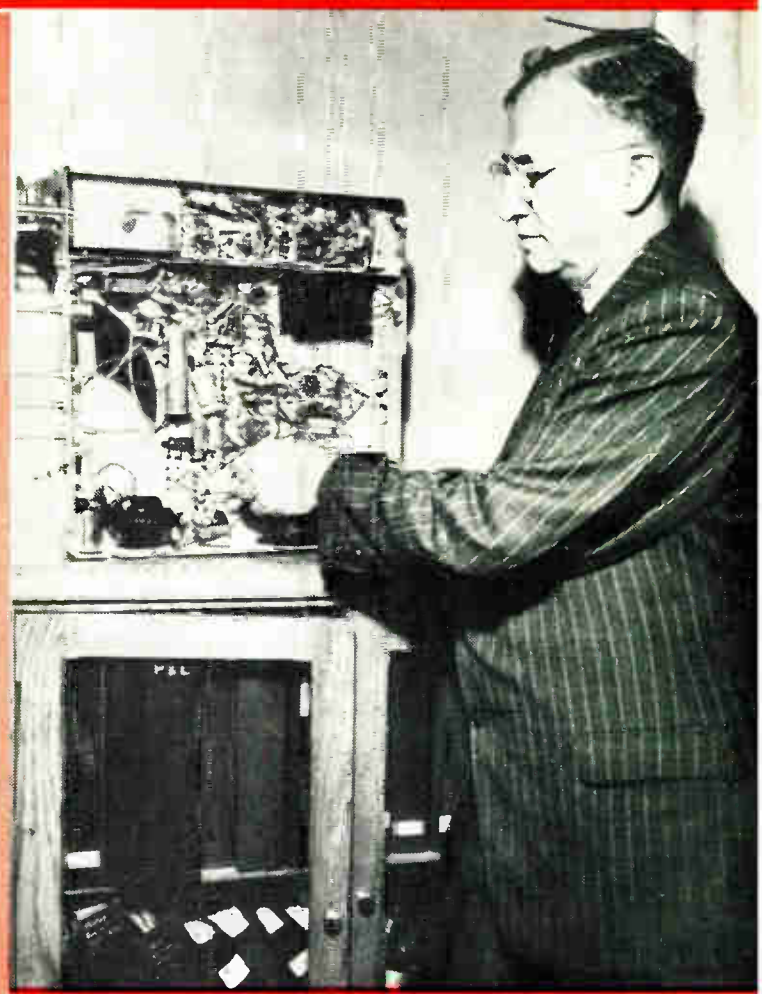
ELECTRONICS *and* COMMUNICATIONS

DESIGN—MANUFACTURE—ENGINEERING—DISTRIBUTION—APPLICATION

New Ideas For Modern Management

- **Communications For Civil Defense —What's Needed And Why.**
- **Ships That Sail The Arctic Provide Market For Radar Equipment.**
- **Autotronic Elevators Save Building Owners $7,000 Per Year Per Car.**
- **Whither Color TV In Canada?**
- **Concrete Mixes Now Checked With Minute Accuracy Save Time And Money.**



Defense Minister, The Hon. Brooke Claxton, Canada's Number One purchaser of defense electronic equipment here examines a commercial TV set while on tour of the Canadian Westinghouse plant in Hamilton.

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March-April, 1954 ★ $5.00 a year
An AGE Publication, Toronto, Canada

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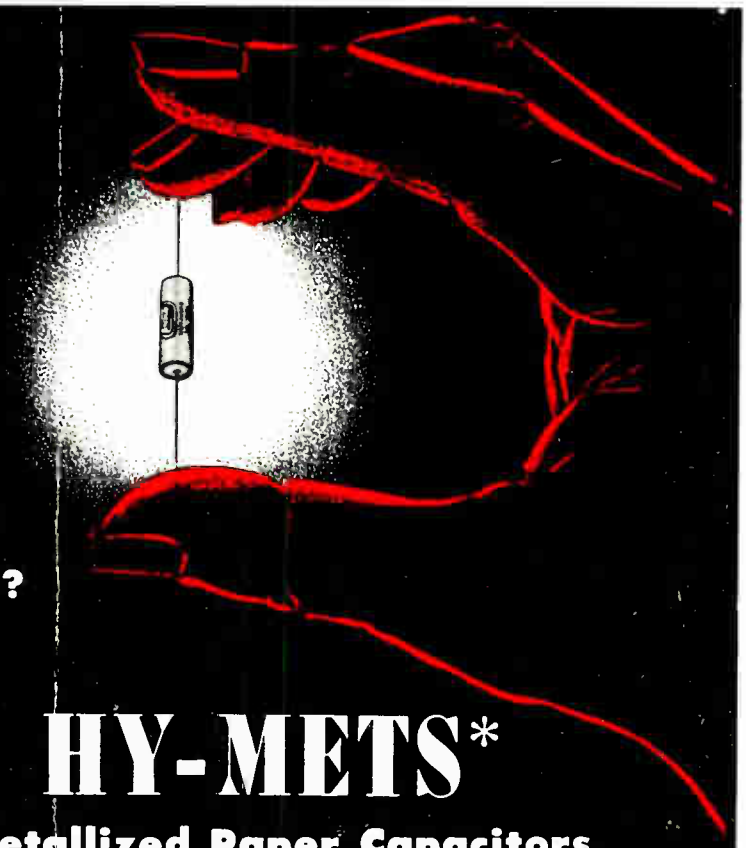

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long life?
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Type MQL

Type MDL

Answer several of your capacitor and assembly problems with one quick stroke. Specify ASTRON Hy-Mets—for long life in high temperature operation. Now you can have the subminiature size of metallized paper capacitors for high temperature operation without derating.

Hermetically sealed Hy-Mets utilize ASTRON's new solid impregnant—to eliminate possibility of any oil or impregnant leakage from −55C° to +125°C. Hy-Mets offer high insulation resistance, longer life, lower power factor and exceptional stability over extremes in operating conditions. ASTRON Hy-Mets are the subminiature for the biggest job.

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Write for Bulletin AB-19 on Hy-Mets, giving complete data on sizes, ratings, mounting styles, engineering performance characteristics and test specifications.

Astron manufactures a complete line of dry electrolytic, metallized paper, plastic molded and subminiature paper capacitors, and standard and subminiature RF interference filters for every radio, television and electronic use.

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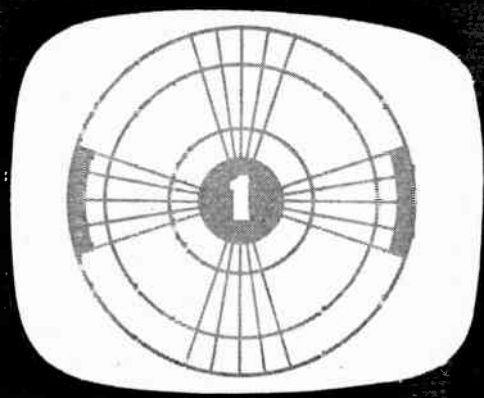

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Canada's finest radio and television tubes

CANADIAN MARCONI COMPANY

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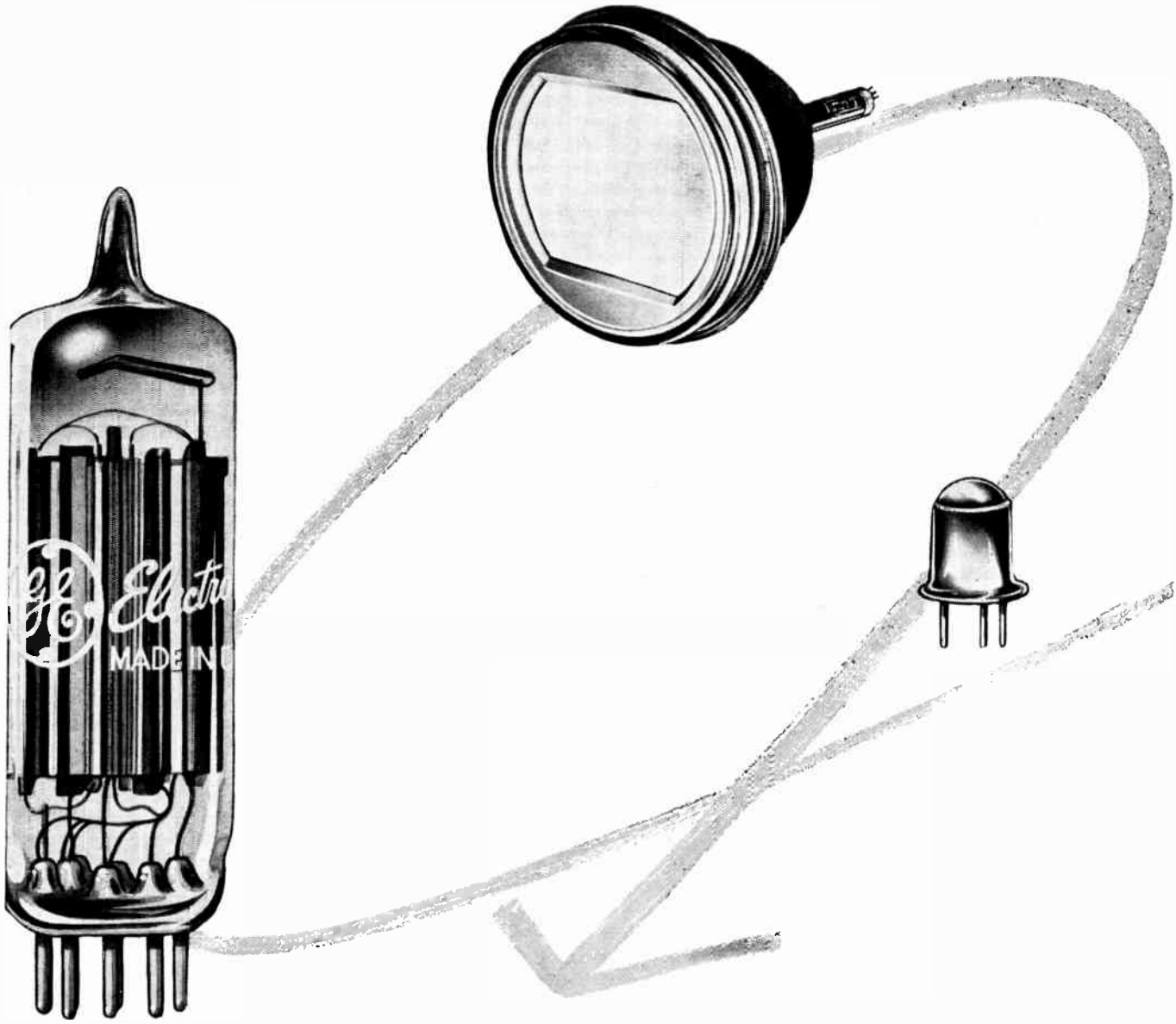

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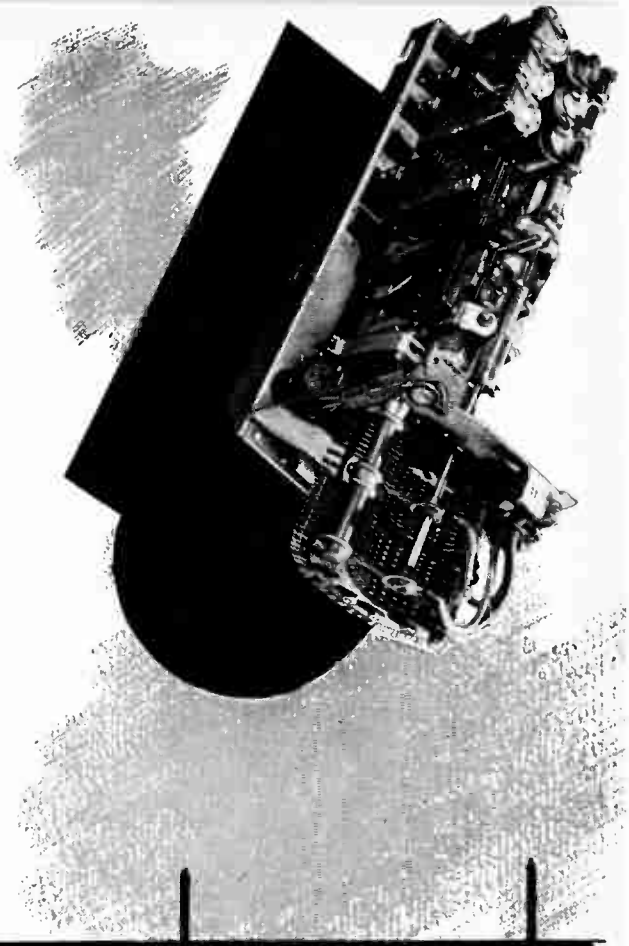
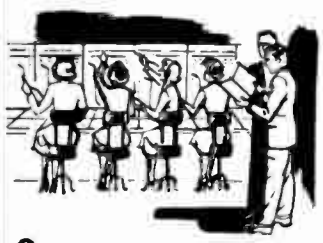
world famous for dependability



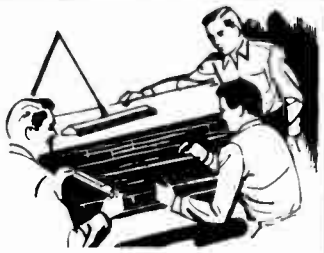
First . . . because Strowger Automatic is **proved dependable** — the **only** automatic switching equipment with a 60-year record of successful development and use.

Second . . . because we offer you the advantages of complete advisory and engineering services. These services include assistance in ironing out pre-installation problems, personnel training, and, after installation, the benefit of expert guidance until the system is working smoothly.

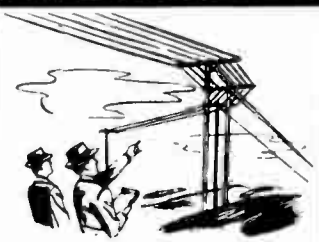


❶ **Our Engineers make a survey of traffic** and operating requirements in your exchange to determine exact amount and types.

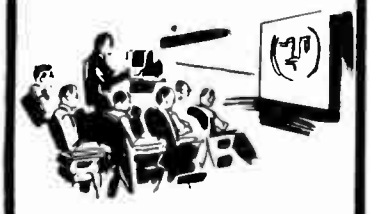
❷ **We help you to arrange financing,** to apply for upgraded rate adjustments, and to set up a time-saving record system.



❸ **We plan your switching equipment individually** to meet the specific requirements of your exchange.



❹ **We help you plan your toll system,** to enable you to handle the greatest volume of this desirable traffic—by physical lines, carrier, and radio.



❺ **We train your technical personnel** in our well-equipped factory school if you request, or we supply books for "on the job" training.

❻ **Our demonstration units prepare your subscribers for automatic service.** We supply you with these portable units, on request.

❼ **Our experts install your new switching equipment,** if you wish — including power equipment and manual positions.

❽ **Our operating engineers are always at your call**—throughout the life of Strowger Automatic equipment — to consult on any phase of your exchange operations.

Take advantage of this complete service by writing us about your conversion plans today.

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London Report

Grosvenor House, in London, was the stage for the 1954 British Radio Components Manufacturers annual exhibition. April 4th, 5th and 6th, saw record breaking crowds view a dazzling array of radio and electronic components.

Miniaturisation was the keynote and many of the small parts manufacturers were displaying components designed along the new motif. Bulk and weight of items such as controls and connectors has been drastically reduced. Aviation electronics now playing an ever increasing role has prompted much of the new design.

