

ELECTRONICS

AND

COMMUNICATIONS

1958 DIRECTORY AND BUYERS' GUIDE

DECEMBER 1957



AN AGE PUBLICATION
TORONTO, CANADA

Price \$1.00

AMPHENOL

COAXIAL CABLE

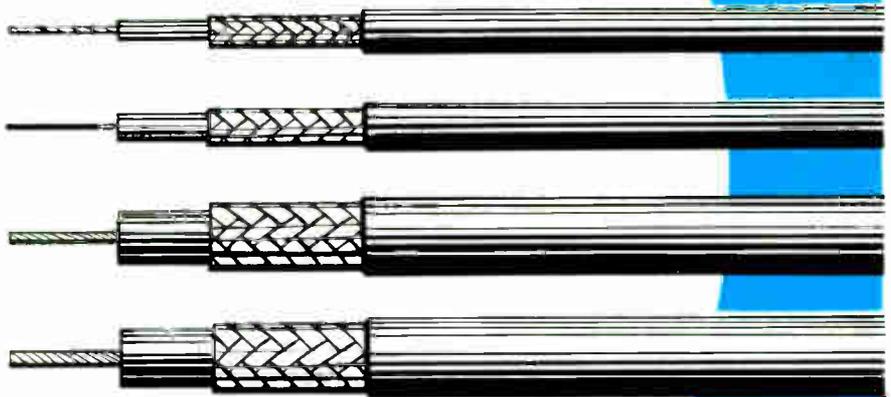
manufactured in Canada

to JAN-C-17A & MIL-C-17B SPECS.

7

MAJOR QUALITY CHECKS

on the line
and in the
laboratory
assure the top
performance
of dependable
AMPHENOL
co-axial cable.



- 1 Center conductor: Production and lab check of mechanical and electrical characteristics.
- 2 Dielectric: rolling micrometer checks dimensions during extrusion.
- 3 Finished Core: micrometer checked again before jacketing.
- 4 Shielding: checked after braiding for percentage of coverage, loose ends, tightness.
- 5 Jacket: inspected 100 per cent during extrusion.
- 6 Complete cable: special lab check of every run, electrically and mechanically.
- 7 Complete cable: every foot extruded is run through automatic machinery for final dimensional check.

Constant inspection and testing during manufacture, the use of fine materials, modern equipment, skilled workmen: all are combined at AMPHENOL. Specify and insist upon AMPHENOL coaxial cables!

**We are equipped to Sweep Test Cable
when specified.**

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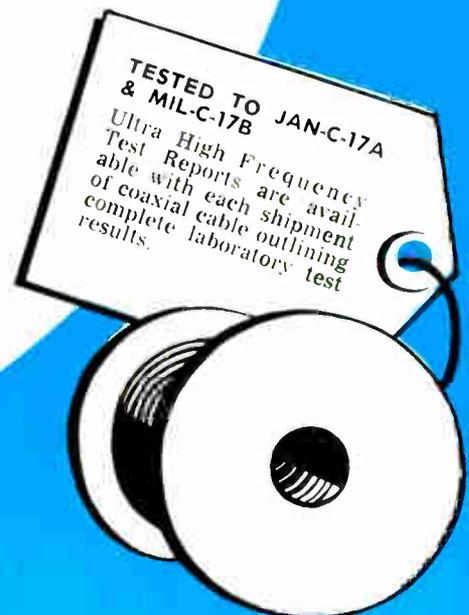
300 CAMPBELL AVENUE

TORONTO 9, ONT.

5890 Monkland Avenue
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Radiovision Sales Ltd.
325 - 10th Ave. West, Calgary, Alta.

492 Somerset St. West
Ottawa, Ont.

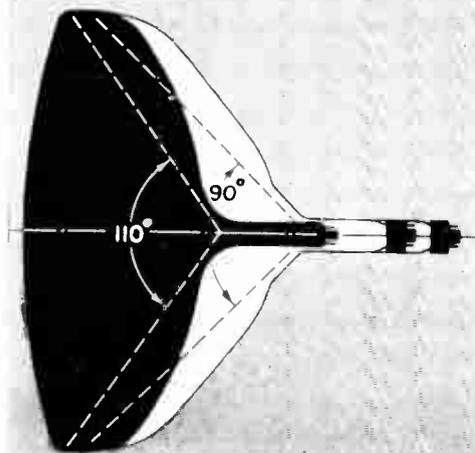
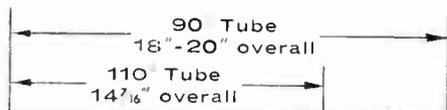


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6 advantages

- * 5½" shorter than the conventional 90° tube, opening new scope for cabinet design.
- * Available with 90° faceplate allowing for conversion to 110° without retooling the mask.
- * No ion trap required—you save on the cost of an ion trap and the labour for adjusting it.
- * Integral glass button base eliminates any possibility of loose base-pin connection.
- * Small neck allows 110° deflection with only slightly more power than is required for a 90° tube.
- * Approximately one pound lighter.



As always Marconi is ready to supply the industry's latest needs. Marconi 110° tubes are now available from Canadian production to customer's specifications.

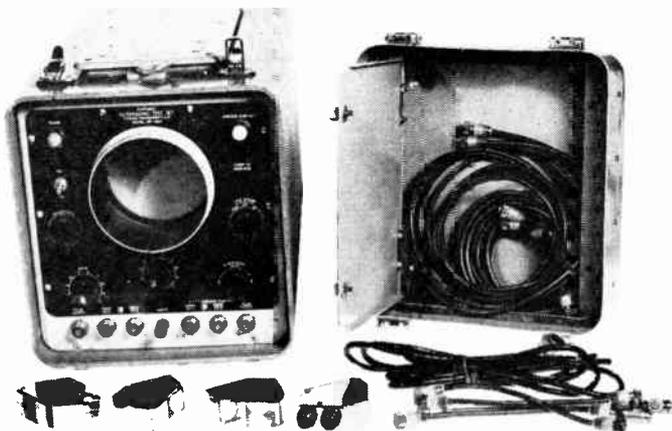
ELECTRONIC TUBE AND COMPONENTS DIVISION

CANADIAN **Marconi** COMPANY

830 BAYVIEW AVENUE, TORONTO, ONTARIO

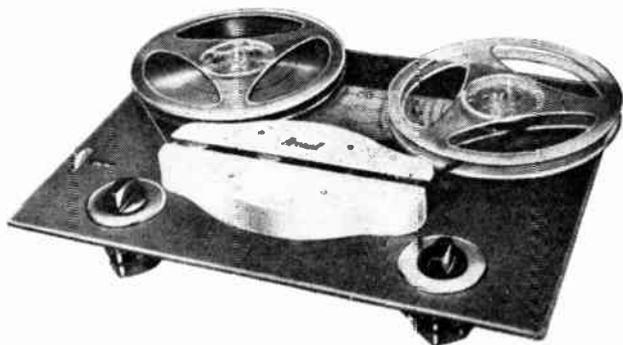
BRANCHES: Vancouver • Winnipeg • Montreal • Halifax • St. John's, Nfld.

COSSOR FOR SOUND MEASURE



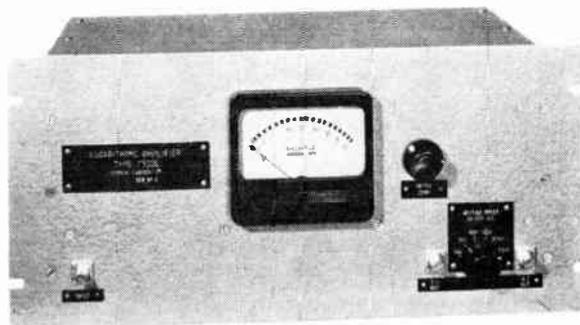
ULTRASONIC TEST SET, MODEL 1064

Designed to detect, identify and measure weld flaws and faults in metals.



BRENNELL TAPE DECK MODEL 500.

3 Independent Motors
3 Recording Speeds 3 3/4, 7 1/2 and 15 i.p.s.
Digital Rev. Counter



LOGARITHMIC AMPLIFIER MODEL 7532

Frequency Range: 20 cycles to 1.5 mc/s
at 6 db. down.

Range of Input Voltage:
300 microvolts to 30
volts peak to peak.

CADENZA MICROPHONE

30 to 14,000 c.p.s. within very close limits.
High-Low Impedance.



AND NOW —

**new additions to the famous
STENTORIAN SPEAKERS.**



S. 1.75

Diameter 1 3/4"
Pole Diameter 0.375"
Standard Impedance 3 ohms (or as required)

Total Depth 1"
Flux Density 5,000 Gauss
Power Rating 250 M.W.
Response 500 - 12,000 c.p.s.

S. 2 x 3

Elliptical Speaker
Size 2 11/16" x 1 27/32"
Pole Diameter 0.5
Standard Impedance 3 ohms (or as required)
Fixing Holes 2 1/4" x 1 1/2" Centres

Total Depth 1 3/8"
Flux Density 7,000 Gauss
Power Rating 300 M.W.
Response 300 - 9,000 c.p.s.

H.F. 816

1,000 ohms Centre Tapped
Response 50 - 12,000 c.p.s.
Voice Coil 500 - 0 - 500

Bass Resonance 65 c.p.s.
Flux Density 16,000 Gauss 3 1/2 lb.

For full specifications of these instruments write:
COSSOR (CANADA) LIMITED HALIFAX, N. S.

For further data on advertised products use page 161.



ALOIS ZETTLER RELAYS

Zettler's standard line of relays include over 30 basic types, of which AZ60 and AZ65 are shown on this page. These relays will meet the requirements of MIL-R-5757B Class A.

AZ60 and AZ65 are miniature relays designed for high switching power, optimum reliability and maximum mechanical stability avoiding resonance in armature and springs. They will operate in any position, withstand vibration up to 55 cps with an amplitude of max. 0.030" and shock to 30 G. The pin type armature bearing assures long wear, even under the most adverse conditions. Due to careful selection of materials used and very close manufacturing tolerances these relays are stable over a temperature range of -55°C to +90°C (-67°F to +194°F).

AZ60 and AZ65 can be supplied hermetically sealed in nitrogen filled type B10 and B20 enclosures with glass to metal headers having up to 14 pins for plug-in applications or the equivalent number of solder hooks. Special sockets for plug-in units are available.

B10 size: 1 1/8" x 1 1/4" x 2 1/2" high (for AZ60). B20 size: 1 1/8" x 1 3/4" x 2" high (for AZ65).

The hermetically sealed relay is protected against the adverse effects of high humidities, salt-spray, sand and dust, gases and widely varying air pressures. The protective gas filling eliminates oxidation and reduces contact arcing. As a result, the hermetically sealed relay operates in its own ideal atmosphere, completely independent of outside conditions which ensures reliability of operation and extended life.

A complete listing of standard available AZ60 and AZ65 relays, open as well as hermetically sealed, is in preparation and will be available shortly together with a reprint of this page. Other Zettler relays are described in a 28 page catalog giving engineering data. This literature supplied upon request.

AZ60

For AZ60 the following standard coils are available:

No.	120	121	122	123	201	124	125	126	118	127	128	129	130	131	132	119	133	110	101
Ohms	5	10	18	26	39	60	75	100	130	200	270	400	600	1000	1500	3000	6000	11000	13000
Turns	650	930	1200	1500	1800	2200	2500	2800	3300	4000	4600	5500	6700	8700	10000	15000	21500	25000	30000

For AZ65 the following standard coils are available:

No.	505	516	517	518	501	510	519	520	521	522	503	523	506	514	525	507	509	526	512
Ohms	2.6	8	16	25	39	60	100	120	150	200	300	420	600	900	1500	2200	4500	8500	20000
Turns	590	1000	1400	1200	2170	2700	3500	3800	4000	4800	6000	7000	8500	10000	13000	15000	22500	30000	43500

The relay coils are designed to operate with a maximum of 130 volts or a maximum dissipation of:

Wattage	2.5W	2.0W	1.5W	1.0W	0.55W	0.4W	0.25W
Ambient Temp.	20°C	35°C	50°C	65°C	80°C	85°C	90°C

AZ60 is supplied with one contact stack only whereas AZ65 has two contact stacks. A maximum of 7 springs can be allowed on each contact stack.

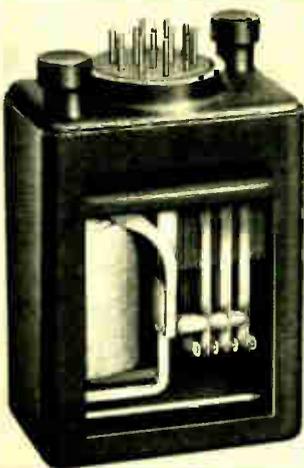
Contact types and ratings:	Standard	High-Current	High-Voltage
Max. number of springs in one stack	7	4	2
Min. contact pressure in grams	15	20	15
Max. switching voltage	100 volts*	100 volts	250 volts*
Max. switching current	2 amps.	4 amps.	1 amp.
Max. switching wattage	100 watts	150 watts	50 watts
Contact material	Silver**	Silver-Cadmium-Oxide	Silver**
Test voltage — Contacts to Frame		1,000 V. AC. - 60 cps.	

* In plate circuit applications 200 volts can be allowed for standard contacts and 500 volts for high voltage contacts (with SP5 contact material) at low current.

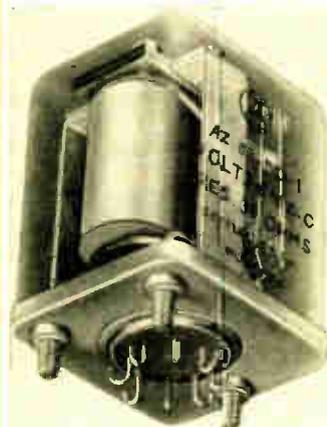
** Silver Palladium 50/50 contact material (type SP5) can be supplied. This contact material will not oxidize and has a higher resistance to material migration, burning and sulfurization.

Contact stacks available:

Standard		Ampere turns		High Current		Ampere turns	
Contact type	Zettler code	AZ60	A65+	Contact type	Zettler code	AZ60	A65+
N	1	75	64	A	1s	90	88
2A	1-1	106	—	2A	1s 1s	152	132
3A	1-1-1	130	114	B	2s	186	164
A+B	1-2	121	106	B+A	2s 1s	218	196
B	2	100	82	High Voltage		Ampere turns	
2B	2-2	—	116	Contact type	Zettler code	AZ60	AZ65
3B	2-2-2	171	154			Depends upon voltage.	
C	21	100	82	2A	1st 1st		
C-A	21-1	121	106	A	1st		
C+2A	21-1-1	144	128	* Sensitivity specified for one contact stack only.			
C+A+B	21-1-2	158	142				
C-B	21-2	136	116				
2C	21-21	136	116				



B10 AZ60



B20 AZ65

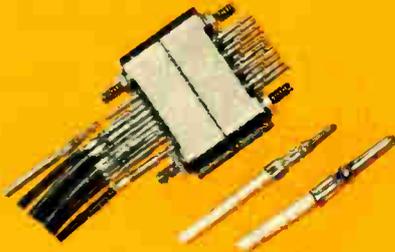
Sensitivity for pull-in is specified in ampere turns next to the standard available contact stacks. To find the pull-in current e.g. for AZ60 with an 11000 ohm (25000 turns) coil, and 1 form C+2 form A standard contacts, we have 144 Amps ÷ 25000 = 0.00576 A. or 5.76 MA. The corresponding voltage is: 0.00576 × 11000 = 63 volts. A suitable safety margin (min. 40%) must be allowed as tolerances on coil and contact forces can give small variations to the calculated values.

Associated Electronic Components

37 ROSELAWN AVE. - HU. 1-0144 - TORONTO 12, ONT., CANADA

IT'S ROUND-UP TIME AT AMP

... products for your **ELECTRONICS**
and **AVIONICS** applications



TAPER PINS

The A-MP Miniature Taper Pin Receptacle eliminates tedious and costly operations of soldering leads to miniature connectors. This solderless, quick-disconnect terminal is applied to the lead by means of A-MP Automachine and A-MP Certi-Crimp Tooling... then capped over other type connectors, modified to receive the A-MP 37 Series Miniature Taper Pin Receptacle.

Other A-MP Taper Pins are available (Series 53 and 88) for wire sizes 24 - 12 AWG and a wide range of insulation sizes. Insulation piercing Taper Pins are available for small stranded wires and popular size tinsel cords.



TAPER TAB RECEPTACLES

A-MP Taper Tab Receptacles are a recent development for flat tabs employing the taper key principle. They are available for wire sizes 24 - 18 AWG, in gold, silver and tin plated finishes.

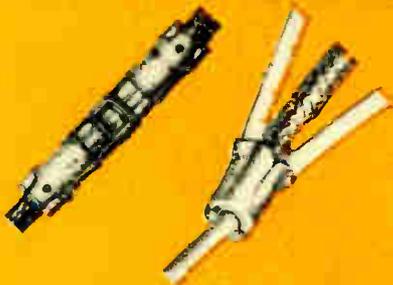
The tapered section of these receptacles is standardized to fit the same size tapered tab. Insulation piercing Taper Tab Receptacles are available for small wire sizes and tinsel cords.



CONNECTORS FOR PRINTED CIRCUITS

The AMP-Edge Connector is design-engineered with positive wiping contact and frictional grippage. This connector gives you: greater flexibility... its size does not limit the size of your completed unit; design versatility... easily applied, in any arrangement, to any section of the perimeter; costs reductions... in applying connector to the wire and to the printed circuit.

The AMPin Connector... gets leads to the printed circuit in one assembly operation... eliminates your investment in expensive automation equipment... no loose leads during the solder-dip process... construction promotes good capillary flow of solder during dipping process... can be applied to solid or stranded wires... is self retaining and self-aligning.



THE SHIELDED WIRE TEAM

The A-MP Shielded Wire Splice joins sections of shielded wire so that the inner conductor and outer shield are firmly spliced and remain effectively insulated from each other. Features include: rectangular inspection window, in center, permits easy inspection to determine proper placement of ends of inner conductor; inspection ports, at each end, to check proper depth of braid enclosed after crimping; and overhang of outer sleeve projects beyond inner elements and grips braid for anti-vibration support.

The A-MP Termashield Shielded Wire Ferrule are of one-piece construction, is slightly thicker than the wires joined, and is the ideal one-step splice for ground tap accommodation.

This A-MP Shielded Wire Team is color-coded for easy identification of leads and connectors and provides a simple one-step operation that reduces assembly time and costs.

Further information on these products is available on request.

Aircraft-Marine Products of Canada, Ltd.
194 Wilson Avenue, Toronto, Canada

Wholly owned Subsidiary of AMP INCORPORATED, Harrisburg, Pa. Other wholly owned Subsidiaries: Societe A-MP de France, Le Pre St. Germain, Seine, France • A-MP - Holland N. V., 's-Hertogenbosch, Holland • Aircraft-Marine Products (Great Britain) Ltd., London, England.
Distributor in Japan: Oriental Terminal Products Co., Ltd., Tokyo, Japan.



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Electronics And Communications

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NUMBER 12

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Audit Board, Inc.

PRINTED IN CANADA
60

TEFLON*

INSULATED

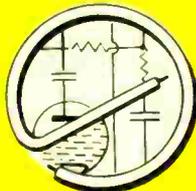
FEDERAL'S NEW HIGH TEMPERATURE HOOK-UP WIRE

CONSTRUCTION — Federal's Teflon insulated hook-up wire has a silver coated copper conductor, insulated with an extruded wall of Teflon tetrafluoroethylene resin having an extremely uniform diameter. Where necessary, an overall Teflon enamelled glass braid and or shield may be supplied.

Teflon insulated hook-up wire meets the requirements of military specifications MIL-W-16878 for types E and EE, rated at 600 and 1000 volts respectively, and MIL-W-7139 for type RM, rated at 600 volts. Supplied in 10 standard solid colours and up to 3 spiral stripes for circuit identification.



HEAT RESISTANCE — Teflon is suitable for continuous service at temperatures from 90° to 250°C. A hot soldering iron in contact with Teflon insulation will not damage it — particularly important where space is limited. As well as withstanding high ambient temperatures, Teflon also permits higher operating temperatures, making possible reduced conductor size with a saving in space and weight.



ELECTRICAL PROPERTIES — Teflon's low power factor, low dielectric constant, high volume and surface resistivity and good dielectric strength are all constant over a wide range of frequencies and temperatures.



CHEMICAL INERTNESS — Wherever there is danger of exposure to solvents or chemicals Teflon in many instances affords the only complete protection. Of all the chemicals encountered in commercial practice, only molten alkali metals and fluorine at elevated temperatures and pressures show any sign of attack on Teflon.

LOW COEFFICIENT OF FRICTION — Teflon has an exceptionally slippery surface — ideal when passing leads through sleeves or similar confined spaces.

Federal's Teflon insulated wire opens the door to new and improved design. Let us know *your* requirements now.

* DuPont registered Trade-Mark

5720

GUELPH, ONTARIO • St. John's Nfld. • Truro • Montreal • Toronto • Winnipeg • Regina • Saskatoon • Calgary • Edmonton • Vancouver

H. K. PORTER COMPANY (CANADA) LTD.

FEDERAL WIRE AND CABLE DIVISION

Divisions of H. K. Porter Company, Inc.: Cleveland, Connors Steel, Delta-Star Electric, Henry Disston, Leschen Wire Rope, Quaker Rubber, Refractories, Riverside-Alloy Metal, Vulcan Crucible Steel and W-S Fittings. In Canada: H. K. Porter Company (Canada) Ltd., Henry Disston, Federal Wire and Cable.

For further data on advertised products use page 161.

World Radio History

YOU CAN'T AFFORD TO OVERLOOK THIS DEVELOPMENT IN INSULATED WIRE...

FEDERAL-
first

to supply
extruded

TEFLON*
TETRAFLUOROETHYLENE RESIN

insulated wire
manufactured
in Canada.

READ ABOUT FEDERAL'S *New* **TEFLON** INSULATED HOOK-UP WIRE →

The outstanding electrical, chemical and mechanical properties of Teflon are opening new avenues for improved design in many industries. Teflon's unique combination of these properties is of particular value in the electrical and electronics industries and makes possible significant advances in the design of aircraft, guided missiles and all associated electronics equipment.



* DuPont registered Trade-Mark

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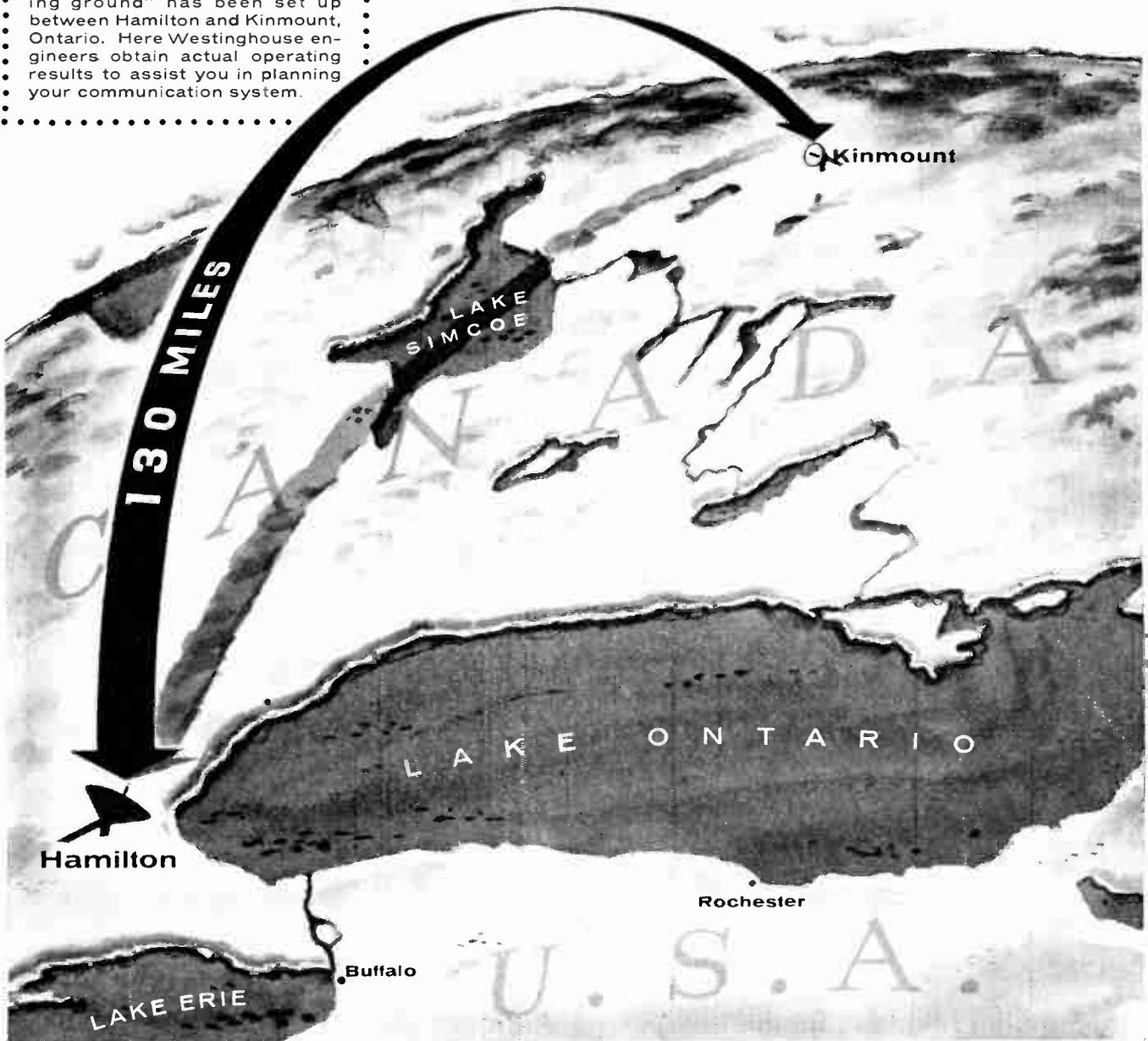
H. K. PORTER COMPANY (CANADA) LTD.
FEDERAL WIRE AND CABLE DIVISION

Divisions of H. K. Porter Company, Inc. Cleveland, Connors Steel, Delta-Star Electric, Henry Disston, Leschen Wire Rope, Quaker Rubber, Refractories, Riverside-Alloy Metal, Vulcan Crucible Steel and W-S Fittings. In Canada: H. K. Porter Company (Canada) Ltd., Henry Disston, Federal Wire and Cable.

ELECTRONICS & COMMUNICATIONS, DECEMBER, 1957

For further data on advertised products use page 161.

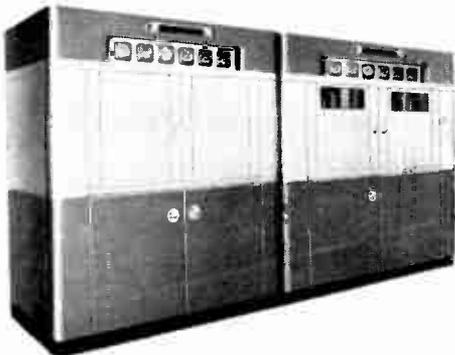
A 130-mile Westinghouse "proving ground" has been set up between Hamilton and Kinmount, Ontario. Here Westinghouse engineers obtain actual operating results to assist you in planning your communication system.



ANOTHER WESTINGHOUSE FIRST!

57-B-745

SHF "Scatter" Transmission



New Westinghouse 4400-5000 mc. Transmitting and Receiving Equipment is compactly and durably designed for truck mounting or fixed installation for either commercial or military application.

- Now for the first time in the communications field, scatter equipment for super-high frequency transmission for fixed or transportable operation has been introduced by Canadian Westinghouse.

- The new Westinghouse "Scatter" communications equipment is designed for high quality, high reliability transmission of voice, teletype, telemetering, facsimile, television and data signals over hops of 100 to 200 miles. Voice capacity for multi-channel operation extends to 120-150 channels.

- Contact your local Westinghouse Sales Office for Descriptive Bulletin H83-100 or write Canadian Westinghouse Company Limited, Electronics Division, Hamilton, Canada.

**WATCH WESTINGHOUSE
ELECTRONICS**

... WHERE BIG THINGS HAPPEN FIRST

Enjoy Television's Top Dramatic Show, Westinghouse STUDIO ONE, every Monday at 10:00 o'clock

RETMA Report



By Basil Jackson, A.R.Ae.S., Tech. M.C.A.I.

A Year Of Consolidation

The year 1957 has been one of consolidation for the Canadian Electronics Industry. The overall volume of business is still running at a little over \$500,000,000 a year, with an upturn in electronic equipment for industrial purposes. This is reflected in the steady membership growth of the Electronics Division of the Radio-Electronics-Television Manufacturers Association.

The key to the future growth of the industry was given in a recent address by the RETMA President, W. H. Jeffery, before the Components Division of the association. In a reference to the Defense side of the electronics industry he said, in part:-

"What about the Government or Defense portion of our business? We are here entering a new era. The systems to-date have principally been a building block process of adding black box to black box to come up with a new system or modify an old one. Now we are going into a complete systems approach to each Defense problem. This puts greater emphasis on the importance of integrating the work of the aviation and electronic business. You are in the fortunate position of participating in this Defense future. It is your opportunity too, to assist your customers in the aviation industry to find people in the electronic industry who might be able to help them solve some particularly sticky design or production problem - - and vice versa. These two industries, in Defense at least, are destined to become so intertwined that you will be building a solid foundation for your future if you can early adopt the role of mediator. I offer this as a challenge to you."

"Great emphasis is also going to be put on research and development. Truly the race for security is a race for scientific intelligence. In this field Canada can make an outstanding contribution. The penalties of smallness are much less in the field of scientific development than in the field of mass production. The component industry will of necessity have to play an important role in the design of our future defenses, thus ensuring your own future. More and more the equipment wanted and ordered by the Services for our defense will be designed in Canada for manufacture in Canada from Canadian components."

Consumer Products Sales Increase — Inventories Low

October 1957 saw the first marked increase in sales of television receivers for a year. The trend began at the end of the summer and has continued at a healthy rate. To complement this sales increase, inventories have been considerably reduced, with shortages expected in some of the more popular finishes of many models.

This consumer products segment of the industry believes that the low sales point has now been passed and that 1958 will see an uprising of television receiver sales as the replacement market begins to make itself felt. There are still about 500,000 wired homes in Canada, within range of Canadian television stations, without a television receiver - - a large potential untapped market.

The scheduled completion of the cross-Canada microwave system in 1958 will do much to stimulate television viewing as those towns now able to receive only limited program fare will be joined to a national network giving more variety and, no doubt, more stimulating programs.

Newsletter

Canadian Radio Technical Planning Board

13th Annual Meeting

The 13th Annual Meeting of the Canadian Radio Technical Planning Board took place in Ottawa on December 10. The meeting was well-attended by representatives from contributing sponsors and by observers from the Department of Transport.

Under the chairmanship of the outgoing president, R. A. Hackbusch, the meeting received reports from the West Coast Panel, Television Committee, Broadcast Committee, Microwave Committee, Task Force on Microwave Systems Parameters, Fixed Land and Maritime Mobile Committee, Tropospheric Scatter Committee, Aeronautical Committee, and a report from the Director of Public Relations.

President's Report

President Hackbusch, in his annual report, made two important recommendations. The first was that consideration be given to the formation of a committee, comprising manufacturer and user sponsors, to consider amortization periods and effective dates for electronic equipment. Action by the Fixed Land and Maritime Mobile Committee will determine if the formation of such a committee is required.

The second recommendation suggested that as the Canadian Standards Association was national in scope and served all provinces as well as representing manufacturers and users, it might undertake the preparation of technical specifications hitherto compiled by the engineering committees of CRTPB. No decision was made on this proposal.

Other Proposals

The Planning Board adopted, in general, a proposal to increase its annual budget to cover more of the ever-increasing amount of work being undertaken by the Board.

It was also proposed that a special committee be set up, and to report to the Board by mid-January, to recommend measures for the CRTPB to adopt so that the Planning Board can be adequately prepared to participate fully in the very important work, of an international nature, of the committees of the CCIR (Consultative Committee on International Radio) and ITU (International Telecommunications Union).

The Canadian Electrical Association recommended that a technical committee be set up to consider, and report on, the exemption of licensing all wire carrier systems operating at frequencies beyond the currently licensed upper limits.

New Members

The addition of three new contributing sponsors to the Board was reported, bringing the total membership to twenty.

Election Results

Results of the election of officers for the year 1957-1958 are as follows:

President — F. H. R. Pounsett
 Assistant General Manager, Canadian Radio Manufacturing Corporation Limited
 Vice-President — C. J. Bridgland
 General Radio Engineer, Canadian National Telegraphs
 General Co-ordinator — R. A. Hackbusch
 President, Hackbusch Electronics Ltd.
 Director of Public Relations — R. C. Poulter
 Director of Education, Radio College of Canada.
 Secretary-Treasurer — F. W. Radcliffe
 General Manager, Radio-Electronics-Television Manufacturers Assoc. of Canada.

DOT Values CRTPB's Work

The observers from the Department of Transport were invited to make suggestions for improving the service rendered to the DOT by the CRTPB. In the absence of Mr. F. G. Nixon, Controller of Telecommunications, DOT, who had left earlier, Mr. C. M. Brant, Controller, Radio Regulations Division, DOT, commented on the importance of the work of the CRTPB and thanked the Board and its members for their co-operation.

Frequency Allocations Chart

Copies of the Canadian Radio Frequency Allocations Chart are available from the CRTPB office at 50 cents each. Measuring 34 in. by 30 in., the chart is in full color, has a color key, table of frequency nomenclature, a colored band showing microwave absorption characteristics, and general explanatory notes on the frequency allocations.

Recent Engineering Committee Meeting

The Fixed Land and Maritime Mobile Committee held a meeting in Montreal on December 19.

New Chairman of Broadcast Committee

Mr. C. Eastwood, of Radio Station CFRB (Toronto) is now chairman of the Broadcast Committee to take the place of Mr. F. H. R. Pounsett, who was elected CRTPB president at the annual meeting on December 10.

Could Whistlers Provide New Method Of Radio Propagation?

Scientists carrying out experiments on "whistlers" — natural radio signals — in connection with the International Geophysical Year, have suggested that a new long-distance method of point-to-point radio communications may be forthcoming.

Experiments during the summer at Stanford University resulted in a special pulse signal (15.5 kc) being sent from Annapolis to Cape Horn through the ionosphere and the exosphere which resulted in both signals being received. The signals followed the path which guides whistlers into space and return, by following the earth's field of magnetic force through ionised gases in the exosphere.

The total length of the path in the Cape Horn experiment was 20,000 miles as the whistlers path extended into a gigantic loop into space and back to earth. It has been discovered that ionised solar gases are formed into magneto-ionic ducts extending well out into space (about 30,000 miles) and that the ducts are in the same direction as the earth's magnetic field; thus they are connected from one earth's hemisphere to the other.

FCC Actions

The Federal Communications Commission of the United States recently granted the right for the National Broadcasting Company to send television programs to Canadian Broadcasting Corporation stations without such programs having to be network programs, and such programs do not necessarily have to pass through NBC's regular facilities.

The FCC also recently announced that the U.S. Coast Guard would no longer monitor the 2670 kc distress frequency signal but that it would ensure that some Coast Guard personnel monitor the 2182 kc band instead.

Canadian Radio Technical Planning Board
 200 St. Clair Avenue West, Toronto 7, Ontario

F. H. R. POUNSETT, President; C. J. BRIDGLAND, Vice-President; R. A. HACKBUSCH, General Co-ordinator; F. W. RADCLIFFE, Secretary-Treasurer

CODE MODULATED MULTIPLE-PULSE MICROWAVE SIGNAL GENERATOR

Model B 950-10,750 mc

Generates multi-pulse modulated carrier for beacons, missiles, radar... provides 5 independently adjustable pulse channels, 4 interchangeable r-f oscillator heads, precision oscilloscope, self-contained power supplies... all in one integrated mobile instrument.

The Polarad Model B is an essential instrument for testing beacons, missiles, radar, navigational systems such as DME, Tacan, H. F. Loran, etc., where multi-pulse modulated, microwave frequency energy with accurately controlled pulse width, delay, and repetition rate is required for coding.

A fully integrated self-contained equipment with these features:

Four Interchangeable Microwave Oscillator Units—all stored in the instrument... each with UNI-DIAL control... precision power monitor circuit to maintain 1 mw power output reference level... keying circuit to assure rapid rise time of modulated r-f output... non-contacting chokes.

Five Independently Adjustable Pulse Channels—each channel features variable pulse width and delay; has provisions for external pulse-time modulation.

Precision Oscilloscope with Built-In Wide Band RF Detector for viewing the modulation en-

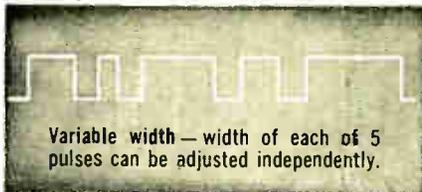
velope and accurately calibrating the r-f pulse width, delay, and group repetition rate. Equipped with built-in calibration markers.

Self-Contained Power Supplies—Model B operates directly from an AC line through an internal voltage regulator. The coded multi-pulse generator is equipped with an electronically regulated low voltage DC supply. Klystron power unit adjusts to proper voltage automatically for each interchangeable band.

Contact your Polarad representative or write to the factory for detailed information.



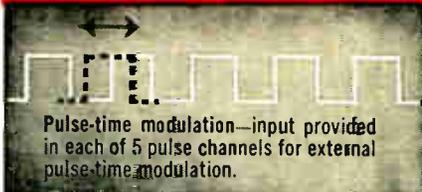
CODE MODULATED MULTIPLE-PULSE
MICROWAVE SIGNAL GENERATOR
Model B



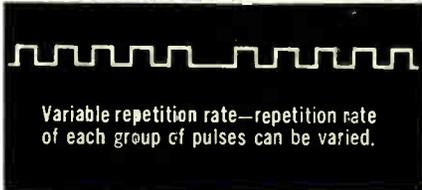
Variable width—width of each of 5 pulses can be adjusted independently.



Variable delay—delay between each of 5 pulses can be adjusted independently.



Pulse-time modulation—input provided in each of 5 pulse channels for external pulse-time modulation.



Variable repetition rate—repetition rate of each group of pulses can be varied.

SPECIFICATIONS:

- Frequency Range:**
 - Band 1... 950 to 2400 mc
 - Band 2... 2150 to 4600 mc
 - Band 3... 4450 to 8000 mc
 - Band 4... 7850 to 10,750 mc
- Frequency Accuracy**... ±1%
- RF Power Output**... 1 milliwatt maximum (0 DBM)
- Attenuator:**
 - Output Range... 0 to -127 DBM
 - Output Accuracy... ±2db
 - Output Impedance... 50 ohms nominal
- RF Pulse Characteristics:**
 - a. Rise Time... Better than 0.1 microsecond as measured between 10 and 90% of maximum amplitude of the initial rise.
 - b. Decay Time... Less than 0.1 microsecond as measured between 10 and 90% of maximum amplitude of the final decay.
 - c. Overshoot... Less than 10% of maximum amplitude of the initial rise.

- Internal Pulse Modulation:**
 - No. of Channels... 1 to 5 Independently on or off
 - Repetition Rate... 40 to 4000 pps
 - Pulse Width... 0.2 to 2.0 microseconds
 - Pulse Delay... 0 to 30 microseconds
 - Accuracy of Pulse Setting... 0.1 microsecond
 - Minimum Pulse Separation... 0.3 microsecond
 - Initial Channel Delay... 2 microseconds from sync. pulse
 - Internal Square Wave... 40-4000 pps (separate output)
- Pulse Time Modulation:**
 - Frequency... 40-400 cps any or all channels
 - Required Ext. Mod... 1 volt rms min.
 - Maximum deviation... ±0.5 microsecond
 - Power Input (built-in power supply) 105/125 v. 60 cps 1200 watts.

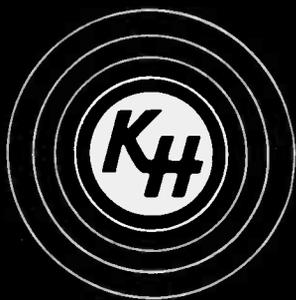
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Model UHR-240

FEATURES

- LOAD REGULATION TO 0.001%
- EXTREMELY LOW OUTPUT IMPEDANCE TO 1 MC WITH NO PEAKS
- RIPPLE LESS THAN 100 MICROVOLTS

Model	Voltage	Current	Impedance		Other Outputs		Price
			DC	AC	Bias	Heaters	
UHR-240*	0-500v	0-500ma	0.005 ohms	0.05 ohms	0-150v, 0-5ma	6.3v ac, 10a 6.3v ac, 10a 5-13v dc, 2.5a	\$625.00
UHR-245*	150-500v	0-500ma	0.01 ohms	0.05 ohms	—	6.3v ac, 10a 6.3v ac, 10a	\$425.00
UHR-220**	0-500v	0-200ma	0.01 ohms	0.1 ohms	0-150v, 0.5ma	6.3v ac, 5a 6.3v ac, 5a	\$390.00
UHR-230R Dual Supply consisting of two Models UHR-220, Rack Mounted \$790.00							
UHR-225**	150-500v	0-200ma	0.02 ohms	0.1 ohms	—	6.3v ac, 5a 6.3v ac, 5a	\$275.00
UHR-235R Dual Supply consisting of two Models UHR-225, Rack Mounted \$560.00							

*Available for rack mounting at \$5.00 additional. **Available for rack mounting at \$10.00 additional

VARIABLE ELECTRONIC FILTERS



Model 330

FEATURES

- ULTRA-LOW FREQUENCY COVERAGE
- FREQUENCY RANGE 100,000 to 1 IN ONE INSTRUMENT
- DIRECT FREQUENCY CALIBRATION

Model	Type	Frequency Range	Frequency Accuracy	Noise & Hum	Price
310-AB*	Band Pass	20 cps to 200 kc	10%	1 mv	\$295.00
330-A*	Band Pass	.02 cps to 2 kc	5%	0.1 mv	\$475.00
330-M*	Band Pass	0.2 cps to 20 kc	5%	0.1 mv	\$475.00
340-A	Servo	.01 cps to 100 cps	5%	10 mv	\$385.00
350-A*	Rejection	.02 cps to 2 kc	5%	0.1 mv	\$475.00
360-A*	Rejection	20 cps to 200 kc	10%	5 mv	\$295.00

*Available for rack mounting at \$5.00 additional.

WIDE RANGE RC OSCILLATORS



Model 420-A

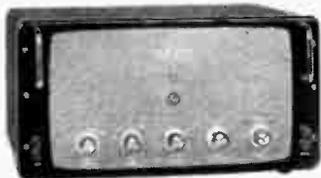
FEATURES

- EXCEPTIONAL STABILITY
- WIDE FREQUENCY RANGE
- LOW DISTORTION

Model	Frequency Range	Frequency Accuracy	Output	Dis-tortion	Price
400-A	.009 cps to 1.1 kc	2%	25 mw/10v	1%	\$375.00
400-C***	.009 cps to 1.1 kc	2%	100 mw/10v	1%	\$395.00
410-A***	.02 cps to 20 kc	2%	10 mw/5v	1/10%	\$1050.00
420-A	.35 cps to 52 kc	2%	25 mw/10v	1%	\$315.00
420-C***	.35 cps to 52 kc	2%	100 mw/10v	1%	\$345.00
430-AB	4.5 cps to 520 kc	2%	50 mw/10v	1%	\$145.00
440-A**	.001 cps to 100 kc	1%*	100 mw/10v	1/10%*	\$550.00
440-B**	1 cps to 1 kc	1/20%*	100 mw/10v	1/10%*	\$950.00

All oscillators except 430-AB and 440-B have both sine wave and square wave outputs.
*Higher at end of range **Push Button Operation in Models 440 ONLY. ***Rack panel construction

ULTRA-LOW DISTORTION POWER AMPLIFIER



Model UF-101

FEATURES

- DISTORTION LESS THAN 0.005% AT 50 WATTS
- DYNAMIC RANGE 110 DB
- 50 WATTS OUTPUT FROM 15 CPS TO 30 KC

SPECIFICATIONS

POWER OUTPUT..... 50 watts from 15 cps to 30 kc
 FEEDBACK..... 80 db
 FREQUENCY RESPONSE ±0.5 db from 0.5 cps to 30kc
 ±3 db from 0.03 cps to 70 kc
 DYNAMIC RANGE..... 110 db
 OUTPUT IMPEDANCE..... 2, 4, 8, 16 and 450 ohms
 VOLTAGE GAIN..... 14 db or 30 db to 16 ohm output
 PRICE..... \$425.00

Available for rack mounting at \$5.00 additional.
 Typical harmonic distortion at 1,000 cps is 0.003% in voltage at 50 watts.

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MODEL 372 SLIDING COAXIAL TERMINATIONS

This equipment, available only from Narda, provides the most convenient means for evaluating the residual VSWR of coaxial slotted lines. VSWR of the element is 1.05 or less; covers range from 2000 to 12,400 mc.

N Connector, male or female \$110 C Connector, male or female \$116



MODEL 371 FIXED COAXIAL TERMINATION

This Narda coaxial termination is the first and only to cover the entire frequency range from S to X band. Same range and element VSWR as above.

N Connector, male or female \$55 C Connector, male or female \$58



3, 6, 10 and 20 DB



40 DB HIGH POWER

HIGH DIRECTIVITY COUPLERS

The 40 db High Power Coupler is another exclusive Narda product. Similar to standard types, except that coupling irises are in the narrow wall, it may be used at full rated power of the waveguide size. Nominal coupling value is 40 db; directivity 40 db. Directivity for 3, 6, 10 and 20 db couplers is also 40 db. Standard cover flanges on primary line; low VSWR termination and standard cover flange on secondary. All bands covering frequencies from 2600 to 18,000 mc.



STANDARD REFLECTIONS

Narda offers five values of reflections for each of six different waveguide sizes... the most complete choice we know of! Provides calibrated reflections or VSWR's for use in standardizing reflectometers or calibrating slotted line impedance meters.

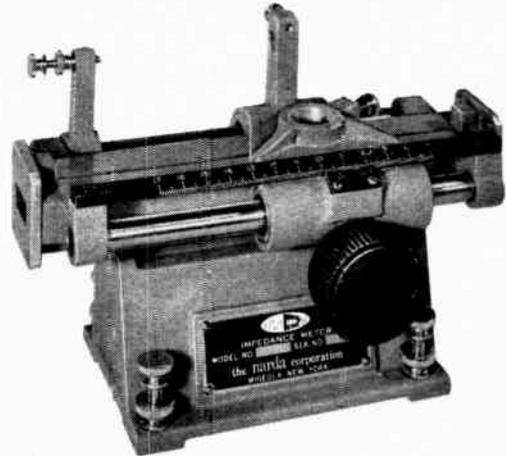
SPECIFICATIONS

Reflection Coefficient	0.00	0.05	0.10	0.15	0.20
Accuracy	0.002	0.0025	0.0035	0.0045	0.007
VSWR Equivalent	1.00	1.105	1.222	1.353	1.50

Models for 2.60 to 18.0 kmc, from \$125 to \$300

Microwave engineers —

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Waveguide and Coaxial IMPEDANCE METERS

Exclusively in Narda Waveguide and Coaxial Impedance Meters, the carriage mounting and drive mechanism are integral with the precisely machined transmission line casting. This insures permanent accuracy and freedom from slope errors—no more tedious adjustment or possibility of misalignment.

Other features include angle-mounted scale and vernier for optimum visibility; readily removable supporting pedestal; and smooth carriage travel action. Waveguide models, accurate for VSWR's of 1.01, are available for complete coverage from 2600 to 18,000 mc; N or C Connector coaxial models, from 1500 to 12,400 mc.

WAVEGUIDE IMPEDANCE METERS

Frequency (kmc)	Narda Model	Residual VSWR	Price
2.6 — 3.95	224	1.01	\$425
3.95 — 5.85	223		350
5.3 — 8.2	222		325
7.05 — 10.0	221		270
8.2 — 12.4	220		250
12.4 — 18.0	219		270

COAXIAL IMPEDANCE METERS

Frequency (kmc)	Connectors (One Male, One Female)	Narda Model	Price
1.5 to 12.4	Series N	231	\$360
1.5 to 12.4	Series C	232	390

Complete Coaxial and Waveguide Instrumentation for Microwaves and UHF—including:

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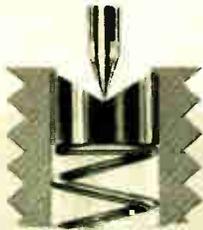


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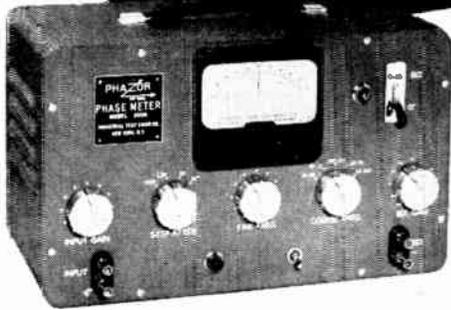


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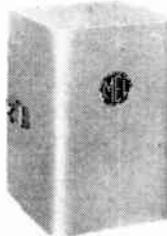
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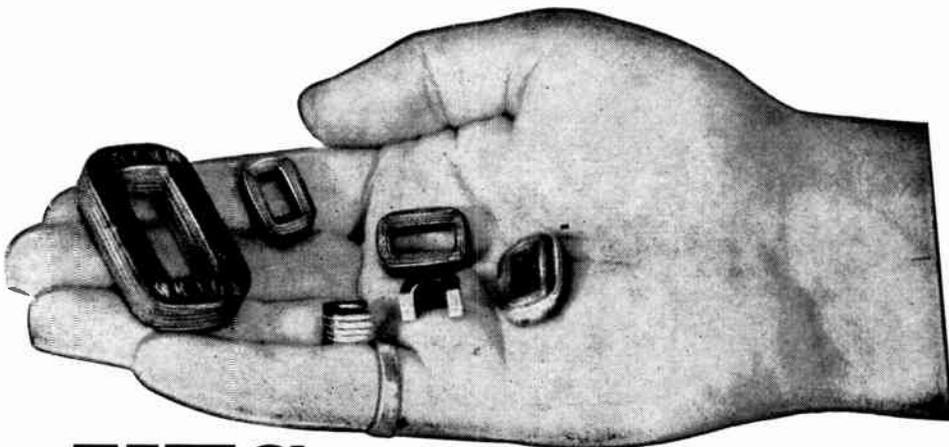
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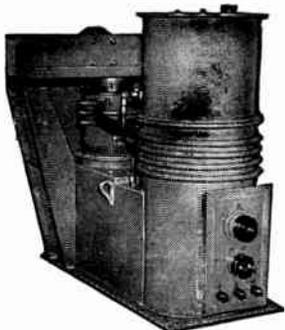
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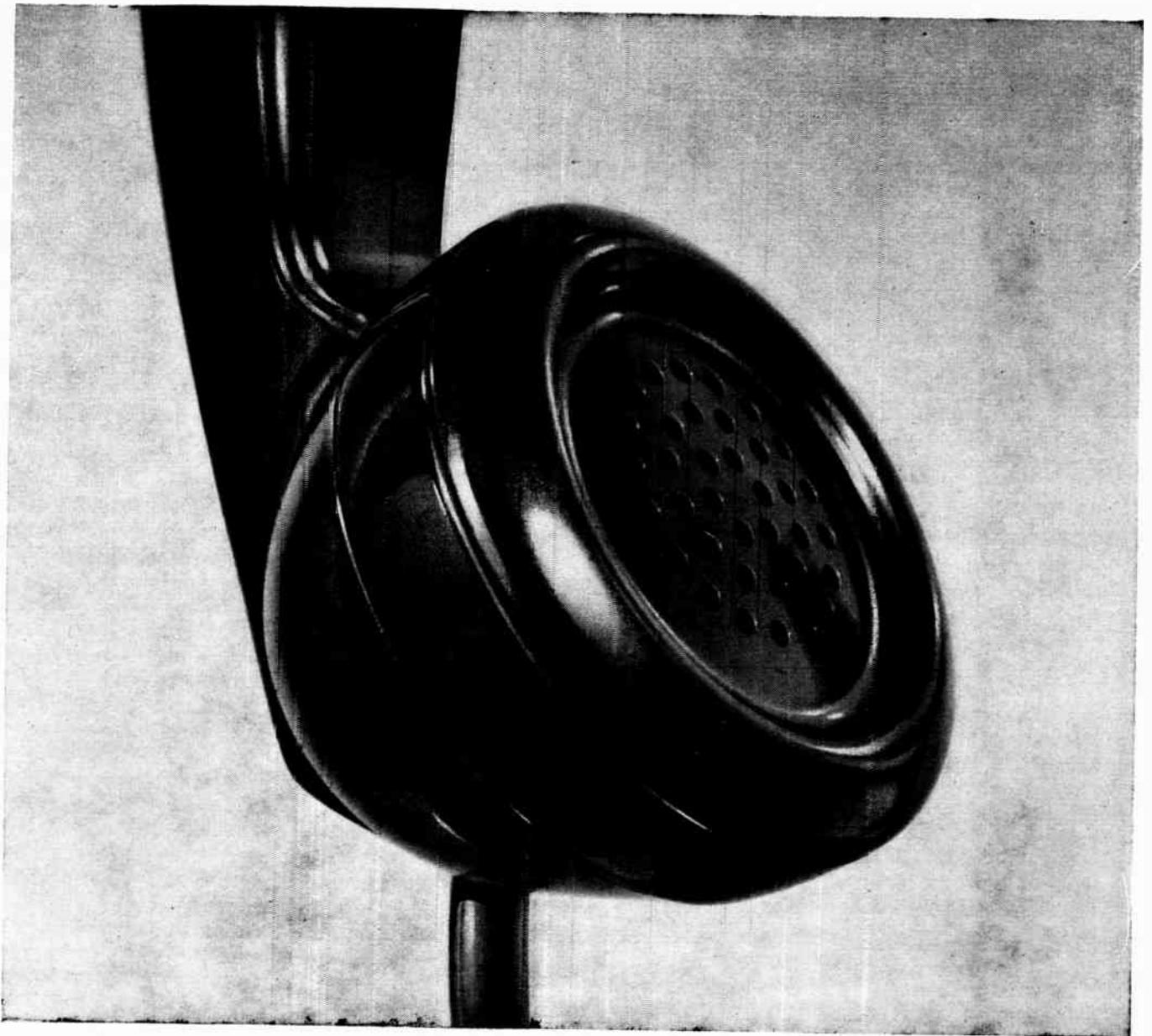
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the editor's page

*A commentary on affairs
pertinent to the electronics
and communications industries.*

Cheap At 600 Million

The expression "old soldiers never die" would appear to be borne out by the actions of some of our recently retired generals and other top-ranking service officers who have been proclaiming with considerable gusto their opinions with respect to the best means of meeting any possible attack that may be directed against us. It is, we believe, good that these men should make known their opinions and express them vigorously because it is by criticism and suggestion from such sources that the present incumbents of the seats of the mighty in the defense services will be kept on their toes to maintain that state of eternal vigilance which is the price of safety in our times.

While constructive criticism is to be desired it would appear that too much attention has lately been paid to the degree of usefulness or uselessness of the Distant Early Warning Radar Line and its associated radar complexes. There seems to be a sizeable bug in the bonnet of some of our retired defense officers that too much money has been spent for the construction of a defense installation which, at the time of its design and construction, was capable of affording a reasonable degree of protection against bomber attack but which now, in the light of the presence of the international missile, can justifiably be looked upon as being more than a little bit out of date.

The argument of course is based upon the premise that at the time of the construction of the northern radar systems it was known that Russia was working on the design of the ICBM and that when such a device came into operational being it would render the northern radar installations obsolete. Well there can be no argument with this premise because time and events have proved it to be correct. However we believe that it should be borne in mind by the critics of our radar warning systems that, despite their cost of \$600,000,000, they have afforded us with some protection against the possibility of bomber attack for a period of two or three years — a form of attack which, ICBM or not, is still a likely form of onslaught that we may have to deal with.

To have forfeited the construction of the radar defense systems for the sake of concentrating on the development of a defense against some form of vehicle we knew nothing about, thereby leaving our skys wide open to attack from a real and existing menace, would have constituted in our opinion a highly dangerous form of defense planning.

The nature of national defense has now developed to the point where the inescapable fact must be accepted that to attempt to economize on defense installations is asking for national disaster. If a three year semi-guarantee of some measure of protection against present day means of attack calls for the construction of a \$600,000,000 radar alarm system, then the price is cheap.

The next step is the development and construction of some form of defense against the ICBM. Who knows what the cost will be? Who knows how long it will be effective? Who knows for sure that a more advanced concept for the waging of war is not now in the formative stages? Are we to grope around dreaming up some means of defense against some nebulous future theory for the waging of war, or are we to spend money on defending ourselves against the present danger?

The Canadian Market

According to Robert E. Poole Jr., president of Autron Engineering Incorporated of Los Angeles, Canada's boom in industrial development will continue in 1958 at an even higher rate than in 1957.

Pointing to a 400 per cent increase in sales to Canada, during 1957, of the automatic control units which his firm manufactures, Mr. Poole predicted an even higher sales level in Canada for his automation equipment during 1958.

Canadian hydroelectric developments which have produced, or soon will produce, an abundance of electricity, and many other factors are entering into the accelerated progress of Canadian industry, Mr. Poole observed, and the development of gas resources in Western Canada will later bring industrial development to this part of Canada, he suggested.

The rapid increase in Canadian consumption of automatic machine control devices has necessitated the appointment of a direct Canadian representative for his firm, Mr. Poole announced. Because Canadian industry must pace U.S. manufacturing methods, Canadian manufacturers are now turning to automatic control of some machine operations in manufacture, or to more extensive automatic control which amounts to automation of whole areas of a plant, Mr. Poole said.

In the United States, Mr. Poole observed, factors such as tight money, defense cutbacks and anticipated lower consumer spending are driving manufacturers to automation of factories at a rate far exceeding normal technological progress.

While it would be difficult to agree or disagree with Mr. Poole's prediction that Canada's industrial development will continue in 1958 at an even higher rate than in 1957, there can be no argument with the information taken from Mr. Poole's company records which reveals the somewhat startling information that, in 1957, his company has enjoyed a 400 per cent increase in exports to Canada over 1956, and that a still higher increase is looked forward to in 1958. As pointed out by Mr. Poole these export orders consisted of equipment for automation or industrial electronic apparatus which may be taken as fairly tangible evidence of Canadian business management's sharp swing to the use of industrial electronics apparatus.

Insofar as the smaller Canadian business firm is concerned, the trend to industrial electronics has been slow but there is every evidence now of a quickened interest on the part of management in the application of industrial electronics to their company operations. The manufacture of electronic equipment for this particular segment of the market is, we believe, one of the most potentially lucrative areas of business that electronic manufacturers may hope to find.

As pointed out in a year-end statement by the president of one of Canada's largest electrical and electronics manufacturers, management in the Canadian electronics industry is now searching for new fields of endeavor to take the place of diminishing defense contracts and in searching for new market outlets have come to recognize the widespread requirements of Canadian industry generally for the machinery of automation and control.

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Thoroughly effective communications with maximum economy is the keynote of Pye VHF and UHF radio communication equipment. Years of intensive research have produced two-way radio that will out-perform competitive makes — yet costs less. Simplified circuits and heavy-duty components provide unfailing service and lower maintenance costs. Mobile units and base stations are available in a number of styles and ratings to suit all requirements. In addition to the AM line Pye now has FM Equipment, fully compatible with existing systems.

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MODEL PCL-20 — Rated at 20-watts r.f. output, the PCL-20 gives you top performance and economical operation where high power is not required. Five crystal-controlled channels in the 1.6 to 4.5 mc. bands, plus standard broadcast (540-1700 kc.).



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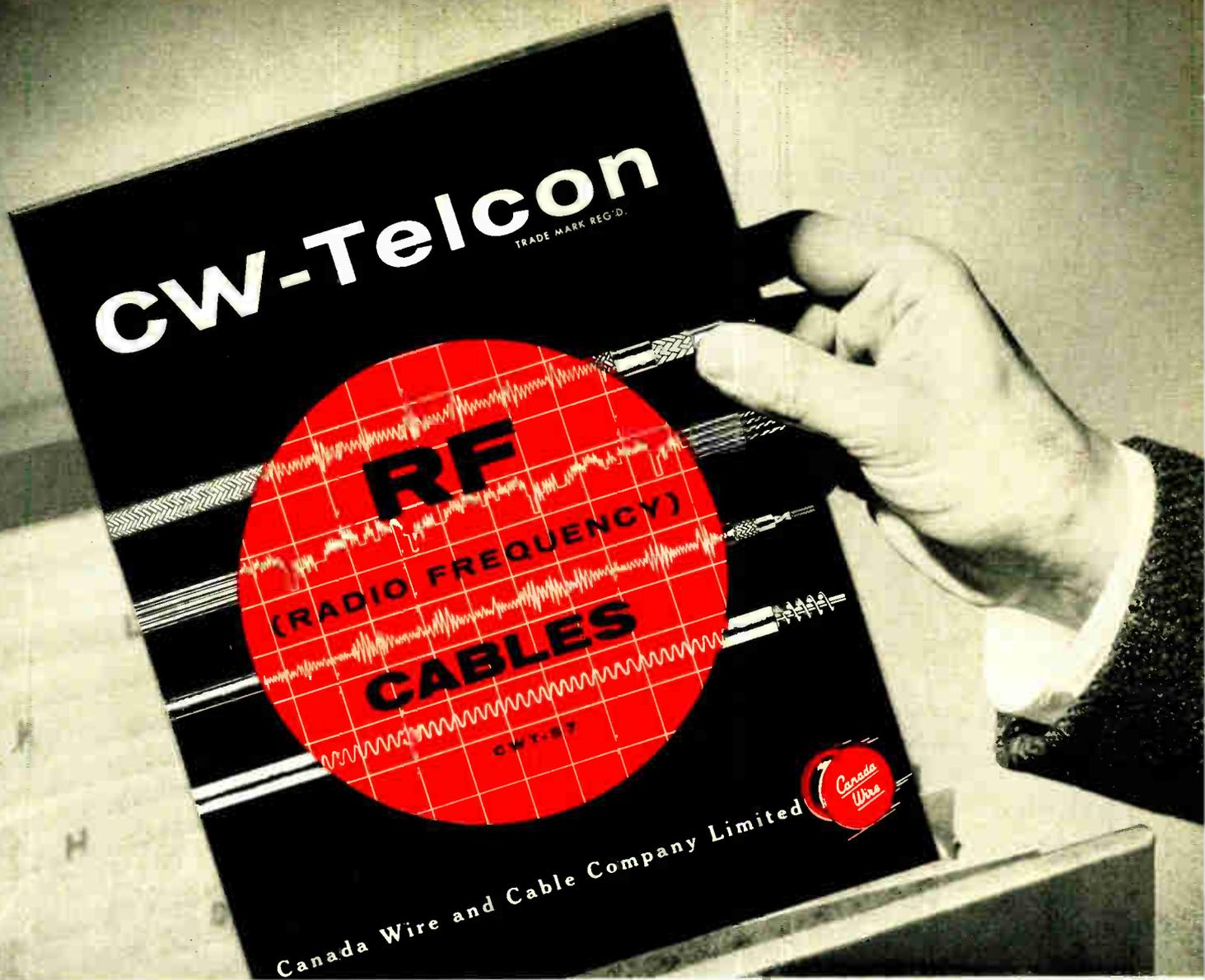
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ANTENNAS

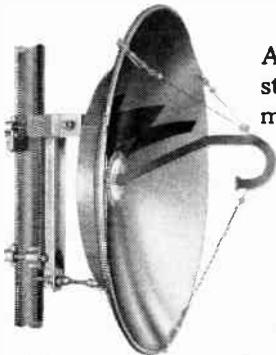
ANTENNA SYSTEMS

TRANSMISSION LINES

The ANDREW product line covers the related fields of antennas for communication and broadcasting, and transmission lines to connect these antennas to transmitters, receivers or other electronic equipment.

PARABOLIC ANTENNAS

A wide selection of standard models in a complete range of sizes and frequencies is stocked for immediate delivery. Special antennas are designed and manufactured to meet individual requirements. Here is a representative selection of stock antennas.



Type PT4-59 4-foot antenna with waveguide horn for 5925-6425 mc.

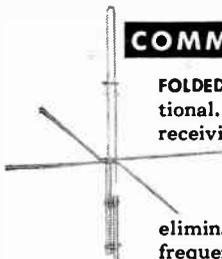
TYPE NUMBERS OF STOCK PARABOLIC ANTENNAS

Frequency Range (MC)	ANDREW Type Number			
	4 ft. dia.	6 ft. dia.	8 ft. dia.	10 ft. dia.
890 - 920	1004A-1	1006A-1		1010A-1
920 - 960	1004A-2	1006A-2		1010A-2
1700 - 1850	2004A-1	2006A-1	2008A-1	2010A-1
1850 - 1990	2004A-2	2006A-2	2008A-3	2010A-3
1990 - 2110	2004A-3	2006A-3	2008A-3	2010A-3
2450 - 2700		P6-24		P10-24
3750 - 4200			PS8-37	
5925 - 6425	P4-59	P6-59	P8-59	P10-59
6575 - 7125	P4-65	P6-65	P8-65	P10-65
7125 - 7425	P4-71	P6-71	P8-71	P10-71

Tower or roof mounts are included as part of the antenna. Most standard mounts include elevation and azimuth adjustments of at least $\pm 5^\circ$. Special heating equipment is available and recommended for antennas operating above 5000 mc in ice areas.

For antennas requiring tower mounts, specify prefix PT for all sizes: example, PT4-59. Roof mounts for 4' and 6' sizes use prefix PM; example, PM6-71. 8' and 10' mounts are designed for either tower or roof mounting.

COMMUNICATIONS ANTENNAS



FOLDED UNIPOLES—(25 mc to 174 mc), omnidirectional. The ideal fixed station transmitting and receiving antenna. Inexpensive, lightweight and easy to install. Some lower frequency models incorporate new design changes which increase windload ratings and eliminate field cutting of vertical elements to frequency.

HIGH GAIN—for 148-174 mc, 400-470 mc. ANDREW High Gain omnidirectional antennas will increase your coverage and multiply benefits by the number of mobile units in the system. Type number, frequency and gain are shown below.

Omnidirectional Pattern

Type 3000	148-174 mc	6.3 db
Type 3006	148-174 mc	9.0 db
Type 4000	450-470 mc	7.6 db
Type 4002	450-470 mc	5.0 db
Type 4010	400-420 mc	7.5 db

Offset Omnidirectional Pattern

Type 201	450-470 mc	10.8 db in max. dir.
Type 3004	148-174 mc	8.1 db in max. dir.

CORNER REFLECTORS. Unidirectional antennas for 25-174 mc and 400-960 mc. Preferred for their high gain and stable operation under severe weather conditions. Also may be utilized for low power TV transmitting in directional and omnidirectional arrays.

ANTENNA SYSTEMS AND PLANNING

ANDREW Corporation offers engineering assistance in the planning of your antenna-transmission line

system at no cost to you. Contact the nearest ANDREW office for this consulting service.

*All are covered by Patent No. 2,757,371

Be sure your library contains Andrew catalog 21 and the new product supplement, 21S.



TRANSMISSION LINES

HELIAX, flexible air dielectric cable combines the efficiency of the finest copper cables with handling ease of solid dielectric types. Available in two sizes, $\frac{7}{8}$ ", Type HO and $1\frac{1}{2}$ ", Type H1, with complete series of pressurized end fittings. Type HO may now be used up to 5000 mc.

RIGID AND SEMI-FLEXIBLE. Complete range of sizes for UHF and VHF systems. Semi-flexible soft copper cable in $\frac{3}{8}$ " and $\frac{7}{8}$ " sizes, rigid copper line $\frac{7}{8}$ " to 9" sizes. Adaptors and fittings available from stock. New 50 ohm, $6\frac{1}{8}$ " line now available for high power applications.

WAVEGUIDE. High efficiency copper clad steel waveguide in sizes ranging from $7\frac{1}{2}$ " to 15" for pressurized UHF systems. Includes accessories for complete line installation.

COAXIAL SWITCH. Automatic, 50 ohm, $3\frac{1}{8}$ ", UHF and VHF. This new, automatic switch now allows high power communication systems, as well as VHF and UHF television stations, the convenience of four-second switching of $3\frac{1}{8}$ " coaxial transmission line at powers up to 10 kw at 1000 mc. Both automatic and manual models include automatic high voltage disabling switch and remote position indicating lights.



ASSOCIATED ANDREW PRODUCTS

Antenna Reflectors, Parabolic Antennas, Tropospheric Antennas, Yagi Antennas, Mobile Antennas, UHF and VHF Cable, Transmission Line (all types) Connectors, Coaxial Cable

Controls, Photoelectric Dehydrators, Automatic Filters, Microwave Filters, UHF and VHF Lighting Equipment, Tower Lines, Slotted Masts, Telescoping Phasing and Tuning Equipment.

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606 BEECH ST., WHITBY, ONTARIO

OFFICES: CHICAGO • NEW YORK • BOSTON • LOS ANGELES

For further data on advertised products use page 161.

Electronics And Communications

Volume 5

December, 1957

Number 12

For Those Who Specify And Buy Electronics

With this issue of **ELECTRONICS AND COMMUNICATIONS** we are proud to present to our readers the Fourth Annual Directory and Buyers' Guide. The Directory, we believe, presents the most accurate and indeed the most extensive compilation of names of firms and their affiliate companies and representatives that has ever been published on behalf of the Canadian electronics industry and the user of electronic parts and equipment. To the best of our knowledge the components section of the Directory includes every conceivable type of electronic equipment and component that is available from Canadian sources together with a listing of the firms and their addresses where the equipment may be obtained. In short we feel justified in permitting ourselves to claim that the Directory provides the Canadian electronics industry with a fully rounded out guide for those engaged in specifying or purchasing electronic equipment.

It is interesting to note that in the 1954-55 Directory and Buyers' Guide published by **ELECTRONICS AND COMMUNICATIONS** there were 18 pages of directory listings. In the 1955-56 Directory there were 31 pages of listings and last year's Directory contained 62 pages of listings. This Directory growth is indicative of the expansion of the Canadian electronics industry and the increasing need for the products of the industry. The growth of the industry, as reflected in the increasing number of pages required for **ELECTRONICS AND COMMUNICATIONS'** annual directories, has made it necessary this year to compile the components section with the use of code reference numbers, a system, we believe, that will meet with the approval of our readers.

The choice of December as the publication month of the Directory is a matter that has been thoroughly considered by the publishers. Publishing in the month of December permits the Directory issue to be placed in the hands of users at the beginning of a new year with a full and up-to-the-minute listing of Canadian sources

of electronic equipment. This date has been chosen rather than March, June or September in order to afford the user a full calendar year's use of the Directory information and to avoid the confusion of having the Directory become obsolete or outdated in the middle of a current year.

As in past years we look upon **ELECTRONICS AND COMMUNICATIONS'** Annual Directory as a reasonable means of measuring the status of the Canadian electronics industry and statistics gathered in the compilation of this year's listings show that in the past twelve months there has been a 10.3 per cent increase in the number of representative agencies in Canada handling electronic equipment and components. While this figure cannot be regarded as a startling advance in the size of the industry it is, nevertheless, an indication of expansion and progress in the right direction.

In the past twelve months business conditions, especially in the defense industries, have been on an uneasy basis, and this condition may be blamed to a considerable extent for the degree of caution exercised by those who may otherwise have invested capital in the establishment of new business ventures in the electronics industry. It is reasonable to assume, however, that as the result of recent startling scientific advances by the Russians, there will be born a concerted effort on the part of the western nations to regain their position in the field of scientific development and this, of course, will lend impetus to the electronics industry. Canada in all likelihood will be expected to share in this effort and, by reason of so doing, we feel it can be confidently looked forward to that, by the end of 1958, our domestic electronics industry will be enjoying a healthy business tempo.

As a contribution to this anticipated development we trust that **ELECTRONICS AND COMMUNICATIONS** 1958 Directory and Buyers' Guide will be of value and assistance to all those engaged in the industry.

Electronics In Canada

In a year-end statement relative to business conditions in the past twelve month period J. Herbert Smith, president of Canadian General Electric Company had the following to say of the Canadian electronics industry.

"... Development in the field of electronics — and their application in communications, defense and industry — are, and will continue to be, very much in the public eye. Increasing applications for electronic equipment are constantly being found in defense work for radar and for aircraft and guided missiles, in the field of nuclear energy, and in the greater use of automation in industry.

"There is an evident trend toward diversification on the part of many electronics manufacturers. This is a result of over-capacity to produce within the industry. Electronics companies are looking for new outlets for their products in striving to maintain an adequate return on

their investment. Manufacturers who have concentrated on defense requirements in the past are therefore showing an increased inclination to diversify into industrial and, perhaps, consumer products in the electronics field in order to put their technical skills to work. The industry is looking toward an increasing demand for industrial electronic equipment.

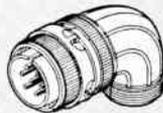
"Canada is becoming increasingly self-sufficient in supplying its own needs for vacuum tubes and related equipment. As one example, a facility has recently been established to manufacture highly reliable specialized receiving tubes for industrial and military applications — tubes which require closer tolerances and heavy emphasis on special features. As well, there is a growing emphasis in Canada on manufacture of semi-conductor products for entertainment, military and industrial applications . . ."

connect with CANNON PLUGS

for better electrical and electronic equipment

USE
for
AIRCRAFT
and **ELECTRONIC**
INSTRUMENTS

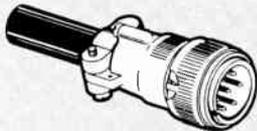
TYPICAL DESIGNS



AN, AN-A, AN-B, AN-C... Conforming to Specification MIL-C-5015C. 15 insert diameters and 260 contact layouts. 6 shell styles, AN3100 to AN3108 with all accessories. Also (AN) F, O(*) AF.

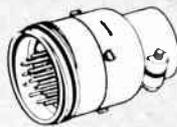


for **VIBRATION**
RESISTANCE
and **MOISTURE-**
PROOF applications



AN-E SERIES ... environment resisting. Replaces AN-M. Meets Specification MIL-C-5015C. Resilient inserts. Integral cable clamp. New grounding lugs. Interfacial sealing, improved grommet and new grommet follower.

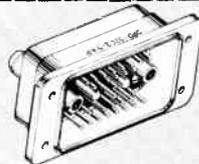
for **GENERAL**
CIRCUITRY and
QUICK DISCONNECT
in more rugged
applications



K, RK SERIES ... **SPECIAL ACME THREAD.** The All-Purpose Series. Conduit and cable clamp entry types. 1 to 82 contacts in 213 different contact layouts. 10-, 15-, 30-, 40-, 60-, 80-, 115-, and 200-amp. silver-plated contacts. High quality phenolic, melamine, and formica insulators. Cadmium-plated aluminum alloy shells.

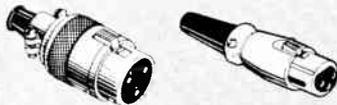


for
UNIT-PLUG-IN
applications ...



DP, DPB, DPD, DPD2, DPD2R, DPR, AND DPM SERIES ... Rack/panel/chassis. With and without shells: coaxial and high voltage contacts. Permit quick disconnect, interchange, replacement, testing and inspection of assemblies and sub-assemblies.

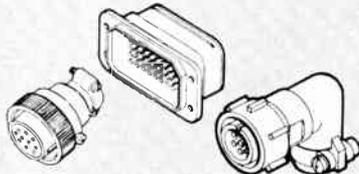
for **AUDIO**
and **LOW LEVEL**
circuits



P, XLR, XL, XK, O, UA, BRS SERIES ... many shell styles and insert layouts. Straight and angle 90° plugs. Latch-lock types. Wall-mounting, panel, lock-nut mounting, and adapter receptacles, single- and two-gang. 10- to 30-amp. contacts, coaxials. UA Series features 3 gold-plated contacts.

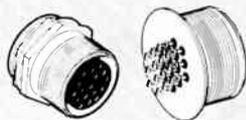


for **RADIO** and
SUB-MINIATURE
applications



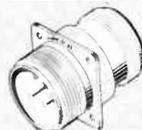
D, MC, DPA, DPX, AND K MINIATURES ... miniatures and sub-miniatures designed for amplifiers, miniature indicators, computer circuits, telemetering equipment, small pre-amps, and general instrumentation where space is limited and current requirements are generally not over 5 amperes. Variety of shell styles, junction shell, and insert arrangements. 3 to 50 contacts, plus coaxials.

for **HERMETICALLY**
SEALED
applications



GS (AN TYPE), KH, RKH, DAH, BFH, TBFH, DBII, KH30 ... with steel shells and contacts to withstand high pressures from within or without. Insulation is a glass material, fused under high temperature to shell and contacts, thus forming a hermetic seal.

for **HIGH**
TEMPERATURE
and **firewall**
applications



AN-K, AN-FW, AND CANNON K-FW STEEL SHELL CONNECTORS ... Open flame protection offered in the greatest variety of this type of connector. Wall- or box-mounting receptacles. Straight or angle 90° plugs. Crimp-type contacts. Inserts of glass-filled materials.

Send for AR Condensed Catalog containing illustrations and technical information on all principal series of connectors in the extensive Cannon Line.



CANNON ELECTRIC CANADA LIMITED, 160 Bartley Drive, Toronto 16, Ontario;
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Licencees in Paris, Tokyo.

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CANNON ELECTRIC

Since 1915



For further data on advertised products use page 161.

WESTON

250° SCALE

PANEL METERS

*-sizes,
sensitivities,
accuracy,
damping,
to meet your
special needs!*



This comprehensive group of Weston d-c and rectifier type a-c panel meters provides not only increased scale readability, but higher accuracies and improved sensitivities and ballistic characteristics as well. Available in 2½" — 3½" — 4½" and 5½" sizes, in standard flanged and aircraft cases for a wide range of voltage and current indications, as well as for tachometry and temperature applications. All movements embody Weston springbacked jewels, and are magnetically self-shielded permitting their use interchangeably on magnetic or non-magnetic panels. For the complete story write to Daystrom Limited, 840 Caledonia Road, Toronto, Ontario; 5430 Ferrier Street, Montreal, Quebec, a subsidiary of Daystrom, Incorporated. Or any office of Northern Electric Co. Ltd.

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 CORPORATION LTD.**

THE NEW SUBSIDIARY OF

ATLAS RADIO CORPORATION LTD.

EXCLUSIVE CANADIAN SALES AND SERVICE REPRESENTATIVES FOR THESE OUTSTANDING
 MANUFACTURERS OF ELECTRONIC MEASUREMENT EQUIPMENT:

ELECTRO PRODUCTS — Magnetic pick-up
 probes.

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HEWLETT-PACKARD — Comprehensive line of
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 vibration calibrators, TV test equipment.

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business briefs and trends

★ Rubidium, a rare alkali metal has been discovered in the 8,000,000 ton lithium ore body at Bernic Lake in Manitoba. The rubidium has been discovered by Montgary Explorations Ltd., in a 150,000 ton cesium ore pocket. Both cesium and rubidium cost about \$2000 a pound when in pure metal form and are used in photoelectric cells, photographic and signalling devices, scintillation counters, vapor rectifiers, spectrometry, electron tubes and microchemical reagents. At the present time the material is imported from Africa.

★ Export of electronic equipment from the United States for the first five months of 1957 has been estimated at \$665,000 higher than for a comparable period in 1956. From January to May this year exports reached \$125,415,574 compared to \$124,751,521 for the same period last year.

★ Exports of British built radio equipment for the first six months of 1957 reached \$63.3 million dollars, an increase of 10 per cent over the same period for 1956. Leading export item in this export advance has been sound reproducing equipment with hi-fi exports running at \$14.4 million dollars for the first six months of this year, an advance of 30 per cent over last year.

★ Estimates show the Royal Canadian Air Force will spend \$4.4 million dollars on search and rescue this year. This figure will be cut substantially by the development of a Canadian "Crash Indicator" which, reports state, "will save lives for \$250". National Research Council's Flight Research and Radar Development Sections have been working on the development of the device for two years.

★ U.S. electronic engineers reporting on a recent trip to the U.S.S.R. state that Russian development on color television and tubes is making big strides. The goal of Russian officials for this year is the production of 2.5 million sets with an increase in the number of color stations from the present 22 to 75 by 1960.

★ Companies in Canada's billion dollar electrical manufacturing industry realized an average profit on their sales dollar of 3.3 per cent for 1956, B. Napier Simpson, general manager, Canadian Electrical Manufacturers Association has stated. "While the 3.3 per cent was a gratifying increase in relation to the industry's profit margin over the past two years, it is still rated among the lowest profit margins in the history of the industry. This compares with an overall average profit of 5.8 per cent for all manufacturing industry in Canada during 1956, according to the survey made by the Canadian Manufacturers Association," he emphasized. The electrical manufacturing industry reported profits on the sales dollar of 2.9 per cent in 1955, 2.6 per cent in 1954, 4 per cent in 1953 and 4.1 per cent in 1952.

★ At a resumption of the Kellock Royal Commission on the dispute of the use of firemen on C.P.R. diesels, L. R. Smith, general superintendent of the Saskatchewan district, said that the C.P.R. intends to install short-wave radio equipment on freight trains operating west of Calgary and Fort Macleod, Alberta, if the railway receives permission to eliminate firemen on freight and yard diesel locomotives.

★ Across-the-board price reductions on the complete line of hermetically-sealed relays has been announced by the General Electric Company in the United States. The change, effective November 1st, will more than compensate for a "slight increase in relay prices made earlier this year," according to Mr. D. O. Dice, marketing manager of General Electric's Specialty Control Department. Reductions will range from seven to 40 per cent in the micro-miniature relay line with cuts averaging about 20 per cent for the widely-used voltage-calibrated types. Miniature and subminiature relays will be reduced by an average of about five per cent, Mr. Dice said.

Continued Overpage

business briefs and trends

★ Union Carbide Scholarships and Fellowships totalling \$52,000 have been awarded this academic year to 68 university students as an aid to their education, and to support fundamental research. Sixty students received Scholarships valued at \$500 a year, and eight were awarded Research Fellowships at \$1,500 a year. These grants are sponsored by Union Carbide Canada Limited, and the selection of recipients and administration of the plan is done by the universities.

★ The Canadian Westinghouse Company, Ltd., will step up its capital spending in the next two years to the rate of \$5,000,000 annually, it was disclosed by George L. Wilcox, president of the company. Purpose of the increased capital investment will be to improve the company's earning power and productivity, and to enable it to keep up with the growth of its business and the progress of the electrical manufacturing industry in Canada. The company's capital expenditures in 1957 will total about \$3,500,000, and in 1956 were about \$1,200,000.

★ The United Mineral & Chemical Corporation has recently reported the introduction and availability in the U.S. and Canada of a new aluminum with the very high purity — 99.999 per cent minimum. This material was developed and is being produced by the Aluminum-Industrie A.G. of Switzerland.

★ Five post-graduate fellowships have been awarded to Canadian students by The International Nickel Company of Canada, Limited, as part of its \$2,500,000 program of aid to higher education in Canada. The fellowships will have a tenure of three years, will provide an annual stipend of \$1,500, plus tuition, and include an annual grant of \$500 to the educational institution.

★ The Electronic Industries Association of the United States is planning on asking the U.S. Congress to reduce the excise tax on television receivers from 10 per cent to five per cent. If Congress does not act on the request it is understood that the EIA will ask that the tax on ultra high frequency receivers only be reduced or eliminated.

★ A change in the patent policy of RCA which is understood to include a royalty-free licensing arrangement with several electronic manufacturing firms is expected to be announced shortly. It is further understood that the new policy will include a reciprocal stipulation calling for the release of RCA from the claims of its licensees.

★ A third quarter summing-up of earnings shows that the United States electronics and electrical equipment firms are the easy leaders of all other segments of industry. In the first nine months of 1957 electrical-electronics equipment earnings scored a 31 per cent gain over 1956. Runner-up with second place in the industrial earnings race was iron and steel with a 22 per cent increase in earnings over the first nine months of 1956.

★ Canadian RETMA, it is reported, will not likely change its name to Electronic Industries Association as its American counterpart recently did. Canadian electronics manufacturers are reported to have privately expressed the opinion that the name Electronic Industries Association has too broad a connotation.

★ The University of Toronto Extension Courses are offering for the first time a series of 10 lectures on the Theory and Practice of Induction Heating. The evening course, sponsored by the Ontario Chapter of the American Society for Metals, runs from January 14 until March 18. Lectures will include qualified personnel from both research and industry.

THINK OF MAGNET WIRE ... THINK OF PHILLIPS

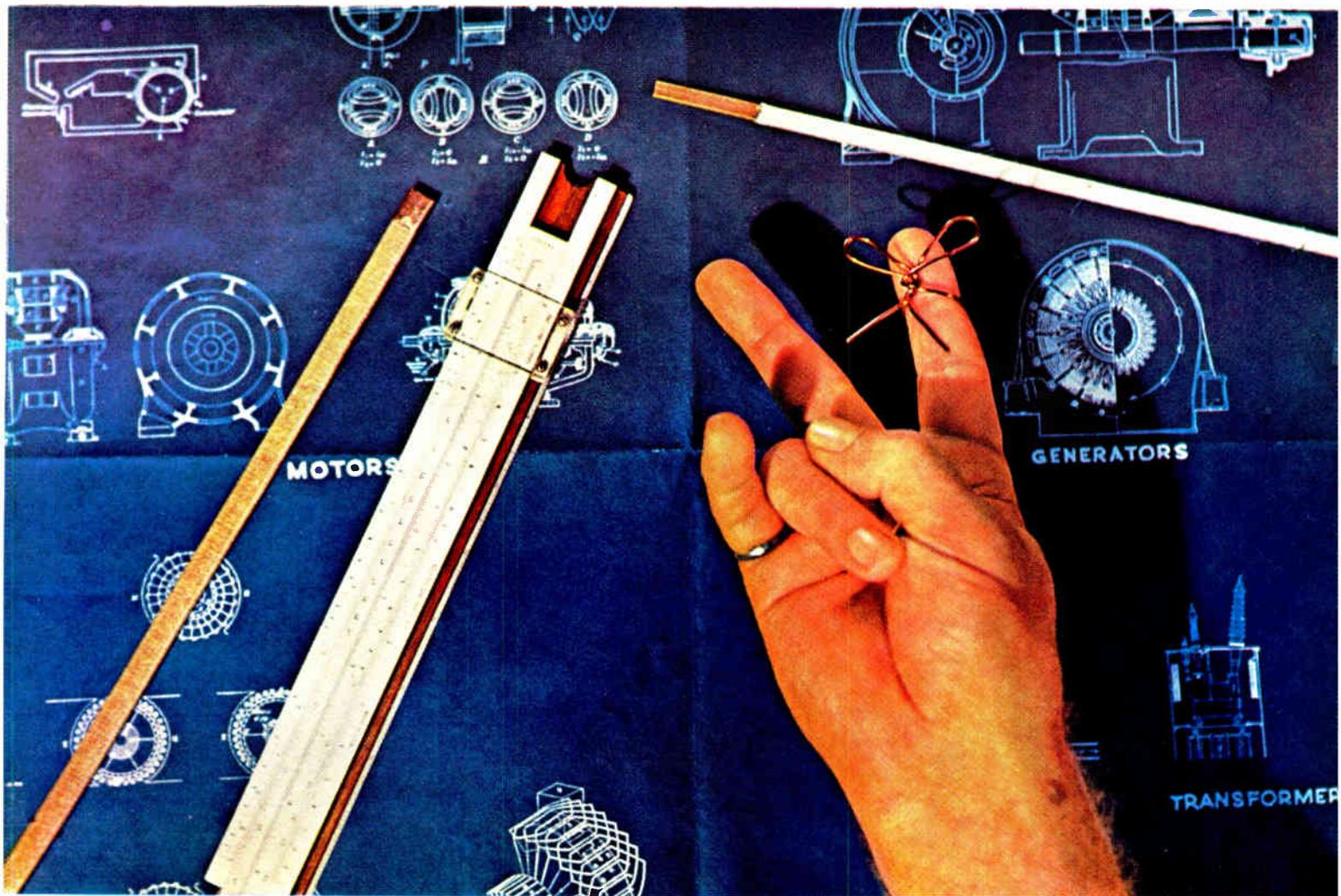
Significant changes are taking place in the Magnet wire field. Changes that may mark the beginning of a new era for magnet wire users. The successful development of Formel provided a reliable satisfactory wire for general winding purposes. Now, to meet the needs of industrial applications, the increase in Home Appliances, and the expansion in Electronics, a number of new and promising wires are being actively developed. These new types employ recently produced synthetics for their insulation, and are the result of months, even years, of painstaking research, selection, and testing.

Tests in which some of you may have participated. As a result, Daglas, Philsol, and Fuzel are now on the market, and others are coming.

You may be assured, that when new and improved magnet wires are needed—Phillips will have them.

Phillips Electrical Company Limited. Head Office—Brockville. Sales Offices—Montreal, Ottawa, Toronto, Hamilton, Winnipeg, Regina, Edmonton, Vancouver. The Canadian affiliate of the British Insulated Callender's Cables Group.

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AVO MINOR MULTIMETER

 \$9.95
 USED EXCELLENT, LESS BATTERIES WITH LEADS

5B1P CATHODE RAY TUBE

 \$6.95 EACH
 BRAND NEW

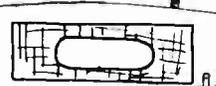
MILLEN 33302 CRYSTAL SOCKET

 FOR CR-7, 3/8" SPACING, .05" PINS.
 29¢ EACH
 \$2.49 FOR 10
 \$19.80 FOR 100

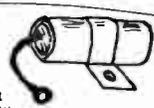
PHONE PLUGS
 PL55 TYPE (2 COND.)
 .69¢ EA
 10 FOR \$5.38
 PL6R TYPE (3 COND.)
 89¢ EA
 10 FOR \$7.85

ASSORTED MULTIDECK WAFFER SWITCHES

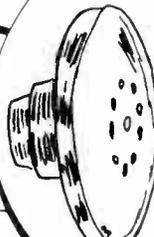
 3 FOR 99¢

RCA AUTO RADIO ADAPTER KIT

 99¢ EA

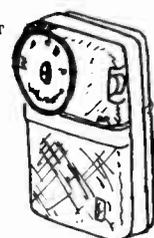
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 10 FOR \$8.50
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 500 FOR \$295.00

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SONY TR-63 SIX TRANSISTOR POCKET RADIO

 WORLDS SMALLEST POCKET RADIO
 1 1/2" x 2 1/4" x 1 1/4"
 EXCELLENT SENSITIVITY
 FULLY GUARANTEED
 \$49.95 EACH
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 MINIMUM ORDER \$5

2500 mfd/15V MALLORY CAPACITOR TYPE FB

 REGULAR \$4.00
 \$1.95 EA
 10 FOR \$14.95

PRECISION VERNIER DIALS

 1 1/2"-\$1.49
 2 1/2"-\$1.79
 3 1/2"-\$2.49
 4"-\$3.79
 180°
 FOR 1/2" SHAFT
 4:1 RATIO

3.3 OHM 55 W SPIRAL WOUND RESISTOR

 49¢ EA.

4" SPEAKER IN BAFFLE

 \$4.95

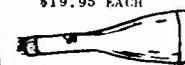
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 JAN GOVT. SURPLUS
 UR CHOICE \$1.29 EA

3 CONDUCTOR KOILED KORD

 \$1.95 EA

SHIPMENTS FOB MONTREAL

7B7A CATHODE RAY NEW GOVT. SURP. REGULAR \$43.00

 \$19.95 EACH

4" PM SPEAKER

 3.2 OHM
 GUARANTEED
 \$1.25 EA.

2N35A POWER TRANSISTOR
 EQUIVALENT TO: REGULAR \$13.50
 CBS 2N155
 CLEVITE 2N257
 SYLVANIA 2N242
 MOTOROLA 2N176
 \$7.95 EA
 \$20.95 FOR 3

2C22 VHF TRIODE

 79¢ EA
 10 FOR \$6.88

GOVERNMENT SURPLUS 5U4G RECTIFIERS

 76¢ EACH
 10 FOR \$7.29
 NOT RECOMMENDED FOR TV

TA-182/U TELEPHONE TELEGRAPH CONVERTER
 MADE BY KELLOG S&S CO.

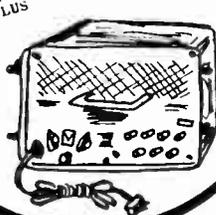
VHF MOBILE ANTENNA

 1PC TYPE RA25
 \$2.85 EACH

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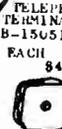
110VAC HOPTIX CADMIUM CELL RECHARGABLE FLASHLIGHT

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 \$5.95 EACH

BRAND NEW GOVERNMENT SURPLUS LESS TUBES \$24.95 EA.


HIGH CURRENT FILAMENT TRANSFORMER
 IN 110 VAC
 OUT 6.3VAC@9 AMPS
 \$2.95 EACH

SELENIUM RECTIFIERS
 PRODUCTION SURPLUS OF POPULAR BRANDS
 350 MA \$1.69 EA
 10 FOR \$14.25
 500 MA \$1.98 EA
 10 FOR \$18.40

TELEPHONE TERMINAL BLK B-15051 CTE

 59¢ EACH
 \$45/100

750 OHM 50 WATT IRC FRW 24 RESISTOR

 99¢ EACH

ENGLISH TUBE SPECIALS

 FIVE ASSORTED TYPES...99¢

MICROPHONE CONNECTOR

 39¢ EA
 10 FOR \$3.22

BC608A ELECTRICAL CONTACTOR

 \$2.95 EA

JONES PLUG P-310-CCT

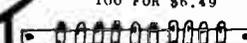
 89¢ EA
 10 FOR \$7.95

PLAIN WHITE TUBE CARTONS
 MINIATURE 1.9¢ EA
 GT 2.4¢ EA
 GFB 2.9¢ EA
 G 2.9¢ EA

1 mfd./600V PAPER CAPACITOR

 14¢ EA
 10 FOR \$1.39

OTHER TYPES IN STOCK. QUERY

MULTI LUG TERMINAL STRIP

 8¢ EACH
 100 FOR \$6.49

CARBON BRUSH ASSORTMENT
 25 ASSORTED CARBON BRUSHES
 \$9¢ / KIT

25% DEPOSIT BALANCE COD

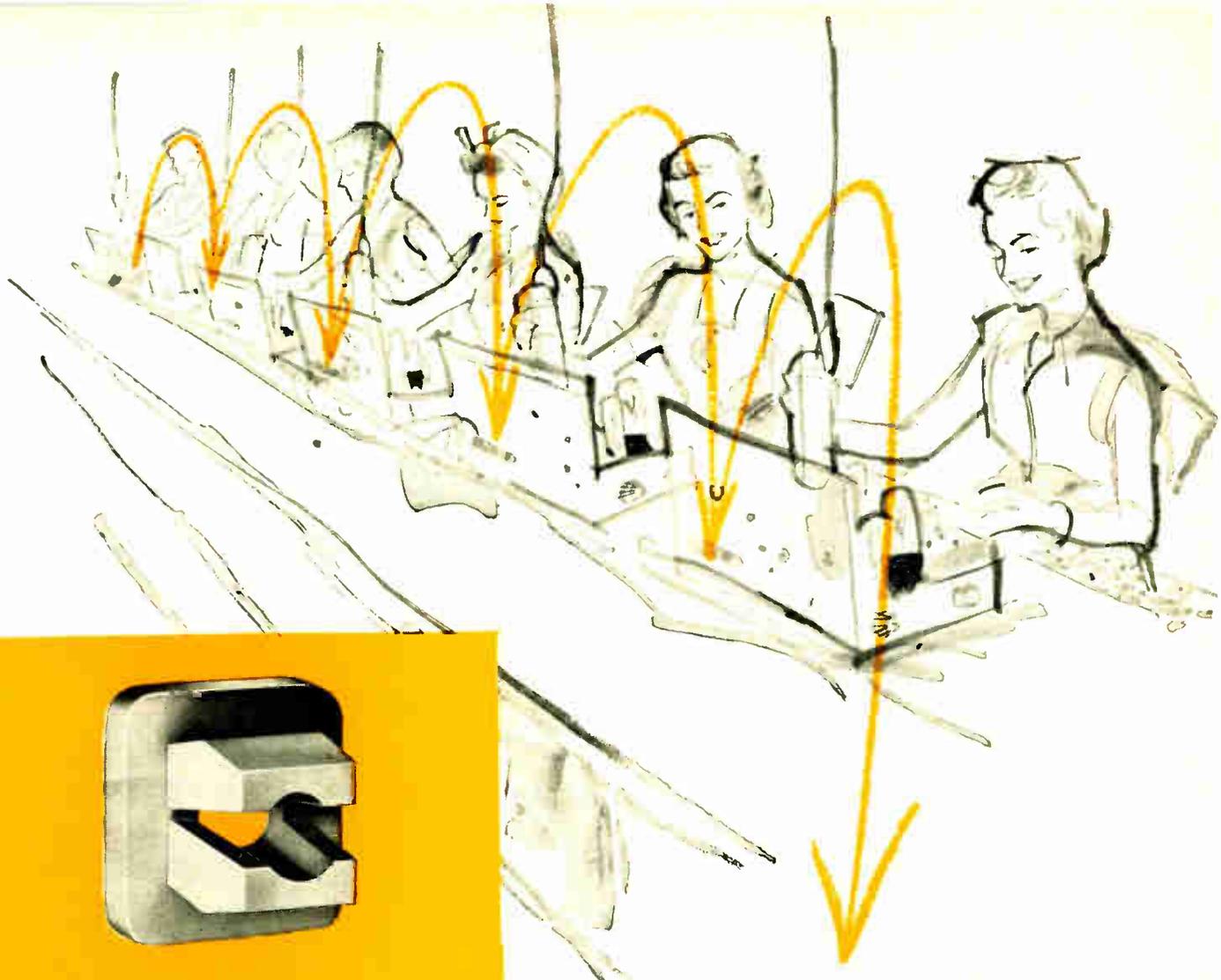
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ELECTRONIC TUBE COMPANY

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MONTREAL, P.Q.

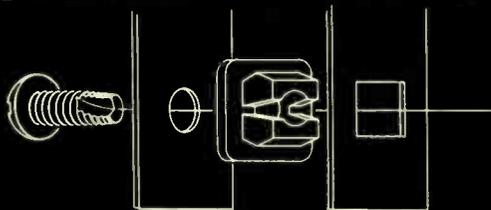


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- non-conductive
- vibration-resistant
- does not chip or craze porcelain
- available in any color

35 sizes stocked



... An Easier Way to Speed Production

... and cut assembly costs, too! Plasti-Grommets snap into a prepared hole at the touch of a finger ... replace other costly retained threaded receptacles, tapped holes or retained nuts. Locked in place by a thread-cutting screw, Plasti-Grommets provide a firm, durable, vibration-resistant fastener. Developed at the Fastex creative engineering labs, Plasti-Grommets are a typical example of the simplification possible in multi-part assembly operations. Fastex volume production of metal and plastic components—on specialized manufacturing equipment—increases the economies gained through Fastex engineering ingenuity. These savings are being realized today in nearly every mass-production industry.

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7-5L

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"FASTENING HEADQUARTERS"®

World Radio History

DIVISION OF CANADA ILLINOS TOOLS LTD.
67 SCARSDALE ROAD • DON MILLS, ONTARIO

Eimac First for



TETRODES

- 4-65A 4CX5000A
- 4-125A 4PR60A
- 4-250A 4W300B
- 4-400A 4W20000A
- 4-1000A 4X150A
- 4CX150G 4X150D
- 4CX250B 4X150G
- 4CX250K 4X250B
- 4CX250M 4X250F
- 4CX300A 4X500A
- 4CX1000A 4X500F

TETRODES

EIMAC TUBE TYPE	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS		
	Plate Dissipation Watts	Plate Voltage	Plate Current Milliampere	Grid Dissipation Watts	Screen Voltage	Screen Dissipation Watts	Filament, Volts	Filament, Amperes	Amplification Factor

4-65A	65	3000	150	5	400	10	6.0	3.50	...
4-125A	125	3000	225	5	400	20	5.0	6.50	...
4-250A	250	4000	350	10	600	35	5.0	14.50	...
4-400A	400	4000	350	10	600	35	5.0	14.50	...
4-1000A*	1000	6000	700	25	1000	75	7.5	21.00	...
4CX250B*	250	2000	250	2	300	12	6.0	2.10	...
4CX250K*	250	1250	250	2	300	12	6.0	2.60	...
4CX250M*	250	1250	250	2	300	12	26.5	0.57	...
4CX300A*	300	2500	250	2	400	12	6.0	2.55	...
4CX1000A*	1000	3000	1000	0	350	12	6.0	12.5	...
4CX5000A*	5000	7500	3000	75	1500	250	7.5	75.00	...
4PR60A*	60	20,000	18,000†	†	1500	8	26.0	2.20	...
4W300B**	300	2000	200	2	300	12	6.0	2.10	...
4W20000A**	20,000	8000	15,000	60	1500	200	10.0	30.00	...
4X150A*	150	1250	250	2	300	12	6.0	2.60	...
4X150D*	150	1250	250	2	300	12	26.5	0.57	...
4X150G*	150	1250	250	2	300	15	2.5	6.25	...
4A250B*	250	2000	250	2	300	12	6.0	2.10	...
4A250F*	250	2000	250	2	300	12	26.5	0.50	...
4X500A*	500	4000	350	10	500	30	5.0	13.50	...
4X500F*	500	4000	350	10	500	30	5.0	13.50	...



TRIODES

- 2C39A 75TH
- 2C39B 75TL
- 2C39WA 100TH
- 3C24 100TL
- 3CX100A5 152TH
- 3W5000A1 152TL
- 3W5000A3 250TH
- 3W5000F1** 250TL
- 3W5000F3 304TH
- 3X100A5 304TL
- 3X2500A3 450TH
- 3X2500F3 450TL
- 3X3000A1 592/3-200A3
- 3X3000F1 750TL
- 6C21 1000T
- 25T 1500T
- 35T 2000T
- 35TG

TRIODES

2C39A*	100	1000	125‡	2	...	...	6.3	1.00	100
2C39B*	100	1000	125‡	2	...	...	6.3	1.00	100
2C39WA	100	1000	125‡	2	...	...	6.3	1.00	100
3C24	25	2000	75	7	...	...	6.3	3.00	24
3CX100A5	100	1000	125‡	2	...	...	6.0	1.00	100
3W5000A1**	5000	6000	2500	50	...	...	7.5	51.00	5
3W5000A3**	5000	6000	2500	150	...	...	7.5	51.00	20
3W5000F1**	5000	6000	2500	50	...	...	7.5	51.00	5
3W5000F3**	5000	6000	2500	150	...	...	7.5	51.00	20
3X100A5*	100	1000	125‡	2	...	...	6.3	1.00	100
3A2500A3*	2500	6000	2500	150	...	...	7.5	51.00	20
3A2500F3*	2500	6000	2500	150	...	...	7.5	51.00	20
3A3000A1*	3000	6000	2500	50	...	...	7.5	51.00	5
3A3000F1*	3000	6000	2500	50	...	...	7.5	51.00	5
6C21	300	30,000	15,000†	†	...	...	8.2	17.00	30
25T	25	2000	75	7	...	...	6.3	3.00	24
35T	50	2000	150	15	...	...	5.0	4.00	39
35TG	50	2000	150	15	...	...	5.0	4.00	39
75TH	75	3000	225	16	...	...	5.0	6.25	20
75TL	75	3000	225	13	...	...	5.0	6.25	12
100TH	100	3000	225	20	...	...	5.0	6.30	38
100TL	100	3000	225	15	...	...	5.0	6.30	14
152TH	150	3000	450	30	...	...	5 or 10	12.50 or 6.25	20
152TL	150	3000	450	25	...	...	5 or 10	12.50 or 6.25	12
250TH	250	4000	350	40	...	...	5.0	10.50	37
250TL	250	4000	350	35	...	...	5.0	10.50	14
304TH	300	3000	900	60	...	...	5 or 10	25 or 12.50	20
304TL	300	3000	900	50	...	...	5 or 10	25 or 12.50	12
450TH	450	6000	600	80	...	...	7.5	12.00	38
450TL	450	6000	600	65	...	...	7.5	12.00	18
592/3-200A3	200	3500	250	25	...	...	10.0	5.00	25
750TL	750	10,000	1000	100	...	...	7.5	21.00	15
1000T	1000	7500	750	80	...	...	7.5	15.50	35
1500T	1500	8000	1250	125	...	...	7.5	24.00	24
2000T	2000	8000	1750	150	...	...	10.0	23.50	23

PENTODE

- 4E27A 5-125B



RECTIFIERS

- 2-01C 253
- 2-25A 8020(100R)
- 2-50A 2CL40A
- 2-150D 2X1000A
- 2-240A 2X3000F
- 2-450A KY21A
- 2-2000A RX21A
- 250R

PENTODE

4E27A 5-125B	125	4000	200	5	750	20	5.0	7.50	...
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KLYSTRONS

- 3K2500LX 3KM50,000PA
- 3K2500SG 4K50,000LQ
- 3KM2500LT 4KM50,000SG
- 3K3000LQ 6K50,000LQ
- 3KM3000LA 1K015CA
- 3K50,000LA 1K015CG
- 3K50,000LF 1K015XA
- 3K50,000LQ 1K015XG

KLYSTRONS

	MAXIMUM RATINGS					
	Output Power CW	Power Pulse Watts	Frequency Range Mc	Beam Voltage	Beam Current A.M.P.S.	Gain db
3K2500LX*	1300	...	980-1200	7000	0.60	25
3K2500SG*	1400	...	1700-2400	7000	0.60	30
3KM2500LT*	...	30,000	955-1220	24,000	3.30	35
3K3000LQ*	2700	...	700-1000	9000	0.75	25
3KM3000LA*	2700	...	375-570	9000	0.75	25
3K50,000LA**	10,000	12,000†	470-580	19,500	2.56	30
3K50,000LF**	10,000	12,000†	580-720	19,500	2.56	30
3K50,000LQ**	10,000	12,000†	700-1000	19,500	2.56	30
3KM50,000PA**	20,000	50,000	225-400	30,000	2.50	30
4K50,000LQ**	10,000	...	720-985	20,000	2.50	50
4KM50,000SG	10,000	...	1700-2400	17,000	1.90	50
6K50,000LQ	10,000	...	720-980	16,000	1.62	60

	MAXIMUM RATINGS						
	Resonator Voltage	Resonator Dissipation	Cathode Current	Reflector Voltage	Heater Voltage	Heater Current	Frequency Range
1K015CA	350	15	50	0 to -500	6.3	0.80	5400-6000
1K015CG***	350	15	50	0 to -500	6.3	0.80	5400-6000
1K015XA	350	15	50	0 to -500	6.3	0.80	8400-9600
1K015XG***	350	15	50	0 to -500	6.3	0.80	8400-9600

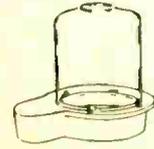
*Requires forced air cooling † Pulse modulator
 **Water cooled ‡ Liquid cooled
 ***Waveguide output fitting † Cathode Current
 ****Grid controlled † TV Peak Synchronizing Level

Reliability in power electron tubes

Continuing research and development adds constantly to the Eimac products list. For latest information, contact our Technical Services Department.

