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TUBE TESTER





MODEL

606

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Dear Friend:

Congratulations on your purchase of B & K—Precision Test Equipment, and welcome to the B & K family. We hope your experience with your new test equipment will make you a lifetime B & K customer.

Your instrument is backed by more than 20 years of experience in designing and manufacturing. Our most important goal is your satisfaction. At B & K, test

equipment is made to meet the demands of the field focusing on dependability and accuracy. We also concentrate on simplicity and operating ease with features that reduce the possibility of human error and speed the servicing process.

In order to determine the type of test units that are needed we have been guided by letters and reports from technicians and engineers who use the equipment daily. Our field tests and studies have helped provide better and faster service techniques. Close contact has been maintained with the manufacturers of consumer products which our test units will be checking and trouble-shooting.

Key personnel in our company cut their eye teeth in the TV service business. This is why we have more "sensitivity" for the problems and conditions under which the test equipment will be used.

B & K product designs are constantly reviewed, and refinements are made or new models developed to meet advances in our industry and to fill your needs. We set our standards high so you can be assured that the B & K test instruments you buy represent advanced design, quality construction, and dependable long-term performance at a price you can afford.

If you have any comments or thoughts about our products, or test equipment in general, I would be delighted to hear from you.

Thanks for your confidence in B & K and we look forward to serving you for a long time to come.

Sincerely,

Carl Korn President

OPERATING INSTRUCTIONS

FOR

Model 606

DYNA-JET

TUBE TESTER

B & K DIVISION OF DYNASCAN CORP. 1801 West Belle Plaine Avenue Chicago, Illinois 60613

MODEL 606 TUBE TESTER

What It Will Do

- 1. The Dyna Jet Model 606 Tube Tester will test all of the commonly used tubes in general use in radio and television sets.
- 2. In addition it will test many voltage regulator tubes, thyratron tubes, industrial types of tubes and many of the European types found in modern hi fi equipment.
- 3. Each tube is automatically checked for shorts and leakage to approximately one megohm. These tests are made from each element to every other element so that all possible combinations of shorts can be detected.
- 4. Grid Emission, Gas, Grid Contamination, or obscure Grid to Cathode leakage are all disclosed by an exceptionally sensitive grid current check. This test will reveal as little as 2 to 3 microamperes of current in the grid circuit and can be adjusted for a sensitivity of over 100 megohms.
- 5. Each section of a multi section tube is checked separately.
- 6. Each tube is checked for quality in a test circuit that determines the full capability of cathode emission under current loads simulating actual operating conditions.

Testing Tubes for Shorts

The Shorts check is automatically made when a tube is placed in the proper socket.

The Shorts check uses a neon lamp as the indicator. Shorts or leakages to approximately 1 megohm will cause this lamp to glow. This Shorts indicator is located just below the meter. See Fig. 1.

A check on grid to cathode leakage is made as soon as the tube is plugged into the socket. The Shorts check between all other elements is made by rotating the switch "C" through its positions, observing the Shorts light as the switch is rotated.

Testing Tubes for Quality

The test for the quality of a tube is a comprehensive cathode emission test. It is important to test the tube under a load condition which will insure that a tube passing this test will have adequate emission to properly operate in a circuit.

TESTING TUBES FOR GRID EMISSION AND GAS

The Grid Emission and Gas Test is an invaluable aid in TV servicing because it quickly picks out those tubes which can cause trouble in a.g.c., sync, I.F. amplifier, and R.F. tuner circuits.

In order to understand how a tube can have "grid emission" and "gas current" we must look into the theory of electron tubes.

There is normally some little evaporation of the cathode coating material on the grid of a tube. Some of this vapor tends to deposit on the grid and gives rise to what is known as "grid emission", where the grid itself emits electrons and draws current commonly known as "negative grid current". The flow of this "negative grid current" can be followed in Figure 2.



Negative Grid Current.

The electrons flow from the grid to the plate then back through the power supply to the grid leak resistor Rg and up to the grid again. Notice that the voltage drop across the grid leak resistor Rg is such that it causes the grid to go more positive than it normally would with no grid emission.