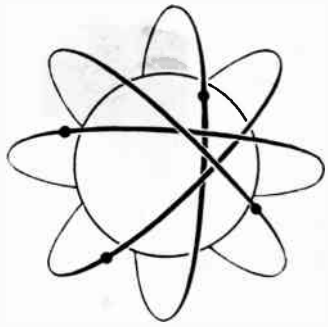
Sir Robert Renwick, Bart., opened the exhibition. He spoke of the tremendous growth of the British Radio industry. The group of exhibitors he said, "are producing over 1000 million valves and accessories every year." He likened the show to "a friendly meeting place for engineers and buyers, who could meet in comfort all of Britain's foremost component manufacturers and discuss with them their various problems."

Since the founding of the association in 1933, radio manufacturers in Britain were steadily growing and today it was necessary to obtain components for a million sets per year. Today British component manufacturers are supplying 750 million parts annually, over half of these are exported, Canada being a far better customer than ever before. Many Canadian radio manufacturers being quick to appreciate the traditional quality which Britain is building into such items as condensers and loudspeakers. These two items being the most popular imports from England to Canada. A special luncheon was held for overseas guests and the speaker, Mr. Ian Ewing, M.P. told the audience that exports for 1953 were over £10,000,000.

Guest speaker for the visitors was Mr. Leonard Carduner of British Industries, New York. Mr. Carduner stressed the importance of maintaining quality. American people have found British radio components of extremely high quality he said and their purchases would steadily increase. He congratulated the British manufacturers on their readiness to redesign to the particular requirements of their export customers.

Strictly HUSH HUSH in Britain is development of guided missiles. The hydrogen bomb makes the headlines but not nearly so well known is the fact that Britain builds the world's fastest jet bomber. Top speeds are very secret but rumour tells us that they are in excess of any published claims, but the good news is that Britain has a guided missile that will seek out this plane and destroy it. Information on this weapon is very closely guarded but the project is a big one and very much alive.

MARCH - APRIL, 1954



ELECTRONICS AND COMMUNICATIONS

Vol. 2 No. 2

FEATURES

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Model MB-1 **Net $3.30**

Model MB-2

Swivel Base and Spring. Spring is of oil-tempered heavy spring steel to withstand toughest shocks, vibration and extreme temperatures. Responds instantly upon contact with overhead obstructions to prevent mast damage. Flexible lead through center of spring maintains constant electrical impedance. Has 3/8" threaded fitting on end of spring to receive stud of mast.

Model MB-2 **Net $4.85**

Model MBS-1

Spring Tempered Steel Masts. Made of chrome silicon steel, this mast has exceptionally high tensile strength . . . can be bent 90° and still return to its original vertical position. It is taper ground with a corrosive resistant surface finish, fits either MB-1 or MB-2 mounting base or any standard base.

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Model MM-60	**Lth. 60"**	**$3.95**
Model MM-72	**72"**	**$3.95**
Model MM-84	**84"**	**$4.10**
Model MM-96	**96"**	**$4.65**

Base Springs. Oil tempered, tightly coiled heavy spring steel to withstand toughest shocks, vibration and extreme temperatures. Model MBS-1 is a regular strength spring. Model MBS-2 is a heavy duty spring for heavier masts.

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Model MBS-1	-	**$1.65**
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ROOF TOP ANTENNA

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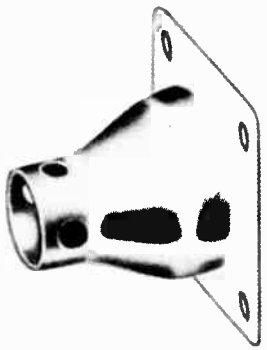
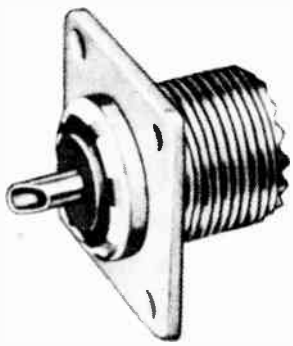
UG-106-U	Shield Cap	.18 ea. Net
SO-239	Coax Receptacle	.75 ea. Net
PL-259	Cable Plug	.68 ea. Net
PL-258	Cable Plug	1.01 ea. Net
UG-176-U	Reducer	.18 ea. Net

Coaxial Connectors

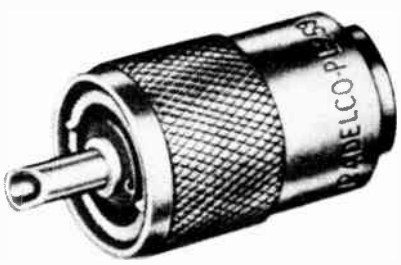


UG-106-U



SO-239

UG-176-U



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business briefs & TRENDS

★ **IT HAS BEEN REPORTED THAT CANADIANS** are buying TV sets at a faster rate than did Americans when TV was at the same stage of development in the United States.

★ **A LIMITED NUMBER OF SMALL SCREEN COLOR TV** sets will be available in Canada this year. Picture sibe of the sets will be about 89 square inches. The picture sibe on the standard 21 inch set is 254 square inches. Canadian General Electric expect to be able to show color sets at the 1954 Canadian National Exhibition.

★ **THE CANADIAN TELEVISION INDUSTRY** have all the stops pulled out for 1954. According to estimates from reliable sources the industry will be called upon to produce around 450,000 sets this year. This is 25 per cent more than what the industry produced in 1953. If the figure is reached it will represent a sales value of about $200,000,000.

★ **COLOR SIGNALS WILL BE CARRIED** on the Canadian TV network sometime in 1955 it is believed but only about 5 per cent of the programs telecast will be in color.

★ **THE CANADIAN ELECTRONIC INDUSTRY EMPLOYS** at the present time 15,000 people. Annual production of goods in the electronic field amounts to $350 million. Estimates from within the industry place the annual production of electronic goods within the next ten years at between $700 and $800 million annually.

★ **THERE IS APPROXIMATELY** 50,000 voice channel miles of microwave now in use in Canada. Authorities concerned with the installation and manufacture of microwave claim that this is a small amount compared to what's on the door step. Compared with the 2.8 million voice channel miles — a $64 million job — which will be required to satisfy the demands of TV within the near future, this can be readily understood.

★ **UNDER THE PRIMARY ALLOCATION PLAN ADOPTED** by the Department of Transport and the C.B.C., there are 68 locations in Canada selected for television stations. Seven of these locations have been selected by the C.B.C. and of the remainder, 16 television licenses have been applied for and granted.

★ **MARKET RESEARCH EXPERTS ANTICIPATE** that the Canadian TV industry will sell 500,000 sets in 1954 but do not expect that this figure of sales will again be reached until 1960 by which time, it is considered, color TV will form an important part of the market.

★ **THERE WAS AN ESTIMATED** 17,500 mobile communications units in use in Canada in 1953 and the rate of sale of this type of equipment now stands at 4,000 units per month.

★ **POSTMASTER GENERAL COTE** has announced in the House of Commons that hand sorting of mail may soon be a thing of the past. Technicians of his department are now attempting the design of an electronic instrument that will sort mail automatically.

★ **NEARLY A THIRD OF ALL LONG DISTANCE** calls now placed in Canada are dialled by the operator straight through to the distant telephone.

★ **R. STORY, MANAGER OF THE RADIO** and Television Department of the Canadian General Electric states that in 1953 Canadians bought 365,000 television receivers. This amounts to 10 freight car loads for every day of the year including Sundays.

★ **THE SAFETY OF TUGS,** small fishing vessels,yachts and motor launches required to do inshore jobs has been increased by the development of a special type radar by the Raytheon Manufacturing Company. Reported to be the smalles tand most compact equipment of its kind in the world the new set is described as the "Mariner's Pathfinder".

★ **CANADIAN UNIVERSITIES CANNOT MEET** the demands of industry in the supply of electrical or electronic engineers. As a result a "man-hunt" for electronic engineers and technicians is being conducted in Great Britain by Canadian industries and it is expected that the hunt for trained personnel will extend to the Continent.

(Turn to page 42)

NEW!

Q STANDARD

TYPE 513-A

Q measurements to ±3%

Here, for the first time, is a Q-Standard which provides an accurately known Q and reactance for precise measurements. It also provides a convenient way to check overall Q-Meter performance.

This Q-Standard consists of a specially developed winding of Litz wire on a low loss, stable, steatite coil form which is mounted in a hermetically sealed copper shield can filled with dry helium; individual calibration data appears on a decal. A convenient wooden carrying and storage case is included with each unit.

Each inductor is calibrated in terms of effective Q (Q_e); nominal circuit Q (Q_i) readings for the Types 160-A and 260-A Q-Meters are also provided.

Due to the construction of the unit, humidity has negligible effect on the electrical characteristics. Temperature correction data for Q_e is furnished; L and Cd have negligible temperature coefficients.

- **Hermetically sealed against humidity effects.**
- **Inductance accurate to ±1%.**
- **Temperature coefficient data furnished.**

SPECIFICATIONS:

INDUCTANCE (L)

Nominal Value: 250 μh Accuracy: ±1%.

DISTRIBUTED CAPACITANCE (Cd)

(When mounted on Type 160-A or 260-A Q-Meter).

Nominal Value: 9.0 μμf. Accuracy: ±2%.

EFFECTIVE Q (Q_e)

(Specified at 0.5, 1.0, and 1.5 mc. and 22°C).

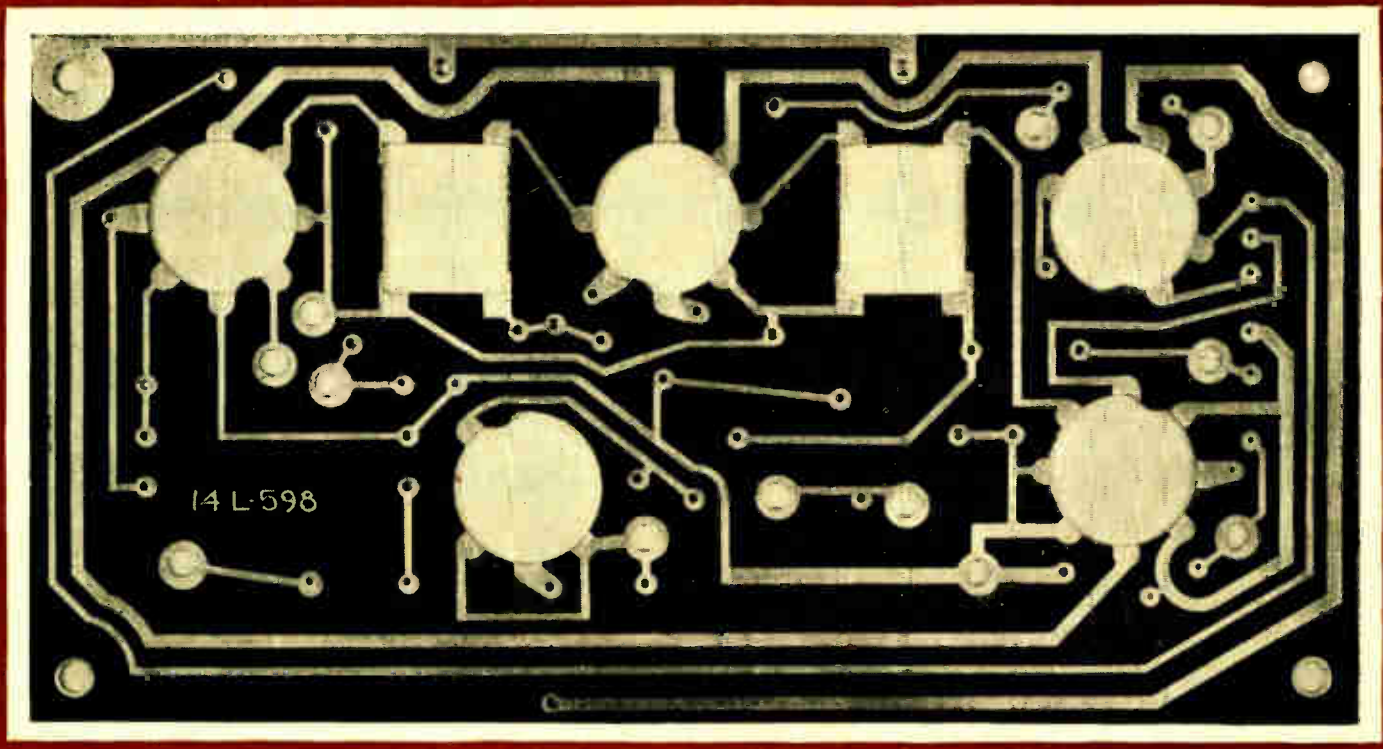
Nominal Value: 180 to 250

Accuracy: ±3%.

BOONTON RADIO Corporation

BOONTON · N·J · U·S·A

RCA VICTOR COMPANY LTD., 1001 Lenoir St., Montreal 30, Que.



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Circuit above printed by Canadian Name Plate Co. for Canadian Westinghouse Company Limited.

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Today manufacturers of Radio, TV and Electronic equipment are investigating the possibilities of Printed Circuitry. Recent developments in this field have proved that production of radio chassis can be increased greatly at a reduced cost, as well as eliminating the chance of human error.

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E&C EDITORIAL

Industrial TV--Tool Of Industry - - -

Ever hear of TV? Practically everyone has. Ever hear of I/TV? Maybe you have and maybe you haven't but it's a sure bet that if you're concerned with the operation of a business, big or small, you'll hear about it pretty soon and in pretty loud terms.

The letters I/TV stand for industrial television and it's destined to have the same impact on business management that ordinary TV has had on the entertainment habits of millions of Americans.

Industrial television holds fair promise of providing industry and commerce with a facility, the benefits of which will equal those resulting from the invention of the telephone.

Already I/TV has been used effectively for plant security, deep sea salvage, to provide visual observation of industrial processes heretofore physically impossible, to diseminate and collect visual information of every description and to display and sell merchandise to buyers thousands of miles distant. In short, I/TV is performing functions so diverse and so far beyond the previously accepted realm of possibility that new uses for it are difficult to conceive by virtue of its fantastic capabilities.

At present there are only a few hundred applications. Possible applications though may be numbered in the thousands each with the ability to save either time, money, labor or material.

It can be said without fear of overstatement that the value of industrial television should be examined by businessmen with the same profound concern and consideration they would give to the expenditure of capital for the establishment of an extra department or the construction of an additional plant. Industrial television is just that important and time, we think, will prove us right.

Hang Up Grandma--You're Draining The Battery - -

Somewhat belatedly we've just finished reading the "Report To The Hydro Electric Power Commission Of Ontario Concerning Rural Telephone Service In Ontario". The report was prepared by the Rural Telephone Committee of the Ontario Hydro Commission and is a commendable work based on exhaustive research into the conditions of rural telephone systems in Ontario. The report confirms our opinion that there is much to be desired from many of the rural telephone systems in the province.

Independent systems provide approximately one-half of the total telephone service in the rural areas of Ontario and the quality of service in many instances is anything but flattering to an industry whose obligations to 95,000 rural telephone subscribers leaves so much to be desired. With due respect and consideration to the financial and physical difficulties which confront many of the smaller independent telephone systems, difficulties which have been duly recognized and fairly treated in the report of the Rural Telephone Committee, there is little to condone the hodge-podge condition of the industry when it is considered as a whole.

Many of the industry's shortcomings may be blamed on the complexities which are consequent to diverse ownership of many small independent systems and the varying conditions of the local areas they serve as pointed out in the report. There can be little excuse, however, for the lack of collective interest and action on the part of the industry as a whole to at least appraise the conditions of their own business and initiate some plan of action designed to remedy its deficiencies.