RECTIFIERS		HIGH VACUUM TYPES			
TYPE	FILAMENT VOLTAGE	FILAMENT CURRENT AMPS.	PEAK INVERSE VOLTAGE	PEAK PLATE CURRENT AMPS.	AVERAGE PLATE CURRENT MA
2-01C	5.3	0.4	1,000	0.010	1
2-25A	6.3	3.0	25,000	1.0	50
2-50A	5.0	4.0	30,000	1.0	75
2-150D	5.0	13.0	30,000	3.0	250
2-240A	7.5	12.0	25,000	4.0	500
2-450A	7.5	26.5	25,000	8.0	1000
2-2000A	10.0	25.0	75,000	12.0	750
250R	5.0	10.0	60,000	2.5	250
253	5.0	10.0	15,000	2.5	350
8020(100R)	5.0	6.5	40,000	1.5	100
2CL40A	6.0	2.1	8,000	10.0 ¹	120 +
2X1000A*	26.5	2.25	25,000	25.0 ¹	1250
2X3000F	7.5	51.0	25,000	12.0	3000

MERCURY VAPOR TYPES					
KY21A****	2.5	10.0	11,000	3.0	750
RX21A	2.5	10.0	11,000	3.0	750

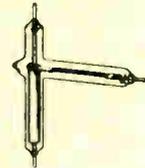


AIR SYSTEM SOCKETS

- | | | |
|--------|--------|--------|
| SK-100 | SK-602 | SK-800 |
| SK-110 | SK-610 | SK-406 |
| SK-200 | SK-620 | SK-506 |
| SK-300 | SK-630 | SK-509 |
| SK-400 | SK-640 | SK-626 |
| SK-500 | SK-700 | SK-806 |
| SK-600 | SK-710 | |



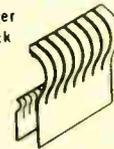
HR HEAT DISSIPATING CONNECTORS



VACUUM SWITCH

VS-2, 4, 5, 6

Finger Stock



TUBE EXTRACTOR

SK-604

5804

AIR SYSTEM SOCKETS & CHIMNEYS

SOCKETS (WITHOUT CHIMNEY)

- SK-100 For Klystrons with oxide coated cathodes such as the 3K3000LQ
- SK-110 For Klystrons with bombardment heated cathodes such as the 3K5000LQ and 4K5000LQ
- SK-200 Cathode end socket for klystrons such as the 3K2500SG
- SK-300 4CX5000A (No Screen By-pass Capacitor)
- SK-400 4-400A, 4-250A, 4-125A
- SK-500 4-1000A
- SK-600 4X150A, 4X150D, 4X250B, 4X250F, 4W300B (Cathode Terminals Not Grounded)
- SK-602 4X150A, 4X150D, 4X250B, 4X250F, 4W300B (Modification of SK-600 Shield slotted between pins 1 & 2)
- SK-610 4X150A, 4X150D, 4X250B, 4X250F, 4W300B (Cathode Terminals Grounded)
- SK-620 4X150A, 4X150D, 4X250B, 4X250F, 4W300B (Cathode Terminals Not Grounded—Screen By-pass Capacitor Plastic Sealed)

SK-630 4X150A, 4X150D, 4X250B, 4X250F, 4W300B (Cathode Terminals Grounded—Screen By-pass Capacitor Plastic Sealed)

SK-640 4X150A, 4X150D, 4X250B, 4X250F, 4W300B (Cathode Terminals Not Grounded—No Screen By-pass Capacitor)

SK-700 4CX300A (Cathode Terminal Not Grounded)

SK-710 4CX300A (Cathode & One Heater Terminal Grounded)

SK-800 4CX1000A (Cathode Grounded, Screen By-pass Capacitor)

CHIMNEYS

- SK-406 (For use with SK-400 Air System Socket)
- SK-506 (For use with SK-500 Air System Socket)
- SK-606 (For use with SK-600 series and SK-700 series Air System Sockets)
- SK-626 (For use with SK-620 and SK-630 Air System Sockets)
- SK-806 (For use with SK-800 Air System Socket)

HEAT DISSIPATING CONNECTORS

TYPE	HOLE DIA.
HR-1	.052
HR-2	.062
HR-3	.070
HR-4	.102
HR-5	.125
HR-6	.359
HR-7	.125
HR-8	.570
HR-9	.570
HR-10	.510

VACUUM SWITCH

Single pole double throw switch within a high vacuum adaptable for high voltage switching. Contact spacing .015". Switch will handle R-F potentials as high as 20 Kv. In DC switching will handle approximately 1.5 Amps. at 5 Kv.

Type	VS-2
	VS-4
	VS-5
	VS-6
Coils	12V
	24V

PREFORMED CONTACT FINGER STOCK

A prepared strip of spring material slotted and formed into a series of fingers designed to make sliding contact.

Single Edge	Width	Double Edge	Width
CF-100	17.32"	CF-200	13.16"
CF-300	31.32"	CF-400	1-17/32"
CF-500	1-3/8"	CF-600	2-1/4"
Klystron Types	Width		
CF-700	17.32"		
CF-800	13.32 x 5.16"		

Used as contact between klystrons and klystron amplifier circuit assemblies.

SK 604 TUBE EXTRACTOR

SK-604 A spring steel extractor for use with the 4X150 series, 4X250 series and 2C39 series tubes.



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The new HTR-10 Model is the same size, weight and style as the popular HTR-5, but provides 10 preset channels. The new HTR-10 control unit has a 10-position frequency switch.

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These HTR-5 and HTR-10 units are ideal for Canadian operations . . . have exceptionally rugged construction, long range and superior trouble-free performance in helicopters, light and medium-size aircraft. Built to military specifications, they are accepted as standard equipment in US Coast Guard helicopters . . . designated as AN URC-13.

Low price includes unit complete with coils, cable connectors and crystals but less microphone and headset. Delivery from stock. Complete units, service and spares available.

For further information write:
200 Laurentien Blvd., Montreal.
Aviation Electric Limited



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REMOTE CONTROL — Simultaneous selection of transmitting and receiving frequencies.

HIGH POWER OUTPUT — Conservatively rated from 30 to 50 watts depending on antenna and frequency . . . ensuring maximum range.

LIGHT WEIGHT — Only 31 lbs. complete, including remote control and self-contained power supply.

MODULATION — 100% with speech clipping . . . ensures maximum performance.

ANTENNA TUNING — Either PI or L networks . . . permits set to be tuned into wide range of antennas.

ANTENNA CAPACITOR — A unique antenna terminating capacitor greatly improves antenna loading, thereby improving performance over conventional equipment.

RECEIVING SENSITIVITY — Better than 3 microvolts for 100 milliwatts output.

LOW POWER REQUIREMENTS — At 27.5 VDC input, only 2.8A for receiving and 9.8A for transmitting.

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Buyers' Guide

Electronic Equipment & Components

Names and addresses of firms can be found in the Directories of Canadian,
American and British and European manufacturers and suppliers.

Canadian listing page 69
United States listing page 80
British and European listing page 102

Aircraft and Airport Equipment (1)

Airborne communication equipm't 1
Airport communication equipment 2
Aircraft communication equipment 3
Airport control equipment 4
GCA equipment 5
VOR equipment complete 6

Ahearn & Soper Co. Ltd., The — 2-4.
Aircraft Radio Corp. — 1-2-3-6.
Alford Mfg. Co. — 6.
Amphenol Canada Ltd. — 3.
Automatic Electric Sales (Canada) Ltd. — 2.
Aviation Electric Ltd. — 1.
Avionics Ltd. — 4.
Bayly Engineering Ltd. — 1.
Beaconing Optical & Precision Materials Co. Ltd. — 4.
Beechey Enterprises — 4.
Bogue Electric of Canada Ltd. — 4-5.
Canadian Aviation Electronics Ltd. — 1-3-6.
Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-2-3-4-5-6.
Canadian Line Materials Ltd. — 2.
Canadian Marconi Co. — 1-2-3-4-6.
Canadian Westinghouse Co Ltd. — 3-6.
Clark Ltd., Alex L. — 4.
Collins Radio Co of Canada Ltd. — 1-2-3-6.
Communications Co. — 4.
Computing Devices of Canada Ltd. — 1-3-5-6.
Curtiss-Wright Corp., Electronics Div. — 4.
Decca Radar (Canada) Ltd. — 4-5.
Electromechanical Products — 1.
Electronic Specialty Co. — 1-2-3.
Electronic Tube Corp. — 1.
Executone Communication Systems Ltd. — 2.
Fenske, Fedrick and Miller Inc. — 4-5.
General Precision Laboratory Inc. — 1-2.
Globe Industries Inc., Electronics Div. — 1-2-3-4-5-6.
Harvey-Wells Electronics Inc. — 1-3.
Instronics Ltd. — 1-2.
Kaar Engineering Corp. — 2.
Lear, Inc. — 1-2-3-6.
Leotron Research Laboratories — 1.
Lenkurt Electric Co. of Canada Ltd. — 2.
Magnecord Canada Ltd. — 2-4.
M.E.L. Sales Ltd. — 2-4.
Mitchell Industries Inc. — 3-6.
National Aeronautical Corp. — 1-2-3.
Pye Canada Ltd. — 1-2-3-4-5.
Radionics Ltd. — 4-5.
Servo Corp. of America — 2.

Sinclair Radio Laboratories Ltd. — 1-2-3-4.
Sonograph Engineering and Mfg. Co. Ltd. — 1-2-3-4.
Specialty Engineering & Electronics Co. — 3-5.
Sperry Gyroscope Ottawa Ltd. — 1-3.
Spivey, Inc., James S. — 1-2-3-4.
Standard Coil Products (Canada) Ltd. — 1-2-3-4-5-6.
Standard Telephones & Cables Mfg. Co. (Canada) Ltd. — 1-2-3-4-5-6.
S & T Sales Ltd. — 3.
Texas Instronics Inc. — 1.
T.M.C. (Canada) Ltd. — 2-4.
Transitron Inc. — 2.
University Loudspeakers, Inc. — 2-3.
Westinghouse Electric International Co. — 2.
Wheeler Insulated Wire Co. Inc., The — 2.

Broadcasting Equipment (2)

Transmitters AM 1
Transmitters FM 2
Control consoles 3
Speech input equipment 4
Remote audio equipment 5
Sampling loops 6
Static drain chokes 7
Tower lighting filters 8
RF Contactors 9

Adler Electronics Inc. — 3.
Ahearn & Soper Co. Ltd., The — 1-2-3-4-5.
Altec Lansing Corp. — 3-4-5.
Caldwell A-V Equipment Co. Ltd. — 5.
Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-2-3-4-5.
Canadian Research Institute — 3-4.
Collins Radio Co. of Canada Ltd. — 1-3-4-5.
Daven Company, The — 4-5.
Electromechanical Products — 1-2.
Engineered Sound Systems Ltd. — 3-4-5.
Gates Radio Co. — 1-2-3-4-5.
General Communications Ltd. — 3-5.
Globe Industries Inc., Electronics Div. — 4-5.
Gould Sales Co., E. S. — 3-4-5.
Instantaneous Recording Service — 4-5.
Johnson Co., E. F. — 6-7-8-9.
Kay Electric Co. — 4.
Lintronics Ltd. — 4
Magnasync Mfg. Co. Ltd. — 5.
Magnecord Canada Ltd. — 5.
McCurdy Radio Industries Ltd. — 3-4-5.
M.E.L. Sales Ltd. — 1-3.
Nichols Ltd., R. H. — 3.
Northern Electric Co. Ltd. — 3-4-5.
Pye Canada Ltd. — 1-2.

Pylon Electronic Development Co. Ltd. — 4.
Radio Communications Equipment & Engineering Ltd. — 1.
Redifon Canada, A Div. of Rediffusion Inc. — 1-2-3.
Rogers Majestic Electronics Ltd. — 1-2-3-4-5.
Standard Telephones & Cables Mfg. Co. (Canada) Ltd. — 1-2.
Tech Laboratories, Inc. — 4-5.
Transitron Inc. — 1.
University Loudspeakers, Inc. — 5.
WRL Electronics, Inc. — 1.

Carrier Current Equipment (3)

Complete terminal equipment 1
Repeat and relay equipment 2
Powerline carrier equipment 3

Ahearn & Soper Co. Ltd., The — 1-2.
Amalgamated Electric Corp. Ltd. — 3.
Automatic Electric Sales (Canada) Ltd. — 1-2.
British Thomson-Houston Co. (Canada) Ltd., The — 1-2.
Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-2.
Canadian Westinghouse Co. Ltd. — 1-2.
Computing Devices of Canada Ltd. — 2.
Electronic Specialty Co. — 2.
Ericsson Telephone Sales of Canada Ltd. — 1-2.
Hackbusch Electronics Ltd. — 1-2.
Kulka Electric Mfg. Co. Inc. — 1.
Lenkurt Electric Co. of Canada Ltd. — 1-2.
Lynch Carrier Systems Inc. — 1.
Microwave Systems — 1.
Northern Radio Mfg. Co Ltd. — 1-2.
Osborne Electric Co. Ltd. — 2.
Pacific Communications Services Ltd. — 1-2.
Pye Canada Ltd. — 1-2.
Rogers Majestic Electronics Ltd. — 1.
Telephone Mfg. Co Ltd. — 1-2.
Westinghouse Electric International Co. — 1-2.

Facsimile Equipment (4)

Receiving equipment 1
Transmitting equipment 2
Sensitized paper 3

Ahearn & Soper Co. Ltd., The — 1-2.
Canadian Electrical Supply Co. — 1-2.
Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-2-3.
Cinema-Television Ltd. — 2.
Electromechanical Products — 1.
Gates Radio Co. — 2.

ELECTRONIC EQUIPMENT — BUYERS' GUIDE

General Photo Products Co. Inc. — 3.
 Kay Electric Co. — 3.
 Muirhead Instruments Ltd. — 1-2-3.
 Northern Radio Mfg. Co. Ltd. — 1.
 Photon Instrument Co. — 3.
 Standard Telephones & Cables Mfg. Co.
 (Canada) Ltd. — 1-2.
 Tel-Autograph Corp. — 1-2.

Industrial Sound Systems (5)

Complete systems 1
Intercom equipment 2

Ahearn & Soper Co. Ltd., The — 1-2.
 Alpha Aracon Radio Co. Ltd. — 1-2.
 Altec Lansing Corp. — 1.
 Atlantic Films & Electronics Ltd.
 — 1-2.
 Atlas Radio Corporation Ltd. — 1-2.
 Atlas Sound Corp. — 2.
 Audio Vox Intercom Inc. — 1-2.
 Automatic Electric Sales (Canada) Ltd.
 — 1-2.
 Bell Telephone Co. of Canada, The
 — 1-2.
 British Thomson-Houston Co. (Canada)
 Ltd., The — 1-2.
 Califone Corp. — 1.
 Canadian Astatic Ltd. — 2.
 Canadian Electrical Supply Co. Ltd.
 — 1-2.
 Canadian Marconi Company — 2.
 Canadian Research Institute — 1-2.
 Chisholm Industries Ltd. — 1-2.
 Cossor (Canada) Ltd. — 1-2.
 Dominion Sound Equipments Ltd.
 — 1-2.
 D & B Sound and Signals Inc. — 1-2.
 Electrolabs — 1-2.
 Electronic Associates Ltd. — 1.
 Electronic Specialties — 1.
 Electro Sonic Supply Co. — 1-2.
 Elgin National Watch Co. — 2.
 Engineered Sound Systems Ltd. — 1-2.
 Ericsson Telephone Sales of Canada
 Ltd. — 1-2.
 Executone Communication Systems
 Ltd. — 1-2.
 Executone Inc. — 1-2.
 Finkler & Co., Len — 2.
 Gates Radio Co. — 1.
 General Theatre Supply Co. Ltd. — 1-2.
 Gould Sales Co., E. S. — 1-2.
 Hackbusch Electronics Ltd. — 1-2.
 Industrial & Institutional
 Communications Ltd. — 1-2.
 Instantaneous Recording Service — 1-2.
 Longstaffe Co. Ltd., J. R. — 2.
 Melody Master Mfg. Co. — 1-2.
 M.E.L. Sales Ltd. — 1-2.
 Northern Electric Co. Ltd. — 1-2.
 Pacific Communications Services Ltd.
 — 2.
 Peffer Sound Systems Ltd. — 1-2.
 Prince & Roberts — 1-2.
 Pye Canada Ltd. — 2.
 Smyth Electronic Components, J. B.
 — 2.
 Spivey, Inc., James S. — 2.
 S & T Sales Ltd. — 2.
 Talk-A-Phone Co. — 2.
 Telecom Ltd. — 1-2.
 Telephone Mfg. Co. Ltd. — 2.
 Tilton Ltd., John R. — 1-2.
 Universal Speaker Service — 1-2.
 University Loudspeakers, Inc. — 1-2.
 Utah Radio Products Co. Inc. — 2.
 Vocaline Co. of America Inc. — 2.
 Wheeler Insulated Wire Co. Inc. — 2.
 Whittaker, E. E. — 2.
 Wickett Ltd., Bradford J. — 1-2.

Marine Equipment (6)

Shipborne equipment 1
Pleasure craft radiotelephone 2

Ahearn & Soper Co. Ltd., The — 1.
 Atlantic Films & Electronics Ltd. — 1-2.
 Aviation Electric Ltd. — 1-2.
 Avionics Ltd. — 1.
 Beacons Optical & Precision
 Materials Co. Ltd., Electronics
 Division — 1.
 Bendix-Pacific — 2.
 Bogue Electric of Canada Ltd. — 1.
 British Thomson-Houston Co. (Canada)
 Ltd., The — 1.
 Canadian Westinghouse Co. Ltd. — 1.
 Chisholm Industries Ltd. — 1-2.
 Collins Radio Co. of Canada Ltd. — 1.
 Cossor (Canada) Ltd. — 1.
 Daystrom Ltd. — 1.
 Decca Radar (Canada) Ltd. — 1.
 D & B Sound and Signals Inc. — 1.
 Elgin National Watch Co. — 1.
 Engineered Sound Systems Ltd. — 2.
 Executone Communication Systems
 Ltd. — 1.
 Globe Industries Inc., Electronics Div.
 — 1-2.
 Gray Radio Co., Inc. — 1-2.
 Instronics Ltd. — 1.
 Jackson Electrical Instrument Co. — 1.
 Kaar Engineering Corp. — 1-2.
 Melody Master Mfg. Co. — 1-2.
 M.E.L. Sales Ltd. — 1-2.
 Muirhead Instruments Ltd. — 1.
 Pye Canada Ltd. — 1-2.
 Pylon Electronic Development Co. Ltd.
 — 2.
 Radio Communications Equipment &
 Engineering Ltd. — 1.
 Raytheon Canada Ltd. — 1-2.
 Rogers Majestic Electronics Ltd. — 1.
 Standard Telephones & Cables Mfg. Co.
 (Canada) Ltd. — 1.
 Stratton & Co. Ltd. — 1.
 S & T Sales Ltd. — 1-2.
 Transitron Inc. — 2.
 University Loudspeakers, Inc. — 1.
 Westinghouse Electric International Co.
 — 1.
 Whittaker, E. E. — 1.

Monitor Equipment (7)

Frequency 1
Modulation 2
Remote control monitors 3
Video monitors 4

Adams Engineering Ltd. — 2.
 Ahearn & Soper Co. Ltd., The
 — 1-2-3-4.
 Aircom, Inc. — 1-2.
 Amalgamated Electric Corp. Ltd. — 3.
 ARVA — 4.
 Atlas Radio Corp. Ltd. — 1-2-4.
 Bayly Engineering Ltd. — 3.
 Biddle Co., James G. — 1.
 BJ Electronics, Borg-Warner Corp. — 1.
 Blonder-Tongue Laboratories Inc. — 4.
 Canadian Electrical Supply Co. — 4.
 Canadian General Electric Co. Ltd.,
 Electronic Equipment & Tube Dept.
 — 1-2-3-4.
 Canadian Marconi Company — 1-2-4.
 Canadian Westinghouse Co. Ltd.
 — 1-2-3.
 Cinema-Television Ltd. — 1-4.
 Collins Radio Co. of Canada Ltd. — 1.
 Computer-Measurements Corp. — 1.
 Daven Company, The — 1.
 Fenske, Fedrick and Miller Inc. — 1-3.
 Frequency Standards Inc. — 1.

Gates Radio Co. — 1-2.
 General Communications Ltd. — 3.
 General Precision Laboratory Inc. — 4.
 General Radio Company — 1-2-4.
 Gertsch Products Inc. — 1-2.
 Globe Industries Inc., Electronics Div.
 — 1-2-3-4.
 Gould Sales Co., E. S. — 4.
 Instronics Ltd. — 1-2.
 Kintel — 4.
 Northern Electric Co. Ltd. — 4.
 Northern Radio Mfg. Co. Ltd. — 1.
 Philips Industries Ltd. — 4.
 Polarad Electronics Corp. — 4.
 Probescope Co. Inc. — 1-2.
 Pye Canada Ltd. — 1-2-4.
 Radionics Ltd. — 1-3.
 Rogers Majestic Electronics Ltd. — 1-2.
 Scheel International, Inc. — 4.
 Telequipment Mfg. Co. Ltd. — 4.
 Television Utilities Corp. — 3-4.

Radar-Microwave Equipment (8)

Microwave relay receivers 1
Position indicator receivers 2
Radar receivers 3
Microwave transmitters 4
Microwave relay transmitters 5
Radar transmitters 6

Ahearn & Soper Co. Ltd., The — 1-4-5.
 Aircom, Inc. — 4.
 ARVA — 1-4-5.
 Automatic Electric Sales (Canada) Ltd.
 — 1-4-5.
 Aviation Electric Ltd. — 3-6.
 Beacons Optical & Precision
 Materials Co. Ltd., Electronics
 Division — 1-4-5.
 Benco Television Associates Ltd.
 — 1-4-6.
 Bendix-Pacific — 3-6.
 British Thomson-Houston Co.
 (Canada) Ltd., The — 2-3-6.
 Canadian General Electric Co. Ltd.,
 Electronic Equipment & Tube Dept.
 — 1-2-3-4-5-6.
 Canadian Marconi Company — 1-5.
 Canadian Westinghouse Co. Ltd.
 — 1-3-4-5-6.
 Collins Radio Co. of Canada Ltd.
 — 1-4-5.
 Computing Devices of Canada Ltd.
 — 2-3-6.
 Decca Radar (Canada) Ltd.
 — 1-2-3-4-5-6.
 Electromechanical Products — 1-6.
 Electronic Tube Corp. — 2.
 Harvey-Wells Electronics Inc. — 3-6.
 Lenkurt Electric Co. of Canada — 1-4-5.
 Lomas, E. G. — 3.
 Mechtron Engineering Products Ltd.
 — 3-6.
 M.E.L. Sales Ltd. — 2.
 Polarad Electronics Corp. — 1.
 Premier Instrument Corp. — 1-3-4-5.
 Pye Canada Ltd. — 1-4-5.
 Raytheon Canada Ltd. — 1-3-4-5-6.
 Rogers Majestic Electronics Ltd.
 — 1-3-4-5-6.
 RS Electronics Corp. — 3-6.
 Sierra Electronic Corp. — 4.
 Specialty Engineering & Electronics Co.
 — 3.
 Spivey, Inc., James S. — 3-6.
 Standard Telephones & Cables Mfg. Co.
 (Canada) Ltd. — 1-4-5.
 S & T Sales Ltd. — 3-6.
 Texas Instronics Inc. — 3-6.
 Varian Associates — 4.
 Westinghouse Electric International Co.
 — 1-2-4-5-6.

ELECTRONIC EQUIPMENT — BUYERS' GUIDE

Television Telecasting Equipment (9)

Transmitters BW	1
Transmitters color	2
Closed circuit equipment	3
Adler Electronics Inc. — 1-2.	
Ahearn & Soper Co. Ltd., The — 1-2-3.	
Ampli-Vision Division, International Telemeter Corp. — 3.	
ARVA — 3.	
Atlas Radio Corp. Ltd. — 3.	
Beaconing Optical & Precision Materials Co. Ltd., Electronics Division — 2-3.	
Benco Television Associates Ltd. — 1-2-3.	
Blonder-Tongue Laboratories Inc. — 3.	
Caldwell A-V Equipment Co. Ltd. — 1-3.	
Canadian Electrical Supply Co. — 3.	
Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-2-3.	
Canadian Westinghouse Co. Ltd. — 3.	
Cinema-Television Ltd. — 3.	
DuMont Labs. Inc., Allen B. — 3.	
Electroline Television Equipment Inc. — 3.	
Entron, Inc. — 3.	
General Precision Laboratory Inc. — 3.	
General Theatre Supply Co. Ltd. — 3.	
Gould Sales Co., E. S. — 3.	
Jerrold Electronics (Canada) Ltd. — 3.	
Kay Electric Co. — 1-2-3.	
Kintel — 3.	
M.E.L. Sales Ltd. — 1-2-3.	
Pacific Communications Services Ltd. — 3.	
Philips Industries Ltd. — 3.	
Pye Canada Ltd. — 1-2-3.	
Rogers Majestic Electronics Ltd. — 1.	
Tel-Instrument Electronics Corp. — 1-2-3.	
Telequipment Mfg. Co. Ltd. — 3.	
Television Utilities Corp. — 3.	

Television Studio Equipment (10)

Consoles control	1
TV cameras	2
TV camera control equipment	3
TV film projectors	4
Studio lighting equipment	5
Adler Electronics Inc. — 1.	
Ahearn & Soper Co. Ltd., The — 1-2-3.	
ARVA — 1-2-3.	
Atlas Radio Corp. Ltd. — 1-2-3-4.	
Beaconing Optical & Precision Materials Co. Ltd., Electronics Division — 5.	
Benco Television Associates Ltd. — 2.	
Caldwell A-V Equipment Co. Ltd. — 1-2-3-4-5.	
Canadian Electrical Supply Co. — 2.	
Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-2-3-4-5.	
Cinema-Television Ltd. — 4.	
Clark Ltd., Alex L. — 3-4-5.	
Collins Radio Co. of Canada Ltd. — 1.	
Daven Company, The — 1.	
General Precision Laboratory Inc. — 1-2-3-4.	
General Theatre Supply Co. Ltd. — 2-3-5.	
Gordon Enterprises — 4-5.	
Gould Sales Co., E.S. — 2.	
Kintel — 1-2-3-4.	
M.E.L. Sales Ltd. — 2-3-4.	
Pacific Communications Services Ltd. — 2.	
Polarad Electronics Corp. — 4.	
Pye Canada Ltd. — 1-2-3-4-5.	
Superior Electric Co., The — 5.	

Telegraph & Teleprinter Equipment (11)

Frequency shift converters	1
Frequency shift keyers	2
Receivers	3
Transmitters	4
Static eliminators	5
Ahearn & Soper Co. Ltd., The — 1-2-3-4.	
Automatic Electric Sales (Canada) Ltd. — 3-4.	
Barker & Williamson Inc. — 1-2-3-4.	
Bell Telephone Co. of Canada, The — 3-4.	
Collins Radio Co. of Canada Ltd. — 1-2.	
Gates Radio Co. — 1-2-3-4.	
Instronics Ltd. — 1-3.	
Johnson Co., E. F. — 4.	
Lynch Carrier Systems Inc. — 3-4.	
M.E.L. Sales Ltd. — 3.	
Millen Mfg. Co Inc., James — 4.	
Northern Radio Mfg. Co. Ltd.—1-2-3-4.	
Pye Canada Ltd. — 1-2-3-4.	
Radelin-Kirk Ltd. — 5.	
Radio Frequency Laboratories, Inc. — 1.	
Redifon Canada, A Div. of Rediffusion Inc. — 2.	
Rogers Majestic Electronics Ltd. — 3-4.	
Standard Telephones & Cables Mfg. Co. (Canada) Ltd. — 1-2-3-4.	
Tel-Autograph Corp. — 3-4.	
T.M.C. (Canada) Ltd. — 1-2-3-4.	
Westinghouse Electric International Co. — 1-2-3-4.	

Telemetry Equipment (12)

Data recorders	1
Data storage mechanisms	2
FM/FM modulators	3
Receivers and transmitters	4
Ahearn & Soper Co. Ltd., The — 4.	
Aircom, Inc. — 4.	
Amalgated Electric Corp. Ltd. — 4.	
Ampex American Corp. — Canadian Division — 1-2.	
Ampex Corporation — Instrumentation Division — 1-2.	
Atlas Radio Corp. Ltd. — 1.	
Automatic Electric Sales (Canada) — Ltd. — 4.	
Baird-Atomic Inc. — 1-2.	
Bayly Engineering Ltd. — 1.	
Beckman/Berkeley Division, A Div. of Beckman Instruments Inc. — 1.	
Bendix-Pacific — 3-4.	
BJ Electronics, Borg-Warner Corp. — 2.	
Bristol Co. of Canada Ltd., The — 4.	
Cinema-Television Ltd. — 4.	
Clark Ltd., Alex L. — 1-2.	
Collins Radio Co. of Canada Ltd. — 4.	
Computing Devices of Canada Ltd. — 1-2-3-4.	
Consolidated Avionics Corp. — 1-2.	
Datran Electronics, Div. of Mid-Continent Mfr. Inc. — 3.	
Daven Company, The — 3-4.	
Daystrom Ltd. — 2-4.	
Edin Co. Inc. — 1.	
Electrical Communications, Inc. — 4.	
Electrodesign — 1-4.	
Electromechanical Products — 1-2-3-4.	
Electronic Associates Inc. — 1-2.	
Electronic Tube Corp. — 1.	
Ellis Industries, The, J. W. — 4.	
Epsco, Inc. — 2.	
Esterline-Angus Co. Inc., The — 4.	
Fischer & Porter Co. — 1.	
Franklin Electronics Inc. — 2.	

General Communications Inc. — 1-2-4.	
General Devices Inc. — 1.	
Globe Industries Inc., Electronics Div. — 3-4.	
Gordon Enterprises — 1.	
Gulton Industries Inc. — 1-3.	
Harvey-Wells Electronics Inc. — 4.	
Honeywell Controls Ltd. — 1-2-4.	
Hoover Company Ltd., The — 1-3-4.	
Hudson Randall International — 1.	
Instronics Ltd. — 1-2.	
Instrument Development Laboratories Inc. — 3.	
Jerrold Electronics Corp. — 3.	
Leeds & Northrup, Canada, Ltd. — 1-4.	
Librascope Inc. — 1-2.	
Lynch Carrier Systems Inc. — 4.	
Magnasync Mfg. Co. Ltd. — 1-2.	
M.E.L. Sales Ltd. — 4.	
Microwave Systems — 4.	
Nems-Clarke, Inc. — 4.	
Nichols Ltd., R. H. — 1-2-4.	
Northern Radio Mfg. Co. Ltd. — 3-4.	
Parsons Co., The Ralph M. — Electronics Division — 3-4.	
Peacock Brothers Ltd. — 4.	
Photon Instrument Co. — 1.	
Pye Canada Ltd. — 1-2.	
Radiation Inc. — 1-2-3-4.	
Radio Frequency Laboratories, Inc. — 4.	
Radionics Ltd. — 1-2-3-4.	
Rogers Majestic Electronics Ltd. — 4.	
Sanborn Co. — 1.	
Solartron Electronic Group Ltd., The — 1.	
Spivey, Inc., James S. — 4.	
Taller & Cooper Inc. — 1-2.	
Telecomputing Corp. — 1-2.	
Texas Instronics Inc. — 1-2-3-4.	
Ultradyne Engineering Laboratories Inc. — 3.	
Veeder-Root of Canada Ltd. — 1.	
Westinghouse Electric International Co. — 3-4.	

Vehicular Mobile Radio Equipment (13)

Base station terminal equipment	1
Mobile station equipment	2
Selective calling equipment	3
Pack sets	4
Receivers fixed	5
Repeater terminals	6
Walkie-Talkies	7
Railroad communications equip.	8
Ahearn & Soper Co. Ltd., The — 1-2-3-4-5-6-7-8.	
Aircraft Radio Corp. — 2.	
Atlantic Films & Electronics Ltd. — 1-2-5-7.	
Automatic Electric Sales (Canada) Ltd. — 3.	
Barker & Williamson Inc. — 1-2-5.	
Bell Telephone Co. of Canada, The — 1-2-4-7-8.	
British Thomson-Houston Co. (Canada) Ltd., The — 8.	
Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-2-3-4-5-6-7.	
Canadian Marconi Company — 1-2-3-5-6.	
Canadian Westinghouse Co. Ltd. — 1-2-3-5-6-8.	
Chisholm Industries Ltd. — 1-2-4-5-7-8.	
Collins Radio Co. of Canada Ltd. — 1.	
Communications Co. — 1-2-5-6.	
Computing Devices of Canada Ltd. — 1-2-3-4-5-6-7-8.	

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DuMont Labs. Inc., Allen B. — 1-2-3-5-6.
 Electrical Communications, Inc. — 3-8.
 Ericsson Telephone Sales of Canada Ltd. — 3-7-8.
 Gordon Enterprises — 7.
 Gould Sales Co., E.S. — 2.
 Harvey-Wells Electronics Inc. — 1-2-3-4-5-6-7.
 Instantaneous Recording Service — 7-8.
 Kaar Engineering Corp. — 2-4.
 Lynmar Engineers, Inc. — 5.
 M.E.L. Sales Ltd. — 1-4-5-7-8.
 Pacific Communications Services Ltd. — 1-2-3-4-5-6-7-8.
 Prince & Roberts — 8.
 Pye Canada Ltd. — 1-2-3-4-5-6-7-8.
 Pylon Electronic Development Co. Ltd. — 1.
 Radio Communications Equipment & Engineering Ltd. — 1-2-4.
 Rogers Majestic Electronics Ltd. — 1-2-3-4-5-6-7-8.
 Specialty Engineering & Electronics Co. — 2.
 Sperry Gyroscope Ottawa Ltd. — 7.
 Spivey, Inc., James S. — 1-2-5.
 S & T Sales Ltd. — 1-2-3-4-5-6-7.
 Taller & Cooper Inc. — 1-8.
 Transitron Inc. — 1-2.
 University Loudspeakers, Inc. — 2-8.
 WRL Electronics, Inc. — 2.

Amateur Radio Equipment

(14)

Transmitters 1
 Johnson Co., E. F. — 1.

Telephone Equipment & Supplies

(15)

Carrier current equipment 1
Handsets 2
Installation hardware 3
Motor generator sets 4
Multiplex equipment 5
Outside plant equipment 6
Pole line hardware 7
Power supplies 8
Protection equipment 9
Repeaters 10
Repeating coils 11
Switchboard equipment PAX 12
Switchboard equipment PBX 13
Telephone booths 14
Telephone cable 15
Telephone systems 16
Telephone wire 17
Teletype error correction (TOM/TOR) equipment 18
Telephone maintenance & service equipment 19

Amalgamated Electric Corp. Ltd. — 1-2-5-10-12-13-14-15-16.
 Automatic Electric Sales (Canada) Ltd. — 1-2-3-4-6-7-8-9-10-11-12-13-14-15-16-17.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-4-5.
 Canadian Line Materials Ltd. — 3-7-8-9.
 Collins Radio Co. of Canada Ltd. — 1-5-16.
 D & B Sound and Signals Inc. — 2-8-11-13-16.
 Engineered Sound Systems Ltd. — 2-8-10-15-16-17.
 Ericsson Telephone Sales of Canada Ltd. — 1-2- 11-12-13-16.

Hackbusch Electronics Ltd. — 1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17.
 Herring & Co. Ltd., John — 9.
 Lenkurt Electric Co. of Canada Ltd. — 1-5-10.
 Phillips Electrical Co. Ltd. — 15-17.
 Pye Canada Ltd. — 1-2-4-5-8-9-10-12-13-16.
 Radio Communications Equipment & Engineering Ltd. — 1-2-5-10-12-13-16-18-19.
 Radio Engineering Products — 1-5-10-11.
 Schauer Manufacturing Corp. — 8.
 Telecables and Wires Ltd. — 15.
 Telecom Ltd. — 12-15-16-17.
 Telephone Manufacturing Co. Ltd. — 1-2-5-10-11-12-13-16.

Amplifiers

(16)

DC amplifiers 1
Decade 2
Dynamic noise suppressors 3
Geophysical 4
Hearing aid 5
High fidelity 6
IF amplifiers 7
Inter-Coms 8
Magnetic 9
Microwave 10
Phono-pre-amplifiers 11
Power 12
Public address 13
RF amplifiers 14
Recording 15
Servo 16
Strain gage 17
TV amplifiers 18
TV boosters 19
Transistor 20
Ultrasonic 21
Wideband 22
Logarithmic 23
Automatic gain control 24
Transducers 25

Acme Electric Corp. Ltd. — 9.
 Acro Products Co. — 6.
 Acton Laboratories Inc. — 2-12-21-22.
 Adler Electronics Inc. — 9-12-14-16-18-19-22.
 Ahearn & Soper Co. Ltd., The — 1-2-3-4-8-9-10-13-14-17-22.
 Airborne Accessories Corp. — 9-20.
 Aircom, Inc. — 10.
 Airmec Ltd. — 1-22.
 Airpax Products Co., The — 1-9.
 Airtron Canada Ltd. — 10-22.
 Alpha Aracon Radio Co. Ltd. — 6-8-11-12-13-15-18-19-20.
 Altec Lansing Corp. — 3-6-7-9-11-12-13.
 Amalgamated Electric Corp. Ltd. — 17.
 American Electronics Inc. — 6-9.
 Ampli-Vision Division, International Telemeter Corp. — 14-18-19.
 ARVA — 1-2.
 Associated Electronic Components — 5-6-7-12-13.
 Astral Electric Co. Ltd. — 6-11-13.
 Atlantic Films & Electronics — 6-8-11-12-13-15.
 Atlas Radio Corp. Ltd. — 1-5-6-8-10-11-12-13-14-15-17-18-19-22.
 Audio Equipment Co. Inc. — 5-8-13.
 Audio Instrument Co. Inc. — 23.
 Audio Tool & Engineering Ltd. — 6.
 Audio Vox Intercom Inc. — 6-8-13.
 Aviation Electric Ltd. — 16-20.
 Avionics Ltd. — 8-10-17-20.
 Baird-Atomic Inc. — 1-17-22.
 Barker & Williamson Inc. — 7-12-14.

Bayly Engineering Ltd. — 17.
 Beaconing Optical & Precision Materials Co. Ltd., Electronics Division — 7-10.
 Beckman/Berkeley Div., A Div. of Beckman Instruments Inc. — 1-9.
 Bendix-Pacific — 17.
 BJ Electronics, Borg-Warner Corp. — 16-20.
 Behlman Engineering Co. — 12.
 Belling & Lee Ltd. — 18-19.
 Bell Sound Systems, Inc. — 6-13.
 Benco Television Associates Ltd. — 10-14-18-19-22.
 Blonder-Tongue Laboratories Inc. — 14-18-19-22.
 Bogue Electric of Canada Ltd. — 1-9-12-16-20.
 Bomac Laboratories Inc. — 10.
 Bristol Co. of Canada Ltd., The — 15-16.
 British Ferrograph Recorder Co. — 15.
 Brush Electronics Co. — 4-15-16-17.
 Caldwell A-V Equipment Co. Ltd. — 7-11.
 Canadian Applied Research Ltd. — 20.
 Canadian Electrical Supply Co. Ltd. — 6-8-11-12-13-15-19-20.
 Canadian General Electric Co. Ltd. — 6-11-20.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-6-10-11-12-14-15-18-20-22.
 Canadian Marconi Co., Electronic Tube & Components Div. — 6-11-12.
 Canadian Research Institute — 1-2-4-6-8-12-13-15-20-21.
 Canadian Westinghouse Co. Ltd. — 1-9-12-16.
 Centralab, A Div. of Globe-Union Inc. — 5-20.
 Cinema-Television Ltd. — 1-18-19.
 Clark Ltd., Alex L. — 6-11-12.
 Collins Radio Co. of Canada Ltd. — 10.
 Computing Devices of Canada Ltd. — 1-14-16-20.
 Cossor (Canada) Ltd. — 6-11-12-13-18-20-22.
 Crescent Engineering & Research Co. — 16-20.
 Curtiss-Wright Corp., Electronics Div. — 9-16-20.
 Danavox, A/S — 5.
 Datan Electronics, Div. of Mid-Continent Mfr. Inc. — 16-17.
 Daven Company, The — 2-22.
 Daystrom Ltd. — 1-6-11-12-16.
 Diamond Antenna & Microwave Corp. — 10.
 Dominion Electrohome Industries Ltd. — 6-11.
 Dominion Sound Equipments Ltd. — 6-8-11-12-13.
 Douglas Microwave Co. Inc. — 10.
 D & B Sound and Signals Inc. — 1-6-8-12-13-20-24.
 Eastern Precision Resistor Corp. — 1-2.
 Edin Co. Inc. — 1-15-17.
 Elder Electronics — 21.
 Electrodesign — 1-4-9-12-15-16-17-22.
 Electrolabs — 6-8-12-13.
 Electroline Television Equipment Inc. — 10-14-18-19-22.
 Electro-Measurements Inc. — 2-16.
 Electromechanical Products — 1-2-7-14-15-16-17.
 Electronic Associates Inc. — 1-15-16.
 Electronic Associates Ltd. — 4.
 Electronic Enterprises Ltd. — 6.
 Electronic Instrument Co. Inc. — 6-11-12.
 Electronic Research Associates, Inc. — 20.
 Electronic Specialties — 6.
 Electronic Specialty Co. — 10-14-16-22.

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- Electronic Tube Corp. — 1-4-12-17.
 Electro-Sonic Laboratories — 11.
 Electro Sonic Supply Co.
 — 6-7-8-11-13-15-18-19-20.
 Electro-Voice Inc. — 6-11.
 Emerson & Cuming, Inc. — 10.
 Empire Products Sales Corp. — 10.
 Endevco Corporation — 17.
 Engineered Magnetics, Div. of Gulton
 Industries, Inc. — 9.
 Engineered Sound Systems Ltd.
 — 6-8-11-12-13-20.
 English Electric Company Ltd. — 9.
 Entron, Inc. — 14-18-19-22.
 Epsco, Inc. — 17.
 Ericsson Telephone Sales of Canada
 Ltd. — 8-13.
 Executone Communication Systems
 Ltd. — 1-8-13.
 Executone Inc. — 8.
 Feedback Controls, Inc. — 16.
 Finkler & Co., Len — 6-8-11-12-13.
 Fisher Radio Corp. — 6-11-15.
 Fortiphone Ltd. — 5-9-20.
 Franklin Electronics Inc. — 1-16-17-22.
 Freed Transformer Co. Inc. — 9-21.
 Gates Radio Co. — 4-6-8-11-12-13-21.
 General Precision Laboratory Inc.
 — 18.
 General Radio Company
 — 1-7-12-21-22.
 General Theatre Supply Co. Ltd.
 — 1-5-8-13-18-19.
 General Transistor Corp. — 20.
 Globe Industries Inc., Electronics Div.
 — 1-7-14.
 Gordon Enterprises — 4-15.
 Gould Sales Co., E. S.
 — 5-6-8-11-12-18-19.
 Gray Co. Ltd., H. Roy — 6.
 Gulton Industries Inc. — 2-9.
 Hackbusch Electronics Ltd.
 — 6-8-11-12-13-19.
 Hammond Mfg Co. Ltd. — 1-3-5-6-8-9-
 12-14-15-16-20-21-22.
 Hamner Electronics Co., Inc. — 16-22.
 Harvey-Wells Electronics Inc. —
 1-6-7-9-10-11-12-13-14-16-17-20-21-22.
 Hewlett-Packard Co. — 10-22.
 Honeywell Controls Ltd. — 1-16-17-20.
 Hooker (Canada) Ltd., Samuel C. — 9.
 Hudson Randall International — 1-9-16.
 Industrial Test Equipment Co.
 — 12-16-22.
 Industrial & Institutional Communica-
 tions Ltd. — 6-8-13-20.
 Instronics Ltd. — 1-4-20.
 Instruments for Industry Inc.
 — 7-14-18-19-22.
 International Resistance Co. Ltd. — 20.
 Jan Hardware Mfg. Co., Inc. — 9.
 Jerrold Electronics (Canada) Ltd.
 — 14-18-19-22.
 Johnson Co., E. F. — 14.
 Kahnert Sales Ltd., R. C. — 6-13.
 Kay Electric Co. — 18-20.
 Kelvin & Hughes Ltd. — 1-15-17.
 Kidde & Co. of Canada Ltd., Walter
 — 21.
 Kintel — 1-17-18-22.
 Krohn-Hite Corp. — 1-4-12-22.
 Lake Engineering Co. Ltd.
 — 9-10-12-15-17-20-21-22.
 Lear, Inc. — 9-12-16-20.
 Lectronic Research Labs. — 1-6-16.
 Leeds & Northrup, Canada, Ltd. — 1.
 Lenkurt Electric Co. of Canada Ltd.
 — 10-12-14-20-22.
 Leonard Electric Ltd. — 9-16.
 Librascope Inc. — 9.
 Lintronic Ltd. — 1-6-12.
 Lomas, E. G. — 7-10-14-18-22.
 Longstaffe Co. Ltd., J. R. — 6.
 Lynmar Engineers, Inc.
 — 7-14-18-19-20-22.
 Magnetics, Inc. — 9-12-17-25.
 Marsland Engineering Ltd. — 16.
 McCurdy Radio Industries Ltd.
 — 6-11-12-18.
 Mechron Engineering Products Ltd.
 — 1-5-16-17-20-21-22.
 Melody Master Mfg. Co. — 5-6.
 M.E.L. Sales Ltd. — 1-2-4-6-10-12-13-
 16-20-21-22.
 Merritt Co., Ron — 6-8.
 Microwave Associates, Inc. — 10.
 Microwave Instruments Ltd. — 20.
 Millen Mfg. Co. Inc., James — 7-14.
 Muirhead Instruments Ltd. — 16.
 Nems-Clarke, Inc. — 1.
 Neosid (Canada) Ltd. — 9.
 Nichols Ltd., R. H. — 1.
 Northern Electric Co. Ltd.
 — 6-8-12-13-20.
 Nucleonic Corp. of America — 2.
 Parsons Co., The Ralph M. —
 Electronics Div. — 1-16.
 Peerless Electrical Products, Div. of
 Altec Lansing Corp. — 9.
 Peffer Sound Systems Ltd.
 — 6-8-11-12-13-15-20.
 Perkin Engineering Corp. — 9.
 Philbrick Researches, Inc., George A.
 — 1.
 Philips Industries Ltd. — 1-12-15-17-22.
 Photcon Research Products — 1.
 Photron Instrument Co. — 1-15-17-22.
 Pickering & Co. Inc. — 11.
 Polarad Electronics Corp. — 22.
 Precision Radiation Instruments Inc. &
 Radio Craftsmen Div. — 6-11.
 Premier Instrument Corp. — 10.
 Prince & Roberts — 8-12-13.
 Pye Canada Ltd. — 4-6-11-18-22.
 Pylon Electronic Development Co. Ltd.
 — 1-7-14-22.
 Radiation Inc. — 12-14-15-16-17.
 Radionics Ltd. — 1-10-14-16.
 R-O-R Associates Ltd.
 — 1-2-4-10-16-17-22.
 RS Electronics Corp. — 7-9-14-22.
 Sanborn Co. — 1-17.
 Servo Corporation of America — 1-16.
 Servomechanisms, Inc. — 9-12-16-20.
 Servomechanisms (Canada) Ltd.
 — 1-9-16-20.
 Smyth Electronic Components, J. B.
 — 6-11-12.
 Solartron Electronic Group Ltd., The
 — 1-12-22.
 Sonotone Corp. — 6.
 Southern Instruments Computer
 Division — 1.
 Speight Laboratories, N. H.
 — 6-8-11-12-13-15.
 Spivey, Inc., James S. — 1-20.
 Stancil Hoffman Corp., The — 15.
 Standard Coil Products (Canada) Ltd.
 — 10.
 Standard Television Products Ltd. — 19.
 Stark Electronic Sales Co. — 6.
 Taller & Cooper Inc. — 16-17.
 Tech Laboratories, Inc. — 2.
 Technical Apparatus Builders
 — 1-6-9-12-16.
 Technicraft Laboratories, Inc. — 10.
 Tecneek Associates — 1-12-16-17.
 Telecom Ltd. — 6-8-13.
 Telecomputing Corp. — 17.
 Tequipment Mfg. Co. Ltd. — 6-18-19.
 Texas Instronics Inc. — 1-4-7-8-20.
 Tilton Ltd., John R.
 — 6-8-11-12-13-19-20-22.
 Tinsley Instruments — 1.
 T.M.C. (Canada) Ltd. — 7-13-14-22.
 Torotor A/S — 7.
 Transistor Devices Inc. — 20.
 Transitron Inc. — 6-11.
 Universal Transistor Products Corp.
 — 1-4-9-12-16-20.
 University Loudspeakers, Inc. — 6-13.
 Varian Associates — 10.
 Vari-L Co. Inc. — 9.
 WaLine, Inc. — 10.
 Weathers Industries, Div. of Advance
 Industries — 11.
 Webster Electric Co. — 6-8-13-14.
 Wheeler Insulated Wire Co., The,
 Division of Sperry Gyroscope Co.
 — 1-2-9-16-20-21-22.
 Wickett Ltd., Bradford J.
 — 6-8-11-12-13.

Antennas (17)

AM broadcasting	1
FM broadcasting	2
TV transmitting	3
TV multiple systems	4
Supporting towers	5
Tower lighting equipment	6
Tower erection	7
Rotators	8
Microwave	9
Radar reflectors	10
Mobile	11
Railroad	12
Marine	13
Dummy	14
Amateur beam antennas	15
Receiving types	16
Communications HF and transformers	17

- Adams Engineering Ltd. — 3-5-9.
 Adler Electronics Inc. — 3.
 Ahearn & Soper Co. Ltd., The
 — 1-2-3-4-6-9-11-12-13-14.
 Aircom, Inc. — 9-14.
 Airtron Canada Ltd. — 9-14.
 Alford Mfg. Co. — 3.
 Alpha Aracon Radio Co. Ltd.
 — 4-5-7-8-11-13-14.
 Alliance Motors — 8.
 American Electronics Co. — 1.
 Amphenol Canada Ltd. — 1-2.
 Andrew Antenna Corp. Ltd.
 — 2-3-9-10-11-12-13.
 Antiference (Canada) Ltd. — 2-3.
 Atlantic Films & Electronics Ltd.
 — 11-13.
 Atlas Radio Corp. Ltd. — 4-5-8-11.
 Aviation Electric Ltd. — 5-13.
 Barker & Williamson Inc. — 14.
 Beacons Optical & Precision Materials
 Co. Ltd. — 3-6-9.
 Beatty Bros. Ltd. — 4-5-6-7.
 Beechey Enterprises — 5-6.
 Belling & Lee Ltd. — 1-2-5.
 Benco Television Associates Ltd.
 — 3-4-9.
 Buggie, Inc. H. H. — 11.
 Caldwell A-V Equipment Co. Ltd. — 3.
 Canadian Electrical Supply Co. Ltd.
 — 4-5-8.
 Canadian General Electric Co. Ltd.
 Electronic Equipment & Tube Dept.
 — 1-2-3-5-6-7-9-10-11-14.
 Central Bridge Co. Ltd. — 5-7.
 Clark Ltd., Alex L. — 9.
 Collben Manufacturing Co. Ltd.
 — 2-3-4-5.
 Collins Radio Co. of Canada Ltd.
 — 2-9.
 Computing Devices of Canada Ltd.
 — 11-12-13.

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Decca Radar (Canada) Ltd. — 9-10.
 Delhi Metal Products Ltd. — 5.
 Diamond Antenna & Microwave Corp.
 — 9-10-12-13-14.
 Dominion Aluminum Fabricating Ltd.
 — 9-10.
 Douglas Microwave Co. Inc. — 9-14.
 Electromechanical Products — 2.
 Electronic Specialty Co. — 9-10.
 Electro Sonic Supply Co. — 5-8-11-14.
 Emerson & Cuming, Inc. — 9-10.
 Entron, Inc. — 4.
 Fleet Mfg. Ltd. — 7-9-10.
 Fretco Inc. — 5-9-10-12.
 Gates Radio Co. — 1-2-3-6-7-14.
 General Radio Company — 14.
 Glendon Co. Ltd., The — 11.
 Gould Sales Co., E. S. — 8-14-15.
 Gulton Industries Inc. — 9.
 Hackbusch Electronics Ltd.
 — 1-2-4-8-9-11-12-13.
 Hooker (Canada) Ltd., Samuel C. — 9-10.
 Howard & Company, M. J. — 10.
 Hughey & Phillips Inc. — 6.
 Illumitronic Engineering Co. — 1.
 Instantaneous Recording Service — 2.
 Javex — 4.
 Jerrold Electronics (Canada) Ltd. — 4.
 Johnson Co., E. F. — 8-15.
 Jones Electronics Co. Inc., M. C. — 14.
 Kahnert Sales Ltd., R. C. — 8.
 Kennedy & Co., D. S. — 8-9-10.
 Lear, Inc. — 11.
 Lectronic Research Laboratories — 9.
 Leitch Engineering Corp. — 11.
 Lenkurt Electric Co. of Canada
 Ltd. — 9.
 Lomas, E. G. — 8-9-10-14.
 Lynmar Engineers, Inc. — 4.
 MacQuarrie, J. J. — 5.
 McCarter Radio & Television
 Ltd. — 1-2-4-11-13-16.
 Mechron Engineering Products
 Ltd. — 10.
 M.E.L. Sales Ltd. — 2-9-10-13-14.
 Micro-Tower Ltd. — 1-5-6-7.
 Microwave Instruments Ltd. — 9.
 Narda Corporation, The — 9-14.
 Ohmite Mfg. Co. — 14.
 Pacific Communications Services
 Ltd. — 9-11-12.
 Pointon Ltd., Charles W. — 8.
 Polarad Electronics Corp. — 9.
 Premier Instrument Corp. — 9.
 Pye Canada Ltd. — 3-5-6-7-9-11-12-
 13-14.
 Radio Components Ltd. — 11.
 Radio Merchandise Sales
 Inc. — 2-3-4-8.
 Radion Corp., The — 16.
 Radionics Ltd. — 8-9-10-14.
 Raytheon Canada Ltd. — 9-10.
 Rogers Majestic Electronics
 Ltd. — 2-3-11-12.
 RS Electronics Corp. — 15.
 Sinclair Radio Laboratories
 Ltd. — 1-2-3-4-9-10-11-12-13-14.
 Smyth Electronic Components,
 J.B. — 5-7-11.
 Specialty Engineering & Electronics
 Co. — 11.
 Stainless Inc. — 1-2-3-4-5-6-7-9-10.
 Stark Electronic Sales Co. — 11.
 States Co., The — 14.
 S & T Sales Ltd. — 10-11-13.
 Technical Appliance Corp. — 1-2-3-4-
 9-10-12-13.
 Tequipment Mfg. Co. Ltd. — 2-4.
 Tenna Mfg. Co., The — 11-14.
 Texas Instronics Inc. — 10.
 Thomas Mold & Die Co. — 5.
 Tilton Ltd., John R. — 1-2-3-5-6-7.

T.M.C. (Canada) Ltd. — 5-14-17.
 WacLine, Inc. — 14.
 Wind Turbine Co. of Canada Ltd. —
 1-2-3-5-6-7-8-10-11-12-13-14.

Antenna Accessories (18)

Feeder line	1
Insulators	2
Lighting arrestors	3
Mounting hardware	4
Towers and masts	5
Antenna switches	6
Radio frequency line switches	7

Adams Engineering Ltd. — 1.
 Ahearn & Soper Co. Ltd., The — 1.
 Alford Mfg. Co. — 1.
 Alliance Motors — 6.
 Alpha Aracon Radio Co. Ltd. —
 1-2-3-4-5-6.
 Amphenol Canada Ltd. — 1-2-3-4.
 Andrew Antenna Corp. Ltd. — 1-2.
 Associated Electronic Components — 2.
 Atlantic Films & Electronics
 Ltd. — 1-2-3-5.
 Atlas Radio Corp. Ltd. — 2-3-4-5-6.
 Aviation Electric Ltd. — 5.
 Beatty Bros. Ltd. — 2-3-4-5.
 Beechey Enterprises — 5.
 Belling & Lee Ltd. — 3-5.
 Blaco Mfg. Co. — 3-4.
 Canadian Electrical Supply Co.
 Ltd. — 2-3-4-5-6.
 Canadian General Electric Co. Ltd.
 Electronic Equipment & Tube Dept.
 — 1-2-3-4-5.
 Central Bridge Co. Ltd. — 5.
 Colben Manufacturing Co. Ltd. — 5.
 Continental-Diamond Fibre of
 Canada Ltd. — 2.
 Delhi Metal Products Ltd. — 5.
 Desser E-E Ltd. — 4.
 Electroline Television Equipment
 Inc. — 1.
 Electronic Specialty Co. — 1.
 Electro Sonic Supply Co. —
 1-2-3-4-5-6.
 Finkler & Co., Len — 2-3-4-6.
 Fleet Mfg. Ltd. — 5.
 Fretco Inc. — 1-2.
 Garde Manufacturing Co. — 2-3.
 Gates Radio Co. — 1-2.
 Gee Lar Mfg. Co. — 2-3-4.
 General Cement Mfg. Co., Div. of
 Textron Inc. — 2-3-4-5.
 General Ceramics Corp. — 2.
 Gould Sales Co., E. S. — 4-6.
 Gray Co. Ltd., H. Roy — 2.
 Hackbusch Electronics Ltd. — 2-3-6.
 Hathaway Kraemer Ltd. — 2.
 Illumitronic Engineering Co. — 1.
 Isolantite Manufacturing Corp. — 2.
 Janco Corp. — 2.
 Johnson Co., E. F. — 2.
 Kahnert Sales Ltd., R. C. — 5.
 Kennedy & Co., D. S. — 6.
 Lectronic Research Laboratories — 6.
 MacQuarrie, J. J. — 1-5.
 McCarter Radio & Television
 Ltd. — 4-5.
 Mechron Engineering Products
 Ltd. — 2.
 Merritt Co., Ron — 1-2-5.
 Micro-Tower Ltd. — 5.
 Millen Mfg. Co. Inc., James — 2.
 National Fibre Co. of Canada Ltd. — 2.
 Osborne Electric Co. Ltd. — 3.
 Pacific Communications Services
 Ltd. — 5.
 Pointon Ltd., Charles W. — 6.
 Polypenco Inc. — 2.

Pye Canada Ltd. — 1-2-3-4-5.
 Radio Merchandise Sales Inc.
 — 3-4-5-6.
 Royal Electric Corp., Federal Cable
 Div. — 1.
 Saxton Products Inc. — 1-2-3-4.
 Simmonds & Sons Ltd., A. C. — 2.
 Sinclair Radio Laboratories Ltd.
 — 1-2-4.
 Smyth Electronic Components, J. B.
 — 5.
 Specialty Engineering & Electronics
 Co. — 5.
 Stainless Inc. — 5.
 S & T Sales Ltd. — 1-2-5.
 Technical Appliance Corp. — 4.
 Tequipment Mfg. Co. Ltd. — 2-4.
 Tenna Mfg. Co., The — 3-4.
 Tilton Ltd., John R. — 2-3-4-5.
 Times Wire & Cable Co. Inc. — 1.
 T.M.C. (Canada) Ltd. — 1-4.
 Wind Turbine Co. of Canada Ltd. —
 1-2-3-4-5-6-7.

Attenuators (19)

Decade	1
Impedance matching	2
Microwave	3
Volume controlling	4

Adams Engineering Ltd. — 1-2.
 Aerovox Canada Ltd. — 3.
 Aerovox Corp., Crowley Division — 3.
 Ahearn & Soper Co. Ltd., The —
 1-2-3-4.
 Aircorn, Inc. — 3.
 Airtron Canada Ltd. — 3.
 Alpha Aracon Radio Co. Ltd. — 4.
 Andrew Antenna Corp. Ltd. — 2.
 Associated Electronic Components
 — 1-2-4.
 Atlas Radio Corp. Ltd. — 1-2-3.
 Avionics Ltd. — 3.
 Bayly Engineering Ltd. — 3.
 Beacons Optical & Precision
 Materials Co. Ltd., Electronics
 Division — 3.
 Belling & Lee Ltd. — 2.
 Benco Television Associates Ltd. — 2.
 Canadian General Electric Co. Ltd.,
 Electronic Equipment & Tube Dept.
 — 1-2-3-4.
 Canadian Marconi Company — 1-3.
 Canadian Research Institute — 1.
 Centralab, A Div. of Globe-Union Inc.
 — 4.
 Chemalloy Electronics Corp. — 3.
 Cinema-Television Ltd. — 2.
 Collins Radio Co. of Canada Ltd. — 4.
 Daven Company, The — 1-2-3-4.
 Dawe Instruments Ltd. — 1.
 Daystrom Ltd. — 1-4.
 Diamond Antenna & Microwave
 Corp. — 3.
 Douglas Microwave Co. Inc. — 3.
 Dumont Labs. Inc., Allen D. — 2.
 Electrodesign — 1.
 Electronic Associates Inc. — 1.
 Electro-Measurements Inc. — 1.
 Electro Sonic Supply Co. — 1-4.
 Ellis Industries, The J. W. — 1.
 Emerson & Cuming, Inc. — 3.
 Empire Products Sales Corp. — 2-3.
 Endevco Corporation — 1.
 General Radio Co. — 1-2.
 Goodman's Industries Ltd. — 4.
 Herring & Co. Ltd., John — 1-2-4.
 Hewlett-Packard Co. — 1-3.
 Hooker (Canada) Ltd., Samuel C. —
 2-3.

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Instronics Ltd. — 1-3.
 International Resistance Co. Ltd. — 1-2-4.
 Jerrold Electronics (Canada) Ltd. — 1-2.
 Kay Electric Co. — 1-2-4.
 Lake Engineering Co. Ltd. — 3.
 Lear, Inc. — 2.
 Lectronic Research Laboratories — 3.
 Lomas, E. G. — 3.
 M.E.L. Sales Ltd. — 1-2-3.
 Microwave Associates, Inc. — 3.
 Microwave Instruments Ltd. — 3.
 Muirhead Instruments Ltd. — 2.
 Ohmite Mfg. Co. — 4.
 Pfeiffer Electronic Laboratories — 4.
 Polarad Electronics Corp. — 3.
 Premier Instrument Corp. — 3.
 Pye Canada Ltd. — 3.
 Pylon Electronic Development Co. Ltd. — 1-2-3-4.
 Radiation Inc. — 3.
 Radionics Ltd. — 3.
 R-O-R Associates Ltd. — 1-3.
 Sinclair Radio Laboratories Ltd. — 3.
 Solartron Electronic Group Ltd., The — 1.
 Tech Laboratories, Inc. — 1-2-3-4.

Batteries (20)

Dry batteries	1
Mercury batteries	2
Storage batteries lead acid	3
Storage batteries nickel alkali	4
Storage batteries silver zinc	5
Chargers	6
Radioactive batteries	7

Acme Electric Corp. Ltd. — 6.
 Ahearn & Soper Co. Ltd., The — 6.
 Aircraft Appliances & Equipment Ltd. — 6.
 Alpha Aracon Radio Co. Ltd. — 1-2.
 Amalgamated Electric Corp. Ltd. — 4.
 Atlantic Films & Electronics Ltd. — 1-2-6.
 Atlas Radio Corp. Ltd. — 6.
 Automatic Electric Sales (Canada) Ltd. — 1-3-4.
 Bogue Electric of Canada Ltd. — 6.
 Burgess Battery Co. — 1.
 Burlec Sales Ltd. — 6.
 Canadian Electrical Supply Co. Ltd. — 1-2-3-6.
 Canadian Fairbanks Morse Co. Ltd. — 3-6.
 Canadian Line Materials Ltd. — 6.
 Canadian Research Institute — 6.
 Christie Electric Corp. — 6.
 Clark Ltd., Alex L. — 3.
 Clarke & Co. (Manchester) Ltd., H. — 6.
 Electric Storage Battery Co. (Canada) Ltd., The, Exide Industrial Div.—3-5.
 Electrolabs — 4-5-6.
 Electro Sonic Supply Co. — 1-2-6.
 Gates Radio Co. — 2.
 General Theatre Supply Co. Ltd. — 1.
 Globelite Batteries Ltd. — 3-4.
 Goodrich Canada Ltd., B. F. — 1-6.
 Gould-National Batteries of Canada Ltd. — 3.
 Hackbusch Electronics Ltd. — 1-6.
 Lake Engineering Co. Ltd. — 1.
 Mallory Battery Co. of Canada Ltd. — 1-2.
 Mallory & Co. Inc., P. R. — 1-2-6.
 National Carbon Co., Div. of Union Carbide Canada Ltd. — 1-2.
 Nichols Ltd., R. H. — 6.
 Onan & Sons Inc., D. W. — 6.

Perkin Engineering Corp. — 6.
 Pioneer Gen-E-Motor Corp. — 6.
 Prince & Roberts — 6.
 Pullman & Barter — 6.
 Pye Canada Ltd. — 6.
 Radelin-Kirk Ltd. — 7.
 Radionics Ltd. — 6.
 Ray-O-Vac (Canada) Ltd. — 1.
 Rotor Electric Co. Ltd. — 6.
 Sel-Rex Corp. — 6.
 Silvercel of Canada Ltd. — 5.
 Simmonds & Sons Ltd., A. C. — 2.
 Sonotone Corp. — 4.
 Standard Electric Time Co., The — 4.
 Technical Apparatus Builders — 6.
 Telecom Ltd. — 1.
 Ward Leonard of Canada Ltd. — 4.

Blowers and Cooling Fans (21)

Air wheels and housings	1
Complete blower assemblies	2
Fan blades	3

Aeromotive Engineering Products — 2.
 Air Control Installations Ltd. — 2.
 Alliance Motors — 2-3.
 American Electronics Inc. — 2.
 Audio Tool & Engineering Ltd. — 2.
 Automatic Electric Sales (Canada) Ltd. — 2.
 Canadian Atlas Transformer Co. Ltd. — 2.
 Dominion Electrohome Industries Ltd. — 2.
 Eastern Industries, Inc. — 1-2.
 Elder Electronics — 2.
 Electro Sonic Supply Co. — 1-2-3.
 Flexaust Co., The — 4.
 Gates Radio Co. — 2.
 General Tire & Rubber Co. of Canada Ltd., The, Stokes Div. — 3.
 Herring & Co. Ltd., John — 1-2-3.
 Howard & Company, M. J. — 1-2.
 Ilg Electric Ventilating Co. — 2.
 Lectronic Research Laboratories — 2.
 Leonard Electric Ltd. — 1-2-3.
 Lomas, E. G. — 1-2-3.
 M.E.L. Sales Ltd. — 2.
 R-O-R Associates Ltd. — 2.
 Rotor Electric Co. Ltd. — 3.
 Rotron Mfg. Co. — 2.
 Servomechanisms (Canada) Ltd. — 2.
 United States Rubber Co. — 3.
 Westinghouse Electric International Co. — 1-2.

Cabinets, Consoles & Enclosures (22)

Assembly enclosures	1
Metal cabinets	2
Metal relay rack panels	3
Molded plastic cabinets	4
Wood cabinets	5

Alpha Aracon Radio Co. Ltd. — 2-3.
 Altec Lansing Corp. — 1-2-3-5.
 ARVA — 1-2.
 Atlantic Films & Electronics Ltd. — 1-2-3-5.
 Atlas Radio Corp. Ltd. — 1-2-3.
 Automatic Electric Sales (Canada) Ltd. — 2.
 Burlec Sales Ltd. — 2-3.
 Canadian Electrical Supply Co. Ltd. — 2-3-5.
 Canadian General Electric Co. Ltd. — 5.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 2-3-4.

Canadian Marconi Co., Electronic Tube & Components Div. — 2-3.
 Clark Ltd., Alex L. — 1.
 Collins Radio Co. of Canada Ltd. — 2-3.
 Cossor (Canada) Ltd. — 1-2-3.
 Daven Company, The — 5.
 Davies Molding Co., Harry — 4.
 Dominion Aluminum Fabricating Ltd. — 1-2.
 Dominion Electrohome Industries Ltd. — 5.
 Elder Electronics — 1-2-3.
 Electroline Television Equipment Inc. — 3.
 Electronic Enterprises Ltd. — 5.
 Electro Sonic Supply Co. — 2-3.
 Electro-Voice Inc. — 5.
 Fleet Mfg. Ltd. — 1-2-3-4.
 Gates Radio Co. — 1-2-3.
 General Communications Ltd. — 1-2-3.
 General Tire & Rubber Co. of Canada Ltd., The, Stokes Div. — 4.
 Goodman's Industries Ltd. — 5.
 Hackbusch Electronics Ltd. — 2-3-5.
 Hallam, Sleigh & Cheston Ltd. — 1-2-3.
 Hammond Mfg. Co. Ltd. — 1-2-3.
 Hamner Electronics Co., Inc. — 3.
 Hartley Products Co. — 5.
 Hathaway Kraemer Ltd. — 4.
 Holman Luggage Ltd. — 5.
 Honeywell Controls Ltd. — 3.
 Kahnert Sales Ltd., R. C. — 5.
 Longstaffe Co. Ltd., J. R., Speaker Div. — 1-5.
 Longstaffe Co. Ltd., J. R. — 5.
 MacQuarrie, J. J. — 1-2-5.
 M.E.L. Sales Ltd. — 1-2-3.
 Merritt Co., Ron — 5.
 Microwave Instruments Ltd. — 2.
 Muckle Mfg. Co. — 2.
 Northern Electric Co. Ltd. — 1-2-3.
 Northern Radio Mfg. Co. Ltd. — 3.
 Peffer Sound Systems Ltd. — 2.
 Prince & Roberts — 3.
 Pye Canada Ltd. — 2-3.
 Radio Communications Equipment & Engineering Ltd. — 2-3.
 Renfrew Electric Ltd. — 1-2-3.
 Richardson Co., The — 4.
 Servomechanisms (Canada) Ltd.—1-2-3.
 Solartron Electronic Group Ltd., The — 2-3.
 Standard Electric Time Co., The—1-2-3.
 Standard Pressed Steel Co. — 2.
 Stratton & Co. Ltd. — 2.
 S & T Sales Ltd. — 2.
 Tilton Ltd., John R. — 3-5.
 T. M. C. (Canada) Ltd. — 3.
 United States Rubber Co. — 4.
 University Loudspeakers, Inc. — 1-5.
 Utah Radio Products Co. Inc. — 2-5.
 Waldom Electronics Inc. — 4.
 Wickett Ltd., Bradford J. — 1-5.

Capacitors Fixed (23)

Ceramic	1
Decade	2
Electrolytic	3
Feed through	4
Fixed composition	5
Gas filled	6
Glass dielectric	7
High voltage	8
Metalized paper	9
Mica	10
Oil filled	11
Paper	12
Decade	13
Plastic insulated	14

ELECTRONIC EQUIPMENT — BUYERS' GUIDE

- | | | |
|---|--|--|
| <p>Power factor 15
Precision air 16
Printed circuit 17
Pulse forming networks 18
Silvered micas 19
Tantalum 20
Vacuum 21</p> <p>Aeromotive Engineering Products — 7
Aerovox Canada Ltd. — 1-3-4-5-8-9-10-11-12-14-15-17-19.
Ahearn & Soper Co. Ltd., The — 1-2-3-4-5-8-9-10-11-12-13-14-15-16-18-19-20-21.
Airborne Accessories Corp. — 4-5-14.
Aircraft Appliances & Equipment Ltd. 4-8-9-11-12-14-18.
Aircraft-Marine Products of Canada Ltd. — 8-11-14-18.
Allen-Bradley Co. — 1-4.
Alpha Aracon Radio Co. Ltd. — 1-2-3-4-5-8-9-10-11-12-13-14-17-19-20-21.
Amalgamated Electric Corp Ltd. — 14.
AMP Inc. — 8-11-18.
Amperex Electronic Corp. — 8-21.
Armstrong Ltd., A.T.R. — 1-5-9-14-17.
Arnhold Ceramics Inc. — 4.
Arrow Radio Co. — 11-12-14.
Associated Electronic Components — 1-2-3-4-5-8-9-10-11-12-13-14-15-16-17.
Astral Electric Co. Ltd. — 1-3-9-10-11-12-15-17-19.
Astron Corp — 1-3-4-9-11-12-14-17.
Atlantic Films & Electronics Ltd. — 1-3-8-9-10-11-12-14-19-20.
Atlas Radio Corp. Ltd. — 1-12.
Beechey Enterprises — 1-3-5-9-17.
Cambridge Thermionic Corp. — 1.
Canadian Atlas Transformer Co. Ltd. — 18.
Canadian Electrical Supply Co. Ltd. — 1-3-4-5-6-7-8-9-10-11-12-14-16-17-19-20-21.
Canadian General Electric Co. Ltd. — 3-7-8-11-12-15-18-20.
Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-3-15.
Canadian Marconi Co., Electronic Tube & Components Div.—3-9-10-11-12-17.
Canadian Research Institute — 2-13.
Canadian Stackpole Ltd. — 5.
Centralab, A Div. of Globe-Union Inc. — 1-4-8-16.
Clarke & Co. (Manchester) Ltd., H. — 10-17-19.
Daly-Arrow Ltd. — 3-17.
Dawe Instruments Ltd. — 1-19.
Desser E-E Ltd. — 3.
Dubilier Condenser Co. (1925) Ltd. — 1-3-4-8-10-11-12-14-19.
Edwards High Vacuum (Canada) Ltd. — 21.
Eitel-McCullough Inc. — 21.
Electra Mfg. Co. — 1-8.
Electrodesign — 1-2-4-8-10-11-13-14.
Electrolabs — 1-3-12-17.
Electromechanical Products — 9-12-20.
Electronic Fabricators Inc. — 14.
Electro-Measurements Inc. — 2-13-14.
Electro Sonic Supply Co. — 1-2-3-4-5-7-8-9-10-11-12-13-14-17-19-20-21.
Ellis Industries, The J. W. — 2-6-8-13.
Endevco Corporation — 2.
Erie Resistor of Canada Ltd. — 1-4-5-7-8-10-14-17-19.
Film Capacitors Inc. — 2-8-9-14.
Filtron Co. Inc. — 4-8-9-11-12-14-18.
Finkler & Co., Len — 9-10-12-19.
Freed Transformer Co. Inc. — 2-13.
Gates Radio Co. — 3-8-10-11-12-21.
General Instrument-F. W. Sickles of Canada Ltd. — 10-12-18.</p> | <p>General Radio Co. — 2-10-13-16-19.
Good-All Electric Mfg. Co. — 1-2-9-11-12-13-14-17.
Gray Co. Ltd., H. Roy — 16.
Gulton Industries Inc. — 1.
Hammond Mfg. Co. Ltd. — 8.
Heenan Ltd., P. J. — 1-3-4-8-9-10-11-12-17-19.
Herring Co. Ltd., John — 1-2-4-9-11-12-13-14-18.
Hooker (Canada) Ltd., Samuel C. — 1-3-4-5-7-8-9-11-12-14-17-18.
Howard & Co., M. J. — 1-3-4-8-9-10-11-12-14-15-17-19-20.
Hudson Randall International — 8-14.
Jensen Condenser Products Co. Ltd., A/S Tobias — 1-2-3-4-5-8-9-10-11-12-13-14-15-17-18-19.
Johnson Matthey & Mallory Ltd.—3-19.
Kahnert Sales Ltd., R. C. — 1-3-4-10-11-12-14-19-20.
Lake Engineering Co. Ltd. — 1-8-14-18.
Lectronic Research Laboratories — 8-10-11-18.
Leeds & Northrup, Canada, Ltd. — 10.
Lomas, E. G. — 8-11-12-14.
Mack & Co. Ltd., R. — 1-3-11-19.
Mallory & Co. Inc., P. R. — 3-9-10-12-17-20.
McVity & Co., J. R. G. — 1-3-20.
M.E.L. Sales Ltd. — 2-13-17-20.
Merritt Co., Ron — 2.
Mucon Corp. — 1-17.
Muirhead Instruments Ltd.—2-10-12-13.
Musimart of Canada — 1-3.
National Fibre Co. of Canada Ltd. — 10.
Ohmite Mfg. Co. — 3-20.
Onondaga Pottery Co., Electronics Div. — 1-8-17.
Paisley Products of Canada Ltd. — 1-9-10-12-17-20.
Phillips Electrical Co. Ltd. — 8-11.
Pointon Ltd., Charles W. — 1-3-9-11-12-14-16-17.
Radio Components Ltd. — 1-4-5.
Robinson Company, C. M. — 1-3-4-5-9-10-11-12-15-17-18-19-20.
Rogers Electronic Tubes and Components — 1-3-4-5-6-8-9-10-11-12-15-17-19-20.
San Fernando Electric Mfg. Co. — 2-4-8-9-11-12-13-14-17-18.
Sangamo Electric Co. — 3-10-11-12-14-15-17-19.
Shamban & Co., W. S. — 14.
Simmonds & Sons Ltd., A. C. — 3-11-17-19-20.
Smyth Electronic Components, J. B. — 1-3-4-10-11-12-14-17-18-19.
Southern Electronics Corp. — 2-8-11-13-14-17.
Sprague International Ltd. — 1-3-4-8-9-10-12-14-15-17-18-19-20.
Stackpole Carbon Co. — 5.
Telegraph Condenser Co. (Canada) Ltd., The — 1-3-4-8-10-11-12-14-15-17-18-19-20.
Telegraph Condenser Co. Ltd., The — 1-2-3-4-5-8-9-10-11-12-13-14-15-16-17-18-19-20.
Telephone Mfg. Co. Ltd. — 5-7-8-9-10-11-12-14-15-19.
Tilton Ltd., John R. — 1-2-3-4-5-7-8-9-10-11-12-13-14-17-18-19-20.
Tinsley Instruments — 2.
Tobe Deutschmann Corp. — 1-3-4-5-8-9-11-12-14-15-17-18.
United Electronic Mfg. Corp. — 3-17.
United Electronics Co. — 20.
Vitramon Inc. — 7-17-18.</p> | <p style="text-align: center;">Capacitors Variable
(24)</p> <p>Neutralizing 1
Precision variable 2
Temperature compensating 3
Trimmers air 4
Trimmers ceramic 5
Trimmers glass 6
Trimmers vacuum 7
Tuning 8</p> <p>Ahearn & Soper Co. Ltd., The — 1-2-3-4-5-8.
Alpha Aracon Radio Co. Ltd. — 1-2-3-4-5-8.
Associated Electronic Components — 1-2-3-4-5-8.
Atlantic Films & Electronics Ltd.—5-8
Barker & Williamson Inc. — 1-8.
Cambridge Thermionic Corp. — 5.
Canadian Electrical Supply Co. Ltd. — 1-2-3-4-5-6-7-8.
Canadian Marconi Co., Electronic Tube & Components Div. — 4-5.
Centralab, A Div. of Globe-Union Inc. — 3-5.
Eitel-McCullough Inc. — 7.
Electro Sonic Supply Co.—1-2-3-4-5-8
Ellis Industries, The J. W. — 2.
Erie Resistor of Canada Ltd. — 3-5.
Fastex Div. of Illinois Tool Works — 5
Finkler & Co., Len. — 4.
Gates Radio Co. — 1-7-8.
General Radio Company — 2.
Gray Co. Ltd., H. Roy — 4.
Hammond Mfg. Co. Ltd. — 1-8.
Heenan Ltd., P. J. — 3-5.
Jackson Brothers (London) Ltd. — 1-4-8.
Jensen Condenser Products Co. Ltd., A/S Tobias — 1-3-5.
Johnson Co., E. F. — 1-4-8.
Leeds & Northrup, Canada, Ltd. — 2.
Lynmore Central Equipment — 1-6-7.
Lomas, E. G. — 2.
Mack & Co. Ltd., R. — 2-4-8.
Marsland Engineering Ltd. — 4-6-8.
Millen Mfg. Co. Inc., James — 1-2-4-8.
Muirhead Instruments Ltd. — 2.
Philips Industries Ltd. — 2.
Pointon Ltd., Charles W. — 1-2-4-8.
Radio Condenser Co. Ltd. — 2-3-4-5-8
Rogers Electronic Tubes and Components — 2-3-4-5-8.
Sarkes Tarzian Rectifier Div. — 2-4.
Simmonds & Sons Ltd., A. C. — 2-4.
Southern Electronics Corp. — 2.
Sprague International Ltd. — 5.
Stratton & Co. Ltd. — 1-8.
Telegraph Condenser Co. Ltd., The—5.
Teleradio Engineering Corp. — 1-2-4.
Tilton Ltd., John R. — 3-6.
Trotor A/S — 1-2-4-8.
White Radio Ltd. — 1-2.</p> <p style="text-align: center;">Chassis and Racks
(25)</p> <p>Aluminum chassis 1
Chassis slides 2
Racks aging 3
Relay racks and cabinets 4
Steel chassis 5
Chassis kits 6</p> <p>Alpha Aracon Radio Co. Ltd. — 1-4-5.
Altec Lansing Corp. — 4.
ARVA — 4.
Associated Electronic Components — 4.
Atlantic Films & Electronics Ltd.—1-5.
Automatic Electric Sales (Canada) Ltd. — 4.</p> |
|---|--|--|

ELECTRONIC EQUIPMENT — BUYERS' GUIDE

- Benco Television Associates Ltd. — 5.
 Burlec Sales Ltd. — 4.
 Canadian Electrical Supply Co. Ltd. — 1-2-4-5.
 Canadian General Electric Co. Ltd. — 4.
 Electronic Equipment & Tube Dept. — 4.
 Canadian Marconi Co., Electronic Tube & Components Div. — 1-4-5.
 Chassis-Trah Inc. — 2.
 Collins Radio Co. of Canada Ltd. — 4.
 Cossor (Canada) Ltd. — 1-4-5.
 Dominion Aluminum Fabricating Ltd. — 1-5.
 DuMont Labs. Inc., Allen B. — 4.
 Elder Electronics — 2-4.
 Electrodesign — 2.
 Electro Sonic Supply Co. — 1-2-4-5.
 El-Met-Parts Ltd. — 5.
 Finkler & Co., Len — 1.
 Fleet Mfg. Ltd. — 1-3-4-5.
 Gates Radio Co. — 1-4-5.
 General Communications Ltd. — 2-4-5.
 Hackbusch Electronics Ltd. — 4.
 Hammond Mfg. Co. Ltd. — 1-2-3-4-5.
 Hamner Electronics Co., Inc. — 1-4-5.
 Jan Hardware Mfg. Co., Inc. — 1-5.
 MacQuarrie, J. J. — 1-4.
 M.E.L. Sales Ltd. — 1-3-4-5.
 Microwave Instruments Ltd. — 4-5.
 Microwave Systems — 2.
 Northern Electric Co. Ltd. — 4.
 Northern Radio Mfg. Co. Ltd. — 4.
 Precision Metal Products Inc. — 6.
 Prince & Roberts — 4.
 Pye Canada Ltd. — 4.
 Pylon Electronic Development Co. Ltd. — 3.
 Radio Frequency Laboratories, Inc.—2.
 Renfrew Electric Ltd. — 4-5.
 St. Johns Metal Stamping Co. Ltd.—1-5.
 Servomechanisms (Canada) Ltd. — 1-3-4.
 Solartron Electronic Group Ltd., The — 1-5.
 Specialty Engineering & Electronics Co. — 1-2-5.
 S & T Sales Ltd. — 5.
 T.M.C. (Canada) Ltd. — 4.
 Whittaker, E. E. — 2.
 Zettler, Alois, G.m.b.H. — 4.
- Coils (26)**
- | | |
|------------------------------|----|
| Audio frequency chokes | 1 |
| Deflection yokes | 2 |
| Filter | 3 |
| Flyback | 4 |
| Focusing coils | 5 |
| Power chokes | 6 |
| RF & IF chokes | 7 |
| Toroids | 8 |
| Tuning | 9 |
| Coil forms | 10 |
- Aerolite Electronics Corp. — 7.
 Aircraft Appliances & Equipment Ltd. — 3.
 Aladdin Electronics, A Division of Aladdin Industries, Inc. — 7.
 Alpha Aracon Radio Co. Ltd. — 1-2-3-4-5-6-7-8-9.
 AMP Inc. — 3-6.
 Armstrong Ltd., A.T.R.—1-2-3-4-5-6-7.
 Associated Electronic Components — 1-2-3-4-5-6-7-9.
 Atlantic Films & Electronics Ltd. — 1-2-3-4-5-6-7-8-9.
 Atlas Radio Corp. Ltd. — 2-4-7-9.
 Audio Development Co. — 6-8.
 Barker & Williamson Inc.—1-3-6-7-8-9.
 Bayly Engineering Ltd. — 3-8.
 Beechey Enterprises — 1-6-7.
 Belling & Lee Ltd. — 3.
 Boesch Mfg. Co. Inc. — 8.
 British Ferrograph Recorder Co. Ltd. — 1-7.
 Caledonia Electronics & Transformer Corp. — 1-3-6-8.
 Cambridge Thermionic Corp. — 7-9.
 Canadian Atlas Transformer Co. Ltd. — 1-3-6-8.
 Canadian Electrical Supply Co. Ltd. — 1-2-3-4-5-6-7-9.
 Canadian General Electric Co., Ltd., Electronic Equipment & Tube Dept. — 1.
 Canadian Marconi Co., Electronic Tube & Components Div. — 1-3-7.
 Cinema-Television Ltd. — 2-3-5.
 Cossor (Canada) Ltd. — 2.
 Desser E-E Ltd. — 7.
 Eastern Precision Resistor Corp. — 2-3-5-7.
 Electrodesign — 8.
 Electronic Engineering — 1-3-6-7.
 Electro Sonic Supply Co. — 1-2-3-4-5-6-7.
 Essex Electronics of Canada Ltd. — 7-9.
 Filtron Co. Inc. — 3-7-8.
 Fortiphone Ltd. — 1.
 Freed Transformer Co. Inc. — 1-3-6-8.
 Garde Manufacturing Co. — 10.
 Gates Radio Co. — 1-3.
 General Instrument-F. W. Sickles of Canada Ltd. — 1-2-3-4-5-6-7-8-9.
 General Radio Company — 6.
 Goodman's Industries Ltd. — 1.
 Gould Sales Co., E. S. — 2-4-5-7.
 Gray Co. Ltd., H. Roy — 7.
 Hammond Mfg. Co. Ltd. — 1-3-6-7-8.
 Harvey-Wells Electronics Inc. — 7.
 Hooker (Canada) Ltd., Samuel C. — 1-3-6-7-8.
 Howard & Company, M. J. — 7-8.
 Hudson Randall International — 1-6-8.
 Illumitron Engineering Co. — 7.
 International Resistance Co. Ltd. — 8.
 Kahnert Sales Ltd., R. C. — 2-4-5-7-8.
 Lake Engineering Co. Ltd.—1-3-7-8-9.
 Lenkurt Electric Co. of Canada Ltd. — 3-8.
 Lomas, E. G. — 2-5-7-8.
 Longstaffe Co. Ltd., J. R. — 1-2-3-4-5-6-7-9.
 Longstaffe Co. Ltd., J. R., Speaker Div. — 1-2-3-4-5-6-7-8-9.
 Lynmar Engineers, Inc. — 3.
 Mechron Engineering Products Ltd.—8.
 Merritt Co., Ron — 1-2-3-4-5-7-9.
 Microtran Co. Inc. — 7.
 Millen Mfg. Co. Inc., James — 7-9.
 Muirhead Instruments Ltd. — 1-2.
 Ohmite Mfg. Co. — 7.
 Osborne Electric Co. Ltd. — 3-5-6-9.
 Paisley Products Co. of Canada Ltd. — 1-2-3-4-8-9.
 Partridge Transformers Ltd. — 1-3-6.
 Peerless Electrical Products, Div. of Altec Lansing Corp. — 1-3-6.
 Pointon Ltd., Charles W. — 1-2-3-4-5-6-7.
 Pye Canada Ltd. — 2-5.
 Radio Components Ltd. — 2-4-7-9.
 Radio Condenser Co. Ltd. — 9.
 Robinson Company, C. M. — 1-2-3-4-5-6.
 Rogers Electronic Tubes and Components — 3-4-7-8.
 Rotor Electric Co. Ltd. — 1-6.
 Rotronic Corp. Ltd. — 2.
 Schou, Jorgen — 1-3-6.
 Smallwood Ltd., S. G. — 2-4-7-9.
 Standard Coil Products (Canada) Ltd. — 4-5-7-9.
 Standard Television Products Ltd. — 1-3-6.
 Stanwyck Coil Products Ltd. — 1-3-6-7-9.
 Stratton & Co. Ltd. — 7-9.
 Superex Electronics Corp. — 1-3-6-7-9.
 Telephone Mfg. Co. Ltd. — 1-8.
 Telequipment Mfg. Co. Ltd. — 2-4-7.
 Teleradio Engineering Corp. — 2-3-4-5-7-9.
 Tilton Ltd., John R. — 1-2-3-4-5-6-7-8-9.
 Tobe Deutschmann Corp. — 8.
 Torotor A/S — 2-3-4-5-7-9.
 Triad Transformer Corp. — 1-2-3-4-5-6-8.
 Vari-L Co. Inc. — 8.
 Wheeler Insulated Wire Co. Inc., The — 1-2-4-5-8.
- Connectors (27)**
- | | |
|-----------------------------------|----|
| AN & MIL standard types | 1 |
| Coaxial | 2 |
| Hermetically sealed | 3 |
| Microphone | 4 |
| Multiple circuit connectors | 5 |
| Power | 6 |
| Slip ring & commutating | 7 |
| Sub-miniature | 8 |
| Waterproof | 9 |
| Solderless connectors | 10 |
| Printed circuits | 11 |
- Accurate Electronics Corp. — 5-6.
 Aerolite Electronics Corp. — 2.
 Ahearn & Soper Co. Ltd., The — 2-3-4-5-6-9.
 Alpha Aracon Radio Co. Ltd. — 1-2-3-4-5-6-8-9.
 Amphenol Canada Ltd. — 1-2-3-4-5-6-7-8-9.
 Andrew Antenna Corp. Ltd. — 1-2-3-9.
 Astral Electric Co. Ltd. — 2.
 Atlantic Films & Electronics Ltd. — 1-2-4-5-8.
 Atlas Radio Corp. Ltd. — 1-2-3-4-5-8-9.
 Automatic & Precision Mfg. Co. — 1-6.
 Aviation Electric Ltd. — 1-3-8-9.
 Belling & Lee Ltd. — 2-4-5-9.
 Benco Television Associates Ltd. — 2.
 Bendix Aviation Corp., Scintilla Div. — 1-2-3-5-6-8-9.
 Blonder-Tongue Laboratories Inc. — 2.
 Brian Engineering Ltd. — 1-3-6-8.
 Buggie, Inc., H.H. — 1-2-3-5-8-9.
 Burndy Canada Ltd. — 1-2-5-6.
 Cambridge Thermionic Corp. — 8.
 Canadian Astatic Ltd. — 1.
 Canadian Electrical Supply Co. Ltd. — 1-2-4-5-8.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-2-4-6-8.
 Canadian Marconi Co., Electronic Tube & Components Div. — 4.
 Cinch Mfg. Corp. Ltd. — 2-4-5-6-7.
 Circon Component Co. — 4-5-6-8-9.
 Consolidated Electronic Equipment Co. Ltd. — 5-8.
 Constantin & Co., L. L. — 3.
 Cannon Electric Canada Ltd. — 1-2-3-4-5-6-8-9.
 Continental Connector Corp. — 1-3-5-6-8-9.
 DeJur-Amsco Corp. — 1-2-3-5-6-8.
 DuMont Labs. Inc., Allen B. — 2.

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D & B Sound and Signals Inc. — 4.
 Elco Corp. — 1-2-5-6-8-11.
 Electroline Television Equipment Inc. — 2.
 Electro Sonic Supply Co. — 1-2-4-5-6-7-8-9.
 Enflo Corporation — 6-8-9.
 Entron, Inc. — 2.
 Ericsson Telephone Sales of Canada Ltd. — 2-5.
 Fortiphone Ltd. — 8-9.
 Garde Manufacturing Co. — 3-5-11.
 Gasaccumulator Co. (Canada) Ltd. — 1.
 General Radio Company — 2.
 Glendon Co. Ltd., The — 1-2-3.
 Gould Sales Co., E. S. — 2-7.
 Gulton Industries Inc. — 2-3-8-9.
 Herring & Co. Ltd., John — 5.
 Hollingsworth Co. — 1.
 Hooker (Canada) Ltd., Samuel C. — 1-2-3-4-8-9.
 Howard & Co., M. J. — 1-2-3-4-5-6-8-9.
 Hudson Randall International — 1-7.
 IlSCO of Canada Ltd. — 10.
 Javex — 2-5-6-8-9.
 Jerrold Electronics Corp. — 2-8.
 Johnson Matthey & Mallory Ltd. — 7.
 Kahnert Sales Ltd., R. C. — 4.
 Kulka Electric Mfg. Co. Inc. — 5-8.
 Johnson Co., E. F. — 10.
 Lake Engineering Co. Ltd. — 2-5-8.
 Lectronic Research Laboratories — 1-2.
 Lomas, E. G. — 1-2-5-8-9.
 MacQuarrie, J. J. — 3-5-8-9.
 Mechron Engineering Products Ltd. — 8.
 Microdot, Inc. — 2-3-8.
 Millen Mfg. Co. Inc., James — 6.
 Peffer Sound Systems Ltd. — 4.
 Pfeiffer Electronic Laboratories — 4-5-6.
 Pointon Ltd., Charles W. — 2-3-5-9.
 Prince & Roberts — 6.
 Pye Canada Ltd. — 2-5.
 Quality Hermetics Ltd. — 1-3-5-8.
 Richards Electrocraft Inc. — 4-8.
 R-O-R Associates Ltd. — 8.
 Sealtron Corp. — 1-3.
 Smyth Electronic Components, J. B. — 4.
 Spivey, Inc., James S. — 1.
 Standard Electric Time Co., The — 6.
 Stark Electronic Sales Co. — 1-2-4-5.
 Superex Electronics Corp. — 4-8.
 Switchcraft, Inc. — 4.
 Tequipment Mfg. Co. Ltd. — 2.
 Tenna Mfg. Co., The — 2.
 T.M.C. (Canada) Ltd. — 2.
 United-Carr Fastener Co. of Canada Ltd. — 1-5.
 U.S. Components, Inc. — 1-3-5-6-8-9.
 White Radio Ltd. — 5-6-8.

Converters (28)

AC to DC	1
DC to AC	2
Inverters	3
Rotary	4
Vibrators	5
Voltage	6
Frequency converters	7

Adams Engineering Ltd. — 1-3-6.
 Adler Electronics Inc. — 1-2-3-6.
 Ahearn & Soper Co. Ltd., The — 1-2-3-4-5-6.
 Aircraft Appliances & Equipment Ltd. — 1-2-3-4.
 Airpax Products Co., The — 5.
 Alpha Aracon Radio Co. Ltd. — 1-2-3-4-5.
 ARVA — 1-2.
 Atlantic Films & Electronics Ltd — 1-2-3-4-5-6.
 Atlas Radio Corp. Ltd. — 1-5.

Avionics Ltd. — 1-2-3.
 Beckman/Berkeley Div., A Div. of Beckman Instruments Inc. — 1-2.
 Benco Television Associates Ltd. — 7.
 Bendix Aviation Corp., Red Bank Div. — 1-2-3-4.
 Bogue Electric of Canada Ltd. — 1-2-3-4-6.
 Bristol Co. of Canada Ltd., The — 5.
 British Ferrograph Recorder Co. Ltd. — 5.
 British Thomson-Houston Co. (Canada) Ltd., The — 4.
 Burlec Sales Ltd. — 1-2-3-4.
 Canadian Electrical Supply Co. Ltd. — 1-2-3-4-5.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept — 1-2-3-5-6.
 Canadian Research Institute — 1-2-6.
 Canadian Westinghouse Co. Ltd. — 2-3.
 Carter Motor Co. — 2-3-4.
 Christie Electric Corp. — 1.
 Computing Devices of Canada Ltd. — 3.
 Consolidated Avionics Corp. — 1-2-6.
 Crescent Engineering & Research Co. — 1-2.
 Daystrom Ltd. — 1.
 Desser E-E Ltd. — 5.
 D & B Sound and Signals Inc. — 4.
 Eastern Precision Resistor Corp. — 1-3.
 Electrodesign — 1-2-6.
 Electrolabs — 1.
 Electromechanical Products — 1-2-3-4-5-6.
 Electronic Controls Ltd. — 1.
 Electronic Instrument Co. Inc. — 1.
 Electronic Research Associates, Inc. — 1-2-3.
 Electronic Specialty Co. — 1-2-3.
 Electro Instruments Inc. — 1-2.
 Electro Sonic Supply Co. — 1-2-3-4-5-6.
 Empire Products Sales Corp. — 4.
 Engineered Magnetics, Div. of Gulton Industries, Inc. — 1-2.
 English Electric Co. Ltd. — 1-2-3.
 Fortiphone Ltd. — 6.
 General Photo Products Co. Inc. — 1-6.
 General Radio Company — 2.
 Gordon Enterprises — 1-2-3-4-5-6.
 Gould Sales Co., E. S. — 5.
 Gulton Industries Inc. — 1.
 Hackbusch Electronics Ltd. — 1-2.
 Harvey-Wells Electronics Inc. — 5-6.
 Herring & Co. Ltd., John — 5.
 Honeywell Controls Ltd. — 1-2-3.
 Hoover Co. Ltd., The — 2-3-4.
 Instrument Development Laboratories Inc. — 4.
 Jack & Heintz Inc. — 1-2-3.
 Kahnert Sales Ltd., R. C. — 2-3-4-5.
 Lake Engineering Co. Ltd. — 1-2-3-6.
 Lectronic Research Laboratories — 3.
 Leeds & Northrup, Canada, Ltd. — 5.
 Lenkurt Electric Co. of Canada Ltd. — 3.
 Leonard Electric Ltd. — 1-2-3-5.
 Librascope Inc. — 4.
 Lomas, E. G. — 1-2-6.
 M.E.L. Sales Ltd. — 2.
 Microwave Associates, Inc. — 1-2-6.
 Northam Electronics Inc. — 2-6.
 Peffer Sound Systems Ltd. — 2-3-4-5.
 Perkin Engineering Corp. — 1-2-3-6.
 Pointon Ltd., Charles W. — 2-3-4.
 Power Sources, Inc. — 2-3-6.
 Pye Canada Ltd. — 1-2-4-6.
 Pylon Electronic Development Co. Ltd. — 2-6.
 Radionics Limited — 1-6.
 Rogers Electronic Tubes and Components — 5.
 Rogers Majestic Electronics Ltd. — 1-2-5.

RS Electronics Corp. — 1-2.
 Sangamo Electric Co. — 2-3-4.
 Sel-Rex Corp. — 1-3-6.
 Sorensen & Co. Inc. — 1-2-3.
 Spivey, Inc., James S. — 3-4.
 Standard Television Products Ltd. — 1.
 S & T Sales Ltd. — 1-3-4-5.
 Technical Apparatus Builders — 1-2-3-4-5-6.
 Tequipment Mfg. Co. Ltd. — 5.
 Texas Instronics Inc. — 3.
 Transistor Devices Inc. — 1-2-3-6.
 Universal Transistor Products Corp. — 1-2-3-6.
 Whittaker, E. E. — 1.

Cores (29)

Ceramic	1
Ferrites	2
Powdered metal	3
Tape wound	4
Toroids	5

Aerovox Canada Ltd. — 2-3-5.
 Aerovox Corp., Crowley Division — 2-3-5.
 Ahearn & Soper Co. Ltd., The — 2-3-5.
 Airtron Canada Ltd. — 2.
 Allen-Bradley Co. — 2.
 Bayly Engineering Ltd. — 5.
 Beechey Enterprises — 3.
 Canadian Electrical Supply Co. Ltd. — 2.
 Canadian Stackpole Ltd. — 2-3.
 Canadian Westinghouse Co. Ltd. — 4-5.
 Centralab, A Div. of Globe-Union Inc. — 1.
 Champlain Metals Ltd. — 2.
 Collins Radio Co. of Canada Ltd. — 2.
 Custom Components Inc. — 3.
 Diamonite Products Mfg. Co., Div. of U.S. Ceramic Tile Co. — 1.
 Electrodesign — 5.
 El-Met-Parts Ltd. — 5.
 Emerson & Cuming, Inc. — 3.
 General Ceramics Corp. — 1-2.
 Glendon Co. Ltd., The — 2-3-5.
 Gould Sales Co., E. S. — 3.
 Gray Co. Ltd., H. Roy — 1.
 Hooker (Canada) Ltd., Samuel C. — 1-2-3-5.
 Howard & Company, M. J. — 2.
 International Resistance Co. Ltd. — 5.
 Isolantite Manufacturing Corp. — 1.
 Lake Engineering Co. Ltd. — 2-3.
 Lenkurt Electric Co. of Canada Ltd. — 3-5.
 Magnetics, Inc. — 3-4-5.
 Mechron Engineering Products Ltd. — 1-4-5.
 Moloney Electric Co. of Canada Ltd. — 4.
 Neosid (Canada) Ltd. — 3.
 Norton Behr-Manning Overseas Inc. — 1.
 Paisley Products of Canada Ltd. — 1-2-5.
 Polypenco Inc. — 3-5.
 Rogers Electronic Tubes and Components — 2-5.
 Stackpole Carbon Co. — 2-3-5.
 Steward Mfg. Co., D. M. — 1-2.
 Superex Electronics Corp. — 2.
 Telephone Mfg. Co. Ltd. — 3-5.
 Tilton Ltd., John R. — 1-2-5.
 Workman TV Inc. — 3.

Crystals and Accessories (30)

Crystal holders	1
Crystal ovens	2
Germanium	3
Oscillating quartz crystals	4
Piezo electric	5
Raw quartz crystals	6

ELECTRONIC EQUIPMENT — BUYERS' GUIDE

Ahearn & Soper Co. Ltd., The — 1-2-3-4-5.
 Aircom, Inc. — 1.
 Alpha Aracon Radio Co. Ltd. — 3.
 Atlantic Films & Electronics Ltd. — 3-4-5.
 Beechey Enterprises — 2-4.
 British Thomson-Houston Co. (Canada) Ltd., The — 1.
 Brush Electronics Co. — 5.
 Bulova Watch Company, Inc. — 2-4-5.
 Canadian Astatic Ltd. — 5.
 Canadian Electrical Supply Co. Ltd. — 1-2-3.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-2-3-4-5.
 Centralab, A Div. of Globe-Union Inc. — 5.
 Cinema-Television Ltd. — 2.
 Constantin & Co., L. L. — 1.
 Diamond Antenna & Microwave Corp. — 1.
 Diamond Drill Carbon Co., The — 6.
 Electrodesign — 4.
 Electro Sonic Supply Co. — 1-4-5.
 Empire Products Sales Corp. — 1.
 Enflo Corporation — 1.
 Erwood Inc. — 2.
 Gates Radio Co. — 1-2-4.
 Gould Sales Co., E. S. — 4.
 Gray Co. Ltd., H. Roy — 1.
 Gulton Industries Inc. — 5.
 Javex — 1.
 Johnson Co., E. F. — 1.
 Kahnert Sales Ltd., R. C. — 5.
 Kemtron Electron Products Inc. — 3.
 Kinney Mfg. Division, The New York Air Co. — 2.
 Lake Engineering Co. Ltd. — 1-2-3-4-5.
 Lavoie Laboratories Inc. — 2.
 Lectronic Research Laboratories — 3.
 Merritt Co., Ron — 1.
 Microwave Associates, Inc. — 1.
 National Radiac Inc. — 1-2.
 Northern Engineering Labs. Inc. — 2-4.
 Pye Canada Ltd. — 2-4.
 Quality Hermetics Ltd. — 1.
 Robinson Co., C. M. — 1-2-4-5.
 Rogers Electronic Tubes and Components — 5.
 Smyth Electronic Components, J. B. — 3.
 Snelgrove Co. Ltd., C. R. — 1-2-4-5.
 S & T Sales Ltd. — 1-4.
 Tilton Ltd., John R. — 1.
 United Insulator Co. Ltd. — 5.
 Waldom Electronics Inc. — 1.
 Warren Components Div., El-Tronics, Inc. — 1.
 Wright Electronics Inc. — 2-4-5.
 Wright Electronics of Canada, Ltd., W Gary — 2-4-5.

Computers (31)

Analog to digital converters	1
Computers analog	2
Computers digital	3
Data reduction equipment	4
Drums magnetic	5
Electronic calculators	6
Counters continuous	7
Counters preset	8
Computer building blocks	9

Ahearn & Soper Co. Ltd., The — 2.
 Anatron Division of Endevco Corp. — 1-7.
 Airmec Ltd. — 7-8.
 Aviation Electric Ltd. — 1-7-8.
 ARVA — 3.
 Atlas Radio Corp. Ltd. — 1-7.
 Baird-Atomic Inc. — 1-2-3-4-7-8.
 Bayly Engineering Ltd. — 1.

Beckman/Berkeley Div., A Div. of Beckman Instruments, Inc. — 1-2-3-4-7-8.
 BJ Electronics, Borg-Warner Corp. — 1-4-5-7-8.
 Brian Engineering Ltd. — 4.
 Canadian Applied Research Ltd. — 1-2-3-7-8.
 Canadian Aviation Electronics Ltd. — 2.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 2-3.
 Canadian Marconi Company — 1-7-8.
 Canadian Research Institute — 2-3-6-7-8.
 Canadian Westinghouse Co. Ltd. — 2.
 Cinema-Television Ltd. — 5-7.
 Computing Devices of Canada Ltd. — 1-2-3-4-7.
 Consolidated Avionics Corp. — 1-3-4-7-8.
 Curtiss-Wright Corp., Electronics Div. — 1-2-3.
 Daystrom Ltd. — 1-2-3-4-7.
 Dynalysis Development Laboratories Inc. — 1-2-4.
 ElectroData Division, Burroughs Adding Machine of Canada Ltd. — 3-4-5-6.
 Electrodesign — 4-6-7-8.
 Electromechanical Products — 1-4.
 Electronic Associates Inc. — 1-2-4.
 Electronic Associates Ltd. — 1-6-7-8.
 Electronic Tube Corp. — 4.
 Electronics Corporation of America (Canada) Ltd. — 1-7.
 Electro Instruments Inc. — 1-2-3-4.
 Electro-Pulse Inc. — 7-8.
 Ellis Industries, The J. W. — 7-8.
 English Electric Company Ltd. — 1-2-3-4-5.
 Epsco, Inc. — 4.
 Feedback Controls, Inc. — 1-2.
 Ferrara Inc. — 8.
 Fischer & Porter Co. — 1-4.
 Fischer & Porter (Canada) Ltd. — 1-4.
 Franklin Electronics Inc. — 1-3-4-7-8.
 Gates Radio Co. — 7.
 Hamner Electronics Co., Inc. — 7-8.
 Honeywell Controls Ltd. — 1-2-3-4.
 Hooker (Canada) Ltd., Samuel C. — 8.
 Hoover Company Ltd., The — 1-4-9.
 Instronics Ltd. — 1-2-4-5-7-8.
 Instrument Development Laboratories Inc. — 1.
 Kintel — 1-2-3.
 Leeds & Northrup, Canada Ltd. — 2-4.
 Librascope Inc. — 1-2-3-4-5-6-7-8.
 Lintronic Ltd. — 4-7.
 Londex Ltd. — 7-8.
 Magnasync Mfg. Co. Ltd. — 3-4.
 Marsland Engineering Ltd. — 7.
 Mechtron Engineering Products Ltd. — 2-3.
 M.E.L. Sales Ltd. — 7-8.
 Northam Electronics Inc. — 4.
 Northeastern Engineering Inc. — 7-8.
 Northern Radio Mfg. Co. Ltd. — 7.
 Parsons Co., The Ralph M. — Electronics Div. — 4.
 Philbrick Researches, Inc., George A. — 2.
 Philips Industries Ltd. — 4-7-8.
 Photocon Research Products — 8.
 Radiation Counter Laboratories Inc. — 1.
 Radiation Inc. — 1-4.
 Radionics Limited — 1-4-8.
 Rogers Electronic Tubes and Components — 7.
 R-O-R Associates Ltd. — 1-2-3-4-6-7-8.
 Servo Corp. of America — 2.
 Servomechanisms (Canada) Ltd. — 1-2-4.

Solartron Electronic Group Ltd., The — 4.
 Southern Instruments Computer Division — 1-2-3-4-6.
 Standard Electric Time Co., The — 2.
 Standard Telephones & Cables Mfg. Co. (Canada) Ltd. — 1-3-5.
 Taller & Cooper Inc. — 1-2-3-4-6-7-8.
 Tecneek Associates — 2.
 Telecomputing Corp. — 1-4-7-8.
 Texas Instronics Inc. — 2-3-7-8.
 Veeder-Root Inc. — 8.
 Veeder-Root of Canada Ltd. — 7-8.
 Weltronic Co. — 6.

Delay Lines (32)

Decade	1
Distributed constant	2
Distributed parameter	3
Lumped constant	4
Ultrasonic	5

Ahearn & Soper Co. Ltd., The — 1-4.
 Aircraft Appliances & Equipment Ltd. — 1-2-3-4.
 Aladdin Electronics, A Div. of Aladdin Industries, Inc. — 2.
 Barker & Williamson Inc. — 2-3-4.
 Beckman/Helipot Corp. — 2.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-2-3-4.
 Centralab, A Div. of Globe-Union Inc. — 4.
 Daven Company, The — 1-2-3-4-5.
 Epsco, Inc. — 4.
 Essex Electronics of Canada Ltd. — 2-4.
 Filtron Co. Inc. — 1-2-3-4.
 General Instrument-F. W. Sickles of Canada Ltd. — 1-2-3-4-5.
 General Radio Company — 3.
 Gray Co. Ltd., H. Roy — 5.
 Gulton Industries Inc. — 4.
 Herring & Co. Ltd., John — 1-2-3-4.
 Hooker (Canada) Ltd., Samuel C. — 2-3-4.
 Hudson Randall International — 4.
 International Resistance Co. Ltd. — 1.
 Lynmar Engineers, Inc. — 4.
 Millen Mfg. Co. Inc., James — 1-2-3-4.
 Philips Industries Ltd. — 5.
 Tech Laboratories, Inc. — 1.
 Times Wire & Cable Co. Inc. — 2-3.
 Tobe Deutschmann Corp. — 2-4.

Equalizers (33)

Dialog equalizers	1
Line equalizers	2
Magnetic recording	3
Disk recording	4
Sound effect equalizers	5

Ahearn & Soper Co., The — 4.
 Benco Television Associates Ltd. — 2.
 Blonder-Tongue Laboratories Inc. — 2.
 Caldwell A-V Equipment Co. Ltd. — 3.
 Canadian Electrical Supply Co. Ltd. — 3.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 2-3-4-5.
 Collins Radio Co. of Canada Ltd. — 2.
 Clark Ltd., Alex L. — 3.
 Daven Company, The — 1-2-5.
 Engineered Sound Systems Ltd. — 1-2.
 Freed Transformer Co. Inc. — 2.
 Gates Radio Co. — 2-3-4.
 Gould Sales Co., E. S. — 2.
 Hooker (Canada) Ltd., Samuel C. — 1-2-3-4-5.
 Instantaneous Recording Service — 3-4.