If a slight amount of "gas" is present in a tube some of the electrons from the cathode will collide with molecules of the gas and may knock off one or more electrons, leaving positive ions (ionization). Some of these positive ions may then strike the grid, taking an electron from the grid to form a gas molecule again. The electron flow of this "gas current" is exactly the same as it is for the "grid emission current" and can be traced on Figure 2. Notice again that the grid is made more positive by this "gas current".

Now let us see what happens if an I.F. amplifier tube in a TV set has grid emission current or gas current (negative grid current). In Figure 2 we noted that the grid would tend to go more positive if negative grid current flowed. In Figure 3, a typical I.F. stage, we see that if there is any negative grid current, the bias voltage in that stage and other associated stages will go more positive because of the flow of current through R1. Making the grid more positive will drive the tubes to saturation, causing clipping or overloading.



After detection, a video signal normally appears as shown in Figure 4. If the signal is clipped in an I.F. stage it will look like Figure 5. Now the horizontal oscillator will try to synchronize both on the blanking signal (A) and on the very black portions of the video (B). This results in pulling or snaking of the picture.





Overloaded or Clipped Video and Sync Signal.

To achieve this sensitive grid emission or gas test, the circuit shown in Figure 6 was employed.

The tube under test has its normal plate to grid voltage applied, but the grid is biased beyond cut-off so that no plate current flows. This bias is applied through the 5.6 megohm resistor. The same 5.6 megohm resistor is also in the grid circuit of a 6BN8 d.c. amplifier and the conditions in this tube are

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such that it, too, is biased just beyond cut-off. Under these conditions, no plate current flows in the 6BN8 and no reading is obtained on the meter in its plate circuit.



Figure 6-Grid Emission Test Circuit.

However, if the tube under test is gaseous, or its grid is contaminated with some of the cathode coating, then current will flow from grid to plate and through the 5.6 meg resistor back to the grid again. This will produce a positive voltage drop across the 5.6 meg resistor, lifting the cut-off bias on the 6BN8 and producing a meter deflection. Upon seeing this deflection, the technician immediately knows that the test tube is deflective and a replacement is indicated.

HOW TO OPERATE THE DYNA JET MODEL 606 TUBE TESTER

Simplified Instructions

- 1. Look up tube in chart.
- 2. Set Heater to voltage indicated in Heater column of chart.
- 3. Set "A", "B" and "C" controls to positions indicated on chart.
- 4. Insert tube into proper socket as indicated on chart.
- 5. Allow tube to warm up and observe Shorts indicator. If Shorts light glows, reject tube.
- 6. Depress Grid Emission button. Any deflection of the meter pointer into the "Grid Emission-Reject" area of the scale is cause for reject. of the tube.
- 7. Depress Quality button. Tube will read on the Good-Bad scale of the meter.
- 8. To test for all other shorts rotate Switch "C" through each of its positions and observe Shorts lamp. (The Shorts lamp may glow instantaneously while rotating switch "C" through its position. This is due to a capacitor discharge and is to be ignored.)

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TEST PROCEDURE

The Model 606 Tube Tester is designed for use at 105-125 volts, 50-60 cycle A.C. only. The instrument is turned on and ready for use merely by inserting the line cord into an A.C. socket. The first step in the testing of a tube is to look up this tube in the chart contained in the cover of the instrument. Let us take a typical example such as a 6AU6. Fig. 7 shows a typical listing for this type. The heater voltage for this tube type is 6, as shown, and the heater switch must therefore be set to the 6 volt position. This will then apply the correct heater voltage to the tube under test.

Tube Type	 Heater	"A"	"B"	"C"	Socket No.
6AU6	6	33	6	1	1
·		Figure	e 7.		

If the tube in question had a 17 volt heater, the heater switch will be rotated to the 15-20 position. Any tube with a heater voltage between 15-20 volts is tested with the heater switch in this position.

CAUTION! THE HEATER SWITCH MUST BE SET TO THE COR-RECT FILAMENT VOLTAGE BEFORE INSERTING THE TUBE IN THE SOCKET. FAILURE TO OBSERVE THIS PRECAUTION MAY RESULT IN BURNING OUT THE FILAMENT OF THE TUBE.

The "A" control is set to 33, the "B" switch placed in position 6, and the "C" switch in position 1. The tube is now inserted into socket No. 1, as shown in the last column of the type listing in Fig. 7. The tube is automatically tested for grid to cathode shorts and leakage as soon as the tube is inserted into the socket.