Rural telephone service has performed a valuable service in Ontario in the past. Its future role will be even more important as industrial development reaches out to the rural areas. Its capability of performing this task will depend on progressive collective action on the part of the industry as a whole. It is poor policy, in our opinion, for the larger and more successful rural companies to sit back content with their individual success when their continued success may well depend on the future co-operative ability of the smaller and less financially successful rural telephone systems, many of which, in their present condition, are sorrowfully inadequate to blend into any co-operative communications hook-up which future developments may require.

Recognizing the need of improvement in the rural telephone systems of Ontario as being in the public interest, the Rural Telephone Committee has as its present duty the job of promoting the required interest on the part of the industry itself. It is hoped that the impetus provided by the existence of the Rural Telephone Committee will be sufficient to evoke some practical plan of co-ordination and co-operation from the industry. By this means, surely, they may serve the public better and enjoy greater success themselves.

. . . new ideas for your business

CAE's new electronics centre located on Cote de Liesse Road, Montreal. "Canada's Most Modern Electronics Plant"

from **cae**'s great new electronics centre

Industrial applications for electronics are being discovered almost daily . . . bringing higher quality, more efficient production.

The combined experience of **cae's** 400 engineers and technicians—more than 4,000 man-years—places **cae** at the genius level on the electronics I.Q. scale.

In the hands of this versatile team, **cae's** great *new* electronics centre, fitted with the most modern instruments and equipment, provides Canadian Industry with the most advanced electronics know-how.

Make it *your* business to take advantage of **cae's** engineering research, design and manufacturing facilities!

CAE manufactures Du Mont Television Sets, designs and manufactures radar, communications and industrial electronics equipment, and high fidelity audio systems.

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THE LARGEST CANADIAN-OWNED ELECTRONICS COMPANY

The Editor's Space

A. W. Paulson, chief electronic engineer of the Otis Elevator Company and one of North America's foremost electronic authorities tells me that he foresees the possibility of elevators being operated without cables. Mr. Paulson visualizes the day in the not-too-distant future when atomic power capsules will be installed on elevator cars to propel them.

* * *

Dave Bridgman, General Manager of P.S.C. Applied Research tells me of some of the mighty interesting projects that his company is working on. Was particularly interested to hear that P.S.C. (Photographic Survey Corporation) is currently carrying out a survey of the Pakistan Republic.

* * *

Congratulations to Messrs. Evans, Wardell, Baker, Sinclair and Mills for the fine exhibit of Decca navigational radar equipment displayed at the National Boat Show held in Toronto a while back. My apologies if I appeared to be a little hazy on the intricacies of the equipment which you were good enough to explain to me.

* * *

Visited with Messrs. J. A. King and R. J. Bull, sales department officials of I.B.M. in their new plant on Don Mills Road recently. Have to admit that the new plant of I.B.M. beats anything I have yet seen in the industrial plant category. Architecturally it may be described as long, low and luxurious.

* * *

Toured the engineering department of C.G.E.'s Lansdowne Plant recently through the courtesy of Bill Holroyd, Sales Manager, Electrical Equipment, and met Mr. Haines, Manager of Technical Services. Mr. Haines heads the department which services equipment installations scattered over the face of the globe. Got any batteries you'd like charged around the south of France, Hawaii or Capri, Mr. Haines?

* * *

More than enjoyed the 33rd anniversary party of D. M. Fraser Limited at their new plant on Birchmounte Road. That's a fine building you have there Mr. Fraser and we wish you every success in your new location. Sorry I couldn't hang around long enough to witness the slicing of that big salmon and ham that adorned the buffet table but that's the way it goes.

* * *

Everybody's building new plants or enlarging existing facilities these days. Stark Electronics out at Ajax recently celebrated the addition of two new buildings to their facilities. The roast beef dinner that followed the official tour of Mr. Stark's plant was just the thing needed to replenish the depleted energy of his guests after walking through something like three miles of corridors and buildings.

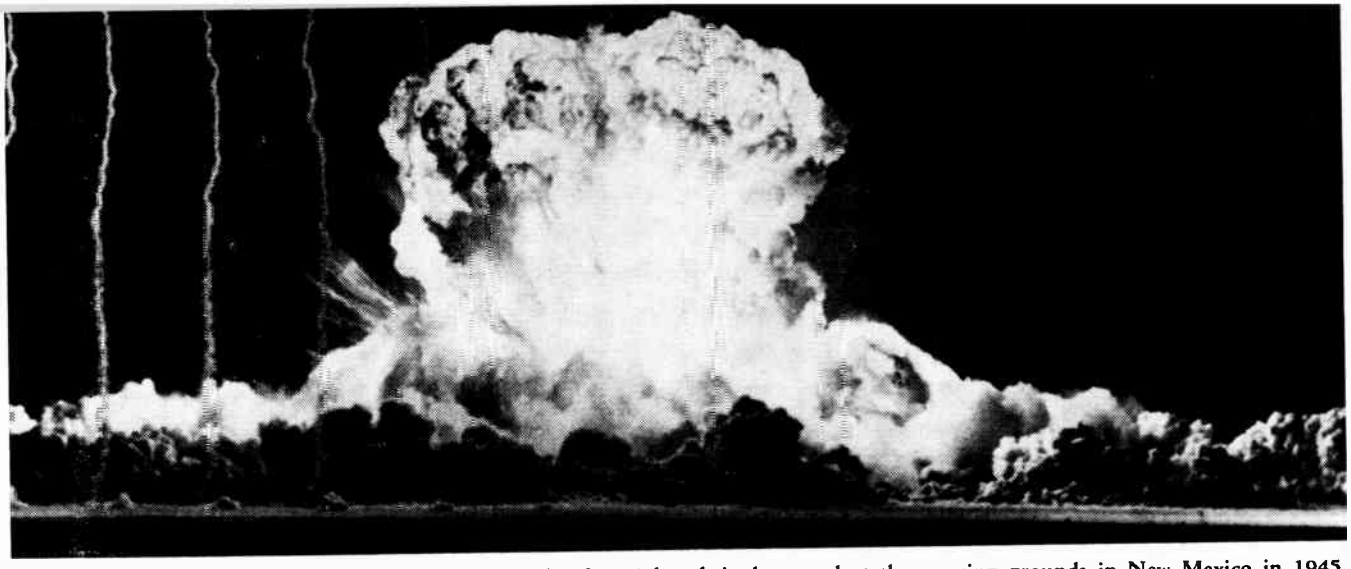
* * *

Another fine display of marine radar equipment exhibited at the National Boat Show in Toronto recently was that of Canadian Marconi. Messrs. Baillie, Banks and Morphet were in charge of this fine exhibition.

* * *

Minneapolis-Honeywell engineers are reportedly working on a lawnmower that will cut the grass while the operator sits on the porch and barks instructions at it. It will, according to reports distinguish between grass and flowers. Since this writer has just become the owner of a humble suburban home surrounded by a frightening expanse of grass — so called — I wish the experimenters working on the project rapid success and I will delay the planned purchase of a goat.

(Turn to page 45)



● Forerunner of the first of the alphabet bombs the first A-bomb is detonated at the proving grounds in New Mexico in 1945. This detonation ushered in the era of atomic warfare bringing to the fore the necessity of many new defenses including improved communications.

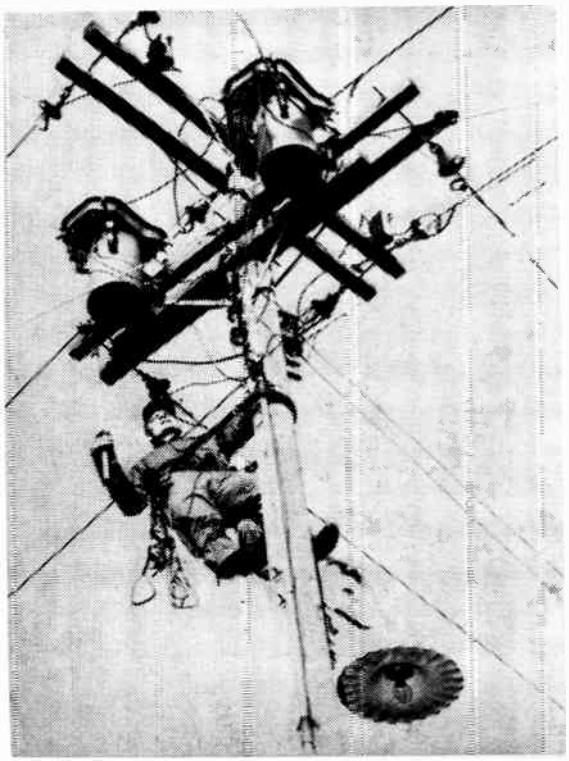
Communications For Civil Defense

By D. S. Robertson
Chief, Civil Defense Communications Division
Department of National Health and Welfare

The importance of communications in Civil Defense is obvious. Unless rapid and effective communication is established and maintained within local civil defense organizations, and with Provincial and Municipal as well as with Federal authorities, Civil Defense machinery will not be able to function properly when needed.

The system will have to be flexible so that the various services which are extensively dependent on an efficient system will at all times be able to be in touch with the persons in charge of, and directing operations. If any one normal means should fail, another must be available to take its place.

COMMUNICATIONS Services for civil defense purposes must provide for continuous exchange of messages within the target area; must permit exchange between target areas and adjacent communities; must enable administrative and control messages to be exchanged between target area control centers and zone control, between the latter and Provincial headquarters to reception areas that provide mobile support and welfare services.



● Maintenance of power and communication lines to assure continued interchange of information will be necessary in time of national emergency.

Fullest possible use and integration of existing facilities is most desirable for many reasons, such as to effect economy, to secure desirable co-operative interest and community spirit, and in the case of radio, to employ services that are already equipped and have frequency allotments that in themselves are scarce. Some of the services that will normally be engaged to a very large extent, such as the police and fire services, have their communication systems in operation at all times. A particular locality or city must, of course, determine the best application of services and facilities, taking into account those that already exist.

Objective

The main objective of any Civil Defense organization, after an attack, is to assist the distressed public and to repair and restrict damage resulting from raids as quickly as possible. Adequate and efficient communications are consequently necessary and of the most vital importance.

The following is a definition of Civil defense communications. "Communications or signals essential to the conduct of Civil Defense activities of duly authorized Civil Defense organizations, including communications directly concerning safety of life, preservation of property, maintenance of law and order, alleviation of human suffering and need, and dissemination of warnings of enemy attack to the civilian population in case of actual or impending armed attack or in any disaster or other incident endangering the public welfare. Such communications may also include transmissions necessary to establishment and maintenance of the radio system and communications essential to the training of personnel engaged in Civil Defense activities." While communication services take a leading part in all phases of Civil Defense, it is obvious that those focused upon the Control Center are of initial importance.

Radio Services

To supplement or extend other means of communication available to the Civil Defense organization or to provide necessary communications for which no other means exists, all local radio stations and networks should be organized by the Civil Defense authority of the area concerned. Such stations and networks should include all those that are intended to be included in the Civil Defense communications plan of the area concerned. Provincial and municipal authorities, in planning their communications arrangements for Civil Defense purposes, should utilize the assistance and experience of all qualified radio personnel. Some of the best qualified sources are:

(a) Police and Fire radio system engineers.
(b) Radio Engineers connected with Provincial Governments.
(c) Federal Government Radio In-

● Established communications services of police departments will be called upon to play a vital role in civil defense measures.

spectors and Engineers.

(d) Qualified Engineers from established radio sales and service organizations.

(e) Amateur Radio Operators and Clubs.

Equipment installed for Civil Defense purposes should have the highest possible efficiency in utilization of spectrum space as there is a recognized shortage of channels available for assignment. Existing facilities should be used to the fullest extent possible.

● A full range of equipment will be necessary including walkie-talkie as shown above to provide adequate communications facilities.

In order to keep spare stocks and service complications to a minimum, consideration should be given to the selection of equipment in relation to the availability of local service and the supply of replacement parts.

Intra-Area Service

Radio equipment provided in the Control Center should be capable of establishing two-way contact with various services such as police, fire, taxis, public utilities, etc. It is to be noted that the Center does not operate the fire and police radio networks but must keep in touch with them, and other Services through facilities organized under the guidance and planning conducted by Civil Defense authorities. To provide for "back-up" facilities between Target Areas and mutual aid and reception areas, arrangements should be made to provide transmitter-receiver equipment for communication with adjacent communities and zone headquarters. Existing facilities such as amateur stations enrolled in Civil Defense might be organized into a suitable network for this purpose. If however, this cannot be done it would be desirable to make other definite arrangements.

Communications Plan

Communication planning for Control Centers, should be simultaneously tied into the overall planning. By this it is envisaged that each Municipality or Target Area should:

(a) survey all available facilities

(b) study the needs of the particular area

(c) draw up a plan based on these factors

The survey essentially should be an inventory of such services as those associated with fire, police, and hydro services, taxis, construction companies, city utilities, etc.

The needs of the area should take into consideration whether it is a target area, reception area, mutual aid or mobile support area.

The plan should include a record of available and required operating personnel that are, or to be enrolled in Civil Defense for communication purposes.

In the case of radio facilities and services it should of course include details of frequency bands planned to be used and the number of stations, including net control stations, to be operated in each band. Suitable operating procedures are essential and this requires careful study towards adoption for liaison with other networks in adjacent areas, such as inter-area, inter-provincial, and trans-border communications.

This Municipal or Target Area plan should be submitted to Provincial authorities so that it may be properly co-ordinated with other Municipal plans and to tie-in with the overall Provincial communications plan. Provinces will no doubt organize their facilities and services in a manner to establish co-ordination and liaison with adjacent provinces. Provincial plans should be sent to the Federal Civil Defense authority for co-ordination with the national and international communication arrangements. In this way it is most likely that a uniform well integrated system of communications will be available for use in an emergency.

Provincial Radio Services

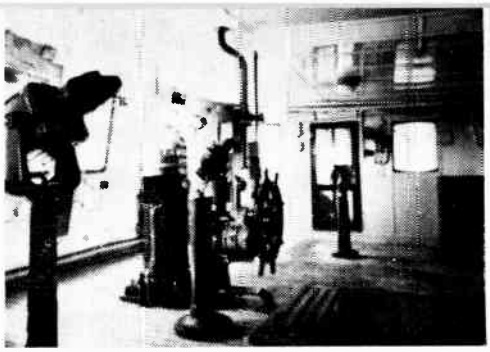
Many Provinces have radio systems established in connection with their

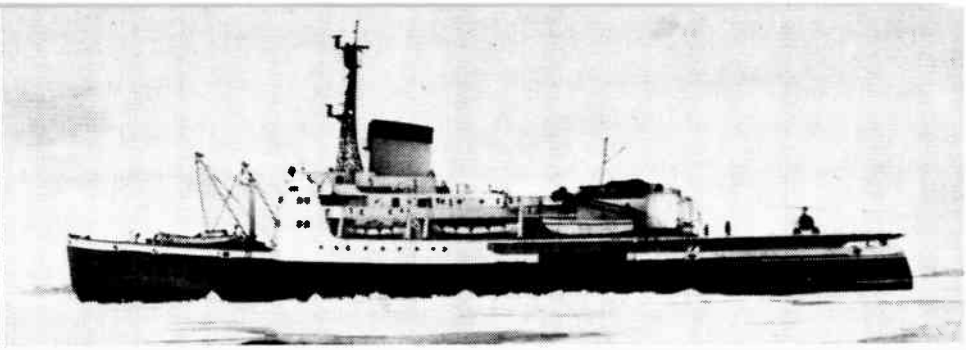
(Turn to page 26)

● Efficient fire-fighting will depend to a large extent on the ability of authorities to get information where it is needed with the least delay.