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Lenkurt Electric Co. of Canada Ltd. — 2.
Magnasync Mfg. Co. Ltd. — 3.
Stancil Hoffman Corp., The — 1-2-3.
Telephone Mfg. Co. Ltd. — 2.
T.M.C. (Canada) Ltd. — 2.

Filters (34)

Antenna	1
Band pass & band rejection	2
High pass	3
Loud speaker dividing networks	4
Mechanical	5
Microwave	6
RF noise reduction	7
TV noise reduction	8
UHF & VHF	9
Variable band pass	10
Low pass	11
Crystal	12

Ace Engineering & Machine Co. Inc. — 7.
Adams Engineering Ltd. — 1-4-6.
Adler Electronics Inc. — 1-2-3-9-10.
Aerovox Canada Ltd. — 7-8.
Ahearn & Soper Co. Ltd., The — 1-2-3-6-7.
Airborne Accessories Corp. — 2-3-7.
Aircorn, Inc. — 1-2-3-6-9.
Aircraft Appliances & Equipment Ltd. — 7.
Allison Laboratories — 2-3-10.
American Electronics Co. — 1-2-3.
Andrew Antenna Corp. Ltd. — 1-2-3-6-7-9.
Arrow Radio Co. — 7.
Astron Corp. — 7.
Associated Electronic Components — 4.
Atlantic Films & Electronics Ltd. — 4.
Atlas Radio Corp. Ltd. — 1-2-3-4-8.
Audio Development Co. — 2-3.
Avionics Ltd. — 6.
Barker & Williamson Inc. — 1-2-3-4-7-9.
Bayly Engineering Ltd. — 1-3-6-9-10.
Beaconing Optical & Precision Materials Co. Ltd., Electronics Div. — 5-6.
Beechey Enterprises — 7-12.
Belling & Lee Ltd. — 1-2-7-8.
Benco Television Associates Ltd. — 2-8-9-10.
BJ Electronics, Borg-Warner Corp. — 3-9.
Blonder-Tongue Laboratories Inc. — 2.
Bomac Laboratories Inc. — 6.
Bulova Watch Company, Inc. — 2-3-10.
Caledonia Electronics & Transformer Corp. — 2-3-11.
Canadian Applied Research Ltd. — 5.
Canadian Atlas Transformer Co. Ltd. — 2-3.
Canadian Electrical Supply Co. Ltd. — 1-2-3-4-8.
Canadian General Electric Co. Ltd., Canadian Marconi Company — 2.
Canadian Marconi Company, Electronic Tube & Components Div. — 8.
Chemalloy Electronics Corp. — 6.
Cinema-Television Ltd. — 2-3.
Collins Radio Co. of Canada Ltd. — 1-2-3-5-6-9-10.
Cubic Corp. — 9.
Diamond Antenna & Microwave Corp. — 1-2-3-6-7-10.
Douglas Microwave Co. Inc. — 6.
DuMont Labs. Inc., Allen B. — 5.
Edin Co. Inc. — 2.
Electroline Television Equipment Inc. — 2-3-6-7-8-9-10.

Electronic Equipment & Tube Dept. — 1-2-3-4-6-9-10.
Electronic Specialty Co. — 1-2-3-6-7-9-10.
Electro Sonic Supply Co. — 3-4-7-8-10.
Electro-Voice Inc. — 4.
Entron, Inc. — 1-2-3-7-8-9.
Epsco, Inc. — 2.
Filtron Co. Inc. — 7-8-9.
Freed Transformer Co. Inc. — 2-3-4.
Frequency Standards Inc. — 1-2-6-10.
Gates Radio Co. — 1-2-3.
General Radio Company — 2-3-9.
Gertsch Products Inc. — 10.
Goodman's Industries Ltd. — 4.
Gould Sales Co., E. S. — 1-7-8.
Hammond Mfg. Co. Ltd. — 2-3-4.
Hewlett-Packard Co. — 2.
Hooker (Canada) Ltd., Samuel C. — 1-2-3-4-6-7.
Howard & Company, M.J. — 2-3-7-9-10.
Jensen Condenser Products Co. Ltd., A/S Tobias — 7-8.
Jerrold Electronics (Canada) Ltd. — 1-2-9-10.
Johnson Co., E.F. — 1-2.
Kahnert Sales Ltd., R. C. — 2-3.
Kennedy & Co., D. S. — 2.
Krohn-Hite Corp. — 2-10.
Lake Engineering Co. Ltd. — 2-3-4.
Lear, Inc. — 2.
Lenkurt Electric Co. of Canada Ltd. — 2-3.
Lomas, E.G. — 6.
Lynch Carrier Systems Inc. — 2-3.
Lynmar Engineers, Inc. — 1-2-3-8.
M.E.L. Sales Ltd. — 2-3-6.
Merritt Co., Ron — 1-4.
Microwave Associates, Inc. — 6.
Mitchell Industries Inc. — 7.
Mosley Electronics, Inc. — 3.
Narda Corporation, The — 6.
Osborne Electric Co. Ltd. — 2-3.
Peerless Electrical Products, Div. of Altec Lansing Corp. — 2-3.
Philips Industries Ltd. — 3.
Pointon Ltd., Charles W. — 7-8-9.
Premier Instrument Corp. — 6.
Proboscope Co. Inc. — 2-10.
Pye Canada Ltd. — 1-6-9.
Radio Components Ltd. — 7-8.
Radio Condenser Co., Ltd. — 2.
Radio Frequency Laboratories, Inc. — 2-3.
Rogers Electronic Tubes and Components — 2-3-10.
R-O-R Associates Ltd. — 2-10.
San Fernando Electric Mfg. Co. — 2-3-7.
Shielding Inc. — 7.
Sierra Electronic Corp. — 2-6-9.
Sinclair Radio Laboratories Ltd. — 1-2-3-6-7-8-9-10.
Smyth Electronic Components, J.B. — 4.
Sprague International Ltd. — 7.
Standard Telephones & Cables Mfg. Co. (Canada) Ltd. — 1.
Standard Television Products Ltd. — 4.
Stanwyck Coil Products Ltd. — 1-4-7-8.
Superex Electronics Corp. — 3-8.
Tech Laboratories, Inc. — 4.
Technical Appliance Corp. — 1-6-9.
Tilton Ltd., John R. — 3-4.
T.M.C. (Canada) Ltd. — 1.
Tobe Deutschmann Corp. — 1-2-3-7-8-9.
Torotor A/S — 1-2-3-9.
Triad Transformer Corp. — 2-3.
Westinghouse Electric International Co. — 1-2-3-6-10.
Wind Turbine Co. of Canada Ltd. — 1-2-7.

Fuses and Fuse Holders (35)

Fuses	1
Fuse holders	2
Fuse pullers	3

Accurate Electronics Corp. — 2.
Alpha Aracon Radio Co. Ltd. — 1-2.
Associated Electronic Components — 2.
Astral Electric Co. Ltd. — 1-2.
Atlantic Films & Electronics Ltd. — 1-2.
Atlas Radio Corp. Ltd. — 2.
Automatic Electric Sales (Canada) Ltd. — 1-2.
Belling & Lee Ltd. — 1-2.
Burlec Sales Ltd. — 2.
Burndy Canada Ltd. — 1-2.
Bussman Mfg. Div. McGraw Edison Co. — 1-2.
Canadian Electrical Supply Co. Ltd. — 1-2.
Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-2.
Cinch Mfg. Corp. Ltd. — 2.
Eby Co., Hugh H. — 2.
Economy Fuse and Manufacturing Co. of Canada Ltd. — 1.
Electrolabs — 2.
Electro Sonic Supply Co. — 1-2.
English Electric Company Ltd. — 1.
Garde Manufacturing Co. — 2.
Gee Lar Mfg. Co. — 2.
Glendon Co. Ltd., The — 2.
Hackbusch Electronics Ltd. — 1-2.
Janco Corp. — 2.
Kulka Electric Mfg. Co. Inc. — 2.
Littelfuse Inc. — 1-2.
Mechron Engineering Products Ltd. — 1.
Permonite Mfg. Co. — 2.
Pfeiffer Electronic Laboratories — 1-2.
Raytheon Canada Ltd. — 2.
Rogers Electronic Tube and Components — 2.
Schouboe, Tage — 2.
Telephone Mfg. Co. Ltd. — 1-2.
Trico Fuse Mfg. Co. — 3.
United-Carr Fastener Co. of Canada Ltd. — 2.
United Insulator Co. Ltd. — 1.
Westinghouse Electric International Co. — 1-2.

Geophysical Equipment (36)

Complete exploration equipment	1
Control equipment	2
Microphones	3
Recording galvanometers	4

Alpine Laboratories Ltd. — 1.
Atlas Radio Corp. Ltd. — 4.
Bogue Electric of Canada Ltd. — 1.
Brush Electronics Co. — 1.
Canadian Astatic Ltd. — 3.
Canadian Research Institute — 1-2-4.
Chemalloy Electronics Corp. — 1.
Clark Ltd., Alex L. — 3-4.
Cossor (Canada) Ltd. — 1-2.
D & B Sound and Signals Inc. — 3.
Edin Co. Inc. — 1-4.
Electrodesign — 1-4.
Electromechanical Products — 1-2-4.
Electronic Associates Ltd. — 1-2.
Electronic Enterprises Reg'd. — 1-2-4.
Elgin National Watch Co. — 3.
Ellis Industries, The, J. W. — 4.
Esterline-Angus Co. Inc., The — 4.
Fisher Research Laboratory, Inc. — 1.
Fraser Ltd., George M. — 2-4.
General Theatre Supply Co. Ltd. — 3.
Gordon Enterprises — 4.
Gould Sales Co., E. S. — 3.

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Industrial & Institutional Communications Ltd. — 3.
 Instronics Ltd. — 4.
 Kahnert Sales Ltd., R. C. — 3.
 Kelk Ltd., George — 1.
 McPhar Manufacturing Ltd. — 1.
 Mechtron Engineering Products Ltd. — 4.
 Nichols Ltd., R. H. — 4.
 Nucleonic Corp. of America — 1.
 Photron Instrument Co. — 4.
 R-O-R Associates Ltd. — 4.
 RS Electronics Corp. — 1.
 Sharpe Instruments Ltd. — 1.
 Tech Laboratories, Inc. — 2.
 Technical Apparatus Builders — 2.
 Texas Instronics Inc. — 1-2-3-4.
 Universal Transistor Products Corp. — 1.
 Varian Associates — 1.

Graphic Recorders (37)

Charts and papers	1
Ink writing	2
Inkless types	3
Fixed speed types	4
Variable speed types	5
Impact	6

Acton Laboratories Inc. — 3-5.
 Ahearn & Soper Co. Ltd., The — 1-2-3-4-5.
 ARVA — 1-2-3-4-5.
 Atlas Radio Corp. Ltd. — 1-2-3-5.
 Barber-Colman of Canada Ltd., (Wheelco Inst. Div.) — 1.
 Beechey Enterprises — 6.
 Bristol Co. of Canada Ltd., The — 1-2-4-5.
 Brush Electronics Co. — 1-2-3-5.
 Canadian Charts & Supplies Ltd. — 1.
 Canadian General Electric Co., Ltd., Industrial Products Dept. — 1-2-3-4-5.
 Canadian Research Institute — 3-5.
 Consolidated Avionics Corp. — 3-4-5.
 Daystrom Ltd. — 1-2-4-5.
 Edin Co. Inc. — 1-2-3-4-5.
 Electrodesign — 1-2-3-4-5.
 Electromechanical Products — 1-2-3-4-5.
 Electronic Associates Inc. — 1-2-4-5.
 Ellis Industries, The J. W. — 2-3-4-5.
 Esterline-Angus Co. Inc., The — 1-2-4-5.
 Fenske, Fedrick and Miller Inc. — 3.
 Fischer & Porter Co. — 4.
 George M. Fraser Ltd. — 1-2-4-5.
 General Communications Ltd. — 1-2-3-4-5.
 General Radio Company — 5.
 Herring Co. Ltd., John — 2.
 Honeywell Controls Ltd. — 1-2-3-5.
 Instronics Ltd. — 1-2-4-5.
 Larson Instrument Co. — 3-4-5.
 Leeds & Northrup, Canada Ltd. — 4.
 Mechtron Engineering Products Ltd. — 1-2-4-5.
 M.E.L. Sales Ltd. — 3-4-5.
 Nichols Ltd., R. H. — 2-3-4-5.
 Peacock Brothers Ltd. — 1-2-4-5.
 Phillips Industries Ltd. — 2-3-5.
 Photron Instrument Co. — 1-2-3-4-5.
 Radiation Inc. — 3.
 Radionics Limited — 1-2-3-4-5.
 R-O-R Associates Ltd. — 1-3-4-5.
 Sanborn Co. — 1-3-4-5.
 Sheffield Corp., The — 3.
 Tecneek Associates — 5.
 Texas Instronics Inc. — 2-5.
 Varian Associates — 1-2-3-4-5.
 Varian Associates of Canada Ltd. — 1-2-4.

Westinghouse Electric International Co. — 1-2-4-5.

Jacks, Jack Fields and Plugs (38)

Jacks	1
Jack fields	2
Patch cords	3
Plugs	4

Accurate Electronics Corp. — 1-4.
 Aerolite Electronics Corp. — 1-3-4.
 Aircraft-Marine Products of Canada Ltd. — 3.
 Amalgamated Electric Corp. Ltd. — 1-4.
 Amphenol Canada Ltd. — 1-2-3-4.
 Associated Electronic Components — 1-4.
 Astral Electric Co. Ltd. — 1-4.
 Atlantic Films & Electronics Ltd. — 1-3-4.
 Atlas Radio Corp. Ltd. — 1-2-3-4.
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 Automatic Electric Sales (Canada) Ltd. — 1-2-3-4.
 Automatic & Precision Mfg. Co. — 4.
 Bayly Engineering Ltd. — 1.
 Belling & Lee Ltd. — 1-4.
 British Ferrograph Recorder Co. Ltd. — 1-4.
 Burlec Sales Ltd. — 1-4.
 Cambridge Thermionic Corp. — 1-4.
 Canadian Electrical Supply Co. Ltd. — 1-4.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-2-3-4.
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 Cannon Electric Canada Ltd. — 1-3-4.
 Cinch Mfg. Corp. Ltd. — 1-4.
 Circon Component Co. — 4.
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 Eastern Precision Resistor Corp. — 3-4.
 Eby Co., Hugh H. — 1-4.
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 Electroline Television Equipment Inc. — 3-4.
 Electro Sonic Supply Co. — 1-2-3-4.
 Engineered Sound Systems Ltd. — 1-3-4.
 Ericsson Telephone Sales of Canada Ltd. — 1-2-4.
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 Fortiphone Ltd. — 1.
 Gee Lar Mfg. Co. — 1-4.
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 Gray Co. Ltd., H. Roy — 1-4.
 Hackbusch Electronics Ltd. — 1-2-3-4.
 Herring & Co. Ltd., John — 3-4.
 Hooker (Canada) Ltd., Samuel C. — 1-2-3-4.
 Howard & Company, M. J. — 1.
 Javex — 1-4.
 Johnson Co., E. F. — 1-4.
 Kahnert Sales Ltd., R. C. — 1-4.
 Kulka Electric Mfg. Co. Inc. — 4.
 Lenkurt Electric Co. of Canada Ltd. — 1-2-3-4.
 Lynch Carrier Systems Inc. — 2.
 Mack & Co. Ltd., R. — 1-4.
 Mallory & Co. Inc., P. R. — 1-4.
 McCurdy Radio Industries Ltd. — 1-2-4.
 Millen Mfg. Co. Inc., James — 1-4.
 Nems-Clarke, Inc. — 1-2-3-4.
 Northern Electric Co. Ltd. — 1-2-3-4.
 Northern Radio Mfg. Co. Ltd. — 2.

Peffer Sound Systems Ltd. — 1-4.
 Permonite Mfg. Co. — 4.
 Pfeiffer Electronic Laboratories — 1-2-4.
 Pointon Ltd., Charles W. — 1-2-3-4.
 Pomona Electronics Co., Inc. — 3.
 Prince & Roberts — 1-4.
 Pye Canada Ltd. — 1-2-3-4.
 Raytheon Canada Limited — 1.
 Richards Electrocraft Inc. — 1-4.
 Simmonds & Sons Ltd., A. C. — 1-4.
 Standard Electric Time Co., The — 1-3-4.
 Standard Telephones & Cables Mfg. Co. (Canada) Ltd. — 1-2-3-4.
 Stark Electronic Sales Co. — 1-4.
 Superex Electronics Corp. — 1-4.
 Switchcraft, Inc. — 1-2-4.
 Telephone Mfg. Co. Ltd. — 1-2-3-4.
 T.M.C. (Canada) Ltd. — 2-3.
 United-Carr Fastener Co. of Canada Ltd. — 1-4.
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 Armstrong Ltd., A.T.R. — 1-2-3.
 Arnhold Ceramics Inc. — 1-2-3-4.
 Associated Electronic Components — 1-2-3-4-5.
 Astral Electric Co. Ltd. — 1-2-3-4.
 Atlantic Films & Electronics Ltd. — 1-2-3-4-5-6.
 Atlas Radio Corp. Ltd. — 1-4-5.
 Atlas Sound Corp. — 1-2.
 Audio Equipment Co. Inc. — 8.
 Audio Tool & Engineering Ltd. — 1-2-3.
 Audio Vox Intercom Inc. — 2-3-4.
 Automatic Electric Sales (Canada) Ltd. — 6.
 British Thomson-Houston Co. (Canada) Ltd., The — 1.
 Brush Electronics Co. — 5.
 Caldwell A-V Equipment Co. Ltd. — 5.
 Canadian Electrical Supply Co. Ltd. — 1-2-3-4-5-6.
 Canadian General Electric Co. Ltd. — 2-3.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-2-3-4-5-6.
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 Cannon Co., C. F. — 5.
 Clark Ltd., Alex L. — 2-3-4.
 Collins Radio Co. of Canada Ltd. — 1.
 Cossor (Canada) Ltd. — 1-2-3-4.
 Danavox A/S — 5.
 Daystrom Ltd. — 1-2-4.
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 Duotone Company Inc — 2.
 D & B Sound and Signals Inc. — 1-5.
 Electronic Enterprises Ltd. — 1.
 Electronic Instrument Co. Inc. — 4.
 Electro Sonic Supply Co. — 1-2-3-4-5-6.
 Electro-Voice Inc. — 2-3-4.
 Elgin National Watch Co. — 6.

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 Ericsson Telephone Sales of Canada Ltd. — 5-6.
 Executone Communication Systems Ltd. — 1-2-3-4-5-6.
 Fortiphone Ltd. — 5.
 General Theatre Supply Co. Ltd. — 1-2-3-5-6.
 Goodman's Industries Ltd. — 1-2-3-4.
 Gould Sales Co., E. S. — 5.
 Hackbusch Electronics Ltd. — 1-4-5-6.
 Hartley Products Co. — 4.
 Hooker (Canada) Ltd., Samuel C. — 5-6.
 Industrial & Institutional Communications Ltd. — 1-5.
 Kahnert Sales Ltd., R. C. — 1-2-3-4-6.
 Lake Engineering Co. Ltd. — 7.
 Lectronic Research Laboratories — 6.
 Lenkurt Electric Co. of Canada Ltd. — 6.
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 Marsland Engineering Ltd. — 1-2-3-4.
 Mc Curdy Radio Industries Ltd. — 1-5-6.
 Mechron Engineering Products Ltd. — 5.
 Melody Master Mfg. Co. — 5.
 Northern Electric Co. Ltd. — 5.
 Peerless Fabrikkerne A/S — 1-2-3-4.
 Peffer Sound Systems Ltd. — 1-2-3-4-5-6.
 Pickering & Co. Inc. — 2.
 Pointon Ltd., Charles W. — 5-6.
 Prince & Roberts — 6.
 Pye Canada Ltd. — 4.
 Quam Nichols Co. — 1-2-3.
 Roanwell Corporation — 5-6.
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 Rogers Electronic Tubes and Components — 1-2-3.
 Simmonds & Sons Ltd., A. C. — 1-2-3-4.
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 Sonotone Corp. — 2-3-4.
 Sperry Gyroscope Ottawa Ltd. — 2-5-6.
 Superex Electronics Corp. — 5.
 S & T Sales Ltd. — 5-6.
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 Tilton Ltd., John R. — 2-3-4.
 Transitron Inc. — 2-3.
 Universal Speaker Service — 1-2-3-4.
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 Associated Electronic Components — 2.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 2.
 Canadian General Electric Co. Ltd., Industrial Products Dept. — 2.
 Canadian Stackpole Ltd. — 2.
 DuMont Labs. Inc., Allen B. — 2.
 Electrodesign — 1.
 General Ceramics Corp. — 2.
 Glendon Co. Ltd., The — 2.
 Indiana Steel Products Co. of Canada Ltd., The — 2.
 Microwave Instruments Ltd. — 1.
 Osborne Electric Co. Ltd. — 1.
 Peerless Fabrikkerne A/S — 2.
 Robins Industries Corp. — 2.
 Sharpe Instruments Ltd. — 2.
 Stackpole Carbon Co. — 2.
 Stanwyck Coil Products Ltd. — 1.
 Steward Mfg. Co., D. M. — 2.
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 Andrew Antenna Corp. Ltd. — 1.
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 Benco Television Associates Ltd. — 3.
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 British Thomson-Houston Co. (Canada) Ltd. — 1-3-5-6-8-11.
 Burlec Sales Ltd. — 2-7.
 Canadian Electrical Supply Co. Ltd. — 1-4-5-6-7-8-10-11.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-2-3-4-5-6-8-10-11.
 Canadian General Electric Co. Ltd., Industrial Products Dept. — 1-2-3-4-5-6-7-8-11.
 Canadian Research Institute — 1-2-3-4-5-6-7-8-10-11.
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 Elder Electronics — 1-2-5-6-8-9-10.
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 Electromechanical Products — 2-3-4-5-6-7-8-9-11.
 Electronic Instruments (Canada) Ltd. — 1-2-7-8.
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 Electronics Corp of America (Canada) Ltd. — 7.
- Electro Instruments Inc. — 8.
 Electro-Pulse Inc. — 8.
 Electro Sonic Supply Co. — 1-2-3-4-5-6-7-8-9-10-11.
 Ellis Industries, The J. W. — 1-2-3-4-5-6-7-8-11.
 English Electric Company Ltd. — 1-3-5-6-8-11.
 Fisher Research Laboratory, Inc. — 8.
 Frequency Standards Inc. — 3.
 Gates Radio Co. — 1-5-6-8-9.
 General Communications Ltd. — 2-7.
 General Radio Company — 3-8.
 Gordon Enterprises — 7.
 Gould Sales Co., E. S. — 6-8.
 Gulton Industries Inc. — 1-4-5-6-8.
 Hackbusch Electronics Ltd. — 1-8-9-10.
 Haydon Mfg. Co. Inc. — 7.
 Herring & Co Ltd., John — 2-4-6-7-8-9.
 Honeywell Control Ltd. — 1-2-3-4-7-8-11.
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 Mack & Co. Ltd., R. — 1-5-6-8-10.
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 Mechron Engineering Products Ltd. — 1-2-5-6-8-10.
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 Northern Radio Mfg. Co. Ltd. — 3-10.
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 Philips Industries Ltd. — 7.
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 Robinson Company, C. M. — 1-2-3-4-5-6-7-8-9-10-11.
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 Altec Lansing Corp. — 3-5-6-7.
 Amperite Co. Inc. — 8.
 Atlantic Films & Electronics Ltd. — 1-2-3-4-5-6-7.
 Atlas Radio Corp. Ltd. — 7.
 Atlas Sound Corp. — 7.
 Audio Instrument Co. Inc. — 3.
 Audio Tool & Engineering Ltd. — 2-4-5.
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 Caldwell A-V Equipment Co. Ltd. — 4-5-7.
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 Canadian Electrical Supply Co. Ltd. — 1-2-4-5-6-7.
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 Canadian Marconi Co., Electronic Tube & Components Div. — 1-2-4-5-7.
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 DuMont Labs. Inc., Allen B. — 1.
 D & B Sound and Signals Inc. — 1-4-5-6-7-8.
 Electro-Sonic Laboratories — 5-6-7.
 Electro Sonic Supply Co. — 1-2-3-4-5-6-7.
 Electro-Voice Inc. — 1-2-4-5-7.
 Electrovert Ltd. — 3-5.
 Elgin National Watch Co. — 1-4-5-7.
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 Industrial & Institutional Communications Ltd. — 4-5-6-7.
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 Photocon Research Products — 3.
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 Robinson Company, C. M. — 1-2-4-5.

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 Simmonds & Sons Ltd., A. C. — 1-4-5-6.
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 Sonograph Engineering and Mfg. Co. Ltd. — 4-5.
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 Aerovox Canada Ltd. — 1.
 Aerovox Corp., Crowley Division — 1.
 Ahearn & Soper Co. Ltd., The — 1-2-3-4-5-6-7.
 Aircrom, Inc. — 1-2-3-5-7.
 Airtron Canada Ltd. — 1-2-3-4-5-6-7.
 Atlas Radio Corp. Ltd. — 1-5-6-7.
 Avionics Ltd. — 1-2-3-4-7.
 Bayly Engineering Ltd. — 1-2-7.
 Beacons Optical & Precision Materials Co. Ltd., Electronics Div. — 1.
 Bomac Laboratories Inc. — 1-2-3-4-5-6-7.
 British Thomson-Houston Co. (Canada) Ltd., The — 1-2-3-7.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-4-6-7.
 Canadian Marconi Company — 1-2-5-7.
 Champlain Metals Ltd. — 1-2-3-4-5-6-7.
 Chemalloy Electronics Corp. — 1.
 Cossor (Canada) Ltd. — 1-2-3-4-5-6-7.
 Cubic Corp. — 7.
 Daven Company, The — 1-6.
 Diamond Antenna & Microwave Corp. — 1-2-3-4-5-7.
 Douglas Microwave Co. Inc. — 1-2-3-4-5-6-7.
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 Electroline Television Equipment Inc. — 1.
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 Emerson & Cuming, Inc. — 1.
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 Fleet Mfg. Ltd. — 1-2-3-4-5-6-7.
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 General Radio Company — 1.
 Glendon Co. Ltd., The — 6-7.
 Hewlett-Packard Co. — 1-5-7.
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 Howard & Co., M. J. — 1.
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 Lake Engineering Co. Ltd. — 1-6-9-10.
 Lectronic Research Laboratories — 1-2-3-4-7.
 Leonard Electric Ltd. — 6.
 Lomas, E. G. — 1-2-3-4-5-6-7.
 M.E.L. Sales Ltd. — 1-2-3-4-7.
 Microwave Associates, Inc. — 1-2-3-4-5-6-7-9.
 Microwave Instruments Ltd. — 1-2-3-5-6-7.
 Microwave Systems — 6.
 Narda Corporation, The — 1-2-3-4-5-6-7.
 Philips Industries Ltd. — 1-2-5-7.

Pye Canada Ltd. — 4.
 Pylon Electronic Development Co. Ltd. — 1-7.
 Radiation Inc. — 1-3.
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 Rogers Electronic Tubes and Components — 3.
 R-O-R Associates Ltd. — 4.
 Sierra Electronic Corp. — 7.
 Sinclair Radio Laboratories Ltd. — 1-2-3-4-5-7.
 Smyth Electronic Components, J. B. — 1-5-6.
 Stark Electronic Sales Co. — 7.
 Tech Laboratories, Inc. — 1.
 Technical Appliance Corp. — 3-4.
 Trico Fuse Mfg. Co. — 8.
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 Alliance Motors — 1-5-6-7.
 Alpha Aracon Radio Co. Ltd. — 2-5.
 American Electronics Inc. — 1-4-7.
 Armstrong Ltd., A.T.R. — 7-8.
 Atlantic Films & Electronics Ltd. — 2-5.
 Atlas Radio Corp. Ltd. — 7.
 Audio Tool & Engineering Ltd. — 1-5.
 Automatic Electric Sales (Canada) Ltd. — 1-4.
 Aviation Electric Ltd. — 4-6-7.
 Beckman/Helipot Corp. — 6.
 Beechey Enterprises — 4-7-8.
 Bendix Aviation Corp., Red Bank Div. — 4.
 Bogue Electric of Canada Ltd. — 3-4-7.
 British Ferrograph Recorder Co. Ltd. — 7.
 British Thomson-Houston Co. (Canada) Ltd., The — 1-3-4-6-7.
 Burlec Sales Ltd. — 2-3-4-8.
 Canadian Applied Research Ltd. — 6.
 Canadian Electrical Supply Co. Ltd. — 2-5.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-2-3-4-6-7-8.
 Canadian Research Institute — 3-8.
 Carter Motor Co. — 2.
 Collins Radio Co. of Canada Ltd. — 2.
 Communication Measurements Laboratory, Inc. — 3.
 Cramer Controls Corp., The — 7-8.
 Daystrom Ltd. — 7.
 Dominion Electrohome Industries Ltd. — 1.
 Eastern Air Devices Inc. — 1-3-4-5-6-7-8.
 Electromechanical Products — 3.
 Electro Sonic Supply Co. — 1-2-3-4-5-7.
 Empire Engineering Co. — 4.
 English Electric Co. Ltd. — 1-4-7.
 General Theatre Supply Co. Ltd. — 3-4.
 Gleason-Avery Inc. — 7-8.
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 Haydon Mfg. Co. Inc. — 7-8.
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 Hoover Co. Ltd., The — 1-2-6-7.
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 Leonard Electric Ltd. — 1-6-7-8.
 M.E.L. Sales Ltd. — 1-2.
 Muirhead Instruments Ltd. — 4-6-7.
 Philips Industries Ltd. — 8.
 Pioneer Gen-E-Motor Corp. — 4.
 Pointon Ltd., Charles W. — 2-5.
 Radionics Ltd. — 3.
 Robbins & Myers Co. of Canada Ltd., The — 1-4-7.
 R-O-R Associates Ltd. — 1-4-6-7.
 Rotor Electric Co. Ltd. — 1.
 Rotron Mfg. Co. — 1.
 Rousseau Controls Ltd. — 1-6-7-8.
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 Servomechanisms, Inc. — 1-6-7.
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 Sharpe Instruments Ltd. — 4.
 Simmonds & Sons Ltd., A. C. — 8.
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 Tecneek Associates — 8.
 Tocco Div., The Ohio Crankshaft Co.—4.
 Universal Electric Co. — 1.
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 Vocaline Co. of America Inc. — 7-8.
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Record changers	6
Record players	7
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Ahearn & Soper Co. Ltd., The—5-7-10.
 Alpha Aracon Radio Co. Ltd. — 1-3-4-5-6-7-8-9-10.
 Armstrong Ltd., A. T. R. — 8-9-10.
 Astral Electric Co. Ltd. — 2-3-4-5-7.
 Atlantic Films & Electronics Ltd. — 1-2-3-4-5-6-7-8-9-10.
 Atlas Radio Corp. Ltd. — 1-4-5-6-7-8-9-10.
 Audio Tool & Engineering Ltd. — 1-2-3-4-6-7-8-9-10.
 Audio Vox Intercom Inc. — 6.
 Caldwell A-V Equipment Co. Ltd. — 1-2-3-4-5-6-7.
 Califone Corp. — 7.
 Canadian Astatic Ltd. — 1-5-8-9-10-12.
 Canadian Electrical Supply Co. Ltd. — 1-3-4-5-6-7-8-9-10-11.
 Canadian General Electric Co. Ltd. — 3-4-8-10.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-3-4-5-6-7-8-10.
 Canadian Marconi Co., Electronic Tube & Components Div. — 6.
 Clark Ltd., Alex L. — 3-5-7-8-10.
 Collins Radio Co. of Canada Ltd. — 1-2-3-4-5-8-9-10.
 Duotone Company Inc. — 1-8-9-10.
 Electronic Enterprises Ltd. — 7.
 Electro-Sonic Laboratories — 2-3-5.
 Electro Sonic Supply Co. — 1-2-3-4-5-6-7-8-9-10-11.

Electro-Voice Inc. — 1.
 Elgin National Watch Co. — 1.
 Engineered Sound Systems Ltd. — 1-2-3-4-5-6-7-8-9-10.
 Gates Radio Co. — 2-3-4-5-6-7-8-10.
 General Theatre Supply Co. Ltd. — 1-2-3-6-7.
 Glendon Co. Ltd., The — 1-5-8-10.
 Gould Sales Co., E. S. — 3-4-8-10.
 Gray Co. Ltd., H. Roy — 2-5.
 Gulton Industries Inc. — 1.
 Hackbusch Electronics Ltd. — 6-7.
 Harvey-Wells Electronics Inc. — 7.
 Kahnert Sales Ltd., R. C. — 1.
 Kinney Mfg. Division, The New York Air Co. — 1-2-4-5.
 Mack & Co. Ltd., R. — 1-5.
 Merritt Co., Ron — 4-5.
 Miller Mfg. Co., M. A. — 8-9-10.
 Monarch Radio Mfg. Co. — 6-7.
 Pacific Transducer Corp. — 1-3-5-8-10.
 Pepper Sound Systems Ltd. — 1-2-3-4-5-6-7-8-10.
 Pfanstiehl Chemical Corp. — 8-9-10.
 Photon Research Products — 2.
 Pickering & Co. Inc. — 3-4-5-8.
 Pointon Ltd., Charles W. — 1-3-5-6-7-8-9-10.
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 Simmonds & Sons Ltd., A. C. — 1-2-6-7.
 Smyth Electronic Components, J. B. — 2-3-5-6-7-8.
 Sonotone Corp. — 8-10-12.
 Stark Electronic Sales Co. — 6-7.
 Tilton Ltd., John R. — 6-7-8-9-10.
 Weathers Industries, Div. of Advance Industries — 8-10.
 Webster Electric Co. — 1-5-7.

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Incandescent lights	1
Neon lights	2
Socket assemblies	3
Brackets, jewels, mounts, sockets	4

Aerolite Electronics Corp. — 1.
 Alpha Aracon Radio Co. Ltd. — 1-2-4.
 ARVA — 1.
 Associated Electronic Components — 1.
 Atlantic Films & Electronics Ltd. — 1-2-4.
 Atlas Radio Corp. Ltd. — 1-2-4.
 Canadian Electrical Supply Co. Ltd. — 1-2.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1.
 Circon Component Co. — 1-2.
 Computing Devices of Canada Ltd. — 8-9.
 Electro Sonic Supply Co. — 1-2.
 Johnson Co., E. F. — 1-2.
 Kulka Electric Mfg. Co. Inc. — 1.
 Lake Engineering Co. Ltd. — 1-2-3.
 Leonard Electric Ltd. — 1-2.
 Lomas, E. G. — 1-2.
 Marco Industries Co. — 1-2.
 Pfeiffer Electronic Laboratories — 1-2.
 Philips Industries Ltd. — 2.
 Simmonds & Sons Ltd., A. C. — 1-2-4.
 United-Carr Fastener Co. of Canada Ltd. — 1.

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DC	1
High voltage (kilowatt)	2
Klystron	3
Low voltage	4
Medium voltage	5
Microwave	6
Primary power sources, fuel engine driven	7
Transistor	8

Voltage regulated power sources AC

9
10
 Acme Electric Corp. Ltd. — 1.
 Adams Engineering Ltd. — 1-2-4-5-8-9.
 Adler Electronics Inc. — 1-2-3-4-5-8-9.
 Aeromotive Engineering Products — 1-4-9.
 Ahearn & Soper Co. Ltd., The — 1-2-3-4-5-7-8-9.
 Aircom, Inc. — 3-6-9.
 Aircraft Appliances & Equipment Ltd. — 1-4-5-7-9.
 Aircraft-Marine Products of Canada Ltd. — 9.
 Airmec Ltd. — 3-9.
 Altec Lansing Corp. — 1-9.
 American Electronics Inc. — 1-2-4-5-9.
 AMP Inc. — 1-3-5-8-9.
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 Associated Electronic Components — 1-4-5-9.
 Atlas Radio Corp. Ltd. — 1-3-4-5-6-9.
 Audio Vox Intercom Inc. — 1.
 Automatic Electric Sales (Canada) Ltd. — 1-4-9.
 Aviation Electric Ltd. — 7-8.
 Avionics Ltd. — 3-8.
 Baird-Atomic Inc. — 1-2-5-9.
 Bayly Engineering Ltd. — 1-2-3-4-5-6-8-9.
 Beaconsing Optical & Precision Materials Co. Ltd., Electronics Div. — 3-6.
 Beckman/Berkeley Div., A Div. of Beckman Instruments, Inc. — 1-2.
 Behlman Engineering Co. — 10.
 Bendix Aviation Corp., Red Bank Div. — 1-4-7-9.
 Bogue Electric of Canada Ltd. — 1-2-6-9.
 Bomac Laboratories Inc. — 6.
 British Thomson-Houston Co. (Canada) Ltd., The — 2-3-6-8.
 Bulova Watch Co. Inc. — 8-9.
 Burlec Sales Ltd. — 1-4-5-7-8-9.
 Caledonia Electronics & Transformer Corp — 1.
 Canadian Atlas Transformer Co. Ltd. — 1-2-3-4-5-9.
 Canadian Electrical Supply Co. Ltd. — 1-2-4-5-8-9.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 4-5-6-7-8-9.
 Canadian Line Materials Ltd. — 1-4-5-8-9.
 Canadian Lister-Blackstone Ltd. — 7.
 Canadian Marconi Company — 1-8.
 Canadian Research Institute — 1-2-4-5-8-9.
 Canadian Westinghouse Co. Ltd. — 8.
 Christie Electric Corp. — 1-4-9.
 Cinema-Television Ltd. — 1-9.
 Collins Radio Co. of Canada Ltd. — 1-3-6-8-9.
 Communication Measurements Laboratory, Inc. — 9.
 Consolidated Avionics Corp. — 1-9.
 Cossor (Canada) Ltd. — 3-6-9.
 Cubic Corp. — 1-5-6.
 Curtiss-Wright Corp., Electronics Div. — 8-9.
 Daystrom Ltd. — 9.
 Eastern Precision Resistor Corp. — 1-3-4-5-8-9.
 Electrodesign — 1-2-3-4-5-6-9.
 Electrolabs — 1-9.
 Electroline Television Equipment Inc. — 5-9.
 Electromechanical Products — 1-2-3-4-5-6-8-9.
 Electronic Instrument Co. Inc. — 1-4-8.
 Electronic Research Associates, Inc. — 1-5-8-9.

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Electronic Specialty Co. — 1-9.
 Electronic Tube Corp. — 1.
 Electro Sonic Supply Co. — 1-4-5-7-9.
 Endevco Corporation — 1.
 Engineered Magnetics, Div. of Gulton Industries, Inc. — 1-4-5-8-9.
 Engineered Sound Systems Ltd.—1-4-5.
 Entron, Inc. — 1-4-9.
 Franklin Electronics Inc. — 1-9.
 Freed Transformer Co. Inc. — 1.
 Gates Radio Co. — 1-2-4-5-9.
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 Globe Industries Inc., Electronics Div. — 1-4-5-8.
 Gould Sales Co., E. S. — 4-5-9.
 Gray Co. Ltd., H. Roy — 1.
 Gulton Industries Inc. — 1-4-5-8-9.
 Hackbusch Electronics Ltd. — 1.
 Hamner Electronics Co., Inc. — 1-4-5-9.
 Harvey-Wells Electronics Inc. — 1-2-3-4-5-6-8-9.
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 Industrial Test Equipment Co. — 1-9.
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 Kay Electric Co. — 8-9.
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 Lake Engineering Co. Ltd. — 1-2-4-5-8-9.
 Lear, Inc. — 7-8.
 Lektra Laboratories Inc. — 1-4-8.
 Lintronic Ltd. — 9.
 Lomas, E. G. — 1.
 Lynmar Engineers, Inc. — 9.
 McCurdy Radio Industries Ltd. — 1-4-5-9.
 Mechron Engineering Products Ltd. — 3-7-8.
 M.E.L. Sales Ltd. — 1-3-4-5-6-9.
 Microwave Associates, Inc.—1-4-5-8-9.
 Microwave Instruments Ltd. — 3-6.
 Millen Mfg. Co. Inc., James — 1-4-5-9.
 Moloney Electric Co. of Canada Ltd. — 1-2-4-5.
 National Radiac Inc. — 2-9.
 Nichols Ltd., R. H. — 1-9.
 Northern Electric Co. Ltd. — 1-4-8.
 Nucleonic Corp of America — 2-4-5-9.
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 Osborne Electric Co. Ltd. — 1-2-4-5.
 Parsons Co., The Ralph M.-Electronics Div. — 1-5-9.
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 Perkin Engineering Corp. — 1-2-4-5-6-8-9.
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 Philips Industries Ltd. — 1-5-9.
 Pioneer Gen-E-Motor Corp. — 1-7-9.
 Polarad Electronics Corp. — 1-3-6.
 Polytronics Co. — 9.
 Power Sources, Inc. — 8-9.
 Precise Development Corp. — 1-2-4-5-9.
 Pye Canada Ltd. — 9.
 Pylon Electronic Development Co. Ltd. — 8.
 Radiation Counter Laboratories Inc.—9.
 Radionics Limited — 1-2-3-4-5-6-8-9.
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 RS Electronics Corp. — 1-4-5-8-9.
 Sangamo Electric Co. — 2-5.
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 Sel-Rex Corp. — 1-2-4-5-9.
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 Servomechanisms, Inc. — 9.
 Servomechanisms (Canada) Ltd. —

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 Sierra Electronic Corp. — 6.
 Sinclair Radio Laboratories Ltd. — 3-6.
 Sola Electric (Canada) Ltd. — 1-4-5-9.
 Solartron Electronic Group Ltd., The — 1-3-4-5-9.
 Sonograph Engineering and Mfg. Co. Ltd. — 8.
 Sorensen & Co. Inc. — 1-2-4-5-8-9.
 Spivey, Inc., James S. — 8.
 Standard Telephones & Cables Mfg. Co. (Canada) Ltd. — 1-2-4-5-6-9.
 Standard Television Products Ltd.—1-4.
 Stark Electronic Sales Co. — 1-2-4-5-9.
 Superior Electric Co., The — 1-9.
 Technical Apparatus Builders — 1-2-3-4-5-6-8-9.
 Texas Instronics Inc. — 8.
 Trad Electronics Corp. — 5.
 Transistor Devices Inc. — 1-4-5-8-9.
 Universal Transistor Products Corp. — 1-2-4-5.
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 Allied Circuit Techniques Ltd. — 1-2-3-5.
 Amphenol Canada Ltd. — 2.
 Atlas Radio Corp. Ltd. — 1.
 Avionics Ltd. — 1-2-3.
 Beechey Enterprises — 2.
 BJ Electronics, Borg-Warner Corp.—1.
 Centralab, A Div. of Globe-Union Inc. — 2.
 Cinch Mfg. Corp. Ltd. — 1-2-3.
 Circon Component Co. — 1.
 Cossor (Canada) Ltd. — 1.
 Desser E-E Ltd. — 1-2.
 Eby Co., Hugh H. — 1.
 Electronic Controls Ltd. — 1-2-3.
 Electronic Tube Corp. — 2.
 Erie Resistor of Canada Ltd. — 3.
 Gates Radio Co. — 3.
 Globe Electrical Mfg. Co. — 1-2.
 Harvey-Wells Electronics Inc. — 1-2-3.
 Heenan Limited, P. J. — 1-2.
 Hooker (Canada) Ltd., Samuel C. — 1.
 Instronics Ltd. — 1.
 Insulated Circuits, Inc. — 1-2-3.
 Lear, Inc. — 2.
 Merritt Co., Ron — 1-2.
 Onondaga Pottery Co., Electronics Div. — 2.
 Printed Electronics Corp. — 1.
 Rogers Electronic Tubes and Components — 2.
 RS Electronics Corp. — 2.
 Sonograph Engineering and Mfg. Co. Ltd. — 1-3.
 Techniques, Inc. — 1-3.
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 Airmec Ltd. — 2.
 Astral Electric Co. Ltd. — 2.
 Atlantic Films & Electronics Ltd. — 2-4-5.
 Aviation Electric Ltd. — 2.
 Barker & Williamson Inc. — 2-3-4-6-7.
 Beckman/Berkeley Div., A Div. of Beckman Instruments, Inc. — 4.
 Canadian Electrical Supply Co. Ltd.—7.
 Canadian Marconi Company — 2.
 Canadian Marconi Co., Electronic Tube & Components Div. — 2-4-5-7.
 Collins Radio Co. of Canada Ltd. — 2-3-4-5-6-7.
 Communications Co. — 2-4-5.
 Computing Devices of Canada Ltd.—5.
 Cubic Corp. — 4.
 DuMont Labs. Inc., Allen B. — 4-5.
 Electromechanical Products — 5.
 Electro Sonic Supply Co. — 1-2-5-7.
 Electro-Voice Inc. — 1-7.
 Ericsson Telephone Sales of Canada Ltd. — 2-4-5-6-7.
 Gates Radio Co. — 2-5.
 Globe Industries Inc., Electronics Div. — 1-2-3-4-5-6-7.
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 Harvey-Wells Electronics Inc. — 1-2-3-4-5-6-7.
 Instronics Ltd. — 2-3-6-7.
 Kahnert Sales Ltd., R. C. — 1-7.
 Lake Engineering Co. Ltd. — 2-3-4.
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Magnetic tape recorders	7
Magnetic wire recorders	8
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 Glendon Co. Ltd. The — 5.
 Gould Sales Co., E. S. — 3-4.
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 Hooker (Canada) Ltd., Samuel C. — 5.
 Lake Engineering Co. Ltd. — 2-3-4-5.
 Lectronic Research Laboratories — 3-4.
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 Lomas, E. G. — 5.
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 Smyth Electronic Components, J. B.—2.
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 Brian Engineering Ltd. — 3-5-6-7-8-11-12-14-15-16-17-18.
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 Burlec Sales Ltd. — 5-15-16-18.
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 Electrodesign — 4-17.
 Electronic Control Corp. — 11-16-17.
 Electronic Specialty Co. — 1-2-3-4-5-10-11-12-14-16-17.
 Electro Sonic Supply Co. — 1-3-5-6-7-8-9-10-11-12-13-14-15-16-17-18.
 Electrovert Ltd. — 1-6-8-9-13-17.
 Elgin National Watch Co. — 1-5-7-8-10-11-12-13-14-15-16-17.
 English Electric Co. Ltd. — 5-11.
 Ericsson Telephone Sales of Canada Ltd. — 5-8-13-14-15-16.
 Essex Wire Corp., R.B.M. Div. — 5-11-12-15-17-18.
 Esterline-Angus Co. Inc., The — 17.
 Farmer Electric Products Co. Inc. — 16.
 Ferrara Inc. — 12-16.
 Gasaccumulator Co. (Canada) Ltd. — 16.
 Gates Radio Co. — 7-8-15.
 General Automatic Corp. — 3-5-6-7-8-12-14-15.
 General Communications Ltd. — 13-14-15-16.
 Glendon Co. Ltd., The — 1.
 Globe Electrical Mfg. Co. — 5-7-8-12-15-16-18.
 Gould Sales Co., E. S. — 1-17.
 Guardian Electric Mfg. Co. — 3-4-5-6-7-8-11-12-13-14-15-16-17-18.
 G-V Controls Inc. — 5-16.
 Hackbusch Electronics Ltd. — 15.
 Hammond Mfg. Co. Ltd. — 18.
 Hart Mfg. Co., The — 5-6-10-11-12-14.
 Haydon Mfg. Co. Inc. — 16.
 Herring & Co. Ltd., John — 1-3-4-5-6-7-8-10-12-14-15-16-17-18.
 Heinemann Electric Co. — 16.
 Hooker (Canada) Ltd., Samuel C. — 3-5-7-8-10-11-12-13-14-16.
 Howard & Company, M. J. — 16.
 Intronics Ltd. — 12.
 Johnson Co., E. F. — 19.
 Lake Engineering Co. Ltd. — 4-5-10-12-13-15-16-18.
 Larson Instrument Co. — 2-3-12-17.
 Lectronic Research Laboratories — 1-5-7-11-12-13-16.
 Leland Inc., G. H. — 5-13-18.
 Leonard Electric Ltd. — 5-11-16.
 Londex Ltd. — 1-3-6-7-8-9-11-12-13-15-16-17.
 Longstaffe Co. Ltd., J. R. — 1-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18.
 Longstaffe Co. Ltd., J. R., Relay Div. — 1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18.
 Mack Electric Devices Inc. — 9-17-18.
 Marion Electrical Instrument Co. — 1-2-5-12.
 Marsland Engineering Ltd. — 13-18.
 M.E.L. Sales Ltd. — 2.
 Muirhead Instruments Ltd. — 3-10.
 Musimart of Canada — 1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18.
 Ohmite Mfg. Co. — 5-8-11-12-15-16-17.
 Osborne Electric Co. Ltd. — 1-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18.
 Phaotron Instrument & Electronic Co. — 5-8-11-12-15-17.
 Philips Industries Ltd. — 5-9-12-16.
 Polytronics Co. — 16.
 Potter & Brumfield, Inc. — 4-5-6-8-11-12-13-14-15-16-17.
 Price Electric Corp. — 1-5-8-11-12-13-14-15-16.
 Prince & Roberts — 6-8-13-15-17.
 Pye Canada Limited — 2-3-4-5-6-7-8-9-10-11-12-13-14-15-16.
 Radio Condenser Co., Ltd. — 5-8-12-14-15-16-17.
 Servo Corp. of America — 6-11-16.
 Simmonds & Sons Ltd., A. C. — 1-5-7-8-11-12-13-14-15-16-17-18.
 Skinner Electric Valve Div. — 20.
 Stanwyck Coil Products Ltd. — 18.
 Stegg Electric Ltd. — 5-12-14-15.
 Telephone Mfg. Co. Ltd. — 5-7-10-12-15.
 Thermovolt Instruments Ltd. — 9.
 Vocaline Co. of America Inc. — 16.
 Ward Leonard of Canada Ltd. — 8-11-12-17.
 Westinghouse Electric International Co. — 2-3-4-6-7-8-10-11-12-13-16-17-18.
 Wilson & Co., G. C. — 16.
 Zettler, Alois, G.m.b.H. — 3-5-6-7-8-9-10-11-12-13-14-15-16-17-18.

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Carbon fixed molded	1
Carbon variable	2
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Potentiometers	4
Precision film	5
Printed circuit	6
Rheostats	7
Thermistors	8
Vacuum sealed	9
Very high megohm	10
Wirewound fixed	11
Wirewound variable	12
Wirewound precision	13

- Ace Electronics Associates Inc. — 4-5-6-7-12-13.
 Adams Engineering Ltd. — 5-13.
 Aerovox Canada Ltd. — 3.
 Ahearn & Soper Co. Ltd., The — 1-2-3-4-5-7-8-10-11-12-13.
 Allen-Bradley Co. — 1-4.
 Allies' Products Corp. — 3.
 Alpha Aracon Radio Co. Ltd. — 1-2-3-4-5-6-7-8-9-10-11-12-13.
 Armstrong Ltd., A.T.R. — 7-11-12.
 Arnhold Ceramics Inc. — 3-5-10.
 Associated Electronic Components — 3-5-7-11-12-13.
 Atlantic Films & Electronics Ltd. — 1-2-3-4-7-11-12.
 Atlas Radio Corp. Ltd. — 2-4-12-13.
 Bayly Engineering Ltd. — 5.
 Beckman/Helipot Corp. — 4.
 Beyschlag, Dr. Bernard — 3-5.
 Biddle Co., James G. — 7.
 Bourns Laboratories Inc. — 2-4-5-7-12-13.
 Canadian Electric Resistors Ltd. — 7-11-12.
 Canadian Electrical Supply Co. Ltd. — 1-2-3-4-5-7-10-11-12-13.
 Canadian Marconi Company, Electronic Tube & Components Div. — 2-3-4-11-12-13.
 Canadian Research Institute — 13.
 Canadian Stackpole Ltd. — 1-2-4.
 Centralab, A Div. of Globe-Union Inc. — 4-6-12.
 Central Scientific Co. of Canada Ltd. — 7.
 Constanta Co. of Canada Ltd., The — 3-5.
 Clark Controller Co. — 7-11-12-13.
 Continental Carbon Div. Wirt Co. — 3-4-5-7-11-12.
 Curtiss-Wright Corp., Electronics Div. — 11-13.
 Daven Company, The — 4-5-6-7-10-11-12-13.
 Daystrom Ltd. — 4-5.
 Daystrom Pacific Corp. — 4.
 Daystrom Pacific, Potentiometer Div. — 3-4-6-12.
 DeJur-Amsco Corp. — 4-7.
 Dubilier Condenser Co. (1925) Ltd. — 3.
 Eastern Precision Resistor Corp. — 6-11-12-13.
 Electra Mfg. Co. — 3-5-6.
 Electrodesign — 3.
 Electromechanical Products — 1-2-4-8-11-12-13.
 Electronic Engineering — 11-13.
 Electro Instruments Inc. — 13.
 Electro-Measurements Inc. — 4-7-11-13.
 Electro Sonic Supply Co. — 2-3-4-5-7-8-10-11-12-13.
 Ellis Industries, The J. W. — 11-13.
 Empire Products Sales Corp. — 3.
 Erie Resistor of Canada Ltd. — 1-3-6.
 Fenwal Inc. — 8.
 Fortiphone Ltd. — 2.
 Gates Radio Co. — 1-2-3-4.
 General Cement Mfg. Co., Div. of Texttron Inc. — 1-2-7-8-11.
 General Radio Company — 4-7-11-12-13.
 Glendon Co. Ltd., The — 7-11-12.
 Gould Sales Co., E. S. — 8.
 Hardwick, Hindle, Inc. — 4-7-11-12.
 Heenan Limited, P. J. — 2-4.
 Herring & Co. Ltd., John — 3-4-10-11-13.
 Hooker (Canada) Ltd., Samuel C. — 1-3-5-6-9-11-13.
 Howard & Company, M. J. — 3-12-13.
 Hudson Randall International — 4-7-12-13.
 International Resistance Co. Ltd. — 1-2-3-4-5-6-7-8-9-10-11-12-13.
 Jensen Electric, I/S — 13.
 Kahnert Sales Ltd., R. C. — 1-2-4-12.
 Lake Engineering Co. Ltd. — 1-3-4-5-7-8-10-11-12.
 Lectronic Research Laboratories — 1-4-13.
 Lomas, E. G. — 4-6-8-10-13.
 Mack & Co. Ltd., R. — 3.
 MacQuarrie, J.J. — 4-7-12.
 Mallory & Co. Inc., P. R. — 1-2-3-4-6-7-11-12.
 Marsland Engineering Ltd. — 11.
 M.E.L. Sales Ltd. — 4-5.
 Meredith & Co. Ltd., C. C. — 2-4-6-7-12.
 Merritt Co., Ron — 4-7-11-12-13.
 Muirhead Instruments Ltd. — 4-9-11-12-13.
 Musimart of Canada — 1-2-3-5.
 Narda Corporation, The — 8.
 Ohmite Mfg. Co. — 1-2-4-5-7-9-11-12-13.
 Pfeiffer Electronic Laboratories — 4-11-12.
 Phaotron Instrument & Electronic Co. — 3-13.
 Pointon Ltd., Charles W. — 1-3-4-6-11-12-13.
 Polytronics Co. — 11-13.
 Precision Electronic Components (1956) Ltd. — 2-11.

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Radionics Limited — 3-9-10.
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 Resistors, Inc. — 11-12.
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 Rogers Electronic Tubes and Components — 3-4-5-7-8.
 R-O-R- Associates Ltd. — 3-4-5-9-11-12-13.
 Rubicon Co. — 13.
 Samulevitz, S. — 7-11-12.
 Servo Corp. of America — 8.
 Simmonds & Sons Ltd., A. C. — 1-2-3-4-5-7-11-12-13.
 Speight Laboratories, N. H. — 1.
 Sprague International Ltd. — 3-5-6-10-11.
 Stackpole Carbon Co. 1-2.
 Tech Laboratories, Inc. — 4-7-12-13.
 Tel-Labs Inc. — 10-11-13.
 Texas Instronics Inc. — 3-5.
 Tilton Ltd., John R. — 11.
 Tinsley Instruments — 4-7-11-12-13.
 Tru-Ohm Products Div. Model Engineering & Mfg. Co.—4-6-7-11-12-4-6-7-11-12.
 Victory Engineering Corp., International Div. — 8.
 Ward Leonard of Canada Ltd. — 7-11-12-13.
 Welwyn Canada Ltd. — 3-5-9-10.
 Whittaker, E. E. — 4-7-12-13.
 Workman TV Inc. — 1-8-11.

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Diodes silicon	2
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Transistors point of contact	4
Transistors power	5
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 Ahearn & Soper Co. Ltd., The — 1-2-3-4-5-6.
 Alpha Aracon Radio Co. Ltd. — 1-2-3-4-5-6.
 Amperex Electronic Corp. — 1-3-5.
 Arnold Ceramics Inc. — 1.
 Atlantic Films & Electronics Ltd. — 1.
 Atlas Radio Corp. Ltd. — 1-2.
 Aviation Electric Ltd. — 5.
 Bendix Aviation Corp., Red Bank Div. — 5.
 Bogue Electric of Canada Ltd. — 2-3-5.
 Bomac Laboratories Inc. — 2.
 British Thomson Houston Co. (Canada), The — 1-2-3-4.
 Canadian Electrical Supply Co. Ltd. — 1-2-3.
 Canadian General Electric Co. Ltd. — 1-2-3-4-5.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-2-3-4-5-6.
 Canadian Marconi Company, Electronic Tube & Components Div. — 1-2-3-4-5-6.
 Computing Devices of Canada Ltd. — 1-3-4-5.
 Desser E-E Ltd. — 1-2.
 Electronics Corp. of America (Canada) Ltd. — 7.
 Electro Sonic Supply Co. — 1-2-3-4-5-6.
 Gates Radio Co. — 4-6.
 Glendon Co. Ltd., The — 3.
 Gould Sales Co., E. S. — 3-4-5-6.
 Hackbusch Electronics Ltd. — 1-2-3-4-5-6.

Honeywell Controls Ltd. — 3-5.
 Hooker (Canada) Ltd., Samuel C. — 2-3-4-5.
 Industro Transistor Corp. — 1.
 International Resistance Co. Ltd. — 1-2-3-4-5-6.
 Kemtron Electron Products Inc. — 1-2.
 Lake Engineering Co. Ltd. — 1-2.
 Leonard Electric Ltd. — 2.
 Lomas, E. G. — 2.
 Microwave Associates, Inc. — 2.
 Pointon Ltd., Charles W. — 1.
 Radio Receptor Company, Inc. — 1-2.
 Raytheon Canada Ltd. — 1-2-3-4-5.
 Rogers Electronic Tubes and Components — 1-3-5.
 Sarkes Tarzian Rectifier Div. — 2.
 Smyth Electronic Components, J. B. — 1-3-4-6.
 Sprague International Ltd. — 3-4-6.
 Standard Telephones & Cables Mfg. Co. (Canada) Ltd. — 1-2-3-4-5-6.
 Technical Apparatus Builders — 1-2-3-5.
 Texas Instronics Inc. — 2-3-5.
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 Westinghouse Electric International Co. — 1.

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Controls	1
Gears, gear trains, etc.	2
Servo amplifiers	3
Servo motors and generators	4

Adler Electronics Inc. — 1-3.
 Aeromotive Engineering Products — 1-2-3-4.
 Ahearn & Soper Co. Ltd., The — 1-2-3-4.
 Airborne Accessories Corp. — 1-3.
 American Electronics Inc. — 1-2-3-4.
 Aviation Electric Ltd. — 1-2-3-4.
 Beckman/Helipot Corp. — 2-4.
 BJ Electronics, Borg-Warner Corp. — 3.
 Bogue Electric of Canada Ltd. — 3-4.
 Bristol Co. of Canada Ltd., The — 3.
 British Thomson-Houston Co. (Canada) Ltd., The — 1-2-3-4.
 Canadian Applied Research Ltd. — 1-2-3-4.
 Canadian Aviation Electronics Ltd. — 1-2-3.
 Canadian Westinghouse Co. Ltd. — 1-3.
 Computing Devices of Canada Ltd. — 1-2-3.
 Crescent Engineering & Research Co. — 1-3.
 Cubic Corp. — 2-3.
 Datran Electronics, Div. of Mid-Continent Mfr. Inc. — 3.
 Daystrom Ltd. — 1-2-3-4.
 Eastern Industries, Inc. — 3.
 Electrodesign — 1-3-4.
 Electronic Associates Inc. — 1-3-4.
 Electronic Associates Ltd. — 1.
 Electronic Controls Ltd. — 1-3.
 Elgin National Watch Co. — 2.
 Feedback Controls, Inc. — 1-2-3.
 Franklin Electronics Inc. — 3.
 Harvey-Wells Electronics Inc. — 1-2-3-4.
 Honeywell Controls Ltd. — 1-3-4.
 Howard & Company, M. J. — 4.
 Hudson Randall International — 2-3-4.
 Induction Motors Corp. — 4.
 Industrial Test Equipment Co. — 3.
 Lear, Inc. — 1-2-3-4.
 Lectronic Research Laboratories — 4.
 Leonard Electric Ltd. — 1-2-4.
 Librascope Inc. — 1-2-3.
 Marsland Engineering Products Ltd. — 2-3.

Mechron Engineering Products Ltd. — 1-2-3.
 M.E.L. Sales Ltd. — 1-2-3.
 Muirhead Instruments Ltd. — 3-4.
 National Fibre Co. of Canada Ltd. — 2.
 Pic Design Corp. — 2.
 Radiation Inc. — 3.
 Radionics Limited — 3.
 R-O-R Associates Ltd. — 1-2-3-4.
 Servo Corp. of America — 1-2-3.
 Servomechanisms, Inc. 1-2-3-4.
 Servomechanisms (Canada) Ltd. — 1-2-3-4.
 Simmonds Aerocessories Inc. — 1.
 Standard Coil Products (Canada) Ltd. — 3-4.
 Tallor & Cooper Inc. — 1-3.
 Technical Apparatus Builders — 3.
 Tecneek Associates — 1-2-3.
 Thermovolt Instruments Ltd. — 1-2.
 Vactric (Canada) Ltd. — 1-2-4.

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Crystal	2
Diode	3
Receiving tube	4
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Accurate Electronics Corp. — 1-2-3.
 Alpha Aracon Radio Co. Ltd. — 1-2-3-4-5-6-7.
 Amphenol Canada Ltd. — 1-2-3-4-5-6-7.
 Associated Electronic Components — 1-4.
 Atlantic Films & Electronics Ltd. — 4-6.
 Atlas Radio Corp. Ltd. — 1-2-3-4-5-7.
 Bulova Watch Company, Inc. — 2.
 Canadian Electrical Supply Co. Ltd. — 2-3-4-5-6-7.
 Cinch Mfg. Corp. Ltd. — 1-2-4-5.
 Desser E-E Ltd. — 1-2-3-5.
 DuMont Labs. Inc., Allen B. — 4-7.
 Eby Co., Hugh H. — 2-4-5.
 Elco Corp. — 2-3-4-5-6.
 Electro Sonic Supply Co. — 1-2-3-4-5-6-7.
 Fastex Div. of Illinois Tool Works — 4.
 Gates Radio Co. — 6.
 General Tire & Rubber Co. of Canada Ltd., The — 4.
 Glendon Co. Ltd., The — 4.
 Gray Co. Ltd., H. Roy — 4.
 Heenan Limited, P. J. — 4.
 Javex — 2.
 Jensen Condenser Products Co. Ltd., A/S Tobias — 4.
 Johnson Co., E. F. — 2-4-6-7.
 Lake Engineering Co. Ltd. — 3-5-8.
 Lomas, E. G. — 3-5.
 Mack & Co. Ltd., R. — 2-4-5.
 Merritt Co., Ron — 2.
 Methode Mfg. Canada Ltd. — 2-4-5.
 Millen Mfg. Co. Inc., James — 2-4-6-7.
 Mosley Electronics, Inc. — 2.
 Permonite Mfg. Co. — 4.
 Pfeiffer Electronic Laboratories — 4.
 Rogers Electronic Tubes and Components — 4-6.
 Rotronic Corp. Ltd. — 4.
 Simmonds & Sons Ltd., A. C. — 1.
 Torotor A/S — 4.
 United-Carr Fastener Co. of Canada Ltd. — 4-6-7.
 Waldom Electronics Inc. — 2-3-4.
 Westinghouse Electric International Co. — 1-2-3-4-5-6.
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Key	5
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Momentary contact	7
Power	8
Precision snap-acting	9
Rotary	10
Slide	11
Spring return	12
Tap	13
Thermometrically operated	14
Toggle and push button	15
Vacuum	16
Circuit breakers	17
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Adams Engineering Ltd. — 8-10-11.
 Aeromotive Engineering Products — 9-15.
 Ahearn & Soper Co. Ltd., The — 2-8-14.
 Aircraft Appliances & Equipment Ltd. — 8.
 Alford Mfg. Co. — 2.
 Alpha Aracon Radio Co. Ltd. — 1-2-4-5-6-7-8-9-10-11-12-13-15.
 Andrew Antenna Corp. Ltd. — 2.
 Armstrong Ltd., A. T. R. — 6-15.
 Arrow-Hart & Hegeman (Canada) Ltd. 4-5-7-8-9-10-11-12-15.
 Associated Electronic Components — 10-12-13-15.
 Atlantic Films & Electronics Ltd. — 10-15.
 Atlas Radio Corp. Ltd. — 1-2-3-4-5-7-8-10-11-12-15.
 Automatic Electric Sales (Canada) Ltd. — 4-10.
 Barker & Williamson Inc. — 1-2.
 Barry Electric Ltd. — 7-12.
 Beaconing Optical & Precision Materials Co. Ltd., Electronics Div. — 9-11.
 Belling & Lee Ltd. — 14.
 British Ferrograph Recorder Co. Ltd. — 10.
 Burlec Sales Ltd. — 5-10-13-15.
 Canadian Electric Resistors Ltd. — 10-13.
 Canadian Electrical Supply Co. Ltd. — 4-6-7-9-10-11-12-13-15.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 2-4-6.
 Canadian Marconi Company, Electronic Tube & Components Div. — 13-15.
 Canadian Research Institute — 4-14.
 Canadian Stackpole Ltd. — 11-12-15.
 Capitol Machine Co., The — 5-7-15.
 Centralab, A. Div. of Globe-Union Inc. — 1-3-8-10-11-12.
 Cinch Mfg. Corp. Ltd. — 15.
 Clare (Canada) Ltd., C. P. — 5-12.
 Clark Controller Co. — 3-4-6-7-9-10-12-15.
 Collins Radio Co. of Canada Ltd. — 1.
 Comac Electric Co. — 7.
 Control Products Inc. — 7-9-14-15.
 Curtiss-Wright Corp., Electronics Div. — 9.
 Cutler-Hammer Inc. — 4-5-7-8-9-10-11-12-15.
 Daven Company, The — 1-2-8-9-10-12-13.
 Jack Davis (Relays) Ltd. — 5.
 Douglas Microwave Co. Inc. — 2.
 D & B Sound and Signals Inc. — 10.
 Ebert Electronics Corp. — 6-8.
 Eitel-McCullough Inc. — 16.
 Electra Mfg. Co. — 4-9-14-15.

Electrodesign — 10.
 Electronic Specialty Co. — 1-2.
 Electro Sonic Supply Co. — 4-6-7-8-9-10-11-12-13-15.
 R-F Electronics, Inc., Div. of Electro Switch Corp. — 8-10-12-13.
 Ericsson Telephone Sales of Canada Ltd. — 10.
 Fenwal Inc. — 14.
 Finkler & Co., Len — 15.
 Fortiphone Ltd. — 10.
 Fraser Ltd., George M. — 5-6-7-8-10-12-13.
 Gee Lar Mfg. Co.—2-3-7-8-9-10-11-15.
 General Cement Mfg. Co., Div. of Textron Inc. — 11-15.
 General Communications Ltd. — 10-13.
 General Devices Inc. — 7-10.
 Glendon Co. Ltd., The — 2.
 Gould Sales Co., E. S. — 2.
 Guardian Electric Mfg. Co. — 3-7-9-15.
 G-V Controls Inc. — 14.
 Hackbusch Electronics Ltd. — 5-10-15.
 Hale Bros. Ltd. — 7-10-15.
 Hart Mfg. Co., The—2-7-9-10-11-14-15.
 Haydon Switch, Inc. — 9-10-15.
 Heenan Ltd., P. J. — 10-11-12.
 Heinemann Electric Co. — 17.
 Herring & Co. Ltd., John — 1-3-5-8-10-12-13-15.
 Honeywell Controls Ltd. — 4-6-7-9-10-11-12-13-14-15.
 Hooker (Canada) Ltd., Samuel C. — 2.
 Instrument Development Laboratories Inc. — 10.
 Janco Corp. — 10.
 Javex — 2-3-10-13.
 Jerrold Electronics Corp. — 2.
 Johnson Matthey & Mallory Ltd. — 3.
 Kahnert Sales Ltd., R. C. — 1-2-7-10-12-15.
 Kulka Electric Mfg. Co. Inc. — 15.
 Lake Engineering Co. Ltd. — 1-6-10-11-12-13-15.
 Leonard Electric Ltd. — 2-7-8-9-10-11-12-14-15.
 Licon Switch & Control Div., Illinois Tool Works — 7-9-15.
 Lomas, E. G. — 2-10.
 Longstaffe Co. Ltd., J. R. — 2-3-5-6-7-9-10-12-15.
 Longstaffe Co. Ltd., J. R. Speaker Div. — 2-3-6-7-8-9-10-11-12-13-15.
 Mack & Co. Ltd., R. — 11-15.
 Mallory & Co. Inc., P. R. — 1-7-9-10-11-12-13-15.
 Marco Industries Co. — 7.
 Maxson Corp., The W. L., Unimax Switch Div. — 9.
 M.E.L. Sales Ltd. — 6.
 Meredith & Co. Ltd., C. C. — 10.
 Mossman, Inc., Donald P. — 5-7-12-15.
 Muirhead Instruments Ltd. — 5-10.
 Ney Co., The J. M. — 3-11.
 Ohmite Mfg. Co. — 8-10-13.
 Pfeiffer Electronic Laboratories — 1-5-7-9-10-11-12-15-18.
 Prince & Roberts — 10-15.
 Pylon Electronic Development Co. Ltd. — 13.
 Radio Components Ltd. — 1-7-9-10-11-12-13-15.
 Richards Electrocraft Inc. — 7-10-12-15.
 Roanwell Corporation — 9-15.
 Robinson Co., C. M.—1-8-9-10-12-13-15.
 Roller-Smith Corp. — 10.
 Rousseau Controls Ltd. — 14.
 Scaico Controls Inc. — 14.
 Schouboe, Tage — 15.
 Simmonds & Sons Ltd., A. C. — 1-8-10-12-13.
 Smyth Electronic Components, J. B. — 2-4.

Sperry Gyroscope Ottawa Ltd. — 12.
 Stackpole Carbon Co. — 10-11-12-15.
 Switchcraft, Inc. — 5-7-10-12-15.
 Tech Laboratories, Inc.—1-3-7-10-12-13.
 Telephone Mfg. Co. Ltd. — 3-5-12.
 Telequipment Mfg. Co. Ltd. — 2.
 Tilton Ltd., John R. — 7-9-15.
 Torotor A/S — 5-10-12-13-15.
 Trad Electronics Corp. — 2.
 Ucinite Co., The — 7-9.
 United Electric Controls Co. — 3-9-14.
 Veeder-Root of Canada Ltd. — 10.
 Vemaline Products Co. — 4.
 Whittaker, E. E. — 10.
 Zettler, Alois, G.m.b.H. — 3-14.

Thermostats (58)

Bellows	1
Bimetal	2
Hermetically sealed	3
Belling & Lee Ltd. — 2.	
Blonder-Tongue Laboratories Inc. — 2.	
Burlec Sales Ltd. — 2-3.	
Canadian General Electric Co. Ltd., Industrial Products Dept. — 2.	
Canadian Research Institute — 2.	
Consolidated Electronic Equipment Co. Ltd. — 3.	
Control Products Inc. — 2-3.	
Curtis Development & Manufacturing Co. — 2.	
Curtiss-Wright Corp., Electronics Div. — 2-3.	
Electra Mfg. Co. — 2.	
Electrodesign — 3.	
Fenwal Inc. — 1-2-3.	
G-V Controls Inc. — 3.	
Honeywell Controls Ltd. — 1-2.	
Hart Mfg. Co., The — 1-2.	
Leonard Electric Ltd. — 3.	
Pacific Transducer Corp. — 2.	
Rotronic Corp. Ltd. — 2.	
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Airmec Ltd. — 1-2.	
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ARVA — 1.	
Atlantic Films & Electronics Ltd. — 2.	
Atlas Radio Corp. Ltd. — 1.	
Bayly Engineering Ltd. — 1.	
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Airtron Canada Ltd. — 1-2-3-4-5-6-7.	
Alpha Aracon Radio Co. Ltd. — 7.	
Andrew Antenna Corp. Ltd.—1-2-4-5-7.	
ARVA — 1-2-4.	
Atlas Radio Corp. Ltd. — 1-5-6.	
Avionics Ltd. — 1-3-6.	
Bayly Engineering Ltd. — 1.	
British Thomson-Houston Co. (Canada) Ltd., The — 1-2.	
Canadian Applied Research Ltd.—1-3-4.	
Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-2-3-4-5-6-7.	
Cascade Research Corp. — 8.	
Chemalloy Electronics Corp. — 2-4.	
Cossor (Canada) Ltd. — 1-2-3-4.	
Cubic Corp. — 3.	
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Douglas Microwave Co. Inc. — 1-3-4-5-6-7.	
Electromechanical Products — 1-2-4-5-6-7.	
Electronic Specialty Co. — 1-3-4-5-6-7.	
Electro Sonic Supply Co. — 7.	
Fleet Mfg. Ltd. — 1-2-3-4-5.	
Glendon Co. Ltd., The — 1-3-4.	
Hooker (Canada) Ltd., Samuel C. — 1-2-3-4-5-6-7.	
Hudson Randall International — 2.	
Instronics Ltd. — 1-2-3-4-6.	
Jersey-Specialty Co. Inc. — 7.	
Kulka Electric Mfg. Co. Inc. — 6.	
Lake Engineering Co. Ltd. — 6-8.	
Lectronic Research Laboratories—1-2-4.	
Lomas, E. G. — 1-2-3-5-6-7.	
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Microwave Systems — 5-6.	
Narda Corporation, The — 1-3-4-5-6-7.	
Philips Industries Ltd. — 1.	
Premier Instrument Corp. — 3-4.	
R-O-R Associates Ltd. — 3-5-6.	
Saxton Products Inc. — 7.	
Shallcross Mfg. Co. — 6.	
Sinclair Radio Laboratories Ltd.—1-3-4.	
Smyth Electronic Components, J. B.—6.	
Technicraft Laboratories, Inc. — 1-2-3-4-7.	
Texas Instronics Inc. — 1-3-4.	

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Distortion & noise analyzers	2
Intermodulation meters	3
Output power meters	4
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Ahearn & Soper Co. Ltd., The—1-2-3-4-5-6-7-8-9.	
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 Atlas Radio Corp. Ltd. — 2-4-5-6-7-9.
 Audio Instrument Co. Inc. — 3-10.
 Bach-Simpson Ltd. — 1-2-5-6.
 Barker & Williamson Inc. — 1-2-3-4-5-6-7-9.
 Beckman/Berkeley Div., A Div. of Beckman Instruments, Inc. — 9.
 Canadian Electrical Supply Co. Ltd.—7.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 2-4-6-7-9.
 Canadian Marconi Company — 1-2-4-5-6-8-9.
 Canadian Research Institute — 1-2-3-4-5-7-9.
 Cinema-Television Ltd. — 5-7.
 Clark Ltd., Alex L. — 2-3.
 Collins Radio Co. of Canada Ltd. — 2-3-4-6.
 Cossor (Canada) Ltd. — 7.
 Cubic Corp. — 4-7.
 Daven Company, The — 2-4-9.
 Dawe Instruments Co. Ltd. — 2-4-5-6-9.
 Dawe Instruments Ltd. — 2-4-5-7-9.
 Daystrom Ltd. — 2-3-4-5-9.
 Douglas Microwave Co. Inc. — 4.
 Edin Co. Inc. — 6.
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 Electroline Television Equipment Inc. — 6.
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 General Radio Co. — 1-2-3-4-5-6-7-9.
 Gray Co. Ltd., H. Roy — 1-2-3-7.
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 Hewlett-Packard Co. — 2-5-7-9.
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 Jackson Electrical Instrument Co. — 5.
 Jensen Electric, I/S — 9.
 Kay Electric Co. — 1-2-5-6-9.
 Krohn-Hite Corp. — 5-7.
 Lake Engineering Co. Ltd. — 1-2-3-4-5-7-9.
 Lavoie Laboratories Inc. — 6.
 Lenkurt Electric Co. of Canada Ltd. — 2-3-8.
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 Mechron Engineering Products Ltd. — 5-6-7-8-9.
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 Muirhead Instruments Ltd. — 5-8.
 Nichols Ltd., R. H. — 5.
 Northeastern Engineering Inc. — 6.
 Northern Radio Mfg. Co. Ltd. — 7.
 Philips Industries Ltd. — 1-5-7-9.
 Polarad Electronics Corp. — 6.
 Precise Development Corp. — 5-7-9.
 Precision Apparatus Co. Inc. — 5-7-9.
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 Radionics Limited — 1-6.
 Rogers Majestic Electronics Ltd. — 2-5.
 R-O-R Associates Ltd. — 1-2-3-4-5-6-7-8-9.
 Servo Corp. of America — 7.
 Sifam Electrical Instrument Co. Ltd — 4-9.
 Smyth Electronic Components, J. B.—7.
 Solartron Electronic Group Ltd., The — 5-7-9.
 Specialty Engineering & Electronics Co. — 1-9.
 Spivey, Inc., James S. — 7.
 Stark Electronic Sales Co. — 4-7.
 Telephone Mfg. Co. Ltd. — 1-2-8.
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| Bridges impedance | 3 |
| Bridges inductance | 4 |
| Bridges resistance | 5 |
| Crystal testers | 6 |
| Calibrators instruments | 7 |
| Decades capacitance | 8 |
| Decades inductance | 9 |
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| Spectrometers | 17 |
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 Alpha Aracon Radio Co. Ltd. — 2-3-5-6-8-10-11-12-13-15-20-22-23.
 American Electronics Inc. — 17.
 Atlantic Films & Electronics Ltd. — 13-15-22-23.
 Atlas Radio Corp. Ltd. — 7-13-14-15-20-22-23.
 Automatic Electric Sales (Canada) Ltd. — 15-18.
 Aviation Electric Ltd. — 1.
 Avionics Ltd. — 1-18-20.
 Bach-Simpson Ltd. — 2-3-4-5-12-13-14-15-22-23.
 Baird-Atomic Inc. — 17-20.
 Barber-Colman of Canada Ltd. (Wheelco Inst. Div.) — 16.
 Barker & Williamson Inc. — 9-14.
 Bayly Engineering Ltd. — 12.
 Beckman/Berkeley Div., A Div. of Beckman Instruments, Inc. — 5.
 Beckman/Scientific Instruments Div. — 17.
 Biddle Co., James G. — 12.
 BJ Electronics, Borg-Warner Corp.—1.
 Bogue Electric of Canada Ltd. — 7.
 Brandon Instruments Inc. and Branson Ultrasonic Corp. — 21.
 Brian Engineering Ltd. — 2.
 Bristol Co. of Canada Ltd., The — 16.
 Canadian Electrical Supply Co. Ltd.—2-3-4-5-6-7-8-9-10-11-12-13-15-19-20-22-23.
 Canadian General Electric Co. Ltd.—20.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 13-20-22-23.
 Canadian General Electric Co. Ltd., Industrial Products Dept. — 5-12-16-18-24-25.
 Canadian Marconi Co. — 2-3-4-5-20-23.
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 Canadian Research Institute — 2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-20-21-22-23.
 Cinema-Television Ltd. — 2-3-4-5-12-22.
 Clark Ltd., Alex L. — 3-23.
 Collins Radio Co. of Canada Ltd. — 7.
 Consolidated Avionics Corp. — 7-20.
 Cossor (Canada) Ltd. — 18.
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 Curtiss-Wright Corp., Electronics Div. — 12-14.
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 Daven Company, The — 10-11-23.
 Dawe Instruments Co. Ltd. — 1-8-9-10-19-21.
 Dawe Instruments Ltd. — 1-2-3-4-5-8-9-10-17-19-21-22-23.
 Daystrom Ltd. — 1-2-3-4-5-6-7-8-9-10-12-13-15-16-22-23.
 Daystrom Pacific Corp. — 1.
 DuMont Labs. Inc., Allen B. — 14-23.
 Eastern Precision Resistor Corp. — 5-10-14.
 Elder Electronics — 14-18.
 Electrodesign — 1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-18-19-20-21-22-23.
 Electromechanical Products — 1-3-5-7-13-14-15-18-20-22-23.
 Electronic Controls Ltd. — 22-26.
 Electronic Enterprises Reg'd. — 1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21-22-23.
 Electronic Instrument Co. Inc. — 2-5-8-10-13-20-22-23.
 Electronic Instruments (Canada) Ltd. — 12-13-15-23.
 Electronic Research Associates, Inc. — 20.
 Electronic Specialty Co. — 1.
 Electronic Tube Corp. — 18.
 Electronics Corp. of America (Canada) Ltd. — 16.
 Electro Instruments Inc. — 13-15-23.
 Electro-Measurements Inc. — 2-3-5-8-9-10.
 Electro-Pulse Inc. — 7.
 Electro Sonic Supply Co. — 2-8-10-11-12-13-15-16-19-22-23.
 Ellis Industries, The J. W. — 3-4-5-7-8-9-10-11-12-13-14-15-16-17-18-19-23.
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 Fisher Research Laboratory, Inc. — 23.
 Franklin Electronics Inc. — 13.
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 General Communications Ltd. — 12-13-15-16.
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 General Transistor Corp. — 20.
 Gertsch Products Inc. — 3-14.
 Glendon Co. Ltd., The — 1.
 Gordon Enterprises — 19.
 Gould Sales Co., E. S. — 8-10-13-22-23.
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 Gulton Industries Inc. — 1-2-3-7-15-20-21.
 Hackbusch Electronics Ltd. — 2-7-23.
 Hamner Electronics Co., Inc. — 17.
 Herring & Co. Ltd., John — 1-2-3-5-8-10-12-14-15-16-18.
 Hewlett-Packard Co. — 13-14-23.
 High Voltage Engineering Corp. — 1.
 Hildon Corporation Ltd. — 18.
 Honeywell Controls Ltd. — 1-5-10-14-16-18.
 Hudson Randall International — 5-10.
 Industrial Development Laboratories Inc. — 1-2-5-14.
 Industrial Test Equipment Co. — 2-3-4-5-12-14-23.
 Intronics Ltd. — 1-6-7-15-23.
 Jackson Electrical Instrument Co. — 22-23.
 Jan Hardware Mfg. Co., Inc. — 20-24.
 Jensen Condenser Products Co. Ltd., A/S Tobias — 8.
 Jensen Electric, I/S — 12-13-14-15-16.
 Kay Electric Co. — 11-13-20-23.
 Kelvin & Hughes Ltd. — 16-18-21.
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 Lake Engineering Co. Ltd. — 1-2-3-4-5-8-9-10-12-13-14-15-20.
 Leeds & Northrup, Canada, Ltd. — 2-5-8-10-16.
 Leitch Engineering Corp. — 23.
 Lintronic Ltd. — 12.
 Lomas, E. G. — 5-10-12.
 Mack & Co. Ltd., R. — 11-13-20.
 Marion Electrical Instrument Co.—7-14.
 Measurements Corp. — 20-23.
 Mechtron Engineering Products Ltd. — 8-10-12-16-17-18-19-20-23.
 M.E.L. Sales Ltd. — 1-2-3-4-5-7-8-9-10-12-13-14-15-16-19-20-23.
 Millen Mfg. Co. Inc., James — 3.
 Muirhead Instruments Ltd. — 2-3-4-5-8-9-10.
 Merritt Co., Ron — 8-10-13-22-23.
 National Radiac Inc. — 6-17.
 Nichols Ltd., R. H. — 1-2-3-4-5-8-9-10-12-13-15-16-19-22-23.
 Northam Electronics Inc. — 1-11.
 Northeastern Engineering Inc. — 13.
 Peacock Brothers Ltd. — 5-14-18.
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 Philips Industries Ltd. — 1-2-4-5-13-15-18-19-22-23.
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 Precise Development Corp. 2-3-4-5-8-9-10-11-13-15-20-22-23.
 Precision Apparatus Co. Inc. — 13-15-22-23.
 Probescope Co. Inc. — 7.
 Pye Canada Ltd. — 2-3-4-5-8-9-10-14-15-17.
 Pylon Electronic Development Co. Ltd. — 5-10-13.
 Radio Communications Equipment & Engineering Ltd. — 2.
 Radio Frequency Laboratories, Inc. — 6-7-12.
 Radionics Ltd. — 1-6-7-17.
 Robinson Co., C. M. — 13-15-16-20-22-23.
 Rogers Majestic Electronics Ltd. — 2-3-4-9.
 R-O-R Associates Ltd. — 1-2-3-4-5-6-7-9-12-14-15-17-18-19-23.
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 Ruge Associates, Inc., Arthur C.—5-16.
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 Servo Corp. of America — 16.
 Shallcross Mfg. Co. — 5-8-10-15.
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 Sierra Electronic Corp. — 23.
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 Sinclair Radio Laboratories Ltd. — 16.
 Smyth Electronic Components, J. B. — 2-3-4.
 Solatron Electronic Group Ltd., The — 7-17-23.
 Specialty Engineering & Electronics Co. — 13.
 Sprague International Ltd. — 2.
 Stark Electronic Sales Co. — 3-13-19-22-23.
 S & T Sales Ltd. — 2.
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 Taller & Cooper Inc. — 23.
 Tech Laboratories, Inc. — 2-3-5-10.
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 Telecomputing Corp. — 10.
 Tel-Instrument Electronics Corp. — 7.
 Tempil Corp. — 16.
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| Primary standards of time | 3 |
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 Associated Electronic Components — 8-10-12-13-14-15.
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 Cinema-Television Ltd. — 1-2-3-4-5.
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 Computer-Measurements Corp. — 1.
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 Dawe Instruments Ltd. — 1-4-5.
 Daystrom Ltd. — 1-2-5.
 DuMont Labs. Inc., Allen B. — 4.
 Electrodesign — 1-4-5.
 Electromechanical Products — 1-2-3-4-5.
 Electronic Instruments (Canada) Ltd. — 1.
- Electronic Enterprises Reg'd. — 1-2-3-4-5.
 Electronic Specialty Co. — 1.
 Electronic Tube Corp. — 1.
 Electro-Pulse Inc. — 1.
 Electro Sonic Supply Co. — 1.
 Elgin National Watch Co. — 2.
 Ellis Industries, The J. W. — 1.
 Frequency Standards Inc. — 4.
 Furzehill Laboratories Ltd. — 4-6.
 General Communications Ltd. — 1.
 General Radio Co. — 2-3-4-5-6.
 Gertsch Products Inc. — 4.
 Gordon Enterprises — 1.
 Haydon Mfg. Co. Inc. — 1.
 Herring & Co. Ltd., John — 1.
 Hewlett-Packard Co. — 1-4-5.
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 Kahnert Sales Ltd., R. C. — 1.
 Kay Electric Co. — 4.
 Lake Engineering Co. Ltd. — 2-4.
 Marion Electrical Instrument Co. — 1.
 M.E.L. Sales Ltd. — 4.
 Muirhead Instruments Ltd. — 6.
 Northeastern Engineering Inc. — 1-2-4-5.
 Northern Electric Co. Ltd. — 2.
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 Pylon Electronic Development Co. Ltd. — 4.
 Radio Communications Equipment & Engineering Ltd. — 1.
 Radio Frequency Laboratories, Inc.—4.
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 Rutherford Electronics Co. — 5.
 Sifam Electrical Instrument Co. Ltd.—1.
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 ARVA — 4.
 Atlantic Films & Electronics Ltd. — 1.
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 Canadian Research Institute — 1-4.
 Cinema-Television Ltd. — 3-4.
 Computing Devices of Canada Ltd. — 1-2-4-5.
 Cossor (Canada) Ltd. — 1-2-4.
 Daystrom Ltd. — 1-4.
 DuMont Labs. Inc., Allen B. — 1-2-4-5.
 Eastern Precision Resistor Corp. — 1-4-5.
 Electrodesign — 2-4.
 Electroline Television Equipment Inc. — 5.
 Electromechanical Products — 1-2-4-5.
 Electronic Enterprises Reg'd. — 1-2-3-4-5.
 Electronic Instrument Co. Inc. — 1-4.
 Electronic Tube Corp. — 2-3-4.
 Electro Sonic Supply Co. — 1-4.
 Finkler & Co., Len — 1.
 Franklin Electronics Inc. — 5.
 Furzehill Laboratories Ltd. — 1-4.
 Gates Radio Co. — 1.
 Globe Industries Inc., Electronics Div. — 1-3-4.
 Gordon Enterprises — 2.
 Gould Sales Co., E. S. — 1-4.
 Gray Co. Ltd., H. Roy — 4.
 Hackbusch Electronics Ltd. — 4.
 Harvey-Wells Electronics Inc. — 5.
 Hewlett-Packard Co. — 1-4-5.
 Honeywell Controls Ltd. — 6.
 Instronics Ltd. — 1-3-4.
 Jackson Electrical Instrument Co. — 1-4.
 Lake Engineering Co. Ltd. — 1.
 Lavoie Laboratories Inc. — 4.
 Lectronic Research Laboratories — 1.
 Lomas, E. G. — 4.
 M.E.L. Sales Ltd. — 1-3-4-5.
 Merritt Co., Ron — 1-4.
 Millen Mfg. Co. Inc., James — 1-3-4.
 Northern Radio Mfg. Co. Ltd. — 4.
 Philips Industries Ltd. — 1-2-3-4-5.
 Precise Development Corp. — 1-3-4.
 Precision Apparatus Co. Inc. — 1-4.
 Probescope Co. Inc. — 4.
 Radio Communications Equipment & Engineering Ltd. — 1-4.

Radionics Ltd. — 1-2-4.
 Robinson Co., C. M. — 1.
 R-O-R Associates Ltd. — 5.
 Solartron Electronic Group Ltd., The — 1-4-5.
 Specialty Engineering & Electronics Co. — 1-4.
 Spivey, Inc., James S. — 1-4-10-11.
 Stark Electronic Sales Co. — 1-4.
 Tequipment Mfg. Co. Ltd. — 4.
 Tilton Ltd., John R. — 1.
 Trad Electronics Corp. — 3.
 Triplett Electrical Instrument Co., The — 4.

Television Test Equipment (74)

Synchronizing generators	1
TV calibrators	2
TV marker generators	3
TV signal generators	4
TV sweep generators	5

Ahearn & Soper Co. Ltd., The — 1-3-4-5.
 Alpha Aracon Radio Co. Ltd. — 2-3-4-5.
 Atlas Radio Corp. Ltd. — 1-2-3-4-5.
 BJ Electronics, Borg-Warner Corp. — 4-5.
 Canadian Electrical Supply Co. Ltd. — 1-2-3-4-5.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-2-3-4-5.
 Canadian Marconi Co. — 5.
 Canadian Marconi Co., Electronic Tube & Components Div. — 3-5.
 Cossor (Canada) Ltd. — 3.
 Daystrom Ltd. — 2-3-4-5.
 Electronic Enterprises Reg'd. — 1-2-3-4-5.
 Electronic Instrument Co. Inc. — 3-4-5.
 Electro Sonic Supply Co. — 2-3-4-5.
 Finkler & Co., Len — 2-3-4-5.
 Gates Radio Co. — 9.
 Gould Sales Co., E. S. — 3-4-5.
 Gray Co. Ltd., H. Roy — 4.
 Jackson Electrical Instrument Co. — 2-3-4-5.
 Jerrold Electronics Corp. — 5.
 Kay Electric Co. — 2-3-4-5.
 Measurements Corp. — 4.
 M.E.L. Sales Ltd. — 2-3-4-5.
 Merritt Co., Ron — 3-4-5.
 Philips Industries Ltd. — 1-3-4-5.
 Polarad Electronics Corp. — 4.
 Precise Development Corp. — 2-3-4-5.
 Precision Apparatus Co. Inc. — 3-5.
 Probescope Co. Inc. — 5.
 Pye Canada Ltd. — 4.
 Robinson Co., C. M. — 4-5.
 Stark Electronic Sales Co. — 2-3-4-5.
 Television Utilities Corp. — 1.
 Tel-Instrument Electronics Corp. — 1-2-3-4-5.
 Transatron Inc. — 3-4-5.
 Triplett Electrical Instrument Co., The — 3-4-5.
 Winston Electronics Inc. — 5.

Radio Frequency Test Equipment (75)

Field strength meters	1
Frequency meters	2
Impedance and admittance meters	3
Marker generators	4
Multi-vibrators	5
Oscillators	6
Phase meters	7
"Q" meters	8
RF power output meters	9
Signal generators AM	10
Signal generators FM	11
Sweep generators	12

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Acton Laboratories Inc. — 7.
 Ahearn & Soper Co. Ltd., The — 1-2-3-4-7-8-9-10-11-12.
 Aircraft Radio Corp. — 10.
 Alpha Aracon Radio Co. Ltd. — 1-2-4-5-6-7-8-9-10-11-12.
 Atlas Radio Corp. Ltd. — 1-2-3-4-6-7-9-10-12.
 Bach-Simpson Ltd. — 1-4-8-10-11-12.
 Beckman/Berkeley Div., A Div. of Beckman Instruments, Inc. — 2-7.
 Blonder-Tongue Laboratories Inc. — 1.
 Canadian Electrical Supply Co. Ltd. — 1-2-4-5-6-7-8-9-10-11-12.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-2-3-4-5-6-7-8-9-10-11-12.
 Canadian Marconi Co. — 1-2-8-9-10-11-12.
 Chemalloy Electronics Corp. — 9.
 Consolidated Avionics Corp. — 2-5.
 Daven Co., The — 2-3-9-11.
 Dawe Instruments Ltd. — 7-8.
 Daystrom Ltd. — 1-2-3-4-6-7-8-9-10-11-12.
 Electromechanical Products — 2-4-6-10-11.
 Electronic Enterprises Reg'd. — 1-2-3-4-5-6-7-8-9-10-11-12.
 Electronic Instrument Co. Inc. — 4-10-12.
 Electro Sonic Supply Co. — 1-2-4-10-11-12.
 Ellis Industries, The J. W. — 8-9.
 Empire Products Sales Corp. — 1.
 Fenske, Fedrick and Miller Inc. — 2.
 Finkler & Co., Len — 4-10-11-12.
 Freed Transformer Co. Inc. — 8.
 General Communications Ltd. — 7.
 General Radio Co. — 3-6-10.
 Gertsch Products Inc. — 2.
 Gordon Enterprises — 4.
 Gould Sales Co., E. S. — 1-4-10-12.
 Gray Co. Ltd., H. Roy — 1-10-11-12.
 Harvey-Wells Electronics Inc. — 1-10-11.
 Hewlett-Packard Co. — 3-9-10.
 Industrial Test Equipment Co. — 3-7-8.
 Jackson Electrical Instrument Co. — 4-6-12.
 Jerrold Electronics (Canada) Ltd. — 1-12.
 Jones Electronics Co. Inc., M. C. — 9.
 Kay Electric Co. — 2-4-6-8-9-10-11-12.
 Measurements Corp. — 1-10-11.
 M.E.L. Sales Ltd. — 1-2-4-6-7-8-9-10-11-12.
 Merritt Co., Ron — 4-6-10-11-12.
 Narda Corp., The — 2-3.
 Nems-Clarke, Inc. — 1.
 Nichols Ltd., R. H. — 10-11.
 Pacific Transducer Corp. — 12.
 Philips Industries Ltd. — 4-10-11-12.
 Precise Development Corp. — 4-5-6-10-11-12.
 Precision Apparatus Co. Inc. — 4-6-10-11-12.
 Probescope Co. Inc. — 12.
 Pye Canada Ltd. — 1-3-8.
 Radionics Limited — 2.
 Robinson Co., C. M. — 10-11-12.
 R-O-R Associates Ltd. — 2-7.
 Sifam Electrical Instrument Co. Ltd. — 9.
 Smyth Electronic Components, J. B. — 8-10-11.
 Stark Electronic Sales Co. — 4-10-11-12.
 Telequipment Mfg. Co. Ltd. — 1.
 Tel-Instrument Electronics Corp. — 4-10-11-12.
 Tilton Ltd., John R. — 10-11-12.
 Trad Electronics Corp. — 10.
 Transiron Inc. — 10-11-12.

Triplett Electrical Instrument Co., The — 4-10-11-12.
 Winston Electronics Inc. — 1.

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 General laboratory equipment . . . 3
 RF shielding materials . . . 4
 Shielded enclosures . . . 5
 Ovens . . . 6
 Temperature cabinets . . . 7
 Vibration analyzers . . . 8
 Shock test machines . . . 9

Ace Engineering & Machine Co. Inc. — 4-5.

Ahearn & Soper Co. Ltd., The — 3-4-5-6-7.

American Research Corp. — 1-7.

Armet Industries Ltd. — 4.

ARVA — 3.

Aviation Electric Ltd. — 1.

Atlas Radio Corp. Ltd. — 4-5-8.

Beechey Enterprises — 1-2-5-6-7.

Belling & Lee Ltd. — 5.

Blue M. Electric Co. — 1-3-6-7.

Calidyne Co., The — 2.

Canadian Laboratory Supplies Ltd. — 1-3-6-7.

Canadian Research Institute — 3-6-7.

Canadian Westinghouse Co. Ltd. — 1-2-3-4-5-6-7-8.

Conrad Inc. — 1-6-7.

Crescent Engineering & Research Co. — 3.

Dawe Instruments Ltd. — 8.

Edin Co. Inc. — 8.

Electromechanical Products — 1-2-7.

Ellis Industries, The J. W. — 6.

Erwood Inc. — 6-8.

Gates Radio Company — 2.

Gaertner Scientific Corp., The — 8.

General Radio Company — 8.

Goodman's Industries Ltd. — 2.

Gordon Enterprises — 1-2-3-6.

Grieve-Hendry Co., Inc. — 1-6.

Gulton Industries Inc. — 8.

Herring & Co. Ltd., John — 7.

Hooker (Canada) Ltd., Samuel C. — 9.

Hull Corp. — 1.

Hudson Randall International — 4.

Instronics Ltd. — 3.

Jan Hardware Mfg. Co., Inc. — 3-4.

Kay Electric Co. — 8.

Lake Engineering Co. Ltd. — 5.

Leeds & Northrup, Canada, Ltd. — 3.

MacQuarrie, J. J. — 2.

Magnetic Shield Div., Perfection Mica Co. — 4-5.

Mechron Engineering Products Ltd. — 1-2-6-7-8.

M.E.L. Sales Ltd. — 2-3-8.

Muirhead Instruments Ltd. — 8.

Nichols Ltd., R. H. — 3-8.

Northam Electronics Inc. — 1.

Northeastern Engineering Inc. — 1.

NRC Equipment Corp. — 1.

Peacock Brothers Ltd. — 2-3-7.

Philips Industries Ltd. — 2-8.

Probescope Co. Inc. — 8.

Radionics Ltd. — 8.

R-O-R Associates Ltd. — 3-8.

Shielding Inc. — 5.

Solartron Electronic Group Ltd., The — 2-8.

Stark Electronic Sales Co. — 5.

Tecneek Associates — 3.

Telecomputing Corp. — 3.

Tel-Instrument Electronics Corp. — 8.

Tenney Engineering, Inc. — 1-6-7.

Wickman Ltd., A. C. — 2.
 Winkler Laboratories — 8.

Measurement and Test Equipment Special Purpose (77)

Attenuators AF . . . 1
 Attenuators logarithmic . . . 2
 Attenuators RF . . . 3
 Barreters . . . 4
 Bolometers . . . 5
 Comparators . . . 6
 Integrators . . . 7
 Lenses . . . 8
 Stroboscopes . . . 9
 Synchroscopes . . . 10
 Thermocouples . . . 11
 Tracers signal . . . 12
 Transducers . . . 13
 Flowmeters . . . 14
 Analyzers pulse height . . . 15
 Servo test equipment . . . 16

Adams Engineering Ltd. — 1.

Adler Electronics Inc. — 13.

Aeromotive Engineering Products — 11.

Aero Research Instrument Co. Inc. — 11.

Ahearn & Soper Co. Ltd., The — 1-3-5-13.

Alford Mfg. Co. — 3.

ARVA — 11.

Associated Electronic Components — 1-2.

Atlas Radio Corp. Ltd. — 1-3-4-5.

Audio Instrument Co. Inc. — 2.

Avionics Ltd. — 13.

Baird-Atomic Inc. — 5-6.

Barber-Colman of Canada Ltd.

(Wheelco Inst. Div.) — 7.

Bayly Engineering Ltd. — 3.

Beaconing Optical & Precision

Materials Co. Ltd., Electronics Div. — 3.

Bendix-Pacific — 13.

BJ Electronics, Borg-Warner Corp. — 3-13.

Blonder-Tongue Laboratories Inc. — 3.

Bomac Laboratories Inc. — 9.

Bristol Co. of Canada Ltd., The — 11.

Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 1-2-3-11.

Canadian Marconi Co. — 1-3.

Canadian Research Institute — 1-11-13.

Consolidated Avionics Corp. — 6-13.

Clark Ltd., Alex L. — 8-13.

Computing Devices of Canada Ltd. — 7-15-16.

Cossor (Canada) Ltd. — 11.

Crescent Engineering & Research Co. — 13.

Datran Electronics, Div. of

Mid-Continent Mfr. Inc. — 13.

Daven Co., The — 1-2-3.

Dawe Instruments Co. Ltd. — 9.

Dawe Instruments Ltd. — 1-6-9.

Daystrom Ltd. — 10-11-12.

Diamond Antenna & Microwave Corp.

— 3.

Elder Electronics — 7-13.

Electrodesign — 6-7-9-11-13.

Electroline Television Equipment Inc. — 3.

Electromechanical Products — 11-13.

Electronic Enterprises Reg'd. — 1-2-3-4-5-6-7-8-9-10-11-12-13.

Electronic Instrument Co. Inc. — 12.

Electronic Tube Corp. — 7-9-10.

Electro Sonic Supply Co. — 1.

Ellis Industries, The J. W. — 1-3-9-11

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 Robertshaw-Fulton Controls Co.—11.
 Fischer & Porter Co. — 13.
 Gaertner Scientific Corp., The — 6-8.
 General Communications Ltd. — 13.
 General Radio Co. — 1-5-6-9.
 Goodman's Industries Ltd. — 13.
 Gordon Enterprises — 6-8-9.
 Gulton Industries Inc. — 13.
 Herring & Co. Ltd., John — 1-2-11-13.
 Hewlett-Packard Co. — 1-3.
 Hildon Corporation Ltd. — 6.
 Honeywell Controls Ltd. — 13.
 Industrial Development Laboratories
 Inc. — 13-14.
 Industrial Test Equipment Co. — 6.
 Instronics Ltd. — 3-13.
 Jensen Electric, I/S — 11.
 Jerrold Electronics (Canada) Ltd. — 3.
 Kay Electric Co. — 1-3.
 Librascope Inc. — 7.
 Lomas, E. G. — 3-4.
 Mechtron Engineering Products Ltd. —
 9-11-12.
 M.E.L. Sales Ltd. — 1-3-4-5-9-10-11-13.
 Microwave Associates, Inc. — 3-4.
 Millen Mfg. Co. Inc., James — 10.
 Muirhead Instruments Ltd. — 1.
 Narda Corporation, The — 3-4-5.
 Nichols Ltd., R. H. — 6-9-11.
 Pacific Transducer Corp. — 11.
 Peacock Brothers Ltd. — 11-13.
 Philips Industries Ltd.—9-10-11-12-13.
 Photocon Research Products — 13.
 Polytronics Co. — 11.
 Pylon Electronic Development Co. Ltd.
 — 1-2-3.
 Radionics Ltd. — 13.
 Rogers Majestic Electronics Ltd.—1-3-5.
 R-O-R Associates Ltd. — 1-2-7-9-13.
 Ruge Associates, Inc., Arthur C. — 13.
 Sanborn Co. — 13.
 Servo Corp. of America — 5.
 Servomechanisms (Canada) Ltd. — 13.
 Shallcross Mfg. Co. — 1.
 Sifam Electrical Instrument Co. Ltd.
 — 11.
 Sinclair Radio Laboratories Ltd.—3-4-5.
 Smyth Electronic Components, J. B. —
 1-2-3.
 Solartron Electronic Group Ltd., The
 — 1.
 Stark Electronic Sales Co. — 9.
 Tech Laboratories, Inc. — 1-3.
 Technicraft Laboratories, Inc. — 3.
 Telecomputing Corp. — 12-13.
 Thermovolt Instruments Ltd. — 11.
 Tinsley Instruments — 11.
 Trad Electronics Corp. — 3.
 Transitron Inc. — 3-13.
 Ultradyne Engineering Laboratories
 Inc. — 13.
 West Instrument Corp. — 11.
 Whittaker, E. E. — 13.
 Wickman Ltd., A. C. — 6.
 Winston Electronics Inc. — 12.
- Industrial Electronic Equipment
(78)**
- Analysis equipment electro-chemical** 1
Balancing equipment dynamic 2
Color control equipment 3
Combustion and smoke nuisance control equipment 4
Electronic counters 5
Flaw locators metal 6
Flaw locators non-metal 7
- Infrared equipment** 8
Industrial TV equipment closed circuit 9
Photoelectric control equipment 10
Positioning equipment 11
Precipitators electro-static 12
Remote control equipment 13
Servo mechanisms 14
Spectroscopes 15
Stroboscopes 16
Ultrasonic equipment 17
Ultraviolet equipment 18
Vacuum controls 19
X-ray equipment 20
Industrial static controls 21
Carbon determination 22
Electronic metal detectors 23
Recording spectrophotometers 24
Scintillation counters 25
Isotopes, radioactive sources 26
- Adler Electronics Inc. — 14.
 Aeromotive Engineering Products — 14.
 Ahearn & Soper Co. Ltd., The — 1-4-
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 Airmec Ltd. — 5-10.
 Alpine Laboratories Ltd. — 18.
 Amalgamated Electric Corp. Ltd. —
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 Ampli-Vision Division, International
 Telemeter Corp. — 9.
 Anatron Division of Endeveco Corp. —
 5-11-13.
 ARVA — 5-9-10.
 Atlas Radio Corp. Ltd. — 5-9.
 Autotron Inc. — 10.
 Bach-Simpson Ltd. — 1.
 Baird-Atomic Inc. — 5-8-10-15-18.
 Barber-Colman of Canada Ltd.
 (Wheelco Inst. Div.) — 4-8-13-18.
 Bayly Engineering Ltd. — 6.
 Beaconing Optical & Precision
 Materials Co. Ltd., Electronics Div.
 — 5-9-10-11-13.
 Beckman/Berkeley Div., A Div. of
 Beckman Instruments, Inc. — 10.
 Beckman/Helipot Corp. — 14.
 Beckman/Scientific Instruments Div.
 — 3.
 Bendix-Pacific — 13-17.
 BJ Electronics, Borg-Warner Corp.—5.
 Blonder-Tongue Laboratories Inc. — 9.
 Bogue Electric of Canada Ltd. — 14.
 Branson Instruments Inc. and Branson
 Ultrasonic Corp. — 6-17.
 Brilmayer Laboratories, Inc., E. W.—23.
 Bristol Co. of Canada Ltd., The — 13.
 British Thomson-Houston Co. (Canada)
 Ltd., The — 2-5-10-14.
 Brush Electronics Co. — 6.
 Caldwell A-V Equipment Co. Ltd.—9.
 Canadian Applied Research Ltd. — 14.
 Canadian Aviation Electronics Ltd. —
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 Canadian General Electric Co. Ltd.,
 Electronic Equipment & Tube Dept.
 — 9-13-21.
 Canadian General Electric Co. Ltd.,
 Industrial Products Dept. — 8.
 Canadian Laboratory Supplies Ltd.—15.
 Canadian Marconi Co. — 4-5-10.
 Canadian Research Institute — 1-3-4-
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 Canadian Westinghouse Co. Ltd. — 9.
 Central Scientific Co. of Canada Ltd.
 — 15.
 Chemalloy Electronics Corp. — 1.
 Cinema-Television Ltd. — 5-6.
 Clark Ltd., Alex L. — 9.
 Communication Measurements
 Laboratory Inc. — 16.
 Computer-Measurements Corp. — 5.
 Computing Devices of Canada Ltd. —
 5-11-14.
 Consolidated Avionics Corp. — 13-14.
 Cossor (Canada) Ltd. — 17.
 Crescent Engineering & Research Co.
 — 1-11-14.
 Datran Electronics, Div. of
 Mid-Continent Mfr. Inc. — 14.
 Davis (Relays) Ltd., Jack — 5.
 Dawe Instruments Co. Ltd. — 2-16-17.
 Dawe Instruments Ltd. — 1-2-3-4-5-
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 Daystrom Ltd. — 10-14.
 DuMont Labs. Inc., Allen B. — 9.
 Durant Manufacturing Co. — 5.
 Dynalysis Development Laboratories
 Inc. — 11-13-17.
 Eastern Industries, Inc. — 14.
 Edwards High Vacuum (Canada) Ltd.
 — 19.
 Elder Electronics — 17.
 Electrodesign — 1-3-4-5-6-7-8-10-13-
 16-17.
 Electrolabs — 3-9.
 Electroline Television Equipment Inc.
 — 9.
 Electromechanical Products — 10.
 Electronic Associates Ltd. — 3-4-5-6-
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 Electronic Control Corp. — 4-5-8-10-11.
 Electronic Enterprises Reg'd. — 5-14-
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 Electronic Specialties — 10.
 Electronics Corp. of America (Canada)
 Ltd. — 4-5-8-10-13.
 Electro-Pulse Inc. — 5.
 Electro-Sonic Laboratories — 13.
 Ellis Industries, The J. W. — 3-4-8-
 10-13-16.
 Evershed & Vignoles (Canada) Ltd. —
 4-11-13.
 Farmer Electric Products Co. Inc.—10.
 Feedback Controls, Inc. — 13-14.
 Ferrara Inc. — 5-11.
 Fischer & Porter Co. — 1-5.
 Franklin Electronics Inc. — 5.
 Fraser Ltd., George M. — 10.
 Freed Transformer Co. Inc. — 5-17.
 Gates Radio Co. — 13.
 General Communications Ltd. — 4-10-
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 General Electric Co., X-Ray Dept.—21.
 General Precision Laboratory Inc.—9.
 General Radio Co. — 16.
 General Theatre Supply Co. Ltd. — 9.
 Gordon Enterprises — 3-15-16.
 Gould Sales Co., E. S. — 9.
 Gulton Industries Inc. — 6-7-17.
 Hamilton Watch Co. — 11.
 Hamner Electronics Co., Inc. — 5.
 Herring & Co. Ltd., John — 10.
 Hewlett-Packard Co. — 5.
 High Voltage Engineering Corp. — 21.
 Honeywell Controls Ltd. — 1-3-4-8-11-
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 Hudson Randall International — 10-14.
 Hughey & Phillips Inc. — 10.
 Hull Corp. — 19.
 Illumitronic Engineering Co. — 3-10.
 Instronics Ltd. — 1-5-18.
 Jerrold Electronics Corp. — 9.
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 Kelk Ltd., George — 8-14.
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 Lake Engineering Co. Ltd. — 17.
 Leeds & Northrup, Canada, Ltd. — 4-
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 Leonard Electric Ltd. — 11-13-14.
 Librascope Inc. — 13-14.
 Lintronic Ltd. — 5.
 Magnetics, Inc. — 11.
 McKenna Laboratories — 17.
 Mechron Engineering Products Ltd. — 4-8-14-15-16-17-18.
 M.E.L. Sales Ltd. — 1-3-5-8-10-11-13-14-16.
 Micro Balancing, Inc. — 10.
 Muirhead Instruments Ltd. — 13-14.
 Nichols Ltd., R. H. — 1-13-16.
 Northeastern Engineering Inc. — 5.
 Peacock Brothers Ltd. — 2-8-13-14.
 Philips Industries Ltd. — 1-2-5-6-9-10-16-17-19-20.
 Phillips Mfg. Co. — 17.
 Photon Research Products — 5.
 Polytronics Co. — 4-10.
 Pye Canada Ltd. — 3-5-8-9-17-18-21.
 Radelin-Kirk Ltd. — 26.
 Radio Heaters Ltd. — 17.
 Radionics Ltd. — 3-10-11-19.
 Raytheon Canada Ltd. — 12-17.
 Robotron Corp. — 5.
 R-O-R Associates Ltd. — 1-2-5-6-10-11-13-14-16.
 Rubicon Co. — 1.
 Servo Corp. of America — 8-11-14.
 Servomechanisms (Canada) Ltd. — 11-14.
 Sheffield Corp., The — 17.
 Sinclair Radio Laboratories Ltd. — 8.
 Solartron Electronic Group Ltd., The — 2-6-15.
 Sorensen & Co. Inc. — 17.
 Southern Instruments Computer Div. — 1.
 Specialty Engineering & Electronics Co. — 10.
 Sperry Gyroscope Ottawa Ltd. — 2-17.
 Stark Electronic Sales Co. — 2.
 TAKK Corp., The — 21.
 Taller & Cooper Inc. — 9-13-14.
 Technical Apparatus Builders — 8-14-16.
 Tecneek Associates — 4-6-10-14-15-18.
 Telemetering Corp. — 5-11.
 Tel-Instrument Electronics Corp. — 9.
 Tequipment Mfg. Co. Ltd. — 9.
 Television Utilities Corp. — 9.
 Texas Instronics Inc. — 8.
 Thermovolt Instruments Ltd. — 14.
 Triplett & Barton Inc. — 21.
 Varian Associates — 1-15.
 Veeco Vacuum Corp. — 6-7-19.
 Veeder-Root of Canada Ltd. — 5.
 WacLine, Inc. — 11-13.
 Weltronic Co. — 5.
 Westinghouse Electric International Co. — 21.
 Wickman Ltd., A. C. — 2-17-20.
 Wilson & Co., G. C. — 10.