To test for grid emission, depress the Grid Emission button. Any deflection of the meter pointer into the "grid emission-reject" area of the meter scale indicates a defective tube. This tube should be discarded. If the tube passes the Grid Emission test, we then proceed to the Quality test.

The tube is tested for Quality by depressing the Quality button and observing the Good-Bad reading on the meter scale. A few tube types do not normally register a meter reading into the "Good" area because of our exceptionally critical Quality test. For these types the chart indicates the minimum numerical reading that this tube must have to be acceptable.

The tube can be tested for shorts or leakage between any of the other elements by rotating switch "C" through each of its positions. If the Shorts indicator neon lamp glows in any of the switch positions of switch "C", the tube should be rejected. (As the switch is rotated from one position to the next, the shorts indicator may instantaneously glow due to a capacitor discharge. This is to be ignored.)

Certain tube types have more than one pin connection for a given element, therefore the Short indicator lamp may normally glow in certain positions of Switch "C", even if there is no short in the tube. The chart will indicate where this "normal" short indication will occur. These tubes should not be rejected for these normal shorts.

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This completes the test on the tube.

If the tube was multi section tube, there would be a second and possibly a third list of settings on the chart to test the additional sections. See Fig. 8.

lube Type	Heater	"A"	"B"	"C"		Socket No.
6BN8	6	35	6	8		2
	6	35	6	· 1		2
	6	35	6	6	· .	2

SERVICE INSTRUCTIONS

The sensitivity of the grid emission test circuit is adjusted at the factory so that a leakage of 25 megohms just reads in the "Grid Emission-Reject" area on the meter scale. This order of sensitivity is the level that tube manufacturers recommend, in order not to reject good tubes. The adjustment of this sensitivity is a screwdriver adjustment available through a small opening just above and to the right of the Quality button. This adjustment is made in the following manner.

Place switch "B" to position 6, and switch "C" to position 1. Connect a 20 megohm resistor between Pins 1 and 7 of socket No. 1, push Grid Emission button, adjust the control for a reading of 20 on the meter. If you wish to make the Grid Emission test at greatly increased sensitivity, the following adjustment will give you a sensitivity in excess of 100 megohms. Place switch "B" in position 6 and switch "C" to position 1, push Grid Emission button and with no resistor in the socket adjust the Grid Emission Sensitivity Control so that the meter just reads zero.

This instrument has an internal adjustment for sensitivity of the short test circuit. This control has been set at the factory for a nominal 1 megohm sensitivity. This should be checked occasionally by placing a 1 megohm resistor between pin #3 and pin #8 of socket #8 with the B switch at 6 and the C switch at 3. Should this sensitivity control require re-adjusting, proceed in the following manner:

- 1. Remove panel from case.
- 2. Locate short sensitivity control which is across the short lite socket base.

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- 3. Place 1 meg external resistor in test socket as outlined above. Rotate control so that the short lite just comes on, starting from end of control where lite is out.
- 4. Re-assemble tester, be sure to remove 1 meg resistor before testing tube.

The enclosed schematic diagram shows all voltage readings for the instrument and the parts list is printed on the back of the schematic diagram.

In order to keep your tube chart up to date, it is recommended that you subscribe to the B & K chart mailing service at a cost of \$2.50 per year. This service will provide mailings every 90 days. Two mailings will consist of completely new charts and will occur in January and July. In addition, in April and October supplementary sheets will be mailed listing only the additional new types which have come out since the last complete chart was mailed. This will mean that within 90 days of the introduction of a new tube type you will automatically have the information on how it is tested in your B & K Tube Tester.

If you do not wish to use this "4 times per year" subscription service, the latest available chart may be obtained at any time by remitting \$1.50 to the factory with the Model and Serial Number of your instrument.

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WARRANTY SERVICE INSTRUCTIONS

1. Refer to the instruction manual for adjustments that may be applicable.

2. Check common electronic parts such as tubes. Always check instruction manual for applicable adjustments after such replacement.

- 3. Defective parts removed from units which are within the warranty period should be sent to the factory prepaid with model and serial number of product from which removed and date of product purchase. These parts will be exchanged at no charge.
- 4. If the above mentioned procedures do not correct the difficulty, pack the product securely (preferably double packed). A detailed list of troubles encountered must be enclosed as well as your name and address. Forward prepaid (express preferred) to the nearest B&K authorized service agency.