It is essential to reiterate and emphasize that communications are extremely vital to the successful operation of Civil Defense Services. Communications are the life blood of Civil Defense. Communications are consequently a very precious element of our resource and must not, therefore, be misused in planning any system on any level. Existing facilities must be well and thoroughly considered so that they can be used to the best advantage. Action to develop and establish an entirely new system of communications for Civil Defense purposes might only lead to the dissipation of stockpiles of critical equipment and material that might be urgently needed in other phases of Defense.

Finally, the essence of a good Civil Defense organization especially as far as vital communications are concerned is to adopt and follow a firm program of preparedness.





● *Left:* The spacious bridge of the ultra modern Canadian ice breaker d'Iberville. At the *extreme left* of the picture can be seen part of the up-to-the-minute radar scanning equipment with which the vessel is equipped. *Right:* a profile view of the d'Iberville.

Navigation----

Radar Probes The Canadian North----

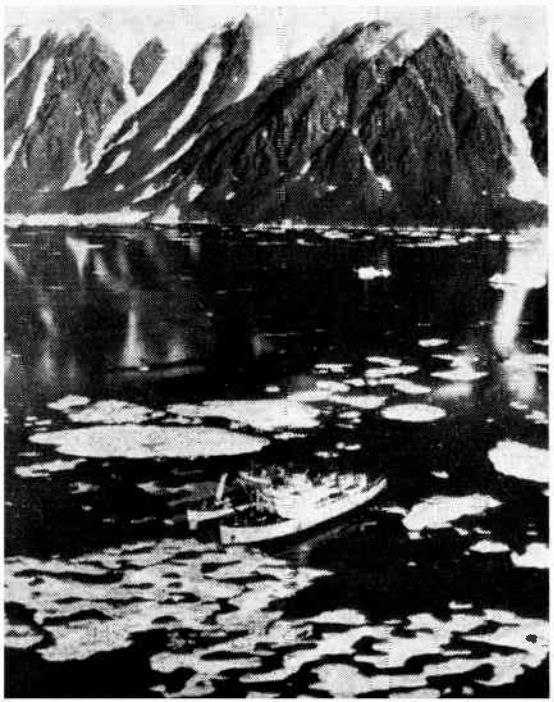
LAST year's "all-time" record for the opening of the Montreal channel way has been clipped by five days and the early opening of this important seaway has meant a personal triumph for Captain Charles Caron in command of the C.G.S. "d'Iberville" which led the team of icebreakers engaged in their yearly task.

The C.G.S. "d'Iberville", Canada's and the world's largest icebreaker, has thus completed her first winter operation since the Department of Transport took delivery of this vessel from Davie Shipbuilding Limited, Lauzon. The "Queen of the Arctic", as the "d'Iberville" is justly titled was built to the Department of Transport's specifications and into this unique vessel went all the modern techniques of ship design and is a just reward for the many years of study and planning carried out by the Department's marine engineers. This powerful ship, quite apart from her role as icebreaker, is designed to carry out a multitude of tasks including the carrying of large numbers of personnel and tons of cargo to the farthest outposts of Canadian civilization with a degree of comfort and safety never before attempted. Her huge fuel tanks will carry her 12,000 miles without refuelling and the "d'Iberville" is equipped with a flight deck for the two Bell helicopters which are carried for low level aerial photography, charting, rescue work and long range navigation through uncharted waters.

Radar Equipment

The hazards of such navigation are lessened by the many and varied aids to navigation with which the "d'Iberville" is equipped and amongst these Radar plays an important part. The radar facilities are provided by the Decca Marine Radar Type 12 with the main display situated in the wheelhouse and a remote display on the upper Bridge deck. These two displays each provide a 12 inch picture with range scales of 1, 3, 10 and 25 miles and with a minimum range of 25 yards — such high discrimination is an essential in waters where icebergs and growlers are commonplace. Azimuth Stabilization working in conjunction with the Gyro Compass is available on both of these displays and in addition the "d'Iberville" is equipped with a completely independent installation of a Decca Radar Type 159B providing a 7 inch display, mounted in the wheelhouse, covering ranges of ½, 1, 3, 10 and 25 miles. Both the scanning antennae for these two radar equipments are mounted on special mast brackets and the reliable operation of the radar scanners is assured by electrically heated jackets under thermostatic control.

The C.G.S. "d'Iberville" took part in the Coronation Naval Review at Spithead last year and the increasing use of radar as a primary aid to safety at sea was amply demonstrated by the great array of scanning antennae which were easily recognizable on the majority of this great assembly of warships and merchantmen.



● Jagged cliffs and dangerous ice-flows makes radar a necessity to navigation in the Canadian Arctic.

Effective Presentation

A new how-to-do-it booklet for business firms tells how tape recordings and color slides can be combined to tell a story or convey an idea in an interesting and effective manner at low cost.

The 20-page illustrated booklet is entitled *How to make your own slide film presentations for less than $20*, and is available free from the publisher.

The booklet points out that both small businessmen and large industrial organizations are faced with the problem of getting ideas across to their salesmen and employees, and although the audio-visual method is highly regarded, its cost is often considered prohibitive.

However, it continues, effective presentations using magnetic tape and 35 mm slides can provide an effective solution and, in many cases, can be produced without professional help.

Many Uses

Typical situations where this audio-visual method can be profitably applied are in sales training, employee indoctrination and training, and in sales meetings, as well as many others.

Five easy steps required to produce a sound-slide presentation are outlined — make a picture script, take pictures, organize slide sequence, arrange recording session, and tape-record the commentary.

Additional tips and important details about each step are also included in the booklet, together with a list of equipment needed, a word about costs, and advice on additional expenditures for items such as sound effects and title cards.

In addition to the extremely low cost of the company-produced sound-slide presentation, there are other advantages, the booklet states.

(1) Company experts, the men with the product knowledge and know-how, even though they are not public speakers, can effectively address themselves directly to a company audience.

(2) There is no loss of small but important details through interpretation by a third party.

(3) There is a definite air of realism and authenticity rarely ever achieved by professional productions.

The Canadian Room - - - -

Host To Canadian Government, Industry, Armed Forces Officials In New York — March 21st-25th

AN oasis of rest and refreshment for foot-weary Canadian visitors to the four-acre display of exhibits at the recent I.R.E. Convention was the Canadian Room, the first to be operated during the I.R.E. National Convention held annually in New York City.

The Canadian Room in the Hotel Commodore was attended by more than 250 visiting Canadians including representatives from the three armed services, The National Research Council, Defense Research Board, Department of Transport, Post Office Department and the Department of National Defense. Business owners and representatives of firms serving the Canadian electronics and communications industries from coast to coast in Canada registered in at the Canadian Room to meet friends and business colleagues.

The Canadian Room was organized to fill the need for a meeting place for the many Canadians who attend the I.R.E. National Convention every year in New York. This year with the splitting of the convention and show between the Waldorf Astoria Hotel and Kingsbridge Armory the Canadian Room proved especially valuable to Canadians and provided a focal point for contacting and entertaining their friends and business associates.

Next Year Too

Consensus of opinion of visitors to the Canadian Room was that it filled the gap which had been felt by Cana-

(Turn to page 71)

● A few of the more than 250 representatives of Canadian government and industry who visited the Canadian room at the Hotel Commodore during the I.R.E. National Convention held in New York City, March 22nd to 25th were caught by Electronics and Communications candid camera. Shown in the adjoining photographs are: George Glinsky, Computing Devices of Canada; Larry Borth, A. V. Roe; C. E. Jagger, C.G.E.; J. M. Toye, C.G.E.; R. Mueller, C.G.E.; R. F. Johnston, Adalia Ltd.; Fred Heath, C.G.E.; Dave Dalzell, P.S.C. Applied Research; Laveen Kanal, C.G.E.; H. Roy Gray, H. Roy Gray Co., Ltd.; Morley Patterson, Rogers Majestic Electronics;

J. S. Brown, Andrew Corp., Ltd.; J. W. McLeod, Andrew Antenna Corp., Ltd.; F. Hanna, P.S.C. Applied Research; A. Russell, A. Fuller, J. S. Parsons, Computing Devices of Canada; D. R. McAuley, Clyde Adams, Adams Engineering; E. H. Miller, Acme Electronic Corp.; Henry Gusciora, Jules Kadish, John R. Cann, Bruce McCafrey, Avionics; Ken Hovington and Dick Richards, Cossor (Canada) Ltd.; Fred Smith, C.G.E.; Norton W. Kingsland, Age Publications Ltd.; Bill Clelland, Arrow Radio; Dick Rogers, Canadian Electronic Equipment Co., Ltd.; Pete Heenan, P. J. Heenan Ltd.; J. Morella, Sealtron; Bert Swinton, Bill Thompson, Rogers Majestic; Ivor Lesile, Avco of Canada; James O'Reilly, National Fibre Co., of Canada; H. E. Fisher, Crosley; L. R. Wood, Ferranti Research Division; Jack Murray, Leonard Electric; Robert J. McCormick, Canadian Marconi; C. D. Murdock, Radio Condenser; R. P. Matthews, Federal Electric; F. P. Taylor, A. T. R. Armstrong Ltd.; M. G. Heaviside, American Machine and Foundry; E. D. Lomas, Art Ainley, Rogers Majestic Electronics; H. A. Ferris, N. L. Stoddart, and D. G. MacKenzie of Trans-Canada Airlines; S/L N. Levitin, R.C.A.F.; W/C J. R. Wright, R.C.A.F.; S. G. Carew, C.G.E.; P. Humeniuk, C.G.E.; Sam Percy, New York Representative, Age Publications Ltd.; S. S. Stevens and Bernie Porter, Douglas Research and Development Group; Bob Chisholm, University of Toronto; Karl Horn, Motorola Canada; Fred Topping, Radio Condenser Co.; A. J. Felice, Atomic Energy of Canada Ltd.; Doug Parkhill, Computing Devices of Canada; Ernie Drouin, Radio Station CFNS, Saskatoon; Stan Smallwood, S. T. Smallwood Ltd.; Bert McCormack, Canadian Marconi; Clare Fraser, Electronic Associates; Jack Argyle, Department of National Defense; P. Nogy, Canadian Aviation Electronics; Jack Cartwright, Aerovox Canada Ltd.; Walter H. Furneaux, Vice-President, Aerovox Corp., New Bedford, Mass.; H. M. Wong and J. L. Wilson, Union Plastics Corp.; E. Farvolden and Bill Morris, R.C.A.; C. F. Kodera and G. F. Eckert, Sperry Gyro, California and New York; Ray W. Pierce, Sperry Gyro Canada; Manuel Prieto, Evelyn J. Zahler, and Edward Spacek of Reeves Instrument Corp., New York; W. J. Cheeseman and Jim Gray, Canadian Westinghouse Co., Ltd.; Len Davidge and Ralph Hackbusch, Hackbusch Electronics; Doug Peacock, Computing Devices of Canada and Mr. and Mrs. John Root, R.O.R. Associates Ltd.

● W. J. Reid, President of the Otis Elevator Company *left*, and W. H. Bruns, electronic expert who designed the Otis Autotronic Elevator are shown examining a mock-up of the control panel by which the modern elevator can be made to think for itself.

Building Trends Call For . . .

Autotronic — Elevators

ELECTRONIC elevator systems which program their own operation to conform with the flow of traffic are being installed in no less than seventeen large buildings from coast to coast in Canada, and are expected to cut operating costs by many thousands of dollars every year.

Controlled by an "electronic brain" panel the travel of the elevator cars is supervised through all six major traffic patterns — Up-Peak; Heavier-Up; Balanced Heavier-Down, Down-Peak, and Night.

● Glittering array of buttons used to control and program new autotronic (electronic and automatic) elevator systems.

Once the traffic pattern is established, the elevator cars are adjusted to such things as surges, measures passenger waiting time, prevents overlong waits, and even picks up "the forgotten man" who might have been overlooked in the 5 p.m. rush.

Operating without the need of attendants, the autotronic elevator cars are equipped with floor push buttons and at each stop, automatically open and close their doors and proceed to the next stop.

It has been found, that in office buildings, hotel and hospitals, the Up and Down traffic is about equal during a large part of a normal working day, while in large department stores, the Up-Down traffic is balanced most of the day. Thus, autotronically controlled elevators can give steady Up-Down service without normal delays, and thus affords particular value during such times as Christmas and Easter shopping, visiting hours at hospitals, convention crowds at hotels, and the starting and ending of the 9-5 days in office buildings.

Ups And Downs

Here in brief is an illustration of the autotronic's operation during an average day:

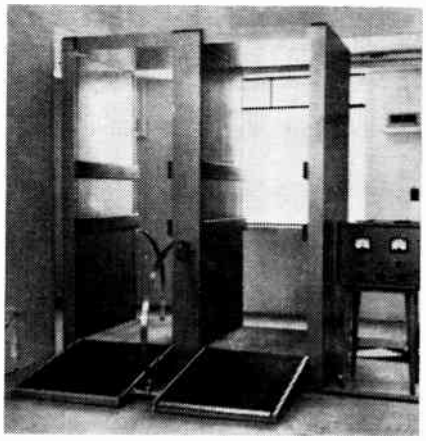
Cars are automatically dispatched from both top and bottom floor terminals at regular and frequent intervals, and a car that has made a fast trip is never held back to wait for a slow car. Cars that are delayed en route to their terminals can be passed by other cars without disrupting the schedule Cars are actually *forced* automatically and electronically to make up for lost time. An UP car that is late, for instance, may be reversed before it reached the top if there are no unanswered calls above it. A car that is late arriving at a lower terminal may have its waiting time reduced.

All without human aid; all completely automatically.

Drop The Gun Louie..!

SECURITY precautions in reform institutions has been greatly increased by the application of electronics. A metal detecting instrument designed by a Canadian firm for the purpose of detecting metal carried on persons visiting inmates of prisons and to prevent prisoners from concealing files, broken hacksaw blades or any other metal on their bodies and smuggling them from the prison workshops to their cells has been installed in several Canadian reform institutions.

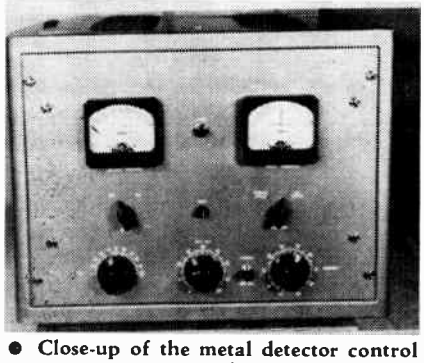
Though the instrument was originally designed for security purposes its usefullness covers a wide range of industrial applications. Used on a



● Metal detector at *right* protects entrances to all security areas.

conveyor system the unit will detect objects the size of a pin head in a loaf of bread or will locate a two inch nail in a log eight feet in diameter.

Fundamentally the instrument is an electronic bridge. It is capable of discriminating between ferrous and non-ferrous metals, a characteristic which makes it particularly valuable in prisons where inmates are per-



● Close-up of the metal detector control panel.

mitted to carry such objects as brass cigarette lighters, but where Colt pistols, cold chisels and claw hammers are discouraged by the management.

FOR OVER TWENTY YEARS CANADA'S LARGEST

makers of Electronic Instruments for every use!

STARK

FINE INSTRUMENTS

Whenever accuracy and reliability are of the utmost importance, you'll find that Stark Electronic Instruments are best for the job! These fine instruments are extremely sensitive. They are precision built . . . designed to operate dependably for years and years.

You can use them for electronic measuring on any job . . . and be sure you're getting maximum accuracy! Write today for technical bulletin on any one of these fine Stark Electronic Instruments.