Induction Heating Equipment (79)

Brazing, soldering & welding	1
Dielectric heating	2
Electric heaters & elements	3
Induction heating	4

Ahearn & Soper Co. Ltd., The — 1-2-3-4.
 All-State Welding Alloys Co. Inc. — 1.
 Bogue Electric of Canada Ltd. — 1-4.
 British Thomson-Houston Co. (Canada) Ltd., The — 1-2-3-4.
 Burlec Sales Ltd. — 1-2-4.
 Canadian General Electric Co. Ltd., Industrial Products Dept. — 1-2-3-4.
 Canadian Research Institute — 1-2-3-4.
 Canadian Westinghouse Co. Ltd. — 4.

Elder Electronics — 1-2-4.
 Electrodesign — 1-2-3-4.
 English Electric Co. Ltd. — 1-2-4.
 Gulton Industries Inc. — 1.
 Induction Heating Corp. — 1-2-4.
 Industron Corp. — 1-2-3-4.
 Lepel High Frequency Laboratories Inc. — 1-4.
 Marion Electrical Instrument Co. — 1.
 Nichols Ltd., R. H. — 2.
 Northern Electric Co. Ltd. — 3.
 Northern Radio Mfg. Co. Ltd. — 1-2-3-4.
 Norton Behr-Manning Overseas Inc. — 4.
 Philips Industries Ltd. — 1-2-3-4.
 Photon Research Products — 1.
 Pye Canada Ltd. — 4.
 Quality Hermetics Ltd. — 1.
 Radio Frequency Co. Inc. — 1-2-3-4.
 Radio Heaters Ltd. — 1-2-4.
 Redifon Canada, A Div. of Rediffusion Inc. — 2-4.
 Robotron Corp. — 2-4.
 Samulevitz, S. — 3.
 Syntro (Canada) Ltd. — 3.
 Tocco Div., The Ohio Crankshaft Co. — 1-4.
 Wall Mfg. Co., P. — 1-3.
 Westinghouse Electric International Co. — 1-4.
 Woodwelding Inc. — 2-4.

Medical Electronic Equipment (80)

Cardiographs	1
Diathermy	2
Electronic cauterizing	3
Electro-encephalographs	4
Stimulators	5
Epilators	6
Blood pressure recorder	7

Canadian Marconi Co. — 2-3-4.
 Canadian Research Institute — 2-3-5.
 Edin Co. Inc. — 1-4-5.
 Electrodesign — 1-5.
 Electronic Enterprises Reg'd. — 1-2-3-4-5.
 Electro-Pulse Inc. — 5.
 General Electric Co., X-Ray Dept. — 1-2.
 Gulton Industries Inc. — 1.
 Industrial Development Laboratories Inc. — 1.
 Kay Electric Co. — 1.
 Mechron Engineering Products Ltd. — 7.
 M.E.L. Sales Ltd. — 1-5.
 Microtran Co. Inc. — 5.
 Nichols Ltd., R. H. — 1.
 Philips Industries Ltd. — 1.
 Radionics Ltd. — 1-4-5.
 Raytheon Canada Ltd. — 1-2.
 Sanborn Co. — 1.
 Tecneek Associates — 5.
 Westinghouse Electric International Co. — 2.
 Wickett Ltd., Bradford J. — 6.

Nuclear Equipment (81)

Dosimeters	1
Ionization	2
Pulse count integrators	3
Scalers	4
Survey meters	5
Spectrometers	6
Reactor control instruments	7
Remote handling equipment	8

Aeromotive Engineering Products — 1-3-4-5.
 Ahearn & Soper Co. Ltd., The — 1.
 Alpine Laboratories Ltd. — 6.
 Amalgamated Electric Corp. Ltd. — 1.
 American Electronics Inc. — 3-4-5.

ARVA — 1-2-4-5.
 Associated Electronic Components — 2.
 Atlas Radio Corp. Ltd. — 3-4.
 Baird-Atomic Inc. — 3-4-5.
 Barker & Williamson Inc. — 1.
 Beckman/Berkeley Div., A Div. of Beckman Instruments, Inc. — 3-4-5.
 Canadian Aviation Electronics Ltd. — 1-5.
 Canadian Marconi Co. — 3-4-5.
 Canadian Research Institute — 1-2-3-4-5.
 Cinema-Television Ltd. — 1-4.
 Computing Devices of Canada Ltd. — 1-3.
 Cossor (Canada) Ltd. — 2-5.
 Curtiss-Wright Corp., Electronics Div. — 5.
 Daystrom Ltd. — 2.
 Electrodesign — 1-2-3-4-5.
 Electronic Associates Ltd. — 2-3-4-5.
 Electronic Enterprises Reg'd. — 1-2-3-4-5.
 Electronic Instruments (Canada) Ltd. — 2.
 Elgin National Watch Co. — 1.
 Fisher Research Laboratory, Inc. — 5.
 Fischer & Porter Co. — 3.
 Franklin Electronics Inc. — 3-4.
 Hamner Electronics Co., Inc. — 2-4.
 Hewlett-Packard Co. — 5.
 Honeywell Controls Ltd. — 3.
 Instronics Ltd. — 1-2-3-4-5.
 Mechron Engineering Products Ltd. — 1-3-5-6-8.
 M.E.L. Sales Ltd. — 3-4-5.
 National Radiac Inc. — 3-4-5.
 Nichols Ltd., R. H. — 6.
 Northeastern Engineering Inc. — 4.
 Nuclear Corp. of America — 1-2-3-4-5.
 Nucleonic Corp. of America — 1-2-3-4-5.
 Philips Industries Ltd. — 1-2-3-4-5.
 Precision Radiation Instruments Inc. & Radio Craftsmen Div. — 5.
 Pye Canada Ltd. — 2-3-4.
 Radelin-Kirk Ltd. — 6.
 Radiation Counter Laboratories Inc. — 1-2-3-4-5.
 Radionics Ltd. — 1-2-3-4-5.
 R-O-R Associates Ltd. — 1-2-3-4-5.
 Specialty Engineering & Electronics Co. — 1.
 Universal Transistor Products Corp. — 1-3-5.
 Westinghouse Electric International Co. — 1-2-3-4-5.

Photographic & Copying Equipment (82)

Blue print reproducing equipment	1
Industrial photographic equipment	2
Motion picture equipment	3
Reproduction and copying equipment	4

Ahearn & Soper Co. Ltd., The — 3.
 Allied Circuit Techniques Ltd. — 2.
 Atlantic Films & Electronics Ltd. — 1-3-4.
 Beacons Optical & Precision Materials Co. Ltd., Electronics Div. — 3.
 Caldwell A-V Equipment Co. Ltd. — 2-3-4.
 Canadian Applied Research Ltd. — 2.
 Cinema-Television Ltd. — 2-4.
 Clark Ltd., Alex L. — 2-3-4.
 DuMont Labs. Inc., Allen B. — 2.
 Electrodesign — 2.
 Amalgamated Electric Corp. Ltd. — 1.
 Empire Engineering Co. — 4.

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General Photo Products Co. Inc. — 4.
Gordon Enterprises — 1-2-3-4.
Harris Co. of Toronto Ltd., E. — 4.
Magnasync Mfg. Co. Ltd. — 3.
Photocon Research Products — 4.
P & H Sales Corp. 1-2-4.

Cable and Wire

(83)

Aluminum	1
Coaxial cables	2
Copper bare	3
Enamel coated	4
Low-loss high frequency types	5
Magnet wire	6
Precious & rare metals wire	7
Pre-formed wire harness	8
Rubber insulated	9
Shielded	10
Synthetic insulated	11
Wire mesh	12
Woven wire braid	13
Telephone	14
Resistance wire	15

Aeromotive Engineering Products — 2-6-11.
Ahearn & Soper Co. Ltd., The — 1-2-3-4-5-6-9-10-11-13.
All-State Welding Alloys Co. Inc. — 1.
Alpha Aracon Radio Co. Ltd. — 2-3-4-5-6-9-10-11-12-13.
Alpha Wire Corp. 2-3-4-5-6-7-8-9-10-11-12-13.
Aluminum Co. of Canada Ltd.—1-6-11.
Amphenol Canada Ltd. — 1-2-3-4-5-9-10.
Andrew Antenna Corp. Ltd. — 2-5.
Atlantic Films & Electronics Ltd. — 2-9-10-11.
Atlas Radio Corp. Ltd. — 2-3.
Audio Vox Intercom Inc. — 10.
Automatic Electric Sales (Canada) Ltd. — 1-2-3-4-9-10-11.
Boston Insulated Wire & Cable Co. Ltd. 2-5-9-10-11-13.
Brand & Co. Inc., William — 2-5-10.
Canadian Electrical Supply Co. Ltd. — 1-2-3-4-6-9-10-11-13.
Canadian General Electric Co. Ltd.,
Electronic Equipment & Tube Dept. — 3-6-9-10-11.
Cresswell Pomeroy Ltd. — 12.
Desser E-E Ltd. — 9-12.
Eaton Mfg. Co., Reliance Div. — 1-3.
Electroline Television Equipment Inc. — 2-5-9-10-11-13.
Electronic Enterprises Ltd. — 7.
Electro Sonic Supply Co. — 2-3-4-6-9-10-11-13.
Ericsson Telephone Sales of Canada Ltd. — 2.
Essex Wire Corp. — 1-3-4-6-8-9-11.
Federal Wire & Cable Co. Ltd., Div. of
H. K. Porter Co. Ltd. — 1-2-3-4-6-9-10.
Gate Radio Co. — 2-3-4-8-9.
General Radio Co. — 2.
General Wire & Cable Co. Ltd. — 1-2-3-5-7-8-10-11-13.
Glendon Co. Ltd., The — 2-3-4-6-10.
Greening Wire Co. Ltd., The B. — 1-3-12.
Gulton Industries Inc. — 2-10.
Hackbusch Electronics Ltd. — 3-9-10.
Hale Bros. Ltd. — 9-11.
Hawkesbury Wire Co. Ltd. — 4-5-6-7-11.
Hooker (Canada) Ltd., Samuel C. — 2.
Howard & Co., M. J. — 2-3-5-10-11.
Hudson Randall International — 6-11.
Illumitronic Engineering Co. — 6.

Jerrold Electronics (Canada) Ltd. — 2-5-10-11.
Johnson Matthey & Mallory Ltd. — 7.
Lake Engineering Co. Ltd. — 2-5-8-10-11-15.
Lectronic Research Laboratories—2-5.
Lomas, E. G. — 2.
MacQuarrie, J. J. — 10-11.
Magnetic Shield Div., Perfection Mica Co. — 10.
Mechron Engineering Products Ltd. — 1-2-3-4-5-6-9-10-11-12-13.
Merritt Co., Ron—1-2-3-4-5-6-9-10-11.
Microdot, Inc. — 2.
Musimart of Canada — 2-3-5-6-10.
Ney Company, The J. M. — 4-7.
Northern Electric Co. Ltd. — 1-2-3-4-6-9-10-11.
Paisley Products of Canada Ltd. — 7.
Peacock Brothers Ltd. — 7-9-10-11.
Peffer Sound Systems Ltd. — 11.
Phalo Plastics Corp. — 2-5-8-10-11.
Phelps Dodge Copper Products Corp. — 2-3-4-6.
Phillips Electrical Co. Ltd. — 1-2-3-4-5-6-9-10-11-13.
Pirelli Cables, Conduits Ltd. — 1-3-9-10-13.
Powerlite Devices Ltd. — 2-5.
Pye Canada Ltd. — 2.
Radix Wire Co., The — 11.
R-O-R Associates Ltd. — 2.
Royal Electric Corp., Federal Cable Div. — 1-2-5-11.
Saxton Products Inc. — 1-2-3-4-5-6-10-11-13.
Sequoia Wire Co. — 2-5-10-11-14.
Smyth Electronic Components, J. B. — 2-3-4-5-6-7-8-10-11-13.
Spaulding Fibre Co. Ltd. — 5-11.
Telecables and Wires Ltd. — 3-10-11.
Times Wire & Cable Co. Inc. — 2-5-7-8-10-11.
Universal Wire & Cable Co. Ltd., The — 4-6.
Warren Wire Co.—1-2-3-4-5-6-9-10-11.
Westinghouse Electric International Co. — 7.
Wheeler Insulated Wire Co. Inc., The — 3-4-5-6-11.
White Radio Ltd. — 2-4-6-9-10-11-13.
Wind Turbine Co. of Canada Ltd. — 5.

Ceramics

(84)

Coil forms	1
Insulators	2
Proprietary forms	3
Dielectrics	4

Alpha Aracon Radio Co. Ltd. — 1-2.
Armstrong Ltd., A.T.R. — 2.
Associated Electronic Components — 2.
Canadian Electrical Supply Co. Ltd. — 1-2.
Centralab, A Div. of Globe-Union Inc. — 1-2.
Consolidated Electronic Equipment Co. Ltd. — 1-2.
Diamonite Products Mfg. Co., Div. of
U.S. Ceramic Tile Co. — 1-2-3.
Electro Sonic Supply Co. — 2.
Emerson & Cuming, Inc. — 2-3.
Erie Resistor of Canada Ltd. — 3-4.
General Ceramics Corp. — 1-2-3.
Heenan Ltd., P. J. — 1-2.
Hooker (Canada) Ltd., Samuel C. — 1-2-3.
Isolantite Manufacturing Corp.—1-2-3.
Jan Hardware Mfg. Co., Inc. — 2.
Mechron Engineering Products Ltd. — 1-2-3.

Millen Mfg. Co. Inc., James — 1-2.
Musimart of Canada — 1.
Mycalex Corp. of America — 2.
Osborne Electric Co. Ltd. — 1.
Paisley Products of Canada Ltd.—1-2-3.
Peacock Brothers Ltd. — 2.
Quality Hermetics Ltd. — 2.
Robinson Co., C. M. — 3.
Schouboe, Tage — 2.
Steward Mfg. Co., D. M. — 1-2-3.
United Insulator Co. Ltd. — 1-2-3.
Wind Turbine Co. of Canada Ltd. — 2.

Components

(85)

Adhesive tapes	1
Brushes motor	2
Bushings and bearings	3
Cable clips	4
Cans	5
Dial and dial assemblies	6
Fasteners	7
Flexible shafts	8
Gaskets	9
Grilles	10
Grommets	11
Lacing cord and tape	12
Machine screw products	13
Markers and tags	14
Nameplates	15
Paper preforms for coil foundations	16
IF shielding materials	17
Retaining rings	18
Rivets	19
Screws, nuts & washers	20
Screws, self-sealing	21
Springs	22
Strain reliefs	23
Switch seals	24
Terminal boards and straps	25
Terminals, rivet & stud	26
Terminals, wire end	27
Test clips	28
Slip rings	29
Ground clamps	30
Liquid cements	31
Special clips	32
Industrial slides	33
Static seals	34
Flexible heating units	35
Grip cap and lead assemblies	36
Terminal blocks	37

Accurate Electronics Corp. — 4-25-26.
Acromark Co., The — 6-14-15.
Acton Laboratories Inc. — 6.
Aerolite Electronics Corp. — 25.
Aeromotive Engineering Products — 3-12.
Aerovox Corp., Crowley Division — 17.
Aircraft Appliance & Equip. Ltd. — 4.
Aircraft-Marine Products of Canada Ltd. — 12-27.
Aircraft Radio Corp. — 7-24.
Alpha Aracon Radio Co. Ltd. — 6-7-8-11-12-13-15-20-24-25-26-27-28.
Amalgamated Electric Corp. Ltd. — 6
Ambroid Co. Inc. — 31.
Amphenol Canada Ltd. — 4-11-27-28.
Armet Industries Ltd. — 9-11-24.
Armstrong Ltd., A. T. R., — 5-7-24-25-27.
Astral Electric Co. Ltd. — 4-11-14-24.
Atlas E-E Corp. — 13-26-32.
Atlas Radio Corp. Ltd. — 6-10-11-13-14-15-24-28.
Audio Vox Intercom Inc. — 4.
Automatic Electric Sales (Canada) Ltd. — 1-4-12-28.
Automatic & Precision Mfg. Co. — 9-21-24.

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- Avery Adhesive Label Corp. (Canada) Ltd. — 14-15.
- Beckman-Helipot Corp. — 6.
- Bentley, Harris Mfg. Co. — 12.
- Blaco Mfg. Co. — 30.
- Bohne Industries Ltd. — 22.
- Brady Co., W. H. — 1-14-15.
- Buchanan Electrical Products Corp. — 24-27.
- Burlec Sales Ltd. — 14-15.
- Burndy Canada Ltd. — 4-27.
- Canada Decalcomania Co. Ltd. — 15.
- Canadian Electrical Supply Co. Ltd.—1-4-6-10-11-13-15-16-19-20-22-23-28.
- Canadian Johns-Manville Co. Ltd. — 1.
- Canadian Marconi Co., Electronic Tube & Components Div. — 11-25-28.
- Canadian Research Institute — 15.
- Chicago Screw Co., The — 7-13-20.
- Cinch Mfg. Corp. Ltd. — 4-5-6-7-11-24-26.
- Circon Component Co.—7-13-19-20-26.
- Clark Ltd., Alex L. — 5.
- Cleveland Container Co. — 16.
- Connecticut Hard Rubber Co., The — 1-9.
- Consolidated Electronic Equipment Co. Ltd — 14-15-25.
- Continental-Diamond Fibre of Canada Ltd. — 9-11-15-25.
- Cresswell Pomeroy Ltd. — 10.
- Curtis Development & Manufacturing Co. — 25.
- Daven Company, The — 6.
- Davies Molding Co., Harry — 6.
- Desser E-E Ltd. — 4.
- Dialight Corp. — 29.
- Dominion Aluminum Fabricating Ltd. — 10.
- Dominion Fasteners Ltd. — 4-7-18-20-22-23.
- Dzus Fastener Co., Inc. — 7.
- Eaton Mfg. Co., Reliance Div. — 7-13-18-20-21-24.
- Electrodesign — 2-25-26-27-28.
- Electrolabs — 4-7-14-15-18-25-26-27-28.
- Electro-Flex Heat, Inc. — 35.
- Electro Sonic Supply Co. — 4-6-8-10-11-12-13-15-20-22-23-25-27-28.
- Elgin National Watch Co. — 22.
- Emerson Plastics Corp. — 3-6-9-11-15-25.
- Enflo Corporation — 1-9-11.
- Ericsson Telephone Sales of Canada Ltd. — 6.
- Fastex Div. of Illinois Tool Works — 4-7-11-18-19-23.
- Garde Manufacturing Co. — 24-26-27.
- Gates Radio Company — 14-15.
- General Radio Company — 6.
- Glendon Co. Ltd., The — 5-17-25.
- Globe Electrical Mfg. Co. — 24.
- Goodrich Canada Ltd., B. F. — 9.
- Gordon Enterprises — 2-3-6-13-15.
- Gould Sales Co., E. S. — 4.
- Grant Dully & Hardware Corp. — 33.
- Gray Co. Ltd., H. Roy — 5-6-17-25.
- Hackbusch Electronics Ltd. — 1-4-12-18-28.
- Hammond Mfg. Co. Ltd. — 5-10.
- Hathaway Kraemer Ltd. — 10-15.
- Heli-Coil Corp. — 7.
- Hellermann Canada Ltd. — 14.
- Heyman Mfg. Co. — 23.
- Hildon Corporation Ltd. — 6.
- Hollingsworth Co. — 27.
- Holub Industries Inc. — 4.
- Hooker (Canada) Ltd., Samuel C. — 15-25-26.
- Howard & Company, M. J. — 15-24.
- Huck Mfg. Co. — 7-19.
- Hudson Randall International — 26-27.
- IlSCO of Canada Ltd. — 32-37.
- Industrial Retaining Ring Co. — 18.
- Jackson Brothers (London) Ltd. — 6.
- Jan Hardware Mfg. Co., Inc.—8-9-13-17.
- Jensen Condenser Products Co. Ltd., A/S Tobias — 5.
- Johnson Co., E. F. — 6-8.
- Johnson Matthey & Mallory Ltd. — 29.
- Knowlton Co. Ltd., J. G. — 6-15.
- Kulka Electric Mfg. Co. Ltd. — 24-25.
- Lake Engineering Co. Ltd. — 15-17-25-26-28.
- Lenkurt Electric Co. of Canada Ltd.—25.
- Lomas, E. G. — 19-20-25.
- London Wood & Plastics Ltd. — 6.
- Mack & Co. Ltd., R. — 6-25-28.
- MacQuarrie, J. J. — 3-6-8-10-13.
- Magnetics, Inc. — 5.
- Merritt Co., Ron — 25-26.
- Mica Insulator Co. — 15.
- Mid-West Spring Mfg. Co. — 4-22.
- Millen Mfg. Co. Inc., James — 5-6-17-24.
- Moody Machine Products Co. Inc. — 13.
- Mueller Electric Co. — 28-30.
- Muirhead Instruments Ltd. — 6.
- Narrow Fabric Co., The — 12.
- National Fibre Co. of Canada Ltd. — 9-11-24.
- Ney Company, The J. M. — 13.
- Northern Electric Co. Ltd. — 1-4-14-28.
- Paisley Products of Canada Ltd. — 1-11-12-15-16-24.
- Palnut Co., The — 7.
- Park Nameplate Co. Inc. — 14-15.
- Permonite Mfg. Co. — 24.
- Pfeiffer Electronic Laboratories — 6-7-8-24.
- Polypenco Inc. — 3-9-20.
- Precision Metal Products Inc. — 13-20-21-25-26.
- Precision Paper Tube Co. — 16.
- Quality Hermetics Ltd. — 5.
- Radelin-Kirk Ltd. — 6-15-29.
- Radio Frequency Laboratories, Inc.—24.
- Rawplug Products (Canada) Ltd. — 7.
- Richards Electrocraft Inc. — 11.
- Robinson Company, C. M. — 25.
- Rogers Electronic Tubes and Components — 25.
- Rousseau Controls Ltd. — 11.
- Schouboe, Tage — 4-25-28.
- Shakeproof, Div. of Illinois Tool Works — 7-20-21.
- Shakeproof/Fastex, Div. of Canada Illinois Tools Ltd. — 7-19-20-21.
- Silicone Insulation, Inc. — 3-9-11.
- Simmons Fastener Corp. — 7.
- Smyth Electronic Components, J. B. — 12-23.
- Southco Div. South Chester Corp—7-19.
- Spaulding Fibre Co., Inc. — 11.
- Spaulding Fibre Co. Ltd. — 9-11-13-14-15-16-20-23-25.
- Specialty Engineering & Electronics Co. — 6-9-15-18-22-25-26.
- Stackpole Carbon Co. — 2-3.
- Standard Pressed Steel Co.—7-13-20-21.
- States Co., The — 24-28.
- Staver Co., Inc., The — 5-9-17.
- Stratton & Co. Ltd. — 6.
- Techniques, Inc. — 15.
- Tilton Ltd., John R. — 8-26.
- United-Carr Fastener Co. of Canada Ltd. — 5-6-7-11-24.
- United Shoe Machinery Corp. — 19.
- United Shoe Machinery Co. of Canada Ltd. — 7-11.
- United States Radium Corp. — 6-15.
- United States Rubber Co. — 1-3-9-11.
- Waldom Electronics Inc. — 6-7-11-15-20-25-26-27.
- Warren Components Div., El-Tronics, Inc. — 36.
- Waterbury Pressed Metal Co., The — 5-7-11-19-24-27.
- Weckesser Co. — 4-7-20.
- Westline Products, Div. of Western Lithograph Co. — 1-14.
- Wolfe Co., Franklin C. — 34.
- Workman TV Inc. — 7.

Core Materials (86)

Laminations	1
Metallic powders	2
Aerovox Corp., Crowley Division — 2.	
Ahearn & Soper Co. Ltd., The — 1-2.	
Associated Electronic Components — 4.	
Bayly Engineering Ltd. — 2.	
Canadian Marconi Co., Electronic Tube & Components Div. — 1.	
El-Met-Parts Ltd. — 1.	
Eutectic Welding Alloys Co. of Canada Ltd. — 2.	
General Aniline & Film Corp., Antara Chemicals Div. — 2.	
Glastic Corp., The — 1.	
Glendon Co. Ltd., The — 2.	
Herring & Co. Ltd., John — 1.	
Lake Engineering Co. Ltd. — 2.	
Lenkurt Electric Co. of Canada Ltd.—2.	
Magnetic Shield Div., Perfection Mica Co. — 1-2.	
Magnetics, Inc. — 1-2.	
Mechron Engineering Products Ltd.—1.	
Paisley Products of Canada Ltd. — 1.	
Williams & Co., C. K. — 2.	

Gases and Vapors (87)

Acetylene	1
Argon	2
Hydrogen	3
Krypton	4
Neon	5
Nitrogen	6
Oxygen	7
Xenon	8
Avionics Ltd. — 15.	
Desser E-E Ltd. — 2-5.	
Linde Air Products Co., Div. of Union Carbide Canada Ltd. — 1-2-3-4-5-6-7-8.	
Wickman Ltd., A. C. — 3.	

Hermetic Seals (88)

Ceramic to metal parts	1
Complete headers	2
Glass to metal seals	3
Switch & shaft seals	4
Armet Industries Ltd. — 4.	
Armstrong Ltd., A. T. R. — 1-2-3-4.	
Atlas Radio Corp. Ltd. — 1-2-3-4.	
Automatic & Precision Mfg. Co. — 4.	
Burlec Sales Ltd. — 3.	
Consolidated Electronic Equipment Co. — 1-2.	
Constantin & Co., L. L. — 2-3.	
Diamonite Products Mfg. Co., Div. of U.S. Ceramic Tile Co. — 1.	
Erie Resistor of Canada Ltd. — 1.	
Fusite Corp. — 2-3.	
Garde Manufacturing Co. — 2.	
General Ceramics Corp. — 1.	
Glendon Co. Ltd., The — 1-2-3.	
Johnson Matthey & Mallory Ltd. — 3.	
Lundey Associates Inc. — 1-2.	
MacQuarrie, J. J. — 2.	
Mechron Engineering Products Ltd. — 1-2.	

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Paisley Products of Canada Ltd. — 1-4.
 Pye Canada Limited — 3.
 Quality Hermetics Limited — 1-2-3.
 Radio Frequency Laboratories, Inc.—4.
 Sealtron Corp. — 1-2-3.
 United Insulator Co. Ltd. — 1.
 Warren Components Div., El-Tronics, Inc. — 3.

Insulating Materials (89)

Cambrie sheeting	1
Cambrie tubing	2
Ceramic	3
Cotton tapes	4
Fiberglass tapes	5
Fiberglass tubing	6
Glass bonded mica	7
Paper	8
Plastic	9
RF shielding materials	10
Rubber	11
Synthetics	12
Asbestos paper	13

Aeromotive Engineering Products — 9.
 Aerovox Corp. Crowley Division — 10.
 Alpha Aracon Radio Co. Ltd. — 2-6.
 Alpha Wire Corp. — 2-6.
 Armet Industries Ltd. — 9-10-11-12.
 Astral Electric Co. Ltd. — 2-5-6.
 Automatic Electric Sales (Canada) Ltd. — 4.
 Bentley, Harris Mfg. Co. — 2-6.
 Borden Co., The, Resinite Dept., Chemical Division — 9.
 Brand & Co. Inc., William — 1-2-4-5-6-7-8-9.
 Canadian Electrical Supply Co. Ltd. — 2-12.
 Canadian Johns-Manville Co. Ltd. — 8-13.
 Centralab, A Div. of Globe-Union Inc. — 3.
 Clarke & Co. (Manchester) Ltd., H. — 2-7-9.
 Cleveland Container Co. — 8-9.
 Connecticut Hard Rubber Co., The — 10-11.
 Continental-Diamond Fibre of Canada Ltd. — 5-9-12.
 Diamonite Products Mfg. Co., Div. of U.S. Ceramic Tile Co. — 3.
 Dow Chemical of Canada, Ltd. — 9.
 Eastern Precision Resistor Corp. — 9.
 Electro Sonic Supply Co. — 1.
 Emerson Plastics Corp. — 6-9.
 Emerson & Cuming, Inc. — 3-9-10-12.
 Enflo Corporation — 9-12.
 Freed Transformer Co. Inc. — 9.
 General Aniline & Film Corp., Antara Chemicals Div. — 12.
 General Ceramics Corp. — 3.
 Glastic Corp., The — 9.
 Glendon Co. Ltd., The — 2.
 Goodrich Canada Ltd., B. F. — 11.
 Howard & Company, M. J. — 9-10.
 Illumitronic Engineering Co. — 9.
 Isolantite Manufacturing Corp. — 3.
 Johnson & Johnson Ltd., Permacel Tape Div. — 4-5-8-9.
 Magnetic Shield Div., Perfection Mica Co. — 10.
 Mica Insulator Co. — 1-7-8-9.
 Millen Mfg. Co. Inc., James — 9.
 Mycalex Corp of America — 7.
 National Fibre Co. of Canada Ltd. — 6-7-8-9.
 Northern Electric Co. Ltd. — 1-2-4-5-6-9-11.
 Norton Behr-Manning Overseas Inc.—3.
 Osborne Electric Co. Ltd. — 9.

Paisley Products of Canada Ltd. — 1-2-3-4-5-6-7-8-9.
 Polypenco Inc. — 9-12.
 Precision Paper Tube Co. — 6-8-9.
 Quality Hermetics Limited — 3.
 Reichhold Chemicals (Canada) Ltd. — 9-12.
 Richardson Co., The — 9.
 St. Regis Paper (Canada) Ltd. — 9.
 Saxton Products Inc. — 9.
 Shamban & Co., W. S. — 9.
 Silicone Insulation, Inc. — 6-9.
 Smyth Electronic Components, J. B. — 2-4-6-9.
 Spaulding Fibre Co., Inc. — 8-9.
 Spaulding Fibre Co. Ltd. — 6-8-9-12.
 Steward Mfg. Co., D. M. — 3.
 Synthane Corp. — 6-9.
 United Insulator Co. Ltd. — 3.
 United States Rubber Co. — 9-11-12.
 Varflex Corp. & Varflex Sales Co. Ltd. — 2-6.

Laboratory Equipment and Supplies (90)

Chemicals	1
General laboratory equipment	2

Adams Engineering Ltd. — 2.
 Allied Chemical & Dye Corp., General Chemical Division — 1.
 ARVA — 2.
 Avery Adhesive Label Corp. (Canada) Ltd — 2.
 Baird-Atomic Inc. — 2.
 Baker Chemical Co., J. T. — 1.
 Beckman/Scientific Instruments Div. — 2.
 Canadian Laboratory Supplies Ltd. — 1-2.
 Canadian Research Institute — 2.
 Central Scientific Co. of Canada Ltd. — 1-2.
 Dow Chemical of Canada, Ltd. — 1.
 DuMont Labs. Inc., Allen B. — 2.
 Dynalysis Development Laboratories Inc. — 2.
 Electrolabs — 2.
 Electronic Instruments (Canada) Ltd. — 2.
 Fretco Inc. — 1.
 Instronics Ltd. — 2.
 Johnson Matthey & Mallory Ltd. — 2.
 Kinney Mfg. Division, The New York Air Co. — 2.
 Leeds & Northrup, Canada, Ltd. — 2.
 M.E.L. Sales Ltd. — 2.
 Metal & Thermit — 1.
 Muirhead Instruments Ltd. — 2.
 Peacock Brothers Ltd. — 2.
 Pye Canada Limited — 2.
 R-O-R Associates Ltd. — 2.
 Sel-Rex Corp. — 1.
 Tecneek Associates — 2.
 Workman TV Inc. — 1.

Lacquers, Paints, Compounds and Waxes (91)

Coil dope	1
Conducting paint	2
Finishing & protective lacquer	3
Fungus preventives	4
Moisture proofing	5
Phosphors	6
Sealing and potting compounds	7
Alkyd resins	8
Insulating varnishes	9
Wire enamels	10
Silicone compounds	11

Ambroid Co. Inc. — 3-7.
 Alpha Aracon Radio Co. Ltd. — 1.
 Atlantic Films & Electronics Ltd. — 1-3-5.
 Atlas Radio Corp. Ltd. — 3.
 Automatic Electric Sales (Canada) Ltd. — 7.
 Canadian Electrical Supply Co. Ltd. — 1-3.
 Canadian General Electric Co. Ltd., Electronic Equipment & Tube Dept. — 2-4-7-8-9-10-11.
 Canadian Johns-Manville Co. Ltd.—7.
 Dow Chemical of Canada, Ltd. — 3-4.
 Eastern Precision Resistor Corp. — 1-4-5-7.
 Electro Sonic Supply Co. — 1.
 Emerson & Cuming, Inc.—1-2-3-4-5-7.
 Gray Co. Ltd., H. Roy — 1.
 Harris Co. of Toronto Ltd., E. — 2.
 Howard & Company, M. J. — 1-2-3-4-5-7.
 Lake Chemical Co. — 7.
 Markal Company — 3.
 Metal & Thermit — 3-4.
 Midland Paint & Varnish Co., The — 2-3-5.
 Millen Mfg. Co. Inc., James — 1-4.
 Paisley Products of Canada Limited—4.
 Permonite Mfg. Co. — 3-4-5.
 Radelin-Kirk Ltd. — 6.
 Reichhold Chemicals (Canada) Ltd.—7.
 Sauereisen Cements Co. — 1-2-7.
 Sonneborn Ltd. — 4-5-7.
 Tempil Corp. — 3.
 United States Rubber Co. — 5.
 Waldom Electronics Inc. — 3-5.

Metals (92)

Alloys	1
Copper	2
Ferrous	3
Non-ferrous excluding copper	4
Powdered	6
Precious and rare	6

Aerovox Corp., Crowley Division — 5.
 Canada Metal Co. Ltd. — 1-2-4.
 Chemalloy Electronics Corp. — 1-5.
 Eaton Mfg. Co., Reliance Div.—1-2-3-4.
 Elgin National Watch Co. — 1-4.
 Federated Metals Canada Ltd.—1-2-4-5.
 General Aniline & Film Corp., Antara Chemicals Div. — 5.
 Handy & Harman of Canada Ltd. — 6.
 International Nickel Co. of Canada Ltd., The — 1-4-5-6.
 Johnson Matthey & Mallory Ltd. — 6.
 Mallory & Co. Inc., P. R. — 1-5.
 Metal & Thermit — 1-2.
 Ney Company, The J. M. — 1-4-6.
 Noranda Copper and Brass Ltd. — 1-2.
 Paisley Products of Canada Ltd. — 6.
 Phelps Dodge Copper Products Corp.—2.
 Sel-Rex Corp. — 1-2-4-6.
 Smyth Electronic Components, J. B.—6.
 Texas Instronics Inc. — 6.
 Westinghouse Electric International Co. — 1-4-6.
 Wickman Ltd., A. C. — 5.
 Williams & Co., C. K. — 3-5.

Molded Products (93)

Insulators	1
Knobs and parts	2
Proprietary moldings	3

Accurate Electronics Corp. — 1-2.
 Acton Laboratories Inc. — 2.
 Alpha Aracon Radio Co. Ltd — 1-2.

ELECTRONIC EQUIPMENT — BUYERS' GUIDE

Armet Industries Ltd. — 1-3.
 Atlantic Films & Electronics Ltd.—1-2.
 Atlas Radio Corp. Ltd. — 2.
 Canadian Electric Resistors Ltd. — 2.
 Canadian Electrical Supply Co. Ltd. — 1-2.
 Canadian General Electric Co. Ltd.,
 Electronic Equipment & Tube Dept. — 1-2-3.
 Canadian Marconi Co., Electronic Tube & Components Div. — 1-2.
 Cinch Mfg. Corp. Ltd. — 2.
 Consolidated Electronic Equipment Co. — 1.
 Davies Molding Co., Harry — 2-3.
 Desser E-E Ltd. — 1.
 Diamonite Products Mfg. Co., Div. of U.S. Ceramic Tile Co. — 1.
 DuMont Labs Inc., Allen B. — 2.
 Electrolabs — 1-3
 Elco Corporation — 1-3.
 Emerson Plastics Corp. — 1-2.
 Enflo Corporation — 1-3.
 Erie Resistor of Canada Ltd. — 2-3.
 Garde Manufacturing Co. — 1-3.
 Gee Lar Mfg. Co. — 1-2-3.
 General Radio Company — 1-2.
 Glastic Corp., The — 1.
 Globe Electrical Mfg. Co. — 1.
 Goodrich Canada Ltd., B. F. — 1-2-3.
 Gray Co Ltd., H. Roy — 1-2.
 Hathaway Kraemer Ltd. — 1-2-3.
 Hudson Randall International — 1.
 Isolantite Manufacturing Corp. — 1.
 Jan Hardware Mfg. Co., Inc. — 1-2-3.
 Javex — 3.
 Johnson Co., E. F. — 1-2.
 Lake Engineering Co. Ltd. — 1-2-3.
 Mack & Co Ltd., R. — 2.
 MacQuarrie, J. J. — 2.
 Mechron Engineering Products Ltd.—1.
 Millen Mfg. Co. Inc., James — 1-2.
 Mycalex Corp. of America — 1-3.
 Ney Company, The J. M. — 3.
 Osborne Electric Co. Ltd. — 1-2-3.
 Pacific Transducer Corp. — 2.
 Paisley Products of Canada Ltd. — 1.
 Pfeiffer Electronic Laboratories — 1-2.
 Precision Metal Products Inc. — 1.
 Saxton Products Inc. — 1-3.
 Schouboe, Tage — 1-2.
 Shamban & Co., W. S. — 1-3.
 Silicone Insulation, Inc. — 1.
 Steward Mfg. Co., D. M. — 1.
 Stratton & Co. Ltd. — 1-2.
 Taller & Cooper Inc — 3.
 Tequipment Mfg. Co. Ltd. — 2.
 United States Radium Corp. — 2.
 United States Rubber Co. — 1-2.
 Waldom Electronics Inc. — 2.
 Westlake Plastics — 1.

Plastics (94)

Extrusions	1
Raw powders	2
Rods	3
Sheets	4
Tubes	5
Copper clad laminates for printed circuits	6

Aeromotive Engineering Products — 1-3-5.
 Alpha Aracon Radio Co. Ltd. — 3-4-5.
 Bakelite Co. — 2-4-5.
 Borden Co., The, Resinite Dept., Chemical Division — 1-2-3-4-5.
 Canadian Electrical Supply Co. Ltd. — 3-4-5.
 Canadian General Electric Co. Ltd.,

Electronic Equipment & Tube Dept. — 1.
 Clarke & Co. (Manchester) Ltd., H. — 3-4-5.
 Cleveland Container Co. — 5.
 Continental-Diamond Fibre of Canada Ltd. — 3-4-5.
 Dow Chemical of Canada, Ltd. — 2.
 Eastern Precision Resistor Corp. — 3.
 Emerson Plastics Corp. — 1-3-4-5.
 Emerson & Cuming, Inc. — 2-3-4.
 Enflo Corporation — 1-3-4-5.
 Fretco Inc. — 3.
 General Wire & Cable Co. Ltd. — 1-2-3.
 Goodrich Canada Ltd., B. F. — 1.
 Hathaway Kraemer Ltd. — 3-4-5.
 Howard & Company, M. J. — 2-3-4.
 Illumitronic Engineering Co. — 1-3-4-5.
 Isolantite Manufacturing Corp. — 3.
 Lomas, E. G. — 3-5.
 London Wood & Plastics Ltd. — 4.
 Mallory & Co. Inc., P. R. — 1.
 Millen Mfg. Co. Inc., James — 4-5.
 National Fibre Co. of Canada Ltd. — 3-4-5.
 Northern Electric Co. Ltd. — 1-5.
 Paisley Products of Canada Ltd. — 1-3-4-5.
 Permonite Mfg. Co. — 3-4-5.
 Polypenco Inc. — 1-2-3-4-5.
 Precision Paper Tube Co. — 5.
 Richardson Co., The — 3-4-5.
 Robinson Company, C. M. — 1.
 St. Regis Paper (Canada) Ltd.—3-4-5-6.
 Saxton Products Inc. — 1-3.
 Shamban & Co., W. S. — 1-3-4-5.
 Silicone Insulation, Inc. — 3-4-5.
 Smyth Electronic Components, J. B.—5.
 Spaulding Fibre Co., Inc. — 3-4-5.
 Spaulding Fibre Co. Ltd. — 3-4-5.
 Synthane Corp. — 3-4-5.
 United States Rubber Co. — 1-2-3-4-5.
 Varflex Corp. & Varflex Sales Co. Ltd. — 5.
 Westlake Plastics — 1-3-4-5.

Production Machinery & Tools (95)

Abrasive cutting machines	1
Aluminizers	2
Coil winding machines	3
Dehydrators	4
Demagnetizers	5
Hermetic sealing machines	6
Impregnating machines	7
Magnetizers	8
Marking and engraving machines	9
Ovens temperature controlled	10
Printed circuit equipment	11
Soldering irons and guns	12
Tools	13
Vacuum pumps	14
Vacuum tube machinery	15
Vibration exciters	16
Ultrasonic drills	17
Welding and brazing equipment	18
Wire stripping machines	19
Motor speed reducers	20
Inspection test equipment	21
Component preparation machines	22
Ovens infrared dry quick	23
Trucks	24

Acromark Co., The — 9.
 Adcola Products Ltd. — 12.
 Ahearn & Soper Co. Ltd., The — 10-14-18.
 Aircraft-Marine Products of Canada Ltd. — 11.
 All-State Welding Alloys Co. Inc. — 18.
 Alpha Aracon Radio Co. Ltd. — 12-13.
 AN.T.E.X. Ltd. — 12.

Astral Electric Co Ltd. — 12-19.
 Atlantic Films & Electronics Ltd. — 12-13.
 Atlas Radio Corp. Ltd. — 12-13-19.
 Automatic Electric Sales (Canada) Ltd. — 12-13.
 Avionics Ltd. — 11.
 Barrett Co., The Leon J. — 7.
 Bayly Engineering Ltd. — 3.
 Beechey Enterprises — 10-22-23.
 Boesch Mfg. Co. Inc. — 3.
 Canadian Electrical Supply Co. Ltd. — 12-13.
 Canadian Fairbanks Morse Co. Ltd., The — 1-3-5-8-9-10-12-13-14-18-19.
 Canadian Research Institute — 5-8-9.
 Central Scientific Co. of Canada Ltd. — 14.
 Clauss Cutlery Co. — 13.
 Cosa Corp. of Canada Ltd. — 1-3-9.
 Eitel-McCullough Inc. — 14.
 Electrodesign — 12-14.
 Electro-Lab — 12.
 Electro Sonic Supply Co.—3-11-12-13.
 Elgin National Watch Co. — 13.
 Empire Engineering Co. — 9.
 Eraser Co., Inc., The — 19.
 Finkler & Co., Len — 13-19.
 Gordon Enterprises — 2-9.
 Gould Sales Co., E. S. — 12.
 Greenlee Tool Co. — 13.
 Harris Co. of Toronto Ltd., E. — 11.
 Hellermann Canada Ltd. — 19.
 Hexacon Electric Co. — 12.
 High Voltage Engineering Corp. — 14.
 Hildon Corporation Ltd. — 13.
 Huck Mfg. Co. — 13.
 Hull Corp. — 2-4-7-10-11-14-15.
 Hunter Tools — 13.
 Induction Heating Corp. — 18.
 Janette Electric Mfg. Co. — 20.
 Kinney Mfg. Division, The New York Air Co. — 2-7-10-14-15.
 Koleetric Ltd. — 3.
 Lake Engineering Co. Ltd. — 17.
 Linde Air Products Co., Div. of Union Carbide Canada Ltd. — 12-18.
 Luma Electric Equipment Co., The—5-9.
 Magnasync Mfg. Co. Ltd. — 5.
 Markem Machine Co. — 9.
 Mechron Engineering Products Ltd. — 12-14.
 M.E.L. Sales Ltd. — 16.
 Merritt Co., Ron — 13.
 Mitchell Industries Inc. — 12.
 Moody Machine Products Co. Inc.—13.
 Nelson Vacuum Pump Co., Geo. F.—14.
 Northern Electric Co. Ltd. — 12-13-19.
 NRC Equipment Corp. — 2-4-7-14.
 Osborne Electric Co. Ltd. — 3-5-8-9-13.
 Pfeiffer Electronic Laboratories — 12.
 Philips Industries Ltd. — 16-17.
 Polytronics Co. — 5-8-10.
 Printed Electronics Corp. — 11.
 Radio Frequency Laboratories, Inc. — 5-8.
 Raytheon Canada Limited — 18.
 Samulevitz, S. — 12.
 Scheel International, Inc. — 12-13.
 Schouboe, Tage — 13.
 Sheffield Corp., The — 17.
 Simmonds & Sons Ltd., A. C. — 12.
 Smyth Electronic Components, J. B. — 8-11-12-13.
 Sturtevant Co., P. A. — 21.
 United Shoe Machinery Corp — 11.
 Veeco Vacuum Corp. — 7-14-15.
 Wall Mfg. Co., P. — 12.
 Whittington Pump & Engineering Corp. — 14.
 Wickman Ltd., A. C. — 1-16-17.
 Willys of Canada Ltd. — 24.
 Wolf Electric Tools Ltd. — 12-13.

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Solder (96)

Acid core	1
Fluxes	2
Plain	3
Precious metal	4
Pre-forms	5
Resin core	6
Aluminum	7

Ambroid Co. Inc. — 2-6.
 All-State Welding Alloys Co. Inc.—2-4.
 Alpha Aracon Radio Co. Ltd. — 1-2-6.
 Atlantic Films & Electronics Ltd. — 6.
 Atlas Radio Corp. Ltd. — 6.
 Automatic Electric Sales (Canada) Ltd.
 — 1-2-3-6.
 Beechey Enterprises — 7.
 Canada Metal Co. Ltd. — 1-2-3-6.
 Canadian Electrical Supply Co. Ltd.
 — 1-2-3-4-5-6.
 Chemalloy Electronics Corp. — 3.
 Electro Sonic Supply Co. — 1-2-3-6.
 Eutectic Welding Alloys Co. of Canada
 Ltd. — 1-2-4-6.
 Federated Metals Canada Ltd.—1-2-3-6.
 Hackbusch Electronics Ltd. — 1-6.
 Handy & Harman of Canada Ltd. — 2.
 Johnson Matthey & Mallory Ltd.—2-4.
 Kester Solder Co. of Canada Ltd.
 — 1-2-3-5-6.
 Lake Chemical Co. — 2.
 Ney Company, The J. M. — 4.

Northern Electric Co. Ltd. — 1-2-6.
 Poynton Ltd., Charles W. — 2-5-6.
 Robinson Company, C. M. — 1-2-3-5-6.

Vacuum Tube Parts (97)

Anodes	1
Envelope glass	2
Envelope metal	3
Getters	4
Grids and grid wire	5
Guns and gun parts	6
Lead wires	7
Phosphors	8
Pins and prongs	9
Shaft locks	10
Spacers and insulators	11
Stampings	12
Tube caps	13
Tube clamps	14
Tube shields	15
Tubing cathode	16
V-R ionization elements	
radioactive	17
Filament wire	18
Permeameters - core graders	19

Atlas E-E Corp. — 14-15.
 Atlas Radio Corp. Ltd. — 13-14-15.
 Bayly Engineering Ltd. — 14-15.
 Boesch Mfg. Co. Inc. — 19.
 Desser E-E Ltd. — 15.
 Diamonite Products Mfg. Co., Div. of
 U.S. Ceramics Tile Co. — 2-11.

DuMont Labs. Inc., Allen B. — 15.
 Eby Co., Hugh H. — 15.
 Eitel-McCullough Inc. — 5.
 Electronic Tube Corp. — 6-15.
 Enflo Corporation — 11-15.
 General Ceramics Corp. — 11.
 International Electronic Research
 Corp. — 15.
 Jan Hardware Mfg. Co., Inc.
 — 3-10-11-15.
 MacQuarrie, J. J. — 10-15.
 Magnetic Shield Div., Perfection Mica
 Co. — 15.
 Millen Mfg. Co. Inc., James — 13-14-15.
 Paisley Products of Canada Ltd.—11-12.
 Permonite Mfg. Co. — 11-12.
 Precision Metal Products Inc. — 10-11.
 Radelin-Kirk Ltd. — 8.
 Smyth Electronic Components, J. B.
 — 5-7-9-18.
 Staver Co., Inc., The — 11-12-13-14-15.
 Steward Mfg. Co., D. M. — 11.
 United States Radium Corp. — 17.
 Waldom Electronics Inc. — 10-15.
 Westinghouse Electric International
 Co. — 5-6-7.

Instruction (98)

Radio service manuals	1
Television service manuals	2

Radio College of Canada — 1-2.

"Motivate 'Em -- Don't Recruit Them"

Petrik & Stephenson Report On Current Advertising For Engineers & Scientists.

When newspapers, magazines, radio and television blossom out with a great welter of advertising dealing with any one specific need, it's bound to raise eyebrows (and interest) throughout the advertising industry. When this advertising seems to be off base in its thinking and approach it warrants not a "raised eyebrow," but a good, close, careful look with both eyes.

Petrik and Stephenson, Inc., Philadelphia advertising agency, sensed what amounted to utter confusion in industry's scramble for engineers and scientists, and took steps to examine this activity objectively. The following report summarizes the highlights of this advertising agency's findings. As far as is known, it is the only professional advertising study that has been made of this currently vital subject.

The findings in this report resulted from 7 months of intensive study from November 1956 to May 1957 and while based on the American situation in respect to industries' scramble for engineers is applicable to the Canadian scene and the methods used by Canadian firms in their efforts to obtain engineering and scientific personnel.

THE number of specialists coming into engineering fields at this time is small even for normal industry growth conditions. There are a number of reasons for this sharp off-balance supply and demand picture. Basically, however, there are three:

First the college age group is small due to the predepression birth rates of the 1930's. This year's engineering graduates number about 34,000. Immediate use of this total is curtailed by an estimated 11,000 engineers committed to

military duty upon graduation, leaving only approximately 23,000 engineers to bridge the gap. Best estimates place the need at 58,000 new engineers annually.

Second because of the lack of industry (as well as general) foresight as to future industry needs, plus "bad advice" a few years back (to prospective students) helped strengthen the already prevalent concept that engineering "was not the field to be in."

(Continued on page 78)

Directory Of Canadian Electronic Equipment Manufacturers & Suppliers

WITH LISTING OF AMERICAN, EUROPEAN AND ASIATIC PRINCIPALS

- Acme Electric Corp. Ltd., 50 Northline Rd., Toronto 16, Ontario. Representing: Acme Electric Corp. Ltd., Cuba, N.Y.
- Adams Engineering Ltd., 1500 St. Catherine St. West, Montreal, Que.; also 1989 Avenue Rd., Toronto; 77 Metcalfe St., Ottawa, Ontario. Representing: Acme Electric Corp., Toronto, Ont. and Cuba, N.Y.
- Allied Control Company Inc., New York City, N.Y.
- The Daven Company, Livingston, N.J.
- Transitron Electronic Corp., Wakefield, Mass.
- Prodelin Inc., Kearny, N.J.
- Adcola Products Ltd., Box 103, Weston, Toronto 15, Ont.**
- Aeromotive Engineering Products, 5257 Queen Mary Rd., Montreal, Que. Representing:**
- American Electronics Inc., 655 W. Washington Blvd., Los Angeles Calif.
- Boots Aircraft Nut Corp., P.O. Box 591, Norwalk, Conn.
- Bowmar Instrument Corp., 2415 Pennsylvania St., Fort Wayne 4, Ind
- Christie Electric Corp., 3410 West 67th St., Los Angeles 43, Calif.
- Control Products Inc., 306 Sussex St., Harrison, N.J.
- Electro-Mec Laboratory Inc., 47-51 33rd St., Long Island City 1, N.Y.
- Gar Precision Parts Inc., P.O. Box 89, Stamford, Conn.
- Iron & Vosseler Zahlerfabrik, Schwenningen, A.N., West Germany.
- New Hampshire Ball Bearings Inc., Peterborough, N.H.
- Pennsylvania Fluorocarbon Co. Inc., 1115 North 38th St., Philadelphia 4, Pa.
- Potter & Brumfield Mfg. Co. Inc., Princeton, Ind.
- Resin Industries (Borden Co.), P.O. Box 1589, Santa Barbara, Calif.
- Tensolite Insulated Wire Co., 198 Main St., Tarrytown, N.Y.
- Unimax Switch, Div. of W. L. Maxson Corp., Ives Rd., Wallingford, Conn.
- Vitramon Inc., P.O. Box 544, Bridgeport 1, Conn.
- Aerovox Canada Ltd., 1551 Barton St. E., Hamilton, Ontario. Representing:**
- Charles L. Thompson Ltd., 3093 Woodbine Drive, North Vancouver, B.C.
- M. J. Howard & Co., 132 Crocus Ave., Ottawa, Ont.
- Ahearn & Soper Co. Ltd., The, 384 Bank St., Ottawa 4, Ontario. Representing:**
- Bauscher and Company K. G., Hamburg, Germany.
- Electrical Communications Inc., San Francisco, Calif.
- Elektromesstechnik, Wilhelm Franz K. G., Lahr/Baden, Germany
- Hammarlund Manufacturing Co. Inc., New York City, N.Y.
- Dr. Rudolf Hell, Kiel, Germany.
- Richard Jahre, Berlin, Germany.
- Georg A. Philbrick Researches Inc., Boston, Mass.
- Quarzkeramik G.m.b.H., Muenchen, Germany.
- Radio Engineering Laboratories Inc., Long Island City, N.Y.
- Rohde and Schwarz, Muenchen, Germany.
- Siemens and Halske A. G. at Muenchen, Berlin, Karlsruhe, and Braunschweig, Germany.
- Siemens-Schuckertwerke A. G. at Erlangen, Berlin, Nuernberg, Bad Neustadt/Saale, Amberg/Opf., Muelheim Ruhr, Germany
- Specialty Engineering and Electronics Co. Ltd., Brooklyn, N.Y.
- H. W. Sullivan Ltd., London, England.
- Telefunken G.m.b.H. at Berlin, Backnag and Ulm, Germany.
- Aircraft Appliances & Equipment Ltd., 585 Dixon Side Rd., Box 177, Toronto 15, Ontario. Representing:**
- Jack & Heintz, Inc., Cleveland 1, Ohio.
- The Hartman Electrical Manufacturing Co., Mansfield, Ohio.
- Electronic Specialty Co., Los Angeles 39, Calif.
- The Strong Electric Corp., Toledo 1, Ohio
- Filtron Company, Inc., Flushing 55, N.Y.
- Cline Electric Mfg. Co., Chicago 32, Ill.
- Paramount Concessionaires (London) Ltd., Staines, Middlesex, England.
- Avtron Manufacturing Inc., Cleveland 5, Ohio.
- Aircraft-Marine Products of Canada Ltd., 194 Wilson Ave., Toronto 12, Ontario.**
- Airtron Canada Ltd., 300 Campbell Ave., Toronto, Ontario.**
- Alliance Motors, 80 Schell Ave., Toronto 10, Ontario. Representing:**
- Alliance Mfg. Inc., Alliance, Ohio.
- O. A. Sutton Corp., 1812 West 2nd St., Wichita, Kansas.
- Howard Industries Inc., Racine, Wis.
- Allied Circuit Techniques Ltd., 1 Robinson St., Oakville, Ontario.**
- Alpha Aracon Radio Co. Ltd., 29 Adelaide St. W., Toronto, Ontario. Representing:**
- Alpha Wire Corp., 200 Varvick St., New York, N.Y.
- Arcoelectric Switches Ltd., West Molsey, England.
- Gremar Mfg. Co., Wakefield, Mass.
- Kedman Co., Salt Lake City, Utah
- Tung-Sol Elect. Inc., 95 Eighth Ave., Newark, N.J.
- Aluminium Co. of Canada Ltd., 1700 Sun Life Bldg., Montreal 2, Que.**
- Amalgamated Electric Corp. Ltd., 384 Pape Ave., Toronto 6, Ontario. Representing:**
- The General Electric Co. Ltd. of England, London, England.
- Cutler-Hammer Inc., Milwaukee, Wis.
- DayBrite Lighting, Inc., St. Louis, Mo.
- Dazor Mfg. Corp., St. Louis, Mo.
- Benjamin Electric Mfg. Co., Des Plaines, Ill
- Jefferson Electric Co., Bellwoods, Ill.
- Silvray Lighting Inc., New York, N.Y.
- Nife Batteries, Redditch, England.
- Woods of Colchester, Colchester, Essex, England.
- Ampex American Corporation — Canadian Division, 1537 The Queensway, Toronto 14, Ontario. Representing:**
- Ampex Corporation, Instrumentation Division, 934 Charter St., Redwood City, Calif.
- Amphenol Canada Ltd., 300 Campbell Ave., Toronto, Ontario.**
- Andrew Antenna Corp. Ltd., 606 Beech St., Whitchy, Ontario. Representing:**
- Andrew Corp., Chicago, Ill.
- Antiferre (Canada) Ltd., 169 Bartley Drive, Toronto 16, Ontario.**
- Arnet Industries Ltd., Guelph, Ontario.**
- Armstrong Ltd., A. T. R., 700 Weston Rd., Toronto 9, Ontario. Representing:**
- Akro-Mils Inc., P.O. Box 989, Akron, Ohio.
- American Geloso Electronics Inc., 312 Seventh Ave., New York 2, N.Y.
- Automatic & Precision Mfg. Co., 252 Hawthorne Ave., Yonkers, N.Y.
- Bristol Motor Division, Vocaline Co. of America Inc., Old Saybrook, Conn.
- L. L. Constantine & Co., Lodi, N.J.
- Durakool Inc., 1010 Main St., Elkhart, Ind.
- Fluorocarbon Products Inc., Division of United States Gasket Co., Camden, N.J.
- Good-All Electric Mfg. Co., Ogallala, Neb.
- Heldor Manufacturing Corp., 238 Lewis St., Paterson, N.J.
- Jensen Industries Inc., 7333 W. Harrison St., Forest Park, Ill.
- Hollingsworth Co., Phoenixville, Pa.
- Kulka Electric Mfg. Co. Inc., 636 S. Fulton Ave., Mount Vernon, N.Y.
- Merit Coil & Transformer Corp., 4427 North Clark St., Chicago 40, Ill.
- Potter & Brumfield Mfg. Co. Inc., 1200 East Broadway, Princeton, Ind.
- Quam-Nichols Company, Marquette Rd. at Prairie, Chicago 37, Ill.
- Regency Division, I.D.E.A. Inc., 7900 Pendleton Pike, Indianapolis, Ind.
- Reeves Soundcraft Corp., 10 East 52nd St., New York 22, N.Y.
- Sarkes Tarzian Inc., Rectifier Division, 415 N. College Ave., Bloomington, Ind.
- Standard Coil Products Co. Inc., Distributor Division, 2085 N. Hawthorne Ave., Melrose Park, Ill.
- Southco Division Lion Fastener, South Chester Corp., Lester, Pa.
- Tru-Ohm Products Division, Model Engineering & Mfg. Inc., 2800 N. Milwaukee Ave., Chicago 18, Ill.
- Arrow-Hart & Hegeman (Canada) Ltd., Industry St., Mount Dennis, Toronto 15, Ontario.**
- Arrow Radio Co., 1829 Davenport Rd., Toronto, Ontario.**
- ARVA, 229 Rogers Building, Vancouver 2, B.C. Representing:**
- Beta Electric Corp., 333 E. 103rd St., New York 29, N.Y.
- Elgin Metal Formers Corp., 630 Congdon Ave., Elgin, Ill.
- Giannini Dutex Division, 1307 S. Myrtle Ave., Monrovia, Calif.
- Lambda-Pacific Engineering Co., 14725 Arminia St., Van Nuys, Calif.
- F. L. Moseley Co., 409 N. Fair Oaks Ave., Pasadena 3, Calif.
- Sanborn Co., 175 Wyman St., Waltham 54, Mass.
- Sensitive Research Instrument Corp., 310 Main St., New Rochelle, N.Y.
- Sorensen & Co. Inc., Richards Ave., South Norwalk, Conn.
- Varian Associates of Canada, 45 River Drive, Georgetown, Ont.
- Vectron Inc., 400 Main St., Waltham 54, Mass.
- Victoreen Instrument Co., 5806 Hough Ave., Cleveland 3, Ohio.
- Barry Controls Inc., 700 Pleasant St., Watertown, Mass.
- Marco Industries Co., 207 South Helena St., Anaheim, Calif.
- Marion Electrical Instrument Co., Grenier Field, Manchester, N.H.
- Sigma Instruments Inc., 40 Pearl St., South Braintree, Mass.
- Associated Electronic Components, 37 Roselawn Ave., Toronto, Ontario. Representing:**
- A/S Tobias Jensen, Copenhagen, Denmark.
- Peerless Fabrikkerne A/S, Copenhagen, Denmark.
- Jorgen Schou, Copenhagen, Denmark.
- Torotor A/S, Copenhagen, Denmark.
- Alois Zettler, Munich, Germany.
- Danish Ventil Industri, Copenhagen, Denmark.
- I/S Jensen-Electric, Copenhagen, Denmark.
- Dr. Bernhard Beyschlag, Westerland Sylt, Germany.
- Samulevitz, Copenhagen, Denmark.
- A/S Danavox, Copenhagen, Denmark.
- Tage Schouboe, Copenhagen, Denmark.
- Astral Electric Co. Ltd., 44 Danforth Rd., Toronto 13, Ontario. Representing:**
- Belling and Lee, Enfield, England.
- British Ferrograph Recorder Ltd., London, England.

CANADIAN ELECTRONICS MANUFACTURERS AND SUPPLIERS

- Dubilier Condenser Co. Ltd., London, England.
- E. M. I. Ltd., Hayes, Middlesex, England.
- H. J. Leak Co. Ltd., London, England.
- Reproducers and Amplifiers Ltd., Wolverhampton, England.
- Jones Stroud and Co., Nottingham, England.
- Vitavox, London, England.
- Stratton and Co., Birmingham, England.
- A. R. Sugden Co., Brighouse, Yorkshire, England.
- Ungar Electric Tool Canada, Toronto, Ont.
- Hellermann Canada Ltd., Toronto, Ontario.
- Atlantic Films & Electronics Ltd.,**
22 Prescott St., St. John's, Newfoundland.
Representing:
Amphenol Canada Ltd., 300 Campbell Ave., Toronto 9, Ontario.
- Dominion Electrohome Industries Ltd., Kitchener, Ontario.
- Executone Communication Systems Ltd., 331 Bartlett Ave., Toronto, Ontario.
- Hammond Manufacturing Co. Ltd., Guelph, Ontario.
- Minnesota Mining & Mfg. of Canada Ltd., London, Ontario.
- Rauland-Borg Corp., 3515 West Addison St., Chicago 18, Ill.
- International Resistance Co. Ltd., 349 Carlaw Ave., Toronto, Ontario.
- Atlas Radio Corp. Ltd., 50 Wingold Ave., Toronto 10, Ontario.
- J. R. Longstaffe Ltd., 300 Campbell Ave., Toronto 9, Ontario.
- Charles W. Pointon Ltd., 6 Alcina Ave., Toronto 10, Ontario.
- A. C. Simmonds & Sons Ltd., 100 Merton St., Toronto, Ontario.
- Len Finkler & Co. (Triplet), 330 Adelaide St. W., Toronto, Ontario.
- Atlas Radio Corporation Ltd.,**
50 Wingold Ave., Toronto 10, Ontario.
Representing:
Amperite Co., 561 Broadway, New York 12, N.Y.
- Atlas Sound Corp., 1451 — 39th St., Brooklyn, N.Y.
- Audiogersh Corp., 514 Broadway, New York 12, N.Y.
- B. & K. Mfg. Co., 3731 N. Southport Ave., Chicago 13, Ill.
- George W. Borg Corp., 120 S. Main St., Janesville, Wis.
- Continental Connectors Corp., Northern Blvd. at 45th, Long Island City 1, N.Y.
- Continental Electric Co., 6 N. Michigan Ave., Chicago, Ill.
- Harry Davies Molding Co., 1428 N. Wells St., Chicago 10, Ill.
- DeJur-Amsco Corp., Northern Blvd. at 45th, Long Island City 1, N.Y.
- Drake Electric Works, 3654 — 56 Lincoln Ave., Chicago 13, Ill.
- Drake Mfg. Co., 1713 W. Hubbard St., Chicago 22, Ill.
- Edin Company Inc., 207 Main St., Worcester 8, Mass.
- Elco Corp., "M" St. below Erie Ave., Philadelphia 24, Pa.
- Electrical Industries Inc., 44 Summer St., Newark, N.J.
- Electroacoustic, GMBH, Kiel, Germany.
- Electronics Division, Elgin National Watch Co., 2435 N. Naomi St., Burbank, Calif.
- Electro Products Labs. Inc., 4501 N. Ravenswood Ave., Chicago 40, Ill.
- Federal Electronic Sales, Federal Electronics Bldg., Rockville Centre, N.Y.
- Flahan Co., 7615 Lanyard Drive, Cleveland 29, Ohio.
- The Gabriel Company, 1148 Euclid Ave., Cleveland 29, Ohio.
- Gertsch Products Inc., P.O. 25856, W. Los Angeles 25, Calif.
- Gregg Electric Co., 2 South Broadway, Lawrence, Mass.
- Hewlett-Packard Co., 275 Page Mill Rd., Palo Alto, Calif.
- I. E. Manufacturing, 325 N. Hoyne Ave., Chicago 12, Ill.
- Industrial Hardware Mfg. Co. Inc., 109 Prince St., New York 12, N.Y.
- Industrial Test Equipment Co., 55 E. 11th St., New York 3, N.Y.
- International Rectifier Corp., 1521 East Grand Ave., El Segundo, Calif.
- Javex, P.O. Box 646, Redlands, Calif.
- Jerrold Electronics Corp., 26th and Dickinson St., N.E. Corner, Philadelphia 46, Pa.
- Kintel, 5725 Kearney Rd., San Diego 11, California.
- Erik A. Lindgren & Associates, 4515 N. Ravenswood Ave., Chicago 40, Ill.
- Lowell Mfg. Co., 3030 Laclede Station Rd., St. Louis 17, Mo.
- MacDonald & Co., 1324 Ethel St., Glendale, Calif.
- J. W. Miller Company, 5917 S. Main St., Los Angeles 3, Calif.
- M. A. Miller Mfg. Co., 4th and Church Sts., Libertyville, Ill.
- Oak Mfg. Co., 1260 Clybourne Ave., Chicago 10, Ill.
- Orradio Industries Inc., T-120 Marvyn Rd., Opelika, Alabama.
- Oxford Electric Corp., 556 West Monroe St., Chicago 6, Ill.
- Robert M. Parks Co. Inc., 7421 Woodrow Wilson Drive, Hollywood 46, Calif.
- Partridge Transformers Ltd., Roebuck Rd., Tolworth, Surrey, England.
- The Pentron Corp., 777 South Tripp Ave., Chicago 24, Ill.
- Pilot Radio Corp., 37-06 — 36th St., Long Island City 1, N.Y.
- Precision Apparatus Co. Inc., 70-31 — 84th St., Glendale 27, L.I., N.Y.
- Pace Electrical Instrument Co., 70-31 — 84th St., Glendale, L.I., N.Y.
- Pyramid Instrument Corp., 630 Merrick Rd., Lynbrook, N.Y.
- Radio Industries Inc., 5225 N. Ravenswood Ave., Chicago 40, Ill.
- Radion Corp., 1130 W. Wisconsin Ave., Chicago 14, Ill.
- Raytron Labs. Inc., 1925 Queen City Ave., Cincinnati 14, Ohio.
- Rek-O-Kut Co. Inc., 38-01 Queens Blvd., Long Island City 1, N.Y.
- Robins Industries Corp., 214-26 — 41st Ave., Bayside 61, N.Y.
- Sierra Electronic Corp., 3885 Bohannon Dr., Menlo Park, Calif.
- Herman H. Smith, Inc., 2326 Nostrand Ave., Brooklyn 10, N.Y.
- Sonotone Corp., Electronic Applications Div., Elmsford, N.Y.
- Sound Craft Systems, 661 Rochester Rd., Pittsburgh 2, Pa.
- Staver Mfg. Co. Inc., P.O. Box 431, 41-51 N. Saxon Ave., Bay Shore, L.I., N.Y.
- Switchcraft, Inc., 1328-30 N. Halsted St., Chicago 22, Ill.
- Taylor Tubes Inc., 2312 Wabansia Ave., Chicago 47, Ill.
- Technical Devices Co., 2340 Centinela Ave., Los Angeles 64, Calif.
- Telex Laboratories Inc., Telex Park, St. Paul 1, Minn.
- Tel-Instrument Co., Inc., 728 Garden St., Carlstadt, N.J.
- Terado Co., 1068 Raymond Ave., St. Paul 14, Minn.
- Triple-A Specialty Co., 2101-11 Walnut St., Chicago 12, Ill.
- Vaco Products Co., 317 East Ontario St., Chicago 11, Ill.
- Walsco Electronics Mfg. Co., 3225 Exposition Place, Los Angeles 18, Calif.
- Ward Products Corp., 1148 Euclid Ave., Cleveland 15, Ohio.
- Wellcor Inc., 1214-18 No. Wells St., Chicago 10, Ill.
- Workshop Associates, Endicott St., Norwood, Mass.
- Audio Tool & Engineering Ltd.,** 32 River St., Toronto, Ontario. **Representing:**
Seabreeze Mfg. Co. Ltd., 32 River St., Toronto, Ontario.
- VM Corp., Benton Harbor, Mich.
- Ronette Acoustical Corp., Holland, N.Y.
- Audio Vox Intercom Inc.,** 4510 De Laroche St., Montreal, Que. **Representing:**
English Telephones Ltd., Wembley, London, England.
- Automatic Electric Sales (Canada) Ltd.,** 185 Bartley Drive, Toronto 16, Ontario.
Representing:
Automatic Electric (Canada) Ltd., Brockville, Ont.
- Automatic Electric Co., North Lake, Ill.
- Lenkurt Electric Co. of Canada Ltd., Vancouver, B.C.
- Electronic Secretary Industries Inc., Waukesha, Wis.
- Stromberg Time Corporation, Thomaston, Conn.
- Telaugraph Corporation, Los Angeles, California.
- Paragon Electric Company, Two Rivers, Wis.
- Lorain Products Corp., Lorain, Ohio.
- Cable Spinning Equipment Co., Topeka, Kansas.
- Avery Adhesive Label Corp. (Canada) Ltd.,** 48 Haas Rd., Rexdale, Ontario.
- Aviation Electric Ltd.,** 200 Laurentien Blvd., Montreal, Que. **Representing:**
Aviation Electric Ltd. is the Canadian affiliate of the Bendix Aviation Corp., Fisher Bldg., Detroit 2, Mich., and all its divisions. Aviation Electric Ltd. is the Canadian representative for:
Kenyon Instrument Co. Inc., Huntingdon Station, L.I., N.Y.
- Ideal-Aerosmith Inc., Hawthorne, Calif.
- Ronan & Kunz, Inc., Marshall, Mich.
- Vandusen Aircraft Supplies, Teterboro, N.J.
- Robinson Aviation Inc., Teterboro, N.J.
- Hamlyn Electronics Corp., New York 17, N.Y.
- Aermotor Ltd., 2500 Roosevelt Rd., Chicago, Ill.
- The Hymatic Engineering Co. Ltd., Redditch, England.
- Teddington Controls Ltd., South Wales, England.
- Lodge Plugs Ltd., Rugby, England.
- Champion Spark Plug Co., Windsor, Ont.
- Avionics Ltd.,** Box 200, Niagara-on-the-Lake, Ontario. **Representing:**
Besson & Robinson, London, England.
- Defiance Eng. & Microwave Corp., Boston, Mass.
- Electronic Research Associates, Nutley, N.J.
- Hudson Electronic Devices, London, England.
- Electro Mechanisms Ltd., Slough, England.
- Microwave Instruments Ltd., North Shields, England.
- Thermionic Products Ltd., Southampton, England.
- Watchstones Co. Ltd., Thoune, Switzerland.
- Avioelectric Co. Ltd.,** Buraby, Ontario. **Representing:**
Wright Relays Inc., Yonkers, N.Y.
- Bach-Simpson Ltd.,** 1255 Brydges St., London, Ontario. **Representing:**
Simpson Electric Co., 5200 W. Kinzie St., Chicago 44, Ill.
- Associated Research Inc., 3758 W. Belmont Ave., Chicago 18, Ill.
- Radiometer, 72 Emdrupvej, Copenhagen NV, Denmark.
- D. Shackman and Sons, 4 Golden Sq., London, W. 1, England.
- Bakelite Company,** 40 St. Clair Ave., East, Toronto 7, Ontario.
- Barber-Colman of Canada Ltd.,** (Wheelco Inst. Div.) 6 Leswyn Rd., North Park P.O., Toronto 10, Ontario. **Representing:**
Barber-Colman Co., Rockford, Ill.
- Barry Electric Ltd.,** 346 Bering Ave., Toronto 18, Ontario. **Representing:**
Cherry Electrical Products Corp., Highland Park, Ill.
- Bayly Engineering Ltd.,** First St., Ajax, Ont. **Representing:**
Allen B. Du Mont Laboratories, Inc., 760 Bloomfield Ave., Clifton, N.J.
- Beta Electric Corp., 333 East 103rd St., New York 29, N.Y.
- Boesch Manufacturing Co., Danbury, Conn.
- Boonton Radio Corp., Boonton, N.J.
- Brush Electronics Co., 3405 Perkins Ave., Cleveland 14, Ohio.
- Continental Carbon Inc., Cleveland, Ohio.
- De Mornay-Bonardi, 780 S. Arroyo Parkway, Pasadena, Calif.
- M. C. Jones Electronics Co. Inc., Bristol, Conn.
- Sorensen & Co., Inc., Richards Ave., South Norwalk, Conn.
- Beaconing Optical & Precision Materials Co. Ltd.,** Electronics Division, 455 Craig St. W., Montreal, Que. **Representing:**
Lambda-Pacific Engineering Inc., Van Nuys, Calif.
- BBT Ltee., Paris, France.
- Beatty Bros. Ltd.,** 599 Hill St. W., Fergus, Ontario.
- Beechey Enterprises,** 290 Lawrence Ave. W., Toronto 12, Ontario. **Representing:**
Conrad, Inc., 141 Jefferson St., Holland, Mich.
- Bulova Watch Co. Inc., Electronics Div., 40-06 62nd St., Woodside 77, N.Y.
- Chemalloy Electronics Corp., Gillespie Airport, Santee, Calif.
- Design Tool Corp., 80 Washington St., New York 6, N.Y.
- Dry Clime Lamp Corp., Greensburg, Ind.
- Hughey & Phillips, 3200 No. San Fernando Blvd., Burbank, Calif.
- Bell Telephone Company of Canada, The,** 118 Beaver Hall Hill, Montreal, Que.
- Benco Television Associates Ltd.,** 27 Tabor Rd., Toronto 15, Ontario.
- Bogue Electric of Canada Ltd.,** Ottawa, Ontario.
- Bohne Industries Ltd.,** 1153 Queen St. W., Toronto, Ontario.
- Boston Insulated Wire & Cable Co. Ltd.,** 118 Shaw St., Hamilton, Ontario.
- Brian Engineering Ltd.,** 5275 Van Horne Ave., Montreal, Que. **Representing:**
Leach Corporation, 5915 Avalon Blvd., Los Angeles 3, Calif.
- The Deutsch Company, 7000 Avalon Blvd., Los Angeles 3, Calif.
- Telecomputing Corp., 12838 Saticoy St., North Hollywood, Calif.
- Avien Inc., 58-15 Northern Blvd., Woodside, N.Y.
- United States Gauge, Sellersville, Pa.
- Bristol Co. of Canada Ltd.,** The 71-79 Duchess St., Toronto 2, Ontario.

CANADIAN ELECTRONICS MANUFACTURERS AND SUPPLIERS

- British Thomson-Houston Co. (Canada), The,** 766 King St. W., Toronto, Ontario.
Representing:
 The British Thomson-Houston Export Co. Ltd., Rugby, England.
- Burgess Battery Co.,** 415 Buttrey St., Niagara Falls, Ontario.
- Burlec Sales Ltd.,** 45 Northline Rd., Toronto 16, Ontario. **Representing:**
 Austinlite Ltd., Crawley, Sussex, England.
 Cramer Controls Corp., Centerbrook, Conn.
 Crowell Designs, Point Pleasant, N.J.
 Electric Specialty Co., Stamford, Conn.
 Ebert Electronics Corp., Queens Village, N.Y.
 Electrons Inc., Newark, N.J.
 Fuse Indicator Corp., Boston, Mass.
 Hammond Mfg. Co. Ltd., Guelph, Ont.
 Horstmann Gear Co. Ltd., Bath, England.
 Donald P. Mossman Inc., Brewster, N.Y.
 Simplex Co., Springfield, Ill.
 Superior Electric Co. Ltd., Bristol, Conn.
 Syntrol (Canada) Ltd., Stoney Creek, Ont.
 The Wama Co., Baltimore, Maryland.
- Burndy Canada Ltd.,** 1530 Birchmount Rd., Toronto, Ontario.
- Burodynamics Inc.,** Montreal, Que.
Representing:
 Verifield Ceramics, 1110 Byers St., Cleveland, Ohio.
 Worthington Circuit Designs, Coventry, England.
- Cables, Conduits & Fittings Ltd.,** 77 Richelleu St., St. Johns, Que.
- Caldwell A-V Equipment Co. Ltd.,** 447 Jarvis St., Toronto, Ontario.
Representing:
 Dage Co. (Thompson Products Ltd.), 804 Mount Pleasant Rd., Toronto, Ont.
 Stancell-Hoffman Corp., 921 N. Highland Ave., Hollywood 38, Calif.
- Campbell Manufacturing Co. Ltd.,** Willowdale, Ontario.
- Canada Decalcomania Co. Ltd.,** 507 King St. E., Toronto, Ontario.
- Canada Metal Co. Ltd.,** The, 721 Eastern Ave., Toronto 8, Ontario.
- Canada Wire and Cable Co. Ltd.,** Leaside, Ontario.
- Canadian Applied Research Ltd.,** 1500 O'Connor Drive, Toronto 16 Ontario.
- Canadian Asiatic Ltd.,** 2273 Danforth Ave., Toronto, Ontario. **Representing:**
 Astatic Corp., Conneaut, Ohio.
- Canadian Atlas Transformer Co. Ltd.,** 17 Carlaw Ave., Toronto, Ontario.
- Canadian Aviation Electronics Ltd.,** 6214 Cote de Liesse Rd., P.O. Box 915, Station "O", Montreal, Que. **Representing:**
 Curtiss-Wright Corp., 631 Central Ave., Carlstadt, N.J.
- Ultra Electric Ltd.,** Ultra Works, Western Ave., Acton, London, W. 3, England.
- Canadian Charts & Supplies Ltd.,** Oakville, Ontario.
- Canadian Chromalox Co. Ltd.,** The, 251 Queen St. East, Toronto, Ontario.
Representing:
 E. W. Playford Ltd., 5851 Upper Lachine Rd., Montreal 28, Que.
 F. D. Bolton Ltd., 826 East Hastings St., Vancouver 4, B.C.
 F. D. Bolton Ltd., 401 Avenue Bldg., Winnipeg, Man.
 F. D. Bolton Ltd., 11430 — 95th St., Edmonton, Alta.
 F. D. Bolton Ltd., 122 — 17th Ave. East, Calgary, Alta.
- Canadian Electric Resistors Ltd.,** 16 Curty Ave., Toronto 16, Ontario.
Representing:
 The British Electric Resistance Co. Ltd., Queensway, Enfield, Middlesex, England.
- Canadian Electrical Supply Co. Ltd.,** 275 Craig St. W., Montreal, Que.
- Canadian Fairbanks Morse Co. Ltd.,** The, 980 St. Antoine St., Montreal, Que.
- Canadian General Electric Co. Ltd.,** Industrial Products Dept., 214 King St. W., Toronto, Ontario.
- Canadian General Electric Co. Ltd.,** 189 Dufferin St., Toronto 3, Ontario.
Representing:
 General Electric Company, Schenectady, N.Y.
- Canadian General Electric Co. Ltd.,** Electronic Equipment and Tube Dept., 830 Landsdowne Ave., Toronto 4, Ont.
Representing:
 General Electric Co. of England, Coventry, England.
- Canadian Johns-Manville Co. Ltd.,** 565 Lakeshore Rd., East, Port Credit, Ont.
- Canadian Laboratory Supplies Ltd.,** 3701 Dundas St. W., Toronto 9, Ontario.
Representing:
 Blue-M Electric Co., Chicago, Ill.
 Precision Scientific Co., Chicago, Ill.
 Labline Inc., Chicago, Ill.
 International Equipment Co., Boston, Mass.
 Beckman Instruments Inc., Fullerton, Calif.
- Coleman Instruments Inc.,** Maywood, Ill.
Burrell Corp., Pittsburg, Pa.
Hevi-Duty Electric Co., Milwaukee, Wis.
Thermo-Electric Mfg. Co., Dubuque, Iowa.
Electrothermal Engineering Ltd., London, England.
- Canadian Line Materials Ltd.,** 3595 St. Clair Ave. E., Toronto 13, Ontario.
- Canadian Lister-Blackstone Ltd.,** 1921 Eglinton Ave. E., Toronto 13, Ont.
Representing:
 Blackstone & Co. Ltd., Dursley, Glos., England.
 R. A. Lister & Co. Ltd., Dursley, Glos., England.
 Lister Blackstone Marine Ltd., Dursley, Glos., England.
- Canadian Marconi Company,** 6035 Cote de Liesse Rd., Montreal 9, Que.
Representing:
 Marconi Instruments Ltd., St. Albans, Herts., England.
 Baird-Atomic Inc., Cambridge, Mass.
 Electronic Corp. of America, Cambridge, Mass.
 High Voltage Engineering Corp., Burlington, Mass.
 National Aeronautical Corp., Ft. Washington, Pa.
 Wilcox Electric Co., 14th & Chestnut St., Kansas City, Mo.
- Canadian Marconi Co.,** Electronic Tube & Components Division, 830 Bayview Ave., Toronto, Ontario. **Representing:**
 Clarostat Manufacturing Co., Washington Ave., Dover, N.H.
 Electric Soldering Iron Co., 1547 West Elm St., Deep River, Conn.
 Insuline Corp. of America, 186 Granite St., Manchester, N.H.
 Jackson Electrical Instrument Co., 18 South Patterson Blvd., Dayton 1, Ohio.
 The National Company, 61 Sherman St., Malden 48, Mass.
 The Turner Company, 903 — 17th St., Cedar Rapids, Iowa.
 Webcor Inc., 5610 W. Bloomingdale Ave., Chicago 39, Ill.
 Marconi Electronic Tube Plant — Montreal.
 English Electric Valve Co., Chelmsford, England.
- Canadian Research Institute,** 46 St. George St., Toronto 5, Ont. **Representing:**
 Buckleys (Uvral) Ltd., London, Eng.
 P. Gossen & Co., Erlangen, Germany
 Hathaway Instrument Co., Denver, Col.
 Isopad Ltd., London, Eng.
 Mico Instrument Co., Cambridge 38, Mass.
 Photovolt Corp., New York 16, N.Y.
 Precision Radiation Instruments, Los Angeles, Calif.
 Sensitive Research Instruments, New Rochelle, N.Y.
 El-Tronics Inc., Philadelphia 23, Pa.
 N.R.D. Instrument Co., St. Louis 14, Mo.
 Nuclear-Chicago, Chicago 10, Ill.
 Nucleonic Co. of America, Brooklyn 31, N.Y.
 Professional Radiation Mfg., Los Angeles, Calif.
 Tracerlab Inc., Boston 10, Mass.
 Triplett Electrical Instrument Co., Bluffton, Ohio.
 Jos. Weidenhoff Inc., Algona, Iowa.
- Canadian Stackpole Ltd.,** 550 Evans Ave., Toronto, Ont. **Representing:**
 Stackpole Carbon Co., St. Mary's, Pa.
- Canadian Westinghouse Co. Ltd.,** Apparatus Division, Hamilton, Ont.
- Canadian Westinghouse Co. Ltd.,** Electronics Division, P.O. Box 510, Hamilton, Ont. **Representing:**
 Link Radio Corp., 110 Jericho Turnpike, New Hyde Park, L.I., N.Y.
 Langevin Mfg. Corp., 47-37 Anstell Place L.I., N.Y.
 General Precision Laboratory Inc., 63 Bedford Rd., Pleasantville, N.Y.
- Canadian Westinghouse Co. Ltd.,** Electronic Tube Division, Aberdeen Ave., Hamilton, Ont.
- Canadian Westinghouse Co. Ltd.,** Lamp-Tube Division, P.O. Box 510, Hamilton, Ont.
- Cannon Electric Canada Ltd.,** 160 Bartley Drive, Toronto 16, Ont.
- Castle Television Services Ltd.,** 152 Main St., Toronto 13, Ont.
- Centralab Canada Ltd.,** 804 Mount Pleasant Rd., Toronto, Ont.
- Central Bridge Co. Ltd.,** 300 West St., Trenton, Ont. **Representing:**
 Canadian National Telegraphs, 151 Front St., Toronto 1, Ont.
 New Brunswick Telephone Co. Ltd., 22 Prince William St., Saint John, N.B.
 Eastern Telephone & Telegraph, 32 Avenue of the Americas, New York 13, N.Y.
- Bell Telephone Co. of Canada,** 1050 Beaver Hall Hill, Montreal, Que.
Canadian General Electric Co., 214 King St. W., Toronto, Ont.
Central Scientific Co. of Canada Ltd., 146 Kendal Ave., Toronto 4 Ont.
Champlain Metals Ltd., 740 St. Maurice St., Montreal, Que. **Representing:**
 Technicraft Laboratories Inc., Thomaston, Conn.
- Chisholm Industries Ltd.,** Electronic Ave., Port Moody, B.C.
- Clare (Canada) Ltd.,** C. P., 2700 Jane St., Toronto, Ont.
- Clark Ltd.,** Alex L., 3745 Bloor St. W., Toronto, Ont. **Representing:**
 Audio Devices Inc., New York, N.Y.
 Audio Instruments Inc., New York, N.Y.
 Berndt-Bach Inc., Hollywood, Calif.
 General Research Lab., New York, N.Y.
 Gray Research & Development Co., Hartford, Conn.
 Houston-Fearless Division, Los Angeles, Calif.
 Goldberg Bros., Denver, Colo.
 James B. Lansing Sound Inc., Los Angeles, Calif.
 Magnasyn Manufacturing Co., North Hollywood, Calif.
 Hole-Richardson Co., Hollywood, Calif.
 McCurdy Radio Industries Ltd., Toronto, Ont.
 Neumade Products Corp., New York, N.Y.
 Moviola Manufacturing Co., Hollywood, Calif.
 Viking of Minneapolis, Minneapolis, Minn.
 Weathers Industries Inc., Barrington, N.J.
- "Collben" Manufacturing Co. Ltd.,** 5 Thorpe St. North, Dundas, Ont.
- Collins Radio Co. of Canada Ltd.,** 11 Bermondsey Rd., Toronto 16, Ont.
- Columbian Carbon Co.,** Mapico Color Division, 33 Edward St., Toronto, Ont.
- Computing Devices of Canada Ltd.,** P.O. Box 508, Ottawa 4, Ont. **Representing:**
 Allison Laboratories Inc., Puente, Calif.
 Benson/Lehner Corp., Los Angeles, Calif.
 Bendix Aviation Corp.:
 Cincinnati Division, Cincinnati, Ohio.
 Research Division, Detroit, Mich.
 Computer Division, Los Angeles, Calif.
 Pacific Division, North Hollywood, Calif.
 Redbank Division, Eatontown, N.J.
 Radio Division, Baltimore, Md.
 Friez Division, Towson, Md.
 Stromberg-Carlson, San Diego, Calif.
 Solartron Electronic Group Ltd., Thames Ditton, Surrey, Eng.
 Teletronics Inc., Westbury, L.I., N.Y.
 Northeastern Engineering Inc., Manchester, N.H.
- Radiation Counter Laboratory Inc.,** Skokie, Ill.
 Wakefield Industries, Skokie, Ill.
 Traid Corp., Sherman Oaks, Calif.
 Epsco Inc., Boston, Mass.
 Ft. Research, Encino, Calif.
- Consolidated Electronic Equipment Co. Ltd.,** 94 Sheppard Ave. West, Willowdale, Ont. **Representing:**
 Curtiss-Wright Inc., Carlstadt, N.J.
 S. Smith & Sons (Canada) Ltd., P.O. Box 96, Station "H", Toronto 13, Ont.
 Filtrors Inc., Sagamore Hill Drive, Port Washington, N.Y.
- Constanta Co. of Canada Ltd.,** The, 280 Regina Ave., Montreal, Que.
- Continental-Diamond Fibre of Canada Ltd.,** 46 Hollinger Rd., Toronto 16, Ont.
Representing:
 Continental Diamond Fibre Corp., Newark, Delaware.
- Copper Wire Products Ltd.,** 300 Campbell Ave., Toronto, Ont.
- Cosa Corp. of Canada Ltd.,** 1160 Lakeshore Rd., Toronto 14, Ont.
Representing:
 Agie A. G., Via. S. Gottardo 4, Locarno, Switzerland
 Friedrich Deckel, Waakirchnerstrasse 7-13, Munich 25, Germany
 Micafil S. A., Zurich, Switzerland.
 G. Boley, Mettingerstrasse 11, (14a) Esslingen/Neckar, Germany
 Andre Bechler Ltd., Moutier, Switzerland
 Esco S. A., Les Geneveys s/Coffrane, Switzerland
 Fortuna A. G., Pragstrasse 138-146 Stuttgart-Bad Cannstatt, Germany
- Cossor (Canada) Ltd.,** 301 Windsor St., Halifax, N.S.
Representing:
 Spencer Kennedy Laboratories Inc., Boston, Mass.
 Whiteley Electrical Radio Co. Ltd., London, Eng.

CANADIAN ELECTRONICS MANUFACTURERS AND SUPPLIERS

- Best Products Ltd., Suffolk, Eng.
Blue M Electric Co., Blue Island, Ill.
Magnetic Amplifiers Inc., New York, N.Y.
W. H. Sanders Electronics Ltd., London, Eng.
Electronic Plastics Corp., North Wilmington, Mass.
General Radiological Ltd., London, Eng.
- Crane Packing Co. Ltd.,** 627 Parkdale Ave. North, Hamilton, Ont
- Cresswell Pomeroy Ltd.,** 35 Densley Ave., Weston, Toronto 15, Ont. Representing: Expanded Metal Co. Ltd., London, Eng.
- Croname Canada Ltd.,** Waterloo, Que.
- Crown Communications Ltd.,** Devon, Alta. Representing: Unther & Farben Electro Equipment, St. Paul, Minn.
Veey Antenna Fittings, Blakeston, Eng
- Daly-Arrow Ltd.,** 140 Kendal Ave., Toronto 4, Ont.
- Davis Automatic Controls Ltd.,** 4251 Dundas St. West, Toronto 18, Ont.
- Dawe Instruments Ltd.,** 1654 Bank St., Ottawa, Ont. Representing: Dawe Instruments Ltd., 99 Uxbridge Rd., London, W. 5, Eng.
Evans Electroelenium Ltd., Potter St., Harlow, Essex, Eng.
Cinema-Television Ltd., Worsley Bridge Rd., Lower Sydenham, London S.E. 26, Eng.
L. E. M. Co. Ltd., Beaver Lane, Hammersmith, London, Eng.
- Daystrom Limited,** 840 Caledonia Rd., Toronto 10, Ont. Representing: Weston Electrical Instrument Corp., Newark, N.J.
Heath Company, Benton Harbor, Mich.
Daystrom Electric Corp., Poughkeepsie, N.Y.
Daystrom Furniture Division, Olean, N.Y.
Daystrom Instrument Division, Archbalk, Pa.
Daystrom International Division, Newark 12, N.J.
Daystrom Nuclear Division, West Caldwell, N.J.
Daystrom Pacific Corp., Santa Monica, Calif.
Daystrom Systems Division, La Jolla, Calif.
Daystrom Transicoil Corp., Worcester, Pa.
- Decca Radar (Canada) Ltd.,** 23 Six Points Rd., Toronto 18, Ont. Representing: Decca Radar Ltd., 1-3 Brixton Rd., London, S.W. 9, England.
- Delhi Metal Products Ltd.,** Waverly St., Delhi, Ont. Representing: Kay Townes Antenna Co., Roma, Ga.
Telrex Labs., Asbury Park, N.J.
Spaulding Products, Frankfort, Ind
- Desser E-E Limited,** 441 St. Francois Xavier, Montreal, Que. Representing: Atlas E-E Corp., 47 Prospect St., Woburn, Mass.
Vokar Corp., 7300 Huron River Drive, Dexter, Mich.
General Transistor Corp., 91-27 138th Place, Jamaica 35, N.Y.
Dalmore Corp., 47 Prospect St., Woburn, Mass.
Utah Radio Products Corp., 1124 East Franklin St., Huntington, Ind.
United Electronic Mfg Corp., 542 Thirty-ninth St., Union City, N.J.
General Transistor Western Corp., 6110 Venice Blvd., Los Angeles, Calif.
- Dictaphone Corp. Ltd.,** 204 Eglinton Ave. E., Toronto 12, Ontario. Branch offices in principal cities across Canada.
- Dominion Aluminum Fabricating Ltd.,** 10 Jutland Rd., Toronto 14, Ontario.
- Dominion Electrohome Industries Ltd.,** 39 Edward St., Kitchener, Ontario.
- Dominion Fasteners Ltd.,** 686 Parkdale Ave. N., Hamilton, Ontario. Representing: Tinneman Products Inc., Cleveland, Ohio
- Dominion Sound Equipments Ltd.,** 4040 St. Catherine St. W., Montreal, Que. Representing: Northern Electric Co., Ltd. Montreal, Que.
Webster Electric Co., Racine, Wis.
Cousino Inc., Toledo, Ohio.
Racon Electric Co., New York, N.Y.
Altec Lansing Corp., New York, N.Y.
Machlett Laboratories, Springdale, Conn.
Klipsch & Associates, Hope, Arkansas.
- Dow Chemical of Canada, Ltd.,** Sarnia, Ontario.
- D & B Sound and Signals Inc.,** 39 Notre Dame St. East, Montreal 1, Que. Representing: The S. H. Couch Co. Inc. North Quincy 71, Mass.
- Trix Electrical Co. Ltd., 1-5 Maple Place, Tottenham Court Rd., London, W. 1, England.
Lustraphone Ltd., Regents Park Rd., London, N.W. 1, England.
- Doyen Electronics Ltd.,** Three Rivers, Que. Representing: Time Electro Devices Ltd., Cliffside, N.H.
Underlea and Manning Ltd., Worcester, England.
- Economy Fuse and Manufacturing Co. of Canada Ltd.,** 1030 St. Alexander St., Montreal 1, Que.
- Edwards High Vacuum (Canada) Ltd.,** P.O. Box 515, Burlington, Ontario.
- Elder Electronics,** 3220 Robert St., Burlington, Ontario. Representing: Marion Electrical Instrument Co., Grenier Field, Manchester, N.H.
The General Ultrasonics Co., 67 Mulberry St., Hartford 3, Conn.
Radio Frequency Co. Inc., Medfield, Mass.
Amco Engineering Co., 7333 W. Airshe St., Chicago 31, Ill.
Instron Engineering Corp., 440 Hancock St., Quincy 71, Mass.
- Electric Storage Battery Co. (Canada) Ltd.,** The Exide Industrial Division, P.O. Box 907, Postal Station "S", Toronto 18, Ontario.
- ElectroData Division, Burroughs Adding Machine of Canada Ltd.,** 1313 Wellington St., Ottawa, Ontario. Eastern Canadian Region for ElectroData Division, Burroughs Corp., 460 Sierra Madre Villa, Pasadena, Calif.
- Electrodesign,** 736 Notre Dame St. W., Montreal, Que. Representing: Oregon Electronics, 2105 S.E. 6th St., Portland, Oregon.
Rutherford Electronics, 3707 Robertson Blvd., Culver City, Calif.
Siemens & Halske, Munchen 2, Germany.
Southwestern Ind. Elect., Box 13058, Houston 19, Texas.
Transitron Inc., 186 Granite St., Manchester, N.H.
Electroflex Heat, 83 Woodbine St., Hartford, Conn.
Franklin Electronics, East 4th St., Bridgeport, Montgomey, Pa.
Instruments for Industry, 150 Glen Grove Rd., Mineola, N.Y.
Laboratory for Electronics, 75 Pitts St., Boston, Mass.
Metrawatt, 52 Schoppershopstrasse, Nurenburg, Germany.
American Rectifier Corp., 95 Lafayette St., New York, N.Y.
Chassies Trak Corp., 525 S. Webster St., Indianapolis, Ind.
Cubic Corp., 5575 Kearny Villa Rd., San Diego, Calif.
Dynopar Corp., 5150 Church St., Skokie, Ill.
Dukes & Briggs, 80 Ashley Rd., Hale, Cheshire, England.
- Electrolabs,** 7385 St. Lawrence Blvd., Montreal, Que. Representing: Onondaga Pottery Co., Electronics Division, Syracuse 1, N.Y.
Park Nameplate Co. Inc., Flushing, N.Y.
Aerolite Electronics Corp., Union City, N.J.
Kellogg Switchboard & Supply Co., Chicago, Ill.
Walker Rectifier Co. (Div. Norma Hoffman Bearing), Stamford, Conn.
American Condenser Co., Chicago, Ill.
Photovolt Corp., New York, N.Y.
James Cunningham, Son & Co., Inc., Rochester, N.Y.
- Electroline Television Equipment Inc.,** Room 114, 5757 Decelles Ave., Montreal, Que. Representing: Entron Inc., 4902 Lawrence St., Bladesburg, Md.
Applied Research Inc., 76 S. Bayles Ave., Port Washington, N.Y.
- Electromechanical Products,** Markham Rd., Agincourt, Ontario. Representing: Advanced Electronics Mfg. Corp., 2025 Pontius Ave., Los Angeles 25, Calif.
Atlantic Research Corp., Alexandria, Va.
Behlman Engineering, 114 S. Hollywood Way, Burbank, Calif.
Burr Brown Corp., Route 4, Box 139, Tucson, Arizona.
Bourns Laboratories Inc., 6135 Magnolia Ave., Riverside Calif.
Computer Measurements Corp., 5528 Vineland Ave., North Hollywood, California.
Century Electronics and Instruments, 1333 No. Utica, Tulsa, Okla.
Electro Instruments Inc., 3794 Rosecrans St., San Diego 10, Calif.
Electro Mechanical Research Inc., 64 Main St., P.O. Box N., Ridgefield, Conn.
Electronic Tube Corp., 1200 East Mermaid Lane, Philadelphia 18, Pa.
- General Communications, 681 Beacon St., Boston 15, Mass.
Kistler Instruments Co. Inc., 15 Webster St., Tonawanda, N.Y.
Nems Clarke Inc., 919 Jesup-Blair Drive, Silver Springs, Md.
Northeast Scientific Corp., 617 Concord Ave., Cambridge 38, Mass.
Photron Instrument Co., 6516 Detroit Ave., Cleveland 2, Ohio.
Arthur C. Ruge Inc., 733 Concord Ave., Cambridge, Mass.
Sage Electronics Corp., 302 N. Goodman St., Rochester 7, N.Y.
Schaevitz Engineering, P.O. Box 505, Camden, N.J.
- Electronic Associates Ltd.,** 4616 Yonge St., Willowdale, Ontario. Representing: Ultra Violet Products, San Gabriel, Calif.
EEOC Engineered Electronics Co., Santa Anna, Calif.
Curtiss-Wright Corp., Electronics Division, Carlstadt, N.J.
- Electronic Communications Ltd.,** 1514 College St., Montreal, Que.
- Electronic Controls Limited** 50 Wellington St. E., Toronto, Ontario.
- Electronic Engineering,** 82 Elmwood Ave., Galt, Ontario.
- Electronic Enterprises Ltd.,** 930 St. George St., Montreal, Que. Representing: Harman-Kardon Inc., 520 Main St., Westbury, L.I., N.Y.
Electro Acoustic Industries, Stamford Works, Broad Lane, Tottenham, London, N. 15, England.
Nesor Alloy Products 282 Halsey St., Newark, N.J.
- Electronic Enterprises Reg'd.,** 551 Oakwood Ave., Toronto 10, Ont. Representing: Universal Transistor Products Corp., 143 E. 49th St., New York 17, N.Y.
Universal Atomics Corp., 143 E. 49th St., New York 17, N.Y.
Dawe Instruments Ltd., 99 Uxbridge Rd., Ealing, London, W. 5, England.
Advance Components Ltd., Walthamstow, England.
Canadian Research Institute, 46 St. George St., Toronto 5, Ont.
Sylvania Electric Products (Electronic Test Equipment), Williamsport, Pa.
Taylor Electrical Instruments Ltd., Montrose Ave., Slough, Bucks., England
W. G. Pye & Co. Ltd., Newmarket Rd., Cambridge, England.
Wayne Kerr Ltd., New Malden, Surrey, England.
Fairchild Camera & Instrument Corp., Robbins Lane, Syasset, L.I., N.Y.
D. & R. Inc., Santa Barbara Calif.
Arkay Radio Kits, 120 Cedar St., New York 6, N.Y.
- Electronic Instruments (Canada) Ltd.,** 44 Wellington St. E., Toronto 1, Ontario.
- Electronic Specialties,** 9 Glen Rd., Toronto 5, Ontario.
- Electronic Tube Company,** 464 McGill St., Montreal, Que. Representing: Eitel-McCullough, Inc., San Bruno, Calif.
Continental Electric Co., Chicago 2, Ill.
Electron, Inc., 127 Sussex Ave., Newark 3, N.J.
Red Bank Division, Bendix Aviation Corp., Eatontown, N.J.
Victoreen Instrument Co., 5806 Hough Ave., Cleveland 3, Ohio.
Telefunken, Germany.
- Electronics Corporation of America (Canada) Ltd.,** Box 111, 104 Advance Rd., Toronto, Ontario. Representing: Combustion Control Division, Electronics Corp. of America, One Memorial Drive, Cambridge 42, Mass.
Photoswitch Division, Electronics Corp. of America, One Memorial Drive, Cambridge 42, Mass.
Fireye Division, Electronics Corp. of America, One Memorial Drive, Cambridge 42, Mass.
- Electro Sonic Supply Co.,** 543 Yonge St., Toronto, Ontario.
- Electrovert Ltd.,** 265 Craig St. West, Montreal, Que., and Box 23, Station "N", Toronto, Ontario.
- Electro-Vox Intercom Inc.,** 2222 Ontario St. E., Montreal, Que.
- Ellis Industries, The, J. W.,** 42 Lombard St., Toronto 1, Ontario. Representing: Danbridge S.A., 60C Frederikssundsvej, Copenhagen N.V., Denmark.
Hartmann & Braun A.G., 97 Graefstrasse, Frankfurt/Main, West Germany.
Dr. B. Lange, Hermannstrasse, 14-18, Berlin-Zehlendorf, West Germany.
Gebr. Ruhstrat, Goettingen, West Germany.
Dipl. Ing. Ulrich Knick, An Der Rehwiess, 26, Berlin-Nikolassee, West Germany.