Contact your local B&K Distributor for the name and location of your nearest service agency, or write to

Service Department

B & K DIVISION OF DYNASCAN CORPORATION

1801 West Belle Plaine Avenue

Chicago, Illinois 60613

"B & K warrants that each product manufactured by it will be free from def workmanship under normal usage and service for a period of ninety days aff from an authorized B & K distributor. Our obligation under this warranty is or replacing any product or component which we are satisfied does not com going warranty and which is returned to our factory or our authorized service-tation prepaid, and we shall not otherwise be liable for any damages, consequ *The foregoing warranty is exclusive and in lieu of all other warranties (includ merchantability), whether expressed or implied.* Such warranty shall not apply component (i) repaired or altered by anyone other than B & K or its authorized (except normal tube replacement) without B & K's prior written approval; (ii) altered in any way or subjected to misuse, negligence or accident; (iii) which has lettered in any time or change specifications or design without notice and with obligation. The warranty shall be void and there shall be no warranty of a ponent if a B & K warranty registration card is not properly completed and B & K factory within five days after the purchase of the product new B & K distributor." "B & K warrants that each product manufactured by it will be free from defects in material and workmanship under normal usage and service for a period of ninety days after its purchase new from an authorized B & K distributor. Our obligation under this warranty is limited to repairing, or replacing any product or component which we are satisfied does not conform with the foregoing warranty and which is returned to our factory or our authorized service contractor, transportation prepaid, and we shall not otherwise be liable for any damages, consequential or otherwise. The foregoing warranty is exclusive and in lieu of all other warranties (including any warranty of merchantability), whether expressed or implied. Such warranty shall not apply to any product or component (i) repaired or altered by anyone other than B & K or its authorized service contractor (except normal tube replacement) without B & K's prior written approval; (ii) tampered with or altered in any way or subjected to misuse, negligence or accident; (iii) which has the serial number altered, defaced or removed; or (iv) which has been improperly connected, installed or adjusted otherwise than in accordance with B & K's instructions. B & K reserves the right to discontinue any model at any time or change specifications or design without notice and without incurring any obligation. The warranty shall be void and there shall be no warranty of any product or component if a B & K warranty registration card is not properly completed and postmarked to the B & K factory within five days after the purchase of the product new from an authorized

WARRANTY



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B & K DIVISION OF DYNASCAN CORPORATION

1801 W. BELLE PLAINE AVE. • CHICAGO, ILL. 60613

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B & K Model 606 Parts List

SCHEMATIC SYMBOL

DESCRIPTION

B & K PART No.

CAPACITORS

C-1	.05 MFD @ 500 V Disc Ceramic Capacitor020-401-7-503
C-2	5 MFD @ 250 V Pigtail Electrolytic Capacitor021-018-9-001
C-3	200 MFD @ 4 V Pigtail Electrolytic Capacitor022-001-9-007
C-4	.01 MFD @ 500 V Disc Ceramic Capacitor020-501-7-103

RESISTORS — CONTROLS

R-3 100K Ohm ½ Watt Control, "Gas Sensitivity Adjust" Adjust" .008-001-9-009 R-6 2 Megohm Control (Short Adjust) .008-056-9-001 R-7 500 Ohm 5 Watt 5% Wire Wound Res. .006-005-5-501 R-9 1K Ohm Wire Wound Pot. (Special Taper) .008-003-9-001 or .009-021-9-001

SWITCHES

	Heater Switch	
SW-2	"C" Selector	083-034-9-001
	"B" Selector	
SW-4	"Quality" Push Button Switch	091-005-9-001
SW-5	"Grid Emission" Push Button Switch	091-004-9-001

SOCKETS

Plate-Grid Cap Assembly	ASM-45
Test Sockets No.1, No. 6 (7 Pin Min.)	749-002-9-007
Test Sockets No. 10, No. 11 (Novar)	
Test Sockets No. 3, No. 8, No. 12 (Octal)	
Test Socket No. 4 (Loctal)	749-014-9-001
Test Socket No. 5 (Nuvistor)	749-015-9-001
Test Socket No. 7 (9 Pin)	749-002-9-002
Test Socket No. 2 (10 Pin)	749-002-9-003
Test Socket No. 9 (12 Pin)	749-024-9-001
Test Socket No. 13 (Decal)	749-033-9-001
7 Pin—Pin Straightener	766-004-9-001
9 Pin—Pin Straightener	766-00 5-9-001

SCHEMATIC SYMBOL

DESCRIPTION

B&K PART NO.