A COMPLETE RANGE OF

- Dynamic Mutual Conductance Tube Testers
- Vacuum Tube Voltmeters
- Emission Tube Testers
- Cathode Ray Oscillographs
- Volt-Ohm-Milliammeters
- Signal Generators
- Panel Meters

STARK ELECTRONIC INSTRUMENTS LIMITED

Head Office and Factories: Ajax, Ontario.
Foreign Division: 276 West 43rd Street, New York 36, N.Y., U.S.A.
Canadian Sales: MJS Electronic Sales Ltd., 2028 Avenue Rd., Toronto, Ont.
Cables: Starkex, New York.

STARK

fine instruments

Five cell indoor metalclad switchboard built by English Electric, containing Stark panel meters.

Making poise weights for balancing meters in one of the Stark plants.

Service Bench at Howard Radio Co., showing Stark test equipment in use.

NEWS

A. J. James, General Manager Copper Wire Products Ltd.

Mr. A. J. James has been appointed General Manager of Copper Wire Products Ltd., at their new location, 300 Campbell Ave., Toronto.

Mr. James brings 25 years of transformer technical experience to his new position, which started as shop apprentice at The English Electric Co. Ltd., Stafford, England, in 1929. His experience also includes nine years as Senior Transformer Engineer with Hackbridge Electric Construction Co. Ltd., and 2 years in the same position with The General Electric Co., Birmingham. From 1946 to 1948 Mr. James was General Manager of Messrs. Power Construction Ltd., Wellington, N.Z.

A. J. JAMES

Mr. James is a member of the Association of Professional Engineers of Ontario (Electrical Branch), Associate Member of the Institute of Electrical Engineers (AMIEE) and a Member of the American Institute of Electrical Engineers.

Television-Radio Division Of Westinghouse Moves To Brantford

The Television-Radio division of Canadian Westhinghouse Company Limited, Hamilton, will be transferred from Hamilton to new manufacturing facilities to be leased from Behr-Manning (Canada) Limited of this city, H. H. Rogge, President, has announced.

This new industry in Brantford will manufacture the full line of Westinghouse television and radio receivers. The new plant is expected to open early in May.

The new move to Brantford is due primarily to the growth of defense production in the Electronics division in the west plant in Hamilton. This building at present houses both the Television-Radio division and the Electronics division of the company.

The Manager of the new Canadian Westinghouse plant will be Harry E. Rice. E. Olsen will be Manager in charge of engineering, and the Sales Manager will be Julian Tuteur. A number of other key personnel will move to Brantford when the plant is ready for occupancy.

AUTOMATIC ELECTRIC SALES STAFF APPOINTMENTS

Mr. C. R. Hughes, President of Automatic Electric Sales (Canada) Ltd., with head office at Toronto, announces the following staff appointments.

R. W. Robb formerly supervisor of telephone sales in Toronto becomes Winnipeg District Manager with headquarters at 115 Phoenix Bldg., Winnipeg.

W. R. Boast, previously engaged in sales and field work in Montreal is named Toronto District Manager.

C. H. Begg, in charge of telephone sales in the Montreal District, becomes Montreal District Manager, with headquarters at 54 Decarie Blvd., Ville-St. Laurent, Montreal 9.

L. C. Kelly, in charge of Telephone sales at Vancouver, becomes Vancouver District Manager with headquarters at 527 West 8th Avenue, Vancouver.

R. W. ROBB W. R. BOAST C. H. BEGG L. C. KELLY

Donald Blackman To Maritimes For Canadian Admiral Sales

Stanley Lundy, Vice-President in Charge of Sales of Canadian Admiral Corporation, Ltd., announced today the appointment of Donald Blackman to the Sales Department of Canadian Admiral Corporation, Port Credit, as Regional Manager for the Maritime Provinces. Mr. Blackman will make his operating headquarters in Halifax, N.S. He has had considerable experience in the radio, television and appliance field. In addition to sales and sales promotion with manufacturing companies, Mr. Blackman's background includes advertising and merchandising experience with Stewart-Bowman-Macpherson, Ltd., advertising agency. He was with this company when he joined Admiral. Previous to this association Mr. Blackman was assistant sales manager of Addison Industries, Ltd. Earlier he held a sales position for a number of years with Canadian General Electric. Mr. Blackman is a native of Haileybury, Ontario.

Adams Engineering Appointed Agents For Prodelin

Prodelin Incorporated of Kearny, New Jersey has appointed Adams Engineering Limited of Toronto and Montreal as their Canadian representatives.

Prodelin are manufacturers of Air Dielectric Co-axial Transmission Lines and Waveguide for use in Microwave, VHF Communications and Television. Antennas and accessories for all VHF and UHF communications services.

New catalogs describing these products have just been released and are available from Toronto and Montreal.

J. W. Pearce Appointed Ontario Sales Representative

J. W. Pearce has been appointed Ontario Sales Representative for P & S Wiring Devices, it has been announced by Mr. M. J. Kennedy, General Manager of Renfrew Electric & Refrigerator Co. Ltd. Mr. Pearce has had five years' technical experience with the Bell Telephone Co. and several years' sales experience.

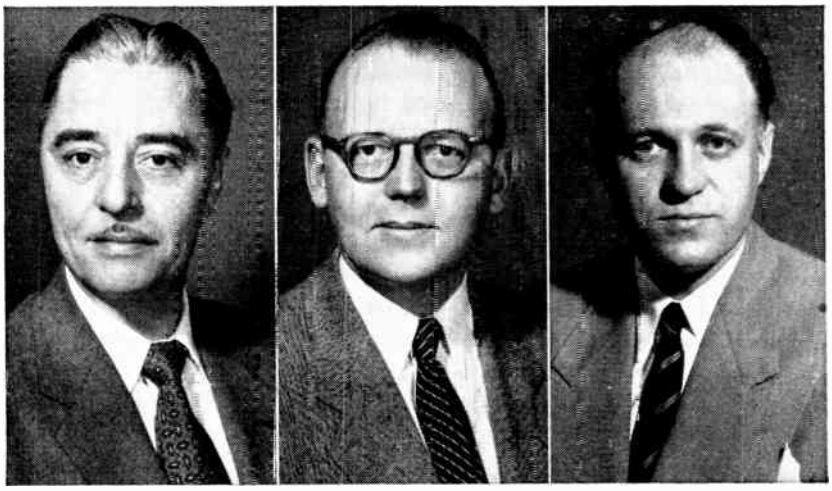
His office will be at 351 Carlaw Ave., Toronto, Ont.

Acme Electric Represented By Adams Engineering

Acme Electric Corporation Limited announce the appointment of Adams Engineering Limited, Toronto and Montreal, as representatives for their Electronic products.

Acme Electric are producers of Transformers for Radio, Television and Electronic equipment and hold JCNAAF-T-19 approval for Hermetically Sealed units.

AUTOMATIC ELECTRIC SALES STAFF APPOINTMENTS



C. L. LITTLER R. C. FAWCETT E. E. HUCAL

Mr. C. R. Hughes, President of Automatic Electric Sales (Canada) Limited, with head office in Toronto, announces three staff appointments to supervise the company's expanding sales activity from coast to coast. C. L. Littler is named Manager for Telephone Sales; R. C. Fawcett, Manager for Carrier Sales; and E. E. Hucal, Manager for Communication Wires and Cables Sales.

Prior to joining Automatic Electric in 1947, Mr. Littler had extensive previous communication experience in Canada and abroad and recently he has been in charge of telephone sales in the Winnipeg district.

Mr. Fawcett has had broad experience in carrier communication. Since joining Automatic Electric in 1950 he has been supervisor of carrier equipment sales.

Since joining Automatic Electric in 1947, Mr. Hucal has specialized in wire and cable sales and applications. Previous to his present appointment he was in charge of the Regina office.

Sharpe Instruments Enter Electronic Field

Sharpe Instruments Limited manufacturers of geophysical instruments have announced that they have entered the electronic field in the production of instruments. First electronic instrument turned out by the firm is their MD-21 Metal Detector.

D. RICHARDSON

Concurrent with their entry in the electronic industry is the firm's move to new and larger quarters situated at 6080 Yonge Street in Toronto. The new premises of the firm provides five thousand square feet of floor space in a new two-storey structure which includes instrument, electronic and machine shop departments.

Mr. D. Richardson, is the Sales Manager of the company.

Sealtron Forms Canadian Company

G. R. Morello has recently announced the formation of The Sealtron of Canada Company Limited. Parent firm of the new Canadian company is the Sealtron Corporation, Cincinnati, Ohio.

Sealtron of Canada Company Limited now in operation in Canada will specialize in the manufacture of glass to metal seals used principally in hermetically sealed electronic components. Sealtron products in Canada are manufactured exclusively by Johnson, Matthey, and Mallory Limited of Toronto.

G. R. Morello has been appointed manager of Sealtron of Canada Limited. Mr. Morello is a member of the Association of Professional Engineers of Ontario and a graduate in engineering from the University of Toronto. Mr. Morello was previously associated with the radio and TV department of the Canadian General Electric Company.

Handy & Harman Of Canada Ltd. Sales Appointments

T. H. Gallagher, Managing Director of Handy & Harman of Canada, Ltd., Fabricators and Refiners of Precious Metals, announces the appointment of J. S. (Jim) Fullerton as Sales Manager, effective March 1.

Formerly Eastern Canada Sales representative and in charge of the Company's Montreal Sales Office, Mr. Fullerton will now be located at the principal office and plant in Toronto. With a long and varied background, including such appointments as Vice-Chairman of the Montreal Chapter, American Society for Metals, and Founder-President, Canadian Welding Society, he brings a wealth of experience to his new position.

Donald W. Walker, previously covering Western Canada and resident in Vancouver, will take over the duties of the Montreal Sales Office. Don, with his many years of experience in precious metals in Industry, the Arts and Dentistry, is eminently suited for this position. His many friends in both Eastern and Western Canada will wish him well.

Ross T. Varcoe, previously located at the Company's principal office and plant in Toronto, will leave for Vancouver to take over the duties vacated by Don Walker. Ross has been connected with Handy & Harman of Canada Limited for over ten years and has been covering territories in Eastern Canada, principally Ontario, for the past three years. He brings thirteen years of experience in both Sales and Plant to his new territory.

Kenneth W. Rayner Appointed Sales Supervisor For Renfrew Electric & Refrigerator Co.

Kenneth W. Rayner has been appointed as Sales Supervisor for Renfrew Electric and Refrigerator Co. Ltd., it has been announced by Mr. M. J. Kennedy, General Manager. Mr. Rayner started his sales career with Swift Canadian Co., Montreal and brings 20 years' sales experience to his new appointment. From 1947 to 1953 he was Sales and Advertising Manager for McLeans Cocoa Mills Ltd., Montreal and travelled extensively from coast to coast. Mr. Rayner is a member of the Sales Executive Club, Montreal.

K. W. RAYNER

A. M. Thurston To Head C.A.E. Engineering

Mr. A. M. Thurston has been appointed Chief Engineer of CAE's Engineering Division. Mr. Thurston brings to his new post an extensive background in physics, electronics, electrical and mechanical engineering and management. His record includes experience as a Development Engineer in the Shawinigan Water and Power Company, Research and Consulting Engineer with the Canadian Marconi Company, Manager of a refrigeration, Heating, Ventilating, and Air Conditioning firm, and Plant Manager of the Dominion Electrical Protection Company, where he was responsible for the central station and subscriber equipment.

A. M. THURSTON

(Turn to page 26)

NEWS

(Continued from page 25)

Dave Wilson Appointed R.C.A. Division Manager

B. J. Sibbold, Commercial Sales Manager, Engineering Products Dept., has announced the appointment of Dave Wilson as Manager, Industrial and Distributed Product Sales.

DAVE WILSON

In his new position, Mr. Wilson will be responsible for the sales of all industrial and distributed products sold by the Engineering Products Department. Included in these are various sound products, the TV eye, electron microscopes, tape recorders, beverage inspection equipment, industrial TV.

The 1954 Electronic Parts Show

This all-industry sponsored conference and Show in electronics is to be held in the Conrad Hilton Hotel, Chicago, Illinois, May 17th to 20th, 1954, both dates inclusive. As in previous years it will feature displays of radio, television and electronic equipment in Exhibition Hall and on the fifth and sixth floors of the hotel.

Canadian Headquarters

Room 13, on the fourth floor, has been designated as Canadian Headquarters under the management of the Canadian Electronic Sales Representatives, of which P. J. "Pete" Heenan is the Chairman. All Canadian visitors to the Show are welcome to make use of "Canadian Headquarters" as their meeting place while in Chicago.

Eleventh Annual Canadian Luncheon

The 11th Annual Canadian Luncheon will be held in the South Ballroom of the Conrad Hilton on Wednesday, May 19th. This luncheon is sponsored by the Canadian Electronic Sales Representatives and the Association is now arranging for a special guest speaker. Tickets for the luncheon may be obtained in advance by writing to John T. Rochford, Canadian Luncheon Secretary, c/o "Radio TV & Appliance Trade Builder", Box 4000, Terminal A, Toronto 1, Ont.

Association Breakfast-Meeting

Arrangements are being made to hold the annul meeting and breakfast of the Canadian Electronic Sales Representatives in Room 18 of the Conrad Hilton Hotel on Tuesday, May 18, at 8:00 a.m. All members of CESR are invited and urged to be present at this important Association meeting.

Kenneth Branch Transferred To Vancouver For Canadian Admiral Sales Limited

Edwin Whittaker, Supervisor of Branches for Canadian Admiral Sales, Limited, has announced the appointment of Kenneth Branch as Branch Manager for Canadian Admiral Sales Limited, Vancouver. Mr. Branch joined Admiral in April 1953 and since then has been sales representative in eastern Ontario, For the three preceding years, he was Manager of the "Bearcat" appliance store (La Salle Lead Products), an Admiral dealer in Windsor. Prior to that Mr. Branch was Credit Manager for B. F. Goodrich in Windsor. He served in the Canadian Navy during the war, before which he attended the Sandwich Collegiate in Windsor, which is his home town.

(Turn to page 29)

● Members of the Canadian Room Committee shown in the above photograph are *top row*, left to right: Len Davidge, Jack Cartwright, Clyde Adams and Bill Holroyd. *Bottom row:* Doug Peacock, John Root, John Houlding and Pete Heenan.

What You Said - - Where And How!

NEW uses for recording tape, particularly for professional and educational purposes, are expected to grow out of the development of colored recording tapes by Audio Devices, Inc.

Plastic recording tape is now available in green and blue as well as the standard clear plastic base. Plastic reels in a choice of five colors can also be supplied.

Colored tape it is thought, will open up new fields of usefulness for tape recording. Much quicker selection and playback of specific sections of recordings will result.

In teaching languages, for instance, a length of colored tape spliced in following the instructor's section, would let students record their own version of the lesson, then play it back for comparison. If necessary, the student could erase his effort and start over again without danger of erasing the instructor's lesson.

Tape with splices of contrasting color could be used similarly in music or speech problem classes.

Recording and broadcast studios should find that the choice of five colors for their tape reels, as well as colored tape, will give them added protection against accidental erasure and labeling errors, and at the same time simplify some of their packing and shipping problems.