CANADIAN ELECTRONICS MANUFACTURERS AND SUPPLIERS

- Hermann Wetzler Pfronten, Bayr. Allgaeu, West Germany.
- Drelo, Ing. P. Drexell, (22a) Gladbach, Rheindahlen, West Germany.
- Sodoco, Societe des Compleurs de Geneve, Grand Pre, 70, Geneva, 16, Switzerland.
- Jaquet S.A., 19 25 Thannerstrasse, Basle, Switzerland.
- EI-Met-Parts Ltd., Head St., Dundas, Ont.**
- Empire Engineering Co., 738 Dundas St. E., Toronto, Ontario. Representing:**
The Lewis Machine Co. 3441 E. 76th St., Cleveland, Ohio.
- F. W. Derbyshire, 157 High St., Waltham, Mass.
- Porst Bros. Mfg., Sturgis, Mich.
- Globe Heat Seal, 3380 Robertson Blvd., Los Angeles 34, Calif.
- Foredom Electric Co., 27 Park Place, New York, N.Y.
- "Wyco" — Wyzenbeek & Staff, Inc., 223-233 California Ave., Chicago 12, Ill.
- Dremel Mfg. Co., Racine, Wis.
- Dumore Co., Racine, Wis.
- Grobet File Co., New York 13, N.Y.
- Gorton Machine Co., Racine, Wis.
- Bacon Felt, 472 West Water St., Taunton, Mass.
- Field Abrasive Co. Inc., 1303 Stanley Ave., Dayton 4, Ohio.
- Metal Removal Co., 1801 W. Columbia Ave., Chicago, Ill.
- Dominion Rubber Co. Ltd., Postal Station "J", Toronto 6, Ont.
- Tom Senior, Atlas Works, Liversedge, Yorks., England.
- David Dowling Ltd., Roebuck Rd., Hainault, Ilford, Essex, England.
- A. A. Tools, 197a Whiteacre Rd., Ashton-U-Lyne, England.
- Taylor-Hobson, Stroughton St., Leicester, England.
- Engineering Sound Systems Ltd., 169 Kipling Ave., S., Toronto 18, Ontario. Representing:**
Tandberg Tone Recorders, Oslo, Norway.
Hasler Telephone Equipment, Switzerland (Ontario only).
- Etelco Ltd., 22 Lincoln's Inn Fields, London, W.C. 2, England (Ontario only).
- Eriasson Telephone Sales of Canada Ltd., 130 Bates Rd., Montreal 8, Que. Representing:**
Telefonaktiebolaget L.M. Ericsson, Stockholm 32, Sweden.
Svenska Elektronor, Lumavagan 6, Stockholm 20, Sweden.
North Electric Co., Galion, Ohio.
- Erie Resistor of Canada Ltd., Trenton, Ontario. Representing:**
Erie Resistor Corp., 644 W. 12th St., Erie Pa.
- Essex Electronics of Canada Ltd., 99 Wragge St., Trenton, Ontario.**
- Ellin Company Ltd., H. B., 1850 Wilson Ave., Toronto 15, Ontario.**
- Eutectic Welding Alloys Co. of Canada Ltd., 3150 37th St., Ville St. Michel, Que.**
- Evershed & Vignoles (Canada) Ltd., 2781 Dufferin St., Toronto 10, Ontario.**
- Executone Communication Systems Ltd., 331 Bartlett Ave., Toronto 4, Ontario.**
- Ezard Electronic Devices, Bondhead, Manitoba. Representing:**
Stutevant Magnetics, Chicago, Ill.
Tyndale Electrolab, Wonthrow, Bucks., England.
- Federal Wire & Cable Co. Ltd., Division of H. K. Porter Co. Ltd., P.O. Box 90, Guelph, Ontario.**
- Federated Metals Canada Ltd., 1110 Birchmount Rd., Scarborough, Ont.**
- Ferranti Electric Ltd., Industry St., Mount Dennis, Toronto 15, Ontario.**
- Len Finkler & Co., 330 Adelaide St. W., Toronto 2B, Ontario. Representing:**
Triplett Electrical Instrument Co., Bluffton, Ohio.
- Arco Electronics Ltd., 64 White St., New York 13, N.Y.
- Hunter Tool, P.O. Box 564, Whittier, Calif.
- Gernsback Publications Inc., 154 W. 14th St., New York 11, N.Y.
- Workman TV Inc., 309 Queen Anne Rd., Teaneck, N.J.
- Tenatronics Ltd., Davis Drive East, Newmarket, Ont.
- Wm. Cohen Ltd., 7000 Park Ave., Montreal, Que.
- Kitchener Electronics, 139 Dundas St., Kitchener, Ontario.
- Parker Electronics, 532 Christie St., Toronto, Ontario.
- Crown Controls, New Bremen, Ohio.
- Lab-Tronics Ltd., 3656 North Lincoln, Chicago 13, Ill.
- K. Miller Tool & Mfg., 8 Cass St., Springfield 4, Mass.
- Newcastle Fabrics Corp., 80 Wythe Ave., Brooklyn 11, N.Y.
- Illuminotron Engineering, 680 East Taylor, Sunnyvale Calif.
- Fischer & Porter (Canada) Ltd., 2700 Jane St., Toronto, Ontario. Representing:**
Instruments Inc., Tulsa, Okla.
Uniflow Valve Corporation, Cranford, N.J.
- Fleck Electrical Manufacturing Ltd., 80 Harvey St., Tillsonburg, Ontario.**
- Fleet Mfg. Ltd., Fort Erie, Ontario. Representing:**
D. S. Kennedy and Co., Cohasset, Mass.
- Fortier Inc., Herrmann, 2115 Workman, Montreal, Que.**
- Fraser Ltd., George M., 1554 Yonge St., Toronto 7, Ontario. Representing:**
The Autocall Company, Shelby, Ohio.
Castell Locks Ltd., 30 Woburn Place, London, W.C. 1, England.
W. C. Dillon & Co. Inc., P.O. Box 3008, Van Nuys, California.
Electro Switch Corporation, 167 King Ave., Weymouth 88, Mass.
The Esterline-Angus Co. Inc., P.O. Box 596, Indianapolis, Ind.
The Fisher-Pierce Co. Inc., 170 Pearl St., South Braintree, Mass.
Rapid Electroplating Co. Inc., 1414 South Wabash Ave., Chicago 5, Ill.
- R-F Electronics Inc., 167 King Ave., Weymouth 88, Mass.**
- Furness Intercom Systems, Winnipeg, Manitoba. Representing:**
Rite Special Wires Inc., Chicago, Ill.
Sandford Circuits Ltd., High Upton, England.
- Garlock Packing Co. of Canada Ltd., The, 750 Bay St., Toronto 2, Ontario.**
- Gasacumulator Co. (Canada) Ltd., 12 Gower St., Toronto 16, Ontario. Representing:**
AGA Division of Esna, 1027 Newark Ave., Elizabeth, N.J.
Buchanan Electrical Products Corp., Hillside N.J.
- General Communications Ltd., 980 O'Connor Drive Toronto 16, Ont. Representing:**
Analytical Measurements, Inc., 585 Main St., Chatham, N.J.
Branson Corp., Boonton, N.J.
B/W Controller Corp., 2200 East Maple Rd., Birmingham, Mich.
Capeway Instrument Corp., N. Bedford St., East Bridgewater, Mass.
Eastern Specialty Co., 3617 North 8th St., Philadelphia 40, Pa.
Excel Electric Service Co., 2119 South Western Ave., Chicago 8, Ill.
Claude S. Gordon Co., 3000 S. Wallace, Chicago 16, Ill.
Hallam, Sleight & Cheston Ltd., Bagot St., Birmingham 4, England.
Instrument Laboratories, 315 W. Walton Pl., Chicago 10, Ill.
Lumenite Electronic Co., 407 S. Dearborn St., Chicago 5, Ill.
Microtan Co., 84-16 Rockaway Beach Blvd., Rockaway Beach 93, N.Y.
Standard Instrument Corp., 657 Broadway, New York 12, N.Y.
Techniflex Mfg. Co., Inc., 55 Jersey Ave., Port Jervis, N.Y.
- General Instrument — F. W. Sickles of Canada Ltd., 151 Weber St. South, Waterloo, Ontario.**
- General Precision Industries Ltd., 455 Craig St. W., Montreal, Que.**
- General Radio Company, 99 Floral Parkway, Toronto 15, Ontario. Representing:**
General Radio Company, 275 Massachusetts Ave., Cambridge 39, Mass.
- General Theatre Supply Co. Ltd., 861 Bay St., Toronto 5, Ontario. Representing:**
National Theatre Supply, International Div., 90 Gold St., New York 38, N.Y.
L.O.F. Glass Fibers Co., 1810 Madison Ave., Toledo 1, Ohio.
DuKane Corp., St. Charles, Ill.
Adler Silhouette Co., 118 43 W. Olympic Blvd., Los Angeles 64, Calif.
- Strong Electric Corp., 87 City Park Ave., Toledo 2, Ohio.**
J. E. McAuley Manufacturing Corp., 554 West Adams St., Chicago 6, Ill.
Hertner Electric Co., 12690 Elmwood Ave., Cleveland 11, Ohio.
J. G. McAlister Inc., 1117 North McCadden Place, Hollywood 38, Calif.
Spatz Paint Industries, 5237 Manchester, St. Louis 10, Mo.
Andrew Smith Harkness Ltd., Station Rd., Boreham Wood, Herts., England.
Bausch & Lomb Optical Co., Theatre Lens Division, Rochester, N.Y.
Canadian General Electric Co., Toronto, Ont.
- National Carbon Co., 805 Davenport Rd., Toronto, Ont.
- Walker American Corp., St. Louis, Mo.
- R.C.A. Victor Co. Ltd., Toronto, Ont.
- Ampli-Vision Division of International Telemeter Corp., Los Angeles, Calif.
- General Tire & Rubber Co. of Canada Ltd., The, Stokes Division, Welland, Ontario.**
- General Wire & Cable Co. Ltd., 609 William St., Cobourg, Ontario.**
- Glendon Co. Ltd., The, 44 Wellington St. E., Toronto, Ontario. Representing:**
Cosmocord Limited, Enfield, Middlesex, England.
Neosid Limited, Welwyn Garden City, Herts., England.
Neosid (Canada) Ltd., 10 Vansco Rd., Toronto 14, Ontario.
Reliance Electrical Wire Co. Ltd., Leyton, London, E. 10, England.
United Insulator Co. Ltd., Surrey, England.
Bodnar Industries Inc., 238 Huguenot St., New Rochelle N.Y.
Mullard Overseas Ltd., London, W.C. 2, England.
Electro Acoustic Industries Ltd., London, N. 15, England.
Watliff Co. Ltd., South Wimbledon, London, S.W. 19, England.
Permonite Manufacturing Co., 444 Lake Shore Drive, Chicago 11, Ill.
Hamilton Hall Resistor Corp., 227 North Water St., Milwaukee 2, Wis.
Hardwick Hindle Inc., 40 Hermon St., Newark 5, N.J.
Industrial Products Co., P.O. Box 148, Danbury, Conn.
Danbury-Knudsen Inc., P.O. Box 170, Danbury, Conn.
The Fusite Corp., 6000 Fernview Ave., Cincinnati 13, Ohio.
Lundey Associates, 694 Main St., Waltham 54, Mass.
The Frenchtown Porcelain Co., Trenton 9, N.J.
D. M. Steward Manufacturing Co., Chattanooga, Tenn.
Berkshire Electric Cable Co., Leeds, Mass.
Phelps Dodge Copper Products Corp., Fort Wayne, Ind.
Arber Manufacturing Co. Inc., 115 Chestnut St., New Haven 11, Conn.
Taylor Spring & Mfg. Co. Inc., 7830 South Oakley Ave., Chicago 20, Ill.
- Globelite Batteries Ltd., 1021 Winnipeg Ave., Winnipeg, Manitoba.**
- Goodrich Canada Ltd., B. F., 251 King St. W., Dunker Building, Kitchener, Ontario.**
- Gould-National Batteries of Canada Ltd., 214 Merton St., Toronto, Ontario.**
- Gould Sales Co., E. S., Suite 108, 3500 Atwater Ave., Montreal 25, Que. Representing:**
Blonder-Tongue Labs. Inc., 526 North Ave., Westfield, N.J.
Creative Electronics Corp., 94 Lincoln Ave., Stamford, Conn.
Crown Controls Co. Inc., 40-44 South Washington Blvd., New Bremen, Ohio.
Dow-Key Co. Inc., Warren, Minnesota.
Fen-Tone Corp., 106-5th Avenue, New York, N.Y.
Hy-Gain Antenna Products, 249 North 48th St., Lincoln, Neb.
International Magnetic Electronics Co., P.O. Box 987, Minneapolis, Minn.
Lynmar Engineers Inc., 1432 North Carlisle St., Philadelphia, Pa.
McIntosh Laboratory Inc., 22 Front St. W., Toronto, Ont.
McCurdy Radio Industries, 22 Front St. W., Toronto, Ont.
James Vibrapower Co., 4050 N. Rockwell St., Chicago, Ill.
Kenode Mfg. Co., 161 W. 18th St., New York, N.Y.
Microtran Co. Ltd., 145 E. Mineola Ave., Valley Stream, L.I., N.Y.
Precise Development Corp., Oceanside, N.Y.
Richo Plastic Co., 4445 W. Fullerton Ave., Chicago 39, Ill.
Standard Telephones & Cables Co. Ltd., 9600 St. Lawrence Blvd., Montreal, Que.
Superox Electronics Corp., 4-6 Radford Pl., Yonkers, N.Y.
Telequipment Mfg. Co., P.O. Box 844, London, Ont.
Trans-Tel Corp., 910 N. Orange Drive, Los Angeles, Calif.
Workman TV Inc., 309 Queen Anne Rd., Teaneck, N.J.
W.R.L. Electronics Mfg. Corp., 3415 West Broadway, Council Bluffs, Iowa.
Ram Electronics Sales Co., Paramus, N.J.
Industro Transistor Corp., 649 Broadway, New York, N.Y.
Hiram Jones Electronics, 2313 W. Olive St., Burbank, Calif.
Slip Ring Co. of America, 3612 West Jefferson Blvd., Los Angeles 16, Calif.

CANADIAN ELECTRONICS MANUFACTURERS AND SUPPLIERS

- Gray Co. Ltd., H. Roy, 46 Danforth Road, Toronto 13, Ontario. Representing: Measurements Corp., Boonton, N.J. James Millen Mfg. Co., Malden, Mass. Canada Cabinets & Furniture, Kitchener, Ont. Fairchild Recording Co., New York, N.Y. Sherwood Electronics, Chicago, Ill. Conrac Inc., Glendora, Calif.
- Greening Wire Co. Ltd., The B., 55 Queen St. North, Hamilton, Ontario.**
- Gunther Technical Appliances, Saint John, N.B. Representing:** Quality Grommet and Connector Ltd., Newark, N.J. Ritelights Instrument Illuminators, Trentovale, England.
- Hackbush Electronics Ltd., 23 Primrose Ave., Toronto 4, Ontario. Representing:** Stromberg-Carlson Co., Rochester, N.Y. Sylvania Electric Products, Woburn, Mass. Technical Appliance Corp., Sherburne, N.Y. Caledonia Electronics & Transformer Corp., Caledonia, N.Y.
- Hale Bros. Ltd., 6222 Chambord St., Montreal, Que.**
- Hallcrafters Canada Ltd., The, Don Mills, Ontario.**
- Hammond Mfg. Co. Ltd., Guelph, Ontario.**
- Handy & Harman of Canada Ltd., 141 John St., Toronto 2B, Ontario.**
- Harris Co. of Toronto Ltd., E., 1 Leslie St., Toronto Ontario. Representing:** Warnow Process Paint Co., 1218 Long Beach Ave., Los Angeles, Calif. Kenn Equipment Co., 16-18 S. Marshall St., Philadelphia 6, Pa. General Research & Supply Co., 572 Division Ave., S., Grand Rapids 3, Michigan. Ulano Products Co., 610 Dean St., Brooklyn 38, N.Y.
- Hathaway Kraemer Ltd., 125 Whitney Place, Kitchener, Ontario.**
- Hawkesbury Wire Co. Ltd., 17 Laurier St., Hawkesbury, Ontario.**
- Heenan Limited, P.J., 804 Mount Pleasant Rd., Toronto, Ontario. Representing:** Centralab, Division of Globe Union, Milwaukee, Wis. Centralab Canada Ltd., Ajax, Ont. Methode Manufacturing Corp., Chicago, Ill. Methode Manufacturing Canada Ltd., Hanover, Ont. Sangamo Electric Co., Marion, Ill. Heppner Manufacturing Co., Round Lake, Ill. American Electric Cable Co., Holyoke, Mass.
- Hellermann Canada Ltd., 46 Danforth Road, Toronto 13, Ontario.**
- Herring & Co. Ltd., John, 3468 Dundas St. W., Toronto 9, Ontario. Representing:** AEMCO, Inc., Mankato, Minn. Barber-Colman Co., Rockford, Ill. Electrical Mechanical Instrument Co., 1010 Schaff Bldg., Philadelphia, Pa. H-B Instrument Co., American & Bristol St., Philadelphia, Pa. Landis & Gyr Inc., 45 — West 45th St., New York 36, N.Y. Mucon Corp., 9 St. Francis St., Newark, N.J. National Capacitor Co., 18 Webster St., Brookline 44, Mass. Geo. Rattray, Inc., 116-8 Myrtle Ave., Richmond Hill, N.Y. Ripley Co. Inc., Middletown, Conn. Shallcross Mfg. Co., Jackson & Pusey Aves., Collingdale, Pa. Statham Laboratories, 12401 W. Olympic Blvd., Los Angeles, Calif. Stevens-Arnold, Inc., 7 Elkins St., South Boast 27, Mass.
- Hildon Corporation Ltd., 321 King St., West, Toronto 2B, Ontario. Representing:** Moore & Wright (Sheffield) Ltd., 14-28 Norton Lane, Meadowhead, Sheffield 8, England. James Chesterman & Co. Ltd., Bow Works, Sheffield 11, England. A. Capp & Sons Ltd., Thames Rd., Crayford, Kent, England. Thomas Mercer Ltd., Eyewood Rd., St. Albans, England.
- Holman Luggage Ltd., 167 Suffolk St., Guelph, Ontario.**
- Honeywell Controls Ltd., Vanderhoof Ave., Toronto 17, Ontario.**
- Hooker (Canada) Ltd., Samuel C., 4126 Bathurst St., Downsview, Ontario. Representing:** Ace Electronic Associates Inc., 99 Dover St., Somerville 44, Mass. Aero Instrument Co., 11423 Vanowen St., North Hollywood, Calif. Barry Controls Inc., 700 Pleasant St., Watertown, Mass. Belltron Manufacturing Co. Inc., 400 Hoover Ave., Bloomfield, N.J.
- Cambridge Thermionic Corp., 445 Concord Ave., Cambridge, Mass. Cinema Engineering Corp., 1500 Chestnut St., Burbank, Calif. Electra Manufacturing Co., 4051 Broadway, Kansas City, Mo. Glass-Tite Industries Inc., 1391 Atwood Ave., Johnston 9, R.I. Gudeman Co., 340 West Huron St., Chicago, Ill.
- Hoffman Semiconductor Div., Hoffman Electronics Corp., 930 Pitner Ave., Evanston, Ill. Jeffers Electronic Division, Speer Carbon Co., Du Bois, Pa. Kings Electronics (Canada) Ltd., 2425 Grand Blvd., Montreal 28, Que. New England Transformer Co., Somerville, Mass. Roanwell Corp., 662 Pacific St., Brooklyn, N.Y. Carl W. Schutter Mfg. Co., 80 E. Montauk Highway, Lindenhurst, N.Y. Sigma Instruments Inc., 130 Pearl St., South Braintree, Mass. Speer Resistor Division Speer Carbon Co., Bradford, Pa. Scaico Controls Inc., Box 41, 450 Cooper St., Delanco, N.J.
- Hoover Company Ltd., The, Gage Ave. & Barton St., Hamilton, Ontario. Representing:** Eicor Inc., 4235 West North Ave., Chicago 39, Ill. Hoover Electronics, 3641 Woodland Ave., Baltimore 15, Md. Rotron Manufacturing Co., Schoonmaker Lane, Woodstock, N.Y.
- Hoskins Alloys of Canada Ltd., 45 Racine Rd., Rexdale P.O., Toronto, Ontario.**
- Howard & Company, M. J., 132 Crocus Ave., Ottawa, Ontario. Representing:** Aerovox Canada Ltd., 1551 Barton St. E., Hamilton, Ont. Canon Electric (Canada) Ltd., 160 Bartley Drive, Toronto, Ont. Staward Wire & Cable Ltd., 70 Wingold Ave., Toronto, Ont. Consolidated Electronic Equipment Co. Ltd., 94 Sheppard Ave. W., Toronto, Ont. Emerson & Cuming, Inc., 869 Washington St., Canton, Mass. Waters Manufacturing Inc. Boston Post Rd., Wayland, Mass. Burnell & Co. Inc., 10 Pelham Parkway, Pelham, N.Y. Induction Motors Corp., 570 Main St., Westbury, L.I., N.Y.
- Hudson Randall International, 46 Grange Mill Crescent, Don Mills, Ontario. Representing:** Diehl Manufacturing Co., Somerville, N.J. The Gamewell Co., Newton Upper Falls, Mass. Electrix Terminals Corp., Cleveland, Ohio. Julie Research Laboratories Inc., New York City, N.Y. Douglas Randall, Inc., Westerv. R.I. Metron Corp., Lambertville, N.J. Balco Research Laboratories, Newark, N.J. Trans-Coil Products, Scarborough, Ont. Trans-Gear Products, Scarborough, Ont. Telectronic Corp., Long Island City, L.I., N.Y.
- Humble Manufacturing Co. Ltd., 1695 West 2nd Ave., Vancouver 9, B.C.**
- Hysol (Canada) Limited, 184 Laird Drive, Toronto, Ontario.**
- Hysulite Custom Electronics, Bedford, N.S. Representing:** Pacific Electro-Navigation Inc., Lake Plain, N.Y. Quantum Meters Ltd., Nottingham, England.
- Ilco of Canada Ltd., 25 Carson St., Toronto, Ontario. Representing:** Ilco Corporation, Cincinnati, Ohio.
- Indiana Steel Products Co. of Canada Ltd., The, 135 Hayward Ave., Kitchener, Ontario. Representing:** The Indiana Steel Products Co., Valparaiso, Ind.
- Industrial Electronics of Canada Ltd., Rexdale Blvd., & Kipling Avenue, Toronto 15, Ontario.**
- Industrial & Institutional Communications Ltd., 29 McNaughton Ave., Wallaceburg, Ontario. Representing:** Talk-A-Phone Co., 1512 S. Pulaski Rd., Chicago 23, Ill. Lustraphone Ltd., St. George's Works, Regents Park Rd., London, N.W. 1, England.
- Instantaneous Recording Service, 42 Lombard St., Toronto 1, Ontario. Representing:** Presto Recording Corp., Paramus, N.J. Magnetratics, Inc., New York, N.Y.
- Granco Products, Inc., Long Island City, N.Y. Society of Visual Education, Chicago, Ill.
- Instronics Limited, 11 Spruce St., Ottawa, Ontario. Representing:** BJ Electronics, Borg-Warner Corp., P.O. Box 1679, Santa Ana, Calif. Donner Scientific Co., Concord, Calif. Empire Devices Products Corp., Amsterdam, N.Y. Gruen Industries Inc., Electronic Products Div., 9701 Reading Rd., Cincinnati 15, Ohio. Lavoie Laboratories, Inc., Morganville, N.J. Millivac Instrument Corp., P.O. Box 997, Schenectady, N.Y. Potter Instrument Co., Inc., Sunnyside Blvd., Plainview, N.Y. Radio Frequency Laboratories, Inc., Boonton, N.J. Racial Engineering Ltd., Western Rd., Bracknell, Berks., England. Schomandl K.G., 6-8 Belfortstrasse, Munich 8, Germany. Texas Instruments Inc., Industrial Instrumentation Division, P.O. Box 6027, Houston, Texas. Volkens and Schaffer Mfg. Corp., P.O. Box 997, Schenectady, N.Y.
- International Nickel Co. of Canada Ltd., The, 25 King St. W., Toronto, Ontario.**
- International Resistance Co. Ltd., 349 Carlaw Ave., Toronto, Ontario.**
- Iotherm Applications Ltd., 1404 St. Janisthria, Montreal, Que. Representing:** Ozarite Plastics and Shieldings, Brunswick, N.J. Pullinger and Babson Ltd., Fairclowe, Lancashire, England.
- Jerrold Electronics (Canada) Ltd., 50 Wingold Ave., Toronto 10, Ontario. Representing:** Jerrold Electronics Corp., 23rd and Chestnut St. S., Philadelphia, Pa. Times Wire & Cable Co. Inc., (Div. of International Silver Co.), 358 Hall Ave., Wallingford, Conn.
- Johnson Matthey & Mallory Ltd., 110 Industry St., Toronto 15, Ontario. Representing:** P. R. Mallory & Co. Inc., 3029 E. Washington St., Indianapolis, Ind. Johnson, Matthey & Co. Ltd., Hatton Gardens, London, E.C. 1, England.
- Johnson & Johnson Limited, Permacel Tape Division, 2155 Plus IX Blvd., Montreal 4, Que.**
- Justin Charles, Industrial Electronics, Ignace Rd., Vancouver, B.C. Representing:** Newark Electronic Fittings, Denmar, Calif.
- Kahnert Sales Ltd., R. C., 73 Crockford Blvd., Scarborough, Ontario. Representing:** American Television & Radio Co., 300 East Fourth St., St. Paul 1, Minn. Alproco Inc., P.O. Box 4974, 540 Weakley Ave., Memphis, Tenn. Barker & Williamson, Inc., Canal St. & Beaver Dam Rd., Bristol, Pa. Electro-Voice Inc., Buchanan, Mich. J. B. T. Instruments, 441 Chapel St., New Haven 8, Conn. C. M. Peterson Co. Ltd., 575 Dundas St. London, Ont. Richards Electrocraft, 4432 N. Kedzie, Chicago, Ill. Sangamo Electric Co., Marion, Ill. Shurite Meters Inc., 61 Hamilton St., New Haven 8, Conn. Soundolier Inc., Box 3848, St. Louis, Mo. Triad Transformer Corp., 4055 Redwood Ave., Venice, Calif. Resistor Wholesalers Corp., 71 Murray St., New York 7, N.Y.
- Kelk Limited, George, 130 Willowdale Ave., Willowdale, Ontario.**
- Kerr-Machin Associates, P.O. Box 34, Station "K", Toronto 12, Ontario.**
- Kester Solder Co. of Canada Ltd., 51 Bruce St., Brantford, Ontario.**
- Kidde & Co. of Canada Ltd., Walter, 5500 Royalmount Ave., Town of Mount Royal, Que.**
- Knowlton Co. Ltd., J. G., 311 Richmond Rd., Ottawa 3, Ontario.**
- Kywardine Electro-Industrial Specialties, Inner Lake St., London, Ontario. Representing:** Murchison Mobile Equipment, 82 Zariba St., Detroit, Mich. Nylon Test Instruments, Micklegate Court, London, England.
- Lake Engineering Co. Ltd., 767 Warden Ave., Scarborough, Ontario. Representing:** Aladdin Industries Inc., Nashville, Tenn. Custom Components Inc., Caldwell, N.J. Elna Ferrite Lab., Saugerties, N.Y. Grayhill Inc., La Grange, Ill. Grigsby Allison Inc., Arlington Heights, Ill. Glenco Corp., Metuchen, N.J.

CANADIAN ELECTRONICS MANUFACTURERS AND SUPPLIERS

- Gulton Industries Inc. Metuchen, N.J.
Greibach Instrument Inc.,
New Rochelle, N. Y.
Hawkesbury Wire Co. Ltd.,
Hawkesbury, Ontario.
Stanwyck Coil Products Ltd.,
Hawkesbury, Ont.
Kemtron Electron Products Inc.,
Newburyport, Mass.
Litton Industries Inc., Components Div.,
Los Angeles, Calif.
Standard Telephones & Cables Mfg. Co.
Canada Ltd., Montreal, Que.
Titania Electric Corp. of Canada Ltd.,
Gananoque, Ont.
Wirt Co., Philadelphia, Pa.
Continental Carbon Co. Inc.,
Cleveland, Ohio.
Stegg Electric Ltd., Belleville, Ont.
Rogers Electronic Tubes and Components,
11-19 Brentcliffe Rd., Leaside,
Toronto 17, Ont.
Dialco Corp., Brooklyn, N.Y.
Leecraft Mfg. Co. Inc., Brooklyn, N.Y.
Signal Indicator Corp., Brooklyn, N.Y.
Dialtron Corp., Brooklyn, N.Y.
Fuse-On Products, Arlington Heights, Ill.
Plas-kem Electronics Corp., Burbank, Calif.
Ahearn & Soper Ltd., 384 Bank St.,
Ottawa, Ont. (Ontario and Quebec).
Patterson Moos Research Division, Universal
Winding Co. Inc., 90-28 Van Wyck
Expressway, Jamaica 18, N.Y.
- Leeds & Northrup, Canada, Ltd.,**
61 Industry St., Toronto 15, Ontario.
Lenkurt Electric Co of Canada Ltd.,
6960 Loughheed Highway,
North Burnaby, B.C. Representing:
Automatic Electric Sales (Canada) Ltd.,
185 Bartley Drive, Toronto 16, Ont.
- Leonard Electric Limited, 346 Bering Ave.,**
Toronto 18, Ont. Representing:
Airpax Products Co., Middle River,
Baltimore, Md.
G-V Controls Inc., East Orange, N.J.
Globe Industries, Dayton Ohio.
Hetherington Inc., Folcroft, Pa.
Rototest Laboratories, Lynwood, Calif.
U.S. Dynamics Corp., Boston, Mass.
- Linde Air Products Co., Div. of Union**
Carbide Canada Ltd., 40 St. Clair Ave. E.,
Toronto 7, Ontario.
- Lindsay Antenna & Specialty Prods. Ltd.,**
11 Wellington St., Lindsay, Ont.
- Lomas, E. G., 227 Laurier Ave. West,**
Ottawa, Ont. Representing:
Allied Industries Inc., Ogallala, Neb.
Circon Component Co., Goleta, Calif.
Co-Operative Industries Inc., Chester, N.J.
Eastern Precision Resistor Corp.,
Brooklyn, N.Y.
Film Capacitors Inc., New York, N.Y.
Coil Winders Inc., Westbury, N.Y.
Nugent Electronics, New Albany, Ind.
Microwave Associates Inc.,
Burlington, Mass.
Lel Inc., Copiague, L.I., N.Y.
Power Sources Inc., Burlington, Mass.
- London Wood & Plastics Ltd., 19 King St.,**
London, Ont.
- Longstaffe Co. Ltd., J. R., 300 Campbell Ave.,**
Toronto 9, Ont. Representing:
Jensen Manufacturing Co., Chicago, Ill.
Pace Inc., Mansfield, Ohio.
Teleradio Engineering Corp.,
New York, N.Y.
Kurz-Kasch Inc., Dayton, Ohio.
Electro-Snap Switch & Mfg. Co.,
Chicago, Ill.
Gordos Inc., Bloomfield, N.J.
Precision Tube Co., North Wales, Pa.
- Longstaffe Co. Ltd., J. R., Relay Division,**
300 Campbell Avenue, Toronto 9, Ont.
- Longstaffe Co. Ltd. J.R., Speaker Division,**
300 Campbell Avenue, Toronto 9, Ont.
- Lynmore Acoustics, Byward Place,**
Ottawa, Ont. Representing:
Lombard Acoustics Ltd.,
Havens Bay, L.I., N.Y.
Munmore Laboratory Devices,
Bristol, Eng.
- Mack & Co. Ltd., R., 1706 W. 66th Ave.,**
Vancouver 14, B.C. Representing:
Siemens Edison Swan Ltd., London, Eng.
Jackson Brothers (London) Ltd.,
Surrey, England
Sanwa Electric Instrument Works Ltd.,
Tokyo, Japan
Primo Sound Research Inc., Tokyo, Japan.
- MacQuarrie, J. J., 46 St. George St.,**
Toronto 5, Ont. Representing:
Bradley Laboratories Inc.,
New Haven, Conn.
Hartley Products Co., New York, N.Y.
Harvey Wells Electronics Inc., Southbridge,
Mass.
Jan Hardware Manufacturing Co., Inc.,
Brooklyn, N.Y.
Keil Engineering Products, St. Louis, Mo.
- Kupfrian Manufacturing Co.,
Binghamton, N.Y.
Spaulding Products Co., Frankfort, Ind.
Sequoia Wire Co., Redwood City, Calif.
U.M. & F. Manufacturing Co.,
North Hollywood, Calif.
U.S. Components Inc., New York, N.Y.
Wendell Plastic Fabrics Corp.,
New York, N.Y.
Winegard Co., Burlington, Iowa
Woodcraft Service Co., Mimico, Ont.
- Magnecord Canada Ltd., 3745 Bloor St. W.,**
Toronto 18, Ont. Representing:
Magnecord Division of Mid-Western
Instruments, Chicago, Ill., and
Tulsa Okla.
- Mallory Battery Co. of Canada Ltd.,**
228 St. Helen's Ave., Toronto, Ont.
- Marsland Engineering Ltd.,**
154 Victoria St. South, Kitchener, Ont.
Representing:
G. H. Leland Inc., Chicago, Ill.
Sarkes Tarzian, Inc., Bloomington, Ind.
- Martin Engineering Inc.,**
1846 Dorchester St. W., Montreal 25, Que.
- McCardle H., P.O. Box 197, Grimsby, Ont.**
- McCart Radio & Television Ltd.,**
1625 West 3rd Ave., Vancouver 9, B.C.
- McCurdy Radio Industries Ltd.,**
22 Front St. W., Toronto, Ont. Representing:
Ampex American Corp., Redwood City,
Calif.
Electro-Voice Inc., Buchanan, Mich.
Gray Manufacturing Co., Hartford, Conn.
McIntosh Laboratory Inc.,
Binghamton, N.Y.
Kliegl Brothers, New York, N.Y.
- McPhar Manufacturing Ltd., 139 Bond Ave.,**
Don Mills, Ont.
- McVity & Co., J. R. G., 51 Dalewood Rd.,**
Toronto 12, Ont. Representing:
Rectifier-Capacitor Division, Fansteel
Metallurgical Corp., 2200 Sheridan Rd.,
North Chicago, Ill.
R.M.C. Division, P. R. Mallory & Co Inc.,
3325 N. California Ave., Chicago 18, Ill.
- Mechron Engineering Products Ltd.,**
2437 Kaladar Ave., Ottawa, Ont.
Representing:
Western Detail Manufacturers Ltd.,
Bristol, Eng.
Savage & Parsons Ltd., Watford, Herts.,
England
Fleming Radio (Developments) Ltd.,
Caxton Way, Stevenage, Herts., Eng.
Sifam Electrical Instruments,
Torquay, Devon, England
Wandleiside Cable Co., 106 Garratt Lane,
Wandsworth, London, S.W. 18, Eng.
Lintronics Ltd., 149 Strand, London, W.C. 2,
England
United Insulator Co.,
Chessington, Surrey, Eng.
Winstons Electronics Ltd.,
Shepperton, Middlesex, Eng.
Amos of Exeter, Exeter, Devon, Eng.
Amplivox (Exports) Ltd., 2 Bentinck St.,
London, W. 1, Eng.
Telcon-Magnetic Cores Ltd.,
Airdrie, Lanarkshire, Scotland.
Impulshysics Frungel, Hamburg, Germany
Rosenhage Laboratores,
Hamburg, Germany
Antex, Tower Hill,
London, E. C. 3, Eng.
Micro-Methods Ltd., East Ardley,
Yorkshire, Eng.
- M. E. L. Sales Ltd., Arnprior, Ont.**
Representing:
Acton Laboratories, Inc., 533 Main St.,
Acton, Mass.
Browning Laboratories Inc., 750 Main St.,
Winchester, Mass.
Calidyne Co., 120 Cross St.,
Winchester, Mass.
Communication Measurements Laboratory
Inc., 350 Leland Ave., Plainfield, N.J.
Electro-Measurements Inc., 7524 S.W.
Macadam Ave., Portland 1, Oregon.
El-Tronics Inc., Mayfield, Pa.
Frequency Standards Ltd., P.O. Box 504
Asbury Park, N.J.
Henry Francis Parks Laboratory,
P.O. Box 946, 920 Stambaugh St.,
Redwood City, Calif.
Instrument Development Laboratories, Inc.,
67 Mechanic St., Attleboro, Mass.
Kaer Engineering Corp., 2995 Middlefield
Rd., P.O. Box 1320, Palo Alto, Calif.
Kay Electric Co., 14 Maple Ave.,
Pinebrook, N.J.
Keithley Instruments, 12415 Euclid Ave.,
Cleveland 6, Ohio
Krohn-Hite Export Corp.,
580 Massachusetts Ave.,
Cambridge 39, Mass.
Larson Instrument Co.,
411 North Derbyshire,
Arlington Heights, Ill.
- The Narda Corp., 160 Herricks Rd.,
Mineola, N.Y.
Polarad Electronics Corp., 43-20 34th St.,
Long Island City, N.Y.
Post Machinery Co., Electronic Products
Div., 140 Elliott St., Beverly, Mass.
The Reflectone Corp., Post Rd.,
Stamford, Conn.
Sanders Associates Inc., Nashua, N.H.
Sensitive Research Inst. Corp., 310 Main St.,
New Rochelle, N.Y.
Servo Corp. of America,
20-20 Jericho Turnpike,
New Hyde Park, N.Y.
Trad Electronic Corp., 1001 First Ave.,
Asbury Park, N.J.
Technology Instrument Corp., 531 Main St.,
Acton, Mass.
Roger White Electron Devices, 4th Ave.,
Haskell, N.J.
Yellow Springs Instrument Co., Inc.,
P.O. Box 106, Yellow Springs, Ohio
Endevco Corp., 161 E. California St.,
Pasadena, Calif.
- Meredith & Co. Ltd., C. C., Thomas St.,**
Streetsville, Ont. Representing:
Chicago Telephone Supply Corp.,
Elkhart, Ind.
- Merritt Co., Ron, 229 Rogers Building,**
470 Granville St., Vancouver 2, B.C.
Representing:
American Gelsolo Electronics Inc.,
312-7th Ave., New York 1, N.Y.
Argos Products Co., 310 Main St.,
Genoa, Ill.
Celestial Tapes, 120 W. Thomas St.,
Seattle 99, Wash.
Reeves Soundcraft Corp., 10 E. 52nd St.,
New York 22, N.Y.
Sherwood Electronic Labs. Inc.,
2802 W. Cullom Ave., Chicago 18, Ill.
Electronic Instrument Co. Inc.,
3300 Northern Blvd.,
Long Island City, N.Y.
Electrosonic Laboratories, 35-54 36th St.,
Long Island City 6, N.Y.
Krauter & Co. Inc., 585-18th Ave.,
Newark 3, N.J.
Meritana Mfg. Co., 120 W. Thomas St.
Seattle 99, Wash.
Mosley Electronics Inc.,
8622 St. Charles Rock Rd.,
St. Louis 14, Mo.
National Wire & Cable Corp.,
136 San Fernando Rd.,
Los Angeles 31, Calif.
Plastoid Corp., 42-61 24th St.,
Long Island City 1, N.Y.
Seco Mfg. Co., 5015 Penn Ave. S.,
Minneapolis 19, Minn.
Standard Coil Products Co.,
2085 N. Hawthorne Ave.,
Melrose Park, Ill.
Thordarson-Meissner, 7th & Belmont,
Mt. Carmel, Ill.
U.S. Engineering Co., 521 Commercial St.,
Glendale 3, Calif.
Tru-Ohm, 2800 N. Milwaukee Ave.,
Chicago 18, Ill.
G & M Equipment Co., 7315 Varna Ave.,
North Hollywood, Calif.
- Methode Mfg. Canada Ltd., P.O. Box 566,**
Hanover, Ont.
- Micro-Tower Limited, 42 Crockford Blvd.,**
Scarborough, Ont. Representing:
Tower Construction Co., Sioux City, Iowa.
- Microwave Systems, 42 Crockford Blvd.,**
Scarborough, Ont. Representing:
Cascade Research Corp., Los Gatos, Calif.
Radio Frequency Laboratories,
Boonton, N.J.
- Minnesota Mining & Mfg. of Canada Ltd.,**
P.O. Box 757, London, Ont.
- Moloney Electric Co. of Canada Ltd.,**
213-219 Sterling Rd., Toronto, Ont.
Representing:
Moloney Electric Co., 5390 Bircher Blvd.,
St. Louis, Mo.
- Monarch Radio Mfg. Co., 3837 Arcade St.,**
Montreal, Que.
- Muirhead Instruments Ltd., 677 Erie St.,**
P.O. Box 4, Stratford, Ont. Representing:
Muirhead & Co. Ltd., Beckenham, Kent,
England.
- Musimart of Canada, 901 Bleury St.,**
Montreal, Que. Representing:
Birmingham Sound Reproducers,
Old Hill, Staffs., Eng.
Goldring Mfg. Co., Leytonstone,
London, Eng.
Lenco Corp., Bergdorf, Switzerland.
Permanoid Corp., Manchester, Eng.
Fred Goat Co., Brooklyn, N.Y.
Comar Relay Mfg., Chicago, Ill.
Dictograph Corp., New York, N.Y.
Illinois Condenser Corp., Chicago, Ill.
Rosenthal Mfg. Co., Bayern, Germany.

CANADIAN ELECTRONICS MANUFACTURERS AND SUPPLIERS

- Mylynex Radio Parts and Equipment,**
Port Arthur, Ont. Representing:
Kingam Electro Products Ltd.,
Chicago, Ill.
Lymington Accessories For Electronics,
Thorngate Near Baron, Eng.
- National Carbon Co., Division of Union**
Carbide Canada Ltd., 805 Davenport Rd.,
Toronto 4, Ont.
- National Fibre Co. of Canada Ltd.,**
Atlantic & Hanna Aves., Toronto 3, Ont.
- National Silicates Limited, Kipling & Horner**
Avenues, Etobicoke Township, P.O. Box 69,
Toronto 18, Ont.
- Neosid (Canada) Ltd., 10 Vansco Rd.,**
Toronto 14, Ontario
- Nichols Ltd., R. H., 2781 Dufferin St.,**
Toronto 10, Ont. Representing:
Avo Ltd., 92-96 Vauxhall Bridge Rd.,
London, S.W. 1, Eng.
Evershed & Vignoles Ltd.,
Acton Lane Works, London,
W. 4, Eng.
Westinghouse Brake & Signal Ltd.,
82 York Way, King's Cross, London,
N. 1, Eng.
Cambridge Instrument Company Ltd.,
13 Grosvenor Place, London, S.W. 1,
Eng.
Ernest Turner Electrical Instruments
Chiltern Works, Totteridge Ave.,
High Wycombe, Bucks., Eng.
Electric Regulator Corp., Pearl St.,
Norwalk, Conn.
- Noranda Copper and Brass Ltd.,**
P.O. Box 1238, Place D'Armes,
Montreal, Que.
- Northern Electric Co. Ltd.,**
1600 Notre Dame St. W., Montreal, Que.
Representing:
Altec Lansing, 1161 Vine St.,
Hollywood, Calif.
Western Electric, 195 Broadway,
New York N.Y.
The Gamewell Co.,
Newton Upper Falls, Mass.
Eagle Signal Corp., Moline, Ill.
Automatic Signal Co., Regent St.,
Norwalk, Conn.
- Northern Radio Manufacturing Co. Ltd.,**
1950 Bank St., Ottawa, Ont. Representing:
Northern Radio Inc., 143-145 West 22nd St.,
New York 11, N.Y.
- Nugent Intercom Ltd., New Westminster,**
B.C. Representing:
Jacobson and Mueller Marine,
San Diego, Calif.
Kunzborge Capacity and Flow Meters,
Nottingham, Eng.
- Osborne Electric Co. Ltd., 95 Wesley St.,**
Toronto 14, Ont.
- Ouse and Richter Ltee., Perkins Crescent,**
Quebec, P.Q. Representing:
Innesmay Relay Mfg. Co. Ltd.,
Longdorfe Quay, L.I., N.Y.
Jacksons Condensers, Wigginton Quay,
Bradford, Eng.
- Pacific Communications Services Ltd.,**
1181 Marine Drive, North Vancouver, B.C.
Representing:
Rogers Majestic Electronics Ltd.,
11 Brentcliffe Rd., Leaside, Ont.
Electronics Associates Ltd. 4616 Yonge St.,
Willowdale, Ont.
Thompson Products Ltd.,
804 Mt. Pleasant Rd., Toronto, Ont.
- Paisley Products of Canada Ltd.,**
36 Upton Rd., P.O. Box 159, Station "H",
Toronto 13, Ont. Representing:
General Ceramics Corp., Keasby, N.J.
Electro Technical Products, Nutley, N.J.
Resin Industries, Santa Barbara, Calif.
Columbia Tape Mills Inc.,
East Greenville, N.C.
Formica Co., Cincinnati, Ohio.
Murex Ltd. Rainham, Essex, Eng.
Papeteries Bolore, Paris, 8e. France.
East London Mica Works, London, Eng.
Accurate Paper Tubes, Chicago, Ill.
Thomas De La Rue, London, Eng.
Schenectady Varnish, Schenectady, N.Y.
- Peacock Brothers Ltd., 260 St. Patrick St.,**
Ville La Salle, Montreal 32, Que.
Representing:
Foxboro Co. Ltd., Ville La Salle,
Montreal, Que.
Baldwin Lima Hamilton Corp.,
Waltham Mass.
- Peiffer Sound Systems Ltd., 40 Maurice St.,**
Kitchener, Ont. Representing:
Autophone Limited, London, S.W. 8, Eng.
- Pfeiffer Electronic Laboratories,**
19 Fairview Crescent, (Box 316),
Trenton, Ont. Representing:
The Waterbury Pressed Metal Co.,
Waterbury, Conn.
American Electrical Heater Co.,
Chicago, Ill.
A. F. Bulgin & Co. Ltd., Eng.
- Philco Corporation of Canada,**
Don Mills Road, Toronto, Ont.
- Philips Industries Ltd., 116 Vanderhoof Ave.,**
Toronto, Ont. Representing:
N. V. Philips, Eindhoven, Holland
Philips Electrical Ltd., Shaftesbury Ave.,
London, Eng.
Mullard Overseas Ltd., Shaftesbury Ave.,
London, Eng.
Philips Electronics Inc.,
750 South Fulton Ave.,
Mount Vernon, N.Y.
C.H.F. Mueller, Hamburg Germany
A. W. Haydon Co., Waterbury, Conn.
- Phillips Electrical Co. Ltd., P.O. Box 100,**
Brockville, Ont.
- Physical Enterprises, London, Ont.**
- Pirelli Cables, Conduits Ltd.,**
77 Richelieu St., St. Johns, Que.
- Plessey Co. of Canada Ltd., The,**
243 Dunbar Avenue,
Town of Mount Royal, Que.
- Pointon Ltd., Charles W., 6 Alcina Ave.,**
Toronto 10, Ont. Representing:
Astron Corp., East Newark, N.J.
H. H. Buggie, Inc., Toledo, Ohio.
Carter Motor Co., Chicago, Ill.
Allen D. Cardwell Electronics Productions
Corp., Plainville, Conn.
Dale Products Inc., Columbus, Neb.
Duotone Co., Inc., Keyport, N.J.
Garrard Engineering & Mfg. Co. Ltd.,
Swindon, Eng.
General Industries Co., Elyria, Ohio.
General Cement Mfg. Co., Rockford, Ill.
Multicore Solders Ltd., Hemel Hempstead,
England
Pickering & Co. Inc., Oceanside, N.Y.
Radiart Corporation, Cleveland, Ohio.
Radio Receptor Co. Inc., Brooklyn, N.Y.
John F. Rider Publisher Inc.,
New York, N.Y.
RJ Audio Products, New York, N.Y.
Thordarson-Meissner, Mt. Carmel, Ill.
Trimn Inc., Libertyville, Ill.
Xcelite Inc., Orchard Park, N.Y.
- Polytronics Co., 582 Bathurst St.,**
Toronto 4, Ont. Representing:
Ess Instrument Co., Bergenfield, N.J.
- Poverlite Devices Ltd., 54 Atomic Ave.,**
Toronto 14, Ont. Representing:
Felten & Guillaume Carlswerk, Ltd.,
Cologne, Germany.
- Precision Electronic Components (1956) Ltd.,**
50 Wingold Ave., Toronto 10, Ont.
Representing:
Reon Resistor Corp., 117 Stanley Ave.,
Yonkers, N.Y.
- Prince & Roberts, 61 Charles St. West,**
Toronto, Ont. Representing:
Amalgamated Electric Corp. Ltd.,
384 Pape Ave., Toronto, Ont.
Auth Electric Company Inc.,
34-20 Forty-Fifth St.,
Long Island City, N.Y.
- Process-Instrument Systems Ltd.,**
1918 Avenue Road, Toronto, Ont.
- Pye Canada Ltd., 82 Northline Rd.,**
Toronto 16, Ont. Representing:
Budelman Radio Corp., Stamford, Conn.
Aeronautical Communications Equipment
Inc., Miami, Fla.
Conrac Inc., Glendora, Calif.
Wickes Engineering and Construction Co.,
Camden, N.J.
Neims-Clarke, Inc., Silver Springs,
Maryland
Stanton Instruments Ltd., Eng.
W. G. Pye Ltd., Cambridge, Eng.
Labgair, Cambridge, Eng.
Wayne Kerr Ltd., Eng.
Sonic Engineering Corp., Stamford, Conn.
W. Watson and Sons Ltd., Cambridge, Eng.
American Microwave Corp.,
North Hollywood, Calif.
Unicam Ltd., Cambridge, Eng.
Standard Electronics,
Long Island City, N.Y.
- Pylon Electronic Development Co. Ltd.,**
161 Clement St., Ville LaSalle,
Montreal 32, Que. Representing:
Gray Radio Co., 501 Forest Hill Blvd.,
West Palm Beach, Fla.
Tech Laboratories Inc.,
Edsall & Bergen Blvds.,
Palisades Park, N.J.
- Pylon Radionics Industrial, St. Juan Pablo,**
Montreal, Que. Representing:
Hughes and Bellamy Electronics,
Moresay Square, Brooklyn, N.Y.
Ingram Custom Communications Cabinets,
Burnhamthorpe-on-Wickstead,
Lancs., Eng.
- Quality Hermetics Ltd., 45 Hollinger Rd.,**
Toronto 16, Ont. Representing:
Hermetic Seal Corp., 29-37 South Sixth St.,
Newark 7, N.J.
- Quartermaine Industrial Electronics,**
Northway Blvd., Edmonton, Alta.
Representing:
Garret X-Ray Industrial,
Breadelbane Blvd., Geneva, Ill.
Hothersall Electro-Measurements,
High Bank Rd., Goole, Eng.
- Radelin-Kirk Ltd., 1168 Bay St.**
Toronto 5, Ont. Representing:
United States Radium Corp.,
Bloomsburg, Pa.
- Radio College of Canada, 86 Bathurst Street,**
Toronto 2B, Ont. Representing:
Northern Institute of Technology Ltd.,
Toronto, Ont.
- Radio Communications Equipment &**
Engineering Ltd., 850 Fifth Avenue,
Lachine, Montreal 32, Que.
Representing:
Hasler S. A. Berne, Switzerland
Airmec Ltd., High Wycombe, Bucks., Eng.
- Radio Components Ltd., 50 Wingold Ave.,**
Toronto 10, Ont. Representing:
Oak Mfg. Co. Ltd., 1260 Clybourn Ave.,
Chicago, Ill.
Ward Products Corp., 1148 Euclid Ave.,
Cleveland, Ohio
Radio Industries, 5225 N. Ravenswood Ave.,
Chicago, Ill.
Automatic Coil Mfg. Co., 50 Wingold Ave.,
Toronto, Ont.
- Radio Condenser Co. Ltd.,**
6 Bermondsey Rd., Toronto 12, Ont.
Representing:
Price Electric Corp. Inc., Church St.,
Frederick, Md.
- Radio Engineering Products,**
1080 University St.,
Montreal 3, Que.
- Radionics Limited, 8230 Mayrand St.,**
Montreal 9, Que. Representing:
Airborne Instruments Laboratory, Inc.,
1345 New York Ave.,
Huntington Station, N.Y.
Edin Co. Inc., 207 Main St.,
Worcester 8, Mass.
Eldorado Electronics Co.,
1401 Middle Harbor Rd.,
Oakland 20, Calif.
Huggins Laboratories Inc.,
711 Hamilton Ave., Menlo Park, Calif.
NJE Corporation, 345 Carnegie Ave.,
Kenilworth, N.J.
National Radiac, Inc., 475 Washington St.,
Newark, N.J.
New England Nuclear Corp.,
575 Albany St., Boston 18, Mass.
Northam Electronics, Inc.,
2420 North Lake Ave., Altadena, Calif.
Radiation, Inc., P.O. Box 37,
Melbourne, Fla.
Veeco Vacuum Corp., 86 Denton Ave.,
New Hyde Park, L.I., N.Y.
Victoreen Instrument Co., 5806 Hough Ave.,
Cleveland 3, Ohio
WacLine, Inc., 35 South St. Clair,
Dayton 2, Ohio
Westronics, Inc., 3605 McCart,
Fort Worth 10, Texas
Fenske, Fedrick & Miller Inc.,
12820 Panama St., Los Angeles, Calif.
- Rawplug Products (Canada) Ltd.,**
7320 Upper Lachine Rd.,
Montreal 28, Que. Representing:
The Rawplug Co. Ltd., Cromwell Rd.,
London, S.W. 7, Eng.
- Ray-O-Vac (Canada) Ltd.,**
Berry and Sargent, St. James, Man.
- Raytheon Canada Ltd., 61 Laurel St. East,**
Waterloo, Ont. Representing:
Raytheon Manufacturing Co.,
Waltham, Mass.
- RCA Victor Co. Ltd.,**
1001 Lenoir St., Montreal, Que.
- Redifon Canada, A Division of Rediffusion**
Inc., 6301 Park Avenue, Montreal 8, Que.
- Reichhold Chemicals (Canada) Ltd.,**
1919 Wilson Ave., Toronto 15, Ont.
Representing:
Reichhold Chemicals (Canada) Ltd.,
Ste. Therese de Blainville, Que.
Reichhold Chemicals (Canada) Ltd.,
Port Moody, B.C.
- Renfrew Electric Ltd., Renfrew, Ont.**
Research Industries Ltd., 1777 W. 3rd Avenue,
Vancouver 9, B.C.
- Robbins & Myers Co. of Canada Ltd., The,**
58-66 Morrell St., Brantford, Ont.
Robinson Co., C. M., 1550 Erin St.,
Winnipeg 3, Man. Representing:
Biley Electric Co. Ltd.,
Union Station Bldg., Erie, Pa.
JBT Instruments, 441 Chapel St.,
New Haven, Conn.
Merit Coil & Transformer Corp.,
4427 North Clark St., Chicago, Ill.
Ohmite Mfg. Company, 3601 Howard St.,
Skokie, Ill.

CANADIAN ELECTRONICS MANUFACTURERS AND SUPPLIERS

- Shure Brothers Inc., 222 Hartrey Ave., Evanston, Ill.
 Shurite Meters, 61 Hamilton St., New Haven, Conn.
 Sprague International Ltd., P.O. Box 73, North Adams, Mass.
 Triplett Electrical Instrument Co., Bluffton, Ohio
 Kester Solder Co. of Canada Ltd., 51 Bruce St., Brantford, Ont.
 Smith & Stone Ltd., 50 St. Clair Ave. W., Toronto, Ont.
- Rogers Electronic Tubes and Components, 11-19 Brentcliffe Rd., Leaside, Toronto 17, Ont. Representing:**
 Mullard Ltd., London, Eng.
 Amperex Electronic Corp., Hicksville, L.I., N.Y.
 N. V. Philips Gloeilampfabrieken, Eindhoven, Holland
- Rogers Majestic Electronics Ltd., 11-19 Brentcliffe Rd., Leaside, Toronto 17, Ont.**
- R-O-R Associates Ltd., 1470 Don Mills Rd., Don Mills, Ont. Representing:**
 Data and Control Systems Div., Beckman Instruments, 325 N. Muller Ave., Anaheim, Calif.
 Berkeley Division, Beckman Instruments, Inc., 2200 Wright Ave., Richmond, Calif.
 Ballantine Laboratories, Inc., Boonton, N.J.
 Bruel & Kjaer, Naerum, Denmark
 Physik. Instrumente Huggenberger, Ackersteinstrasse, 119, Zurich, Switzerland.
 George Kelk Ltd., 130 Willowdale Ave., Willowdale, Ont.
 F. L. Moseley Co., 409 N. Fair Oaks Ave., Pasadena, Calif.
 Sanborn Company, 175 Wyman St., Waltham 54, Mass.
 Vectron, Inc., 1605 Trapelo Rd., Waltham, Mass.
 Bomac Laboratories, Inc., Beverly, Mass.
 Helipot Corporation, 3 Six Points Rd., Toronto, Ont., and Newport Beach, Calif.
 International Electronic Research Co., 177 W. Magnolia, Burbank, Calif.
 Meppo, Inc., 35 Abbott Ave., Morristown, N.J.
 Microdot Inc., 220 Pasadena Ave., South Pasadena, Calif.
- Rotor Electric Co. Ltd., 195 Rexdale Blvd., Toronto, Ont.**
- Rotronic Corp. Ltd., 380 Adelaide St. West, Toronto, Ont.**
- Rousseau Controls Ltd., 640 DeCourcelle St., Montreal 30, Que. Representing:**
 Barber-Colman Co., Rockford, Ill.
 Fenwal Inc., Ashland, Mass.
 Rubbercraft Corp. of California, Torrance, Calif.
- Rutherford Electromechanical Consultants, Bedford Chambers, Vancouver, B.C. Representing:**
 Farringer Telephone Equipment, San Roaxis, Calif.
 Gyson and Sons, Wire Protectives, Coventry, Eng.
- S & T Sales Ltd., 120 E. Cordova St., Vancouver, B.C. Representing:**
 Spilsbury & Tindall Ltd., 120 East Cordova St., Vancouver, B.C.
 Communications Co. Inc., Coral Gables, Fla.
 Webster Aerial Manufacturing Co., Mill Valley, Calif.
 Raytheon Manufacturing Co., Waltham, Mass.
 General Mercantile Co., Tokyo, Japan.
- St. Johns Metal Stamping Co. Ltd., 205 Blvd. Seminaire, St. Johns, Que.**
- St. Regis Paper (Canada) Ltd., Panelyte Division, Montcalm Blvd., St. Johns, Que.**
- Servomechanisms (Canada) Ltd., Rexdale Blvd. & Kipling Ave., Toronto 15, Ont. Representing:**
 Servomechanisms Inc., Westbury, N.Y., and Hawthorne, Calif.
- Shakeproof/Fastex, Division of Canada Illinois Tools Ltd., 67 Scarsdale Rd., Don Mills, Ont.**
- Sharpe Instruments Ltd., 6080 Yonge St., Willowdale, Ont. Representing:**
 Ultra Violet Product Inc., San Gabriel, Calif.
 Technical Associates, 140 West Providence Ave., Burbank, Calif.
 Georator Corp., Manassas, Va.
- Silvercel of Canada Ltd., 10 Wickman Rd., Etobicoke, Toronto, Ont. Representing:**
 Yardney Electric Corp., 40-48 Leonard St., New York 13, N.Y.
 Venner Accumulators Ltd., Kingston By-Pass, New Malden, Surrey, Eng.
 New London Instrument Co., New London, Conn.
- Simmonds & Sons Ltd., A. C., 100 Merton St., Toronto, Ont. Representing:**
 Collaro Limited, Barking, Essex, Eng.
 Curtis Development & Mfg. Co., Milwaukee, Wis.
 Goodmans Industries Ltd., Wembley, Eng.
 Guardian Electric Mfg. Co., Chicago, Ill.
 Holub Industries Inc., Sycamore, Ill.
 Industrial Timer Corp., Newark, N.J.
 E. F. Johnson Co., Waseca, Minn.
 P. R. Mallory and Co. Inc., Indianapolis, Ind.
 Ohmite Manufacturing Co., Skokie, Ill.
 Howard W. Sams & Co. Inc., Indianapolis, Ind.
 Shure Brothers Inc., Chicago, Ill.
 Sterling Mfg. Co., Cleveland, Ohio
 Weller Manufacturing Co., Easton, Pa.
- Sinclair Radio Laboratories Ltd., 70 Sheffield St., Toronto 15, Ont.**
- Smallwood Ltd., S. G., 391-397 King St. E., Kitchener, Ont. Representing:**
 Radio Television Products Corp., Grass Lake, Mich.
- Smyth Electronic Components, J. B., 380 Craig St. W., Montreal 1, Que. Representing:**
 Acoustical Manufacturing Co. Ltd., Huntingdon, Eng.
 Advance Components Ltd., London, Eng.
 S. G. Brown Ltd., Watford, Eng.
 D. & R. Limited, Santa Barbara, Calif.
 Electro Sonic Laboratories Inc., Long Island City, N.Y.
 Gylling & Co., Stockholm, Sweden.
 International Scientific Instruments Corp., Colorado Springs, Col.
 Kobayashi Electrical Works, Tokyo, Japan
 Lumalamp A/B, Stockholm, Sweden
 Luxor A/B, Motola, Sweden
 Phalo Plastics Corp., Worcester, Mass.
 Resosound Ltd., Romford, England
 Stability Radio Components Ltd., London, Eng.
 Suflex Ltd., London, England
 Tokyo TeleTech, Tokyo, Japan
 Wharfedale Wireless Works Ltd., Bradford, England
 Zeva Electrizarits, Arolsen, Germany
- Snelgrove Co. Ltd., C. R., 141 Bond Ave., Don Mills, Ont.**
- Sola Electric (Canada) Ltd., 102 Laird Drive, Toronto 17, Ont. Representing:**
 Sola Electric Co., 4633 W. 16th St., Chicago 50, Ill.
- Sonneborn Ltd., 133 Laird Drive, Toronto 17, Ont.**
- Sonograph Engineering and Mfg. Co. Ltd., 122 Laird Drive, Toronto, Ont. Representing:**
 Clary Corporation, San Gabriel, Calif.
 Spaulding Fibre Co. Ltd., 106 Lakeshore Rd. E., Port Credit, Ont.
- Speight Laboratories, N. H., 130 Simcoe St., Toronto, Ont. Representing:**
 Resistor Wholesalers Corp., 71 Murray St., New York 7, N.Y.
 Welco Mfg. Co., Burlington, Iowa
- Sperry Gyroscope, Ottawa Ltd., 3 Hamilton Ave., Ottawa, Ont. Representing:**
 Telephones Corp., Huntington, L.I., N.Y.
 Wheeler Insulated Wire Corp., Waterbury, Conn.
 M. H. Rhodes Inc., Hartford, Conn.
- Standard Coil Products (Canada) Ltd., 37 Drummond St., Mimico, Ont.**
- Standard Telephones & Cables Mfg. Co. (Canada) Ltd., 9600 St. Lawrence Blvd., Montreal, Que.**
- Standard Television Products Ltd., 108 Sydney St. South, Kitchener, Ont.**
- Stanwyck Coil Products Ltd., 17 Laurier St., Hawkesbury, Ont. Representing:**
 Stanwyck Winding Co. Inc., Newburgh, N.Y.
- Star Expansion Products Co., 1061 The Queensway, Toronto 14, Ont.**
- Stark Electronic Sales Co., P.O. Box 670, Ajax, Ont. Representing:**
 Educational Electronics Co., 6322 N. Clark St., Chicago 26, Ill.
 Hickok Electrical Instrument Co., 10514 Dupont Ave., Cleveland 8, Ohio
 North Hills Electric Co. Inc., 402 Sagamore Ave., Mineola, L.I., N.Y.
 Peschel Electronics Inc., 13 Garden St., New Rochelle, N.Y.
 Shielding Inc., Riverton, N.J.
 Sunshine Scientific Instruments, 1810 Grant Ave., Philadelphia 15, Pa.
 Science Electronics Inc., 195 Massachusetts Ave., Cambridge 42, Mass.
 Tenna Manufacturing Co., 7580 Garfield Blvd., Cleveland 25, Ohio
 Thonens Co., New Hyde Park, L.I., N.Y.
- Stegg Electric Ltd., P.O. Box 211, Belleville, Ont.**
- Syntron (Canada) Ltd., Box 910, Dept. "K", Stoney Creek, Ont. Representing:**
 Syntron Company, Homer City, Pa.
 Szyzome Telecommunications Equipment, Star Building, Moncton, N.B. Representing:
 Ewart Electro Tubing and Wire, Brofeldt Rd., Bedford Bay, Mass.
 Fleming Communications Components, Greater Baggot St., Liverpool, Eng.
 Taylor Electric Co. Ltd., 625 Princess Ave., London, Ont.
- Tecneek Associates, P.O. Box 966, Station "B", Montreal, Que. Representing:**
 Pic Design Corp., 477 Atlantic Ave., East Rockaway, L.I., N.Y.
 Industrial Control Co., 805 Albin Ave., Lindenhurst, L.I., N.Y.
 Trio Laboratories Inc., 4025 Merrick Rd., Seaford, N.Y.
 Hanovia Lamps, Bath Rd., Chippenham, Slough, Bucks., Eng.
 Metrawatt AG., Nuremberg, Germany
 R & J Beck Ltd., 69/71 Mortimer St., London, W. 1, England
 Photovolt Corp., 95 Madison Ave., New York 16, N.Y.
 Gorrell & Gorrell, Haworth, N.J.
 E. H. Sargent & Co., 4647 W. Foster Ave., Chicago, Ill.
 Whitey Tool & Die Co., 1150-55 St., Oakland, Calif.
 Megatron Ltd., 115A Fonhill Rd., London, N. 4, Eng.
 Bellingham & Stanley, 71 Hornsey Rise, London, N. 19, Eng.
 Nash & Thompson Ltd., Oakcroft Rd., Chessington, Surrey, Eng.
- Telecables and Wires Ltd., Fort Garry, Man. Telecom Limited, 163½ Church St., Toronto 2, Ont. Representing:**
 Autophone Ltd., 73 Gt. Peter St., London, S.W. 1, Eng.
 Dominion Sound Equipments Ltd., 45 Wingold Ave., Toronto 10, Ont.
 Transelectric Mfg. Co., Oxford, Pa.
- Telegraph Condenser Co. (Canada) Ltd., The, 50 Beral Rd., Toronto 15, Ont. Representing:**
 Telegraph Condensers Co. Ltd., North Acton, London, W. 3, Eng.
- Telephone Mfg. Co. Ltd., 26 Duncan St., Toronto, Ont. Representing:**
 Telephone Mfg. Co. Ltd., London, Eng.
- Tequipment Mfg. Co. Ltd., 729 Dundas St., London, Ont. Representing:**
 Acro Products Co., Philadelphia, Pa.
 Beaver Laboratories Inc., Hollis, N.Y.
 Blonder-Tongue Labs. Inc., Newark, N.J.
 James Vibrapower Co., Chicago, Ill.
 Karlson Associates Inc., New York, N.Y.
 TV Development Corp., Hollis, N.Y.
 Radio Kits Inc., New York, N.Y.
 Ram Electronic Sales Co., Paramus, N.J.
 Tequipment Ltd., London, Eng.
- Tenatronics Ltd., Davis Drive East, Newmarket, Ont.**
- Thermovolt Instruments Ltd., 19 Chaucer Ave., Toronto 18, Ont.**
- Tilton Ltd., John R., 51 McCormack St., Toronto 9, Ont. Representing:**
 David Bogen Co. Inc., Paramus, N.J.
 Electronic Instrument Co. Inc., Long Island City, N.Y.
 Capitol Machine Co., Danbury, Conn.
 Johnson Electronics Inc., Orlando, Fla.
 J. F. D. Mfg. Co., Brooklyn, N.Y.
 Dual Record Changers, Hannover, Germany
 Electrovox Co. Inc., East Orange, N.J.
 Mosley Electronics Inc., St. Louis, Mo.
 Sprague International Ltd., North Adams, Mass.
 Standard Television Products Ltd., Kitchener, Ont.
 University Loudspeakers Inc., White Plains, N.Y.
 Wind Turbine Co. of Canada Ltd., Toronto, Ont.
 York Woodcraft Ltd., New Hamburg, Ont.
- Tinsley Instruments, 234 Ste. Paule Ave., St. Jerome, Que. Representing:**
 Colvern Potentiometers Ltd., Romford, Essex, Eng.
- Titania Electric Corp. of Canada Ltd., P.O. Box 672, Herbert St., Gananoque, Ont.**
- T.M.C. (Canada) Ltd., P.O. Box 1006, Billings Bridge, Ottawa, Ont. Representing:**
 The Technical Materiel Corp., 700 Fenimore Rd., Mamaroneck, N.Y.
- Tuverholme Camden Audio Electronics Ltd., Prince Rupert, B.C. Representing:**
 Darwin Electronic Assay Equipment, Cloverdale, Oregon
 Empire Electronic Devices, Barstaff Market Place, Birmingham, Eng.

CANADIAN ELECTRONICS MANUFACTURERS AND SUPPLIERS

- Ungar Electric Tool Co. of Canada,
44 Danforth Road, Toronto 13, Ont.
- United-Carr Fastener Co. of Canada Ltd.,
231 Gage Ave. North, Hamilton, Ont.
Representing:
Cinch Mfg. Co., Chicago, Ill.
Cinch-Jones Co., Chicago, Ill.
H. B. Jones Division, Cinch Mfg. Co.,
Chicago, Ill.
Ucinite Co., Newtonville, Mass.
- United Shoe Machinery Co. of Canada Ltd.,
2610 Bennett St., Montreal, Que.
- Universal Speaker Service, 668 Annette St.,
Toronto, Ont.
- Universal Wire & Cable Co. Ltd., The,
2155 Moreau St., Montreal 4, Que.
- Ursol Communications Equipment,
Windermere St., Kitchener, Ont.
Representing:
Coward Electro Process Ltd., Bondale Flat,
Illingsworth, Calif.
Dysol Telecommunications Ltd.,
Tiny Carter St., Bristol, Eng.
- Vactric (Canada) Ltd.,
1835 St. Catherine St. W., Montreal, Que.
Representing:
Vactric (Control Equipment) Ltd.,
196 Sloane St., London, S.W. 1, Eng.
- Varian Associates of Canada Ltd.,
45 River Drive, Georgetown, Ont.
Representing:
Varian Associates, 611 Hansen Way,
Palo Alto, Calif.
John Fluke Mfg. Co. Inc.,
1111 W. Nickerson St., Seattle, Wash.
- Veeder-Root of Canada Ltd.,
955 St. James St. W., Montreal, Que.
- Vemecr Electronic Imports,
Government Dock Avenue, Victoria, B.C.
Representing:
Brading Insulation Materials,
Bangrove East, Calif.
Cuzons Custom Ceramics, Palace Square,
Manchester, Eng.
- Ward Leonard of Canada Ltd.,
1070 Birchmount Rd., Box 70,
O'Connor Postal Station, Toronto 16, Ont.
Representing:
Barkelew Electric Mfg. Co.,
Middleton, Ohio
Kenco Pump Div. of American Crucible
Products Co., 1305 Oberlin Ave.,
Lorain, Ohio
S.A.F.T. Accumulateurs, Route Nationale,
Romainville (Seine), France.
- Waterloo Metal Stampings, Ltd.,
3 Regina Street North, Waterloo, Ont.
- Welwyn Canada Ltd., 1255 Brydges St.,
London, Ont. Representing:
Welwyn Electrical Laboratories,
Bedlington Station, Northumberland, Eng.
- White Radio Limited, P.O. Box 463,
Hamilton, Ont. Representing:
Hammarlund Mfg. Co. Inc.,
460 West 34th St., New York, N.Y.
Hugh H. Eby Co., 4701 German Town Ave.,
Philadelphia, Pa.
Belden Mfg. Co., 4647 West Van Buren St.,
Chicago, Ill.
Teletest Instrument Corp., 136-10 31st Rd.,
Flushing 54, N.Y.
- Whittaker, E. E.,
P.O. Box 3255, Arnprior, Ont.
Representing:
Spectral Electronics Division of Carrier
Corp., 1704 South Del Mar Ave.,
San Gabriel, Calif.
Dressen-Barnes Corp.,
250 North Vinedo Ave., Pasadena, Calif.
Remler Co. Ltd.,
2101 Bryant St., San Francisco, Calif.
- Wicket Ltd., Bradford J., 2792 Yonge St.,
Toronto, Ont.
- Wickman Ltd., A. C., 1425 Queensway,
Toronto 14, Ont. Representing:
Losenhausenwerk, Dusseldorf, Germany.
Optical Gaging Products, Inc.,
Rochester, N.Y.
Sheffield Corp., Dayton, Ohio.
- Willard Storage Battery Co. of Canada Ltd.,
269 Campbell Avenue, Toronto, Ont.
- Willys of Canada Ltd., 2525 Central Ave.,
Windsor, Ontario. Representing:
Sherwood Motors (1953) Ltd.,
898 Burrard St., Vancouver, B.C.
Modern Motors Ltd., 1538 — 9th Ave. East,
Calgary, Alta.
Western Equipment Ltd., 1630 St. John St.,
Regina, Sask.
Midwest Mining Supplies Ltd., 860 King
Edward St., St. James, Winnipeg, Man.
Willys Ontario Co., 2301 Queen St. E.,
Toronto, Ont.
Cooke Toledo Motors Ltd.,
2134 St. Catherine St. W., Montreal, Que.
Auto Moderne Ltée., 498 rue de la Couronne,
Quebec, Que.
Capital Garage Ltd., 355 Campbell St.,
Fredericton, N.B.
Provincial Motors Ltd., P.O. Box 245,
2 Queen St., Halifax, N.S.
Baird Motors Ltd., Merrymeeting Rd.,
St. John's, Newfoundland.
- Wind Turbine Co. of Canada Ltd.,
51 McCormack St., Toronto 9, Ontario.
- Wolf Electric Tools Ltd., 2271 Bloor St. W.,
Toronto 9, Ontario.
- Wright Electronics of Canada, Ltd., W. Gary,
628 Kent St., Whithy, Ontario.
- Wurgood Electronic Chassis Specialties Ltd.,
Bourne St., Waterloo, Ontario.
Representing:
Arden Chassis Mfg. Co. Ltd.,
Piperfield, Ill.
Byron Precision Parts, East Portsmouth Rd.,
Portsmouth, England.
- X-Ray & Radium Industries Ltd.,
261 Davenport Rd., Toronto, Ontario.
- York Woodcraft Ltd., New Hamburg, Ontario.
- Youngstown Industrial Antenna,
Middle Canal St., St. Johns, Que.
Representing:
Benson & Farlinger, Sherman St.,
Bayside, N.J.
Ayhurst Electronic Assemblies,
Lyton-on-Thames, England.

"Motivate 'Em -- Don't Recruit Them"

(Continued from page 68)

Third . . . going deep into the root of this problem we find the ultimate solution for the industry over the long pull will be in our educational setup. This is an all-inclusive undertaking that is gradually being remedied. According to a recent survey, engineering enrollments in technical schools rose between the years 1951 and 1955 from 166,000 to 243,000. This is a good start, but for all present intents and purposes, just a start.

The current out of balance situation on supply and demand of specialists in the electronics and nucleonics and allied field poses special problems in the recruitment of engineers and technicians.

"Recruitment" is really no longer the right word . . . it connotes selection of people from existing labor pools (viz. colleges and universities and normal transient pool). There are no longer labor pools of any kind. The demand is so great and the competition so keen that there isn't even a five-minute period between sheepskin and slide rule. As for a transient pool, it is non-existent except by compulsion. So, today we have to think in terms of "MOTIVATION" not "recruitment" of engineers.

Motivation better defines what needs to be done. The connotation here is to "move" engineers from whatever their present situation happens to be by means of a "selling process."

It is this selling process that has been almost totally neglected in Recruitment Advertising and paradoxically so in view of the fact that engineers are no different from anybody else. THEY CAN BE SOLD! And the same mental processes that move people to beer, bread, automobiles and new refrigerators can move engineers (they're people!) to new jobs.

Quite naturally help wanted classified advertising stems originally from the Employment and Personnel departments and is simply "WANT ADS." This approach in a normal labor market probably would be sufficient; however, the situation today is anything but normal. The inability to project industry's engineering needs in these most dynamic fields of Electronics and Nucleonics has further complicated the job of personnel and employment people. The most crying need of personnel people is in filling immediate needs. Results can not be too long in forthcoming. It is a problem of first things first.

Failure to get enough competent engineers from their advertising has led many companies to exaggerated spending and hysterical efforts. The ensuing melee manifests itself in a great welter of display advertising which in essence is nothing more than classified ads moved to other than the classified section, pumped up in size to include pictures of everything from cheese cake to chess players. The awful end result has been to make engineers even MORE unresponsive to industry's advertising efforts. The personnel man has been his own worst enemy. Advertising is not his field.

A study by this agency analyzed thousands of display ads of this type appearing in metropolitan newspapers and trade magazines. A formula based upon known motivation factors in product advertising, was applied to each . . . and the picture of waste dollars was clear to see.

Recognition of a need for engineers is evidenced by page upon page, column upon column of display advertising. But the big difference between "Recruitment" and "MOTIVATION" is not in evidence in most of this advertising.

(Continued on page 100)

MECHRON ENGINEERING PRODUCTS LTD.

2437 Kaladar Avenue, OTTAWA

OTTAWA — REgent 3-3855

TORONTO — HUDson 1-5639

Outstanding engineering personnel are available at our Ottawa location to handle Developmental and Consulting problems in the fields of electronics and nucleonics.

The companies with whom we are associated are outstanding in their field and provide engineering and developmental effort for requirements of an unusual nature.

Please send additional information on following items:

Ceramics

- R-F coil forms
- R-F ceramic plates
- Ceramic stand-off insulators
- Metallized hermetic seals
- Special ceramic shapes to customers design

Wire

- All types wire and cable: co-ax, armoured, steel clad copper, multi-conductor tinsel to British or U.S. Mil specifications

Soldering Irons

- Miniaturized soldering irons. Voltages 115 to 6 volts, without transformers, wattages various

Meters

- Meters Moving Coil AC DC
- Ammeters
- Milliameters
- Microammeters
- Voltmeters
- Pyrometers
- Thermocouples
- Resistance Thermometers

Electronic Instruments

- Synchrosound projectors
- Pyrometers
- Thermocouples
- Portable 35 and 16 mm microfilm readers
- Audio frequency output meters
- Transistorized V.T. V.M.
- Signal tracers

Electronic Instruments (cont.)

- S, X, L and Universal spectrum analyzers
- Decade Oscillator 1 cps to 100 Kc/s
- Multiple pulse generators
- Single pulse generators
- Grain oriented Toroids
- Magnetic Amplifiers

Nucleonic Instruments

- NATO approved radio activity contamination meter
- Beryllium Spectrographic monitor
- Manipulators large and small
- Multiple pulse generators
- Logarithmic ratemeters
- Single pulse generators
- Radioactive laboratory monitoring equipment
- Personnel Integrating monitor

Strain Gauge Equipment

- Multi channel strain gauge recorders
- Strain gauge DC amplifiers
- Galvo camera recorders
- 6-8 Channel pen recorders
- 10-50-600 Channel Auto/Sampling panels

Communications Equipment

- Aircrew headsets
- Broadcast Studio headsets
- Transistorized amplifiers
- Ultra violet communication system
- Telegraph distortion monitor
- Scanners and Radio Dishes

Airport and Meteorological Equipment

- Broadcast studio headsets
- Airport Ceilometer
- Airport Transmissometer
- Recording Balloon Theodolite
- Vibration proof 12 channel recorder
- Anemometer
- Barographs
- Wind direction indicators
- Dewpoint recorders
- High pressure hydrogen generators (portable)
- Ozone-Sonde balloon
- Meteorological radar
- Air pollution recorder
- Surveillance Radar

Laboratory Instrumentation

- Portable 35 and 16 mm microfilm viewers
- 40 Megawatt strobe-light
- Ultra-violet generators
- Vibration analyzers
- Transistor characteristic plotters
- Environmental test chambers
- Ultra violet detectors
- Solar radiation balance meter
- Camera shutter timing device
- High speed image converter camera
- Servo loop polar co-ordinate plotter
- Computers (Analog, Digital)
- Velocity and turbulence recorder for gases and liquids
- Infra-Red Generators/Detectors

Industrial Equipment

- General purpose strobe-light
- 40 Megawatt strobe light
- Impulse welding equipment
- Vacuum casting furnaces
- Refrigeration units
- Power Transformers (15-1000 KVA)

Marine Equipment

- Automatic recording marine clinometer
- Recording draft and trim gauge

Medical Equipment

- Air pollution recorder
- Blood pressure follower

Tape Recorder

- HI-FI tape recorder

Signs

- Flexibly lettered neon sign

Power Equipment

- High voltage insulation tester
- High voltage measuring bridges
- High voltage oil testing device
- Circuit breaker timing tester
- Portable H.V. Generators 0-10 KV, 0-50 KV
- Live Line detectors
- Grain oriented transformer cores

Diesel Generator Plants

- 2 KW to 1000 KW with Manual or Unattended Automatic, and No-Break Control Panels

NAME

TITLE

COMPANY

ADDRESS

Directory Of American Electronic Equipment Manufacturers

WITH LISTING OF CANADIAN REPRESENTATIVES

- Abrams Instrument Corp.**, 606 E. Shiawassee St., Lansing, Mich.
Represented by: Gensales, Ltd., P.O. Box 303, Malton, Ont.
- Accurate Electronics Corp.**, 167 S. Abbe Rd., Elyria, Ohio. **Represented by:** Electrolabs, 7385 St. Lawrence Blvd., Montreal 16, Que.
- Ace Electronics Associates Inc.**, 99 Dover St., Somerville 44, Mass. **Represented by:** Gammatronics Ltd., National Bldg., 18 Rideau St., Ottawa 3, Ont.
- Ace Engineering & Machine Co. Inc.**, 3644 N. Lawrence St., Philadelphia, Pa. **Represented by:** Standard Telephones & Cables Mfg Co. Ltd., 9600 St. Lawrence Blvd., Montreal, Que.
- Acromark Co., The**, 109 Morrell St., Elizabeth 4, N.J. **Represented by:** Canada Tool & Supply Co., 19 Melinda St., Toronto, Ont.
- Acro Products Co.**, 369 Shurs Lane, Philadelphia, Pa. **Represented by:** Tequipment Co., Box 844, London, Ont.
- Acton Laboratories Inc.**, 533 Main St., Acton, Mass. **Represented by:** Measurement Engineering Ltd., Arnprior, Ont.
- Adler Electronics Inc.**, One LeFevre Lane, New Rochelle, N.Y. **Represented by:** Benco Television Associates Ltd., 278 Bridgeland Ave., Toronto 9, Ont.
- AEMCO Inc.**, 10 State St., Mankato, Minn. **Represented by:** John Herring & Co., 3468 Dundas St. W., Toronto, Ont.
- Aerolite Electronics Corp.**, 507 — 26th St., Union City, N.J. **Represented by:** Electrolabs, 7385 St. Lawrence Blvd., Montreal 16, Que.
- Aero Research Instrument Co. Inc.**, 315 No. Aberdeen St., Chicago 7, Ill. **Represented by:** Winnett Boyd Ltd., 745 Mount Pleasant Rd., Toronto 7, Ont.
- Aerovox Corp., Crowley Division**, 1 Central Ave., West Orange, N.J. **Represented by:** Aerovox Canada Ltd., 1551 Barton St. E., Hamilton, Ont.
- Airborne Accessories Corp.**, 1414 Chestnut Ave., Hillside 5, N.J. **Represented by:** Winnett Boyd Ltd., 745 Mount Pleasant Rd., Toronto 12, Ont.
- Aircon, Inc.**, 354 Main St., Winthrop 52, Mass. **Represented by:** M.E.L. Sales Ltd., Arnprior, Ont.
- Aircraft Radio Corp., Boonton, N.J.** **Represented by:** Anthony Foster & Sons, Ltd., 302 Church St., Toronto, Ont.
- Airpax Products Co., The, City of Plantation**, Fort Lauderdale, Fla. **Represented by:** Leonard Electric Ltd., 346 Bering Ave., Toronto 18, Ont.
- Aladdin Electronics, A Division of Aladdin Industries, Inc.**, 703 Murfreesboro Rd., Nashville, Tenn. **Represented by:** Lake Engineering Co. Ltd., 767 Warden Ave., Scarborough, Ont.
- Alford Mfg. Co.**, 299 Atlantic Ave., Boston, Mass. **Represented by:** Electrodesign, 736 Notre Dame St. W., Montreal, Que.
- Allen-Bradley Co.**, 136 W. Greenfield Ave., Milwaukee, Wis. **Represented by:** Allan-Bradley Canada Ltd., Galt, Ont.
- Allied Chemical & Dye Corp., General Chemical Division**, 40 Rector St., New York 6, N.Y. **Represented by:** The Nichols Chemical Co. Ltd., Sun Life Bldg., Montreal, Que.
- Allied Control Co. Inc.**, 2 East End Ave., New York 21, N.Y. **Represented by:** Adams Engineering Ltd., 1500 St. Catherine St. W., Montreal, Que.
- Adams Engineering Ltd.**, 1999 Avenue Rd., Toronto 12, Ont.
- Adams Engineering Ltd.**, 77 Metcalfe St., Ottawa 4, Ont.
- Allies' Products Corp., P.O. Box 188**, Kendall Branch, Miami, Fla. **Represented by:** Kerr-Machin Associates, P.O. Box 34, Station "K", Toronto 12, Ont.
- Allison Laboratories**, 14185 Skyline Drive, La Puente, Calif. **Represented by:** Computing Devices of Canada Ltd., P.O. Box 508, Ottawa 4, Ont.
- All-State Welding Alloys Co. Inc.**, 249 Ferris Ave., White Plains, N.Y. **Represented by:** Scott-Foster Ltd., 1215 Clark Drive, Vancouver 6, B.C.
- D. Ackland & Son, Ltd.**, 722 — 11th Ave. W., Calgary, Alta.
- K. J. Halladay**, 65 Rosburn Drive, Toronto 8, Ont.
- Alpha Wire Corp.**, 200 Varick St., New York, N.Y. **Represented by:** Alpha Aracon Radio Co. Ltd., 29 Adelaide St. W., Toronto, Ont.
- Alpine Laboratories Ltd.**, 1610 S. Nevada Ave., Colorado Springs, Col. **Represented by:** Allan Lyone Ltd., Winnipeg, Man.
- Scientific Supplies Co.**, Vancouver, B.C.
- Altec Lansing Corp.**, 1515 S. Manchester Ave., Anaheim, Calif. **Represented by:** Dominion Sound Equipments Ltd., 4040 St. Catherine St. W., Montreal 6, Quebec.
- Northern Electric Co.**, 250 Sidney St., Belleville, Ont.
- Ambroid Co. Inc., Box 30**, Weymouth 88, Mass. **Represented by:** J. H. Ashdown Hardware, Edmonton, Alta.; Winnipeg, Man.
- Marshall-Welles Ltd.**, Port Arthur, Ont.; Winnipeg, Man.
- James Wilson & Co.**, Montreal, Que.
- George Taylor Ltd.**, North Bay, Ont.
- Cochrane-Dunlop Ltd.**, Toronto, Ont.; Sudbury, Ont.; North Bay, Ont.
- James S. Neil & Sons**, Fredericton, N.B.
- Caverhill Learmont & Sons**, Montreal, Que.
- Wood Alexander Ltd.**, Hamilton, Ont.
- John Leckie**, Toronto, Ont.
- American Electronics Co.**, 1203 Bryant Ave., New York 59, N.Y. **Represented by:** William Cohen Ltd., 7000 Park Ave., Montreal, Que.
- American Electronics Inc.**, 655 W. Washington Blvd., Los Angeles 15, Calif. **Represented by:** Aeromotive Engineering Products, 5257 Queen Mary Rd., Montreal 29, Que.
- American Research Corp., Route 6**, Farmington, Conn. **Represented by:** Climatic Equipment, P.O. Box 312, Ottawa, Ont.
- AMP Inc.**, 155 Park St., Elizabethtown, Pa. **Represented by:** Aircraft-Marine Products of Canada Ltd., 194 Wilson Ave., Toronto 12, Ont.
- Amperex Electronic Corp.**, 230 Duffy Ave., Hicksville, L.I., N.Y. **Represented by:** Rogers Electronic Tubes & Components, 11-19 Brentcliffe Rd., Leaside, Toronto 17, Ont.
- Amperite Co. Inc.**, 561 Broadway, New York 12, N.Y. **Represented by:** Atlas Radio Corp. Ltd., 50 Wingold Ave., Toronto 10, Ont.
- Ampex Corp., Instrumentation Division**, 934 Charter St., Redwood City, Calif. **Represented by:** Ampex American Corp. — Canadian Division, 1537 The Queensway, Toronto 14, Ont.
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- Elgin Watch Ltd.,** 111 Richmond St. W., Toronto, Ont.
- B.S.A. Tools Ltd.,** 228 Norseman St., Toronto 18, Ont.
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- Engineered Magnetics, Division of Gulton Industries, Inc.,** 13030 Cerise Ave., Hawthorne, Calif. **Represented by:**
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- Entron, Inc.,** 4902 Lawrence St., Box 287, Bladensburg, Md. **Represented by:**
 Electroline Television Equipment Inc., 5757 Decelles Ave., Montreal 24, Que.
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We have the knowledge and ability to give our customers an opportunity to discuss their specialized problems and our principals have the facilities to experiment and produce articles to their particular specifications.

This unusual combination of our experienced service to customers and our contact with varied and established manufacturers of electronic component parts provides an avenue of supply, which can save both Purchasing Agent and Engineering Staff many man-hours of fruitless search for their requirements.

Our Products

RELAYS — Sub-miniature - Open - Plug-in - Hermetically sealed - High Voltage - High Shock - High Temperature - Frequency sensitive - Ultra high speed ($\frac{1}{3}$ millisecc) - Polarized millisecc. - To individual specs.

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MINIATURE BALL & ROLLER BEARINGS — Pivot Type - Angular - Radial - Conrad Type radial - Filmseal - Miniature roller - Special high speed - Gyro rotor - Gimbal.

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INSTRUMENTS — Bridges: megohm, percent-limit, Wheatstone, Kelvin-Wheatstone, fault location - Low resistance test sets - Logarithmic decade - Decade Resistance Boxes - Galvanometer and galvanometer systems - D.C. power supply - Voltage Dividers.

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MISCELLANEOUS — Precision Potentiometers - Pulse forming networks - Ayrton Universal shunts - Decade delay lines - Miniature Blowers - Burglar Alarms - Time Switches - Timers - Flashers - Meteorological Thermometers - Shaded Pole Motors, fractional H.P., unidirectional, synchronous, and geared head.

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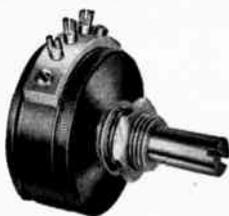
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STANDARD WATERS ELECTRICAL AND MECHANICAL SPECIFICATIONS

Model	Resistance Range ±5%*	Linearity (Bushing)*	Linearity (Servo) (S)*	Case Diameter	Case Length (Bushing)	Case Length (Servo) (S)	Shaft Diameter
AP 1/2	1/2-250 K ohm	5%-2% over 50 K	3%-2% over 50 K	1/2 inch	3/8 inch min.	1/2 inch min.	1/8 inch
RT/RTS 7/8	1/2-250 K ohm	3%	2%	7/8 inch	3/8 inch	1/2 inch	1/8" / 1/4"
LT 7/8	25-100 K ohm	None	0.5%	7/8 inch	None	0.80 inch	1/8 inch
LLT 7/8	1/2-150 K ohm	None	0.5%	7/8 inch	None	0.80 inch	0.040"
AP 11/16	1/2-350 K ohm	2%	1%	1-1/16 inch	1/2 inch	11/16 inch	1/8 inch
AP 1 1/8	1/2-350 K ohm	2%	1%	1 1/8 inch	1/2 inch	11/16 inch	1/4 inch
WP 1 1/8	1/2-500 K ohm	C.5%	0.5%	1 3/8 inch	2-5/32 inch	1-1/32 inch	1/4 inch

*Variations available on special order, forward requirements for prompt analysis. Details subject to change without notice.
STANDARD RESISTANCES — ALL SERIES, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K. IN ADDITION, 40K and 50K ON RT/RTS⁷/₈ AND "LO TORK" SERIES AND 40K, 50K AND 100K ON AP 1-1/16, AP 1 1/8 AND WP 1 1/8 SERIES.

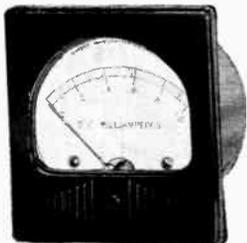
Waters COMPONENTS and PANEL METERS

Waters Components and Panel Meters

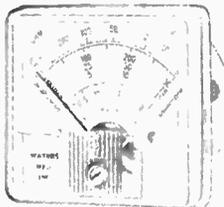
include an ever-increasing variety of high-quality products. Write for our latest catalogs whenever you need electronic components.



Model 250



Model 350S



Model PS250

Model	Size	Description
250	2 1/2"	Round Bakelite case
260	2 1/2"	Round metal case*
PS250	2 1/2"	Rectangular, clear plastic case
350	3 1/2"	Round Bakelite case
360	3 1/2"	Round metal case*
PS350	3 1/2"	Rectangular, clear plastic case
250-S	2 1/2"	Rectangular black Bakelite case
350-S	3 1/2"	Rectangular black Bakelite case
450-S	4 1/2"	Rectangular black Bakelite case
450-SP	4 1/2"	Rectangular black Bakelite case; has provision for front illumination

Ranges	D-c Types	A-c Rectifier Types
Microamperes	0-25 to 0-9000	0-100 to 0-900
Milliamperes	0-1 to 0-1000	0-1 to 0-500
Amperes	0-1 to 0-20 ¹	—
Millivolts	0-10 to 0-1000	—
Volts	0-1 to 0-500 ²	0-1 to 0-500 ³

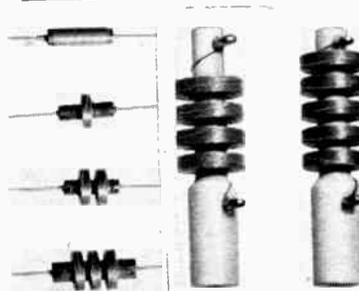
¹ Over 20 amperes, a 50-millivolt movement is used with an external shunt.

² 1000 ohms per volt.

³ External resistor required over 500 volts.

*Hermetically sealed MIL-M-6A JAN-1-6

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- Solenoids on phenolic & powdered-iron forms.
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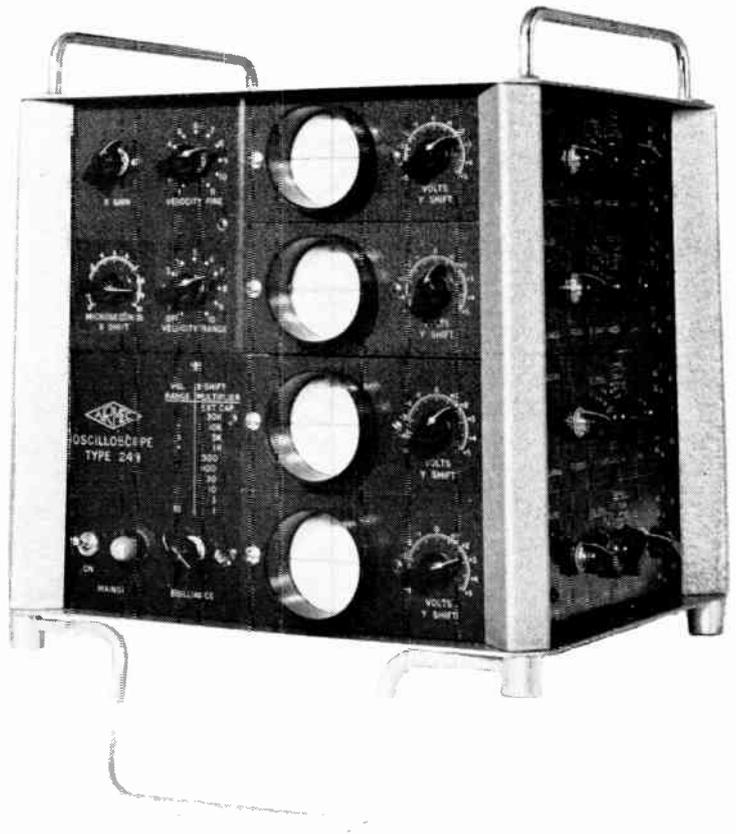
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- Industrial Retaining Ring Co.,** 57 Cordier St., Irvington 11, N.J. Represented by: H. A. Ness & Co., 25 Ripley Ave., Toronto, Ont.
- Industrial Test Equipment Co.,** 55 E. 11th St., New York 3, N.Y. Represented by: Atlas Radio Corp. Ltd., 50 Wingold Ave., Toronto 10, Ont.
- Industro Transistor Corp.,** 649 Broadway, New York 12, N.Y. Represented by: E. S. Gould Sales Co., Suite 108, 3500 Atwater Ave., Montreal 25, Que.
- Industron Corp.,** 55 Needham St., Newton Highlands 61, Mass. Represented by: Preston Woodworking Machinery Co. Ltd., Preston, Ont.
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- Insulated Circuits, Inc.,** 100-8th St., Passaic, N.J. Represented by: Willard Spenser Co., Detroit, Mich.
- International Electronic Research Corp.,** 145 W. Magnolia Blvd., Burbank, Calif. Represented by: R-O-R Associates Ltd., 1470 Don Mills Rd., Don Mills, Ont.
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- Innesmay Relay Mfg. Co. Ltd.,** Longdorfe Quay, L.I., N.Y. Represented by: Ouse and Richter Ltee., Perkins Crescent, Quebec, P.Q.
- Jack & Heintz Inc.,** 17600 Broadway, Cleveland 1, Ohio. Represented by: Aircraft Appliances & Equipment Ltd., 585 Dixon Side Road, P.O. Box 177, Toronto 15, Ont.
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- Williams & Wilson Ltd., 11 Front St. E., Toronto, Ont.
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- M.E.L. Sales Ltd., P.O. Box 189, Postal Station "O", Montreal, Que.
- Kulka Electric Mfg. Co. Inc.,** 633 South Fulton Ave., Mount Vernon, N.Y. Represented by: A.T.R. Armstrong Ltd., 700 Weston Rd., Toronto 9, Ont.
- Kingam Electro Products Ltd.,** Flarenoff Rd., Chicago, Ill. Represented by: Mylynex Radio Parts and Equipment, Port Arthur, Ont.
- Lake Chemical Co.,** 3052 W. Carroll Ave., Chicago 12, Ill. Represented by: Ontor Ltd., 12 Leswyn Rd., P.O. Box 608, Station "L", Toronto 10, Ont.
- R. L. McInnes & Co., 36 Bate Bldg., 221 McDermot Ave., Winnipeg 2, Man.
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- Lavoie Laboratories Inc.,** Morganville, N.J. Represented by: Instronics Ltd., P.O. Box 51, 11 Spruce St., Sittsville, Ont.
- Lear, Inc.,** 3171 So. Bundy Drive, Santa Monica, Calif. Represented by: Railway & Power Eng. Corp., Ltd., 3745 St. James St., Montreal, Que.
- Foothills Aviation, Ltd., Municipal Airport, Calgary, Alta.
- Laurentide Aviation Ltd., Cartierville Airport, Montreal, Que.
- Sanderson Aircraft, Ltd., Malton, Ont.
- West Coast Air Service Ltd., Municipal Airport, Vancouver, B.C.
- Lectronic Research Labs.,** 715 Arch St., Philadelphia 6, Pa.
- Leitch Engineering Corp.,** 326 Lincoln St., Manchester, N.H. Represented by: Electrodesign, 736 Notre Dame St. W., Montreal, Que.
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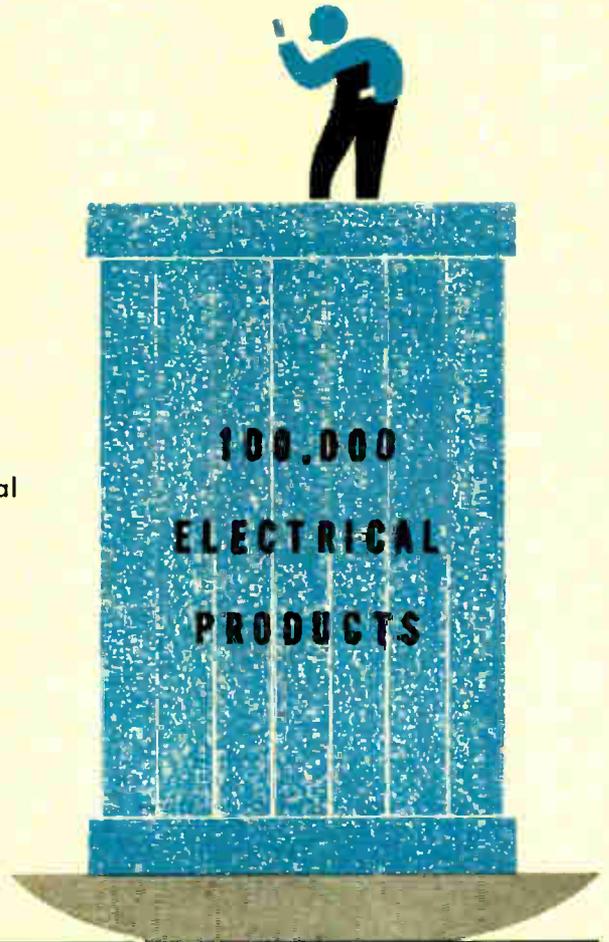
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- Leland Inc., G. H., 123 Webster St., Dayton 2, Ohio. Represented by:** Marsland Engineering Co., Kitchener, Ont.
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- Littelfuse Inc., 1865 Miner St., Des Plaines, Ill. Represented by:** Pitt Distributing Co., 80 George St., Toronto, Ont.
- Lord Mfg. Co., 1635 W. 12th St., Erie 6, Pa. Represented by:** Railway & Power Engineering Corp., 169 Eastern Ave., Toronto, Ont.
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- Lynmar Engineers, Inc., 1432 N. Carlisle St., Philadelphia 21, Pa. Represented by:** E. S. Gould Co. Ltd., Suite 108, 3500 Atwater Ave., Montreal 25, Que. (Quebec, Ottawa Valley, Prince Edward Island, New Brunswick, Nova Scotia, Newfoundland) Don H. Burcham Co., 510 Northwest 19th Ave., Portland 8, Ore. (British Columbia).
- Lombard Acoustics Ltd., Havens Bay, L.I., N.Y. Represented by:** Lynmore Acoustics, Byward Place, Ottawa, Ont.
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- Mosley Electronics, Inc., #622 St. Charles Rock Rd., St. Louis 14, Mo. Represented by:** John R. Tilton Ltd., 51 McCormack St., Toronto 9, Ont. Ron Merritt Co., Room 229, Rogers Bldg., 470 Granville St., Vancouver, B.C.
- Mossman, Inc., Donald P., P.O. Box 265, Brewster, N.Y. Represented by:** Burlec Sales Ltd., 45 Northline Rd., Toronto 16, Ont.
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- Mueller Electric Co., 1604 H. East 31st St., Cleveland 14, Ohio. Represented by:** W. H. Cooper & Co., 1103 Yonge St., Toronto 5, Ont.
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- Nuclear Corp of America, 9842 Manchester Rd., St. Louis 19, Mo. Represented by:** X-Ray & Radium Industries Ltd., 261 Davenport Rd., Toronto, Ont.
- Nucleonic Corp. of America, 196 Degraw St., Brooklyn 31, N.Y. Represented by:** Electrodesign, 736 Notre Dame St. W., Montreal, Que.
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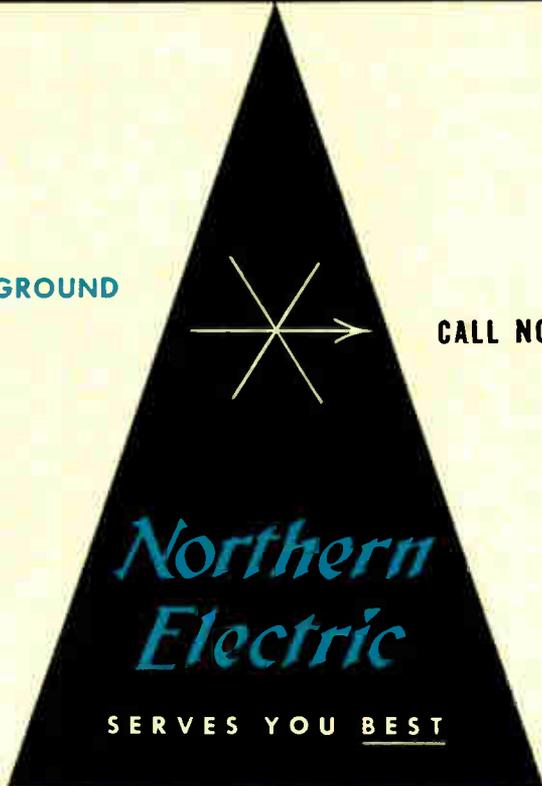


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Blair Equipment, Ltd., Ottawa, Ont.
Canus Equipment, Ltd., 590 Bank St.,
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The T. Eaton Company, Ltd., Toronto, Ont.
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Steel & Engine Products, Ltd.,
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- Power Sources, Inc., South Ave.,**
Burlington, Mass. Represented by:
E. G. Lomas, 227 Laurier Ave. W.,
Ottawa, Ont.
- Precise Development Corp., 2 Neil Court,**
Oceanside, N.Y. Represented by:
E. S. Gould Sales Co., Suite 108,
3500 Atwater Ave., Montreal, Que.
D. Eldon McLennan Sales Co.,
1624 W. Third Ave., Vancouver, B.C.
- Precision Apparatus Co. Inc., 70-31 84th St.,**
Glendale 27, L.I., N.Y. Represented by:
Atlas Radio Corp. Ltd., 50 Wingold Ave.,
Toronto 10, Ont.
- Precision Metal Products Inc., 41 Elm St.,**
Stoneham, Mass. Represented by:
Norman J. Rolph Co., 18 Toronto St.,
Toronto, Ont.
- Precision Paper Tube Co.,**
2035 W. Charleston St., Chicago 47, Ill.
Represented by:
Playford Ltd., Box E., Montreal, Que.
- Precision Radiation Instruments Inc.**
& Radio Craftsmen Division,
4223 W. Jefferson Blvd.,
Los Angeles 16, Calif.
Represented by:
Intercomm Supply Co., Ltd., 1315 Victoria,
Fort William, Ont.
- Premier Instrument Corp., 52 W. Houston St.,**
New York 12, N.Y. Represented by:
Revco Ltd., 756½ Yonge St., Toronto, Ont.
- Price Electric Corp., East 2nd & Church Sts.,**
Frederick, Md., Represented by:
Radio Condenser Co. Ltd., 6 Bermondsey Rd.,
Toronto 16, Ont.
- Printed Electronics Corp., 7 North Ave.,**
Natick, Mass. Represented by:
J. B. Smyth, 380 Craig St. W.,
Montreal 1, Que.
- Probescope Co. Inc., 44-05 30th Ave.,**
Long Island City 3, N.Y.
Represented by:
M.E.L. Sales Ltd., Arnprior, Ont.
- P & H Sales Corp., 5650 N. Western,**
Chicago 45, Ill. Represented by:
J. G. Fraser, Ltd., 621 W. Pender St.,
Vancouver, B.C.
Riley's Reproductions, Ltd.,
612 Eighth Ave. W., Calgary, Alta.
Northern Drafting & B/P Co.,
10652 — 101st St., Edmonton, Alta.
Instruments (1951) Ltd., 2180 12th Ave.,
Regina, Sask.
Riley's Reproductions, Ltd.,
438 Notre Dame Ave., Winnipeg, Man.
J. G. Fraser, Ltd., 320 Donald St.,
Winnipeg, Man.
Instruments (1951) Ltd., 14 Adelaide St. W.,
Toronto, Ont.
Instruments (1951) Ltd., 300 Parkdale Ave.,
Ottawa, Ont.
Surveying & Drawing Supply, Ltd.,
755 Yonge St., Toronto, Ont.
Atlas-Helio Co., 124 Merton St.,
Toronto, Ont.
Norman H. Wade Co., 891 Yonge St.,
Toronto, Ont.
Martlin & Lawrie, Ltd., 22 Gore St.,
Hamilton, Ont.
Instruments (1951) Ltd., 4646 Decarie Blvd.,
Montreal, Que.
Norman H. Wade Co., 4263 St. Catherine
St. W., Montreal, Que.
Keuffel & Esser of Canada,
679 St. James St. W., Montreal, Que.
- Pacific Electro-Navigation Inc.,**
Lake Plain, N.Y. Represented by:
Hysulite Custom Electronics, Bedford, N.S.
- Quam Nichols Co., 234 East Marquette Rd.,**
Chicago 37, Ill. Represented by:
D. Eldon McLennan Ltd.,
1624 W. Third Ave., Vancouver 9, B.C.
A.T.R. Armstrong Ltd., 700 Weston Rd.,
Toronto 9, Ont.
- Quality Grommet and Connector Ltd.,**
Newark, N.J. Represented by:
Gunter Technical Appliances,
Saint John, N.B.
- Radiation Counter Laboratories Inc.,**
5121 W. Grove St., Skokie, Ill.
Represented by:
Computing Devices of Canada Ltd.,
P.O. Box 508, Ottawa, Ont.
Computing Devices of Canada Ltd.,
P.O. Box 108, Rosemere, Montreal, Que.
Computing Devices of Canada Ltd.,
62 Norden Crescent, Toronto, Ont.
Computing Devices of Canada Ltd.,
Room 122-23 Commercial Bldg.,
10120 Jasper Ave., Edmonton, Alta.
- Radiation Inc., P.O. Box 37, Melbourne, Fla.**
Represented by:
Radionics Ltd., 8230 Mayrand St.,
Montreal, Que.
- Radio Condenser Co., Davis & Copewood Sts.,**
Camden 3, N.J. Represented by:
Radio Condenser Co. Ltd.,
6 Bermondsey Rd., Toronto, Ont.
- Radio Frequency Co. Inc., 44 Park St.,**
Medfield, Mass. Represented by:
Elder Electronics, 3220 Robert St.,
Burlington, Ont.
- Radio Frequency Laboratories, Inc.,**
Boonton, N.J. Represented by:
Microwave Systems, 891 O'Connor Drive,
Toronto, Ont.
Instronics Ltd., 11 Spruce St.,
Stittsville, Ont.
Instronics Ltd., 21 Benleigh Drive,
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- Radio Merchandise Sales Inc.,**
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Represented by:
Ben Manis Associates Reg'd.,
5137 Montclair Ave., Montreal 29, Que.
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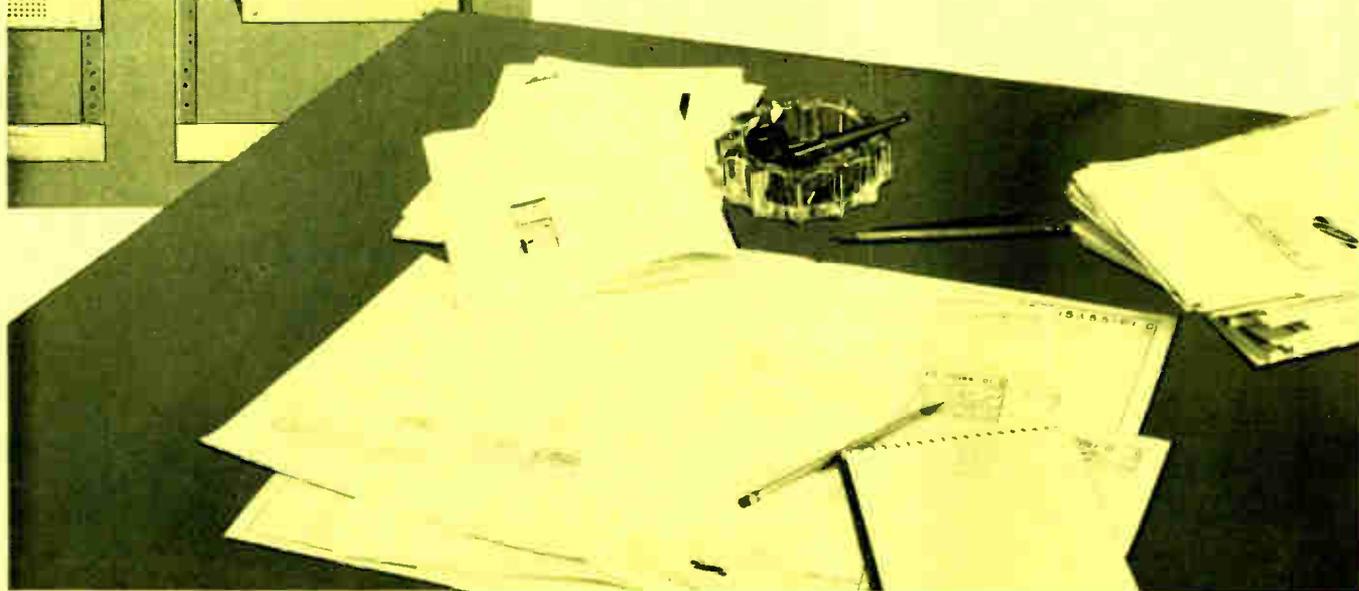
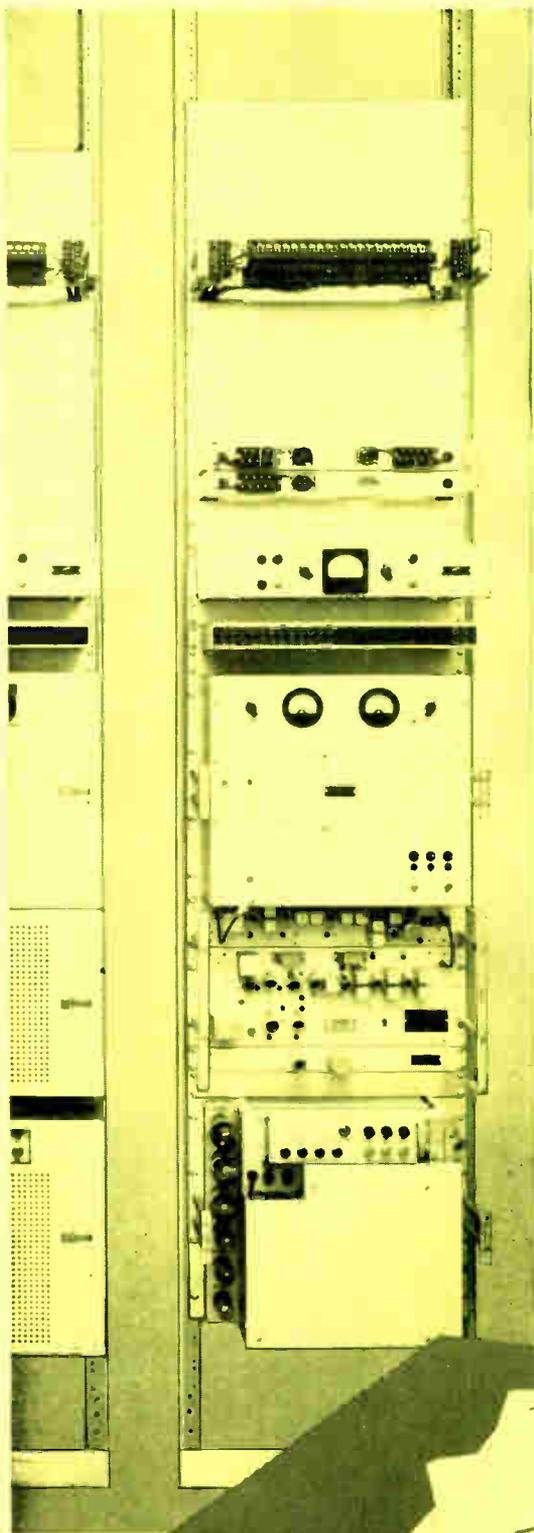
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5753




STROWGER
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TOLL TICKETING

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*a profitable investment now—
and for the future!*

NOW
Strowger Automatic Toll
Ticketing is ready to speed short-haul tolling

— eliminating toll tickets and many other
costly manual operations.