MISCELLANEOUS PARTS

T-1	Power Transformer	005 000 0 001
M-1	Meter	000-039-9-001
V-1	Meter	320-010-9-001
* - T	6BN8 Tube	235-060-2-148
	Knob with line	751-010-9-001
	Knob, Push button	751-036-9-001
	Case	. 270-005-9-001
	"Shorts" Lamp (NE-51)	401_002_0_002
	"Shorts" Lamp Socket	740 005 0 001
	"Shorts" Lamp Clear Plastic Cap	750-001-9-001
	"Shorts" Lamp Bushing (includes nut	
	692-001-9-001)	849-007-9-001
	Lamp with Resistor	
	Red Plastic Cap W/Tinnerman	
	Carton and Filler	500-116-9-001
	6-Foot Black Line Cord	420-001-9-007
	Instruction Manual	490.067.0.001
	Tube Chart Subscription; Consisting of	
	4 issues per year	

Note: Standard value resistors are not listed. Values may be obtained from schematic diagram.

Minimum charge \$2.00 per invoice. Orders will be shipped C.O.D. unless previous open account arrangements have been made or remittance accompanies order. Advance remittance must cover postage or express charges.

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488-051-9-002

DYNASCAN CORPORATION

FACTORY AUTHORIZED PARTS AND SERVICE CENTERS

429-036-0-172

The following will handle any parts and/or service problems, either in or out of warranty. Your nearest service center has been selected for quality and prompt attention to your needs. Please take advantage of this service facility established for your benefit.

B & K Test Equipment (T) Cobra Communication Products (C) Precision (P)

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ALABAMA

- Davidson's Communications 1103 Waverly Avenue Muscle Shoals, Alabama 35660 AC 205 383-4222 Statham TV Service 340 Killough Circle Birmingham, Alabama 35215 AC 205 853-4530 С
- С

- ALASKA
- С **Rio Nova Electronics**
 - 1441 Laurene Street P. O. Box 2624
- Fairbanks, Alaska AC 907 452-5958

ARIZONA

- KIZUNA Arizona Radio Communications 2717 E. McDowell Phoenix, Arizona 85008 AC 602 274-5595 Arizona Electric Standard Lab. 4430 North 19th Avenue Phoenix, Arizona 85015 AC 602 264-9351 Emmett Research Lab 1309 F. McDowell Boad С
- С
- 1309 E. McDowell Road Phoenix, Arizona 85006 AC 602 233-4783
- ARKANSAS
- Prince Electronics 541 Quachita Avenue Hot Springs, Arkansas 71901 AC 501 NA 4-2825 С

CALIFORNIA

- Electronic Service Company 7732 A Densmore Avenue Van Nuys, California 91406 AC 213 780-3071 è

- AC 213 780-3071 C Guaranteed Electronics T 5822 Mission Street P San Francisco, California 94112 AC 415 DE 4-5900 THurley Electronics, Incorporated 2101 North Fairview Santa Ana, California 92706 AC 714 638-7220 C Imtronix T 305 North Broadway AC 714 638-7220 Fresno, California 93701 AC 209 485-2741 C Imtronics

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- Imtronics 1635 "M" Street Merced, California 95340 AC 209 723-2261

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 - Otto's Instrument Service Ontario International Airport Ontario, California 91761 AC 714 986-6624
- CT
- Whitmore & Company 10466 East Alondra Blvd. Bellflower, California 90706 AC 213 TO 7-5728 TO 6-8816
- CANADA
- Atlas Electronics Limited 50 Wingold Avenue Toronto 19, Ontario, Canada AC 416 781-6174

COLORADO

- Allstate Electronics Corp. 229 Vallejo Denver, Colorado 80223 AC 303 744-2771 т
- AC 303 744-2771 Alpha Tronics, Inc, 14251 East Colfax Aurora, Colorado 80010 AC 303 344-3484 С
- Briscoe Instrument Labs 8105 East Colfax Denver, Colorado 80220 AC 303 377-1167 ē
- С
- Clyde N. Still Electronics 2630 West Kiowa Colorado Springs, Colorado 80904 AC 303 633-8404 è