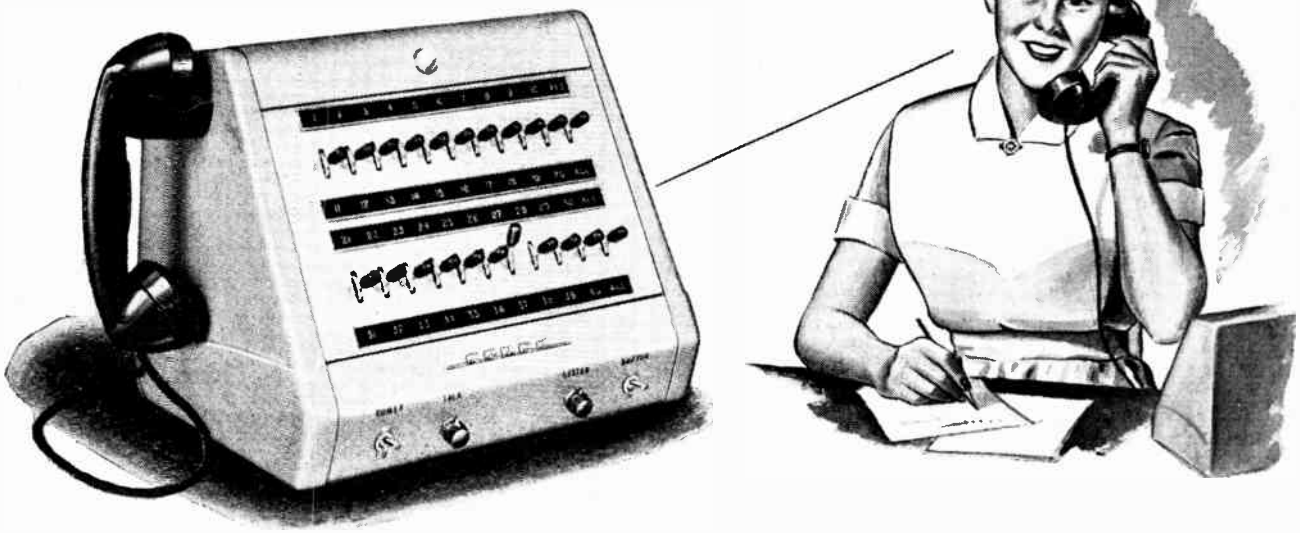
CIVIL DEFENSE

(Continued from page 17)

forestry, hydro and police services, etc. These would be particularly helpful in Civil Defense and of course in connection with handling of messages for the Ground Observer Corps. They should be included in all Civil Defense communications plans and representations should be made to warrant their continued use so long as they are operated in conformity to rules and regulations that are likely to be imposed during an emergency to prevent their emissions from being of navigational aid to an enemy.

For the reason that Civil Defense activities in Canada and the United States must be carefully co-ordinated, arrangements have already been worked out whereby warning information will be exchanged; siren signals standardized and, many other aspects co-ordinated. While many Canadian Provinces and cities have already established a plan for the organizing of their communications requirements, it seems essential that much more detail must be developed so that in case of emergency, there will be no question as to what service will be employed and for what purpose in connection with Civil Defense.

CUT YOUR COSTS with modern "COUCH-CALL" COMMUNICATION



by providing . . .

INCREASED STAFF EFFICIENCY
HAPPIER WORKING CONDITIONS
GREATER PATIENT COMFORT

"Couch-Call" nurse-to-patient communication provides central, constant contact between nurse-attendant and ***all*** rooms on the floor without walking a step!

To answer a light or buzzer signal the nurse simply picks up her COUCH-CALL handset and talks WITH THE PATIENT. Many steps are saved and patients receive faster, more alert attention . . . yet patient-to-nurse communication is private.

Nurse may listen in on all rooms simultaneously . . . to hear and to isolate the abnormal sound or irregular breathing which means trouble. COUCH-CALL is not a substitute for nurse's regular rounds. It *supplements* her calls with constant patient supervision. Patients' radio entertainment with under-pillow speakers may also be included.

Compact and attractive, the COUCH-CALL requires a minimum of maintenance. Any necessary replacement parts are standard and may be obtained locally.

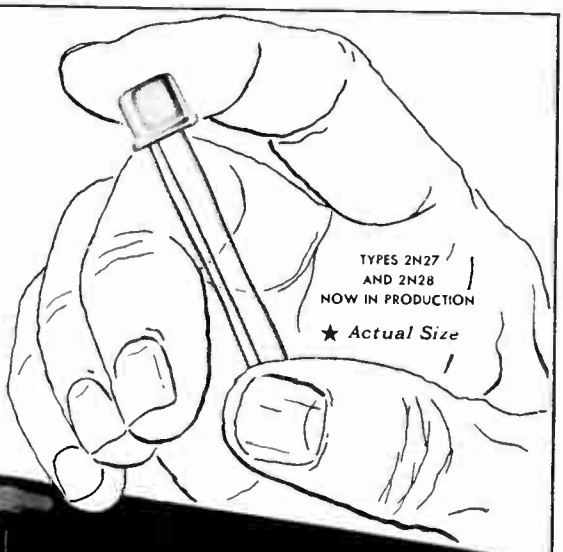
For further description and specifications write to:

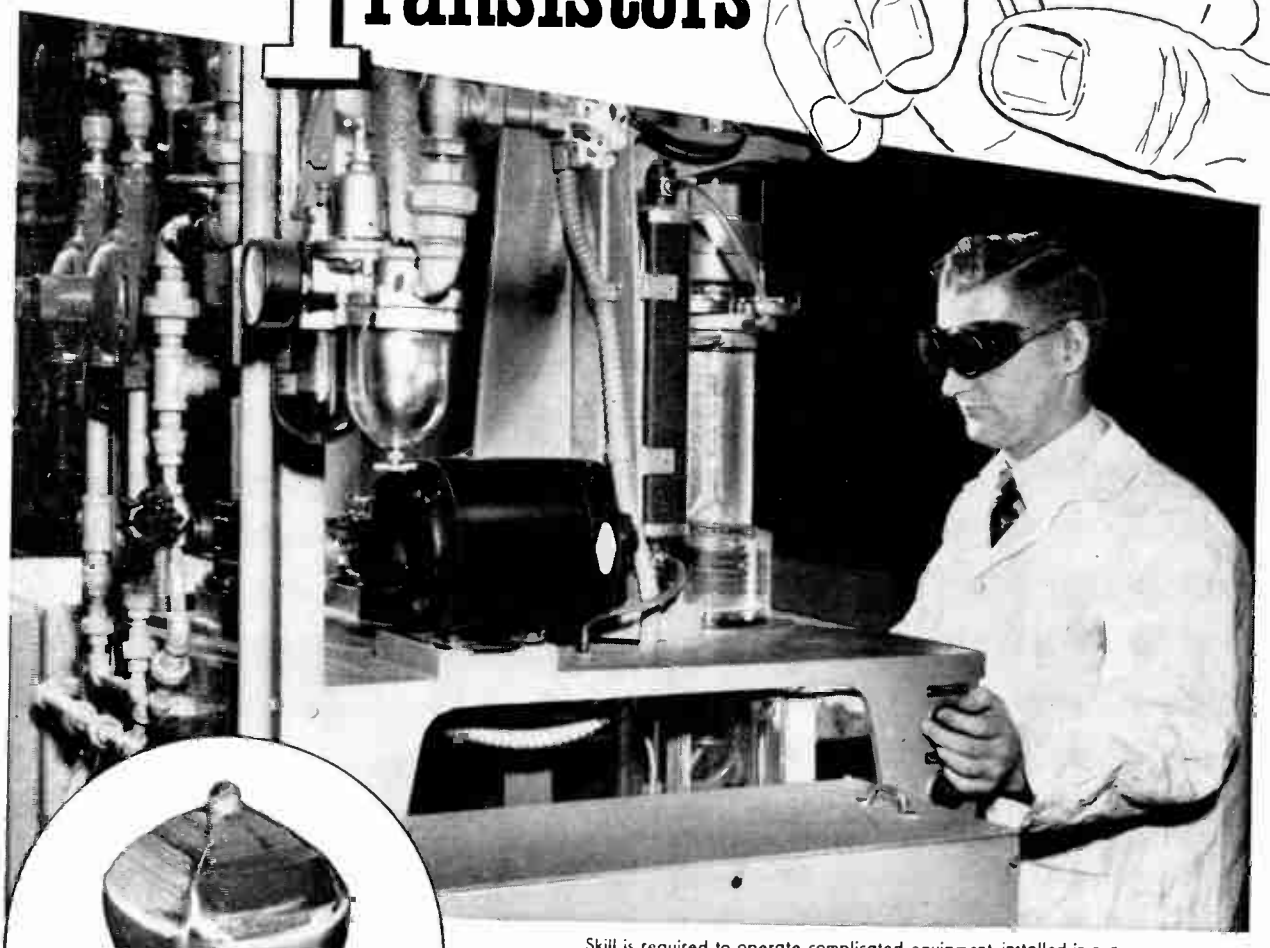
Commercial Products Division
CANADIAN MARCONI COMPANY
Established 1902
2442 Trenton Avenue, Montreal 16, P.Q.
VANCOUVER • WINNIPEG • TORONTO
MONTREAL • HALIFAX • ST. JOHN'S

Marconi

the greatest name in Radio and Television

Junction Transistors





Skill is required to operate complicated equipment installed in our Montreal Plant to produce grown NPN crystals for Junction Transistors.

"Single crystal" of pure germonium grown in our plant for use in Junction Transistors.

Based on Fundamental research in semi-conductors, Northern Electric now offers "Home Grown" NPN Junction Transistors.

- ★ *Manufactured To Close Tolerances*
- ★ *Alpha Closely Approaching Unity*
- ★ *Instantaneous Operation*
- ★ *Long Life*
- ★ *Hermetically Sealed*
- ★ *Withstand Mechanical Shock*
- ★ *Non-microphonic*
- ★ *Light Weight*
- ★ *Small Size*

Grown Junction Transistors have Superior characteristics especially for low power operation and compare favourably in respect to "Noise" with the best vacuum tubes. They are ideal for low level Transmission Amplifiers.

Northern Electric
COMPANY LIMITED
44 BRANCHES THROUGHOUT CANADA

2054-1

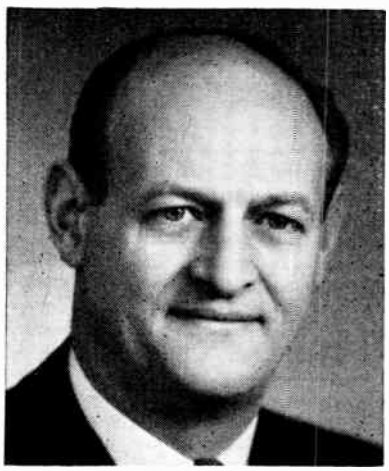
NEWS

(Continued from page 26)

Ronald M. Robinson Appointed General Manager Of Electronics Division of C.G.E.

The establishment of an Electronics Division at Canadian General Electric Company has been announced by H. M. Turner, President. Vice-President Ronald M. Robinson has been appointed General Manager of the Division.

The Electronics Division consists of the Electronic Equipment Department and the Radio and Television Department, both of which are located at the Company's Royce electronics centre in Toronto.



R. M. ROBINSON

Born in Derby, England, Mr. Robinson graduated from the University of Toronto in Electrical Engineering. His long association with C.G.E. started in 1928 as an apprentice. In 1935 he joined the Lighting Engineering group and then spent several years in the marketing of lighting equipment, fluorescent ballasts, carrier current control and other products. In 1946 he was made Works Manager at Royce Works which at that time produced some appliances along with the electronic equipment. His broad experience led to management appointments and in 1951 he was named General Manager of the Appliance Division. He was elected a Vice-President in November of last year.

Mr. Robinson has his offices at the Company's Head Office at 212 King Street West in Toronto.

Appointed Canadian Representative

R. H. Rogers of Consolidated Electronic Equipment Company has announced that the company has been appointed Canadian representative for Elly Electronics Corporation of Fairlawn, New Jersey, manufacturers of the Snapper Thermal Time Delay Relay and electronic products.

Canadian Vessels Modernized With Latest Electronic Devices

The installation of radar, radio telegraph, radio telephone, and complete remote systems in H.M.C.S. "Prestonian" and H.M.C.S. "Toronto" has just been completed by CAE's Installation Department. Work is continuing on the Minesweeper "Fundy" and H.M.C.S. "New Glasgow".

The H.M.C.S. "Prestonian" is the prototype of approximately 16 Frigates to be refitted at shipyards across Canada. These ships had been placed in "mothballs" at the end of the late war and are now being rebuilt and modernized as anti-submarine vessels.

C.S.A. Meeting For Hotel Vancouver

In the interests of closer co-operation between East and West and of the promotion of mutual good will and the stimulating of interest in the practice of standardization as a national asset, the 28th Annual Meeting of the Canadian Standards Association will be held at the Hotel Vancouver, Vancouver, on Wednesday, April 14, 1954 at 3 p.m.

This is the first annual CSA meeting ever held outside eastern Canada.

It is believed that there is a potential opportunity for good and for a better understanding among the people of the ten provinces of Canada, through national standards.

The theme of the 1954 Annual Meeting will be — Standardization — a National Service.

World Standardization In Electronics Step Closer

What U.S. scientists consider a decisive advance toward world standardization in the electronics field has been attained through a new international standard for testing electronic parts used in radio communication and electronic apparatus.

The standard has been published by the International Electrotechnical Commission (IEC) composed of national committees of 30 member nations. It represents several years work by an IEC Technical Subcommittee on Electronic Components. Chairman of the subcommittee is an American, E. F. Seaman of the U.S. Navy Bureau of Ships.

Approval of the documents has been given by the United States National Committee of the IEC. This committee, an organ of the American Standards Association, represents the U.S. electrical industry in the deliberations of the IEC.

B.C. Orders World's Largest Underwater Power Cable

British Insulated Callender's Cables Limited announce receipt of an order valued over $3,000,000 from the British Columbia Electric Company for the supply and installation of some 77 miles of 138,000 volt gas-pressure type cable. This cable will be laid across the Straits of Georgia for transmission of power from the mainland to Vancouver Island to provide an adequate supply for future development.

Guy Vandry Appointed Assistant Sales Manager

Mr. F. H. McLenaghan, General Manager of Burndy Canada Limited, Toronto, announces the appointment of Guy Vandry as Assistant Sales Manager — Eastern Division. Mr. Vandry joined Burndy in 1950 as Eastern Sales Representative with headquarters in Montreal.

GUY VANDRY

Mr. Vandry's appointment will make him more directly available for assistance to the company's well known Eastern Sales Manager, Mr. Fred Patterson.

(Turn to page 43)

NEW PRODUCTS

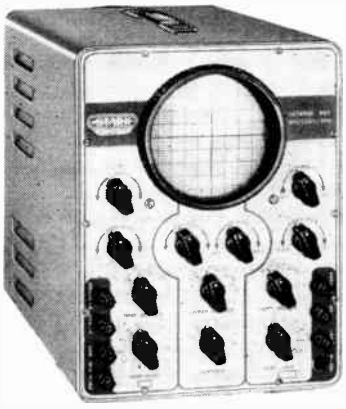
New Product specifications published in Electronics and Communications have been briefed for your convenience. If you require further information on any of the items published you may readily obtain such by using our Readers' Service, Page 64. Just mark the products you are interested in on the coupon on Page 64 and the information will be in your hands within a few days.

● *New-Cost Oscilloscope*

Item 479

Recently introduced is a new 5-inch Oscilloscope that incorporates relatively new but proven principles.

The design of the Model 115 Oscilloscope is based on "unitized construction". This unique new construction method enables the manufacturer to eliminate the chassis, remove many of the stray capacities — and extract

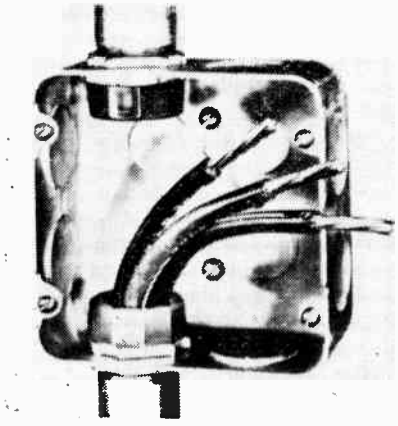


peak performance from all components. Because of these internal changes in structure, the Model 115 is able to withstand shock, vibration and temperature hazards better. The result is "a light-weight, highly accurate Oscilloscope that does all the jobs of higher priced models, yet sells for much less.