IN THE FUTURE — Any SATT system installed now can be readily linked with Nationwide Customer Toll Dialing when it becomes a reality.

Strowger Automatic Toll Ticketing Systems are designed to store, translate and re-transmit dialed information. Backed by years of actual service in Independent exchanges, SATT Systems keep an automatic "ticker tape" record on every completed toll call—everything you need to prepare a customer's toll bill. Calling and called station directory numbers, date, time and length of each call are all stored, and swiftly recorded the instant the call is completed.

SATT Systems are designed to provide all the economies of completely automatic bill processing—preparing toll bills "without the touch of a human hand" if desired. Or if a manual method of billing is desired to coordinate with your existing accounting practices, SATT can print a complete toll ticket on each call . . . even the toll charge can be computed and shown on the card. If, at a later date, you desire to change your billing operation to use automatic accounting machines, no change in the SATT equipment is required.

Using automatic accounting machines, the same call data used in billing can be made available also to your traffic and commercial departments.

SATT Systems fit the needs of any network—from 100 stations to the largest possible—and they expand easily!

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ORIGINATORS OF THE DIAL TELEPHONE



For further data on advertised products use page 161.

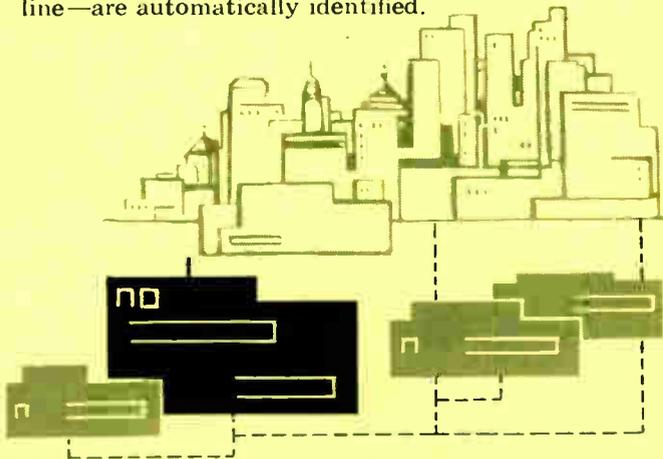
SATT TYPE A

For the Large Metropolitan Network
(Provides automatic identification of calling party)

Where switching into a large metropolitan area involves intricate trunking arrangements, this SATT System increases customer service, lowers operating company costs.

The Type A System with its associated step by step metropolitan network, is now working with panel, crossbar and other step-by-step networks.

Type A is the most completely automatic of all SATT Systems; for any short-haul call, the subscriber dials only the called party's directory number. His call is automatically routed and extended to the called party; the calling line—and the calling station, on a party line—are automatically identified.

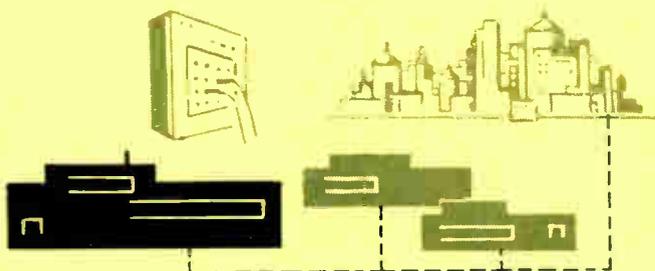


These 5
SATT SYSTEMS
Meet Every Need

SATT TYPE D

For Smaller Systems where Operators are Available
(Calling Party is identified by operator)

Operation is simple. The calling party dials only the SATT access code and the called number. An operator is then momentarily connected to the line. She asks his number and records it by keying the number into the ticketer with a keyset. The call is then extended in the same manner as in other SATT Systems.

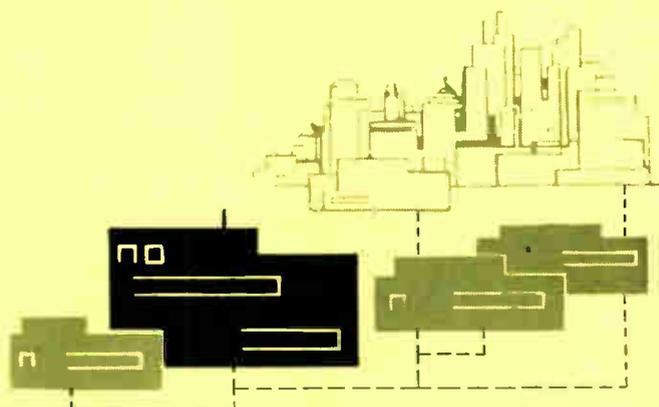


SATT TYPE B

For the large central exchange, or
medium-sized multi-office network
(Provides automatic identification of calling party)

For exchanges where the Director is not needed to route traffic to neighboring areas, SATT Type B offers the same improved service and automatic operation which are provided by Type A—but at a lower initial investment.

In the Type B system, the subscriber dials a SATT "access code" of two or three digits, then dials the called party's directory number. Identification of calling line and party is automatic.



SATT TYPE BD

A combination of the B and D Systems
(Provides automatic detection of individual line and operator identification of party line stations, in the same ticketing centre.)

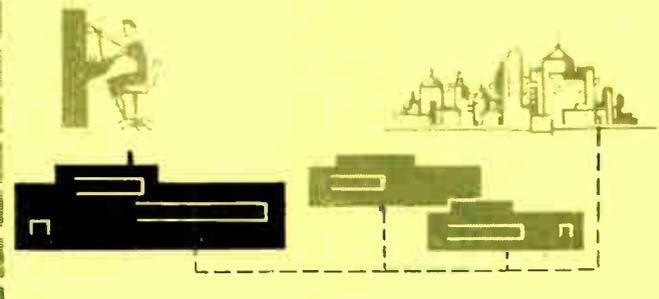
It also provides for operator identification of all calls from outlying office areas that have been arranged for customer dialing.

SATT TYPE C

For Smaller Systems where Operators are not Available
(Calling number is dialed by subscriber)

Calling party dials a SATT access code, his own directory number and the number he wishes to call. (In networks not using universal numbering, it may be necessary to dial a directing code before dialing the called number). Automatic verification of the calling line number is provided.

5745



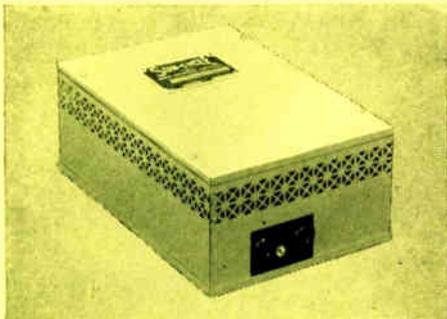
Lorain R.T.

ringing-talking power units for PBX and switchboards

END ALL MAINTENANCE!



The R.T.2, one of 7 Lorain ringing-talking power units to meet all needs. The R.T.2 operates on 115-125 volts, 60 cycle supply. It has heavy overload capacity.



The BX-60, one of a complete range of Lorain ringing machines. It operates on 105-125 volts, 60 cycle supply. Lorain also make high quality auxiliary transformers, stand-by generators, ringing converters etc.

With Lorain R.T. Units there are no moving parts. No lamps, vibrators or brushes to cause service interruptions . . . to be continually replaced. An inductance containing a saturable magnetic core and a capacitor connected in the circuit, handle the frequency conversion. The stable circuit elements operate without any mechanical movement. They do not wear out. And there is no change in their characteristics—even after long use.

Lorain R.T. Units give absolutely reliable ringing and talking currents year after year—without maintenance, lubrication or replacements—without inspection of the ringing generator!

Write us today for your copy of Bulletin 159A. It gives you full details of the complete Lorain range of ringing-talking power units for PBX and switchboards.

Automatic Electric Sales (Canada) Limited, 185 Bartley Dr., Toronto 16, Ontario. Branches in Montreal, Ottawa, Brockville, Hamilton, Winnipeg, Regina, Edmonton, Vancouver.

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AMERICAN ELECTRONICS MANUFACTURERS AND SUPPLIERS

- Radion Corp., The**, 1130 W. Wisconsin Ave., Chicago 14, Ill. Represented by: Atlas Radio Corp. Ltd., 50 Wingold Ave., Toronto 10, Ont.
- Radix Wire Co., The**, 26260 Lakeland Blvd., Cleveland, Ohio. Represented by: D. W. Rycroft & Associates, 81 Glenmore Rd., Toronto 8, Ont.
- Reeves Soundcraft Corp.**, 10 East 52nd St., New York, N.Y. Represented by: A.T.R. Armstrong Ltd., 700 Weston Rd., Toronto 9, Ont.
- Ron Merritt Co., 120 W. Thomas St., Seattle 99, Wash.
- Rek-O-Kut Co. Inc.**, 38-19 108th St., Corona 68, N.Y. Represented by: Atlas Radio Corp. Ltd., 50 Wingold Ave., Toronto 10, Ont.
- Remler Co. Ltd.**, 2101 Bryant St., San Francisco, Calif. Represented by: E. E. Whittaker, P.O. Box 3255, Arnprior, Ont.
- Reon Resistor Corp.**, 117 Stanley Ave., Yonkers, N.Y. Represented by: Precision Electronics Corp. Ltd., 50 Wingold Ave., Toronto 10, Ont.
- Resistors, Inc.**, 5226 W. 26th St., Chicago 50, Ill. Represented by: Gammatronics Ltd., 18 Rideau St., Ottawa, Ont.
- R-F Electronics, Inc.**, Div. of Electro Switch Corp., King Ave., Weymouth 88, Mass. Represented by: George M. Fraser, Ltd., 1554 Yonge St., Toronto 7, Ont.
- Richards Electrocraft Inc.**, 4432-36 N. Kedzie Ave., Chicago 25, Ill. Represented by: R. C. Kahrnt Sales Co., 73 Crockford Blvd., Scarborough P.O. Ont.
- Richardson Co., The**, 2770 Lake St., Melrose Park, Ill. Represented by: Paul Hammond Co., 1913 Tecumseh Rd., Lansing, Mich.
- Roanwell Corp.**, 662 Pacific St., Brooklyn 17, N.Y. Represented by: Samuel C. Hooker Ltd., 2425 Grand Blvd., Montreal 28, Que.
- Robins Industries Corp.**, 214-26 41st Ave., Bayside 61, N.Y. Represented by: Atlas Radio Corp. Ltd., 50 Wingold Ave., Toronto 10, Ont.
- Robinson Aviation, Inc.**, Teterboro Air Terminal, Teterboro, N.J. Represented by: Aviation Electric Ltd., 200 Laurentian Blvd., Montreal, Que.
- Robotron Corp.**, 21300 W. Eight Mile Rd., Detroit 19, Mich. Represented by: Frank Amy, P.O. Box 73, Burlington, Ont.
- Roller-Smith Corp.**, 1825 W. Market St., Bethlehem, Pa. Represented by: John S. Plewes, 52 Hunbercrest Blvd., Toronto, Ont.
- Rotron Mfg. Co.**, 7-9 Schoonmaker Lane, Woodstock, N.Y. Represented by: The Hoover Co. Ltd., Gage & Barton Sts., Hamilton, Ont.
- Royal Electric Corp.**, Federal Cable Division, 95 Grand Ave., Pawtucket, R.I. Represented by: Standard Telephone & Cables Mfg. Co. (Canada) Ltd., Montreal, Que.
- RS Electronics Corp.**, 435 Portage Ave., Palo Alto, Calif. Represented by: Micarta Fabricators Ltd., 18 Toronto St., Toronto, Ont.
- Rubicon Co., Ridge Ave at 35th St.**, Philadelphia, Pa. Represented by: Honeywell Controls Ltd., Vanderhoof Ave., Toronto 17, Ont.
- Ruge Associates Inc.**, Arthur C., 733 Concord Ave., Cambridge 38, Mass. Represented by: Electromechanical Products Ltd., Markham Rd., Agincourt, Ont.
- Rutherford Electronics Co.**, 8944 Lindblade St., Culver City, Calif. Represented by: Electrodesign, 736 Notre Dame St. W., Montreal, Que.
- Rite Special Wires Inc.**, Chicago, Ill. Represented by: Furness Intercom Systems, Winnipeg, Man.
- Sanborn Co.**, 175 Wyman St., Waltham 54, Mass. Represented by: R-O-R Associates Ltd., 1470 Don Mills Rd., Don Mills, Ont.
- R-O-R Associates Ltd., 6201 Cote St. Luc Rd., Montreal, Que.
- ARVA, 470 Granville St., Vancouver 2, B.C.
- San Fernando Electric Mfg. Co.**, 1509-35 First St., San Fernando, Calif. Represented by: George H. Giles, 16 Center St., Thornhill, Ont.
- Sangamo Electric Co.**, Eleventh & Converse, Springfield, Ill. Represented by: Sangamo Electric Co., Leaside, Ont.
- P. J. Heenan, 804 Mount Pleasant Rd., Toronto 12, Ont.
- D. Eldon McLennan, 1624 West Third Ave., Vancouver 9, B.C.
- Sarkes Tarzian Rectifier Division**, 415 N. College Ave., Bloomington, Ind. Represented by: A.T.R. Armstrong Ltd., 700 Weston Rd., Toronto, Ont.
- Sauereisen Cements Co.**, 1045 N. Canal St., Pittsburgh 15, Pa. Represented by: A. A. Andersen & Co. Ltd., 20 Algje Ave., Toronto 14, Ont.
- Saxton Products Inc.**, 1661 Boone Ave., Bronx 60, N.Y. Represented by: Active Radio Corp. Ltd., 58 Spadina Ave., Toronto, Ont.
- Musimart of Canada Ltd., 901 Bleury St., Montreal, Que.
- Scaico Controls Inc.**, Cooper St., P.O. Box 41, Delanco, N.J. Represented by: Samuel C. Hooker Ltd., 21 King St. E., Toronto 1, Ont.
- Samuel C. Hooker Ltd., 2425 Grand Blvd., Montreal 28, Que.
- Schauer Manufacturing Corp.**, 4523 Alpine Ave., Cincinnati 42, Ohio. Represented by: Pitt Distributing Co., 80 George St., Toronto 2, Ont.
- Scheel International, Inc.**, 5909 N. Lincoln Ave., Chicago 44, Ill. Represented by: Josid Sales Reg'd., 393 Prince Albert, Montreal, Que.
- Bissett & Webb Ltd., 608 Paris Bldg., Winnipeg, Man.
- Sealtron Corp.**, Reading Rd. at Amity, Cincinnati 15, Ohio. Represented by: Johnson, Matthey & Mallory, 110 Industry St., Toronto 15, Ont.
- Seco Manufacturing Co.**, 5015 Penn Ave. S., Minneapolis 10, Minn. Represented by: George H. Giles Sales, 16 Centre St., Thornhill, Ont. (Eastern Canada).
- Ron Merritt Co., 470 Granville St., Room 229, Vancouver 2, B.C. (Western Provinces).
- Sci-Rex Corp.**, 75 River Rd., Nutley 10, N.J. Represented by: Armalite Co Inc., Crystal Arts Square, Toronto 6, Ont.
- Lea Products Co., 996 De Bullion St., Montreal, Que.
- Sensitive Research Instrument Corporation**, New Rochelle, N.Y.
- Sequoia Wire Co.**, 2201 Bay Rd., Redwood City, Calif. Represented by: J. J. McQuarrie, 46 St. George St., Toronto 5, Ont.
- Servo Corporation of America**, 2020 Jericho Turnpike, New Hyde Park, N.Y. Represented by: M.E.L. Sales Ltd., Arnprior, Ont.
- M.E.L. Sales Ltd., P.O. Box 50, Don Mills, Ont.
- M.E.L. Sales Ltd., P.O. Box 189, Postal Station "O", Montreal, Que.
- Servomechanisms, Inc.**, 12500 Aviation Blvd., Hawthorne, Calif. Represented by: Servomechanisms (Canada) Ltd., Rexdale Blvd. & Kipling Ave., Rexdale, Toronto, Ont.
- Shakeproof, Division of Illinois Tool Works**, St. Charles Rd., Elgin, Ill. Represented by: Shakeproof/Fastex, Division of Canada Illinois Tools Ltd., 67 Scarsdale Rd., Don Mills, Ont.
- Shalleross Mfg. Co.**, Jackson & Pusey Aves., Collingdale, Pa. Represented by: John Herring & Co. Ltd., 3468 Dundas St. W., Toronto 9, Ont.
- Instrument Service Labs. Ltd., 21 W. Broadway, Vancouver, B.C.
- Shamhan & Co., W. S.**, 11617 W. Jefferson Blvd., Culver City, Calif. Represented by: Abercorn Aero Ltd., 7435 Chester Ave., N.D.C., Montreal, Que.
- Sheffield Corp.**, The 721 Springfield St., Dayton, Ohio. Represented by: A. C. Wickman Ltd., Box 9, Station "N", Toronto 14, Ont.
- Shielding Inc.**, 3 N. Read Ave., Riverton, N.J. Represented by: Stark Electronics Instruments Ltd., Box 240, Ajax, Ont.
- Sierra Electronic Corp.**, 3885 Bohannon Drive, Menlo Park, Calif. Represented by: Atlas Radio Corp. Ltd., 50 Wingold Ave., Toronto 10, Ont.
- Atlas Radio Corp. Ltd., 1393 Robson, Vancouver, B.C.
- Atlas Radio Corp. Ltd., 505 McIntyre Block, 416 Main St., Winnipeg, Man.
- Sigma Instruments, Inc.**, 85 Pearl St., South Braintree 85, Mass.
- Silicone Insulation, Inc.**, 1383 Seabury Ave., Bronx 61, N.Y. Represented by: Dow Corning Silicones, Ltd., Tippet Rd., Wilson Heights, Toronto, Ont.
- Andrew Gilchrist Ltd., 155 Decarie Blvd., Ville St. Laurent, Que.
- Paisley Products of Canada, Ltd., P.O. Box 159, Station "H", Toronto 13, Ont.
- Simmonds Aerocessories Inc.**, 105 White Plains Rd., Tarrytown, N.Y. Represented by: Simmonds Aerocessories of Canada, Montreal, Que.
- Simmons Fastener Corp.**, North Broadway, Albany, N.Y. Represented by: Moore Brothers Machinery Co., 953 St. James St. W., Montreal, Que.
- Skinner Electric Valve Division**, 95 Edgewood Ave., New Britain, Conn. Represented by: Dycon Ltd., 21 Carson St., Toronto 14, Ont.
- Cowper Co. Ltd., 515 Fourth Ave., Lachine, Montreal, Que.
- C. M. Lovsted & Co. Ltd., 1726 W. 5th Ave., P.O. Box 459, Vancouver, B.C.
- Sonotone Corp.**, P.O. Box 200, Elmsford, N.Y. Represented by: Atlas Radio Corp. Ltd., 50 Wingold Ave., Toronto 10, Ont.
- Canadian Aviation Electronics, 6214 Cote de Liesse Rd., Montreal 9, Que.
- Sorensen & Co. Inc.**, Richards Ave., South Norwalk, Conn. Represented by: Bayly Engineering Ltd., First St., Ajax, Ont.
- ARVA, 229 Rogers Bldg., Vancouver 2, B.C.
- SoundScriber Corp.**, The 6 Middletown Ave., North Haven, Conn. (P.O. Box 1941, New Haven 9, Conn.) Represented by: Sales representatives in all principal cities across Canada.
- Southco Division, South Chester Corp.**, Lester, Pa. Represented by: Metal & Wood Fastening Devices, 60 Lakeshore Rd., Valois, Montreal, Que.
- Black Bros. Ltd., 1200 Hornby St., Vancouver, B.C.
- A.T.R. Armstrong Co., 700 Weston Rd., Toronto 9, Ont.
- Southern Electronics Corp.**, 150 W. Cypress Ave., Burbank, Calif. Represented by: Electrodesign, 736 Notre Dame St. W., Montreal, Que.
- Spaulding Fibre Co. Inc.**, 310 Wheeler St., Tonawanda, N.Y. Represented by: Spaulding Fibre Co. Inc., 106 Lakeshore Rd. East, Port Credit, Ont.
- Specialty Engineering & Electronics Co.**, 79 Clifton Place, Brooklyn 38, N.Y. Represented by: Ahearn & Soper Co. Ltd., 384 Bank St., Ottawa, Ont.
- Spectral Electronics Division of Carrier Corp.**, 1704 S. Del Mar Ave., San Gabriel, Calif. Represented by: E. E. Whittaker, P.O. Box 3255, Arnprior, Ont.
- Spivey, Inc.**, James S., 4908 Hampden Lane, Washington 14, D.C. Represented by: Domac Technical Sales Ltd., 1950 Bank St., Ottawa, Ont.
- Sprague International Ltd.**, North Adams, Mass. Represented by: John R. Tilton Ltd., 51 McCormack St., Toronto 9, Ont.
- C. M. Robinson Co., 207 Scott Bldg., Winnipeg, Man.
- Micarta Fabricators Ltd., 18 Toronto St., Toronto, Ont.
- Stackpole Carbon Co.**, Stackpole St., St. Marys, Pa. Represented by: Canadian Stackpole Ltd., 550 Evans Ave., Etobicoke, Toronto 14, Ont.
- Stainless Inc.**, Third St., North Wales, Pa. Represented by: Walcan Limited, Victoria Bldg., Ottawa, Ont.
- Stancil-Hoffman Corp.**, The, 921 N. Highland Ave., Hollywood 38, Calif. Represented by: Caldwell Av. Equipment Co. Ltd., 447 Jarvis St., Toronto 5, Ont.
- Standard Electric Time Co.**, The, 89 Logan St., Springfield 2, Mass. Represented by: The Standard Electric Time Co. of Canada, Ltd., 726 St. Felix St., Montreal, Que.
- Standard Pressed Steel Co.**, Box 167, Jenkintown, Pa. Represented by: Standco Canada Ltd., 193 Bartley Drive, Toronto 16, Ont.
- States Co.**, The, 19 New Park Ave., Hartford 6, Conn. Represented by: Irving Smith Ltd., 2095 Madison Ave., Montreal 28, Que.
- Filer Smith Machinery Co. Ltd., 503 Confederation Life Bldg., Winnipeg, Man.
- Staver Co. Inc.**, The, 41-51 N. Saxon Ave., Bay Shore, L.I., N.Y. Represented by: Atlas Radio Corp. Ltd., 50 Wingold Ave., Toronto 10, Ont.

AMERICAN ELECTRONICS MANUFACTURERS AND SUPPLIERS

- Stevens Mfg. Co., Inc.**, P.O. Box 1007 Annex, Mansfield, Ohio. Represented by: R. W. Stark, P.O. Box 514, 44 Renfrew St. W., Renfrew, Ont. (Ontario and Quebec).
- Steward Mfg. Co., D. M.**, East 36th St., Chattanooga, Tenn. Represented by: The Glendon Co. Ltd., 44 Wellington St. E., Toronto, Ont.
- Sturtevant Co., P. A.**, Addison, Ill. Represented by: Monahan Supply Corp. Ltd., 189/191 Queen St. E., Toronto 2, Ont.
- Superior Electric Co., The**, 83 Laurel St., Bristol, Conn. Represented by: The American Superior Electric Co. Ltd., 482B Eglinton Ave., Toronto 12, Ont.
- Suprex Electronics Corp.**, 4-6 Radford Place, Yonkers, N.Y. Represented by: E. S. Gould Sales Co., Suite 108, 3500 Atwater Ave., Montreal 25, Que.
- Switchcraft, Inc.**, 1328-30 N. Halsted St., Chicago, Ill. Represented by: Atlas Radio Corp. Ltd., 50 Wingold Ave., Toronto 10, Ont.
- Synthane Corp.**, Oaks, Pa. Represented by: Plastic Supply Co., 6078 Sherbrooke St. W., Montreal, Que.
- Stutevant Magnetics, Chicago, Ill.** Represented by: Ezard Electronic Devices, Bondhead, Man.
- Takk Corp., The**, P.O. Box 346, Newark, Ohio. Represented by: Powerlite Devices Ltd., 54 Atomic Ave., Toronto 14, Ont.
- Powerlite Devices Ltd., 233 Dunbar Ave., Montreal 16, Que.
- Powerlite Devices Ltd., 961 Denman St., Vancouver 5, B.C.
- Permaflex Industries Ltd., 2710 St. Clair Ave. W., Toronto, Ont.
- Talk-A-Phone Co.**, 1512 South Pulaski Rd., Chicago 23, Ill. Represented by: Industrial & Institutional Communications Ltd., 29 McNaughton Ave., Wallaceburg, Ontario.
- Taller & Cooper Inc.**, 75 Front St., Brooklyn 1, N.Y. Represented by: Atlas Radio Corp. Ltd., 50 Wingold Ave., Toronto 10, Ont.
- General Communications Ltd., 980 O'Connor Drive, Toronto, Ont.
- Tech Laboratories, Inc.**, Bergen and Edsall Blvds., Palisades Park, N.J. Represented by: Pylon Electronic Development Co. Ltd., 161 Clement St., Ville LaSalle, Montreal 32, Que.
- Technical Apparatus Builders**, 109 Liberty St., New York 6, N.Y.
- Technical Appliance Corp.**, 1 Taco St., Sherburne, N.Y. Represented by: Hackbusch Electronics Ltd., 23 Primrose Ave., Toronto, Ont.
- Techniques, Inc.**, 52 Jackson Ave., Hackensack, N.J. Represented by: A.T.R. Armstrong Ltd., 700 Weston Rd., Toronto, Ont.
- Tecniraft Laboratories, Inc.**, Thomaston-Waterbury Rd., Thomaston, Conn. Represented by: Champlain Metals Ltd., 740 St. Maurice St., Montreal, Que.
- Tektronix, Inc.**, P.O. Box 831, Portland 7, Ore.
- Tel-Autograph Corp.**, 87 Bellanca Ave., Los Angeles 45, Calif. Represented by: Automatic Electric Sales (Canada) Ltd., 185 Bartley Drive, Toronto 16, Ont.
- Telecomputing Corp.**, 12838 Satcoy St., North Hollywood, Calif. Represented by: Brian Engineering Ltd., 5275 Van Horne Ave., Montreal, Que.
- Teleradio Engineering Corp.**, 99 Wall St., New York 5, N.Y. Represented by: J. R. Longstaffe Co. Ltd., 300 Campbell Ave., Toronto 9, Ont.
- J. R. Longstaffe Co. Ltd., 5890 Monkland Ave., Montreal 28, Que.
- J. R. Longstaffe Co. Ltd., 492 Somerset St. W., Ottawa, Ont.
- Radiovision Sales Ltd., 325-10th Ave. W., Calgary, Alta.
- Television Utilities Corp.**, 112-33 Colonial Ave., Corona, N.Y. Represented by: Canadian Marconi Co., 2442 Trenton Ave., Montreal 16, Que.
- Canadian Marconi Co., 830 Lansdowne Ave., Toronto, Ont.
- Tel-Instrument Electronics Corp.**, 728 Garden St., Carlstadt, N.J. Represented by: Atlas Radio Corp. Ltd., 50 Wingold Ave., Toronto 10, Ont.
- Tel-Labs Inc.**, 1050 Second St., Manchester, N.H. Represented by: Electrodesign, 109 Eglinton Ave. E., Toronto, Ont.
- Tempil Corp.**, 132 West 22nd St., New York 11, N.Y. Represented by: Welding & Supplies Co. Ltd., 3445 Parthenais, Montreal, Que.
- Tenna Mfg. Co., The**, 7580 Garfield Blvd., Cleveland, Ohio. Represented by: Ben Manis Associates Reg'd., 5137 Montclair Ave., Montreal 29, Que.
- Tenney Engineering, Inc.**, 1090 Springfield Rd., Union, N.J. Represented by: J. H. Lock & Sons Ltd., 874 Clyde Ave., Ottawa, Ont.
- J. H. Lock & Sons Ltd., 150 Perth Ave., Toronto, Ont.
- Texas Intronics Inc.**, 6000 Lemmon Ave., Dallas 9, Texas. Represented by: Earl Johnson, 53 Queen St., Ottawa 7, Ont.
- Thomas Mold & Die Co., Henry & Grant Sts.**, Wooster, Ohio. Represented by: The Andrew Corp., 606 Beech St., Whitby, Ont.
- Times Wire & Cable Co. Inc.**, 48 State St., Meriden, Conn. Represented by: Jerrold Electronics (Canada) Ltd., 50 Wingold Ave., Toronto 10, Ont.
- Tobe Deutschmann Corp.**, Providence Highway, Norwood, Mass. Represented by: Adams Engineering Ltd., 1500 St. Catherine St. W., Montreal, Que.
- Adams Engineering Ltd., 65 Bloor St. W., Toronto, Ont.
- Tocco Division, The Ohio Crankshaft Co.**, 4620 E. 71st St., Cleveland 5, Ohio. Represented by: W. K. Ginman, 30100 Stephenson Highway, Madison Heights, Mich.
- John C. Lewis, 44 Kingsmount St. North, Hamilton, Ont.
- C. P. Bidle, 3404 E. Olympic Blvd., Los Angeles 23, Calif.
- Trad Electronics Corp.**, 1001 First Ave., Ashbury Park, N.J. Represented by: M.E.L. Sales Ltd., Armprior, Ont.
- Transistor Devices Inc.**, 730 Boulevard, Kenilworth, N.J. Represented by: Computing Devices of Canada Ltd., P.O. Box 508, Ottawa 4, Ont.
- Transitron Electronic Corp.**, 168 Albion St., Wakefield, Mass. Represented by: Adams Engineering Ltd., 1500 St. Catherine St. W., Montreal, Que.
- Adams Engineering Ltd., 1999 Avenue Rd., Toronto 12, Ont.
- Adams Engineering Ltd., 77 Metcalfe St., Ottawa 4, Ont.
- Transitron Inc.**, 186 Granite St., Manchester, N.H. Represented by: Electrodesign, 736 Notre Dame St. W., Montreal, Que.
- Triad Transformer Corp.**, 4055 Redwood Ave., Venice, Calif. Represented by: D. Eldon McLennan Sales Co. Ltd., 1624 W. Third Ave., Vancouver, B.C. (Western Canada).
- R. C. Kahnert Sales Ltd., 73 Crockford Blvd., Scarborough P.O., Ont. (Eastern Canada).
- Trico Fuse Mfg. Co.**, 2948 N. 5th St., Milwaukee 12, Wis. Represented by: Irving Smith Ltd., 2095 Madison Ave., Montreal 28, Que.
- Trio Laboratories Inc.**, 4025 Merrick Rd., Seaford, N.Y. Represented by: Tecneek Associates, P.O. Box 966, Station "B", Montreal, Que.
- Triplet Electrical Instrument Co., The**, Harmon Rd., Bluffton, Ohio. Represented by: Len Finkler, 330 Adelaide St. W., Toronto, Ont.
- C. M. Robinson Co., 2nd Floor, 189 Market Ave. E., Winnipeg, Man.
- Triplet & Barton Inc.**, 831 N. Lake St., Burbank, Calif. Represented by: The Warnock Hersey Co. Ltd., 128 Elmslie St., Montreal 32, Que.
- Tru-Ohm Products Div. Model Engineering & Mfg. Co.**, 2800 N. Milwaukee Ave., Chicago, Ill. Represented by: A.T.R. Armstrong Ltd., 700 Weston Rd., Toronto 9, Ont.
- Ron Merritt, 120 W. Thomas, Seattle, Wash.
- Tung-Sol Electric Inc.**, 95 Eighth Ave., Newark 4, N.J.
- Time Electro Devices Ltd.**, Cliffside, N.H. Represented by: Doyen Electronics Ltd., Three Rivers, Que.
- Ucinite Co., The**, 459 Watertown St., Newtonville 60, Mass. Represented by: United-Carr Fastener of Canada Ltd., Gage Ave. and Beach Rd., Hamilton, Ont.
- Ultradyne Engineering Labs, Inc.**, 2624 San Mateo, N.E., Albuquerque, N.M. Represented by: Electrodesign, 736 Notre Dame St. W., Montreal, Que.
- United Electric Controls Co.**, 85 School St., Watertown 72, Mass. Represented by: E. W. Playford Ltd., 5851 Western Ave., P.O. Box E., Montreal 28, Que.
- Process Instrument Systems Ltd., 1918 Avenue Rd., Toronto 12, Ont.
- United Electronic Mfg. Corp.**, 542-39th St., Union City, N.J. Represented by: Desser E-E Ltd., 441 St. Francois Xavier St., Montreal, Que.
- United Electronics Co.**, 42 Spring St., Newark, N.J. Represented by: Ahearn & Soper Company, 384 Bank St., Ottawa, Ont.
- United Shoe Machinery Corp.**, 140 Federal St., Boston, Mass. Represented by: United Shoe Machinery Co. of Canada, Ltd., P.O. Box 1658, Place D'Armes, Montreal, Que.
- 227 St. Vallier St., Quebec City 2, Que.
- 25 Concession St., Galt, Ont.
- 26-28 Duncan St., Toronto 2B, Ont.
- United States Radium Corp., Morristown, N.J.** Represented by: Radelin-Kirk Ltd., 1168 Bay St., Toronto, Ont.
- United States Rubber Co.**, 1230 Avenue of the Americas, New York 20, N.Y. Represented by: Dominion Rubber Co. Ltd., P.O. Box 130, 550 Papineau St., Montreal, Que.
- Universal Electric Co.**, 300 E. Main St., Owosso, Mich. Represented by: Dominion Electrohome Industries Ltd., 39 Edward St., Kitchener, Ont.
- Universal Transistor Products Corp.**, 143 East 49th St., New York 17, N.Y. Represented by: Electronic Enterprises Regd., 551 Oakwood Ave., Toronto 10, Ont.
- University Loudspeakers, Inc.**, 80 S. Kenico Ave., White Plains, N.Y. Represented by: Charles L. Thompson Ltd., 3093 Woodbine Drive, North Vancouver, B.C.
- John R. Tilton Ltd., 51 McCormack St., Toronto 9, Ont.
- U. S. Components, Inc.**, 454 E. 148th St., New York 55, N.Y. Represented by: J. J. MacQuarrie, 46 St. George St., Toronto 5, Ont.
- Utah Radio Products Co. Inc.**, 1124 E. Franklin St., Huntington, Ind. Represented by: Desser E-E Ltd., 441 St. Francois Xavier St., Montreal 1, Que.
- Desser E-E Ltd., 1512 Eglinton Ave. W., Toronto, Ont.
- Unther & Farben Electro Equipment**, St. Paul, Minn. Represented by: Crown Communications Ltd., Devon, Alberta.
- Varfex Corp. & Varflex Sales Co. Ltd.**, 512 W. Court St., Rome, N.Y. Represented by: Mica Co. of Canada, 4 Lois St., Hull, Que.
- Varian Associates**, 611 Hansen Way, Palo Alto, Calif. Represented by: Varian Associates of Canada Ltd., 45 River Drive, Georgetown, Ont.
- Vari-I. Co. Inc.**, 432 Fairfield Ave., Stamford, Conn. Represented by: Electrodesign, 736 Notre Dame St. W., Montreal, Que.
- Veeco Vacuum Corp.**, 86 Denton Ave., New Hyde Park, L.I., N.Y. Radionics Ltd., 8230 Mayrand St., Montreal 9, Que.
- Veeder-Root Inc.**, 70 Sargent St., Hartford 2, Conn. Represented by: Veeder-Root of Canada Ltd., 955 St. James St., Montreal 3, Que.
- Vemaline Products Co.**, Box 222, Hawthorne, N.J. Represented by: Geo. H. Giles, 16 Centre St., Thornhill, Ont.
- Victory Engineering Corp., International Division**, 13 East 40th St., New York, N.Y. Represented by: William T. Barron, P.O. Box 126, Oakville, Ont.
- Vitramon, Inc.**, Box 544, Bridgeport 1, Conn. Represented by: Aeromotive Engineering Products, 5257 Queen Mary Rd., Montreal 29, Que.
- Aeromotive Engineering Products, 2543 Gerrard St. E., Toronto 13, Ont.
- Vocaline Co. of America Inc., Coulter St., Old Saybrook, Conn.** Represented by: A.T.R. Armstrong Ltd., 700 Weston Rd., Toronto 9, Ont.
- Verifield Ceramics, Cleveland, Ohio.** Represented by: Burodynamics Inc., Montreal, Que.
- WacLine, Inc.**, 35 South St. Clair St., Dayton 2, Ohio. Represented by: Radionics Ltd., 8230 Mayrand St., Montreal 9, Que.

TECHNIQUES and DEVELOPMENTS in oscillographic recording



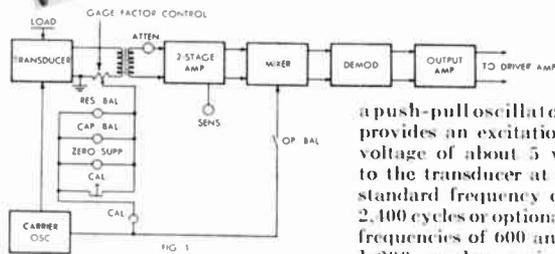
FROM
SANBORN

CIRCUIT DESIGN AND TYPICAL USES OF THE "150" CARRIER PREAMPLIFIER

One of the most frequently used plug-in front ends for Sanborn 150 Series oscillographic recording systems is the Model 150-1100 Carrier Preamplifier, since with it a "150" system can record such variables as force, temperature, strain, pressure, displacement, velocity, flow, acceleration — or any variable which can be expressed as a suitable input signal by a transducer. The "1100 Carrier" will operate with a variety of different transducers and bridge circuits, which will be mentioned later on.



In the block diagram (Fig. 1),



a push-pull oscillator provides an excitation voltage of about 5 v. to the transducer at a standard frequency of 2,400 cycles or optional frequencies of 600 and 1,200 cycles, using plug-in components.

This excitation voltage also feeds the Balancing, Calibration and Zero Suppression circuits. (The Balancing controls allow correction of resistive and reactive signal leakage from the

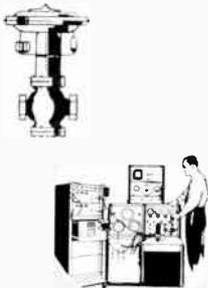
transducer, so that at zero load the net signal to the Preamplifier is zero. The Zero Suppression feature permits bucking out a large static load so that a small part of the load can be expanded over the full recording chart. The Gage Factor control allows the zero suppression range to be made equivalent to some convenient transducer load, or the full load rating of the transducer, and also causes the calibration signal to represent 2% of that load.) Transducer output is fed to the transformer through the Gage Factor potentiometer, across which the Balancing-Calibration-Zero Suppression circuits develop a voltage effectively in series with the transducer output. The mixer receives a suppressed carrier AM signal and re-inserts a carrier component, to make its output a conventional AM signal whose modulation represents the transducer load. The modulation signal (whose amplitude and polarity represent magnitude and direction of transducer output) is recovered by the demodulator and fed to the output amplifier, which in turn excites the Driver Amplifier and recording galvanometer of a "150" system.

Transducers which may be used with the Carrier Preamplifier include strain gage half-bridges or full-bridges, commercial resistance or reactance bridges, differential transformers and resistance thermometer bridges. The transducer chosen should provide at least 18.0 microvolts per volt of excitation at the minimum load to be recorded, for a one cm. deflection; impedance should be 100 to 1000 ohms. With strain gages, normal operation provides sensitivities of 50, 20 or 10 micro-inches per inch for each cm. on the recording, depending on the number of active gages. With resistance thermometers, if 1°C. or 2°F. per cm. stylus deflection is sufficient sensitivity, the user can construct his own resistance thermometer by including a 3 ohm coil of copper wire in one arm of an equal arm 100 ohm bridge.

Helpful information about the use of transducers with the 150-1100 Preamplifier is contained in the following Sanborn RIGHT ANGLE articles (reprints on request): Counting Differential Transformers, Aug. and Nov., 1956; Filter Networks for use with Force Dynamometers, Nov., 1956; Calibration with 1-, 2- or 4-arm Strain Gage Bridges, Aug., 1955; Theoretical and Actual Applications of Bridge Circuits, May and Aug., 1954.

Wing flutter recording to infrared research . . .

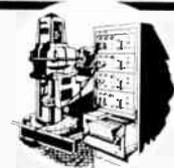
with the versatile "1100 Carrier"



Today, Carrier Preamp-equipped Sanborn "150" systems are being used for frequency response tests of process control system components; to record shaft deflections of fluid mixing equipment; in infrared research . . . vehicular traffic studies . . . submarine hull vibration measurements. Applications are limited only by the transducers available.

These are applications of only one "150" front-end; eleven more interchangeable, plug-in Preamplifiers increase the scope of Sanborn oscillographic recording systems to meet an almost infinite variety of research, production and field testing requirements. All Sanborn "150" direct writing systems record inkless traces in true rectangular coordinates; all provide 1% linearity; Basic Assemblies — equipped with your choice of Preamps — are available from one- to eight-channels, packaged in vertical cabinets, portable cases, or specially modified housings.

Technical data and help with your oscillographic recording problem are always available from Sanborn.



SANBORN COMPANY
INDUSTRIAL DIVISION

175 Wyman St., Waltham 54, Mass.

AMERICAN ELECTRONICS MANUFACTURERS AND SUPPLIERS

- Waldom Electronics Inc.**, 4625 W. 53rd St., Chicago 32, Ill. Represented by: Active Radio & TV Distributors, 58 Spadina Ave., Toronto 2B, Ont.
- Wall Mfg. Co., P., Erie St., Grove City, Pa.** Represented by: A.T.R. Armstrong Ltd., 700 Weston Rd., Toronto 9, Ont.
- Warren Components Division, El-Tronics, Inc., S. Irvine St., Warren, Pa.** Represented by: Components Canadian, Ltd., 7 Valerie Rd., Scarborough, Ont.
- Warren Wire Co., Pownal, Vt.** Represented by: Northern Electric Co., 1600 Notre Dame St. W., Montreal, Que.
- Waterbury Pressed Metal Co., The, 300 Chase Ave., Waterbury, Conn.** Represented by: Pfeiffer Electronic Laboratories, Trenton, Ont.
- Waveforms Inc., 333 Sixth Ave., New York, N.Y.** Represented by: Electrodesign, 736 Notre Dame St. W., Montreal, Que.
- Weather Industries, (Division of Advance Industries), 60 E. Gloucester Pike, Barrington, N.J.** Represented by: Alex L. Clark Ltd., 3745 Bloor St. W., Toronto, Ont.
- Webster Electric Co., 1900 Clark St., Racine, Wis.** Represented by: Dominion Sound Equipments Ltd., 4040 St. Catherine St. W., Montreal, Que. Audio Tool & Eng Ltd., 32 River St., Toronto 2, Ont.
- Weckesser Co., 5701 Northwest Highway, Chicago 30, Ill.** Represented by: Oki & Willadsen Ltd., 43 Crockford Blvd., Toronto 16, Ont. Hall Distributors Reg'd., 1172 Fort St., Montreal 25, Que. Aviquipo of Canada Ltd., 636 St. Paul St. W., Montreal 3, Que.
- Weltronic Co., 19500 W. Eight Mile Rd., Detroit, Mich.** Represented by: John Hackbusch, 9 Yewfield Crescent, Don Mills, Ont.
- West Instrument Corp., 4363 W. Montrose Ave., Chicago 41, Ill.** Represented by: Upton, Bradeen and James Ltd., 890 Yonge St., Toronto, Ont.
- Westinghouse Electric International Co., 40 Wall St., New York 5, N.Y.** Represented by: Canadian Westinghouse International Co. Ltd., 195 Fleet St. E., Toronto 1, Ont. Canadian Westinghouse Co. Ltd., Hamilton, Ont. X-Ray and Radium Industries Ltd., 261 Davenport Rd., Toronto 5, Ont.
- Westlake Plastics, West Lenni Rd., Lenni Mills, Pa.** Represented by: Crystal Glass & Plastics, 130 Queens Quay E., Toronto, Ont.
- Westline Products, Division of Western Lithograph Co., 600 E. 2nd St., Los Angeles 54, Calif.**
- Wheeler Insulated Wire Co. Inc., The, Division of Sperry Gyroscope Co., 150 E. Aurora St., Waterbury, Conn.** Represented by: Sperry Gyroscope Co. Ltd., 3 Hamilton Ave., Ottawa, Ont.
- Whittington Pump & Engineering Corp., 1126 Prospect St., Indianapolis 3, Ind.** Represented by: All-Vac Control Sales, Room 307, 11 Yorkville Ave., Toronto 5, Ont.
- Williams & Co., C. K., 640 N. 13th St., Easton, Pa.** Represented by: P. N. Soden & Co., 1143 St. Patrick St., Montreal 22, Que.
- Wilson & Co., G. C., 1915 Eighth Ave., Huntington, W. Va.** Represented by: Higginson Engineering & Sales Ltd., Hamilton, Ont.
- Winkler Laboratories, 5225 N. 20th St., Phoenix, Arizona.** Represented by: Electrodesign, 736 Notre Dame St. W., Montreal, Que.
- Winston Electronics Inc., 4312 Main St., Philadelphia 27, Pa.** Represented by: Active Radio & TV Distributors, 58 Spadina Ave., Toronto 2B, Ont.
- Wolfe Co., Franklin C., 10567 Jefferson Blvd., Culver City, Calif.** Represented by: A. J. Campbell & Co. Ltd., Room 519, Keefer Bldg., 1440 St. Catherine St. W., Montreal, Que. W. R. Watkins Co. Ltd., 41 Kipling Ave. S., Toronto 18, Ont.
- Woodwelding Inc., 355 N. Newport Blvd., Newport Beach, Calif.** Represented by: Sutherland-Schultz Electric Co., Kitchener, Ont.
- Workman TV Inc., 309 Queen Anne Rd., Teaneck, N.J.** Represented by: E. S. Gould Sales Co., 3500 Atwater Ave., Suite 108, Montreal, Que. (Quebec Province & Maritimes). Len Finkler, 330 Adelaide St. W., Toronto, Ont. (Ontario and all Western Canada except British Columbia).
- Wright Electronics Inc., 2537 Grand Ave., Kansas City 8, Mo.** Represented by: W. Gary Wright Electronics of Canada Ltd., 628 Kent St. N., Whitby, Ont.
- WRL Electronics, Inc., 3415 West Broadway, Council Bluffs, Iowa.** Represented by: E. S. Gould Sales Co., 3500 Atwater Ave., Suite 108, Montreal, Que. Payette Radio Ltd., 730 St. James St. W., Montreal, Que. (Distributor). Alpha Aracon Radio Co. Ltd., 29 Adelaide St. W., Toronto, Ont. (Distributor).
- Wright Relays Inc., Yonkers, N.Y.** Represented by: Avioelectric Co. Ltd., Buraby, Ont.

"Motivate 'Em -- Don't Recruit Them"

(Continued from page 78)

Benefit Or Bromide?

You cannot, through the mechanical devices of big space ads, shouting headlines, pretty pictures, sandbag engineers into moving in your direction. You've got to MOTIVATE 'EM, not recruit 'em. The difference between the two is the major premise. The key word is "benefit." The engineer must be made aware of a real benefit in his favor, if there is none . . . he will not budge. It is the difference between a real benefit and an old bromide. A good engineer knows the difference. A specialist in motivation (and this advertising agency leans heavily upon its precepts) can move engineers just as surely as he can move a housewife to buy a brand of cereals. To move either there must be a benefit in evidence . . . and the wise personnel manager will search out the benefits in his own company's proposition before he throws his advertising dollars into the current whirlpool.

The statement that "Engineers are People" is true . . . and leads us directly into the problem at hand . . . what appeals will influence an engineer to leave one position to go to another?

A very interesting piece of information is a survey, using engineers and engineering companies in the Avionics field and could be considered indicative of the all-over Engineer Procurement Problem. The survey embraced 18 major Avionics suppliers whose employees represent 25 to 40 per cent of the Avionics industry total. Between eight per cent and 15 per cent of the engineers questioned quit old jobs to take new ones. Higher salary and opportunity for greater responsibility are the two major reasons why they move. These outweigh all other factors combined. Geographical consideration is third.

A simultaneous survey was undertaken of 300 Avionics Engineers selected at random from the IRE Directory.

Jointly the companies surveyed employ 11,700 engineers, lost 1,400. They showed a gain of 2,300 engineers representing approximately a 24 per cent net increase in the size of their engineering staffs.

Following were the Motivation Factors In Order Of Importance.

To The Engineers:

1. Higher Salary — 29%
2. Greater Responsibility — 27%
3. Geographical Consideration — 19%
4. Opportunity for Advance Study — 6%
5. Work for Larger Company — 6%
6. Work for Smaller Company — 5%
7. Company Reputation and Policy — 3%

To the Companies:

(their view of why an engineer seeks a new job):

1. Greater Responsibility — 29%
2. Geographical Consideration — 18%
3. Higher Salary — 15%
4. Interesting Type of Work — 9%
5. Work for Smaller Company — 9%
6. Opportunity for Advanced Study — 8%
7. Company Reputation and Policy — 6%
8. Work for Larger Company — 3%

It seems quite evident from current surveys and other sources of information, including our own association with engineers, that the most significant symbol on job motivation in the mind of the engineers is not any of the signs in the Greek alphabet so familiar to the engineers but the standard \$ sign.

To the personnel manager who cannot offer the "high dollar," the need for motivation in his advertising is even more acute.

ANNOUNCING

A NEW CANADIAN COMPANY

IT&T

Electronics Service Company of Canada Ltd.

(an associate of Federal Electric Corp., Maintenance and Operations contractors for Dew Line and White Alice)

PROVIDING
A COMPLETE COMMUNICATIONS PACKAGE
ANYWHERE

Systems Engineering in all its phases, including siting,
Installation, Testing, Operation and Maintenance



IT&T offers you an opportunity to assign, to one experienced management, undivided responsibility for results

ITT

ELECTRONICS SERVICE COMPANY

of Canada Ltd.

2055 PEEL STREET

MONTREAL 2, P.Q.

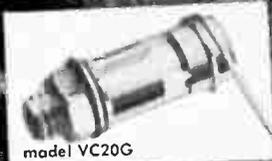
AVENUE 8-0262

Directory Of British & European Electronics Manufacturers

WITH LISTING OF CANADIAN REPRESENTATIVES

This list also contains names and addresses of Japanese firms who maintain Canadian representation

- A. A. Tools**, 197a Whiteacre Rd., Ashton-U-Lyne, Eng. Represented by: Empire Engineering Co., 738 Dundas St. E., Toronto, Ont.
- Acoustical Manufacturing Co. Ltd.**, Huntingdon, Eng. Represented by: J. B. Smyth Electronic Components, 380 Craig St. W., Montreal, Que.
- Advance Components Ltd.**, Walthamstow, London, Eng. Represented by: Electronic Enterprises Reg'd., 551 Oakwood Avenue, Toronto 12, Ont.
- J. B. Smyth Electronic Components, 380 Craig St. W., Montreal 1, Que.
- Aglie A. G. Via. S., Gottardo 4**, Locarno, Switzerland. Represented by: Cosa Corp. of Canada Ltd., 1160 Lakeshore Rd., Toronto 14, Ont.
- Air Control Installations Ltd.**, Ruislip, Middlesex, Eng.
- Airmec Limited**, High Wycombe, Bucks, Eng. Represented by: Radio Telecommunications Equipment & Engineering Ltd., 850-5th Ave., Lachine, Montreal 32, Que.
- Amos of Exeter**, Exeter, Devon, Eng. Represented by: Mechtron Engineering Products Ltd., 2437 Kaladar Ave., Ottawa, Ont.
- Amplivox (Exports) Ltd.**, 2 Bentinck St., London W. 1, Eng. Represented by: Mechtron Engineering Products Ltd., 2437 Kaladar Ave., Ottawa, Ont.
- A.N.T.E.X. Ltd.**, 3 Tower Hill, London, E.C. 3, Eng. Represented by: Mechtron Engineering Products Ltd., 2437 Kaladar Ave., Ottawa, Ont.
- Arcoelectric Switches Ltd.**, West Molsey, Eng. Represented by: Alpha Aracon Radio Co. Ltd., 29 Adelaide St. W., Toronto Ont.
- Austinlite Ltd.**, Crawley, Sussex, Eng. Represented by: Burlec Sales Ltd., 45 Northline Rd., Toronto 16, Ont.
- Autophone Ltd.**, 73 Great Peter St., London, S.W. 1, Eng. Represented by: Peffer Sound Systems Ltd., 40 Maurice St., Kitchener, Ont.
- Telecom Ltd., 163½ Church St., Toronto 2, Ont.
- Avo Ltd.**, 92-96 Vauxhall Bridge Rd., London, S.W. 1, Eng. Represented by: R. H. Nichols Ltd., 2781 Dufferin St., Toronto 10, Ont.
- Ayhurst Electronic Assemblies**, Lyton-on-Thames, Eng. Represented by: Youngstown Industrial Antenna, St. Johns, Que.
- Bauscher and Company, K.G.**, Hamburg, Germany. Represented by: The Ahern & Soper Co. Ltd., 384 Bank St., Ottawa 4, Ont.
- BBT Ltee.**, Paris, France. Represented by: Beacons Optical & Precision Materials Co. Ltd. Electronics Division, 455 Craig St. West, Montreal, Que.
- Bechler Ltd.**, Andre, Moutier, Switzerland. Represented by: Cosa Corp. of Canada Ltd., 1160 Lakeshore Rd., Toronto 14, Ont.
- Beck Ltd.**, R. & J., 69/71 Mortimer St., London, W. 1, Eng. Represented by: Tecneek Associates, P.O. Box 966, Station "B", Montreal, Que.
- Belling & Lee Ltd.**, Great Cambridge Rd., Enfield, Middlesex, Eng. Represented by: Astral Electric Co. Ltd., 44 Danforth Rd., Toronto 13, Ont.
- Bellingham & Stanley**, 71 Hornsey Rise, London N. 19, Eng. Represented by: Tecneek Associates, P.O. Box 966, Station "B", Montreal, Que.
- Benson & Robinson**, London, Eng. Represented by: Avionics Ltd., Box 200, Niagara-on-the-Lake, Ont.
- Best Products Ltd.**, Suffolk, Eng. Represented by: Cossor (Canada) Ltd., 301 Windsor St., Halifax, N.S.
- Beyschlag, Dr. Bernard**, Postschliessfach 128, 24B Westerland/Sylt, Germany. Represented by: Associated Electronic Components, 37 Roselawn Ave., Toronto 12, Ont.
- Birmingham Sound Reproducers**, Old Hill, Staffordshire, Eng. Represented by: Musimart of Canada, 901 Bleury St., Montreal, Que.
- Blackstone & Co. Ltd.**, Dursley, Gloucester, Eng. Represented by: Canadian Lister-Blackstone Ltd., 1921 Eglinton Ave. E. Toronto 13, Ont.
- Boley, G.**, Mettingerstrasse 11, (14a) Esslingen/Neckar, Germany. Represented by: Cosa Corp. of Canada Ltd., 1160 Lakeshore Rd., Toronto 14, Ont.
- British Electric Resistance Co. Ltd.**, The, Queensway, Enfield, Middlesex, Eng. Represented by: Canadian Electric Resistors Ltd., 16 Curity Ave., Toronto 16, Ont.
- British Ferrograph Recorder Co. Ltd.**, 131 Sloane St., London, S.W. 1, Eng. Represented by: Astral Electric Co. Ltd., 44 Danforth Rd., Toronto 13, Ont.
- British Physical Laboratories**, Radlett, Herts., Eng.
- British Thomson-Houston Export Co. Ltd.**, The, Rugby, Eng. Represented by: The British Thomson-Houston Co. (Canada) Ltd., 766 King St. W., Toronto, Ont.
- Brown Ltd.**, S. G., Watford, Eng. Represented by: J. B. Smyth Electronic Components, 380 Craig St. W., Montreal, Que.
- Bruel & Kjaer**, Naerum, Denmark. Represented by: R-O-R Associates Ltd., 1470 Don Mills Rd., Don Mills, Ont.
- Buckleys (Uvral) Ltd.**, London, Eng. Represented by: Canadian Research Institute, 46 St. George St., Toronto 5, Ont.
- Bulgin & Co. Ltd.**, A. F., England. Represented by: Pfeiffer Electronic Laboratories, 19 Fairview Crescent, (Box 316), Trenton, Ont.
- Byron Precision Parts**, East Portsmouth Rd., Portsmouth, Eng. Represented by: Wurgood Electronic Specialties Ltd., Waterloo, Ont.
- Cambridge Instrument Company Ltd.**, 13 Grosvenor Place, London, S.W. 1, England. Represented by: R. H. Nichols Ltd., 2781 Dufferin St., Toronto 10, Ont.
- Capp & Sons Ltd.**, A., Thames Road, Crayford, Kent, Eng. Represented by: Hildon Corporation Ltd., 321 King Street W., Toronto 2B, Ont.
- Castell Locks Ltd.**, 30 Woburn Place, London, W.C. 1, Eng. Represented by: George M. Fraser Ltd., 1554 Yonge St., Toronto 7, Ont.
- Chesterham & Co. Ltd.**, James, Bow Works, Sheffield 11, Eng. Represented by: Hildon Corporation Ltd., 321 King St. W., Toronto 2B, Ont.
- Cinema-Television Ltd.**, Worsley Bridge Rd., Lower Sydenham, London, S.E. 26, Eng. Represented by: Century Electric Co., 420 McGill St., Montreal, Que.
- Dawe Instruments Ltd.**, 1654 Bank St., Ottawa, Ont.
- Clarke & Co. (Manchester) Ltd.**, H., Atlas Works, George St., Patricroft, Eccles, Lancs, Eng. Represented by: Canadian Wilbur E. Driver Co. Ltd., 85 King St. E., Toronto 1, Ont.
- Collaro Limited**, Barking, Essex, Eng. Represented by: A. C. Simmonds & Sons Ltd., 100 Merton St., Toronto, Ont.
- Cosmocord Limited**, Enfield, Middlesex, Eng. Represented by: The Glendon Co. Ltd., 44 Wellington St. E., Toronto, Ont.
- Covern Potentiometers Ltd.**, Romford, Essex, Eng. Represented by: Tinsley Instruments, 234 Ste. Paule Ave. St. Jerome, Que.
- Cuzons Custom Ceramics**, Palace Square, Manchester, Eng. Represented by: Vemeer Electronic Imports, Government Dock Ave., Victoria, B.C.
- Danavox, A/S**, 112 Lersoe Parkalle, Copenhagen, Denmark. Represented by: Associated Electronic Components, 37 Roselawn Ave., Toronto 12, Ont.
- Danbridge, S. A.**, 60 C Frederikssundsvej, Copenhagen N. V., Denmark. Represented by: The J. W. Ellis Industries, 42 Lombard St., Toronto 1, Ont.
- Danish Ventil Industry**, Gladsaxevej 120, Soborg, Nr. Copenhagen, Denmark. Represented by: Associated Electronic Components, 37 Roselawn Ave., Toronto 12, Ont.
- Davis (Relays) Ltd.**, Jack, 18 Tudor Place, London, W. 1, Eng.
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model VC20G



model VC9G



model VC16G



model VC10GW

NEW FROM JFD

Trimmer Capacitors for Miniaturization and Subminiaturization



model VC10GW actual size

WHERE DESIGNS CALL FOR MAXIMUM RANGE IN MINIMUM PHYSICAL SIZE

VC9G Trimmer series (lug & lead type for printed circuits)

Model	Capacitance Range (MMF)	
	Min.	Max.
VC9G	0.8	8.5
VC10G	0.8	4.5
VC31G	0.8	12
VC32G	0.8	18
VC42G	1	21
VC43G	0.8	30

VC9GW Trimmer series (4 wire type for printed wiring boards)

Model	Capacitance Range (MMF)	
	Min.	Max.
VC9GW	0.8	8.5
VC10GW	0.8	4.5
VC31GW	0.8	12
VC32GW	0.8	18
VC42GW	1	21
VC43GW	0.8	30

VC20G Trimmer series (panel type)

Model	Capacitance Range (MMF)	
	Min.	Max.
VC20G	0.8	8.5
VC21G	0.8	4.5
VC22G	0.7	12
VC23G	0.8	18
VC24G	1	30

These new miniature types incorporate the exclusive new JFD telescoping tuning assembly. Both the telescoping piston and self-contained adjustment shaft function as a low inductance coaxial assembly within the dielectric cylinder. This innovation makes possible a highly compact variable trimmer piston capacitor of minimum size for the given capacitance range—up to 50% reduction in overall length compared to previous similar types.

VC16G Split stator series (panel type)

Model	Capacitance Range (MMF) Plate to Plate	
	Min.	Max.
VC16G	0.8	2.5
VC17G	1.1	4.5
VC18G	1.8	7.5
VC80	0.4	1.0
VC81	0.6	1.6
VC82	0.85	2.8
VC83	3.0	6.0

The new JFD Split Stator trimmer series was expressly engineered for critical push pull radio frequency circuits and similar sensitive networks. The extreme stability and low temperature coefficient of the quartz dielectric types recommend these trimmers for applications requiring extreme low-loss operation with maximum tuning resolution. Where maximum range for physical size is needed, you have your choice of the JFD glass dielectric split stator type.

JFD keeps pace with new trimmer capacitors ready to meet new challenges. The result is today's JFD line of 42 Precision trimmers (the industry's largest) to meet your most critical network design and production needs.

Write for Bulletins 201A, 202A, 203A and 204A, for comprehensive electrical data on above JFD trimmers.

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GRAYHILL Switches • Test Clips • Molded Parts

Grayhill Miniature Tap Switches

SERIES 5000

For Commercial Applications

SERIES 12

For Military Applications

Available 1 to 6 decks—2 to 10 contacts per deck.

Shorting (make before break) or Non-shorting (break before make). Switch rotates 360° with 10 positions—stops provided with 9 or less positions.

Bushings, 1/4" long — 3/8" — 32 thread. Diameter of switch 1-1/32". Rated to break—1 amp., 115 V. AC, non-inductive.

To carry—5 amps., 115 V. AC.



SERIES 24

Positive Detent Action and better feel for precision requirements.

Available 1 to 6 decks—2 to 10 contacts per deck.

Shorting (make before break) or Non-shorting (break before make). 360° rotation with 10 positions—stops provided for less than 10 positions.

Bushings, 1/4" long — 3/8" — 32 thread. Diameter of switch 1-1/32". Rated to break—1 amp., 115 V. AC, non-inductive.

To carry—5 amps., 115 V. AC.



Spring Return Rotary Switch

Similar to Series 24 except with spring return to center position. Provides momentary contact on either side of center position only. Available in 1 to 3 decks, either shorting or non-shorting type.



Series 29 Binding Posts



- Metal parts—Nickel Plated.
- Molded parts—Phenolic to MIL-P-14.
- Washers—Non-turn "D".
- Cross-hole—Flush.
- Integral solder lug.
- Color—Red or Black as specified.

Grayhill Diode Holder

Provides a tight snap fit within gold-plated, phosphor bronze, spring tension clips. Molded phenolic base has non-turn projection.

Clips—.635" center to center. Overall dims.—length—1.516", width—3/8", height—3/8".

No. 17-1—Molded Diode Holder.



Grayhill Push Button Switches

SERIES 2000 — Snap Action

For Manual Operation

Audible click when actuated. Momentary contact, single pole, single throw type.

O.D.—7/8" dia. x 1-59/64" high. Bushings 7/16" long — 15/32" — 32 thread.

Rated—10 amps., 115 V. AC, non-inductive.

1 amp., 115V., D.C. Rated Life—Approx. 50,000 operations.

No. 2201—Normally open. No. 2202—Normally closed.



SERIES 4000 — Momentary Contact

Momentary contact, single pole, single throw type.

O.D.—51/64" dia. x 1-17/32" high. Bushings, 3/8" long — 15/32" — 32 Thread.

Rated—1/2 amp., 115 V. AC, non-inductive. Rated Life—Approx. 800,000 operations.

No. 4001—Normally open. No. 4002—Normally closed.



SERIES 23

Miniature Momentary Contact

Momentary contact, single pole, single throw type.

O.D.—1/2" dia. x 1-3/64" high. Bushings, 1/4" long — 5/16" — 32 thread.

Rated—1/4 amp., 115 V. AC, non-inductive. Rated Life—Approx. 500,000 operations.

No. 23-1—Normally open.



SERIES 30

Midget Silent Action

Sub-Miniature, non-snap, momentary contact, single pole, single throw type.

O.D.—3/8" dia. x 63/64" high. Mounting Bushing, 1/4" — 32 thread.

Rated—.10 amp., 115 V. AC, non-inductive. Rated Life—Approx. 300,000 operations.

No. 30-1—Normally open.



Grayhill Printed Circuit Test Jacks

SERIES 31

For use on printed circuits as a test point to feed AF, RF, and Pulse signals, check and feed DC voltages, monitor signals during test, alignment, etc. For use with standard .081"-.0825" phone tip plugs. Rivets to board like an eyelet.

Dims.—1/4" high, rivet dia.—.114".

No. 31-1—For 1/16" board.

No. 31-2—For 3/32" board.

No. 31-3—For 1/8" board.



Plastic Sleeves

for Series 31 Test Jacks

Snap-on, plastic insulators lock in place over Grayhill Test Jacks. Dimensions—Dia. .245", Hgt. .290". No. 31B—Plastic Sleeves, available in 8 colors for coding.



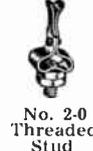
LAKE ENGINEERING CO. LTD.
767 WARDEN AVENUE
SCARBOROUGH, ONTARIO
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Grayhill Test Clips



SERIES 16

Completely insulated. Even hinge pin is insulated. Low contact resistance (approx. .0015 ohm) — .008" silver overlay on contact surfaces. Terminals—silver plated. Finger grips—molded phenolic.



No. 2-0 Threaded Stud



No. 2-1 Banana Plug



No. 2-4 Threaded Stud with Insulating Washers



No. 2-6 Pin Plug

SERIES 2

The basic spring clip is available in several styles of mounting as illustrated. Mounted on panel of test equipment, they permit fast lead connections without manual opening and closing of jaws or clamps. Also useful in bread board work and laying out of harnesses.

Grayhill Plug-In Adapter

Designed for testing resistors, capacitors, and similar pig-tail type components on standard test equipment. Banana Plug spacing—3/4" centers. No. 2-2 Plug-In Adapters.



Grayhill Stand-Off Insulators

Mica-filled phenolic bodies for low loss at high frequencies, high dielectric strength, low moisture absorption and fungus resistance. Silver plated brass solder terminals. Front of panel length—15/16". Dia. 5/16". No. 18-1—Female, No. 4—40 Thread. No. 18-2—Male, No. 4—40 Thread.



Grayhill Coil Forms

Molded of mica-filled phenolic for low loss at high frequencies, low moisture absorption, high dielectric strength and resistance to fungus growth. Tinned Copper wire leads. Patented anchor posts. Dimensions—Length—.500" to 1.000". Diameter—.125" to .250". Lead wire diameter—.025" to .040".



Grayhill Mating Insulating Washers

To insulate jacks with 3/8" dia. bushings from mounting panel. Back of panel washer has indexing hole fitting non-turn tab of the jack. Shoulder dimensioned for 1/16" min. panel thickness.

No. 21B78-1 Indexing Washer, Natural Mica-filled Phenolic. No. 21B78-2 Indexing Washer, Black Electrical Grade.

Grayhill Molded Insulating Washers

Available in sizes for No. 6 to 3/8" screw in natural mica-filled phenolic or black electrical grade insulating material.



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* The Canadian Publishing Industry May Well Be Proud Of Its International Leadership



"Something strange, nameless and profound moves in Canada today . . . Sometimes by thought, more often by intuition, the Canadian people make the final discovery. They are discovering themselves."

— Bruce Hutchison in 'Canada: Tomorrow's Giant.'

For Canadians, this is indeed a time of self-discovery. Everywhere, there is a deepening sense of national identity, a new-born confidence in Canada's destiny. And nowhere is this growing self-reliance more evident than in this country's publishing industry. For years, by the sheer pressure of their numbers, U.S. publications imposed a recognizable U.S. pattern on Canadian publications. But no longer. As the voice of the nation in every department of our national life, more and more Canadian publications are speaking with a new self-awareness and assurance. They are leading, where once they followed, striking out for themselves as originators of Canadian policies designed for Canadian readers. By being true to themselves they have actually reversed traditional trends, and established continent-wide leadership. Presumably they are being watched by prosperous U.S. Publications and there is some reason to believe that Canadian patterns have sparked off significant changes in U.S. editorial policies. Here are two recent examples of which Canadian publishers may well be proud.

In 1953 Age Publications Ltd. launched **ELECTRONICS AND COMMUNICATIONS** on the concept that a well balanced editorial program would require approximately 50 per cent of its content devoted to news, management and market data and 50 per cent to strictly technical articles. This year — five years

later—the leading United States electronics magazine formerly heavily technical in content announced a change from monthly to three-times-a-month issuance with two issues devoted to news, management and market data and the third to technical articles.

Since then, it has gone even further to announce that in 1958 all its issues will deal with the commercial aspects of the field and only half carry technical articles. Announced reasons for the changes were those which formed the basis of the publishing and editorial policy of **ELECTRONICS AND COMMUNICATIONS** when established five years ago.

Early this year Age Publications decided to fill a long felt need in the Canadian aircraft industry for a publication directed vertically toward management, design and production. In May, Age Publications Ltd. announced and in August it published the first issue of **INDUSTRIAL AERONAUTICS** — the first publication on the continent addressed exclusively to and circulated among this branch of the aviation field. In late September two major U.S. publishers announced new magazines, each to be published in January, 1958 as "the first truly industrial magazines directed to operating management in the aircraft manufacturing industry" in the United States. Reasons announced for their establishment were those which formed the basis for the establishment in Canada of **INDUSTRIAL AERONAUTICS** earlier in this year.

As a member of the Canadian publishing industry and as one who has been personally associated with leading Canadian periodicals for over 30 years it is, I hope, with pardonable pride that I call attention to these two Canadian "firsts" instituted by Age Publications Limited. In all fairness to the Canadian periodical press I recognize that there have been other such instances in the history of our industry.

Norman McHardy

NORMAN "NICK" McHARDY
PRESIDENT



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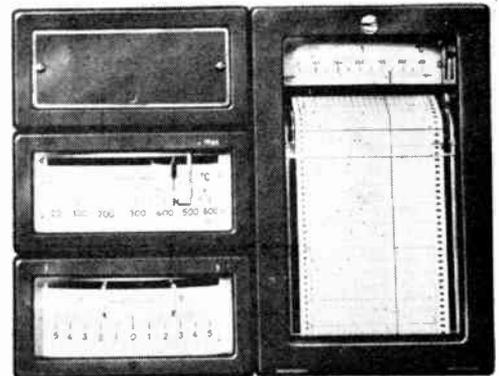
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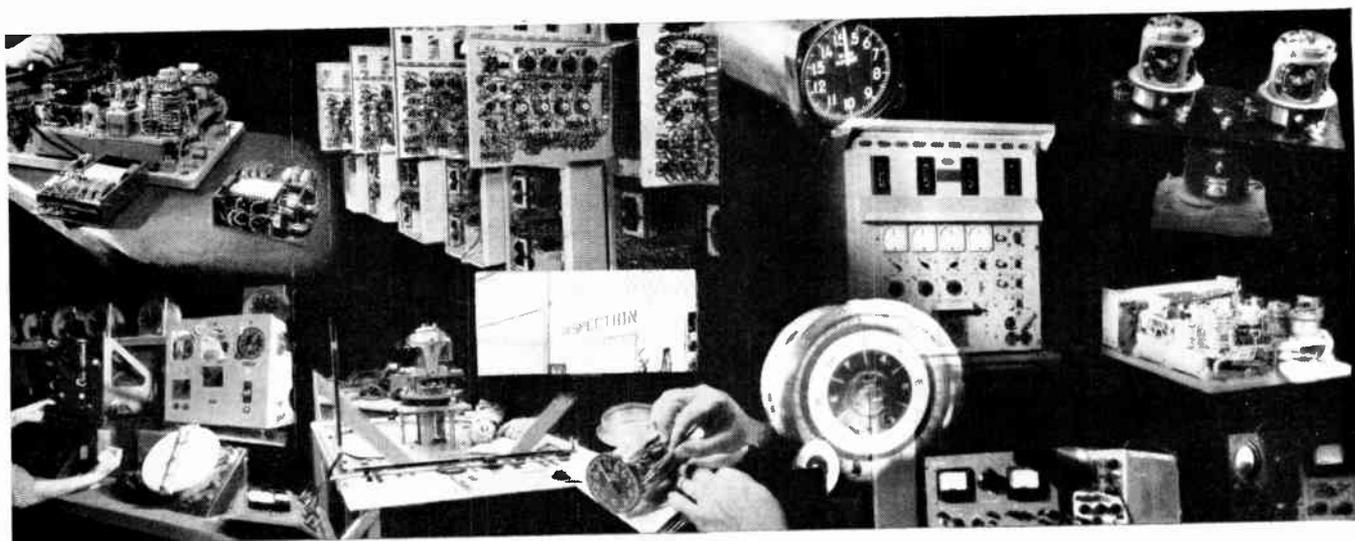
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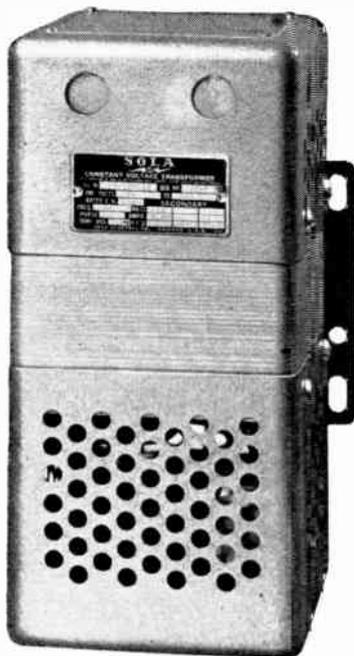
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Today more than yesterday...tomorrow more than today

A dependable source of stable voltage

Today more than yesterday—and tomorrow more than today—circuit reliability and simplification is a



STANDARD-TYPE DESIGN for the 250-1000 va ratings range of Sola Constant Voltage Transformers shows compactness and simplicity of this static-magnetic regulator.

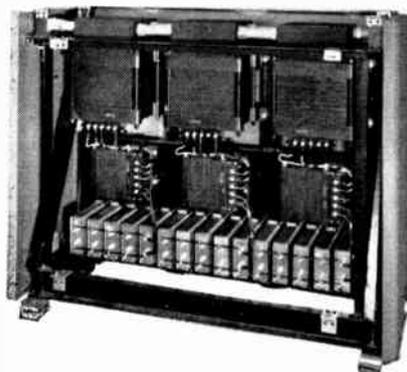
vital responsibility of the electronic and electrical design engineer. Where the problem is voltage control, utmost simplicity and reliability is provided by the Sola Constant Voltage Transformer.

Along with its simplicity, the static-magnetic Sola regulator offers many important advantages over other voltage stabilizers, some of which depend upon saturation of core materials for their regulating action; or other types employing tubes. The performance characteristics of Sola Constant Voltage Transformers have led to their widespread use in applications for which other types of regulators are unsatisfactory. Included are:

1. Completely automatic, continuous regulation of output within $\pm 1\%$ with primary voltage variations as great as $\pm 15\%$.

2. Response time of 1.5 cycles or less.
3. No moving or expendable parts or manual adjustments.
4. Self-protecting against short circuits or heavy overloads on output or load circuit.
5. Current-limiting characteristic protects load equipment from excessive fault currents.
6. Availability of transformation ratio for step-up, step down, plate and/or filament supply permits substitution in place of conventional non-regulating transformers.
7. Provides isolation between input and output circuits, often eliminating the need for "static shields."
8. Relatively compact compared to other equipment for comparable ac voltage regulation.

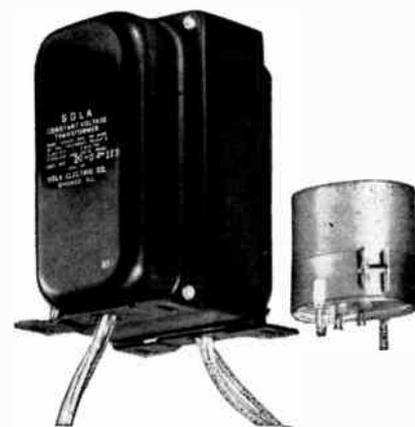
The basic-design Sola regulator—referred to as the Standard-Type Constant Voltage Transformer—is available from stock in capacities from 15 va to 10 kva in a variety of ratings. Many of these standard models can also be supplied for 25



SPECIAL DESIGN above exemplifies adaptability of the basic Sola Constant Voltage Principle to special electrical or mechanical needs. This unit, rated at 9 kva—either single, or three-phase—delivers $\pm 1\%$ voltage regulation with negligible harmonic distortion.

and 50 cycle service, or with other input and output voltages, on a "build-to-order" basis.

Special adaptations of the basic design have resulted in six additional types of Sola regulators that meet a variety of voltage stabilization problems. Included are types that provide low harmonics in the output wave, regulation of electronic plate and filament voltage supplies, and lower-cost regulation for household appliance service.



LATEST ADDITION are these filament-voltage regulators in capacities up to 25a at 6.3v. Capacitor, at right, is wired separately from transformer for most compact mounting of the assembly as component in manufacturers' product.

Your letterhead request for "The Sola Constant Voltage Transformer—Theory of Design and Operation" will bring answers to your technical questions about the operation of the Sola regulator. This monograph includes a discussion of special adaptations of the basic-design voltage regulator. Specific information about transformer availabilities for your particular "component" or "end use" applications may be obtained promptly from your nearest district sales engineer. He's listed below.

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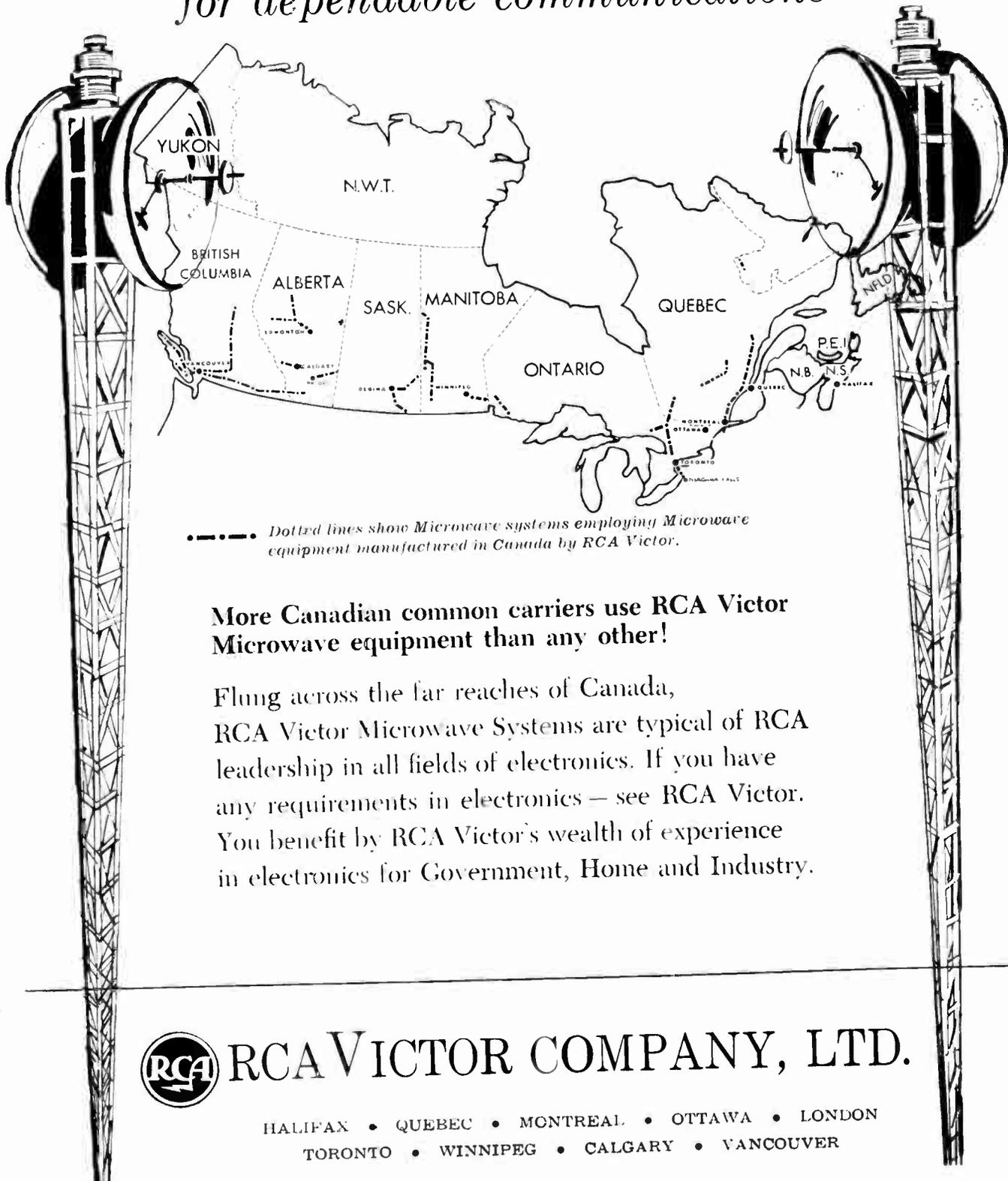
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for dependable communications



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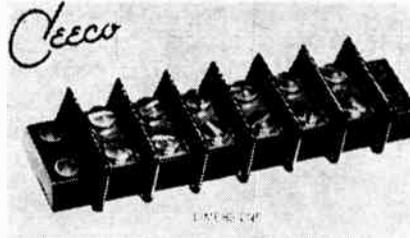
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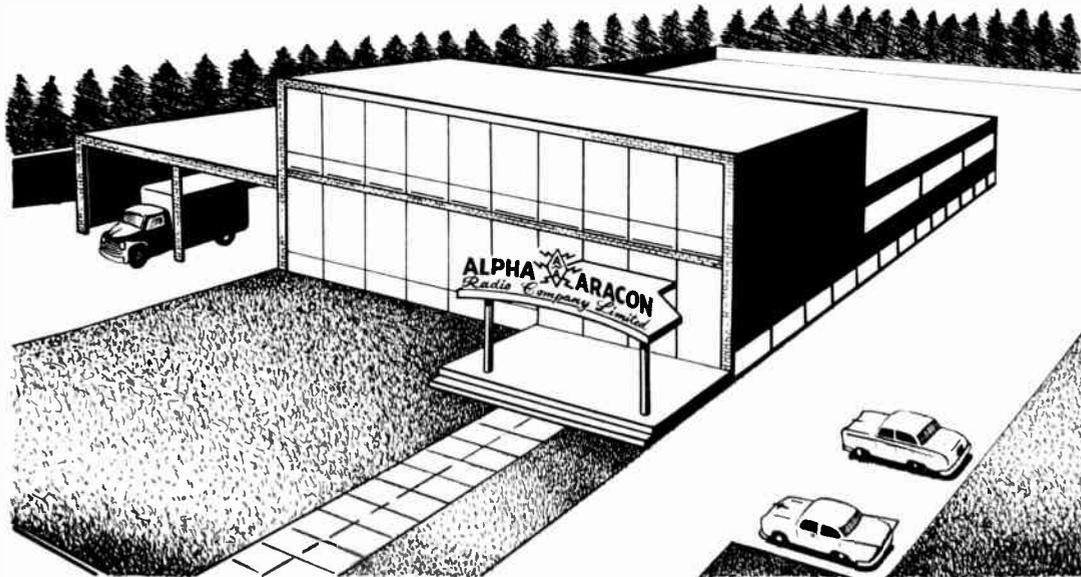
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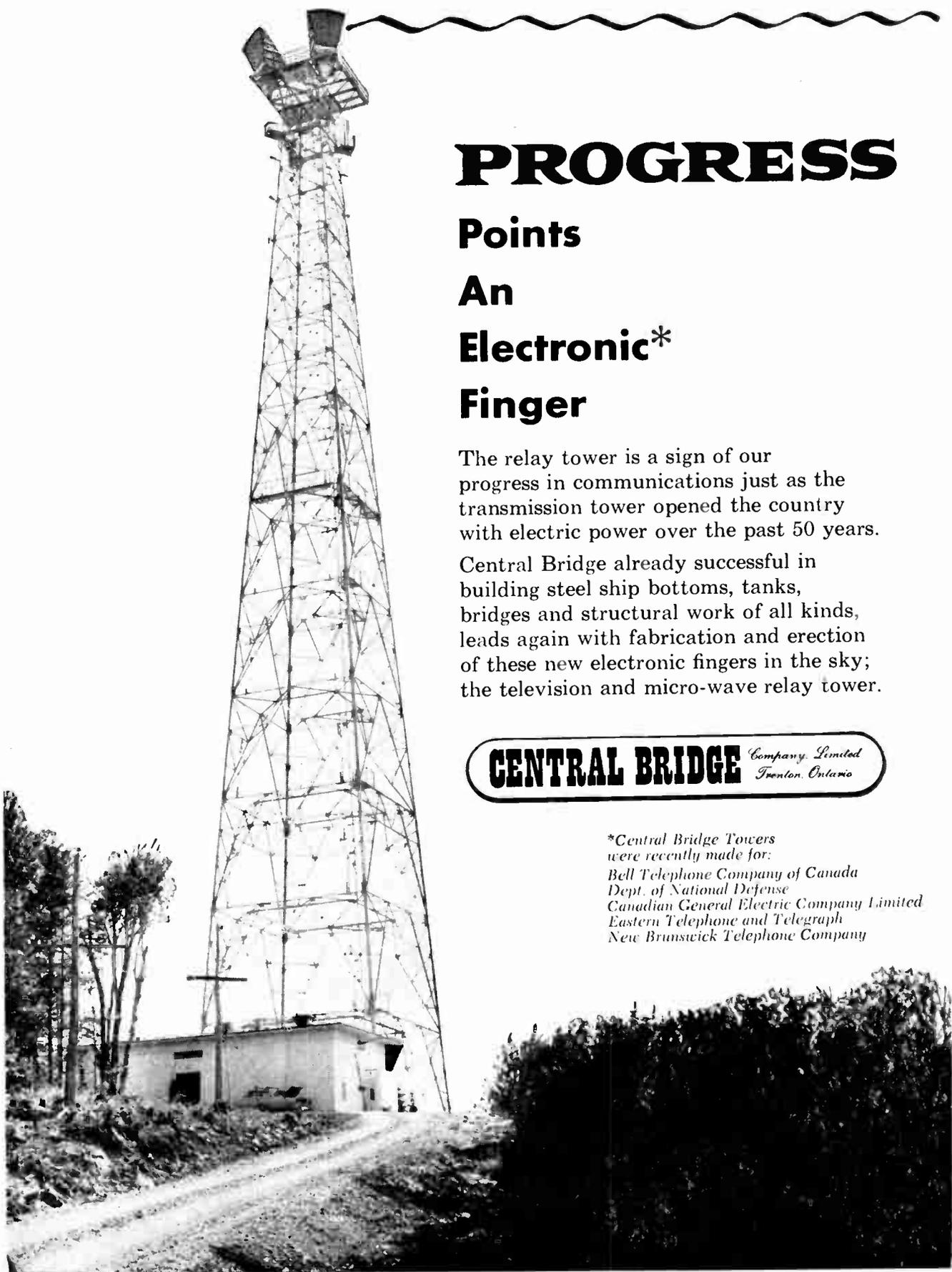
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 Marion Instrument Company
 Tung-Sol Electric, Inc.

ALPHA ARACON RADIO COMPANY LTD. - - - - 29 Adelaide St. W., Toronto, Ontario

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PROGRESS

Points An Electronic* Finger

The relay tower is a sign of our progress in communications just as the transmission tower opened the country with electric power over the past 50 years.

Central Bridge already successful in building steel ship bottoms, tanks, bridges and structural work of all kinds, leads again with fabrication and erection of these new electronic fingers in the sky; the television and micro-wave relay tower.

CENTRAL BRIDGE *Company, Limited*
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**Central Bridge Towers
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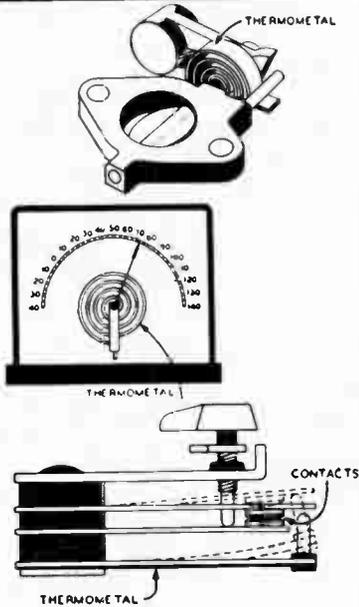
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THERMOMETAL . . .

for use in electrical appliances, thermal cutouts, heating controls . . . in any application involving the indication and accurate control of temperatures, electrical currents, voltages, etc. Supplied in strip form, rolled and slit to close tolerances and tempered to meet specifications. Also supplied as elements and sub-assemblies, with or without contacts attached, fabricated in accordance with specifications.



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of ductile and non-ductile materials for every application requirement. BAKER research has developed processes for bare drawing wire as fine as .0004". Where smaller fine wire is required, the Wollaston process, for ductile metals, and the Taylor and Extrusion methods, for non-ductile materials, are employed.



- ▶ for controlling temperature...
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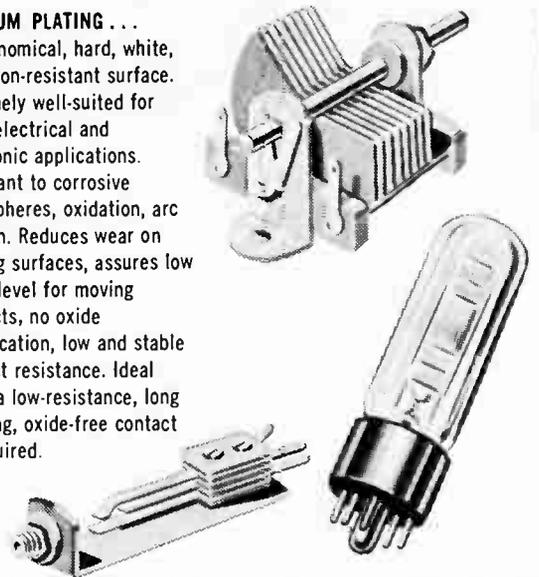
PRECIOUS METAL CONTACTS

for long operating life and unvarying performance. Available in pure or alloyed forms of Silver, Platinum, Palladium, and Gold. These contacts provide extremely high resistance to atmospheric corrosion, deformation, arc erosion, sticking and metal transfer. They are supplied as wire, rod, sheet, and as fabricated forms.



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HERE'S HOW TO SPECIFY

Performance-Guaranteed TAPE WOUND CORES

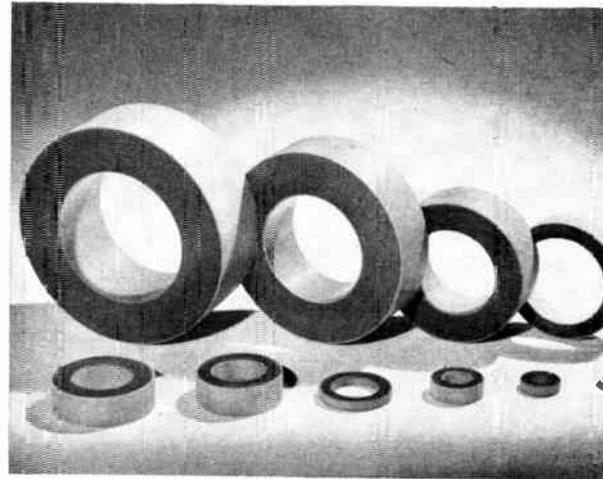
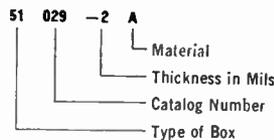
Magnetics, Inc. manufactures "Performance-Guaranteed" Tape Wound Cores using such commercially available alloy materials as Hy Mu 80, 48 Alloy and Orthonol. These alloys, when properly processed, fill the majority of applications in which tape wound cores are used today.

Each "Performance-Guaranteed" Tape Wound Core is coded by a part number which describes it in great detail. Knowing this code will greatly simplify your purchasing and assembly line practices.

- 50,000 series are Standard Cores in Phenolic Boxes
51,000 series are Standard Cores in Aluminum Boxes
- Number preceding final letter is tape thickness in mils
- Final letter describes the high permeability material as follows: A—Orthonol D—Hy Mu 80 H-48 Alloy

Example: A typical core number is 51029-2A

- 51,000 indicates a standard core in an Aluminum Core Box.
- The number preceding final letter is 2, indicating tape thickness is 2 mils.
- Final letter is A, showing Orthonol is the material.



For complete information, write for Catalog-Design Manual TWC-200

TABLE I • STANDARD SIZES OF TAPE WOUND CORES

A ₂ Aw X 10 ⁻⁶ (See Note 1)	CORE NUMBER (See Note 2)	CORE DIMENSIONS (In.)			NOMINAL CASE DIMENSIONS (In.)			CASE WINDOW AREA IN CIRCULAR MILS X 10 ⁻⁶	MEAN LENGTH OF MAGNETIC PATH (Cm.)	EFFECTIVE CORE CROSS SECTION AREA (Cm. ²)			I.D./O.D. RATIO
		I.D.	O.D.	Ht.	I.D.	O.D.	Ht. (See Note 3)			.001	.002	.004 & .006	
0.004	50153	0.375	0.500	0.125	0.315	0.560	0.195	0.099	3.49	0.041	0.043	0.046	0.750
*0.008	50056	0.500	0.625	0.125	0.440	0.685	0.195	0.194	4.47	0.040	0.043	0.045	0.800
0.013	50057	0.625	0.750	0.125	0.555	0.810	0.195	0.308	5.49	0.040	0.042	0.046	0.833
*0.017	50000	0.500	0.750	0.125	0.440	0.810	0.195	0.194	4.92	0.081	0.086	0.091	0.667
*0.030	50002	0.650	0.900	0.125	0.590	0.960	0.195	0.348	6.13	0.081	0.086	0.091	0.722
0.053	50033	0.625	0.875	0.250	0.555	0.945	0.330	0.308	5.99	0.162	0.172	0.182	0.714
0.059	50003	0.750	0.938	0.250	0.680	1.010	0.330	0.460	6.74	0.121	0.128	0.135	0.800
*0.059	50076	0.625	1.000	0.188	0.555	1.070	0.268	0.308	6.36	0.182	0.193	0.205	0.625
*0.074	50011	1.000	1.250	0.125	0.930	1.320	0.195	0.864	8.94	0.081	0.086	0.091	0.800
*0.079	50007	0.625	1.000	0.250	0.555	1.070	0.330	0.308	6.36	0.242	0.257	0.272	0.625
*0.079	50061	0.750	1.000	0.250	0.680	1.070	0.330	0.462	6.93	0.161	0.171	0.181	0.750
*0.089	50106	0.750	1.125	0.188	0.680	1.195	0.260	0.462	7.38	0.182	0.193	0.205	0.667
0.118	50168	0.750	1.000	0.375	0.680	1.070	0.455	0.462	6.97	0.227	0.257	0.272	0.750
0.119	50094	0.625	1.000	0.375	0.555	1.070	0.445	0.308	6.49	0.339	0.385	0.411	0.625
*0.148	50004	1.000	1.250	0.250	0.930	1.320	0.330	0.864	8.94	0.161	0.171	0.181	0.800
0.179	50034	0.750	1.125	0.375	0.680	1.195	0.455	0.460	7.49	0.342	0.389	0.405	0.667
0.186	50115	1.125	1.375	0.250	1.045	1.445	0.330	1.090	9.99	0.161	0.171	0.181	0.818
*0.222	50029	1.000	1.375	0.250	0.930	1.445	0.330	0.864	9.39	0.242	0.257	0.272	0.727
0.237	50188	0.750	1.250	0.375	0.680	1.320	0.455	0.462	7.98	0.453	0.514	0.544	0.600
0.250	50181	0.875	1.250	0.375	0.805	1.320	0.440	0.648	8.48	0.340	0.386	0.408	0.700
*0.296	50032	1.000	1.500	0.250	0.930	1.570	0.330	0.864	9.84	0.323	0.343	0.363	0.667
*0.444	50026	1.000	1.500	0.375	0.930	1.570	0.445	0.864	9.84	0.484	0.514	0.544	0.667
*0.469	50030	1.250	1.750	0.250	1.170	1.820	0.330	1.368	11.85	0.323	0.343	0.363	0.714
*0.592	50038	1.000	1.500	0.500	0.930	1.570	0.590	0.864	9.84	0.605	0.685	0.726	0.667
*0.597	50018	1.625	2.000	0.250	1.525	2.100	0.330	2.324	14.41	0.242	0.257	0.272	0.813
*0.937	50035	1.250	1.750	0.500	1.170	1.820	0.590	1.368	11.85	0.605	0.685	0.726	0.714
*1.055	50425	1.250	2.000	0.375	1.170	2.100	0.465	1.368	12.60	0.726	0.771	0.817	0.625
*2.471	50017	2.000	2.500	0.500	1.900	2.600	0.590	3.608	17.87	0.605	0.685	0.726	0.800
2.685	50040	1.500	2.000	1.000	1.400	2.100	1.110	1.960	13.99	1.211	1.370	1.457	0.750
*2.686	50001	1.500	2.500	0.500	1.400	2.600	0.590	1.959	15.79	1.210	1.371	1.452	0.600
*3.944	50031	2.500	3.000	0.500	2.400	3.100	0.590	5.757	21.73	0.605	0.685	0.726	0.833
*4.947	50103	2.000	3.000	0.500	1.900	3.100	0.590	3.608	19.67	1.210	1.371	1.452	0.667
*7.320	50128	2.500	3.500	0.500	2.312	3.688	0.713	5.343	23.71	1.210	1.371	1.452	0.714
*9.893	50022	2.000	3.000	1.000	1.900	3.100	1.110	3.608	19.67	2.419	2.742	2.903	0.667
*14.661	50042	2.500	3.500	1.000	2.313	3.688	1.188	5.343	23.71	2.419	2.742	2.903	0.714
*22.907	50080	2.500	3.750	1.250	2.313	3.938	1.437	5.347	24.59	3.780	4.284	4.536	0.667
*27.489	50100	2.500	3.750	1.500	2.313	3.938	1.688	5.347	24.59	4.536	5.141	5.444	0.667
*48.176	50081	3.250	4.500	1.500	3.062	4.688	1.688	9.371	30.64	4.536	5.141	5.444	0.722
*67.452	50427	3.250	5.000	1.500	3.062	5.188	1.688	9.371	32.40	6.351	7.198	7.621	0.650
*99.617	50112	4.000	5.250	2.000	3.782	5.469	2.280	14.063	35.66	6.048	6.855	7.258	0.667
*159.386	50426	4.000	6.000	2.000	3.782	6.280	2.276	14.532	39.34	9.677	10.968	11.613	0.667

*A.I.E.E. Proposed Standard Size.

Note 1—Product of window area and iron area calculated for 2 mil material.

Note 2—Part numbers listed are for phenolic cases. Specify 51000 series for aluminum cases (last three numbers remain the same)

Note 3—Dimensions listed are nominal sizes for phenolic cases. For aluminum cases, add .015 to .020 inches to heights shown.

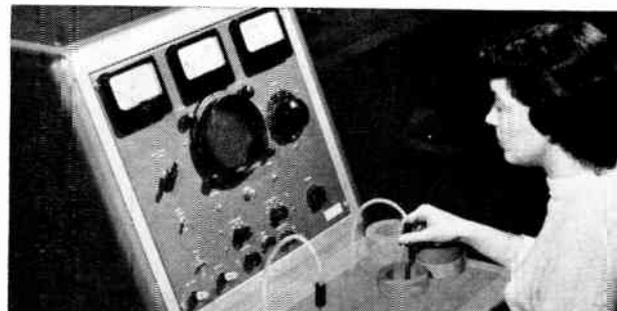
TABLE II • NAMES OF SIMILAR MATERIALS

D—Hy Mu 80	H-48 Alloy	A—Orthonol
4-79 Permalloy MO—Permalloy Mu Metal*	Carpenter 49 Allegheny 4750 Hipernik	Orthonik Deltamax Hipernik V

*This material has a different composition than the others in the same column. The characteristics of this material are such that in general it is not recommended for use in tape wound cores.

MATCHED CORES

Magnetics, Inc. will match cores within 5% over the entire voltage-current loop. Matching prior to winding results in improved yield and economical production. There is a very slight service charge for matching cores.



MAGNETICS INC. PRODUCTS

Performance-Guaranteed BOBBIN CORES

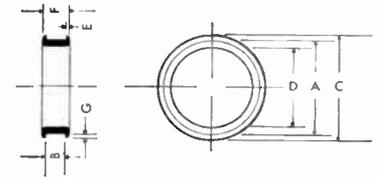
TABLE III • STANDARD CERAMIC AND STAINLESS BOBBIN CORES

PART NO.		NOMINAL DIMENSIONS IN INCHES						
		A	B	C	D	E	F	G
CERAMIC BOBBIN	80002-B	.125	.140	.185	.090	.030	.200	.030
	80003-B	.188	.140	.248	.148	.030	.200	.030
	80023-A	.250	.140	.310	.210	.030	.200	.030
	80004-B	.313	.140	.373	.270	.030	.200	.030
	80018-A	.313	.140	.435	.270	.030	.200	.061
	80009-B	.375	.140	.435	.330	.030	.200	.030
	80017-A	.563	.140	.685	.513	.030	.200	.061
STAINLESS STEEL BOBBIN	80163	.110	.050	.140	.100	.005	.060	.015
	80164	.110	.140	.140	.100	.005	.150	.015
	80165	.125	.075	.185	.105	.010	.095	.030
	80166	.125	.140	.155	.110	.005	.150	.015
	80167	.188	.140	.248	.168	.010	.160	.030
	60168	.313	.140	.373	.293	.010	.160	.030

For Additional Information, Write for Bulletin BC-102

Bobbin cores are now being made in combinations of the following dimensions. Other sizes can be supplied on request.