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- Fowkes Electronics 1830 Fouraker Road Jacksonville, Florida 32205 AC 904 781-0574
- P.S.L. Electronics, Inc. 4860 N.W. 2nd Avenue Miami, Florida 33127 AC 305 754-8801
- Superior Electronic Center
- ç
- 2010 Pine Terrace Sarasota, Florida 33581 AC 813 955:9300

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Rodd Electronics 1645 East Albany Expressway Albany, Georgia 31705 AC 912 435-1044 С

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- C Ken Kline Company Star Route Moyic Springs, Idaho 83845 AC 208 267-3209
- Royal Radio & TV Service 1922 E. 14th Street Des Moines, Iowa 50316 AC 515 266-5315
- C
- P
- TV Tuner Service 118 Third Street West Twin Falls, Idaho 83301 AC 208 733-5636 (P.O. Box 793)

ILLINOIS

- Dynascan Corporation 1801 W. Belle Plaine Avenue Chicago, Illinois 60513 AC 312 327-7270 C T P

- Put's Radio Sales 737 East Marietta Peoria Heights, Illinois 61614 C
- т
- AC 309 685-5271 Turner Electronics 18 South New Jersey St. Indianapolis, Indiana 46204 AC 317 639-9169 WA
- **IOWA**
- RA Everts Electronics Post Office Box 350 128 3rd Street Glidden, Iowa 51443 AC 712 659-3869 C

KANSAS

- Electronics Specialists South Highway #283 Dodge City, Kansas 67801 AC 316 225-5881 С
- Main Electronics, Inc. 353 Pattie Wichita, Kansas 67211 AC 316 267-3581 т

LOUISIANA

- Audio & Instrument Associates 5511 Sussex Street Shreveport, Louisiana 71108 AC 318 868-9577 TP
- Circle "D" Electronics 206 Circle Drive Post Office Box 4209 West Monroe, Louisiana 71201 AC 318 323-4732 Ċ
- С
- Fisher Electronics Lab. 8309 Apple New Orleans, Louisiana 70118 AC 504 865-1380
- Marshall F. Kelly Repair Service 5738 Knoll Crest Street Shreveport, Louisiana 71109 AC 318 631-4551 C

MARYLAND

- Boyers Two-Way Radio 5110 W. Howard Street Hagerstown, Maryland 27140 AC 301 RE 3-6522 С
- Meter Devices, Inc. 11325 Maryland Avenue Beltsville, Maryland 20705 AC 301 345-7775

MICHIGAN

- Ajax Home Improvement Co. 6530 Wyoming Dearborn, Michigan 48128 AC 313 LU 4-9100 С
- Electro Instrument Repair Div. Instrument Specialties, Inc. 1024 West 14 Mile Road Clawson, Michigan 48017 AC 313 588-6688 т
- Electronic Distributing, Inc. 1960 Peck Street Muskegon, Michigan 49441 AC 616 726-3196 С
- P
- AC 616 726-3196 Main Electronics 5558 South Pennsylvania Lansing, Michigan 48910 AC 517 882-5035 Whightsil's Distributing Co. 605 South Main Street Ithaca, Michigan 48847 AC 517 875-3659 С

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- Morningside Communications Highway 75 South Moorhead, Minnesota 56560 AC 218 233-3035 С
- Citizens Band Sales & Service 8345 12th Ave. Minneapolis, Minn. 55420 AC 218 854-3774 С

MISSOURI

- Bill's Two-Way Radio 3214 South 169 Highway St. Joseph, Missouri 64503 AC 816 279-1152 С
- Bob's Television Communication Hiway 240, Route 4 Marshall, Missouri 65340 AC 816 886-8247 С
- Marsnan, missouri osotr AC 816 886-8247 Communications & Elec. Sve. 8905 Manchester Post Office Box 11584 Kansas City, Missouri 64138 AC 816 763-2132 Lectronic Service, Inc. 321 S. Main Street Lee's Summit, Mo. 64063 Area Code 816 524-0777 Peterson Radio & TV 910 Ildereen Drive Springfield, Missouri 65804 AC 417 866-1261 Scherrer Instruments 7170 Manchester Avenue St. Louis, Missouri 63143 AC 314 644-5362 Kermit Shetley С
- С т
- C.

