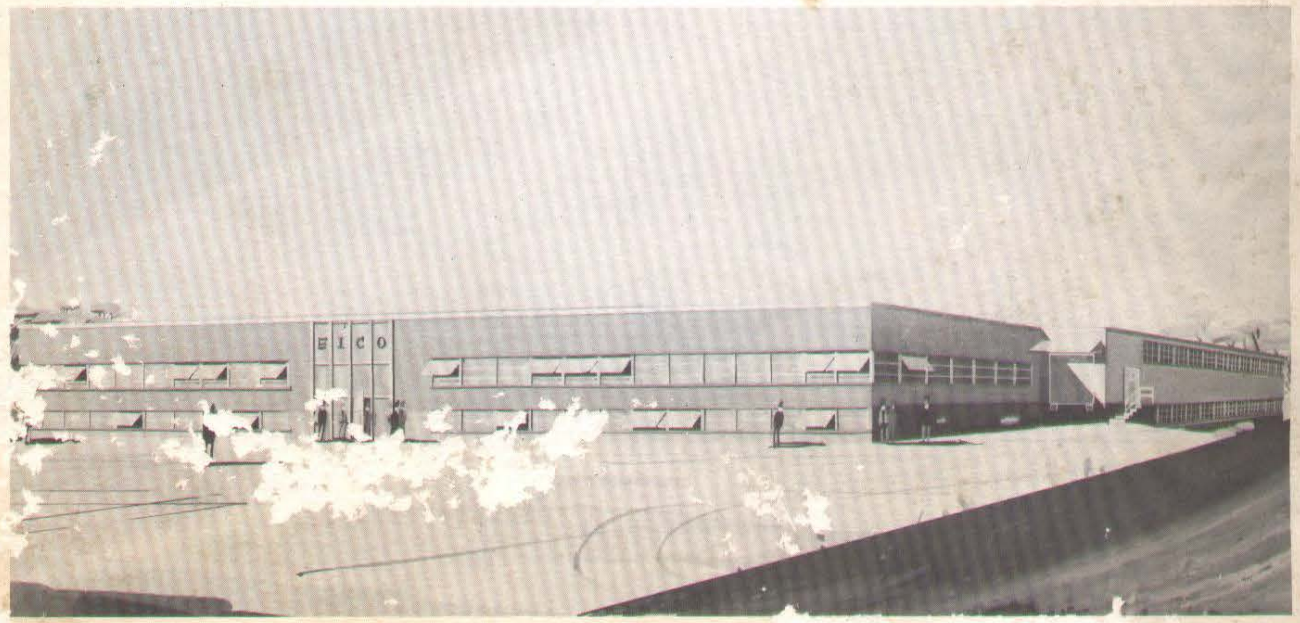
Since 1945, EICO has been recognized as a leader in the design and manufacture of electronic products in kit form. The wide range of equipment that EICO has made available covers nearly every phase of electronics—High Fidelity (Receivers, Amplifiers, Tuners and Speakers); tape recorders; test instruments, Citizen Band and Amateur Radio and Transistor Radios.

There is virtually no area of our every day life where EICO Products do not make a contribution. For there are more than 3,000,000 EICO Electronic Products in use in American homes, industry, military as well as in Federal, State and local Government. In the Nation's schools, EICO Test Instruments and training aids make it easier for students to learn about electricity and electronics.

EICO's 20 years of growth is a matter of public record. Responsible for this growth is the company's strict adherence to its policies of top quality products at reasonable prices. The Company's recent move to a modern 110,000 square foot plant marks the beginning of another era in EICO product development and contribution to the Nation's economy.



Eico Electronic Instrument Co., Inc., 131-01 39th Avenue, Flushing, N.Y. 11352

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