● *Shatter-Proof Insulating Bushings*

Item 480

Development of a shatter-proof insulating bushing for ½ to 6 inch standard rigid electrical conduit has been announced. Made from a special cellulose acetate butyrate formula, the new bushing is tough and resilient. It will not shatter if accidentally



struck by tools or if dropped on a concrete floor during installation like other materials commonly used for the purpose.

According to the manufacturer, the bushing will provide positive protection against damage to electrical wiring at the ends of raceways to prevent short circuits and fires.

● *Subminiature Ultra Low-Torque Potentiometer*

Item 481

The new type Ultra-Low Torque Potentiometer is an improved version of this well known type of instrument. It is only .875" in diameter, and will operate with a mechanical force as low as .015 ounce inches. This potentiometer offers an opportunity to designers and manufacturers of computers and servomechanisms to achieve an heretofore unattainable degree of "miniaturization" without sacrifice of high performance characteristics.

A new structural feature of Type 9 is the use of a precision machined aluminum housing for the toroidally wound resistance elements. The individual potentiometer cups are only .500" long and the instruments are available in ganged assemblies up to 6 units. A five cup assembly, using one shaft to operate all five units is 2.81 inches in length including the base and cover.

● *Scintillation Phosphors*

Item 482

The use of Geiger-Müller counters in nucleonics is being, in many cases, substituted by the more versatile scintillation counter. The basis of this unit is a suitable scintillation phosphor. To be satisfactory, these phosphors must be made from the purest constituents, and be properly mounted. In addition, they must be easy to handle, obtainable in large bulk where necessary, and easily fabricated to complex shapes.

There is now being marketed such a range of Chystalline and Plastic Phosphors suitable for the counting of alpha, beta, and gamma rays, neutrons, protons, and X-Rays. Those supplied include a ready-for-use sealed capsule containing a thallium-activated Sodium Iodide crystal; extremely pure plastic phosphor, Tetraphenyl Butadiene in Polystyrene, with good response and optical characteristics; and Zinc Sulphide in perspex for fast neutron counting.

● *Miniature Permanent-Magnet Generator*

Item 483

Rated for continuous duty with an output frequency of 20 cps and a maximum of 3 per cent harmonic distortion, the new Dalmotor Type 44A generator is recommended for instrument indicating and other similar applications. Voltage is linear with speed, and the unit develops 33 volts of 2-phase a-c at 4500 rpm. Internal winding resistance is 30,000 ohms per phase.

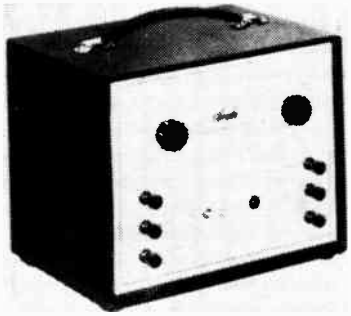
Weighing a total of 8 ounces, the Type 44A is 1¾ inches in outside diameter by 2⅛ inches long, and has a $\frac{3}{32}$-inch shaft extending 0.340 inches. Special shaft arrangements including splines, keyways, and gears can be supplied. The generator is pressure-sealed and has permanently-lubricated bearings. Electrical leads or terminations can be supplied in a number of different types as required. Canadian coverage is being sought for distribution of this product.

USE HANDY COUPON PAGE 64

● *Bypass Marker Injector*

Item 484

A bypass marker injector to provide uniform markers at any point on visual-response curves, in traps, or along the base line of a curve has been announced. The SMI-53 Super Marker Injector is designed to operate with any service sweep generator, scope, and marker generator.



The Injector electronically mixes a small sample of the sweep voltage with a small sample of the marker voltage. The mixed frequencies are amplified, demodulated, filtered, and reamplified, following which the large, stable "pip" ("birdie" or "bug") is electronically mixed with the sweep-wave envelope from the picture detector. The marker is always the same size, whether the operator runs the marker into the center of a ratio-detector S curve, into a sound trap, on top of the curve, or along the base line. The marker remains the same size although the receiver circuits may be completely out of alignment.

The new instrument is designed for application at video, i-f, and r-f frequencies through 200 Mc. When used with a low-capacitance probe, the wide-band amplifier permits effective signal tracing in i-f circuits. Accordingly, the instrument is suited to trouble-shooting as well as alignment of TV receivers. Provides localization of dead or weak stages, and relative gain measurements. Can be used in auxiliary applications, such as marker-generator calibration, and as a scope preamplifier.

● *Twin Pin Straightener*

Item 485

A new tool, the Twin Pin Straightener, has just been developed for radio-and-television service-dealers . . . as well as electronic technicians and engineers. The "Twin" grew out of watching servicemen bolt individual straighteners back to back—for convenience.

One of a long list of by-and-for-servicemen tools, the Twin Pin Straightener is compact, handy, light, and roll-proof . . . ideal for pocket or tool box. With it, pin straightening of 7-pin and 9-pin miniature tubes is safe, fast, economical . . . as simple as plugging the tube into a socket.

(Turn to page 36)

tested for quality and performance

Phillips TELEPHONE WIRES & CABLES

A. Telephone Cable

B. Neoprene Drop Wire

C. Switchboard Cable

D. Submarine Cable

Throughout the manufacturing operation, Phillips Telephone Wires and Cables are constantly checked—to ensure uniformity of insulation resistance, mutual capacitance and dielectric strength. As a result, the Phillips Wires and Cables you buy are of a consistently high standard.

TELEPHONE CABLES—For every type of telephone system, from a few stations in a small exchange, to the largest communications network.

Telephone Cable—paper insulated, lead-sheathed for aerial, underground or submarine use.

Terminating Cable—textile insulated, lead-sheathed for terminating exchange cables.

Switchboard Cable—textile or plastic insulated, braid or plastic sheath for local interconnections.

Supervisory Control Cable—paper, textile, plastic or rubber insulation with lead or plastic sheath for control purposes.

Conductors in the above cables can be supplied in concentric, unit, quads and composite constructions. For extra protection, steel wire armour, steel tape armour, neoprene jacket or jute wrap can be supplied.

TELEPHONE WIRES AND DROP CABLES—Phillips Telephone Wires and Drop Cables have the durability and long life expectancy required for dependable service under the toughest conditions.

Drop Wire—parallel or twisted, neoprene or braided
Inside Telephone Wire—PVC or rubber
Distributing Frame Wire
Switchboard Wire
Bare Line Wire
Interphone Wire
Drop Cable—neoprene or polyethylene
Rural Distribution Cable
Telephone and Switchboard Cordage

Any Phillips Telephone Wires and Cables can be supplied to your specifications

5411

Phillips
ELECTRICAL COMPANY (1953) LIMITED

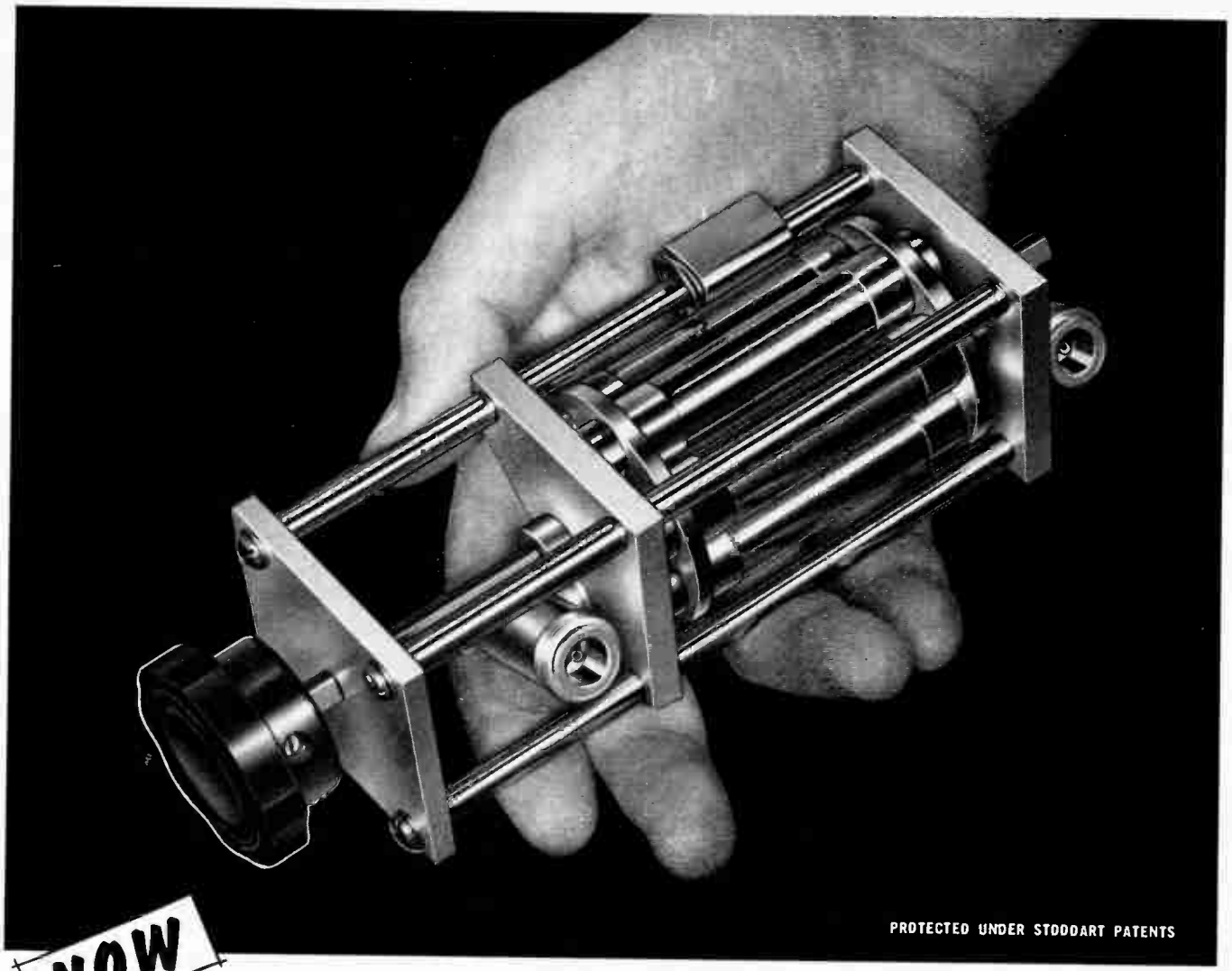
WIRES & CABLES

THE CANADIAN AFFILIATE OF THE B.I.C.C. GROUP

26 Hollinger Road, Toronto 16

MONTREAL • OTTAWA • BROCKVILLE • HAMILTON • WINNIPEG
REGINA • EDMONTON • VANCOUVER

Phillips Telephone Wires and Cables are also distributed in Canada by Automatic Electric Sales (Canada) Ltd.



NOW

Precision Attenuation to 3000 mc!

SINGLE "IN-THE-LINE" ATTENUATOR PADS and 50 ohm COAXIAL TERMINATION

▶ TURRET ATTENUATOR featuring "PULL-TURN-PUSH" action . . .

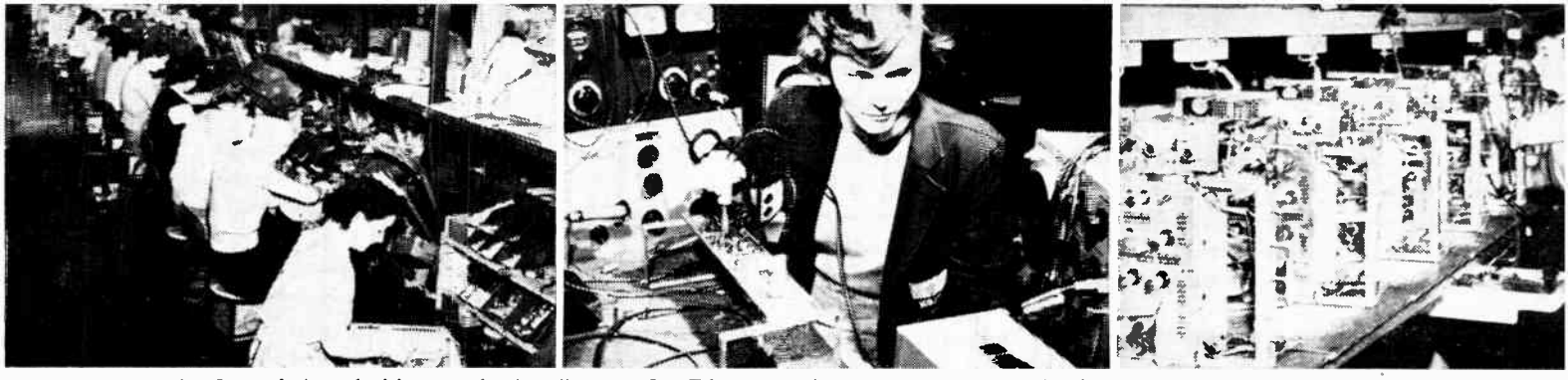
FREQUENCY RANGE: dc to 3000 mc.
CHARACTERISTIC IMPEDANCE: 50 ohms
CONNECTORS: Type "N" Coaxial female fittings each end
AVAILABLE ATTENUATION: Any value from .1 db to 60 db
VSWR: <1.2, dc to 3000 mc., for all values from 10 to 60 db
<1.5, dc to 3000 mc., for values from .1 to 9 db
ACCURACY: ± 0.5 db
POWER RATING: One watt sine wave power dissipation

Send for free bulletin entitled "Measurement of RF Attenuation"

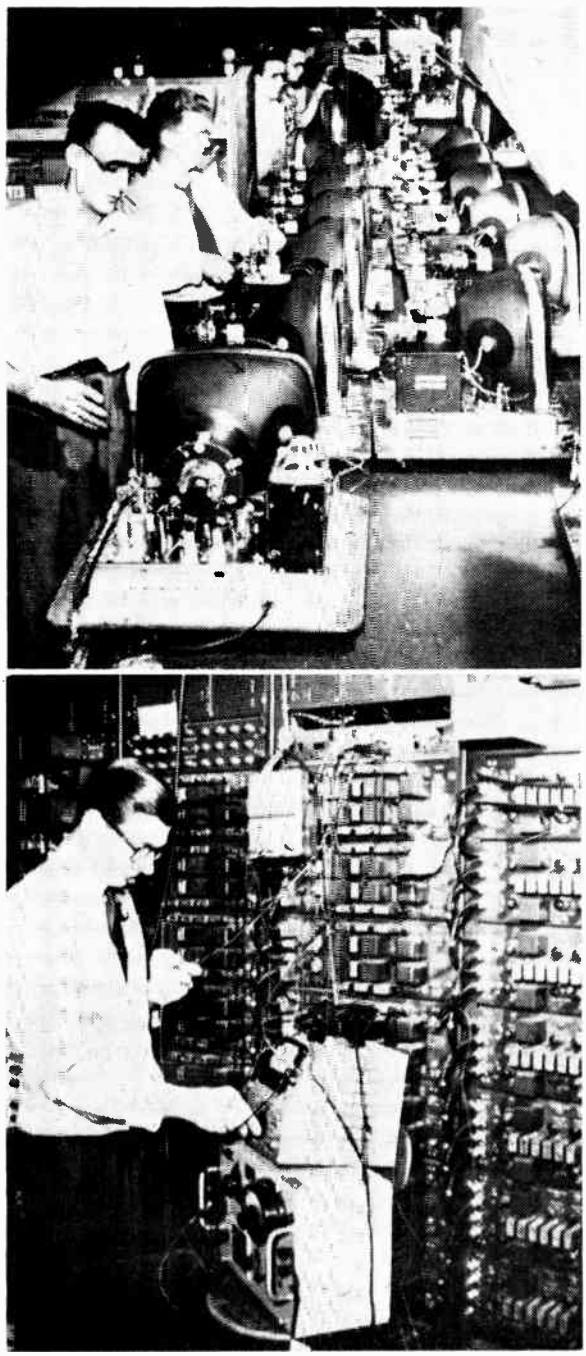
•

Inquiries invited concerning pads or turrets with different connector styles

STODDART AIRCRAFT RADIO CO., INC.
6644-D SANTA MONICA BLVD., HOLLYWOOD 38, CALIFORNIA
HOllywood 4-9294



● *Left:* One of the television production lines at C.G.E.'s Royce electronics center. Length of the radio and television production lines in the plant totals nearly one-half mile. *Center:* Electronics is a woman's world too. Here, at Canadian General Electric's Royce electronics center, Jeanette McMillan works on development of an I.F. amplifier for multichannel microwave equipment. *Right:* Norma McLaren carries out a test operation on television chassis being produced in the Radio and Television Department at C.G.E.'s Royce electronics plant.