- Kermit Shetley 2613 Marvin Cape Girardeau, Missouri 6370 AC 314 ED 4-2044

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- Electronic Associates С 5125 Colfax Lincoln, Nebraska 68504 AC 402 434-4655
- Randy's CB Center 6612 North 90th Street Omaha, Nebraska 68134 AC 402 572-8905 C

NEVADA

Neva Tronix Research 1928 Western Street Las Vegas, Nevada 89102 AC 702 382-9639 т

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- L & M Electronics C 2005 Highway 35 Ocean, New Jersey 07712 AC 201 531-3727
- Simon Side Band Company Holland Mountain Road Oak Ridge, New Jersey 07438 AC 201 697-4246 С
- Cleon W. Taylor Rte. 561 Haddonfield-Berlin Rd. Gibbsboro, New Jersey 08026 AC 609 784-7447 C

NEW YORK

- Abco Communications Co. C 550 Fourth Avenue Brooklyn, New York 11215 AC 212 SO 8-0100
- Circle Tele-Tronics, Inc. 1008 Utica Avenue Brocklyn, New York 11203 AC 212 345-5656
- **Compton Industries** С 413 Commerce Road Vestal, New York 13850 AC 607 729-9221
- Electrical Instrument Service 25 Dock Street Mount Vernon, New York 13850 AC 914 699-9717
- Hirsch Sales Company С 219 California Drive Williamsville (Buffalo), N.Y. 14221 AC 716 632-1189

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- **Oliphant Electronics** С Jamaica, New York 11435 AC 212 OL 8-9041 JA 6-5994
- Purchase Radio 747 Main Street Buffalo, New York 14203 AC 607 TL 4-2125 С

NORTH CAROLINA

- C Electronic Service Center 772 N C 268 West Elkin, North Carolina 28621 AC 919 835-5421
- Ship & Shore Communications 814 Greenhowe Drive Wilmington, North Carolina 28401 AC 919 791-0828 (P.O. Box 492) С

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- Ohio Browning Outlet 5044 South Main Street Akron, Ohio 44319 AC 216 896-1902 С
- DeCulp Electronics Eureka Star Route Gallipolis, Ohio 45631 AC 614 446-1639 Ċ
- Electronic Devices Company С Furlow Street Millersburg, Ohio 44654 AC 216 674-6706
- Findlay Communications 229 North Main Street Findlay, Ohio 45840 AC 419 422-0133 C
- С Howard's Radio Communications 6 North Seltzer Street Wapokoneta, Ohio 45895 AC 419 738-3224
- Popdavid Radio Service 1255 Shadyside SW Canton, Ohio 44710 AC 216 452-2710

OKLAHOMA

Robby's Two-Way Radio Company 9501 N.E. 10th Street Oklahoma City, Oklahoma 73130 AC 405 732-8036 ç

OREGON

Electronic Wholesale Mart 631 Northeast Grand Avenue Portland, Oregon 97232 ç AC 503 235-8373

PENNSYLVANIA

- Bennie's Communications 1612 Walnut Street Berwick, Pa. 18603 AC 717 759-0795 С
- Certified Calibration Labs 2709 N. Broad Street Philadelphia, Pennsylvania 19132 AC 215 229-7557
- С **Meridian Electronics**
- 333 Meridian Road Butler, Pa. 16001 AC 412 482-2575

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- AC 215 273-3313 Swop Shop 343 West Douglas Street Reading, Pennsylvania 19601 AC 215 374-6152 6741 Adams County Electronics Lincoln-Way—East New Oxford, Penn. 17350 AC 717 624-7103 R W Trautman Comm С
- С
- R. W. Trautman Comm. 1071 S. King Street Palmyra, Pa. 17078 AC 717 838-4153 c

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- James A. Weaver P.O. Box 37A—RD #1 Perkiomerville, Pa. 18074 AC 215 287-9786 or 234-8874 С
- Adams County Electronics Boundary & Albermarie Sts. York, Pa. 17403 AC 717 854-2053

SOUTH CAROLINA

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