*BOBBIN DIAMETERS: $\frac{1}{8}$ ", $\frac{3}{16}$ ", $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ ", $\frac{7}{16}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ ", 1 ", $1\frac{1}{4}$ ", $1\frac{1}{2}$ ".
 †TAPE WIDTH: $\frac{1}{16}$ ", $\frac{1}{8}$ ", $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", 1 ", $1\frac{1}{2}$ ".
 TAPE THICKNESS: 0.000125", 0.000250", 0.0005", 0.001".
 BUILD-UP: 1 wrap to several hundred.
 MATERIALS: 4-79 Mo Permalloy, Ortholol.
 * $1\frac{1}{2}$ -in. diam. bobbin is not standard, but can be furnished upon request.
 †Not with standard bobbins if tape width is over $\frac{1}{4}$ -in., but can be furnished upon request.



Performance-Guaranteed POWDER CORES

TABLE IV • MOLYBDENUM PERMALLOY POWDER CORES

Core Number	μ	Inductance (mh) 1000 Turn Coil			Dimensions (inches) before finish									
		Min.	Nom.	Max.	O.D.			I.D.			Height			Radii
					Min.	Nom.	Max.	Min.	Nom.	Max.	Min.	Nom.	Max.	
55206-A2	125	58	68	83	.790	.800	.810	.495	.500	.505	.240	.250	.260	.032
55848-A2	60	28	32	39	.790	.800	.810	.495	.500	.505	.240	.250	.260	.032
55511-A2	26	12	14	17	.790	.800	.810	.495	.500	.505	.240	.250	.260	.032
55057-A2	14	6.6	7.8	9.2	.790	.800	.800	.495	.500	.505	.240	.250	.260	.032
55310-A2	125	77	90	104	.890	.900	.910	.547	.550	.553	.290	.300	.310	.062
55930-A2	125	136	157	179	1.050	1.060	1.070	.575	.580	.585	.428	.440	.452	.075
55894-A2	60	65	75	86	1.050	1.060	1.070	.575	.580	.585	.428	.440	.452	.075
55395-A5	60	65	75	86	1.050	1.060	1.070	.575	.580	.585	.428	.440	.452	.075
55066-A2	26	28	32	37	1.050	1.060	1.070	.575	.580	.585	.428	.440	.452	.075
55068-A2	14	15	18	20	1.050	1.060	1.070	.575	.580	.585	.428	.440	.452	.075
55548-A2	125	106	127	148	1.288	1.300	1.312	.785	.785	.785	.400	.420	.437	.062
55585-A2	125	71	79	91	1.335	1.350	1.365	.908	.920	.925	.333	.350	.367	.062
55324-A2	125	101	117	137	1.395	1.410	1.425	.868	.880	.885	.400	.412	.424	.062
55254-A2	125	146	168	195	1.558	1.570	1.582	.938	.950	.955	.555	.570	.585	.100
55438-A2	125	248	281	325	1.825	1.840	1.855	.938	.950	.955	.690	.710	.730	.100

For Complete Details, Write for Bulletin PC-103

Performance-Guaranteed MAGNETIC LAMINATIONS

TABLE V • STANDARD MAGNETIC CORE LAMINATION SHAPES

LAMINATION TYPE	STACK HEIGHT (inches)	WINDOW AREA (sq. in.) W	CROSS-SECTION AREA (sq. in.) A	W x A	LAMINATION TYPE	STACK HEIGHT (inches)	WINDOW AREA (sq. in.) W	CROSS-SECTION AREA (sq. in.) A	W x A	
DU 1	$\frac{1}{4}$	.5625	.063	.035	EI 375	$\frac{3}{8}$	.234	.141	.033
DU 37	$\frac{3}{8}$	1.125	.141	.159	EI 625	$\frac{3}{8}$	.293	.391	.115
RS-7, 8, 9	$\frac{1}{2}$	2.000	.250	.500	F 12	.344	.188	.118	.022	
EE 24-25	$\frac{1}{4}$.125	.063	.008	F 12	(Modified)	.344	.188	.118	.022
EE 26-27	$\frac{3}{8}$	.172	.141	.024	F 13	.344	.190	.118	.022
EE 28-29	$\frac{1}{2}$	.039	.014	.0005	F 20	$\frac{3}{8}$	.371	.141	.052
EE 186-187	$\frac{3}{16}$	.125	.063	.008	F 21	$\frac{1}{2}$	.257	.25	.064
EI 11	$\frac{3}{8}$	.574	.766	.440	Ring	Variable	Various	Various	Variable
EI 12	1	.750	1.000	.750	U-BE	$\frac{1}{4}$	.313	.063	.020
EI 21	$\frac{1}{2}$	.254	.250	.064	UI 312	$\frac{3}{16}$	.293	.098	.028
EI 75	$\frac{3}{8}$	.422	.563	.237	UI 375	$\frac{3}{8}$	.422	.141	.059
EI 187	$\frac{3}{16}$	.082	.035	.003					

Performance-Guaranteed laminations are made from any commercially available soft magnetic material. Heat treatment for specific properties may be specified but should be checked by Magnetics, Inc. Engineering Department if the Performance-Guarantee is to apply. When asking for quotations, describe, if possible:

1. Shape required
2. Grade of magnetic steel
3. Gauge of lamination
4. Surface insulation

For Complete Details, Write for Catalog ML-201.

Performance-Guaranteed MAGNETIC SHIELDS

TABLE VI • MAGNETIC SHIELDS

Tube To Be Used With	Tube Mfr.	Magnetics, Inc. Part No.	Tube To Be Used With	Tube Mfr.	Magnetics, Inc. Part No.	Tube To Be Used With	Tube Mfr.	Magnetics, Inc. Part No.
RS-1, 2, 3		40012	5 AMP-1	Dumont	40036	7 MP	Dumont	40120
RS-4, 5, 6		40013	5 BP-1	RCA	40086	7 JP-1, 4	RCA	40005
RS-7, 8, 9		40014	5 BPA	Dumont	40086	7 VP-1	RCA	40005
2 BP-1, 11	RCA	40024	5 CP-1A	RCA	40087	10 SP-4	RCA	40031
3 ACP	Dumont	40023	5 CPA	Dumont	40087	10 WP-7	Dumont	40031
3 BP-1A	RCA	40023	5 FP-4, 7	RCA	40149	5819	RCA	40050
3 JP-1, 7	RCA	40023	5 AHP & 5FP	Dumont	40149	K 1197	Dumont	40021
3 GPA	Dumont	40007	3 JPA	Dumont	40044	6363	Dumont	40021
3 KP-1, 4, 11	RCA	40007	5 LPA	Dumont	40151	K-1198	Dumont	40022
3 MPI	RCA	40148	5 RP	Dumont	40119	6364	Dumont	40022
3 RPA	Dumont	40001	5 UP-1, 7, 11	RCA	40000	K-1211	Dumont	40067
3 RP-1	RCA	40001	5 WP-11, 15	RCA	40150	6199	RCA	40015
3 WPI	Dumont	40074	5 XP	Dumont	40153	6292	Dumont	40020
5 ABP-1,7,11	RCA	40019	5 YP	Dumont	40152	6467	Dumont	40055
5 ADP	Dumont	40019	7 ABP	Dumont	40120	931-A	RCA	40066
5 AFP	Dumont	40109	7 MP-7, 14	RCA	40120			

DEPT. EC-39



BUTLER, PENNSYLVANIA

For Further Details, Write Sales Engineering Dept. World Radio History

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International Rectifiers

For all DC needs from microwatts to megawatts!

SELENIUM



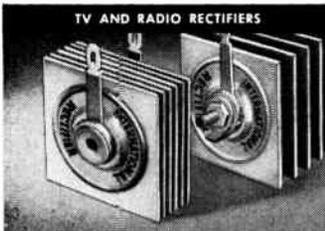
SUB-MINIATURE SELENIUM DIODES

Developed for use in limited space at ambient temperatures ranging from -50°C to $+100^{\circ}\text{C}$. Encapsulated to resist adverse environmental conditions. Output voltages from 20 to 160 volts; output currents of 100 microamperes to 11 MA. Bulletin SR-118



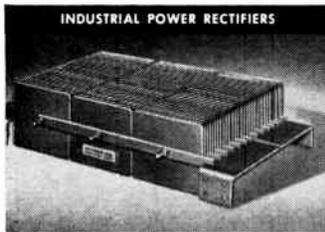
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TV AND RADIO RECTIFIERS

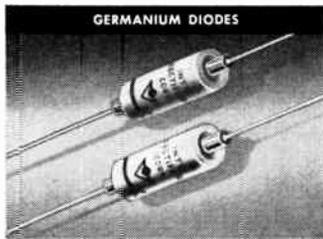
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GERMANIUM



GERMANIUM DIODES

This series of general purpose, high quality point contact diodes provide excellent rectification efficiency for very high frequency applications. Special "RED DOT" series available for ambient temperatures from -55°C to $+100^{\circ}\text{C}$. Bulletin SR-140



GERMANIUM RECTIFIER STACKS

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AIR-COOLED GERMANIUM JUNCTIONS

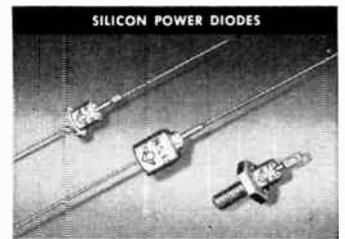
Engineered for heavy power applications, these highly efficient forced air cooled units feature moisture and corrosion resistant housings. A complete series in each of 3 current ratings: 150, 330 and 500 Amperes @ 26 to 66 volts rms. Request Bulletin GPR-2



LIQUID COOLED GERMANIUM JUNCTIONS

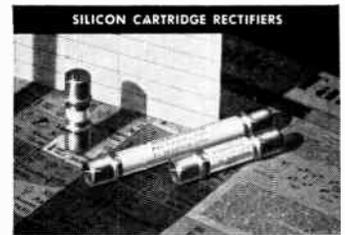
Liquid cooled for maximum power in minimum space. Junction rating: 670 amps at 26 to 66 volts rms. Housed in high-conductivity copper cast around special steel coils. Water, oil or other accepted coolants may be used. For complete data. Bulletin GPR-2

SILICON



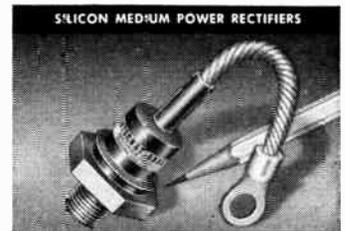
SILICON POWER DIODES

Hundreds of types in three basic styles, for operating temperatures from -55°C to $+150^{\circ}\text{C}$. Up to 800ma DC output current per junction over a voltage range of 50 to 1,000 PIV. Hermetically sealed. For complete information on all types. Bulletin SR-A



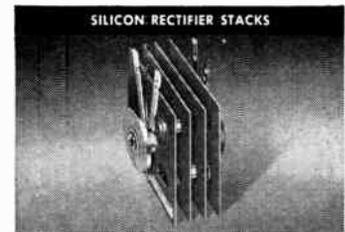
SILICON CARTRIDGE RECTIFIERS

The answer to tough miniaturization problems! Ratings for high temperature applications: from 1000 volts PIV at 100ma half-wave DC output to 16,000 volts PIV at 45ma. Hermetically sealed, metallized ceramic housing. Request Bulletin SR-139B



SILICON MEDIUM POWER RECTIFIERS

The most conservatively rated silicon rectifiers in the industry! When fin-mounted, the convection cooled rating at 45°C ambient is 30 amps rectified dc output; 115 amps under forced cooled conditions. All-welded, hermetically sealed. Request Bulletin SR-143 D



SILICON RECTIFIER STACKS

These units consist of hermetically sealed junction diodes mounted on copper cooling fins, stacked to include the interconnections required for specific circuits. Junction ratings: 1.25 amps. DC output; 70 to 350 AC input volts rms. Request Bulletin SR-137A



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THE WORLD'S LARGEST SUPPLIER OF INDUSTRIAL METALLIC RECTIFIERS

ELECTRONICS & COMMUNICATIONS, DECEMBER, 1957

For further data on advertised products use page 161.

World Radio History

Index of Selected Technical Articles Published In Electronics and Communications

During the four month period, August to November, 1957

Issue	Page	Title of Article	Author or Source
August	26	<i>Are We Educating Our Engineers For Yesterday's Jobs?</i>	Dr. George Sinclair, Professor Electrical Engineering, University of Toronto, President, Sinclair Radio Laboratories Ltd., Toronto, Ont.
August	27	<i>Instantaneous Gaging Of Steel Strip</i>	Applied Research Laboratory, United States Steel Corp., Monroeville, Pa.
August	28	<i>A Canadian First In Computer Design</i>	International Business Machines Co. Ltd., Don Mills, Ont.
August	30	<i>Torque Indicator Teaching Aid</i>	Electronics & Instrumentation Div., Baldwin-Lima Hamilton Corp., Waltham, Mass.
August	31	<i>Ultrasonic Testing Of Meehanite Castings</i>	Kelvin Hughes Ltd., London, Eng.
August	32	<i>The Radar Strip Recorder</i>	Hycon Electronics Inc., Pasadena, Calif.
August	33	<i>Electronic Measurement of Effects</i>	Oscillograph Division, Southern Instruments Ltd., Camberley, Surrey, Eng.
August	34	<i>The Growth Of Sonics In Industry</i>	Robert L. Rod, President, Acoustica Associates Inc., Glenwood Landing, L.I., N.Y.
August	35	<i>Germanium Rectifiers In Transmitter Use</i>	Electronic Equipment & Tube Div., Canadian General Electric Co. Ltd., Toronto, Ont.
September	38	<i>Load Cells Solve Industrial Weighing Problems</i>	David Vandeventer, Leeds and Northrup Co., Philadelphia, Pa.
September	41	<i>Process Control With The IDL Gamma Switch</i>	Isotope Developments Ltd., Reading, Berks., Eng.
September	42	<i>New Equipment Aids Production Of Electronic Components</i>	Stanat Mfg. Co., Inc., Long Island City, N.Y.
September	43	<i>Testing Techniques For Speaker Magnets</i>	Carboloy Dept., General Electric Co., Detroit, Mich.
September	44	<i>Crystal Filters</i>	Hycon Eastern Inc., Cambridge, Mass.
October	45	<i>Controls Permit Routine Production Of Transistor Crystals</i>	Leeds & Northrup Co., Philadelphia, Pa.
October	46	<i>Weather Avoidance With Airborne Radar</i>	P. L. Stride, Assoc. I.E.E. This article first appeared in British Communications and Electronics magazine.
October	52	<i>The Small Computer And Decentralized Computing Facilities</i>	C. F. Flannell, Royal McBee Corporation, Port Chester, N.Y.
October	55	<i>Terminal And Tube-Pin Setting Machines</i>	Edward Segal, New York City, N.Y.
October	56	<i>Mass Spectrometry In Science And Industry</i>	Consolidated Electrodynamics Corp., Pasadena, Calif.
October	67	<i>A New Dimension For Design Engineers</i>	Pacific Semiconductors, Inc., Culver City, Calif.
October	68	<i>The Spacistor You've Been Hearing About</i>	Raytheon Manufacturing Co., Waltham, Mass.
November	18	<i>Some Practical Aspects Of Digital Data Transmission Over Telephone Facilities</i>	Lenkurt Electric Co. of Canada Ltd., Vancouver, B.C.
November	21	<i>Simultaneous Examination Of Electrical Parameters</i>	Cubic Corporation, San Diego, Calif.
November	22	<i>A Two-Element Ice-Alarm System</i>	American Instrument Co. Inc., Silver Spring, Maryland.
November	25	<i>Production Testing Digital Devices</i>	Rese Engineering, Inc., Philadelphia, Pa.
November	26	<i>An Equipment For Measuring Inter-Channel Crosstalk And Noise On Broad-Band Multi-Channel Telephone Systems</i>	R. W. White, B.Sc., F.Inst.P., A.M.I.E.E. and J. S. Whyte, B.Sc., (Eng.), A.M.I.E.E. This article first appeared in British Communications and Electronics magazine.
November	31	<i>Electronic Measurement Of Moisture In Timber</i>	Dawe Instruments Ltd., Canadian Div., Ottawa, Ont.
November	32	<i>Short-Range Radio Navigation — A Precise Control For Aircraft</i>	Computing Devices of Canada Ltd., Ottawa, Ont.
November	34	<i>A Moving Target Simulator System</i>	Electronics Division, Fairchild Controls Corp., Syosset, L.I., N.Y.

ICAO Specialists Recommend Many Changes To Aviation Communications

The 12-member Air Navigation Commission of the International Civil Aviation Organization will take a close look at solutions to future problems in the aviation communications field worked out by the ICAO Communications Division during its recent five week meeting in Montreal. More than one hundred specialists from 34 countries and four international organizations gathered to consider problems created by increasing traffic and the impending introduction of jet passenger aircraft on the major air routes of the world.

Among the many different aspects of aviation communication discussed by the Sixth Session of the ICAO Communications Division under the chairmanship of G. E. Enright of Ireland were radiotelephone procedures, teletypewriter tape relay operation, the routing of messages among ground radio stations, radio frequency allocations, co-operation with maritime interests in case of distress communications and the introduction of an automatic alarm apparatus. Different types of surveillance radar for air traffic control use were looked at from a communication point of view, short and long distance navigational aids were thoroughly discussed and each problem was examined in the light of the requirements of the jet age and the need to streamline and integrate the many communication services and navigation aids into an efficient overall system.

A one-day symposium was held on the subject of the Information Theory and its practical significance in the field of aeronautical communications systems and procedures. Talks by W. E. Brunt of the British Overseas Airways Corporation, Siegfried Reiger of the U.S. Air Force and George Grier of the Franklin Institute Laboratories, U.S.A., were followed by discussions. The value of information theory as a basic tool in the examination of communication methods and systems was clearly brought before the meeting.

First among the agenda items was a review of telecommunications systems operation. The meeting agreed that practical radiotelephony network experience gained in recent years makes it necessary to amend the basic documents in this field — Annex 10 (Aeronautical Telecommunications) and the Radiotelephony Procedures. A recommendation was made to supplement the revision of these two documents with an instruction manual for both ground and air personnel in order to provide sound material for training and make sure that the new rules may be applied on a world-wide

basis as soon after their adoption as possible.

In some parts of the world many users have adopted a new device named "SELCAL", which makes it unnecessary for the pilot to keep a constant watch on a communications channel because a bell will ring when his aircraft is called. The meeting found it would be impracticable at

this time to have the system characteristics of "SELCAL" included in Annex 10 as International Standards and Recommended Practices, but did recommend their inclusion as guidance material for states who wish to adopt the system. It was also recommended that ICAO become the controlling authority for allocation of the

(Continued on page 127)



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CONSTANT OUTPUT VOLTAGE. In a CLM rectifier the output voltage is kept constant from no load to full load which increases battery life.

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FREE BULLETIN. For your free copy of Bulletin SR-14 which describes in detail, the performance characteristics of CLM rectifiers for station-type batteries write: Jack West, Sales Manager, Rectronic Division, Canadian Line Materials Limited, Toronto 13, Canada.



SELENIUM RECTIFIERS

Product Information Section

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Acme Electric Corporation, Ltd., 50 Northline Rd., Toronto 16, Ont.	1789	Canadian Marconi Company, 4104 St. Catherine St. W., Montreal, P.Q.	1823	Lansdale Tube Co., Div. of Philco Corp., Lansdale, Pa.	1771
Acme Electric Corporation, Ltd., 50 Northline Rd., Toronto 16, Ont.	1792	Canadian Marconi Company, 6035 Cote de Liesse Rd., Montreal, P.Q.	1825	Lansdale Tube Co., Div. of Philco Corp., Lansdale, Pa.	1772
Acme Electric Corporation, Ltd., 50 Northline Rd., Toronto 16, Ont.	1809	Caig Laboratories, 46 Stanwood Rd., New Hyde Park, L.I., N.Y.	1814	Lansdale Tube Co., Div. of Philco Corp., Lansdale, Pa.	1773
Acme Electric Corporation, Ltd., 50 Northline Rd., Toronto 16, Ont.	1816	Chassis-Trak, Inc., 525 S. Webster, Indianapolis, Ind.	1761	Lansdale Tube Co., Div. of Philco Corp., Lansdale, Pa.	1774
Acoustica Associates, Inc., 26 Windsor Ave., Mineola, Long Island, N.Y.	1812	City Chemical Corp., The, 132 W. 22nd St., New York 11, N.Y.	1805	Lansdale Tube Co., Div. of Philco Corp., Lansdale, Pa.	1775
Airpax Products Co., The Seminole Div., Ft. Lauderdale, Fla.	1785	Conrad Inc., Holland, Mich.	1798	Lansdale Tube Co., Div. of Philco Corp., Lansdale, Pa.	1776
Airpax Products Co., The Seminole Div., Ft. Lauderdale, Fla.	1799	Constanta Co. of Canada Ltd., The, 280 Regina Ave., Montreal 19, P.Q.	1830	Lansdale Tube Co., Div. of Philco Corp., Lansdale, Pa.	1777
Airpax Products Co., Cambridge Div., Cambridge, Md.	1803	Cresswell Pomeroy Ltd., 35 Densley Ave., Weston, Ont.	1824	Leonard Electric, Ltd., 346 Bering Ave., Toronto, Ont.	1785
AMCO Engineering Co., 7333 W. Ainslie St., Chicago 31, Ill.	1762	Cunningham Son & Co. Inc., James, 33 Litchfield St., Rochester 8, N.Y.	1813	Leonard Electric, Ltd., 346 Bering Ave., Toronto, Ont.	1799
AMCO Engineering Co., 7333 W. Ainslie St., Chicago 31, Ill.	1801	Electro-Design, 736 Notre Dame St. W., Montreal, P.Q.	1761	Leonard Electric, Ltd., 346 Bering Ave., Toronto, Ont.	1803
Amperite Company, Inc., 561 Broadway, New York 12, N.Y.	1828	Electro-Design, 109 Eglinton Ave. E., Toronto, Ont.	1761	McLennan, Ltd., D. Eldon, 1624 W. Third Ave., Vancouver 9, B.C.	1788
Armstrong, Ltd., A. T. R., 700 Weston Rd., Toronto 9, Ont.	1788	Electrovert Ltd., 265 Craig St. W., Montreal, Que.	1796	Measurement Engineering Ltd., Arnprior, Ont.	1763
Atchley, Inc., Raymond, 2340 Sawtelle Blvd., Los Angeles 64, Calif.	1787	Elder Electronics, 3220 Robert St., Burlington, Ont.	1762	Measurement Engineering Ltd., Arnprior, Ont.	1786
Atlas E-E Corporation, 47 Prospect St., Woburn, Mass.	1815	Elder Electronics, 3220 Robert St., Burlington, Ont.	1801	Measurement Engineering Ltd., 232 John St., Arnprior, Ont.	1806
Atlas Radio Corporation Ltd., 50 Wingold Ave., Toronto 10, Ont.	1790	General Communication Company, 677 Beacon St., Boston 15, Mass.	1820	Mel Sales Ltd., Arnprior, Ont.	1829
Atlas Radio Corporation Ltd., 50 Wingold Ave., Toronto 10, Ont.	1818	Herring & Co. Ltd., John, 3486 Dundas St. W., Toronto, Ont.	1764	North Hills Electric Co., Inc., 402 Sagamore Ave., Mineola, N.Y.	1821
Atlas Radio Corporation Ltd., 50 Wingold Ave., Toronto 10, Ont.	1826	Herring & Co. Ltd., John, 3486 Dundas St. W., Toronto, Ont.	1765	Olympic Instrument Laboratories, Dept. 53, Vashon, Washington	1822
Atlas Radio Corporation Ltd., 50 Wingold Ave., Toronto 10, Ont.	1828	Herring & Co. Ltd., John, 3486 Dundas St. W., Toronto, Ont.	1766	Peschel Electronics Inc., 13 Garden St., New Rochelle, N.Y.	1791
Barber-Colman Company, Rockford, Ill.	1764	Herring & Co. Ltd., John, 3486 Dundas St. W., Toronto, Ont.	1767	Philco Corp. of Canada Ltd., Don Mills, Ont.	1769
Barber-Colman Company, Rockford, Ill.	1765	Herring & Co. Ltd., John, 3486 Dundas St. W., Toronto, Ont.	1768	Philco Corp. of Canada Ltd., Don Mills, Ont.	1770
Barber-Colman Company, Rickford, Ill.	1766	Hoover Co. Ltd., The, Electronic Components and Equipment Dept., Hamilton, Ont.	1797	Philco Corp. of Canada Ltd., Don Mills, Ont.	1771
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Beatty Bros. Limited, Fergus, Ont.	1827	Instrument Development Laboratories, Inc., Attleboro, Mass.	1786	Philco Corp. of Canada Ltd., Don Mills, Ont.	1774
Beechey Enterprises, 290 Lawrence Ave. W., Toronto 12, Ont.	1793	Kahnert Sales, Ltd., R. C., 73 Crockford Blvd., Scarborough, Ont.	1778	Philco Corp. of Canada Ltd., Don Mills, Ont.	1775
Behlman Engineering Co., 2911 Winona Ave., Burbank, Calif.	1794	Krohn-Hite Corp., 580 Massachusetts Ave., Cambridge 39, Mass.	1806	Philco Corp. of Canada Ltd., Don Mills, Ont.	1776
Burton-Rogers Co., 42 Carleton St., Cambridge 42, Mass.	1795	Lansdale Tube Co., Div. of Philco Corp., Lansdale, Pa.	1769	Philco Corp. of Canada Ltd., Don Mills, Ont.	1777
Canadian Marconi Company, 3591 Main St., Vancouver, B.C.	1823	Lansdale Tube Co., Div. of Philco Corp., Lansdale, Pa.	1770	Quam-Nichols Co., Marquette & Prairie, Chicago, Ill.	1788
Canadian Marconi Company, 572 Barrington St., Halifax, N.S.	1823	Lansdale Tube Co., Div. of Philco Corp., Lansdale, Pa.	1771	Radio Engineering Products, 1080 University St., Montreal 3, P.Q.	1800
Canadian Marconi Company, 3 Prescott St., St. John's, Nfld.	1823	Lansdale Tube Co., Div. of Philco Corp., Lansdale, Pa.	1772	Radio College of Canada, 3454 St. Denis St., Montreal, P.Q. and 86 Bathurst St., Toronto, Ont.	1808
		Lansdale Tube Co., Div. of Philco Corp., Lansdale, Pa.	1773	Railway Communications, Inc., 9351 East 59th St., Raytown 33, Mo.	1810
		Lansdale Tube Co., Div. of Philco Corp., Lansdale, Pa.	1774	Richards Electrocraft, Inc., Chicago, Ill.	1778
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Aviation Communications

(Continued from page 125)

code signals to airlines instead of the corporation in the United States which is undertaking the task at present.

In reviewing teletypewriter tape relay operations, the question of whether the length of messages should be limited was linked with a thorough discussion of transit time requirements. Several factors of importance were brought to light and it was agreed that as a practical compromise the text of messages should be limited to 200 groups or words. Consideration of the question of transit time for messages covered in some detail the communication factors involved and led to a necessary clarification of the precise meaning that should be given to transit time and also the form in which it should be expressed; that is, in terms of any one hour period at least 95 per cent of the higher priority messages should be communicated between two points in less than a certain number of minutes which will be established for each case by the different ICAO regions.

Routing or location indicators and routing directories were reviewed on the basis of experience in three of ICAO's eight regions of the world. New principles were agreed on and recommendations were formulated which would change both the current type of "self routing" indicator and the older style of place name abbreviation although the basic feature of four letter identifiers is retained. These changes arose from consideration of proposals of the ICAO Teletypewriter Panel which will change both message format and operating procedures if adopted. They involve sub-division of

the world into sixteen different Aeronautical Fixed Service Routing Areas, to each of which is assigned a separate letter for use as the first letter of the routing indicators of stations of that area. Second letters in general were allocated on a national or territorial area basis and the third and fourth letters will normally be assigned by individual states.

A number of changes were recommended in the plan for allotment of VHF radio frequencies, an important part of Annex 10 to the Convention on International Civil Aviation. Provisions were made, for example, for the introduction of 100 kc/s channel spacing and it was also agreed that a spacing of half of that could be used

(Continued on page 176)

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Rousseau Controls Ltd., 640 DeCourcelle St., Montreal 30, P.Q.	1768
Rycom Instruments, 9351 E. 59th St., Raytown 33, Mo.	1779
Rycom Instruments, 9351 E. 59th St., Raytown 33, Mo.	1819
Servo-Tek Products Co., 1086 Goffle Rd., Hawthorne, N.J.	1782
Servo-Tek Products Co., 1086 Goffle Rd., Hawthorne, N.J.	1784
Sola Electric (Canada) Ltd., 102 Laird Drive, Toronto 17, Ont.	1780
Sola Electric (Canada) Ltd., 102 Laird Drive, Toronto 17, Ont.	1783
Standard Electrical Products Co., 2440 E. 23rd St., Dayton, Ohio	1802
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Weldmatic Div., Unitek Corp., 275 N. Halstead Ave., Pasadena, Calif.	
X-Ray & Radium Industries, Ltd., 261 Davenport Rd., Toronto 5, Ont.	1812



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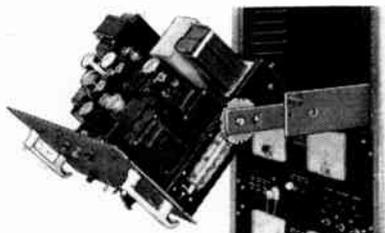
Electronics & Communications 1958 Buyers' Guide

Product Information Section

Cabinet And Rack Slides

Item 1761

Chassis-Trak, Inc., of Indianapolis, Indiana, announces that slides for cabinet and rack mounted electronic equipment are now available from stock in 14-inch through 20-inch lengths . . . plus limited quantities of other sizes. Either solid or roller bearing slides are ready for shipment. The weight of the chassis and its application determine the type of bearing needed in the slide. The solid bearing slides, which are extremely resistant to shock and vibration, are available in standard and heavy-duty models that will support up to 250 lbs. For smoother slide action on highly mobile applications, the stainless-steel roller bearing slides are recommended.



Both the "Detent" model, which locks in 7 different tilt positions (45°, 90°, 105° up or down and horizontal), and the "Basic", which tilts upward but has no tilt-lock assembly, are available with either solid or roller bearings. Other slides in the Chassis-Trak line are the "E-Z Mount", a roller bearing slide that can be installed in 5 minutes and support 125 lbs., and the "Lightweight", a solid bearing slide for smaller installations, which is capable of supporting up to 75 lbs.

In addition to this complete line of standard slides, Chassis-Trak will also custom-build slides to fit special applications. Complete engineering and production services are available for these special applications.

All Chassis-Trak slides are precision manufactured to meet RETMA standards and Army, Navy, Air Force, or other specifications. Accessories for the slides, such as a wide range of handles and connected hardware, and Gusset mounting assemblies are also available.

For further information on these slides write:

Chassis-Trak, Inc., 525 S. Webster, Indianapolis, Indiana or contact: Electro-Design, Montreal, P.Q., 736 Notre Dame St., West; Toronto, 109 Eglinton Ave. East.

Complete Modular Cabinet System

Item 1762

Smart appearance, functional dimensions, and ease of assembly are the outstanding features of a completely standardized modular enclosure system offered by Amco Engineering Co. The desk console pictured is typical of the unlimited combinations using basic catalogued components. All items use the standard 19" wide panel as a basis, and by the use of 38" and 57" enclosure panels and trim, a virtual custom built appearance is attained. Frames may be joined side by side, back to back, or used individually; and have sloping fronts and vertical fronts in various heights. Ball cornered side panels make each assembly eye catching, and can be removed at any time for expansion of equipment into additional



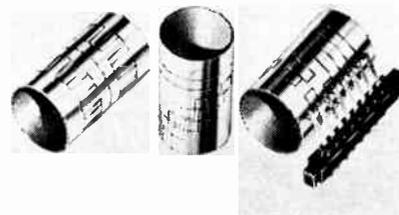
cabinets adjacent. A complete range of accessories includes drawers, doors, shelves, casters, and textolite writing surfaces. The catalog, which lists all items with dimensions, weights, and prices, is available on request from:

Elder Electronics, 3220 Robert St., Burlington, Ont., representing AMCO Engineering Co., 7333 W. Ainslie St., Chicago 31, Illinois.

IDL Rotary Sequence Switch (The RSS)

Item 1763

Special rotary sequence switching units can now be used for direct replacements and new machine control functions where cams and cam follower switches have been required. Over 120,000,000 operations have been demonstrated per circuit while switching signal levels of 10 volts at 20 ma. Up to 4 separate circuits can be programmed or switched in a 1 1/4" Dia. Cylinder 1 1/2" long weighing less than 1 ounce. A 1/4" shaft is provided for direct, flexible or geared coupling. Flange type mounting provisions



are provided. This sequence switch has been designed to meet military (airborne, ground and sub-surface) environmental conditions, as well as for industrial use in factory and office locations. Input shaft needs less than 0.1 inch-ounce torque.

Any sequencing operation which can be provided by a cam is more accurately and reliably reproduced with an IDL RSS unit. Longer life, lower installation and maintenance costs plus easy alignments are a few of the features to be considered. Define your circuit sequencing requirements on a 0 to 360° electrical time base and let us show you how the RSS will satisfy your strictest requirements. First sample to your timing requirements available in 45 days, follow-on quantities can be delivered as required.

Instrument Development Laboratories, Inc., Attleboro, Massachusetts, U.S.A. Canadian Representatives: Measurement Engineering Ltd., Arnprior, Ontario.

To obtain further information on the product write-ups in this section use the post card coupon, page 161.

Barber-Colman Presents A Large Selection Of Fractional Horsepower A-C Shaded-Pole Induction Motors

Item 1764

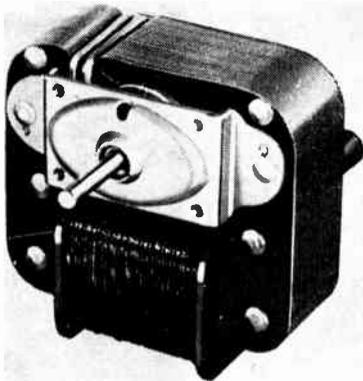
- Nonsynchronous, unidirectional, or reversible, and synchronous unidirectional types.
- Ratings to 1/20 h.p. at 2900 r.p.m.
- With or without gear reductions
- No brushes . . . no radio interference.

Barber-Colman motors are the result of nearly 30 years of research and engineering aimed at the design and development of a superior shaded-pole motor. Designed for applications requiring rugged, long-life construction, their high starting torque and low-inertia rotors provide quick, positive starting even under adverse conditions. Standard motors are designed for 115-volt, 60-cycle power supply and clockwise rotation, but are easily furnished for other voltages and frequencies on special order. Counterclockwise rotation, extended shafts and special mounting details are also available. Write for free catalogs on any type motor.

Unidirectional Motors

Item 1765

Barber-Colman unidirectional motors are designed to give years of service in fan and blower applications at high ambient temperatures. They



are also well suited for use in TV antenna rotators, electric heaters, draft-boosters, pumps, vending machines, vaporizers, and other applications requiring a reliable low-cost motor made from the finest materials.

Small size, high starting and running torque, and low cost make these motors the outstanding choice for the simplest as well as the most critical applications.

Barber-Colman Company, Rockford, Ill., U.S.A.

Synchronous Motors

Item 1766

Combining accurate timing and high torque with light weight and compactness, Barber-Colman synchronous motors develop 30 times the power of ordinary clock and timing motors. Incorporated in X-ray timers, microfilm cameras, scoreboard timers, oscillo-

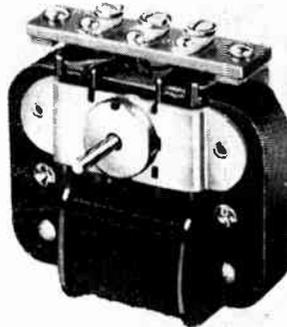
graphs, viscometers, facsimile recorders, and many other devices, these synchronous motors provide the long life and dependable service vital to critical applications.

Barber-Colman Company, Rockford, Ill., U.S.A.

Reversible Motors

Item 1767

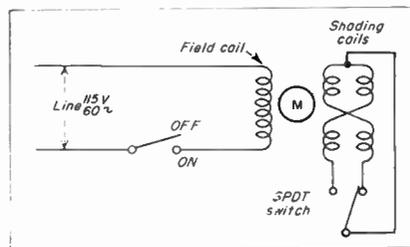
Barber-Colman reversible motors are adaptable to a variety of control circuits and speed and power require-



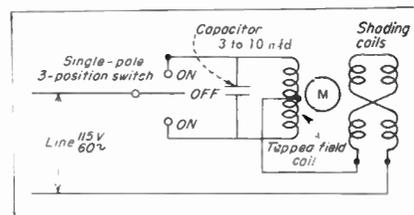
ments. Their compact construction and low-inertia rotors make them ideal for applications requiring fast reversing at a fraction of the cost of other servo-motors. These motors are used extensively in servo-mechanisms, remote switching and positioning devices, pen drives in recording instruments, voltage regulators, remote control tuning, antenna rotators, tap-changing transformers, and voltage regulators. They are available with or without reduction gearing, in either open or enclosed types.

The following circuits illustrate two methods of controlling Barber-Colman reversible motors. Many others, including electronic control, are widely used.

Standard Motor Shading Coil Circuitry (A)



Capacitor Split Phase Circuitry (C)

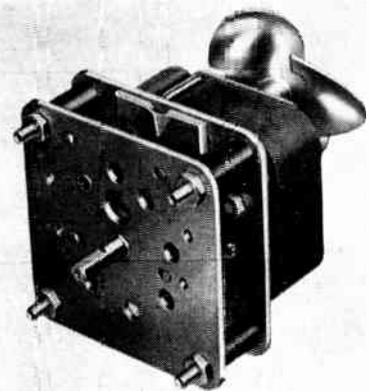


Geared Motors

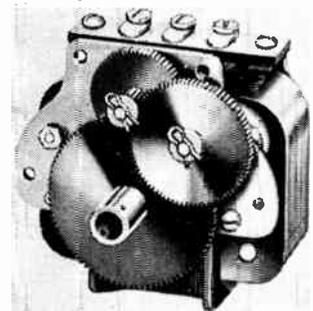
Item 1768

Barber-Colman motors are available with both the enclosed and open gear reductions illustrated below. Each

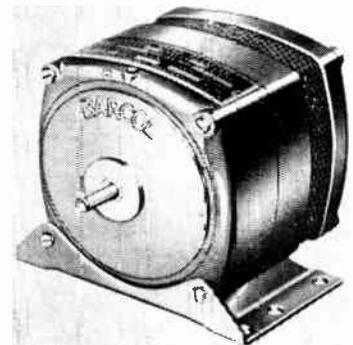
models is available with many different gear ratios. Barber-Colman engineers will be glad to recommend a motor based on your specifications.



DYAZ



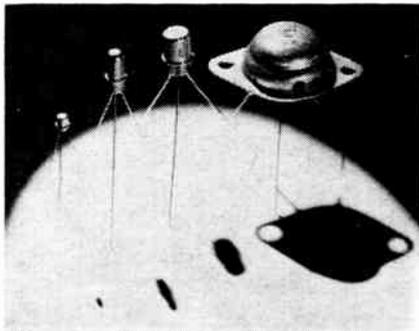
OYAZ



PYAZ

Barber-Colman, Rockford, Ill., U.S.A.
 Canadian representatives: Barber-Colman Company, Small Motors Division, is represented in Canada by John Herring & Co., Ltd., 3468 Dundas St. West, Toronto, Ontario; and Rousseau Controls, Ltd., 640 DeCourcelle Street, Montreal 30, Quebec.

To obtain further information on the product write-ups in this section use the post card coupon, page 161.



Philco Transistors

Item 1769

Philco Transistors . . . in the Vanguard of modern electronics. Basic packages pictured 1 to 7: M-1 low level audio transistors; M-2 surface barrier, silicon and micro alloy transistors; and micro alloy diffused-base transistors; M-3 medium power alloy-junction and bilateral transistors; and power transistors.

Philco Transistors

Item 1770

Proven performance of Philco Hermetically Sealed Transistors has made them the basis for design in commercial and military applications where reliability is the major consideration. Philco transistors range from the world's smallest germanium transistors now in production to silicon transistors with excellent performance at temperatures from -60° to $+150^{\circ}\text{C}$. The following are some of the available Philco transistor types:

Surface Barrier Transistors

Item 1771

Here is the new complete line of Philco Surface Barrier Transistors for low voltage communications circuitry (1-5 volts). Now you can select the best high-frequency transistor for each application . . . RF . . . IF . . . video, amplifiers, converters, oscillators . . . and for high-speed, switching circuits.

The low cost of Philco Surface Barrier Transistors extends their usefulness to many new applications. Low collector capacitance and low leakage current make them highly desirable for critical circuitry. Performance of hermetically sealed Philco SBT's is precise and dependable. Circuit specification is simple . . . accurate!

Micro-Alloy Transistors

Item 1772

The 2N393 combines high gain with excellent high-frequency response at frequencies up to 50 megacycles. Beta linearity is extremely good at currents as high as 50 milliamperes. This new Philco Micro Alloy Transistor provides high frequency switching plus low saturation resistance.

This new transistor design is particularly well adapted to direct-coupled logic circuitry. Polarities of the emitter and collector voltages are similar to PNP junction-type transistors.

Micro-Alloy Diffused-Base Transistors

Item 1773

MADT's are available to various voltage and frequency specifications for design of high performance transistorized equipment through the entire VHF and part of the UHF spectrum. These transistors range in f_{max} from 250 mc to as high as 1000 mc. MADT gains are typically 10 db at 200 mc and greater than 16 db at 100 mc. A low cost general purpose unit is available which will deliver typically 18 db at 50 mc and 32 db at 10 mc.

Silicon Transistors

Item 1774

Unmatched performance and reliability! Characteristics assured by extensive life tests under typical operating conditions. Philco PNP Silicon Transistors make practical complete transistorization of military and commercial circuits—where high ambient temperatures are encountered.

Power Transistors

Item 1775

The advanced design of Philco Power Transistors gives a new high in reliability. Superior thermal drop is achieved by placing the collector junction in intimate contact with the copper base — and the copper mount is assured maximum dissipator contact by "knee action" of the aluminum mounting clamp.

Bilateral Transistors

Item 1776

Here is a new concept in transistor electronics. Emitter and collector are completely interchangeable. Performance characteristics are identical in either direction of current flow.

The new 2N462 features high current (200MW), high gain (typical Beta 45 in each direction), high voltage (40V) — with controlled pulse response and controlled switching rise and fall times.

Miniature Transistors

Item 1777

Germanium PNP Alloy Junction Transistor . . . world's smallest transistor in production. Useful for general purpose applications, switching applications and in any low level audio application where size is an important consideration.

Make Philco your prime source of information for all transistor applications.

In Canada: Philco Corporation of Canada Ltd., Don Mills, Ontario.

In U.S.A.: Lansdale Tube Company, Division of Philco Corp., Lansdale, Pennsylvania.

To obtain further information on the product write-ups in this section use the post card coupon, page 161.

Electronic Components In Standard And Miniature Sizes

Item 1778

A quality line of standard and miniature connector components and push button switches. Two and three conductor plugs, plastic or shielded handles. Two and three conductor open and closed circuit jacks. Cord and panel mounted microphone connectors. Two and three conductor cord mounted jacks. Plastic or shielded handle phone plugs, two and three



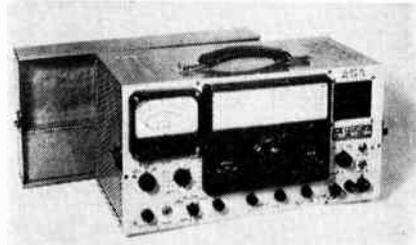
conductor. Adaptors in plastic or shielded handles for modifying connections. Shielded jacks for shielding high impedance circuits, open and closed circuit. Push button switches for momentary contacts. All parts sturdily built to exacting specifications. Send for catalog.

Richards Electrocraft, Inc., Chicago. Canadian Representative: R. C. Kahnert Sales, Ltd., 73 Crockford Blvd., Scarborough, Ontario.

Selective Voltmeter 2170C

Item 1779

Rycom Instruments, a division of Railway Communications Inc., has recently announced the Model 2170C Selective Voltmeter (wave analyzer). This instrument has a R.M.S. or DB indicating meter for voltage measurements of signals from 1 KC to 200 KC with a voltage range from -90 to $+32$ DBM with accuracy of ± 5 DB. Also incorporated in this instrument



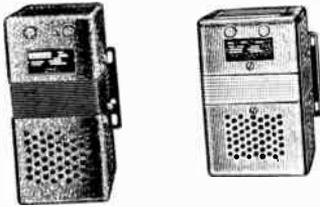
is a speaker, built into the unit for aural output of the various signals under test. A three position selectivity switch with ranges of 100 cycles, 3 KC and 10 KC. Ranges are selected for measurements or monitoring of single sideband and AM or FM signals. For further information write to:

Rycom Instruments, 9351 East 59th Street, Raytown 33, Missouri.

Sola Voltage Regulating Transformers

Item 1780

Static-magnetic regulators provide automatic, instantaneous voltage regulation within ± 1 per cent regardless of primary voltage swings of 30 per cent. No moving parts . . . no manual adjustments . . . self-protecting against short circuits. Five general types, 42 standard units cover most requirements. Custom-design stabilizers for specific requirements available in production quantities.



Standard transformers available in a wide variety of ratings from 15va to 10kva. Most models feature regulation within ± 1 per cent with primary voltage variations as great as ± 15 per cent.

Harmonic-Neutralized Transformers designed for use with equipment requiring a stabilized source of undistorted voltage. Available in capacities from 60va to 2000va. These units provide ± 1 per cent regulated output with less than 3 per cent harmonic distortion.

Write for circular CV-170F for further information:

Sola Electric (Canada) Limited, 102 Laird Drive, Toronto 17, Ontario, MAYfair 4554.

Machine Tool Control Transformers

Item 1781

The quality of these transformers is instantly apparent as a result of their better than average regulation. Designed to reduce 230/460/575 power voltage to 95/115 volt for safe, push-button operation of machine tool controls. Insulated secondary circuit permits independent grounding control at all stations.

These transformers are built to support the momentary overloads of 700 per cent or more, required to magnetize the control components such as relays, solenoids and contactors at a minimum voltage drop to hold components in circuit. Secondary voltage recovery is almost instantaneous, thus preventing cycling.

Available in capacities from 50 VA thru 1500 VA. All standard primary voltages plus standard designs with taps to match off-standard voltages.

For complete details, contact:

Acme Electric Corporation, Limited, 50 Northline Road, Toronto 16, Ont., Canada.

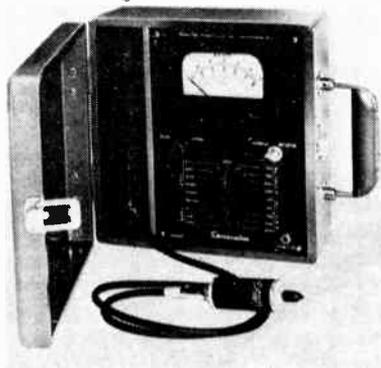
Speedvoter

Item 1782

The Servo-Tek Speedvoter has been especially created and designed to satisfy the special needs of industry and laboratories for a precision instrument that would give a quick and accurate means of measuring speed.

The tester also serves as a high quality voltmeter and ohmmeter with good sensitivity and accuracy on all ranges. Another outstanding feature of the Speedvoter is the ingenious method by which both meter and circuits are so protected that burn-outs are virtually impossible.

The Speedvoter is particularly adapted for use in measuring the speed of motors, rotating machinery, conveyor belts, etc. By the use of a highly linear tachometer generator, the motion of rotating parts and moving surfaces is converted into a d-c voltage which is proportional to speed.



This versatile unit is moderately priced at \$187.00 and comes completely housed in a handsome luggage-type case with carrying handle.

Further information on this instrument, as well as on tachometers, adjustable-speed drives and other motors and controls is available from:

Servo-Tek Products Co., 1086 Goffe Road, Hawthorne, New Jersey.

Sola Constant Voltage DC Power Supplies

Item 1783

For intermittent . . . variable . . . pulse . . . or high current loads.

Sola DC supplies combine Sola CV Transformers, germanium power rectifiers and high-capacitance filters. They are compact, low-weight units for handling loads in the "ampere" range; and for intermittent and pulse loads.



They offer many important advantages in DC power supply:

- Ripple voltage of approximately 1 per cent (r.m.s.) or less.
- Output regulation of ± 1 per cent

or less with ± 10 per cent line voltage variations.

- Minimum output voltage change with wide, rapid load changes.
- Ability to withstand high, short-time overloads without damage to components.
- Exceedingly low output impedance.



Fixed designs available in six stock models with ratings ranging from 24v @ 6a to 250v @ 1a. Compact size, low weight, and moderate price in proportion to power output and performance.

Variable designs offer adjustable, regulated source of DC test voltages for design development. Accessory handles provide portability and self-stacking. Six models ranging from 5v @ 7a to 400v @ 0.6a.

Write for bulletin CV-235 for further information:

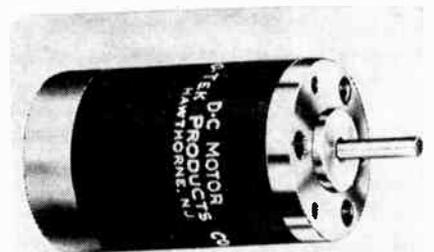
Sola Electric (Canada) Limited, 102 Laird Drive, Toronto 17, Ontario, MAYfair 4554.

Series "A" Motor

Item 1784

Servo-Tek is now producing a new line of miniature permanent-magnet motors. These motors are in the same frame and similar in appearance to a previously announced line of d-c tachometer generators.

Although only slightly over one inch in diameter, they feature a rotatable brush holder which is adjustable for best commutation and power output.



All armatures are wound with heavy Formvar wiring utilizing Mylar insulation. Motor shafts are of stainless steel and rotate on fully-shielded ball bearings.

Motors designed for operation from 6, 12 and 27.5 volts are carried in stock. Other windings or mechanical modifications are available on special order.

Further information and prices are available on these motors, as well as on tachometers, adjustable-speed drives and similar equipment, from:

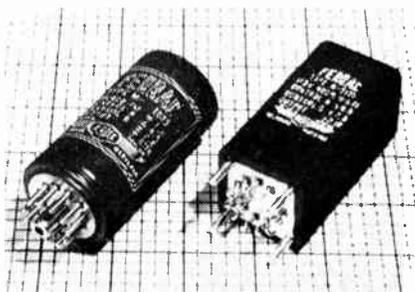
Servo-Tek Products Co., 1086 Goffe Road, Hawthorne, New Jersey.

Shunt And Relay Style Circuit Breakers

Item 1785

The Seminole Division of Airpax Products Company, Ft. Lauderdale, Florida announces the availability of shunt and relay style circuit breakers. These new units use the same magnetic time-delay trip mechanism as the popular series style breakers. Trip level is independent of temperature in all three styles.

In series style breakers, the release coil is in series with the contacts and operates when the load current exceeds 135 per cent of normal rating. In shunt style breakers the release coil can be shunted externally: for example, by a rheostat to adjust trip level. In relay style breakers, the release coil is entirely independent of the contacts. Thus, for example, the release coil can be actuated by the DC output of a power supply and the contacts can control the AC input to the supply.



Release mechanism is actuated reliably by as little as 50 milliamperes. Units are available with standard ratings to 10 amperes. When a breaker opens, the toggle returns to its OFF position giving trip indication. The action is trip free (contacts can not be held closed manually in presence of overload). Time delays permit normal starting inrushes, operating surges, and sequencing transients to pass without tripping the breaker. Two standard delays are available for protecting electronic equipment or equipment with blowers and small motors; faster action is available if needed.

These hermetically sealed breakers withstand 50 G shock, vibrations of 10 G to 1000 CPS and operate from -55 to +100C (-67 to +212F). Contacts are rated for 50 DC volts or 120 RMS volts at 60 or 400 CPS.

Full details are available from:

Leonard Electric, Ltd., located at 346 Bering Avenue, Toronto, Canada, Airpax's sales representative in Canada.

New IDL 1:6000 Shaft Angle Converter

Item 1786

A special new 1:6000 shaft angle converter provides reliable, high-speed computing accuracy, recording ease, display and presentation in airborne, military and industrial applications. It converts rotary motion into an accurate coded system of number for parallel, continuous or bi-directional

(no diodes) read-out. Rotation of the input shaft provides a non-ambiguous binary decimal output representation of shaft position through a designated number of electrically open or closed circuits. The read-out rate is 6000 bits



in 150 revolutions at 450 r.p.m. with an accuracy of 0.3 bit. Each bit carries 20 ma. at 40 volts resistive and can operate into most associated circuits. The entire converter is 1 1/8" in diameter by 2 1/4" long plus leads. This unit weighs less than 3 ounces. The shaft is 3/4" eccentric with ring mounting and shoulder type hold downs. Its total expected life is in excess of 1000 hours and it withstands the environmental conditions represented by MIL-E-5400. (Note: Sand, dust, salt spray and explosion tests not demonstrated as case is not hermetically sealed.)

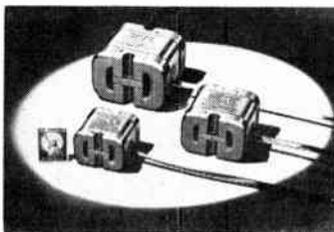
Instrument Development Laboratories, Inc., Attleboro, Massachusetts, U.S.A. Canadian Representatives: Measurement Engineering, Ltd., Arnprior, Ontario.

New Series Of Torque Motors Designed For Aircraft And Missile Servosystems

Item 1787

Trade Names: Raymond Atchley, Inc., Models 28, 24, 23 Torque Motors.

Application: Especially designed for aircraft and missile servosystems to military specifications. Commonly used to stroke hydraulic or pneumatic servovalves, they may also be applied to many other systems requiring a fast-responding high-force transducer.



Construction: The motors are of all-welded construction, and have no pins, lock-washers, safety wires or other fastening devices which may creep and cause large hysteresis values or zero shift of the armature under adverse operating conditions. Because the armature is symmetrically designed, large lateral accelerations have virtually no effect on armature position.

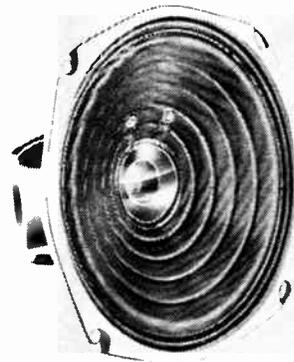
Features: These Atchley Torque Motors feature a highly efficient magnetic circuit, and operate with very high natural frequencies and low phase lag. They operate dependably under adverse temperature and vibration conditions. Model 28 produces a force of 13 pounds with a ± 0.015 inch stroke; Model 24, 8 pounds, ± 0.008 inch stroke; Model 23, 5 pounds, ± 0.007 inch stroke. High Temperature Models operate up to 400 F. For price and delivery, write

Raymond Atchley, Inc., 2340 Sawtelle Blvd., Los Angeles 64, California.

Weather-Proof Speakers

Item 1788

Quam-Nichols Company has developed a line of small (up to 6 1/2") outdoor speakers with a weather-proof "Humi-Gard" cone. This cone of special plastic-impregnated synthetic fiber fabric has a frequency response equal to that of an untreated paper cone, yet will outlast ordinary treated paper cones at least three to one. Laboratory tests show these speakers to be usable even after more than 2,000



hours continuous exposure at 100 per cent humidity and 105 F. The new cone is also abrasion-resistant and will withstand the effects of sand, dust and grit.

Quam-Nichols Company, Marquette & Prairie, Chicago, Illinois. Canadian Representatives: A. T. R. Armstrong, Ltd., 700 Weston Road, Toronto 9, Ontario; D. Eldon McLennan, Ltd. 1624 W. Third Avenue, Vancouver 9, B.C.

Electronic Transformers

Item 1789

Transformers for electronic applications which include various types of automation controls and regulators, aviation installations, computers and business machines, electronic instruments, guided missiles and ground control, radar and telephone communication are each designed to meet specific, mechanical, electrical and environmental specifications.

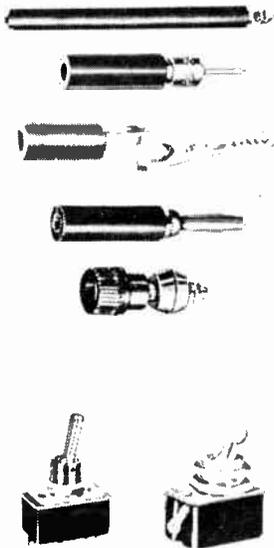
For complete details, contact:

Acme Electric Corporation, Limited, 50 Northline Road, Toronto 16, Ont., Canada.

Electronic Components

Item 1790

H. H. Smith, with greater than ten years of unequalled service to electrical — electronic manufacturers offers a complete range of Electronic Components which include jacks, plugs, alligator clips, battery test clips, test rods, tool kits, test leads, switches, tie down terminal strips, solder lugs, etc., etc. Included also is



a full line of those small, inexpensive yet hard to find though highly essential components and accessories.

We are prepared to assist in the design and development of components and assemblies for special requirements.

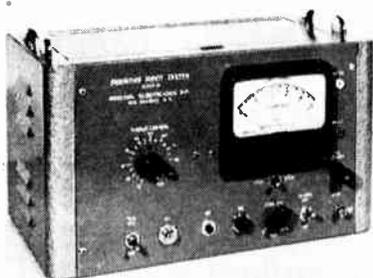
Our illustrated catalog is yours on request.

Write Atlas Radio Corporation Ltd.,
50 Wingold Avenue, Toronto 10, Ont.

Sensitive Hi-Pot Tester Model H 5, AC/DC

Item 1791

An improved line that automatically deenergize high voltage when leakage current reaches 5 micro-amps.



Models available from 2 KV to 120 KV. Will show leakage that less sensitive instruments cannot detect.

Peschel Electronics Inc., 13 Garden Street, New Rochelle, N.Y.

Dry Type Power Transformers

Item 1792

This line of transformers has been engineered for industrial and commercial use where high efficiency, trouble-free performance and quiet operation is important.

Enclosed styles, feature coil and core construction designed with circulating air ducts which maintain temperature levels within the insulation class for which they are constructed.

Standard ratings from 1/10 KVA thru 225 KVA, single phase and 9 KVA thru 750 KVA, 3 phase. Available in autotype, two winding, three winding and four winding construction. All popular voltage combinations. Primaries of 120 x 240; 240 x 480; 480 and 600 volts. Secondary voltage of 120/240; 208Y/120; 120 delta; 240 delta and 480 delta.

Transformers with special voltages can be supplied to order in ratings up to 1000 KVA. Power distribution centers can be supplied with required switching and accessory equipment to exact load specifications.

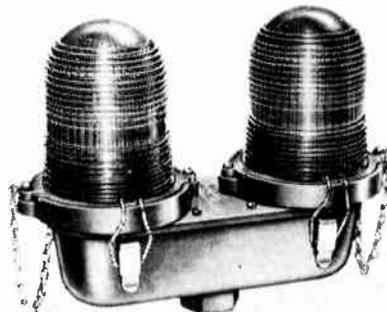
For complete details, contact:

Acme Electric Corporation, Limited,
50 Northline Road, Toronto 16, Ont.,
Canada.

New Double Obstruction Light

Item 1793

A new Double Obstruction Light is added to the Hughey & Phillips line of Obstruction Lighting Equipment. Designed to meet requirements set by the Department of Transport Specifications No. 16, the Model OB22 is



a high quality, light weight fixture incorporating simple, positive latches for easier maintenance.

The Model OB22 Double Obstruction Light is also available with a built-in cable support. Bottom of fixture is tapped to accommodate a 1 inch conduit. Representative for Eastern Canada:

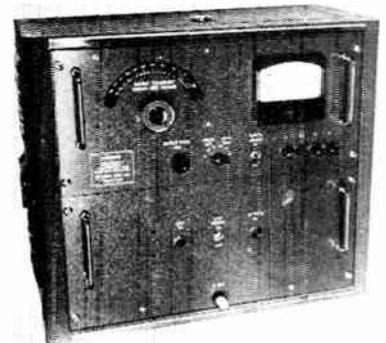
Beechey Enterprises, 290 Lawrence Avenue West, Toronto 12, Ontario.

To obtain further information on the product write-ups in this section use the post card coupon, page 161.

AC Power Source

Item 1794

Behlman Invertron* is a completely electronic AC power source available with single or multiphase output. Input is the 60 cycle line. Models are available in a wide range of power outputs, with frequencies from sub-sonic to super-sonic. The Invertron* features extreme frequency, accuracy and excellent regulation versus line and load. In addition to a standard



catalog line, our use of modular construction permits the offering of custom units, built to customer specifications, at almost production line prices. Applications: guidance systems, gyros, synchros, servo systems, magnetic amplifiers, choppers, shaker tables, airborne instrumentation.

Write for descriptive literature to:
Behlman Engineering Co., 2911
Winona Ave., Burbank, California.

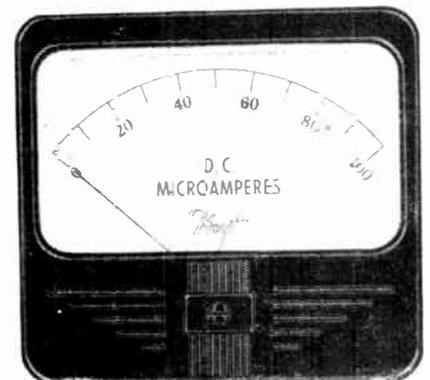
*Registered Tradename, Behlman Engineering Co.

AC And DC Panel Meters

Item 1795

Especially engineered for original equipment component or replacement applications; HOYT moving coil, rectifier, and repulsion type Panel Meters are available in a wide variety of sizes, ranges, cases, and colors. Also, custom-designed to exacting specifications.

No. 647 (illus.) typifies HOYT Meters, with its attractive black bakelite case and highly visible dial.



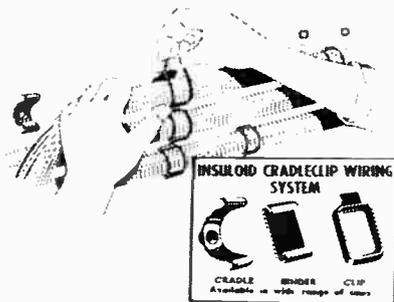
The complete line of round and rectangular Meters includes several with new transparent polystyrene, full-view cases. Details and prices from:

Burton-Rogers Co., 42 Carleton St.,
Cambridge 42, Mass., U.S.A.

New Time-Saving Wiring System Announced

Item 1796

Electrovert Limited announces the availability, to the Canadian market, of the revolutionary new Insuloid "Cradleclip" Wiring System. The "Cradleclip" Wiring System consists of the following: Binders and Extensible Clips for unsupported wiring and Cradles with Extensible Clips for anchored wiring. The Binders and Cradles are moulded from tough Nylon and are virtually unbreakable . . . the Extensible Clips are moulded Neoprene which combines the right degree of toughness and flexibility to hold any type of cables securely and without damage. Ideal for service in all climatic conditions with a temperature range of -60°C to $+100^{\circ}\text{C}$.



The "Cradleclip" wiring system is reported to take only 5 seconds for each fixing point. The Cradles, used for anchored wiring, are screwed in place, the cables are laid in position and a clip is hooked to the cradle . . . for unsupported fixing, a binder is held in place on one side of the cable and then secured in position with a clip . . . quickly, easily and efficiently.

The manufacturer reports that the following advantages are offered by the Insuloid "Cradleclip" Wiring System; new high speed, simplified wiring operations . . . neater and more compact wiring systems . . . completely insulated and suitable for all climates . . . wiring changes can be made with extreme ease . . . electrical and mechanical security assured under all conditions and, most important, reduces wiring costs and speeds up production lines.

The "Cradleclip" Binders, Clips and Cradles are available in a wide assortment of sizes to meet the requirements of cable groupings having a diameter of $\frac{1}{4}$ inch to $2\frac{1}{4}$ inch.

The efficiency of the "Cradleclip" system has already been proved through extended service by leading companies throughout Europe, the British Isles, and Canada.

Free samples are available on request . . . for your samples and descriptive literature, write today to: **Electrovert Ltd., 265 Craig St. West, Montreal, P.Q.**

Transistor Power Supplies

Item 1797

The Hoover Company Limited of Hamilton, Ontario announces the addi-

tion of Transistorized Power Supplies to their products line. Standard designs are available with input voltages from 6 to 30 VDC and output voltages of 50 to 500 VDC, and in 25, 50, 100 and 200 watt packages.

Commercial and military designs are available, permitting case temperatures from -60° to $+90^{\circ}\text{C}$ at rated load. Power outputs to 600 watts and special packaging can be provided if required for dynamotor replacement or modular design.

The Hoover Company Limited, Electronic Component and Equipment Department, Hamilton, Ontario.

Conrad Environmental Test Chambers

Item 1798

Conrad, Inc., Holland, Michigan, manufactures Altitude and Temperature-Humidity Test Chambers with ranges of temperature from $+500^{\circ}\text{F}$ to -120°F and altitude from ambient pressure to 100,000 ft. Special ranges and features are available and custom design work is a specialty with Conrad, Inc.

Conrad manufactures chambers from 4 cu. ft. through walk-in sizes.

Environmental Test equipment is a full-time business with Conrad, Inc., and offices are maintained throughout the United States and in Canada.

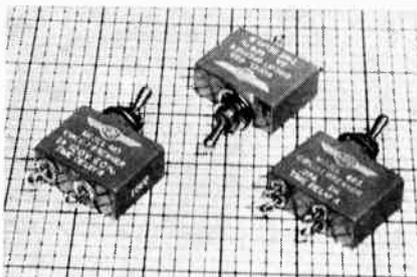
Conrad Inc., Holland, Michigan.

Servo Components

Item 1799

A variety of magnetic components for use with servo mechanisms is available from Airpax Products Company, Seminole Division, Ft. Lauderdale, Florida. These components include Ferrac instrument type analog computing amplifier. Preac low-signal level amplifier (for use with thermocouples and strain gages), and servo power amplifiers. By controlling the power to both phases of a two-phase motor, these power amplifiers are more efficient and require less standby power than conventional magnetic amplifiers.

Other servo amplifiers include Magmeter frequency detectors. These components produce output currents directly proportional to input frequencies for use in velocity servos. For position servos, there is the transformer-coupled ring demodulator,



especially designed to couple from synchros to the Ferrac amplifiers. These components feature unusually stable characteristics over wide ranges of ambient and operating conditions. multiplex equipment of from one to

Full details are available from:
Leonard Electric, Ltd., located at 346 Bering Avenue, Toronto, Canada, Airpax's sales representative in Canada.

Miniature Voice Multiplex Equipment For Radio Systems Four to 124 Channels

Item 1800

A series of miniaturized voice multiplex systems providing from four to 124 voice channels over a radio system are now available. These systems have been designed specifically for radio use, and are not simply converted wire-line carrier-telephone systems. They have all the advantages which design for a specific application produces: High performance, small size, light weight, low cost, circuit simplicity, low power require-



ments, small number of tubes of a single type, low operating cost, low maintenance cost and high reliability.

Channel Characteristics

These systems provide a voice channel flat within 1 db from 300 to 3500 cycles, for each 4 kc of bandwidth occupied. Each channel is obtained as the lower sideband in a single-sideband suppressed-carrier amplitude-modulation arrangement, and is equipped with hybrid, signalling, and dialling circuits for all the standard 2-wire and 4-wire loop options.

Telegraph Group

A telegraph channel is provided on which up to 8 teletype circuits can be multiplexed without double modulation. By dropping telephone channels, this telegraphs group channel can be extended in width in 4 kc increments up to 20 kc, for data transmission service. An order-wire channel and telephone set are provided for each group of up to 24 channels. Channels can be added five at a time.

Miniature frequency-shift telegraph

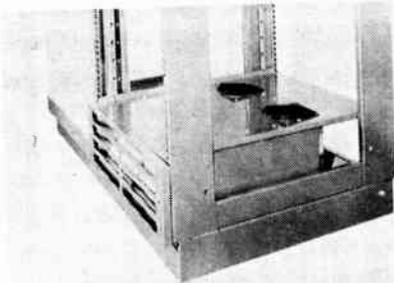
24 channels is also available.

Radio Engineering Products, 1080 University St., Montreal 3, Canada.

New Unitized Blower For Electronic Cabinets

Item 1801

Amco Engineering is now offering a complete packaged blower unit for use with its standard cabinet equipment. The package includes motor, two fans with air-directing ducts, metal enclosure, intake filter, decorative louver, fuses, and line cord. Operating on 110 volts, 60 cycles, the small unit will deliver 350 cubic feet of air per minute. A larger model is available to provide 800 c.f.m. The



BLOWER MODEL 839C

AMCO ENGINEERING CO., 7333 W. AINSLIE, CHICAGO 31, ILLINOIS

outstanding benefit of the design is that the 350 c.f.m. unit uses only 3½" of panel space, and the 800 c.f.m. unit only 7" of panel space. This is possible because the units are designed to fit deep in the base of the cabinet, and utilize otherwise waste space. The filters used are the permanent type and may be washed out periodically. Prices and complete data may be obtained from:

Elder Electronics, 3220 Robert St., Burlington, Ont., representing AMCO Engineering Co., 7333 W. Ainslie St., Chicago 31, Illinois.

Adjust-A-Volt Variable Transformers

Item 1802

Type 500BU Adjust-A-Volt variable transformer is an uncased unit for back-of-panel mounting. It has a shaft that can be loosened with a single screw without upsetting the adjustment between rotor brush and com-



mutator surface. Standard model can be used for special shaft length applications without cutting the shaft.

Type 500Bu has a tap wired to the terminal board to provide 6 volts for a pilot light.

Type 500B, a cased unit for laboratory and industrial use, features a streamlined case with grey wrinkle finish, jeweled pilot light, extractor type fuse, output receptacle cord, plug and on-off switch.

Both units have new hand-fitting knob. Molded barrier type base allows for screwed connections without danger of short-circuiting.

Ratings: Input voltage 115 V; max. load rating, 1.0 KVA, output voltage, 0-115 V and 0-135 V; maximum output 7.5 A.

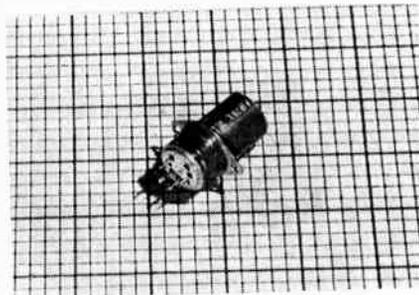
There is a complete line of manual and motor-driven Adjust-A-Volt variable transformers. For 22 page descriptive catalog write to:

Standard Electrical Products Co., 2240 E. 3rd Street, Dayton, Ohio, U.S.A.

Mechanical Modulators

Item 1803

Choppers are available in a wide variety of ranges from Airpax Products Company, Cambridge Division located at Cambridge, Maryland. Type 350 operates in the presence of vibrations up to 15 G from 20 to 2,000 CPS and over a temperature range of minus 65° C to plus 125° C. All types are hermetically sealed and available in mounting styles for plug-in or with solder pin terminals. Contacts are



normally rated for operation in dry circuits and up to 2 milliamperes and at 0 to 100 volts with resistive loads. Drive is normally 6.3 RMS volts; standard units are available for operation at 60 CPS or at 400 CPS. With the drive coil leads brought out at the top of the cam, noise is only 50 microvolts into a high impedance wide-band load. Where synchronous operation is desirable, matched pairs or double-pole, double-thrown choppers can be supplied.

Additional information is available from:

Leonard Electric, Limited located at 346 Bering Avenue, Toronto, Canada, Airpax's sales representative in Canada.

To obtain further information on the product write-ups in this section use the post card coupon, page 161.

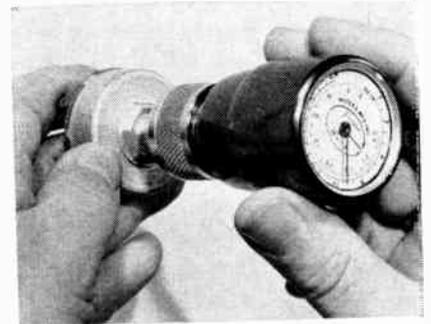
Waters Torque-Watch Gage

Item 1804

Very low torque can be read directly from the watch face of the new Waters Torque Watch Gage. It will measure torque on servos, potentiometers, variable capacitors, small motors, and miniature rotating devices.

The Torque Watch Gage features are:

Easy-to-read dial has full linear scale calibrated in ounce-inches or gram-centimeters. Each model is color-coded for quick selection of range and direction of torque. Accuracy is plus or



minus 5 per cent standard; ± 1 per cent can be supplied on special order; ± 2 per cent of full range can be supplied on special order. The Torque Watch is compact, measures 1½" diameter, 3¾" long; it weighs only seven ounces. Standard chuck is the keyless type; keyed chucks can be supplied on special order.

Ranges of torque, standard, are as low as 0.025 ounce-inches up to 40 ounce-inches, with clockwise, counter-clockwise, or bi-directional movement. Additional ranges can be supplied on special order.

Waters Mfg., Inc., South Sudbury, Mass.

Compounds For Semi-Conductor Use

Item 1805

In co-operation with leading microwave laboratories the City Chemical Corp. has developed a series of chemical compounds for use in semiconductor research. The following compounds are now available:

Potassium Cobalticyanide, Barium Cobalticyanide, Potassium Chromicyanide, Sodium Manganicyanide, Potassium Manganicyanide.

Gadolinium Ethyl Sulfate, Lanthanum Ethyl Sulfate, Barium Ethyl Sulfate, Potassium Ethyl Sulfate, Sodium Propyl Sulfate, Potassium Methyl Sulfate.

Cobalt Silicofluoride, Nickel Silicofluoride, Cadmium Silicofluoride, Zinc Silicofluoride.

Aluminum Acetylacetonate, Chromium Acetylacetonate, Copper Acetylacetonate.

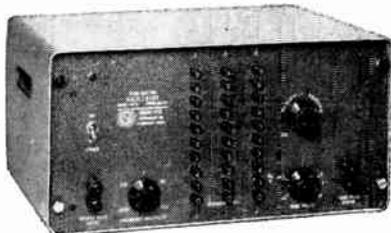
Other compounds can be prepared on request. Prices and further information can be obtained from:

The City Chemical Corp., 132 W. 22nd Street, New York 11, N.Y.

Krohn-Hite Push Button Oscillator From 0.001 CPS to 100 KC

Item 1806

The Model 440-A PUSH-BUTTON OSCILLATOR is designed for applications requiring very low distortion or extremely good frequency stability and resetability. It provides both sine waves and square waves at any frequency between 0.001 cps and 100 kc. Distortion and Hum is less than 0.1 per cent at any output level. Frequency



calibration is ± 1 per cent. For fine control of frequency, three banks of ten push-button switches are provided. An additional vernier control varies the frequency continuously by an amount equal to the increment between adjacent buttons of the third switch bank. Ideally suited for bridge measurements, tuned filter alignment, rapid spot frequency checks and distortion measurement. Price \$550.00 f.o.b. factory. For further details write:

Krohn-Hite Corporation, 580 Massachusetts Ave., Cambridge 39, Mass., U.S.A. or Canadian Representative, Measurements Engineering, Ltd., 232 John Street, Arnprior, Ontario.

Panel Clock

Item 1807

Latest panel clock to be marketed by the Wakmann Watch Company, 15 West 47th Street, New York City, Model W-33-7511, is a 24-hour, 8-day panel clock produced in accordance with USAF specification MIL-C-7939A, except that the dial is 24-hour. Featur-



ing luminescent hands and figures, sweep-second hand, and exceptionally accurate precision movement, this type A-11 clock is mounted in a lightweight black oxidized aluminum case with a $1\frac{7}{8}$ " dial opening.

For further information:

Wakmann Watch Co., Inc., 15 West 47th Street, N.Y.C.

Montreal Gets New Electronic Communications Day And Evening Training Facilities. Includes Microwave, Radar, Mobila FM Etc.

Item 1808

A new high level course on the engineering technician level will be added to the already well established facilities of Radio College of Canada, 3454 St. Denis St., Montreal, P.Q. Whilst this is new for Montreal the course has been going on at 86 Bathurst St., Toronto, for 3 years. All graduates were offered jobs, some with contracts.

Known as Electronic Communications, the course will run for 3 consecutive terms of 16 weeks with training being given all day, Monday through Friday. A well balanced plan assures the student of practical laboratory work each day, along with lectures on applied mathematics and electronic theory. A similar plan for 2 evenings each week will also be available. Registrations for day and evening classes will be limited.

Radio College of Canada is well known for its high standards and is recognized by the electronic industry, Federal and Provincial Government departments.

Thousands of successful RCC graduates, many of whom hold managerial and professional positions, mark 30 years of leadership by Radio College of Canada in most branches of electronic training.

Radio College of Canada, 3454 St. Denis Street, Montreal, P.Q. and 86 Bathurst Street, Toronto.

To obtain further information on the product write-ups in this section use the post card coupon, page 161.

AC to DC Motor Control

Item 1809

Connected to a 230 volt alternating current source of supply, the Rev-O-Trol provides half-wave direct current for powering a 115 volt DC motor. Such motor then, with the Rev-O-Trol control, has an available shaft speed range from zero to full rated speed and above. The selected or most desirable speed for the job may be manually regulated and pre-set. Selected speed will not vary with increased load. The required torque to handle the load is automatically available. Dynamic braking feature stops motor shaft instantly. Foot and reversing control available.

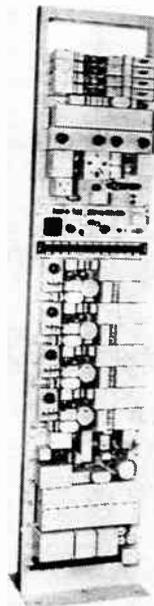
For complete details, contact:

Acme Electric Corporation, Limited, 50 Northline Road, Toronto 16, Ont., Canada.

Model CFD-B Carrier Telephone Equipment

Item 1810

Railway Communications Inc., manufacturers of communications equipment for wire line use, is currently producing a four- and five-channel carrier telephone terminal and repeater units designed for long periods of service and rugged use. The terminal and repeater equipment incorporate automatic controlled pilot channels, carrier channels using highly



selective filters for crosstalk and noise rejection below 50 db. Many features to insure reliable telephone communications are incorporated in the CFD equipment. For further details write to:

Railway Communications, Inc., 9351 East 59th St., Raytown 33, Missouri, U.S.A.

Linearity Bridge

Item 1811

Checks angles with better than 0.1 accuracy and repeatability. Slide-wire master linear to 0.025 per cent. Standard resistance of slide wire is 17 ohms; 5 to 50 ohms on special order.



Anglyzer measures mechanical and electrical angles with accuracy of 0.1°. Takes shafts from $\frac{1}{8}$ " to $2\frac{1}{8}$ " long. Collets furnished for $\frac{1}{8}$ " or $\frac{1}{4}$ " shafts.

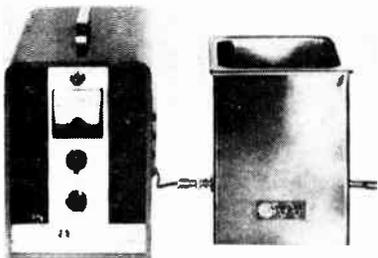
Waters Mfg., Inc., South Sudbury, Mass.

Acoustica Associates, Inc. Ultrasonic Cleaning Equipment

Item 1812

Illustrated below is Acoustica Asso-

ciates, Inc. Model DR 50 AH Portable Ultrasonic Cleaning Unit. The 50 watt generator will power the transducerized ½ gallon capacity stainless steel tank for cleaning small tools, electronic components like relays, potentiometers, switches, bearings, optical, horological, and other precision parts.



A second tank can be alternately driven by use of the built-in selector switch.

Standard larger Ultrasonic units from 1 gallon capacity are also available.

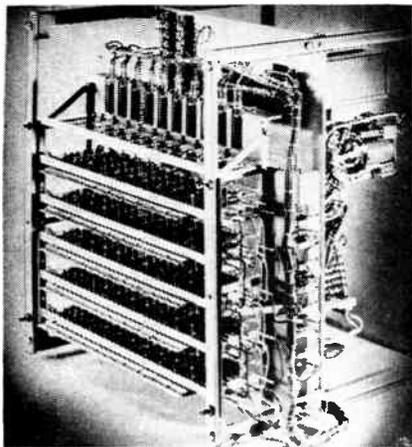
Write for descriptive literature, telling us your individual cleaning problems, to:

Acoustica Associates, Inc., 26 Windsor Ave., Mineola, Long Island, N.Y. Canadian Representative: Mr. R. Billings, X-Ray & Radium Industries, Ltd., 261 Davenport Rd., Toronto 5, Canada.

Cunningham Crossbar Scanner

Item 1813

This versatile, low-cost, self-contained crossbar scanner is capable of scanning 200 points sequentially in response to a contact closure. Provisions are made for start and stop scanning at predetermined points, for skipping groups of points, and for con-



trolling external devices at each point (by contacts). Other features include low-contact resistance, low thermoelectric potentials, high leakage resistance, and very good high frequency performance.

James Cunningham Son & Co., Inc., 33 Litchfield Street, Rochester 8, N.Y.

Electric Control Cleaner

Item 1814

Caig Laboratories offers a Superior Electric Control Cleaner. Cramolin is a greatly improved anti-corrosive preservative, lubricant-cleaner that minimizes contact resistance, sparking and fungus growth. Cramolin is effective on all metals, including gold alloy, galvanized, silverplated contacts, contact metals of copper, brass, bronze or nickel. It adheres to metal surfaces, and has effective temperature range of 40 to 150C. It dissolves and removes nonmetallic oxide and sulfide layers, and protects contacts from further corrosion.

Caig Laboratories, 46 Stanwood Rd., New Hyde Park, L.I., N.Y., U.S.A.

Locking Clips

Item 1815

Additional sizes have been added to the Line of Locking Clips manufactured by Atlas E-E Corporation of Woburn, Mass. They are designed to securely hold ferrule resistors and other cylindrically shaped components under extreme environmental conditions of shock vibration and heat. Available in silver, nickel or Cadmium Plating, with or without solder/position lug. These clips of Phosphor



Bronze with Stainless Locking Springs are made to BU Ships spec RE28F121B. The locking springs are available with a unique device for ejecting the component from the clip. Clips for the following diameter components are now available: ¼", ⅜", ½", ⅝", ¾", 1", 1 ¼", 1 ½", 1 ¾", 2", and 2 ¼". Write for Bulletin No. 1 to:

Atlas E-E Corporation, 47 Prospect Street, Woburn, Massachusetts.

Battery Chargers

Item 1816

Constant potential, current regulated type battery chargers are designed for float charging, unattended, emergency power supply installations, providing a forming charge for new batteries and recharging electric truck batteries. They perform equally well on lead-calcium, lead-antimony, nickel-iron and silver-zinc types. Operated from an alternating current source of supply, the direct current output is obtained from silicon power rectifier elements in full-wave, magnetic ampli-

fier circuits, controlled by transistors. No electronic tubes are used. No disconnecting relays are necessary. Output voltage adjustment is -3 per cent to +10 per cent of nominal and is regulated to ±1 per cent of pre-set value. Output current adjustment is from -50 per cent to +10 per cent of rated full load and is regulated to ±5 per cent of pre-set value.

Output voltage and current from no load to full load values are independent of a ±10 per cent variation in input voltage.

For complete details, contact:

Acme Electric Corporation, Limited, 50 Northline Road, Toronto 16, Ont., Canada.

To obtain further information on the product write-ups in this section use the post card coupon, page 161.

Waters Pot-Test Station

Item 1817

Waters Pot-test Station provides complete instrumentation for quick, efficient checking of detail in production, for maintenance of quality control, and for determination of conformity to specification requirements.

This new potentiometer analyzer provides:

D-c power supply for test circuit; high input resistance, high sensitivity; linearity measurement made to an accuracy of 0.025 per cent; self-calibrating galvanometer; conformity measurement made to an accuracy of 0.1 per cent; self-contained conformity standard; noise observation by external scope.



The pot-test station also offers:

Bridge measurement, end-to-end and slider-to-end, 1 ohm to 1 megohm, plus or minus 1 per cent accuracy, with built-in bridge; electrical angle determinations to 0.1°; means for using external conformity and resistance standard (furnished); means for using external 1 ma. recorder in place of meter; slide-wire standard furnished for regular system check.

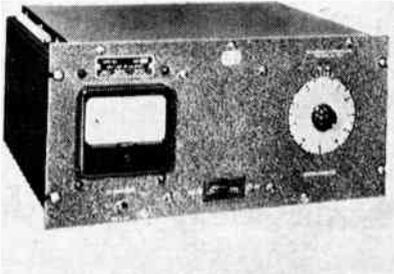
Waters Mfg., Inc., South Sudbury, Mass.

Automatic Voltage Regulators

Item 1818

The Tel-Instrument Corp. Series 600 Automatic Voltage Regulators will stabilize line voltages varying over a ± 20 per cent range to within $\frac{1}{4}$ per cent. This unit is particularly suitable for applications requiring high starting currents such as motors or tungsten lamps. Because it is designed to operate over the range of 50 to 70 cycles it is particularly suitable to regulate the output voltage of generator systems.

As its operation is independent of frequency over the 50-70 cycle range it is especially suitable for use where the frequency of the power source is unstable, such as small generating systems. This feature makes the Series 600 Regulators applicable where the more common regulators that are fre-



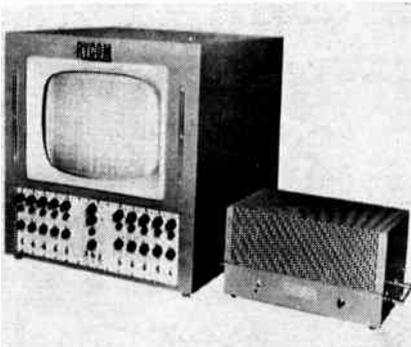
quently sensitive cannot be used. The Series 600 Regulators do not distort the waveform, even with serious peak overloads. The control amplifier is a plug in unit. Units are available with various power output capabilities from 3.6 to 90 KVA single phase or from 7.2 to 270 KVA 3 phase.

Complete technical information is available from Atlas Radio Corp., 50 Wingold Avenue, Toronto 10, Canada.

Model 2400 Multi-Channel Oscilloscope

Item 1819

Rycom Instruments, a division of Railway Communications Inc., produces multi-channel oscilloscopes for many applications. The Model 2400 shown above is the current model



being used in biological and industrial applications for a quick-look multiple display unit.

This oscilloscope is supplied with

a basic unit of 4 channels with additional channels supplied as an accessory item.

The input of each channel amplifier is differential DC inputs, with a sensitivity of 10 millivolts peak-to-peak for 1 inch deflection. Sweep is recurrent, driven or triggered. Linearity is held to 2 per cent in X and Y axis display.

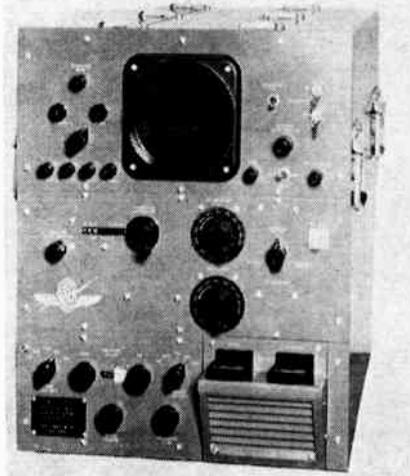
For further information write to:
Rycom Instruments, 9351 East 59th Street, Raytown 33, Missouri.

Pulse Power Calibrator

Item 1820

Model PCX-1 Pulse Power Calibrator is an extremely precise instrument for calibrating pulse power measuring devices in the 925- to 1225-mc frequency range and for measuring power between -10 and $+63$ dbm to within 0.5 db.

This equipment employs a new method which permits far greater accuracy (other than calorimetric) than heretofore achieved. It establishes a measurement reference level at the time of each use. Ease of opera-



tion is assured by the notch-and-reference-line display, by the automatic centering of pulses on the display and by the direct reading of power measurements.

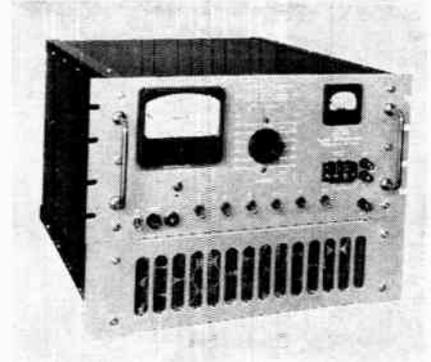
General Communication Company,
677 Beacon Street, Boston 15, Mass.

Constant Current Converters Capacity 1 Ma To 30 Amps

Item 1821

Three "Current Governors" each a two terminal current stabilizer, current modulator and electronic load, feature rapid or automatic selection of desired current level, high accuracy and stability, and constant current over a wide voltage range. In addition, current can be switched, pulsed, swept, modulated and programmed.

Each of the "Current Governors"



may be excellently applied to production testing and laboratory operation of any current sensitive devices such as diodes, rectifiers, transistors and electromagnetic components.

Further technical data may be obtained by writing for bulletin 957 to:

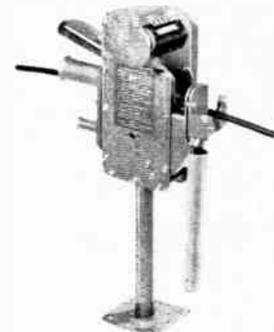
North Hills Electric Co., Inc., 402 Sagamore Ave., Mineola, N.Y. or Stark Electronic Sales Co., Box 240 Ajax, Ontario.

To obtain further information on the product write-ups in this section use the post card coupon, page 161.

Model 600 Olympic Length Meter

Item 1822

The Model 600 Olympic Length Meter accurately measures flexible materials from .010" to 1" in diameter. A Veeder-Root counter indicates in FEET and INCHES up to 9,999 feet at speeds to 500 feet per minute.



The quickly interchangeable guide tubes accommodate materials ranging from Nylon fishing line to 1" flexible electric cable or cordage. No. 650 Cutter shown with Meter is optional. Meter approved by the Department of Trade and Commerce, Standards Division.

Olympic Instrument Laboratories, Dept 53, Vashon, Washington.

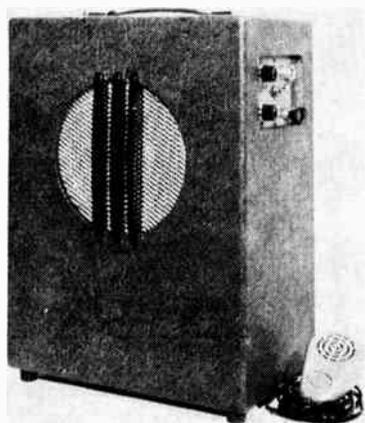
All-Transistor Portable P.A. System

Item 1823

A rugged, light-weight, portable, P.A. system of wide versatility from Canadian Marconi.

The self-contained 10 watt unit TPA/569 is housed in a sturdy, weather proof case and features a high flux, hi-fidelity 8" speaker output without distortion. Additional speaker terminals are incorporated on the control panel.

Tone and volume controls, as well as on/off switch are conveniently located on the side of the case. Ready access is provided to the 12 volt 7 a.h. dry battery. Current drain, 5 amps average, allow 14 hours continuous use before re-charging.



A felt-lined pocket, provides convenient microphone stowage.

Widely varied microphone facilities are provided, for the many purposes to which the portable system may be applied. A reflex horn speaker of 11 inch flare diameter is available for marine or mobile vehicle fitting.

The TPA/569 P.A. unit measures 13¼" by 17½" by 8½" deep and weighs 24½ pounds.

Canadian Marconi Company, 4104 St. Catherine St. West, Montreal, 830 Bayview Ave., Toronto, 3594 Main St., Vancouver, 572 Barrington St., Halifax, 3 Prescott St., St. John's, Nfld.

Expamet Metal in Industry

Item 1824

Expamet Pattern Mesh is an entirely new "lace-like" expanded metal mesh. Its recurring patterns sparkle and reflect the light, creating new decorative effects of exceptional beauty.

It can be color-anodised in 12 different colors, and gives unlimited scope for bold new decorative treatments, for loudspeaker and High Fidelity grilles. Made of aluminum, there are 28 different patterns, from over 3" to as small as the point of a pin. There are hundreds of uses: Aircraft grille covers, electric fan and machinery guards, neon sign backgrounds, TV, film and stage sets, Radar equipment covers, etc., etc.

Write for illustrated brochures. Queries from interested designers, architects, manufacturers promptly answered.

Cresswell Pomeroy Ltd., 35 Densley Avenue, Weston, Ontario.

New Low-Cost 150 MC Mobile Unit

Item 1825

A compact 10-Watt mobile of new design is now in production at Canadian Marconi, Montreal. It is made without control head facilities and with a minimum of non-functional components, thus achieving low weight and bulk without resorting to special miniaturization components and techniques.

The unit is small enough to fit beneath the instrument panel of motor vehicles, cable harness, loudspeaker case, as well as control head facilities having been eliminated.

The DT23 unit weighs 15½ pounds, 5 pounds of which is in the power-transformer. Space is saved by using eight printed components on top of the chassis, which replace 44 conventional components in the IF and AF portions.



Compactness of the unit is due largely to the 6360 dual tetrode used as a power amplifier. The complete equipment employs only 17 vacuum tubes. The unit is DOT type approved to existing land mobile specifications.

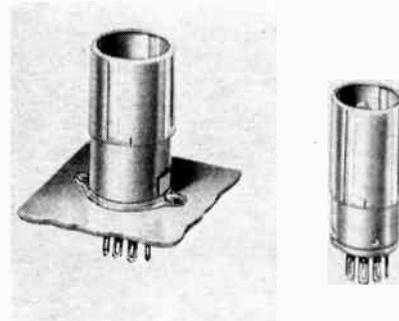
Canadian Marconi Company, 6035 Cote de Liesse Rd., Montreal, P.Q.

To obtain further information on the product write-ups in this section use the post card coupon, page 161.

CapTiVated Telescoping Shields

Item 1826

"CapTiVated" telescoping shields for miniature electronic tubes are offered by the Staver Company, Inc., Bay Shore, New York, in a variety of designs as the newest additions to the extensive line of original Staver "Mini-Shields". Flanged, roll-over and snap-in bases are available in the CapTiVated types in addition to the Standard and Printed Circuit wrap-around "Mini-Shields" of non-captive design.



The "CapTiVated" shields are permanently mounted to the chassis in electronic equipment using both 7 and 9-pin miniature tubes. Its unique telescoping feature permits quick access to the tube, while guarding against shock, vibration, oscillation and radiation often encountered in the use of ordinary shielding.

The "wrap-around" "Mini-Shield," for either standard or printed circuit use, is designed to hold any miniature tube firmly in its socket with a grip that actually tightens against any force that tends to loosen the tube. Variations in tube dimension are accommodated, and serrations on the base clip prongs compensate for tube length variations.

Staver also manufactures the electronic industry's most accepted tube support, the "Mini-Spring", a highly efficient support at a price lower than any other. Spring action downward is combined with sideways support to keep the tube upright, insuring permanent tube support regardless of mounting position of the chassis.

Staver products and complete descriptive literature can be secured from:

Atlas Radio Corporation, Ltd., 50 Wingold Ave., Toronto 10, Canada.

New Beatty Portable Aluminum Mast

Item 1827

This new Beatty mast provides quick communication installations to heights of 150 feet. It can be completely assembled without leaving the ground and erected by 2 men in less than 1 hour! Supplied with a vertical radiator on an insulated base or with a grounded base.

- Built to C.S.A. Standards.
 - Suitable for broad field applications.
- Send your requirements to:
Beatty Bros. Limited, Fergus, Ont.

New Miniature Amperite Delay Relays

Item 1828

Amperite Delay Relays are now available in the miniature T6-½ Bulb-Base 9 pin miniature.

- These tubes can be supplied for all standard heater voltages, such as 6.3-26 and 115 V.
- Delays available from 2 to 120 seconds.
- Wattage consumed by the heater is approximately 2 watts.
- Contact rating 115V - 2a AC, non-inductive.
- Ambient compensated for temperatures from -50° to +70°C.



Hermetically sealed, the Amperite Miniature Delay Relays are not affected by altitude or any other climatic conditions. Their unusually rugged construction enables these miniatures to withstand vibrations.

For further information, write to: **Amperite Company, Inc., 561 Broadway, New York 12, N.Y.** In Canada: **Atlas Radio Corp., 50 Wingold Ave., Toronto 10, Ont.**

Weldmatic Stored-energy Welder Speeds Precision Assembly

Item 1829

This self-contained, bench-mounted unit brings the advantages of welding to precision assembly work in electronics, aircraft, ordnance and other industries. It joins metals from .0002" to .060" with millisecond speed—without discoloration or deformation. Sets up fast, operates easily and reliably. Welded joints withstand high temperature, severe shock and vibration.



Availability of many special-purpose accessories and electrodes gives the 1015 extreme flexibility. A great time-saver in the lab, a great cost-saver on the production line. Delivery from stock. Write for information on complete line of stored-energy welders, printed-circuit types, portable types, power supplies, electrodes and accessories.

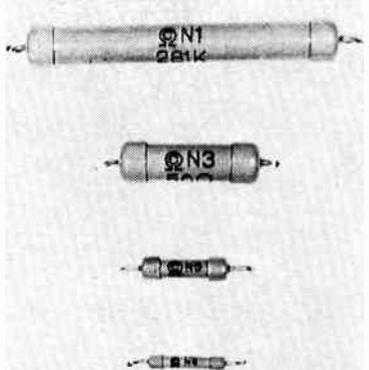
Weldmatic Division, Unitek Corp., 275 N. Halstead Ave., Pasadena, California. In Canada: **Mel Sales Limited, Arnprior, Ontario, Canada.**

Precision Resistors

Item 1830

The Constanta Company of Canada

Limited manufacture a line of deposited carbon high stability precision resistors. These range from 2 watts down to 1/10 watt. Non-inductive types are also manufactured by this Canadian company.



A hermetically-sealed range of resistors is manufactured by Constanta of Canada, from 2 watts to 1/8 watt, for 70° Centigrade Ambient temperature.

Write to **The Constanta Company of Canada, Limited, 280 Regina Avenue, Montreal 19, Quebec.**

DC Overpotential Tester Model 3050 - 5

Item 1831

Latest addition to the Beta series 3000 DC Overpotential Testers is the Model 3050 - 5. Like the other models in the 3000 Series, this unit features minimum size and weight, non-destructive qualitative and quantitative dielectric testing, "burn" currents for positive fault identification, effective personnel and equipment protection, and simplicity of operation which permits use by non-technical personnel.

The 3050-5 has an output range of 0-50 KV at 0.5 ma, 0.5/20/50 KV volt-meter ranges, 0-50/200/500/2000/5000 microampere meter ranges, 105 to 125 volt — 50 to 60 cycle — single phase input, reversible polarity, and less than 2 per cent ripple at full resistive load.

Beta Electric division of Sorensen & Co., Inc., 333 E. 103 St., New York 29, N.Y.

Vibrating Reed Frequency Meters

Item 1832

In three styles — bakelite case, hermetically sealed metal case and hermetically sealed metal case ruggedized construction; sizes — 3½" round flush and 2½" round flush. Reed cones with 5, 7, 9, 11, 17, or 21 reeds; ranges to cover mid-scale of 25



cycles, 50 cycles, 60 cycles, 400 cycles, 800 cycles and specials up to 1500 cycles; accuracy plus or minus 0.5 per cent. The individual reeds tuned to within plus or minus 0.3 per cent of their rated frequency; suitable for operation on 100-150 volts, 200-250 volts, 440 volts or low voltages. Trade name — "STANDCO", precision built, with reeds aged to prevent fatigue with resultant inaccuracies.

Herman H. Sticht Co. Inc., 27 Park Place, New York 7, New York.

Induction Motors Have Dynamotor For Guided Missiles

Item 1833

IMC's 1500 series features 100 hour brush life at 50,000 ft. altitude; 500 hours at sea level. Motors operate in ambient temperature range of from



—40°C to +71°C standard, with special units available for operation up to 100°C ambient.

All motors in the series are designed to withstand vibration of 3 g's from 5-600 c.p.s. along 3 mutually-perpendicular axes; duration 30 minutes minimum in accordance with MIL-T-5422C (ASG). All are totally enclosed to protect against sand and dust and meet all military specifications with regard to humidity.

Data sheet presents engineering drawing of typical unit in the series and includes a performance curve on efficiency versus output.

For copy of Bulletin 15F5, write: **Induction Motors Corp., 570 Main Street, Westbury, New York.**

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National Research Council, Ottawa, requires a graduate engineer to take charge of design and development of special instrumentation, controls and data handling systems to be used in high speed wind tunnels. Applicants must be familiar with applications of strain gauges and other transducers, automatic electronic controls, analogue and digital data handling systems, etc. They should also have wide experience of instrumentation equipment currently available in Canada and USA. This work calls for imaginative and original approach to a large variety of advanced instrumentation, control and data handling problems.

Candidates must be graduates of a recognized university in electrical engineering or engineering physics (or equivalent) with a good academic standing and must have several years of pertinent experience.

Initial salary is dependent on qualifications and experience.

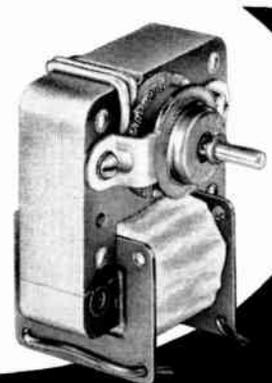
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Inquiries are invited from interested candidates. Write, outlining your qualifications, to **Employment Officer, National Research Council, Sussex Drive, Ottawa 2.** Please quote file ME-340.



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News Report

A Monthly Roundup of News and Personnel Changes in The Canadian Electronics Industry.

Recent Appointment By Northern Electric Co.

A. B. Hunt has been appointed general manager, research and development, for Northern Electric Company Limited of Montreal, Que.

Formerly general manager of the company's telephone contract division,



A. B. HUNT

Mr. Hunt was born in London, Ontario, and received his education in that city and at the University of Toronto, where he graduated with the degree of Bachelor of Applied Science, receiving also the medal of

the British Association for the Advancement of Science.

Joining the company in 1928, as a manufacturing methods engineer, Mr. Hunt has also been manager of the company's electronics and communications equipment divisions, and during 1954 and 1955 served as director of the electronics branch of the Department of Defense Production.

Winner in 1946 of the R. A. Ross medal for his paper, "The Future of Radio Communications in Canada", Mr. Hunt was in 1952 president of the Radio - Television Manufacturers' Association.

R. M. Brophy Heads Up Canadian Motorola Electronics Limited

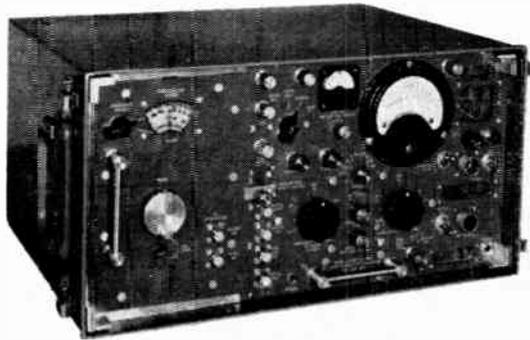
As the result of negotiations with Motorola Inc. of Chicago, Ill., a new Canadian company has been formed with the title of Canadian Motorola Electronics Limited.

The directors of the new company are R. M. Brophy, L. C. Bonnycastle, B. H. Rieger and E. M. Auger of Toronto, also Dr. D. E. Noble, executive vice-president of Motorola Inc., Chicago.

Mr. Brophy is president of Canadian Motorola Electronics Limited. Well known to the Canadian electronics industry, Mr. Brophy was formerly board chairman of Rogers Majestic Electronics Ltd. and president of Philips Canadian Industrial Development Company Limited.

S. G. Paterson, formerly president of Rogers Majestic Electronics Ltd., has been appointed vice-president (Sales).

E. M. Auger is secretary-treasurer of the new company.



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3. **Missile Electronics** — Electro-mechanical design in servo-mechanisms, instruments and flight control. To \$10,000.
4. **Applications Engineer** — Control and computers with design experience. \$6,000 - \$9,000.
5. **Project Engineers** — (A) Mechanical design of instruments and controls for flight simulator. (B) Electrical development of precision and mobile communication equipment. \$6,000 - \$9,000.
6. **Electronic Designers** — Required in fields of radar, servo-mechanisms, analog computers, fire control, UHF communications multichannel VHF systems and nuclear instrumentation with experience in magnetic assemblies, ferrites or transistors. To \$8,400.
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If your qualifications measure up to such as these openings and you possess leadership qualities, we recommend that you forward to us, by mail, a complete resume of your background, education and experience.

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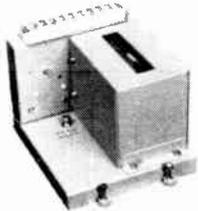
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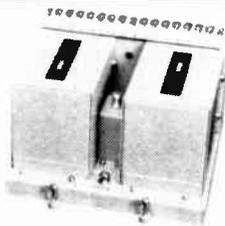
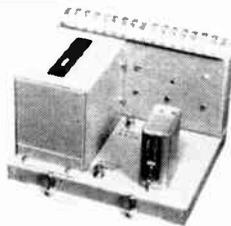
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Transistor Servo Amplifier, Mod. AM-103.
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Transistor Servo Amplifier, Mod. AM-102.
Application: Two channels, 400 c. precision positioning servo loop, (i.e. Resolver). Up to size 18 Bu. Ord. motor, built-in 400 c. power supply, transfer input network, feed-back damping and stick-off voltage controls.



Transistor Servo Amplifier, Mod. AM-101 (AM-104 + AM-105).
Application: High gain, 400 c. synchronous amplifier for highest accuracy velocity integrating servo-loop, using up to size 18 Bu. Ord. motor/tachometer generator. Built-in: power supplies, null voltage suppressor, tachometer generator phasing network, speed adjustment and quadrature rejection circuit.

Transistor Amplifier, (Pre-Amplifier) Mod. AM-104.
Class A, all transistor voltage and low power amplifier combined. Voltage gain between rated impedances is adjustable between 50 and 150 V. Built-in power supply, 400 c. (Power Amplifier AM-105 packages in same manner: Class B, all transistor synchronous power amplifier-application as positioning and Integrating servo amplifier.)



Differential, Model M-134.
Body & Mounting: Similar to size 18 Bu. Ord. motor. All ball bearings. Application: Servo mechanisms and computers. Speed Torque: symmetrical mechanical differential max. speed of any shaft 4000 r.p.m.; max. torque output 10 oz. inch.



Magnetic Clutch, Model M-134.
Body & Mounting: Similar to size 18 Bu. Ord. motor. All ball bearings. Max. speed 4000 r.p.m. Application: Servo mechanisms and computers. Energizing Power: 24 V.D.C., 3 watts. Min. Torque: 35 oz. inch.

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News Report

Sales Division Appointment Made By Northern Electric

V. O. Marquez has been appointed general manager of the sales division of Northern Electric Company Limited, succeeding Mr. Fulton, who is now general manager of the telephone contract division.

Born in Trinidad, British West Indies, Mr. Marquez came to Canada in 1929 and joined the company in that same year. In 1931 he was appointed cost investigation engineer in the technical department of the telephone division.



V. O. Marquez

During World War II, Mr. Marquez was a production engineer in a wartime department concerned with the manufacture of predictor equipment for anti aircraft weapons and, in 1944, he was appointed assistant technical inspection engineer.

In 1946, Mr. Marquez became public relations manager, acting in this capacity until 1953, when he was appointed marketing manager of the sales division. His appointment as marketing manager, staff, was announced in 1956.

Toronto Section IRE Addressed By Staff Inspector Long

Staff Inspector G. H. Long addressed the Toronto Section of the Institute of Radio Engineers on December 5. He described the new Metropolitan Toronto Police Radio Dispatch system outlining the procedures followed in handling the various types of public reports and inquiries, generally received by phone. Following his address, Inspector Long invited all present to accompany him and inspect the dispatch center in police headquarters.

"Industrial Television Applications" will be the general topic at the January 13 meeting of the Toronto Section of the Institute of Radio Engineers. Mr. R. P. de Karwin of the Canadian General Electric Company will be the speaker and will outline the general applications of closed circuit television. He will also describe and show slides detailing the features of his company's monochrome system. The meeting will be held in Room E21, Electrical Building, University of Toronto at 8:15 p.m.

News Report

New Officer And Directors For AMF Atomics (Canada)

A new officer and three new directors have been elected to AMF Atomics (Canada) Limited, according to an announcement made recently by General Walter Bedell Smith, chairman and president of the Canadian company.

Denton Massey, general manager of the company since 1956, has been elected vice-president and director, and will continue as a general manager; B. V. Elliot, Q.C., general counsel of the company, and senior partner of the Toronto law firm of Borden, Elliot, Kelley, Palmer & Sankey, has been elected a director; and Roy B. Snapp,



B. V. Elliot, Q.C.



Denton Massey



R. B. Snapp

group executive and divisional vice-president of the AMF Atomics division of American Machine & Foundry Company, has also been elected a director of the Canadian company.

AMF Atomics (Canada) Limited commenced operations and produced the

first fuel rod for its long-term Atomic Energy of Canada Limited contract at its Port Hope plant on September 30, 1957. The company also secured the contract for a 1,000 KW nuclear research reactor for McMaster University at Hamilton, Ontario.

Canadian Marconi Shows Scatter Development Link

During an "At Home" week in their Radio Relay Development Laboratories in Montreal, the Canadian Marconi Company invited representatives from the Canadian Government and Services, USAF, USSC, Bell Telephone, C.N.R., C.P.R., RCA and many other organizations to see development activities and equipments.

One center of interest was the CMC 2000 Mc/s SSB Tropicospheric Scatter Development Link which has just completed a most productive year's operation over a high-attenuation path between Ottawa and Montreal. Also shown was the 240-600 channel all-travelling - wave - tube - long - haul - microwave now entering production at Canadian Marconi in Montreal.

Adams Engineering Appoints Ottawa Manager

The appointment of J. M. Carriere as manager of the Ottawa office of Adams Engineering Limited has been announced by C. B. Adams, president.

Mr. (Joe) Carriere has been actively associated with the Canadian electronics industry for the past 15 years and brings with him a wide variety of technical and commercial experience gained through service with the N.R.C., I.B.U.K. & C., RCAF, Department of National Defense (CAMESA) and Computing Devices of Canada Limited.

In this new undertaking, Mr. Carriere will be responsible for all technical and sales activity in Eastern Ontario, serving present and potential customers.

F. J. Stokes Appoints Manager

Fred Y. Walters, Jr., has been appointed manager of F. J. Stokes Company of Canada, Ltd., a subsidiary of F. J. Stokes Corporation, Philadelphia. Headquarters of the Canadian company are at 27 Wellington Street East, Toronto.

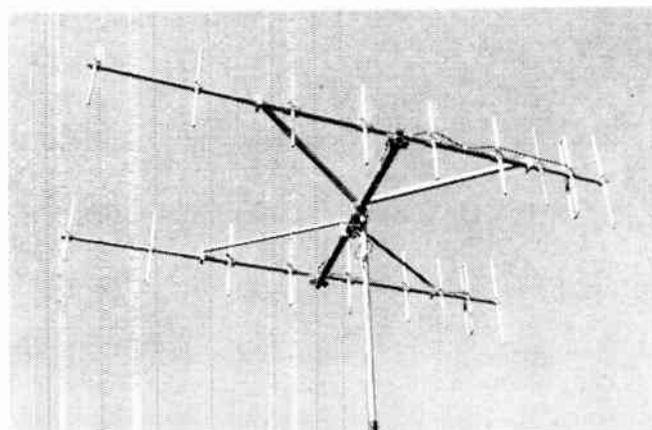
Mr. Walters started with Stokes of Canada as a sales engineer in January, 1955. A Canadian citizen and a long time resident of Toronto, he was graduated from McGill University in 1952 with a B. Eng. in mechanical engineering. Before joining Stokes, he had been, successively, a sales applications engineer with Vickers, Inc.; a production and service engineer with Gutta Percha & Rubber, Ltd., molders and extruders, Toronto; and a methods engineer with Northern Electric Co., Ltd., Montreal.

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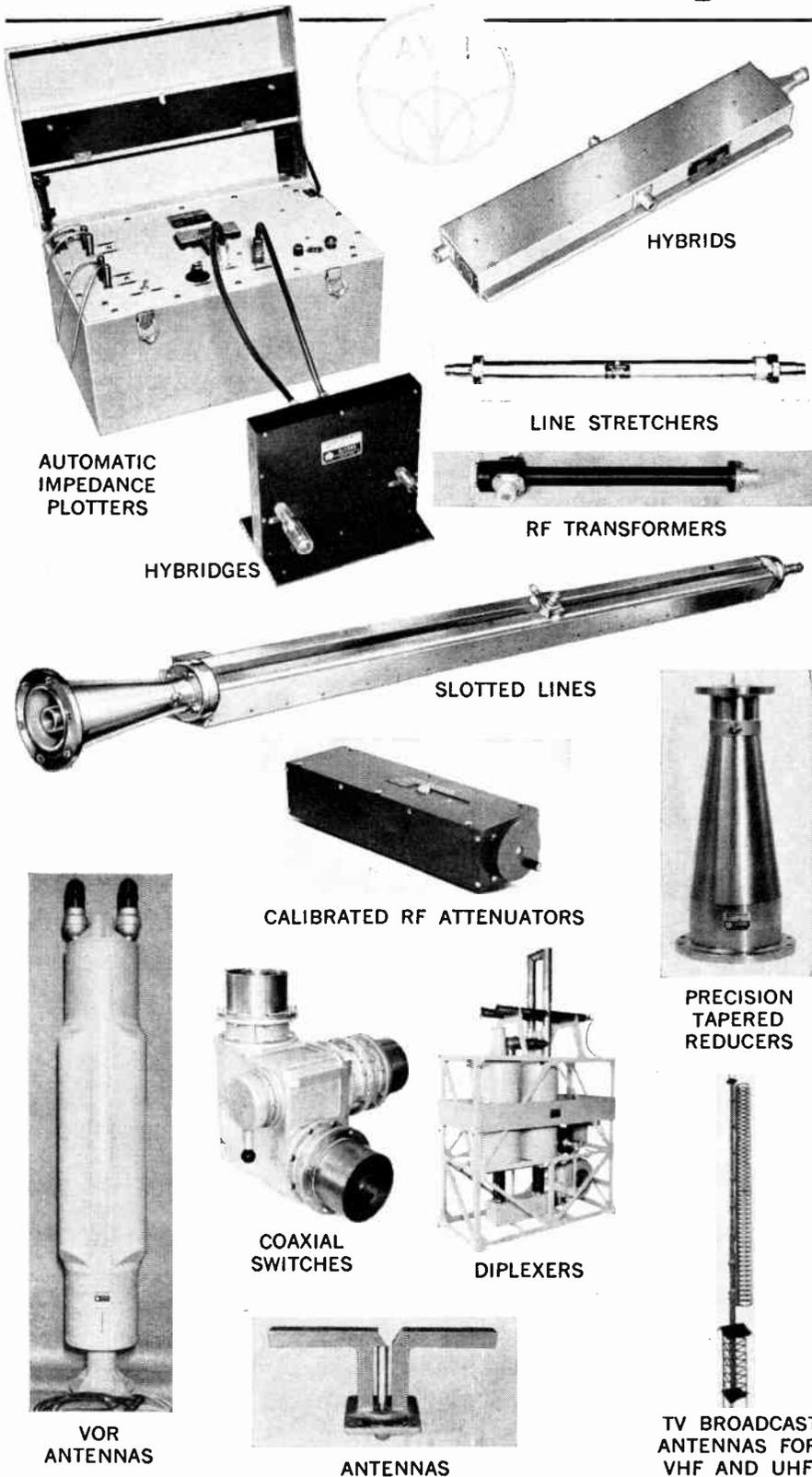
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News Report

Appointments At Canadian Applied Research Limited

J. M. Bridgman, managing director, Canadian Applied Research Limited, a member of the A. V. Roe Canada Ltd. group, has recently announced two appointments made by his company.

P. G. Jeffrey, who has been named director of sales and service, will be responsible for the policy and administration of the company's Sales Division and Service Division. A graduate of Queen's University, his professional background includes extensive knowledge and experience in sales, marketing, sales administration and advertising.

W. D. Russell has been appointed as secretary and solicitor for Canadian Applied Research Limited. Mr. Russell is a graduate of the University of Toronto and the Osgoode Hall Law School. He was formerly secretary and solicitor for each of the companies in the Hunting Group in Canada and prior to this was associated with a prominent legal firm in Canada.

Canadian Westinghouse Appoints Director Of Quality Control

The appointment of E. H. Tovee as director of quality control for the Canadian Westinghouse Company has been recently announced by headquarters manufacturing manager, E. R. Nary.

In his new headquarters post, Mr. Tovee will administer the broad quality control program at Westinghouse and coordinate policies and procedures throughout all company divisions.

Mr. Tovee joined the local firm in 1935 and is one of the electrical industry's authorities in cost and product improvement. Since 1953 he has coordinated the work of cost improvement teams throughout the many operating divisions at Westinghouse.

Philips Industries Represent Servonics In Canada

Philips Industries Limited have been appointed exclusive Canadian representatives for Servonics Incorporated. As such, they will introduce to the Canadian market Servonics' well known line of quality components engineered and manufactured by this company in the United States.

The Servonic products which are now available here include "Dipot" Potentiometer voltage dividers, Radar Target Generators, and a complete line of Servo equipment.



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2	2.35	3.35	5.40	6.45	11.70	33.60	4.75	5.95	24.90	47.90	CR20R† \$14 6VDC@100AMP
3	3.00	4.15	6.30	9.60	13.45	42.90	5.40	6.85	27.60	63.30	REPLACEMENT
4	3.70	7.50	11.30	16.15	25.00	49.80	6.75	7.95	31.15	69.75	OR
6	4.45	8.85	12.90	19.30	32.85	63.90	7.90	9.30	48.45	81.90	CONVERSION
10	6.50	12.60	19.90	27.90	42.30	99.70	9.00	14.25	63.60	117.75	6&12VDC
12	8.10	15.90	22.50	32.75	45.90	111.45	10.75	16.15	69.75	137.90	100/50AMP
20	13.20	25.40	38.00	52.50	79.45	177.90	16.20	24.75	124.15	165.75	CR32D† \$20
24	16.15	32.40	44.90	63.60	86.35	210.60	18.60	31.70	149.70	279.90	BR18R* \$24
30	19.80	37.80	56.45	78.75	120.75	256.15	21.60	34.95	189.60	363.75	BR18C* \$26
36	24.90	48.45	72.45	95.70	147.60	326.70	24.75	39.30	225.75	399.60	BN18R* \$20
50	33.45	63.75	121.50	192.75	245.90	459.90	31.60	46.75	297.90	591.75	6& 12 VDC 80/40AMP

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Stock Number	Continuous Rating	With Meters
T2RWSA*	0-2R WVDC at 5 Amp	\$57
T2RVSACC	5 Amp (1% Ripple)	84
T2RVS2ACC	5 Amp (0.1% Ripple)	155
T2RVI2A	0-2R VDC at 12 Amp	138
T2RVI2ACC	12 Amp (1% Ripple)	168
T2RVI2ACC†	12 Amp (0.1% Ripple)	250
T2RVS16ACC†	0 to 3V @ 16 Amp/35% Ripple	210
T2RVS24A†	0-2R VDC at 24 Amp	175
T2RVS24ACC†	24 Amp (1% Ripple)	250
T2RVS24ACC†	24 Amp (0.1% Ripple)	345
T2RVS50A†	0-2R VDC at 50 Amp	325
T2RVS50ACC†	50 Amp (1% Ripple)	450
T2RVS100A†	0-2R VDC at 100 Amp	550
T2RVS100ACC†	100 Amp (1% Ripple)	750
T3VS25ACC†	0-35V @ 25 Amp (1% Ripple)	370
T3VS50ACC†	0-35V @ 50 Amp (1% Ripple)	639
T60V1ACC	0-60 VDC @ 1 Amp (0.1% Rip	108
T60V2ACC	0-60 VDC @ 2 Amp (0.1% Rip	139
T60V3ACC	0-60 VDC @ 3 Amp (0.1% Rip	225

Variable 0-130 VDC Completely built. Includes Isolation Transformer, Full Wave Bridge, Rectifier, 4" Rectangular Volt & Ammeter Specify for 115 or 220VAC/10/60cy Input. T130V5A† 0-130 VDC at 5 Amp \$225 T130V5ACC† 5 Amp (1% Ripple) 275 T130V10A† 0-130 VDC at 10 Amp. 369 T130V10ACC† 10 Amp (1% Ripple) 379 Includes 4" Meters 2% Acc. 4" Meters



"TABTRAN" Rectifier Xfms

Sec'd Volts (DUAL)	0-9-15-18-40-9-15-18
Series Sec'ds	0-3-6-9-12-15-18-21-24-27
30-33-36 Volt	
TR4001	@ 1 Amp ea/sec wvdg. \$ 4.95
TR4002	@ 2 Amp ea/sec wvdg. \$ 7.20
TR4003	@ 3 Amp ea/sec wvdg. \$ 9.45
TR4005	@ 12 Amp ea/sec wvdg. \$ 16.70
TR4006	@ 24 Amp ea Sec Wvdg. \$ 35.65
TR4007	@ 30 Amp ea Sec WVDG. \$ 52.65
TR4008	@ 100 Amp per each SEC WVDG. \$ 117.00

† Wvdgs. in Series at Amps shown; Parallel 2X Current, Voltage equals 0-9-15-18
TAP PRI 105, 110 & 115V. PRI 115 & 230V 60 cy AC-Rectifier Transformer (ONLV) for 120* or 230 VDC Output: when used with a Full Wave Bridge Rectifier All Primaries 115 & 115V. 60 cy 1ϕ Input.
Secondary 0-125, 150, 160, 165V. *Nema Specs
TR4009* @ 5 Amp Continuous Duty \$ 50
TR4010* @ 10 Amp Continuous Duty \$ 72
Secondary 0-250, 300, 330, Nema Specs
TR4011† @ 5 Amp Continuous Duty \$ 65
TR4012† @ 10 Amp Continuous Duty \$105
† Selenium F. W. Bridge Rectifier Extra!

"TABTRAN" Rectifier Chokes

CR6001/1	1 Amp @ 1 HV/1.4 Ohm	\$3.50
CR6002/2	2 Amp @ 1 HV/0.7 Ohm	5.45
CR6003/3	3 Amp @ 0.7 HV/0.4 Ohm	9.45
CR6004/12	12 Amp @ 0.1 HV/0.1 Ohm	14.75
CR6005/24	24 Amp @ 0.04 HV/0.025 Ohm	29.75
CR6006/50	50 Amp @ 0.01 HV/0.01 Ohm	47.85

CE156M 6000MFD 15 V \$2 ea.; 2/53; 10 \$12
CE502M 2000MFD 50 V \$4 ea., 10 for \$30
C. 2005M 500 mfd @ 20V 56 ea., 4/ \$22, 10/ \$45
Brackets for capacitors 25c ea., 5 for \$1.

230 to 115 V Autotrans

TPA100/20W*	\$2.55
TPA175/75W*	3.66
TPA100/100W*	4.00
TPA200/200W*	5.75
TPA250/250W*	6.75
TPA500/500W*	8.25
TPA750/750W*	11.75
Model TPA 1000	Watts: kw† \$16.95
TPA1500/1500W*	\$22.50; TPA2000/2 KW* \$34.00

* Less Cord, Plug & Receptacle

Isolation and Control Transformers Indoor Power Circuit Type, NEMA CASED & Specs Primary 230/480V & Secondary 115/230V 1ϕ 60 cys TTP 050/50W \$10 TTP075 75W \$12 TTP100 100W \$13 TTP150 150W \$14 TTP250 250W \$17 TTP500 500W \$25 TTP750 750W \$32 TTP1000/1KW \$39 TTP2000 2KW \$59 Also one & 3-phase Booster Transformers.

AIR CONDITIONING BOOSTER Transformers 104 to 115V. TTPB21 1KVA \$15. TTPB22 2KVA \$20 TTPB3 3KVA \$23. TTPB4 4KVA \$25. TTPB5 5KVA \$29. TTPB6 6KVA \$31. TTPB7 7KVA \$33. TTPB8 8KVA \$35. TTPB9 9KVA \$37. TTPB10 10KVA \$39. TTPB11 11KVA \$41. TTPB12 12KVA \$43. TTPB13 13KVA \$45. TTPB14 14KVA \$47. TTPB15 15KVA \$49. TTPB16 16KVA \$51. TTPB17 17KVA \$53. TTPB18 18KVA \$55. TTPB19 19KVA \$57. TTPB20 20KVA \$59.

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News Report

Cannon Electric Appoints Connector Distributors

Cannon Electric Canada Limited of 160 Bartley Drive, Toronto 16, announce that they have appointed authorized distributors across Canada to handle their Audio Series of connectors. The Audio Series covers the XL, XLR, P and UA type connectors.

Distributors for the XL and XLR connectors will be: Consolidated Supply Co. Ltd., 100 Sackville Street, Halifax, N.S.; Canadian Electrical Supply Co. Ltd., 275 Craig St. West, Montreal, Que.; Payette Radio Ltd., 730 St. James St. W., Montreal, Que.; The Big "A" Co. Ltd., 79 Pinnacle Ave., Belleville, Ont.; Western Radio Supply Co. Ltd., 182 Rebecca Street, Hamilton, Ontario; Poole Electronic Supplies Co. Ltd., 649 Colborne St., London, Ont.; Johnson Electric Supply Co., 135 McIntyre St. East, North Bay, Ont.; A & A Radio Company Ltd., 29 Adelaide St. W., Toronto, Ont.; Electro Sonic Supply Co. Ltd., 543 Yonge St., Toronto, Ont.; Smalley's Radio Ltd., 1105 — 7th Ave. West, Calgary, Alta.; Canadian Electronics Ltd., 10052 — 109th St., Edmonton, Alta.; L. A. Varah Ltd., 1451 Hornby St., Vancouver, B.C.

P and UA Series connectors are also stocked in Montreal, Toronto and London.

Northern Electric Co. Switches Division Head

F. F. Fulton, has been appointed general manager of the telephone contract division of Northern Electric Company Limited, succeeding A. B. Hunt, who will be responsible for research and development.

A native of St. John, N.B., Mr. Fulton received a certificate of engineering from Mount Allison University and graduated from McGill University with a B. Sc. degree in electrical engineering. He joined the company in 1927 as a sales engineer in the electronics division and was general sales manager of special products at the advent of World War II.



F. F. Fulton

Returning to Northern Electric following the war, Mr. Fulton was appointed chief engineer of the electronics division in 1946. Government contracts manager in 1949, manager of the Belleville plant in 1950. After a period as assistant to the vice-president and managing director, he became general manager of the sales division in 1952.

New Variable 0 to 6 & 12 Volt 12 Amp DC Power Supply, Filtered



Battery Eliminator, Charger, Auto Radios, Model RR, Plater, Aircraft, Marine or any DC. Extra Heavy Duty Selenium Rectifier, 2 Meters V. & A. Design for Cont. Service and up to 20 Amp Intermittent overload; 10% Ripple. Model T612V12AC \$33

T612V12A2CC same specs (0.5% Ripple) \$43
New "TEKPAK" Variable 0 to 6 & 12 Volt, 50 & 25 Amp Filtered DC Supply. Air-Marine/Police-Power Supply designed for communications, Transmit & Receive, rugged design; 4" Volt & Amp Meter. Designed for continuous service. 6V @ 50AMP/5 & 12V @ 25 Amps Filtered 2% Ripple 115 VAC/60CY/1ϕ Input. One Year Gtd. T6125NACC \$200

NEW! LOW PRICED HIGH CURRENT BASIC SUPPLIES

Consisting of Transformer & Full Wave Bridge Rectifier grill and chassis, fused, outlet pilot light & ventilated Power, 1 yr. Gtd. Input 115 VAC/60 cys.

Stock Number	Rating	Basic
B28V/5A	0-2R WVDC at 5 Amp	\$45
B28V/5ACC	5 Amp (1% Ripple)	69
B28V/12A	0-2R VDC at 12 Amp	90
B28V/12ACC	12 Amp (1% Ripple)	135
B28V/24A	0-2R VDC at 24 Amp	139
B28V/24ACC	24 Amp (1% Ripple)	189
B28V/50A	0-2R VDC at 50 Amp	225
B28V/50ACC*	50 Amp (1% Ripple)	350
B28V/100A*	0-2R VDC at 100 Amp	439
B28V/100ACC*	100 Amp (1% Ripple)	600

INDUSTRIAL DC SUPPLIES

B100V1A	100 VDC @ 1 Amp	\$39
B115V1.5A	115 VDC @ 1.5 Amp	52
B115V5A*	115 VDC @ 5 Amp	120
B220V1.5A*	220 VDC @ 1.5 Amp	234
B115V5ACC*	115 VDC @ 5 Amp/1% Ripple	169
B115V10ACC*	115 VDC @ 10 Amp/1% Ripple	275
B220V10ACC*	220 VDC @ 10 Amp/1% Ripple	468

* 115 & 230 VAC/60cy/1ϕ Input

New "Tekpak" Relay 24 VDC Supplies Cased Filtered Ready to Work. Input 115 VAC/60 cys. B24VAR 24VDC @ 1 Amp \$8 B24VER 24VDC @ 2 Amp \$14 B24VR 24 VDC @ 5 Amp \$24

"TEKAP"® ONE & 3 PHASE 400 CYS SUPPLIES

3k 400 cys / 115V/750 watt & 1ϕ 400 cys 26V @ 250 watts with voltage adjustment. Operates 115 & 230V/60cy/1ϕ input, 28VDC @ 60 amps Filtered to inhibit Inverter, V/adj & Freq/adj & Radio Noise Filter; All in One Cabinet. T4750B Basic Non-Metered \$475 T4750M DC & AC & Freq Metered \$563

NEW "REGOVAC"® 450VDC Pkg

Regulated 250 to 450 VDC @ 200 ma. REGULATION 1% MIN TO MAX. CURRENT RIPPLE LESS THAN .5 MV. IMPED 2 OHMS & ALSO NON REGULATED 125 VDC @ 100 MA. 6.3V/12A. COMPLETE CONTROLS FRONT PANEL. SWITCHES, PILOT LIGHT, BINDING POSTS, FUSES, 4" VOLTS AND MILLIAMPER (2% ACC) RACK 834 H13D19"W or CABINET. 115VAC Inpt. R200R RACK MOUNTING \$135 R200C CABINET \$150
New "REGOVAC"® 190 VDC PKG. Regulated 145 to 190VDC @ 35 Ma. Regulation 1% Min to Max. Constant Output for 25% Variation in Line & Load. Extremely low ripple & recovery time. Input 115VAC. Housed in compact cover grill & Chassis. R35C19 \$24
New "REGOVAC"® 175 VDC PKG. Regulated 75 to 175 VDC @ 50 ma. Regulation 1% Min to Max. Constant output for 25% variation in line & load. Extremely low ripple & recovery time. Also 0.3VAC @ 3 amp. Input 115VAC Housed in compact cover grill & chassis. R50C17 \$30

New Five Way "Tekap" Binding Posts

Similar to Superior DE30* takes plugs, tips lugs, wire, 1/16" to 1/4" panel. Red & Black. BP30*. 30 Amp, 29c @ 12 \$3, 50 \$11, 100 \$19 BP40*. 40 Amp, 19c @ 12 \$3, 50 \$5, 100 \$11 BP60*. 60 Amp, 75c @ 12 \$3, 50 \$5, 100 \$11 BP100. 100 Amp, \$1 @ 12 \$3, 50 \$5, 100 \$18

Similar to Superior DE30* takes plugs, tips lugs, wire, 1/16" to 1/4" panel. Red & Black.

Similar to Superior DE30* takes plugs, tips lugs, wire, 1/16" to 1/4" panel. Red & Black.

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- Frequency Shift Converters
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- Tone Keyers
- Line Amplifiers
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- Tone Filters
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Pulse Forming Networks

High Voltage Capacitors

Power Supplies

Glasscaps

Plastic Capacitors are specialists in the production of plastic film dielectric units to meet the most rigid military and civilian specifications. We carry in stock, or can quickly design to your particular requirements, the units illustrated below, plus others in a variety of containers and characteristics for a multitude of applications. These include Low Loss Capacitors, High Voltage Filter Units, Polystyrene Capacitors, etc.

TYPE OE-CP70 metal container, high voltage filter, temperature range -60°C to -85°C and higher with other dielectric materials.



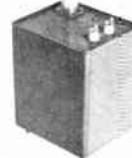
GLASSCAPS. TYPE OF glass container high voltage DC filter. Temperature range -60°C to 105°C or higher with other dielectric materials.

TYPE P. Polystyrene capacitors designed for integrating circuits, analog computers and High Q filters. Supplied in Glasscap, Bathtub and CP70 containers.

TYPE H, low loss capacitors designed specifically for pulse and RF applications in the temperature range of -69°C to 75°C and higher, 1000 V to 30 KV available in Glasscap or CP70 container.

TYPE T, low loss capacitors designed specifically for pulse and RF applications, in the temperature range of -60°C to 125°C and as high as 200°C . Available in Glasscap or CP70 containers.

HIGH VOLTAGE POWER PACKS in range of 2 to 75 KV utilizing dry or tube rectifiers for operation at 60 or 400 CPS. Standard units and special packages available.



TYPE OT. Designed for very high voltage applications up to 120 KV, up to 65°C . Supplied with Corona Cap for close quarter operation.

PULSE FORMING NETWORK. Standard design in range of 0.5 to 5 microseconds. Operation up to 125°C . Matching impedance of 50 ohms. Special applications invited.



LS Miniatures are the smallest high quality capacitors available for transistor applications and potted circuitry. Temperature range up to 125°C .

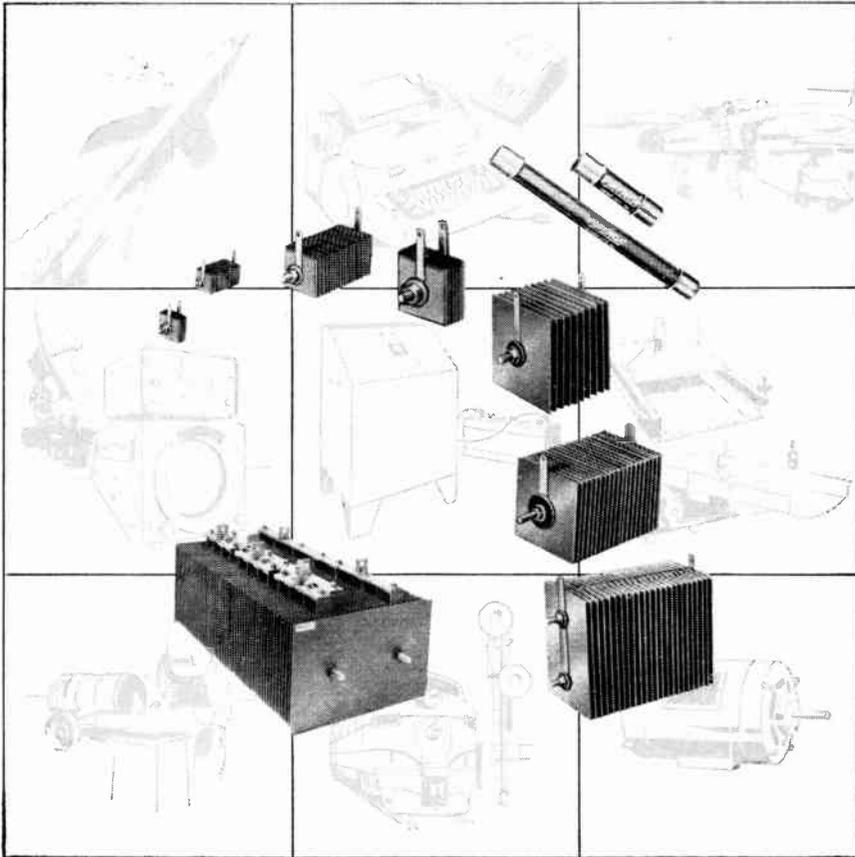
← CATALOGS and data may be obtained from Lake Engineering Co., Ltd., 767 Warden Ave., Scarborough, Ontario, Canada. Phone Plymouth 7-3253.

PC Plastic Capacitors,
2620 N. Clybourn • Chicago 14, Illinois

SYNTRON Vacuum process

SELENIUM RECTIFIERS

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provide proven dependability and superior performance to the industries we serve.

- Syntron's unique vapor deposit process and quality control methods provide rectifiers of extreme uniformity.
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- Reverse cell voltage rating from 15 volts to 45 volts RMS means fewer cells per stack.
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News Report

Television Shortage Looms

"October distributor to dealer television sales of over 70,000 units were the highest since October a year ago", said W. H. Jeffery, president of the Radio-Electronics-Television Manufacturers Association of Canada, in an address before the RETMA Components Division.

"We have passed the low in television sales, and 1957 and 1958 can be expected to level out at between 465,000 and 475,000 units."

While sales are increasing, inventories are decreasing and are the lowest for three years.

"The most heartening factor is the manufacturer plus distributor inventory", said Mr. Jeffery. "At the end of October this was 40 per cent lower than a year ago. A projection shows that by the end of this year the inventory will be 50 per cent lower than it was last year. The inventory at year end will be down to less than four weeks' selling at present rate of sales."

This low inventory means that dealers will have difficulty in replacing many models in popular finishes for pre-Christmas selling.

Radio sales too, are increasing. Sales for the end of this year will comfortably exceed the 709,416 units sold in 1956.

Mr. Jeffery gave an optimistic preview of the future in the radio and television field.

"A survey of several large Canadian cities", said the RETMA president, "shows that 45 per cent of the TV receivers are now over three years old while the percentage is higher in Windsor, the Niagara Peninsula, and the Toronto areas. This means that we can expect replacement business to start in 1958. It has really not started yet in Toronto, but our first upward move in business is going to come from replacement TV sales".

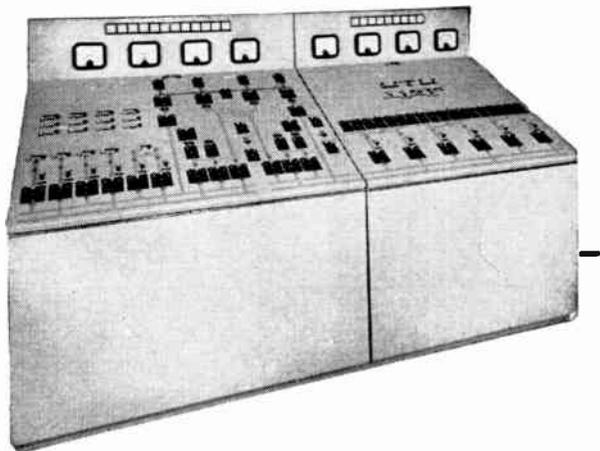
Mr. Jeffery mentioned that there were one half million homes in Canada, within range of Canadian TV stations, which had not purchased their first TV set. This constituted a large potential market.

It was estimated that by the end of 1957, 72 per cent of wired homes within effective program range will have purchased a TV set. The level of those who will ultimately own a set was at least 90 per cent or perhaps 95 per cent. There was plenty of new normal volume TV business between the 72 per cent and the 95 per cent plus a gradual build up of the replacement business, claimed Mr. Jeffery.

Mr. Jeffery said that the industry could look forward confidently to many years of steady expansion as new products were manufactured for the domestic consumer market and in the fields of industrial and military electronics.

MICRO SWITCH PRECISION SWITCHES

Small, rugged, high capacity switches designed to meet requirements of communications and electronic equipment and aircraft



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SUPERVISORY CONTROL

TELEMETERING

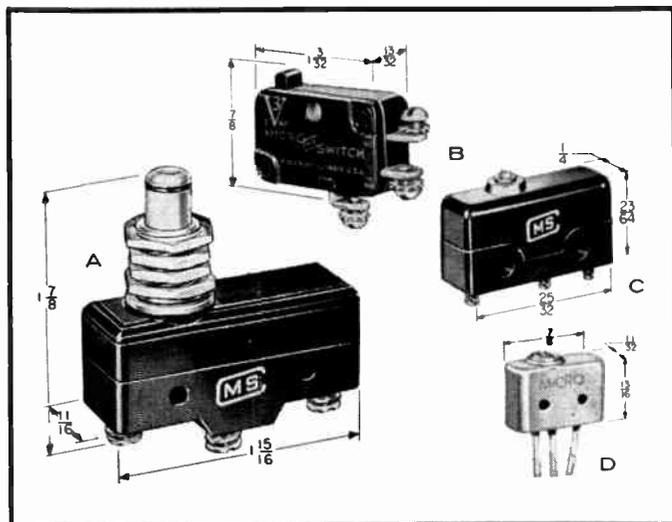
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A. "Q1" Plunger Switches. Single-pole, double-throw basic switches for mounting through panels as manual or mechanical push button switches, as door switches, or for operation by slow moving cams. Conforms to JAN-S-63.

B. Type "V3" Basic Switches. Small, single-pole, double-throw switches. Lightweight with highest electrical capacity. Suitable as limit, control or safety switch where space is limited. Conforms to MIL-S-6743.

C. Subminiature Pin Plunger Type Basic Switch. Single-pole, double-throw pin plunger switch for use where travel of actuating mechanism is accurately controlled or with auxiliary actuators and enclosures. Conforms to MIL-S-6743.

D. Sealed Subminiature Switch. The smallest lightest weight switch of this type available. Completely sealed . . . gives trouble-free operation in a temperature range from minus 65° to plus 180° F.

MICRO SWITCH
A PRINCIPLE
OF GOOD DESIGN

MICRO SWITCH produces a complete line of switches to conform to military specifications. Available with a selection of actuators. Literature on request.

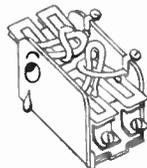


MICRO SWITCH

A DIVISION OF HONEYWELL CONTROLS LIMITED, TORONTO 17, ONTARIO.

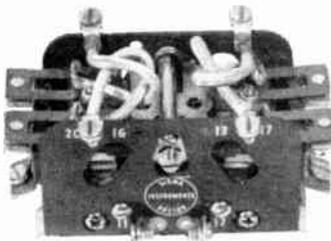


no beeps
...just clicks



This is probably about the most groundborne relay ever built by Sigma. Since its leviathan specifications include a brutish size of $3\frac{1}{2}'' \times 2\frac{3}{16}'' \times 2\frac{3}{32}''$ and a weight that can reach $\frac{5}{8}$ of a pound (even bigger and heavier when hermetically sealed), it's exceedingly doubtful that it will ever fly, orbitally or otherwise. Since *that* kind of quick fame is out of the question, the "61" should be able to do some other — though less timely — sort of job. It can, and here's where you product designers can start paying close attention.

The 61 is a polarized DC power contactor, with four separate heavy-duty contact circuits (DPDT only) for switching up to 20-ampere resistive loads in response to momentary $\frac{1}{4}$ to $\frac{1}{2}$ watt signals. Two switching forms are available: Form Z, magnetic latch-in, single or dual coils, and Form Y, magnetically biased, single coil. For special jobs, center-stable 61's can also be built (Form X). Since the Form Z types latch firmly in either of two positions by magnetic means, there are no mechanical wearing surfaces; the one part that does move uses miniature ball bearing pivots.



POLARIZED LATCHING CONTACTOR

Some of the places we'd expect the 61 to be particularly useful include machine tool control panels, battery-powered control systems, and other equipment where big fat loads must be dependably switched by comparatively meager signals, in the presence of contact-disturbing shakes, shocks and rumblings. Space and money can also sometimes be saved by a 61, in replacing a pilot and slave relay combination where 225-450 mw. signals have to control 1 to 2 kw. loads.

Series 61 relays are quite easy to order, once you master Sigma's international, all-encompassing system of code designation (readable east to west, north to south, without binoculars). Example: 61FZ2A2B — 200 — GD SC — an unenclosed latching DPDT 61 with 200-ohm dual coils and silver alloy contacts. Bulletin, on request, explains all this and more.

SIGMA INSTRUMENTS, INC.

85 Pearl St., South Braintree 85, Mass.

Canadian Representatives:

SAMUEL C. HOOKER (CAN.) LTD., Montreal and Toronto

ARVA, Vancouver, B.C.

For further data on advertised products use page 161.

World Radio History

News Report

Gage Control Rights Held By Westinghouse

An agreement recently consummated between the Electronics Division of the Canadian Westinghouse Company Limited of Hamilton, Ontario, and the Davey and United Company of Sheffield, England, gives the Canadian firm manufacturing rights on an automatic gage control used by steel mills.

This new servo control, which has already been installed on the reversing cold strip mill of the Dominion Foundries and Steel Company of Hamilton, was developed by a member of the instrument department of Davey and United Company.



GEORGE CHURCHILL

● George Churchill has been named sales rep at Sponsor Film Services, it was announced recently by president Spence Caldwell. Mr. Churchill, 24, will work on customer sales-service, print procurement, bicycling, editing, cleaning service, etc., for Canadian advertising agencies and clients. Mr. Churchill was formerly with All-Canada for 4 years, where he handled both radio transcription, and later film servicing.

Canadian Rep For Dressen-Barnes Corporation

L. M. Purcell, vice-president, Dressen-Barnes Corporation, announces that this firm will be represented by E. E. Whittaker, P.O. Box 3255, Arnprior, Ontario.

The Dressen-Barnes Corporation, 250 North Vinedo Avenue, Pasadena, California, manufactures a comprehensive line of regulated DC power supplies incorporating electronic or magnetic amplifier circuitry. Sub-chassis, cabinet, and rack mounted units covering the range of 28 to 1,000 volts DC are available from stock.

A new eight-page short form catalog, obtainable on request, lists the specifications for 36 typical power supplies for laboratory, production, and transistor applications.

MJS Test Equipment

"You can't get more for less, NOR AS MUCH for so little"

RADIO AND HI-FI KITS

HK-1—An authentic high-fidelity reproduction, one chassis construction includes pre-amplifier, 10 watts output, flat from 20 to 20,000 cycles. Individual bass and treble controls \$49.95



5A-2—5 tube superhetrodyne circuit to provide experience in construction and operation of radio in the broadcast bands. \$19.95



VMK-1—An accurate versatile dependable instrument measuring AC and DC to 1200 volts in seven ranges; ohms 2 to 1000 megohms in seven ranges; zero centre, peak to peak. Engineered under Stark's high standard for design. \$39.20
WIRED \$53.95



ES-2—The Stark ES-2, a 20,000 ohms volt circuit analyzer is a rugged compact instrument which offers accurate multi-range voltmeter, milliammeter and ohmmeter measurements over wide ranges.
\$39.95

WIRED \$52.95

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SOLD THROUGH LEADING CANADIAN JOBBERS
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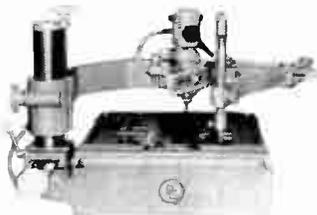
Dowling

ENGRAVING EQUIPMENT

... moderate in price — high in performance

Model 713 Engraving Machine

Reduction range 1:2 to 1:8, with engraving at near writing speeds. Balanced pantograph has ball pivots and adjustable tension. Area for 1:2 reduction, 15 in. by 10 in., for 1:8 reduction, 15 in. by 4 in.



Model 858 Engraving Cutter Grinder

Simplifies the grinding of special cutter forms. Universal cutter head with bold graduations and adjustable stops for profiles, compound angles, radii, blends, etc.



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For Synchros and Servomotors

Consult Muirhead the Specialists with the widest range and largest stock of Grade 1 Synchros in Canada

SYNCHROS in current production :

Designation	Size	Volts	Frequency	Function
26V08CX4(B)	08	26V	400c/s	Control Transmitter
26V08CT4(B)	08	26V	400c/s	Control Transformer
11CX4b	11	115V	400c/s	Control Transmitter
11CT4b	11	115V	400c/s	Control Transformer
11CDX4a	11	115V	400c/s	Control Differential Transmitter
11TR4a	11	115V	400c/s	Torque Receiver
11TX4a	11	115V	400c/s	Torque Transmitter
F11M-16-A/1	11	115V	400c/s	Linear Variometer
11RS4	11	26V	400c/s	Resolver
26V11CX4a	11	26V	400c/s	Control Transmitter
26V11CT4b	11	26V	400c/s	Control Transformer
26V11CDX4a	11	26V	400c/s	Control Differential Transmitter
26V11TR4a	11	26V	400c/s	Torque Receiver
26V11TX4a	11	26V	400c/s	Torque Transmitter
F11M-16-A/2	11	26V	400c/s	Linear Variometer
15CX4a	15	115V	400c/s	Control Transmitter
15CT4a	15	115V	400c/s	Control Transformer
15CDX4a	15	115V	400c/s	Control Differential Transmitter
15TR4a	15	115V	400c/s	Torque Receiver
15TR4b	15	115V	400c/s	Torque Receiver
15TX4a	15	115V	400c/s	Torque Transmitter
15TX4b	15	115V	400c/s	Torque Transmitter
15TDX4a	15	115V	400c/s	Torque Differential Transmitter
15DR4a	15	115V	400c/s	Torque Differential Receiver
15RS4	15	40V	400c/s	Resolver
15CT6a	15	115V	60c/s	Control Transformer
18CX4a	18	115V	400c/s	Control Transmitter
18CT4a	18	115V	400c/s	Control Transformer
18CDX4a	18	115V	400c/s	Control Differential Transmitter
18TR4a	18	115V	400c/s	Torque Receiver
18TX4a	18	115V	400c/s	Torque Transmitter
18TDX4a	18	115V	400c/s	Torque Differential Transmitter
18DR4a	18	115V	400c/s	Torque Differential Receiver
18CX6a	18	115V	60c/s	Control Transmitter
18CT6a	18	115V	60c/s	Control Transformer
18CDX6a	18	115V	60c/s	Control Differential Transmitter
18TR6a	18	115V	60c/s	Torque Receiver
18TX6a	18	115V	60c/s	Torque Transmitter
F18M-6-A/1	18	25V	1000c/s nominal	Resolver Transmitter
23CX4a	23	115V	400c/s	Control Transmitter
23CT4a	23	115V	400c/s	Control Transformer
23CDX4a	23	115V	400c/s	Control Differential Transmitter
23TR4a	23	115V	400c/s	Torque Receiver
23TX4a	23	115V	400c/s	Torque Transmitter
23TDX4a	23	115V	400c/s	Torque Differential Transmitter
23DR4a	23	115V	400c/s	Torque Differential Receiver
23CX6a	23	115V	60c/s	Control Transmitter
23CT6a	23	115V	60c/s	Control Transformer
23CDX6a	23	115V	60c/s	Control Differential Transmitter
23TR6a	23	115V	60c/s	Torque Receiver
23TX6a	23	115V	60c/s	Torque Transmitter

317/3Ca

SERVOMOTORS in current production :

Designation	Size	Reference Phase		Control Phase	
		Volts	Frequency	Volts	Frequency
Mk. 14 Mod. 2	11	115V	400c/s	115V (57.5 ± 57.5)	400c/s
Mk. 14 Mod. 3	11	115V	400c/s	180V (90 ± 90)	400c/s
*Mk. 14	11	115V	400c/s		
Mk. 7 Mod. 1	15	115V	400c/s	115V (57.5 ± 57.5)	400c/s
Mk. 7	15	115V	400c/s	20V (10 ± 10)	400c/s
*Mk. 7	15	115V	400c/s		
†Mk. 12 Mod. 0	15	115V	400c/s	115V (57.5 ± 57.5)	400c/s
†Mk. 12	15	115V	400c/s		
Mk. 8 Mod. 0	18	115V	400c/s	115V (57.5 ± 57.5)	400c/s
Mk. 8 Mod. 1	18	115V	400c/s	115V (57.5 ± 57.5)	400c/s
‡Mk. 8	18	115V	400c/s	20V (10 ± 10)	400c/s
‡Mk. 8	18	115V	400c/s		
*Mk. 16 Mod. 0	18	115V	400c/s	115V (57.5 ± 57.5)	400c/s
*Mk. 16	18	115V	400c/s		
TACHOGENERATOR Mk. 1 Mod. 1	Size 15	Energisation 115V	400c/s	Output 3-1V/1000 r.p.m.	

*Low impedance control windings †With Tachogenerator ‡Mod. 0 or Mod. 1 shafts

A COMMERCIAL VERSION OF MANY OF THE ABOVE UNITS CAN ALSO BE SUPPLIED

Many types are available for immediate delivery

If you require types not listed above, do not hesitate to send us your enquiry — they may be in hand — or, if not, we may be able to produce them for you quite quickly.

Call 'MUIRHEAD the Synchro People' Telephone: 3717

MUIRHEAD INSTRUMENTS LIMITED • STRATFORD • ONTARIO • CANADA

For further data on advertised products use page 161.

World Radio History

News Report

Computer Program Announced By Adalia Computations

Adalia Computations Limited, with its technical personnel and the facilities of its Datatron 205 computing system, has evolved a mathematical program which will help industrial and commercial concerns to improve their operations in a large measure.

This program yields an economic forecast over a period up to 19 years and is capable of handling monthly and seasonal adjustments and various statistical calculations.

The electronic computer has been programmed in a very general manner so as to be adaptable to the needs of most clients: banks, insurance companies, investment dealers, wholesale distributors, department stores, consumer goods manufacturers or any other commercial or industrial ventures.

The more evident advantages of this technique are particularly noticeable in such points as: more accurate forecast available for sales patterns, be they of tangible or intangible goods; decrease of overhead expenses through a better channeling of the sales effort and a more accurate determination of a competitive position; accurate control of inventory (real or figurative) and precise determination of the maximum buffer stock necessary, leading to the freeing of a capital excessively committed to inventories; economical and rapid analysis of the optimum depreciation pattern for rolling stock, single unit machines, production lines, technical personnel turnover, etc.; increased accuracy in the projection of financial position, as in investments or other long term commitments of resources; more realistic and accurate integration of the client's business in the larger economic picture of the market, in a province or in the country as a whole.

Radio Engineers Hear National Film Board Speaker

N. F. B. Bounsall of the National Film Board was the speaker at the meeting of the Toronto Section of the Institute of Radio Engineers held on November 11.

Mr. Bounsall briefly described the production of a documentary film, starting with the outline of the original idea and progressing through separate filming and tape recording of various scenes.

Slides showing the facilities in the new National Film Board headquarters building in Montreal were presented and several examples of recorded sound and a finished CBC documentary were demonstrated.

FREED

PORTABLE MEGOHMMETER

MODEL 2030



- 500 VOLT DC TEST POTENTIAL
- TRANSISTOR POWER SUPPLY
- BATTERY OPERATED

The Freed Type 2030 Megohmmeter is a battery operated instrument especially suited for measuring leakage of transformers, motors, cables, condensers and insulating materials wherever the power line is inaccessible or where battery operation is more desirable.

Resistance values are indicated on a 3" expanded scale meter protected against overload. Low resistance in series with component under test provides very short charging time for even the largest condensers. Calibration positioned provided to check accuracy of 500 volt test potential. The 500 volt test supply is regulated.

- Resistance — 5 Megohms to 10 million Megohms.
- Accuracy — $\pm 3\%$ to 100,000 Megohms $\pm 5\%$ to 10 million Megohms.
- Voltage on unknown — 500 volts DC.
- Self contained — Battery operated.

OTHER MEGOHMMETERS AVAILABLE

Type 1620 Megohmmeter — 50-1000 Volt Variable test Potential — 0.1 Megohms to 4 million Megohms.

Type 1620-C Megohmmeter — Designed for capacitor testing 50-1000 volt variable test potential.

Type 1020-B Megohmmeter — A 500 volt fixed test potential, Range — 1 Megohm to 2 million Megohms.

Send for NEW 48 page transformer catalog. Also ask for complete laboratory test instrument catalog.

FREED TRANSFORMER CO., INC.

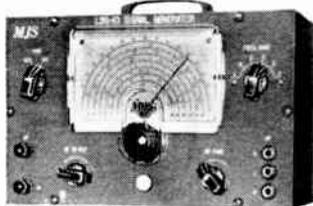
1716 WEIRFIELD ST., BROOKLYN (RIDGEWOOD) 27, N.Y.

MJS Test Equipment

"You can't get more for less, NOR AS MUCH for so little"



BJ-1—Checks all kinds of condensers for capacity, leakage, opens, shorts or inter-mittant conditions. Direct reading .00001 to 1000 MFD. Resistance from 100 ohms to 5 megohms. \$34.95



LSG-10 — Compact, handy, high quality RF signal generator suitable for service technicians, amateurs, instructors and etc. Frequency up to 130 MC. Fundamental. 260 MC harmonic; AF output 2-3 volts at 400 cycles; RF output over 100,000 microvolts. \$39.95



PD-3 — Compact 2000 ohms volt packet multi-tester. Measures AC and DC to 1200 Volts. DC current, resistance, capacity and inductance. \$13.95



MT-6D — Versatile compact 20,000 ohms volt multimeter. Measures AC volts to 1200. DC volts to 6000. Current; resistance; capacity and inductance. Proven dependability. \$24.95

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STARK ELECTRONIC SALES CO.

A JAX ONTARIO

SOLD THROUGH LEADING CANADIAN JOBBERS 5574

NEY'S SMALL PARTS PLAY A BIG PART IN PRECISION INSTRUMENTS

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Ney's for "engineered" precious metal contacts, slip rings and alloys

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TESTING EQUIPMENT FOR RESEARCH AND INDUSTRY



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CSA Approved Dielectric Strength Test Set

Over 1000 different instruments available from Toronto Stock

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- Geophysical
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Write for our new illustrated catalogue of electronic test instruments and scientific apparatus.

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Canadian Research Institute

46 ST. GEORGE STREET - TORONTO 5, CANADA

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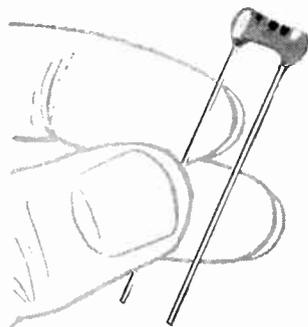
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ERIE

TUBULAR and DISC CERAMICONS

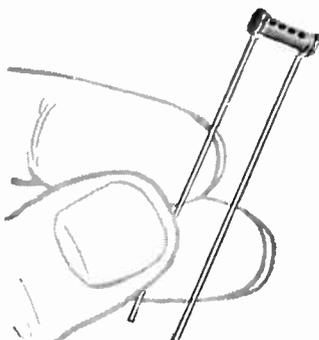
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PRINTED WIRING APPLICATIONS



DIPPED PHENOLIC INSULATED

These Radial lead units are dipped in low-loss phenolic material which is baked and vacuum wax impregnated.



NON-INSULATED

Radial leads soldered to silver electrodes and sealed with moisture impervious coating to withstand humidity.

Write for 16 page Bulletin 313-2 for description of ERIE TUBULAR CERAMICONS. Also ask for our new 8 page Feed-Thru Ceramicon Bulletin 323.



ERIE RESISTOR OF CANADA LIMITED

TRENTON, ONTARIO

Factories: London, Eng.; Holly Springs, Miss.; Erie, Pa.

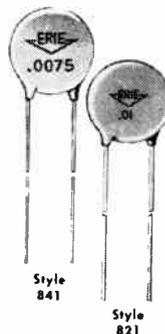
- Leads are tin coated with a minimum of .001" heavy coating of solder to insure ease of solderability and to prolong shelf-life.
- ERIE TUBULAR CERAMICONS offer convenient form design, including 1/4" and 3/8" lead spacing, for printed wiring board applications where space is at a premium.
- Rugged construction of ERIE TUBULAR CERAMICONS features inherently strong dielectric design with leads wrapped around the dielectric and soldered to withstand stress and strain.
- Temperature Compensating and General Purpose Ceramicons are available in a wide capacity range with tolerances as close as $\pm 1\%$ or ± 1 mmf and in Hi-K types for by-pass and coupling applications.

AVAILABLE IN 3 TYPES

TEMPERATURE COMPENSATING Disc Ceramicons offer a wide combination of temperature coefficient and capacitance values. They meet all requirements for RETMA REC-107A Class 1 ceramic capacitors. Available in capacity ranges from 1.5 to 2810 mmf at 500 V.D.C.W. and temperature coefficients ranging from P120 through N5600.

GENERAL PURPOSE Disc Ceramicons have low series inductance which assures efficient high frequency operation. Values from 1.5 mmf to .02 mfd. Rated at 500 Volts D.C. Working.

HIGH VOLTAGE Disc Ceramicons employ the same basic diameters and design that have been standardized in 500 volt ceramic capacitors. Conservative voltage rating beginning at 1 KV D.C.W. are based on extensive life test data.



Exclusive Franchise Held By Pye Canada Ltd.

W. Jones, managing director of Pye Canada Limited, has completed negotiations with Utility Tower Manufacturing and Fabricating Company of Oklahoma, Okla. As a result of the negotiations, Pye Canada Limited has the exclusive franchise throughout the Dominion for the products and services of this American company.

Their products include TV, AM, FM and Microwave Relay Towers.



B. CORMACK

• Bruce Cormack has been appointed copy supervisor at S. W. Caldwell's, it was announced recently. Mr Cormack will co-ordinate Caldwell's creative activities, including commercial production for Westinghouse STUDIO ONE. A native of Australia, Mr. Cormack was formerly an account supervisor at Goldberg Advertising in Sydney, where he worked on campaigns for Westinghouse, Max Factor, Old Dutch Cleanser and Nestle.

Electronic Scientists And Engineers Meet In Ottawa

Top ranking scientists and engineers met early in December to discuss important problems concerning the allocation of radio frequencies which will permit interference-free operation of the 52,000 radio transmitters in use in Canada. They studied ways and means to provide more spectrum space for the additional transmitters which will be operated in the future. Their findings will be made available to industry; to the layman this will provide better television pictures and improved radio reception.

This group of scientists and engineers, who devote their time to this work on an entirely voluntary basis, are members of the Canadian Radio Technical Planning Board, a non-profit organization which has done much, in an engineering advisory capacity, to provide the public with efficient and reliable electronic communications, radio and television.

For further data on advertised products use page 161.

**We Stock
Industrial Electronic Components**



AN ENGINEERS DREAM
COME TRUE . . .
and IT'S FREE!

- Hammond Transformers
- Potter Brumfield Relays
- Industrial Tubes
- Pyramid Capacitors
- Grayhill Switches
- Superior Powerstats
- Cannon Connectors
- General Transistors
- Sola Transformers
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WE SUPPLY ELECTRONIC COMPONENTS TO MIL
SPECS WITH RELEASE NOTES

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Write today for your copy of the
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**ELECTROLYTIC
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Type RTC. Hermetically sealed
aluminum cans. Any capacity voltage
combination desired. Variety of
terminals. Size from 1/4" diam. x 1 1/4"
long to larger standard sizes.

Write for Illustrated Brochure on Complete Range
Electrolytic Condensers.

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MANUFACTURERS OF ELECTROLYTIC CAPACITORS
140 KENDAL AVENUE TORONTO 4, ONT.

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DAVEN'S NEW
MINIATURE WIRE
WOUND RESISTORS
PROVIDE AS MUCH
AS 400K
RESISTANCE IN
1/4" x 5/16" SPACE

Types and Specifications

Type	Dia.	Length	Max. Ohms	Max. Watts
1274	3/16	3/8	100K	0.25
1273	1/4	5/16	400K	0.25
1283	1/4	5/16	400K	0.25
1284	1/4	27/64	.5 Meg.	0.25
1250	1/4	1/2	900K	0.33
1170A	7/16	1/2	1.2 Meg.	0.50
1170	1/2	1/2	1.8 Meg.	0.50

Write for our new resistor catalog.

THE **DAVEN** co.
Livingston, N.J.

Special temperature coefficients
can be supplied on request.

IN CANADA:
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- ★ **PRECISION DIALS**
LUMINESCENT - FLUORESCENT
- ★ **EDGE LIGHTED PANELS**
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TELEVISION - INDUSTRIAL
- ★ **SELF-LUMINOUS
MARKERS**
- ★ **X-RAY SCREENS**
MEDICAL - INDUSTRIAL

and application of these for commercial
and military requirements to precise
standards.

WAlnut 3 - 8497

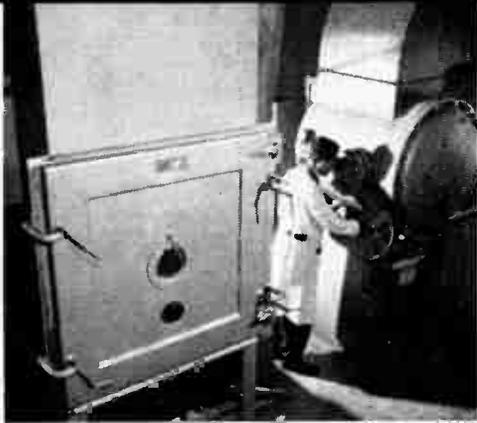
RADELIN-KIRK LIMITED
1168 BAY STREET • TORONTO 5



HORIZONTAL MECHANICAL VIBRATOR, used here by Dr. Everett Braaten, test lab chief, has a capacity of 1,000 g lbs., a maximum load of 150 lbs. and a maximum displacement of .125 inches in the horizontal plane within the frequency range of 10 to 60 cycles/sec. A vertical mechanical vibrator of the same performance range is also available.



SALT SPRAY AND HUMIDITY CHAMBER has a working space 48x36x26 in. The Engineering staff of ARL is available to laboratory customers.



SAND AND DUST CHAMBER, left, and Explosion chamber, right, have working spaces of 3x3x3 feet, and 3-ft. diameter x 4-ft. length, respectively.



ICING WIND TUNNEL, with present 24 h.p. motors, has a maximum indicated airspeed in excess of 400 f.p.s. Work space cross section is 12x12 in.



TEMPERATURE ALTITUDE CHAMBER has a 27 cu. ft. capacity. Tests from -100°F. to 300°F., at altitudes from sea level to 100,000 ft.

TAILORED FOR TORTURE

Equipment takes its worst punishment at new Canadian Applied Research Limited test lab

FOR their own highly specialized purposes, engineers and researchers can now, practically speaking, fly around the world without leaving 3,000 square feet of floor space at Canadian Applied Research Limited's environmental test lab in Toronto. Moisture congealing Arctic temperatures; buffeting, shock and strain of severe air turbulence; corroding heat and humidity in the tropics; icing and air pressure at high altitudes—these are the facts of world flight most interesting to design engineers. They are among conditions now duplicated in detail at CARL's new lab—the first private enterprise establishment of its kind in Canada. Entire facilities of the laboratory are being offered to industry and government on a commercial basis.*

Tests available: low and high temperature, altitude, humidity, shock, vibration, salt spray, sand and dust, radio interference, explosion, fungus, wind tunnel.

The laboratory has been granted RCAF approval No. T-045—2/56. Literature is available on request, giving full details of each test facility.

**Canadian Aviation magazine, April, 1956*

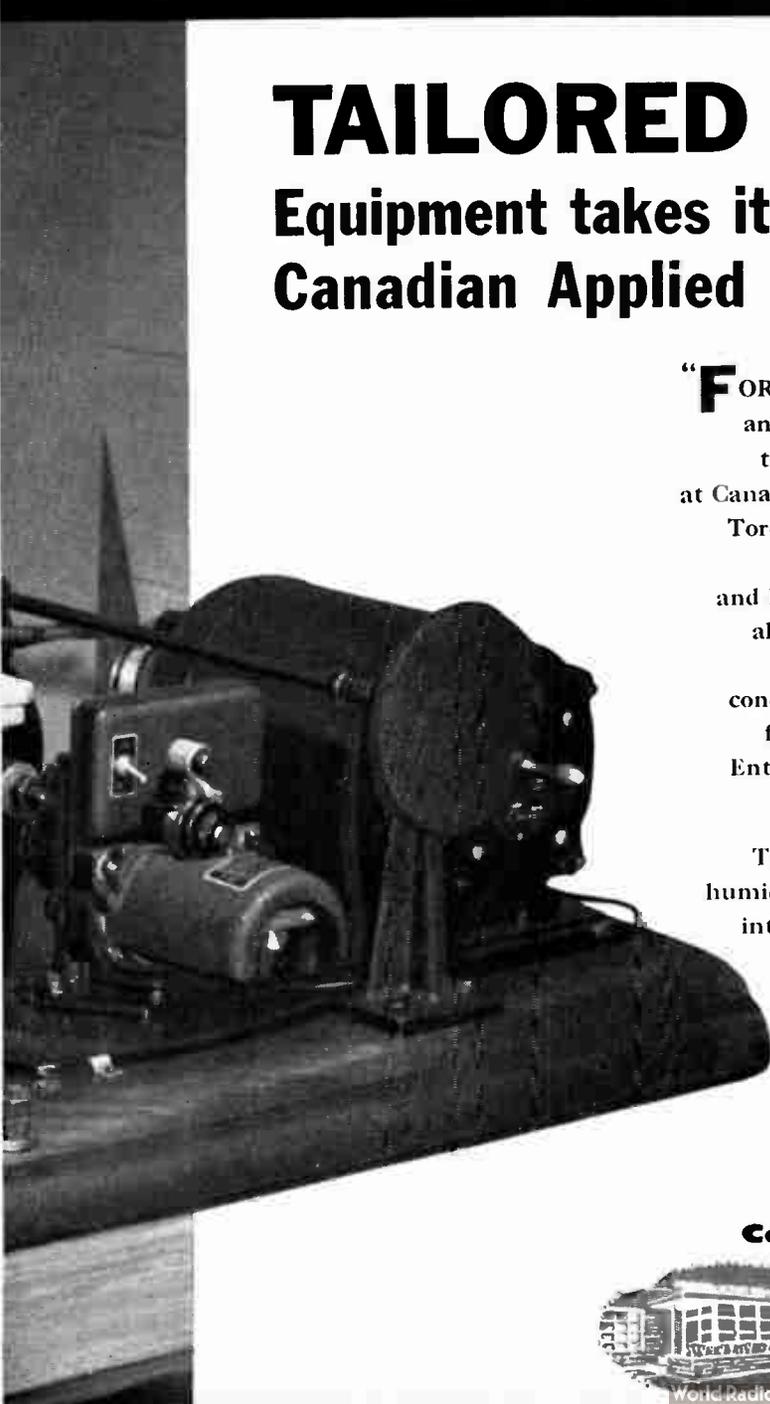
Canadian Applied Research Limited

(Formerly PSC Applied Research Limited)

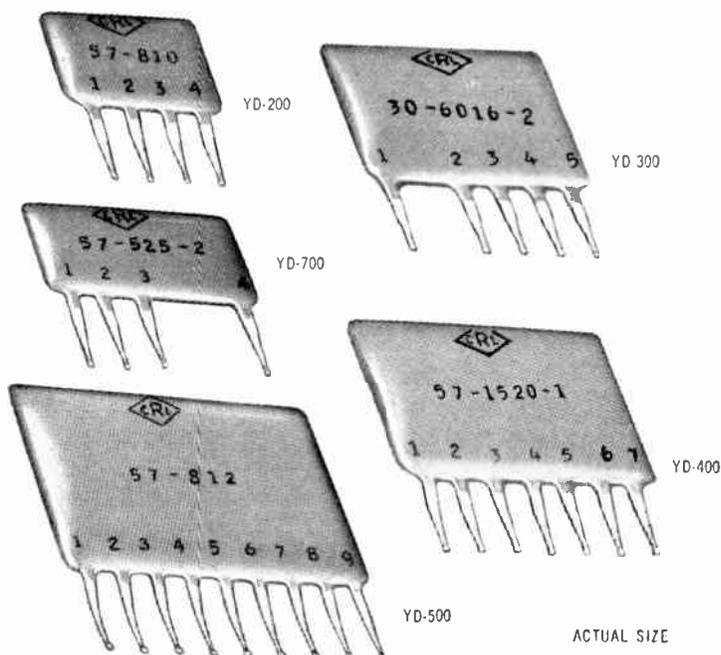
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MEMBER: A. V. ROE CANADA LIMITED & HAWKER SIDDELEY GROUP



More circuit flexibility ...more compact design



from these five standard Couplates™... Centralab PEC's^{*} (Packaged Electronic Circuits)

Centralab can adapt the five basic shapes shown into an infinite number of electronic circuit combinations to meet your requirements. In addition, you have a choice of leads — narrow tab (shown), wide tab, long wire, stub wire, and crimped wire.

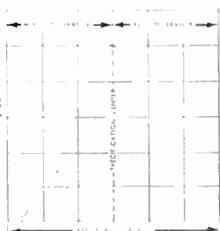
These packaged electronic circuits incorporate resistors, capacitors, wiring, and often inductance in one compact sub-assembly. They're thinner . . .

have less height and depth than competitive makes. You save space, simplify assembly, reduce inventory, and eliminate testing of individual components. What's more, Centralab PEC's guarantee circuit performance under extreme operating conditions.

See your local CRL distributor who has more than 90 standard circuits on hand, or write direct for complete information.

*TRADEMARK

All resistors are produced to nominal resistor values



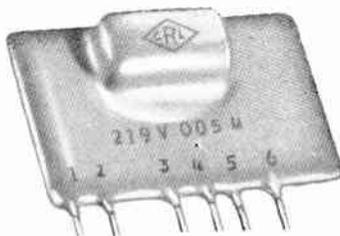
Circuitry performance is more stable because the tolerance is a distribution over the nominal and not fringe values.

Y-4158

Centralab Canada Ltd.

804 Mt. Pleasant Rd., Toronto 12, Ontario

NOW! Extended Capacity Ranges



Maximum capacities: 150 to 600 volts up to .5 mf, 6 volts up to 2.0 mf.

This increases the scope of P.E.C.'s for your applications.

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In Canada: 804 Mt. Pleasant Road • Toronto, Ontario

News Report

CGE Appoints I. A. Mayson Manager — Marketing

Appointment of I. A. Mayson, B.A.Sc., P. Eng., Toronto, as manager — Marketing of the Electronic Equipment and Tube Department has recently been announced by R. M. Robinson, vice-president and general manager of that department of Canadian General Electric Company Limited.



I. A. Mayson

Mr. Mayson joined Canadian General Electric

in the spring of 1953 as Project Co-ordinator and Product Planner on Ground and Marine Radar Equipment. Prior to his recent appointment he served as manager — Market Research and Product Planning.

He is a member of the Association of Professional Engineers of the Province of Ontario.

Selectro Corp. Appoints Canadian Representative

The appointment of M. J. Howard & Company, 132 Crocus Ave., Ottawa, as sales representatives for the entire Canadian market, is announced by Selectro Corporation, original developer and manufacturer of Teflon-insulated "Press-Fit" terminals, Mamaroneck, New York.

The "Press-Fit" technique is already well known in Canada, mainly through the Canadian subsidiaries or affiliates of American companies. Marty Howard who heads his own sales organization, has had considerable experience in the electronic field.

The appointment of Electro-Sonic Supply Co., Ltd., Toronto, as Selectro distributors, is also announced.

Sperry Gyroscope Produces Equipment For India

Sperry Gyroscope Company of Canada, Ltd., Montreal, announces that it is under contract to Shawinigan Engineering Company to produce the Neutron Flux Control System for the Canada-India Reactor, the research reactor being supplied by Canada to India under the Colombo Plan.

The control system was originally designed by Atomic Energy of Canada Ltd. and is one of the most advanced in use either in Canada or elsewhere. Sperry is faced with the problem of re-designing to meet tropical and other environmental conditions peculiar to India.

For further data on advertised products use page 161.

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Company Nature of Business
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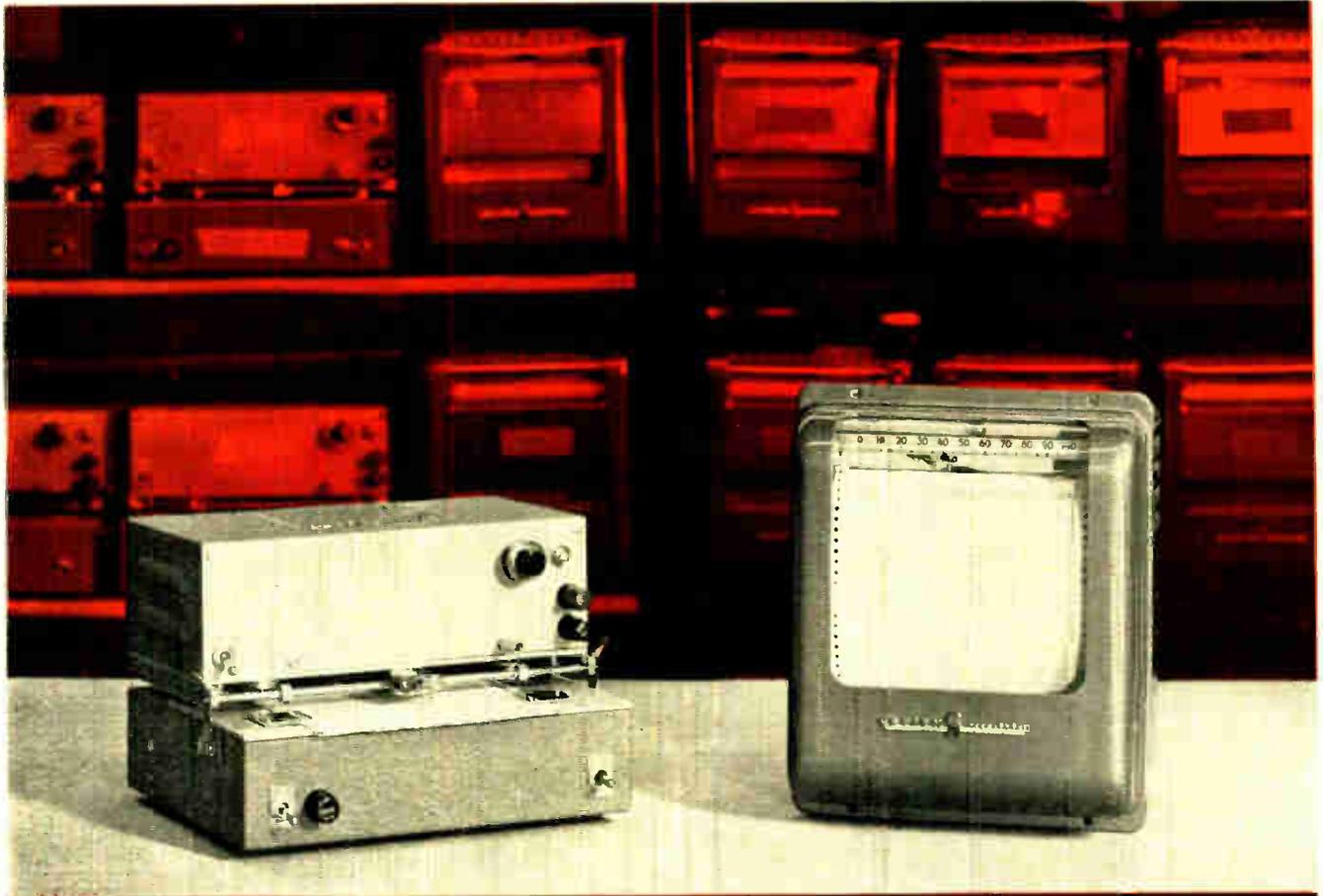


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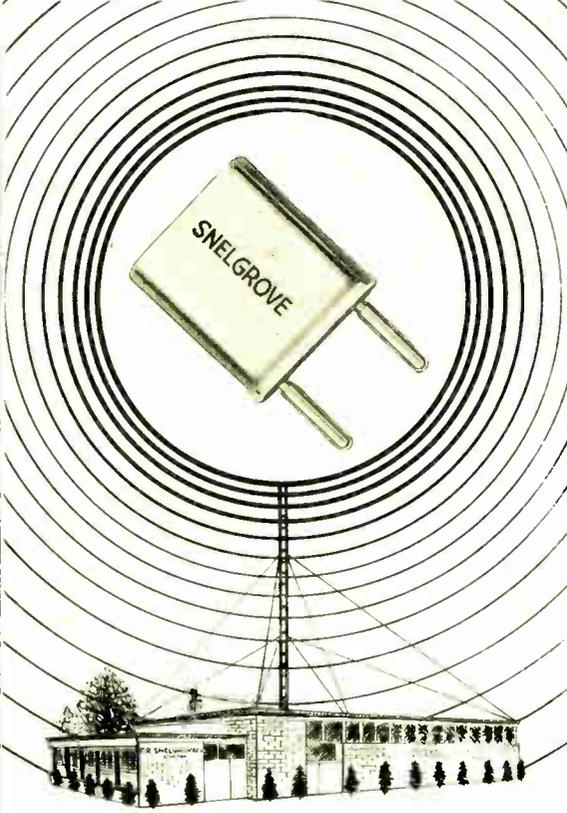
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ELECTRONICS & COMMUNICATIONS, DECEMBER, 1957

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News Report

Dr. A. Conrad Posz To Speak At APEO Luncheon

Dr. A. Conrad Posz, assistant professor of communication skills at Michigan State University, East Lansing, Mich., will address the annual



Dr. A. C. Posz

luncheon meeting of the Association of Professional Engineers of Ontario at the Royal York Hotel, on Saturday, February 1, 1958. John H. Fox, P.Eng., president of the Association has announced.

Dr. Posz who has a dual assignment at the Michigan State University as a professor in the Labor and Industrial Relations Center, will discuss "Why Do We Behave Like People?" Upwards of 1,000 members of the Association are expected to attend the luncheon meeting which is the highlight of the one-day annual meeting. Association President Fox will preside and a number of prominent guests representative of the engineering profession in Canada are scheduled to attend.

Stromberg-Carlson Announces World's Fastest Print Out Equipment

Development of the world's fastest print-out equipment, a device which will greatly accelerate the electronic processing and printing of computer data, was announced recently by Stromberg-Carlson, a division of General Dynamics Corporation and by The Haloid Company. The product, the Stromberg-Carlson Model 5000 high-speed electronic printer, was demonstrated early in December at the New York Coliseum to representatives of the press and leaders of the computer industry.

It is an electronic marriage of Stromberg-Carlson's unique Character Shaped Beam Tube and The Haloid Company's Xerox Copyflo printer. The resulting product is claimed to be the fastest commercially available device for high-speed printing of computer data.

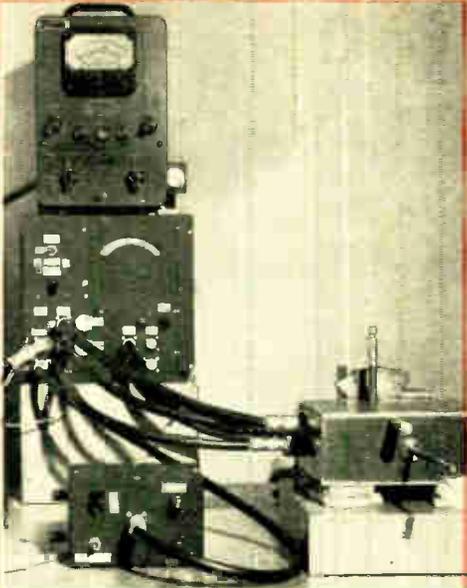
It is expected to have widespread use for commercial, scientific and engineering applications in the field of data processing because of its output and the relatively low cost of operation compared with other printing devices.

Jack-of-All-Trades

Type 1230-A D-C Amplifier and Electrometer

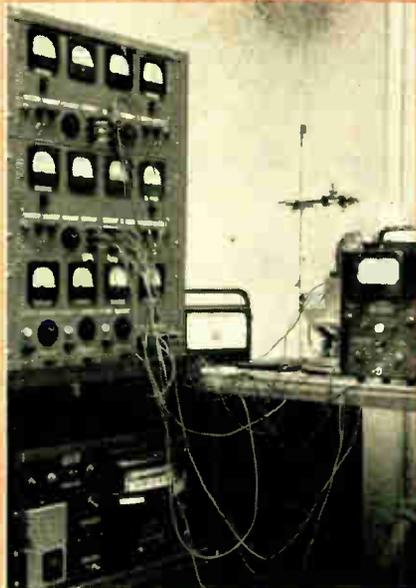


If your requirements call for the measurement of minute currents and voltages, or high resistances, you'll like the new General Radio D-C Amplifier and Electrometer. Its ability to measure currents down to 10^{-14} amps., voltages as small as 1 mv, and resistances up to 10^{13} ohms directly and with good stability makes it a laboratory *jack-of-all-trades*. The Electrometer can be easily converted from a high-impedance voltmeter to a low-impedance ammeter. This simplifies measuring circuits greatly, and is a definite advantage when low-voltage, well-shielded connections are required. At Minneapolis-Honeywell's Research Center in Hopkins, Minnesota, scientists have found the Electrometer indispensable for a wide variety of uses. These include:



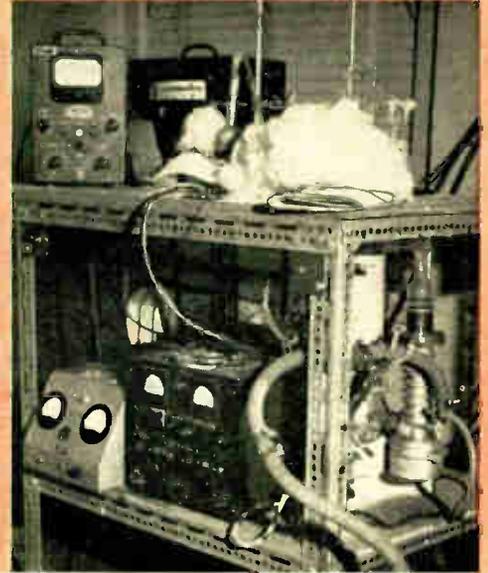
Low-Voltage Measurements

In investigating effects produced by optical irradiation of semiconductor materials, the Electrometer is used to measure open-circuit photo voltage, short-circuit photo current, and the voltage-current characteristic at the metal-to-semiconductor contact.



Low-Current Measurements

Electrometer measures low-magnitude ion currents in a miniature mass spectrometer. Here, an omegatron-type mass spectrometer is used for the analysis of gases at low pressures.



High-Resistance Measurements

Electrometer's high-resistance ranges permit accurate measurements of insulation resistance between electrical leads entering vacuum systems or cryostats and the measurement of resistivity of pressed powders (10^{12} ohms or more).

Specifications

Voltage Ranges: ≈ 30 mv, 100 mv, 300 mv, 1 v, 3 v, and 10 v; dc, full scale. Accuracy is $\pm 4\%$ of full scale on 30 mv range, $\pm 2\%$ on all other ranges.

Current Ranges: ≈ 300 milli-microampere d-c (3×10^{-12} amp) full scale to ≈ 1 milliampere full scale in twenty ranges (two per decade). Full-scale accuracy is $\approx 3\%$ to $\approx 10\%$ depending on multiplier position.

Drift: Less than 2 mv per hour after one-hour warmup.

Resistance Ranges: 300 kilohms to 30 megamegohms ($3 \times 10^{13} \Omega$) in 16 ranges. Accuracy is $\approx 3\%$ to $\approx 10\%$ depending on multiplier and on meter deflection. With external 600 v battery in place of the internal 9 v source, resistance range can be extended to read $1.2 \times 10^{17} \Omega$ at smallest meter division.

Write For Complete Information

Input Resistance: Determined by setting of resistance standards (ohms multiplier) switch: 10^4 , 10^5 , 10^6 , 10^7 , 10^8 , 10^9 , 10^{10} and $10^{11} \Omega$; also "zero" and "infinity" positions. At "infinity" position, it is approximately 10^{14} ohms.

Output: Voltage, current, and resistance are indicated on a panel meter. Terminals provided for use with graphic recorders having resistances up to 1500 Ω .

Temperature, Humidity, Line Voltage Effects: Negligible.

Price: \$440

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We wish to bring to your attention that Canadian Radio Patents Limited is a central patent licensing agency administering various important Canadian patents of invention relating to radio and television receivers and other electronic equipment.

Under the provisions of Section 46 of the Canadian Patent Act, the owner of a patent and his legal representatives have the "exclusive right, privilege and liberty of making, constructing, using and vending to others to be used" the patented invention and Canadian Radio Patents Limited, in accordance with the requirements of Section 67 and 68 of the Patent Act, has licensed the following Canadian companies for the manufacture and sale in Canada of radio and television receivers and other electronic equipment embodying inventions which it administers.

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- Benco Television Associates Limited
- Canadian Admiral Corporation Limited
- Canadian General Electric Company Limited
- Canadian Marconi Company
- Canadian Radio Manufacturing Corporation Limited
- Canadian Westinghouse Company Limited
- Chisholm Industries Limited
- Cossor (Canada) Limited
- Crystal Radio of Canada Limited
- Dominion Electrohome Industries Limited
- Dominion Watch Case Limited
- Electrical Products Manufacturing Company Limited
- Electronic Enterprises Limited
- Emerson Radio of Canada Limited
- Hackbusch Electronics Limited
- Hallicrafters (Canada) Limited, (The)
- Manning Radio Limited
- McCurdy Radio Industries Limited
- McKinnon Industries Limited, (The)
- Measurement Engineering Limited
- Monarch Radio Manufacturing Company
- Nordmende Phoenix Ltd.
- Northern Electric Company Limited
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- Prichard, J. B.
- Pro Musica Limited
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- Stark Electronic Instruments Limited
- Sylvania Electric (Canada) Limited

The above companies are working the patented inventions in Canada on a commercial scale and are prepared and willing to meet the public demand for the patented articles in Canada on reasonable terms.

Canadian Radio Patents Limited desires to inform importers, vendors, purchasers or users of radio and television receivers and other electronic devices and equipment incorporating patented inventions owned or administered by Canadian Radio Patents Limited and not manufactured or sold under license from Canadian Radio Patents Limited, that they will be held liable for patent infringement.

Canadian Radio Patents Limited will be glad to furnish, upon application, full particulars and information in respect to the patents that it owns or administers relating to radio and television receivers and other electronic devices and equipment.

CANADIAN RADIO PATENTS LIMITED

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News Report

Group Retirement Plan For Professional Engineers

The first group retirement savings plan for professional engineers in Canada has been launched by the Association of Professional Engineers of Ontario, which is the licensing body for more than 16,000 professional engineers in the province.

The plan consists of two methods of participation: purchase of a guaranteed insured annuity underwritten by North American Life Assurance Company; or purchase of common stock through the Chartered Trust Company. There is also a combination of both methods available. In each case, the member's deposit for annuity or investment savings is pooled with those of his fellow members. Members may state the percentage of annual deposits to be allotted to each part.

Each of the two plans is a participating contract with dividends and capital growth being used to provide additional retirement benefits.

"One of the most attractive features of the Association Plan is the complete freedom of choice that it provides," says APEO president John H. Fox, P.Eng., of Toronto, adding that by pooling one's savings with those of other professional engineers, it will result in investments over a much broader field than is possible for the individual.

A 12-page brochure describing the Plan in detail has been prepared by the Association for distribution to its membership.



R. H. TANNER

● The Institute of Radio Engineers recently awarded their first Canadian Fellowship of the year to Robert H. Tanner. He was commended by the IRE for his contribution in the design and application of audio equipment in the broadcast field. Mr. Tanner carried out the acoustical design of the Permanent Theatre for Stratford, Ontario, and for the new Queen Elizabeth Theatre in Toronto. He is assistant superintendent, development engineering, in the plant of Northern Electric Company Limited at Belleville.



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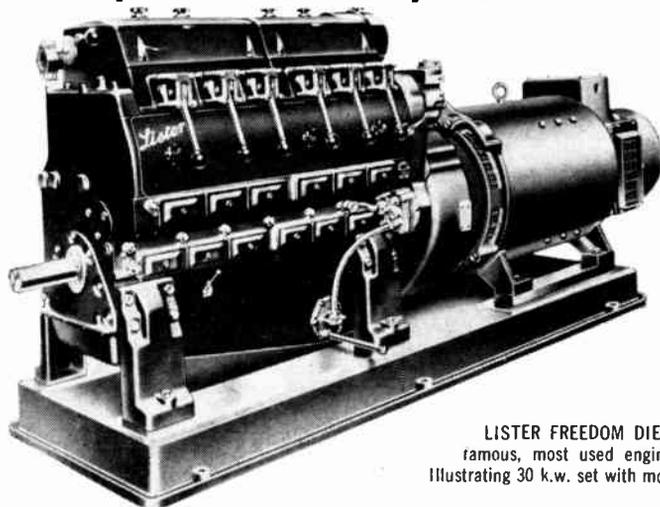
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News Report

Dominion Foundries & Steel Install Radiography Machine

The largest commercially built gamma radiography machine has been shipped by Nuclear Systems, a division of The Budd Company, to Dominion Foundries and Steel, Limited, of Hamilton, Ontario.

The 1060 series Multitron, as Nuclear Systems calls this new addition to its line of gamma radiography equipment, has a capacity of 1,000 curies of Cobalt 60, resulting in exposure times comparable to those of 2,000,000 volt X-Ray equipment. The equipment has a 5,000 pound heavily shielded stainless-steel-clad lead-filled head which serves as both storage and shipping container. Operation is completely safe through a remote console with completely fail-safe electrical controls.

Dominion Foundries and Steel will use the unit, loaded with 700-750 curies of Cobalt 60 of approximately 50 curies per gram specific activity, in its Hamilton foundry for the inspection of large steel castings, some with metal sections up to nine inches thick. This installation is part of a continuing expansion of Dominion Foundries and Steel, Limited's non-destructive testing department as a result of a progressive quality control policy.

Sale of the Multitron 1060 was made by one of The Budd Company's Canadian subsidiaries — Non-Destructive Testing Corporation, Limited.

Toronto Group Sees ITV Demonstrations

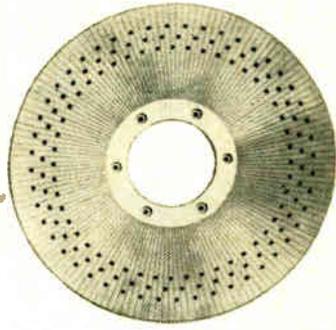
Several Toronto television executives, with officials of the Metropolitan Toronto boards of education, recently visited Penn State Teachers' College to attend a series of demonstrations on educational television and kine recording.

Representatives from the Dage Company and from S. W. Caldwell Ltd. joined the boards of education officials to witness the demonstrations.

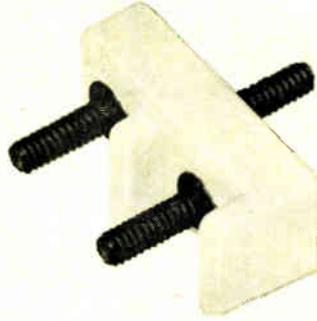
Penn State maintains one of the most extensive closed-circuit television operations in the United States. The college uses TV for mass lectures to teachers by a single instructor.

It is hoped that the demonstrations will kindle interest in educational TV on the part of Toronto school officials. Closed-circuit TV was recently tried out, at Scarborough's Winston Churchill Collegiate, where it was favorably received by a group of school board executives.

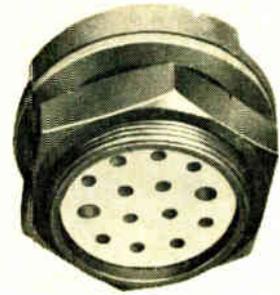
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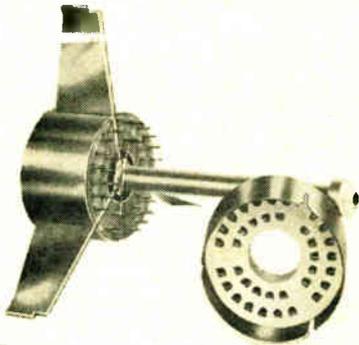
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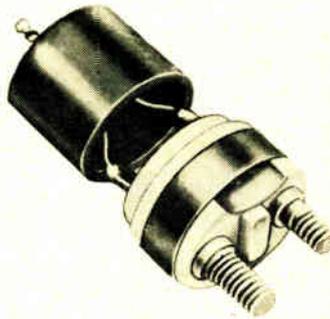
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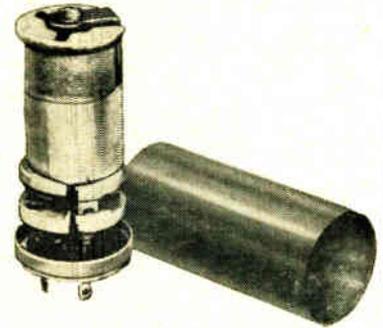
HIGH-TEMPERATURE A-N CONNECTOR
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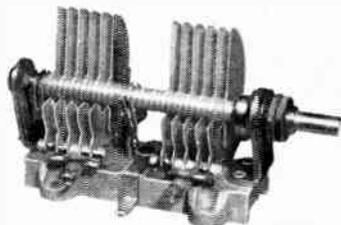
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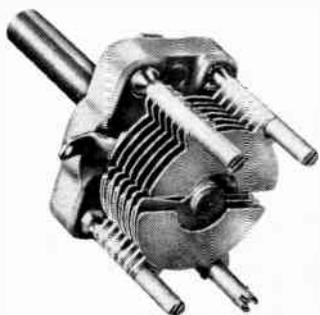


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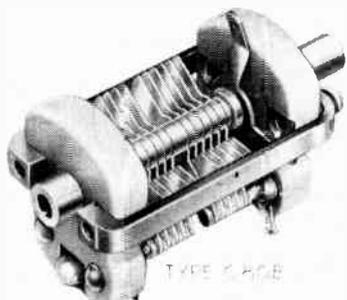
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News Report

Another Canadian "First" In Atomic Reactor Control

Engineers at Sperry Gyroscope Company of Canada, Ltd., Montreal, have successfully designed and built a novel Xenon Computer for Atomic Energy of Canada Ltd.

This electro-mechanical device computes information from the reactor power, concerning the concentration of Xenon 135 and Iodine 135 in the fuel rods. The data supplied is used to avoid "poisoning out" the reactor by the production of Xenon and/or Iodine, or, in the event of a poison shutdown, is used in predicting when the reactor may be restarted.

Scientists at the Atomic Energy of Canada Ltd. had pointed out the need for this type of equipment, and Sperry embarked on the project as one phase of the company-sponsored engineering development program. Tests at Chalk River proved so successful that Atomic Energy ordered a Xenon Computer for its NRU, the latest Canadian atomic reactor.

A highly reliable computer using electro-mechanical principles, as against former tube types, it contains no tubes or relays. Rather it makes use of techniques which combine transistors, magnetic amplifiers and precision servos to produce the results desired.

Miner Rubber Of Canada Enters Tape Field

The Miner Rubber Company Limited, of Granby, Que., and the Peters Manufacturing Company, of Wollaston, Mass., have announced an agreement whereby Miner will make all types of cable tape for the wire and cable industry of Canada.

The Miner Rubber Company Limited is one of the oldest established rubber companies in Canada, and for nearly half a century has been known throughout the world as one of the leading manufacturers of rubber products. The company's large factories located in Granby are equipped with up-to-date machinery suitable for the production of all types of tapes required by the wire and cable industry. Modern laboratories under the direction of skilled chemists provide facilities for testing and evaluating new products.

The Peters Company, founded in 1898 and a leader in the tape industry in the United States, will supply the technical service.

Spectrol Appoints Canadian Representative

Spectrol Electronics, Division of Carrier Corporation, has announced the appointment of E. E. Whittaker, P.O. Box 3255, Arnprior, Ontario, as the Canadian representative of Spec-

trol products in Canada.

Spectrol Precision Potentiometers are manufactured in a wide range of sizes single turn, multi-turn, miniature and high temperature models to meet all potentiometer specifications. Mr. Whittaker can be contacted for information about any of the 18 Standard Models of Precision Potentiometers made by Spectrol or any Special Models based on the Standard design.

C.G.E. To Offer Television Station Maintenance

Canadian General Electric Company Limited has broadened its national broadcast equipment service program by establishing a new sales policy under which the company will accept television station maintenance service contracts.

The announcement was made by Edgar J. Gareau, broadcast equipment specialist for Canadian General Electric's Electronic Equipment and Tube Department. Mr. Gareau explained that, under the new arrangement, the firm will use a combination of methods to satisfy customer maintenance requirements. Various schedules of service are available and any or all may be used depending on the specific station's requirement.

In the past, General Electric broadcast equipment has been serviced by product service representatives from coast to coast. Mr. Gareau emphasized that the previous arrangement will be continued and expanded as the growing sales markets warrant.

"In broad terms", Mr. Gareau said in speaking of the new television station maintenance program, "every transaction should include a contract for good maintenance to supplement the work of the station's technical staff. This new program came as a result of a Canadian General Electric market survey which showed a particular need for this type of service in view of the increasing demands by the industry for highly trained technical personnel.

"The trend is inescapable", he said, adding: "With more specialized types of broadcast equipment now being engineered, the purchaser has a right to be assured that he will be able to receive factory service, when necessary, on complex systems."

Spaulding Fibre Co. of Canada Ltd. Locate In Toronto Area

The Spaulding Fibre Company, Inc., has announced the formation of the Spaulding Fibre Company of Canada Ltd., effective January 1st, 1958.

A plant will be established in the Toronto/Hamilton area within three months; and will fabricate and stock laminated phenolic, vulcanized fibre, transformer pressboard and Spauldo (Rag Paper).

A branch sales office has been in operation at 106 Lakeshore Road East, Port Credit, Ontario for over a year.

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Book Review

Acoustical Engineering by Harry F. Olson, Ph.D., Director, Acoustical and Electro-mechanical Research Laboratory, RCA Laboratories, Princeton, N.J.

The first edition of this book, published in 1940, was the subject matter of thirty lectures prepared for presentation at Columbia University. A second edition was published in 1947. However, the momentous strides taken in recent years by modern acoustic science have made this new and greatly enlarged edition imperative. From fundamentals to practical applications, it now presents complete working methods covering the entire field of acoustical engineering.

Two chapters have been added, dealing with complete sound reproducing systems and communications systems. The most recent developments are all described including those: in underwater acoustics, systems for detecting and locating crafts and obstacles, and for depth soundings; in ultrasonics, industrial techniques for cleaning machined parts, for drilling and detecting flaws; in architecture, methods of obtaining excellent acoustics under severe artistic considerations; in music, new musical instruments.

Here for radio, television, sound motion picture and recording engineers, architects and musicians, is an invaluable reference that reflects the most-up-to-date information available today.

Acoustical Engineering is published by D. Van Nostrand Company (Canada) Limited, 25 Hollinger Road, Toronto 16, Canada, contains 718 pages, hard cover bound, price \$14.50.

Digital Computer Programming by D. D. McCracken, Manager - Training, Industrial Computer Department, General Electric Co., Phoenix, Arizona.

This volume treats the down-to-earth details involved in actually working with digital computers. In clear and logical terms, it discusses many of the points that are especially troublesome to beginners, and builds a sound understanding of programming by means of a lucid presentation of its basic fundamentals. Its coverage is far more comprehensive than that provided by instruction manuals for specific computers, yet is on a more practical level than the broad surveys written primarily for non-users of computers.

To implement his approach, the author has devised a mythical computer combining elements from a number of different models currently on the market. Accordingly, the book is eminently suitable for use when there is no computer available for practice and demonstration. Where a specific machine is available, the applicable parts of the book can be read with profit, along with the large portion of text material that is relevant to any machine.

Digital Computer Programming is published by John Wiley & Sons, Inc., 440 Fourth Avenue, New York 16, N.Y., contains 253 pages, hard cover bound, price \$7.75.

The Science Of Engineering Materials edited by J. E. Goldman, Manager, Physics Department, Scientific Laboratory, Ford Motor Company.

This volume comprises a series of lectures on the Impact of Solid-State Science on Engineering Materials, based on the Proceedings of the Carnegie Conference held at Carnegie Institute of Technology in June, 1954 and sponsored jointly by the American Society for Engineering Education, the National Science Foundation, the Carnegie Institute of Technology, and the University of Illinois.

The book is the work of a number of the
(Continued on page 174)



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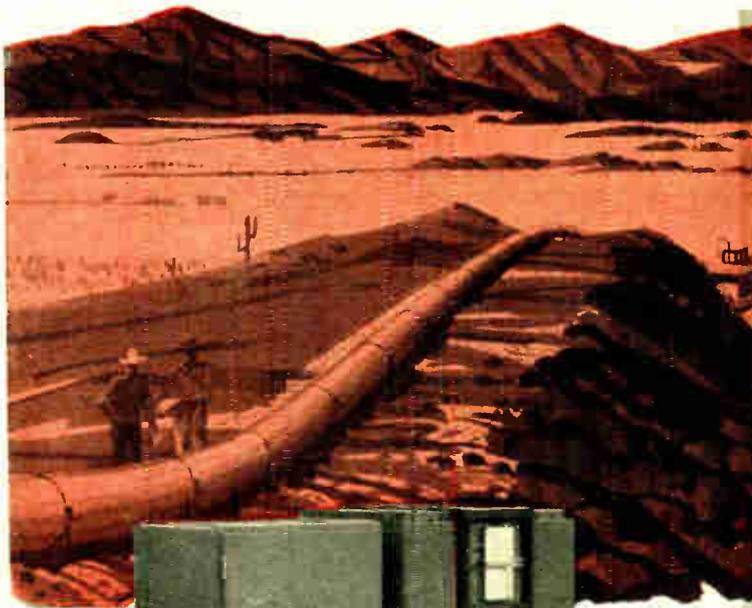


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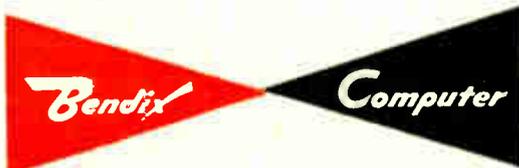
problem:

Determine pressures required in a newly-constructed pipe line to deliver gas at a destination several hundred miles away.

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Engineers brought this problem to Bendix in an effort to simplify the design of a major new pipe line. The line was broken down into mile-long "sections" and a "pressure profile" was run on each section, using a modification of the Panhandle Eastern Flow Equation. Answers were computed accurately, point by point. Solution time was less than 12 minutes. A complete report on this problem is available on request (use coupon).

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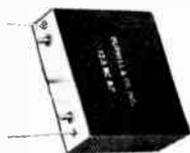
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Book Review

(Continued from page 172)

outstanding scientists in a variety of physical and engineering fields. In defining the actual molecular makeup of materials, they explain and interpret, qualitatively, the properties of metals, alloys, semi-conductors, cements, polymers, and glasses.

The Science Of Engineering Materials is published by John Wiley & Sons, Inc., 440 Fourth Avenue, New York 16, N.Y., contains 528 pages, hard cover bound, price \$12.00.

Transducers And Magnetic Amplifiers by A. G. Milnes, D.Sc.

In the last decade, transducer and magnetic amplifier techniques have become of great prominence in the field of electro-technology for regulating and control purposes.

In this Monograph, based in good part on the author's own investigations in this field, single-phase and three-phase transducer circuits are discussed for a variety of load and operating conditions. Design methods are explained and applications of magnetic amplifiers are described. Other circuits discussed include magnetic modulator devices, transducers with re-set voltage control and transistor controlled magnetic amplifiers.

The general approach is an analytical one, but the need for practical information has not been overlooked in the descriptive chapters. The book should be of interest to all designers and users of magnetic amplifiers in industry and to those teaching this subject in advanced electrical courses.

Transducers And Magnetic Amplifiers is published by The MacMillan Company of Canada Limited, 70 Bond Street, Toronto, Ontario, contains 286 pages, hard cover bound, price \$10.75.

Guidance, by Arthur S. Locke and contributing authors from the Naval Research Laboratory, being the Principles of Guided Missile Design, a new series edited by Grayson Merrill, Captain, U.S.N.

An increasingly large portion of scientific and industrial effort is being directed toward research and development on guided missiles. This first book in the Principles of Guided Missile Design series brings together the most recent information on the key topic of Guidance.

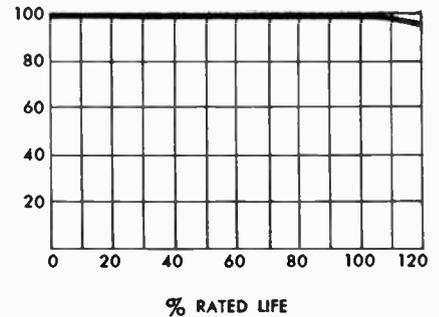
Every basic problem encountered in directing a controlled missile reliably to its target is considered. From a discussion of fundamental problems, the book proceeds to the different methods for obtaining intelligence of a target by employment of infrared, radio and acoustic waves, and fixing its location by terrestrial and celestial references. It covers the mathematical groundwork needed for solving guidance problems and gives an unusually lucid exposition of related servo system theory.

Tactical considerations limiting the employment of guided missiles, an analysis of the several flight trajectories, the use of radar in tracking targets, and bandwidth studies are given in detail. Among the other topics covered are guidance problems arising during the prelaunching and launching phases, economic considerations, the influence of airframe design upon choice of guidance systems, and methods of simulation, computation and telemetry.

An invaluable survey of guidance devices and techniques, this book is an essential background for work with missile guidance systems, even for those already in the field.

Guidance is published by D. Van Nostrand (Canada) Ltd., 25 Hollinger Rd., Toronto 16, Canada, contains 729 pages, hard cover bound, price \$13.50.

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AVIATION COMMUNICATIONS

(Continued from page 127)

from the end of 1959 under certain conditions.

Among the future needs discussed in this field were additional frequency space for the functions using the 118-132 mc/s band as — in the opinion of the Division — the use of 50 kc/s spacing in the future would not meet requirements on a long term basis, which means that the band available to the International Aeronautical Mobile Service must be enlarged.

The need for a special distress frequency was also discussed. In general, aircraft in distress use the frequency of the route on which they are flying but since it is sometimes a great help to be able to communicate with ships in the vicinity, the Division decided

that the radiotelephone distress frequency of the Maritime Mobile Service (2182 kc/s) would be the best immediate solution. In order that aviation and maritime interests in this field may be integrated before 1959 when the International Telecommunications Union will hold a radio conference, the meeting recommended early consultation with mercantile marine authorities. At the same time ICAO member states were invited to test alarm signal devices which automatically activate a distress watch on 2182 kc/s. A system of this kind is already in use on some ships and coast stations and an inexpensive apparatus suitable for aircraft has been developed in Sweden.

The meeting decided that, as far as primary surveillance radar is concerned, there was no need to develop standards and recommended practices, because primary radar does not need for its operation any special equipment in the aircraft. However, a technical specification was developed for secondary surveillance radar which requires cooperative equipment in the aircraft which is triggered by the ground radar signal to return a coded signal to the ground equipment. Achievement of agreement on secondary radar is notable as the subject has been under study for several years.

One possible method of improving the performance of air/ground channels and to provide room for future expansion of the frequency bands allotted to civil aviation, is to adopt a new system called "single side band transmission". It was found impossible to develop complete specifications for a new system of this kind at the time of the meeting, instead the Division recommended that basic characteristics of a single side band system should be incorporated to the attachments to Annex 10 for guidance purposes only. In this connection, it was agreed that it was necessary to take into account the possibility of future adoption of an automatic data-transfer transmission system because this would have to operate within the same tolerances as the radio telephone system now being proposed.

During the discussion of ground aids of various kinds, the Division came to the conclusion that there is an urgent need for an ICAO publication to guide member states in establishing procedures for flight and ground testing of radio navigation aids. It recommended to the Air Navigation Commission that a panel of experts be

created to prepare a document of this kind.

When ICAO member states embark on an expensive equipment program it has been the custom to agree on the length of time during which no new types of equipment will be required to replace the old, so that governments may plan a realistic write-off period. In the case of the VHF Omni-directional Radio Range, the standard short distance aid for certain applications, the so-called protection date had been fixed previously at January 1st, 1960. The Communications Division decided to recommend an extension of the date to January 1st, 1966. A factor contributing to this decision is that the requirement for the VOR system would continue for a considerable period, even if another aid were to be adopted in the near future and it was necessary to give reasonable assurance of useful life if installations were to be proceeded with.

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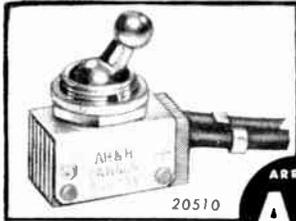
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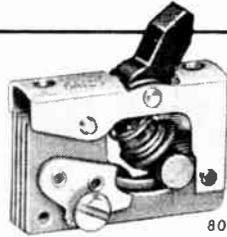
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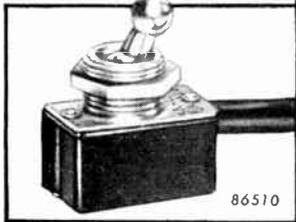
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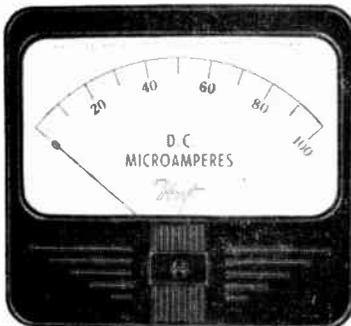


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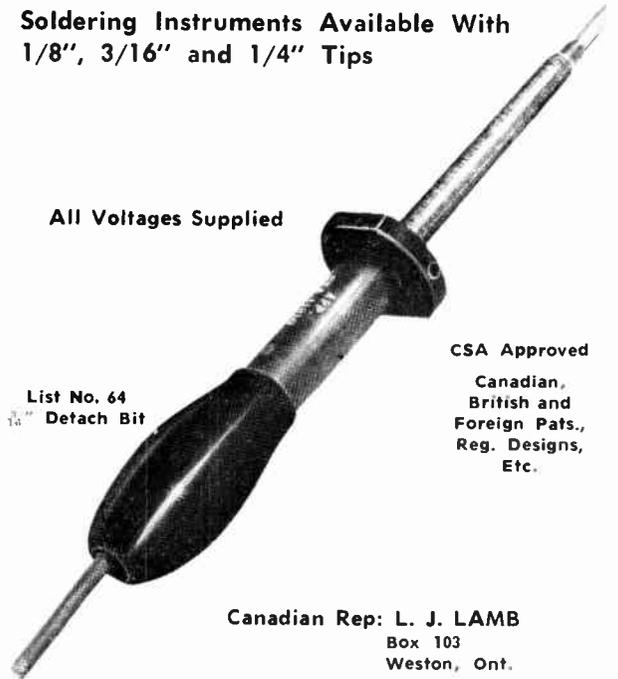
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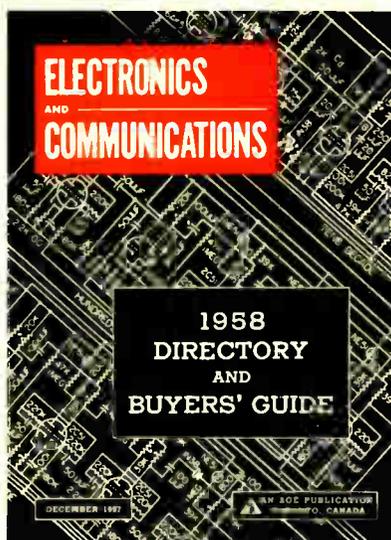
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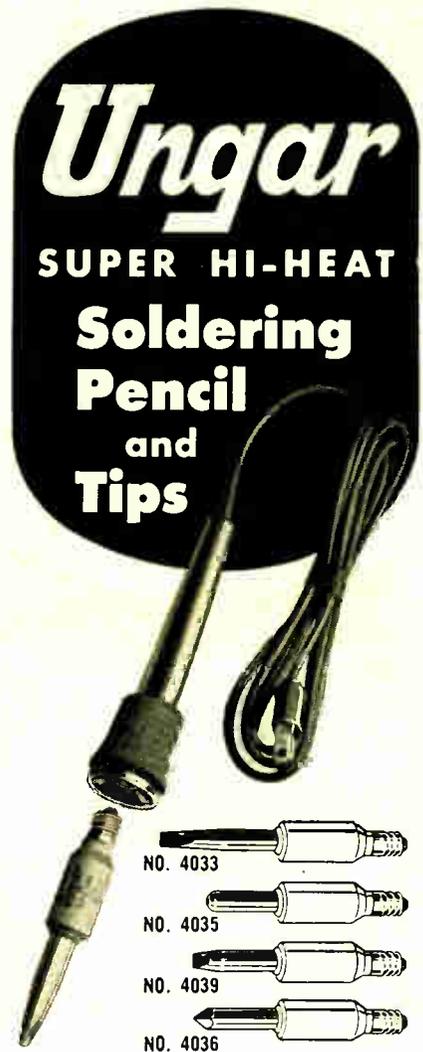
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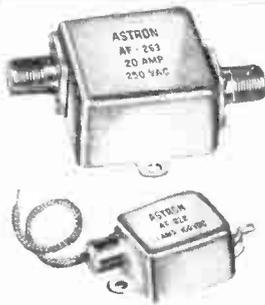
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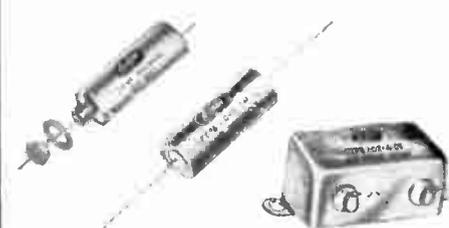


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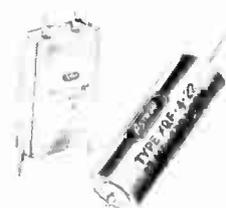
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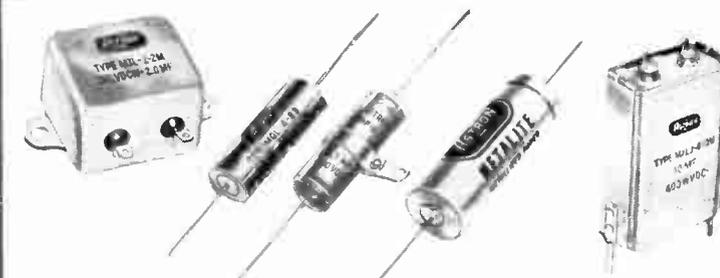
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