● *Bottom:* Ron Staples carries out testing operations on one section of a complex multichannel microwave panel at C.G.E.'s Royce electronics plant. *Top:* Lloyd Grant (1) and Jim Holliday carry out a pre-final setup test on TV receivers at C.G.E.'s Royce Works. Following this operation, the sets are installed in their cabinets and prepared for final testing.

Manufacturing . . . .

Whither Color TV In Canada?

Here's the answers to many of the questions in the minds of broadcasters, potential purchasers and the retail trade who will handle the sales of color TV sets in Canada. The answers are given by Vice-President, R. M. Robinson, General Manager of the Electronics Division, Canadian General Electric Co., Ltd.

Q. When will colour television receivers be available to the Canadian consumer?

A. We expect color TV receivers to be available in Canada in test quantities in the last half of 1954, at which time a few color television programs will be available to Canadian viewers close to certain U.S. border points.

Q. Will color programs be available to viewers with black and white receivers?

A. Yes. The reception of a color signal in black and white (or "compatibility") is a primary requirement of the system adopted in the United States. Development of this compatible system was the result of the work of the National Television System Committee, an organization of 91 companies in the television industry in the U.S. The committee chairman was General Electric Vice-President, Dr. W. R. G. Baker. We expect that the N.T.S.C. system will be adopted in Canada by C.B.C.

Q. What will be the probable picture size and cost of the first color television receivers available here?

A. There is still some doubt concerning the picture sizes of the first color TV receivers, but it is evident that they will be substantially smaller than those of current black and white, or monochrome, models. We anticipate the first color receivers will show 12" pictures and cost something over three times as much as present-day black and white receivers.

Q. When will the sale of color TV receivers form a significant part of set sales?

A. Not for, at the very least, two years. Even in 1956, we expect that only one in four television receivers sold will be a color set.

Q. Why will color receivers be more expensive than black and white models?

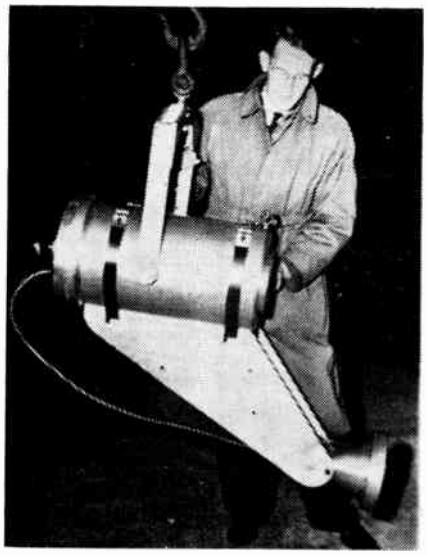
A. Basically, because a color receiver has more components, and its circuits are more complex. For instance, a black and white receiver generally has from 20 to 23 tubes while a color set will have from 38 to 45 tubes. A simple illustration of relative costs of the components: a small-screen color picture tube alone will cost about $300, something more than a complete 17" black and white receiver costs now.

(Turn to page 59)

Salvage By TV

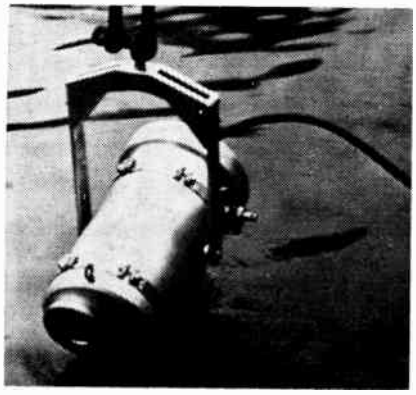
REPORTS from on the spot indicate that a major success has been achieved by the special underwater TV camera which was flown out to help search for the Comet and which has recently sighted parts of the main Comet wreckage.

Not only has the equipment astounded the experts by its performance, but it seems fairly certain that a completely new technique has been born. The remarkable feature of the Admiralty's search has been the use



of a Pye camera to search while the ship has been moving at up to four knots. Hitherto, cameras had to be dangled over the side and suspended perfectly still; now they are being trawled as if they were fishing nets — this being made possible by the special lamp support which has a large "fin" area that directs the camera relative to the tide.

Special features of the equipment are its small size — it weighs under 2 cwt. complete — making it highly manoeuvrable; it has self-contained lighting, adjustable over a wide range, fed from a camera supply cable; there are two lenses remotely selected; it is



housed in a non-magnetic casing to enable it to work in close proximity to an electro-magnetic hoist; and the camera may be angled through 90° down from the horizontal in 15° steps. The camera has been lowered to a depth of 700 feet.

● *Top:* The new PYE underwater TV camera, photographed with its designer, Mr. D. R. Coleman, during tests at Cambridge. *Bottom:* The new PYE underwater television camera which is helping in the search for the Comet off Elba.

Prospecting . . . . The Modern Way

THOUGH gold is still the object of widespread exploration activity in Canada it now has a competitor which has attracted the attention of prospectors and exploration companies. Gold's competitor is that mysterious metal known as U-308 or Uranium, and the lure of "gold in them thar hills" has now been somewhat dulled by the lure of uranium.

Helping immeasurably in the search for uranium is the science of electronics and the Hollywood version of the old-time dust-covered prospector with pack sack and pick and axe strapped on his back has been supplanted by the present day prospector who sallies forth with a load of nucleonic instruments such as Geiger Counters, Rate Meters, Radioassay Scales and Beta Gamma Geiger Tubes. Equipped with such an array of scientific apparatus the prospector today delicately probes the earth beneath him, and the presence of uranium can be measured not only by the area it covers and the depth to which it extends down into the earth but it can also be measured quantitatively.

The demand for this type of equipment to search out deposits of this popular metal are so great in Canada today that one Canadian firm, Electronic Associates, are hard pressed to fill their orders. Such equipment can be found wherever the search for uranium is being carried on and in practically all Canadian establishments carrying out research with the metal.

Speeds Up Search

The presence of uranium is determined with a Gieger Counter. When this box of tricks begins to click the prospector knows that he is standing in the presence of the precious metal. With related equipment he can pinpoint the spot of the greatest concentration of the metal and with a radioassay scale can analyse and appraise his samples in a matter of 30 minutes. Although the chemical assay is more accurate the samples may have to be transported over many miles of rough terrain to a laboratory where the analysis would take three days to complete.

Variety Of Instruments

The Toronto firm engaged in the production of these instruments is perhaps the largest continuing producer of this category of commercial instruments in Canada and the producer of the widest range of uranium ore detecting equipment in North

● The modern prospector does it the electronic way. Here a test with an electronic box of tricks will tell the content of the sample.

America. This clearly indicates the importance of the application of electronics to the mining and exploration activities which are taking place in Canada today. More than 5,000 units of various types of ore-detecting equip-

● Here with an electronic "divining rod" the prospector can locate the point of greatest concentration of the uranium ore.

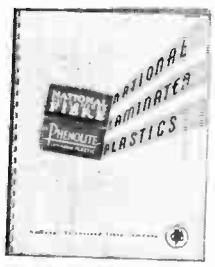
ment have been supplied to mining and processing interests in Canada and the orders continue to roll in. Canadian made ore detecting equipment has helped to make such names as Uranium City, Eldorado, and the Great Slave areas famous in the search and discovery of uranium, the most sought after metal in the world today.

He doesn't give Phenolite a thought

He doesn't have to. Every piece of Phenolite laminated plastic . . . and there are literally hundreds of them in his plane . . . can be counted on to do the job it was specified to do. This versatile material performs without fail in assignments that range from insulation in passenger reading lights to gears in the automatic pilot.

What makes Phenolite's application so universal? Because there are more than 35 different grades of Phenolite manufactured as standard, and many more special types. These are based on materials such as paper, cotton cloth, asbestos paper and fabric, glass cloth, nylon, etc., scientifically compounded with phenol, melamine or silicone resins under heat and pressure. Each grade has a combination of electrical and mechanical properties that is unique. There's almost always a grade of Phenolite to give the designer—aircraft or otherwise—exactly what he wants.

What can *you* do with a material that has great mechanical strength . . . weighs half as much as aluminum . . . is extremely resistant to moisture . . . is an ideal insulator at both high and low voltages . . . can be machined, shaped, punched, sawed, drilled, worked at will . . . is resistant to heat, solvents, oils, acids, alkalis and other chemical solutions? You can use it to advantage and we'll be glad to help you.



Want the facts and specifications on weights, tolerances, forms and grades available? Or dielectric strengths, colors, suggested applications, machining and forming techniques? Here's the whole story in one thumb-tabbed package. It's a catalog you can't afford to be without. Write for your copy to either of the addresses listed, attention Dept. AD-3.

PHENOLITE
Laminated PLASTIC

NATIONAL
FIBRE COMPANY OF CANADA, LTD.
107 ATLANTIC AVENUE, TORONTO • 1411 CRESCENT AVENUE, MONTREAL

NEW PRODUCTS

(Continued from page 30)

• *Tektronix Type 130 L,C Meter* — *Item 486*

Type 130 L,C meter is a direct reading meter for small values of inductance and capacitance in components and circuits. Five ranges: 0 to 3, 0 to 10, 0 to 30, 0 to 100, and 0 to 300 uh or uuf, accurate within 5 per cent of full scale. Coarse and fine zero-adjust controls, illuminated 4" meter. De-

signed for the development engineer, the Type 130 provides quick readings of inductance or capacatance values while circuit changes are being made. The type 130 is also convenient for component testing, sorting, and color code checking on a production basis. Weight 9 lbs.

• *Metagraphic Instruments* — *Item 487*

A new three-part pneumatically-operated instrument system known as the Metagraphic System, has been announced. In these instruments each of the basic functions performed is packaged separately. Units are: a transmitter, a receiver (recorder or indicator), and a controller. Each unit can be installed on the process at the point where it operates best, thus providing a high degree of flexibility of application.

Metagraphic instruments measure, indicate, record, and control pressure, vacuum, temperature, liquid level, differential pressure, and flow.

A universal 3-15 psi air pressure signal interconnects the three units no matter what variable is being transmitted. This makes the components universally interchangeable. (3 to 18 psi signal span also available.) The new receivers and controllers are designed for full plug-in service. Strip-chart recorders, and indicators are quickly interchangeable without loss of signal or control. Design features include continuous valve position indication requiring no switching to get reading, "bumpless" manual-automatic transfer by simply matching pointers, and a set-point regulator of high-output capacity.

• *Electronic Components Catalog* — *Item 488*

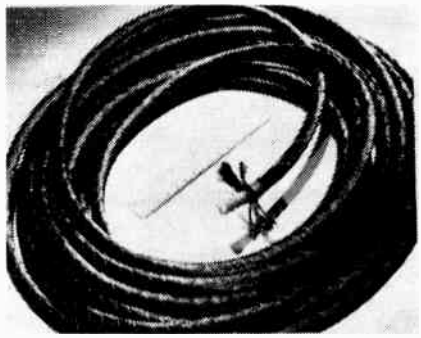
Catalog RC-9 contains a wealth of helpful information on the complete line of fixed and variable composition resistors, line and slide switches, fixed composition capacitors, powdered iron cores, molded coil forms, and Ceramag ferromagnetic cores manufactured by the publishers.

Complete electrical and mechanical specifications, dimensions, and application data for all the manufacturer's standard electronic components are given in the new 56-page catalog. The section on iron cores alone contains over a dozen informative pages on the selection and use of standard, threaded, sleeve, side-molded and cup cores.

USE HANDY COUPON ON PAGE 64

• *High-Voltage Low-Frequency Litz Cable* — *Item 489*

Specialized Litz cables for applications of high voltage in the 20 to 400 kilocycle region are being wound on dielectric cores of rope-like construction formed from a variety of plastic films. Diameter limitations of the production equipment are 1/8 in. core diameter minimum, two in. core diameter maximum.



Typical cables produced have included copper conductors of 33 and 38 gauge laid on the core with a spiral of three turns per foot, although these specifications can be varied fairly widely. A maximum of 125 multi-conductor strands can be applied.

Conductors of Nylon-enamel insulated wire can be made individually continuous to extremely rigid specification requirements.

Polyethelene, Mylar, or other plastic core materials are utilized depending upon requirements of cost, operating temperature, fungus resistance, etc.

(Turn to page 40)

YOU CAN BE SURE... IF IT'S

Westinghouse

MOBILE RADIO

Whether it be a specific railroad, aircraft communications need, police, public utilities or any of the other many uses for mobile and two-way radio, Westinghouse stands ready to serve with the engineering ability know-how and equipment.

Combine the quality and reliability of Westinghouse communications equipment with the design, installation and maintenance experience of Westinghouse engineers and you have a perfect team to handle all your communications problems.

Westinghouse will design and install a communications system completely integrated to meet your individual requirements.

★

CANADIAN WESTINGHOUSE CO. LTD.

Electronics Division

HAMILTON - ONTARIO

The underside of the Transmitter shows the freedom for inspection and maintenance. No component need be moved or removed to reach another.

Three-unit construction separates basic parts of the equipment. Minimum component weight and easy interchangeability result. Units may be checked individually.

Westinghouse

MOBILE RADIO

Klystron Tubes and

WIDE RANGE REFLECTS 16 YEARS OF EXPERIENCE IN MICROWAVE FIELD

KLYSTRONS

Frequency Range from 750 megacycles to 26,000 megacycles.

LOCAL OSCILLATOR SRU-55

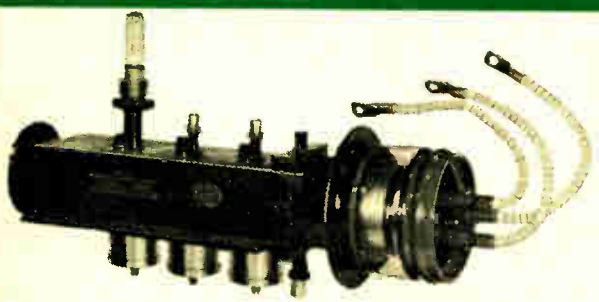
BENCH OSCILLATOR 2K41

LOCAL OSCILLATOR 5981

COMMUNICATIONS AMPLIFIER STC-67

RADIO RELAY TRANSMITTER SRC-43

RADIO RELAY TRANSMITTER SAC-19

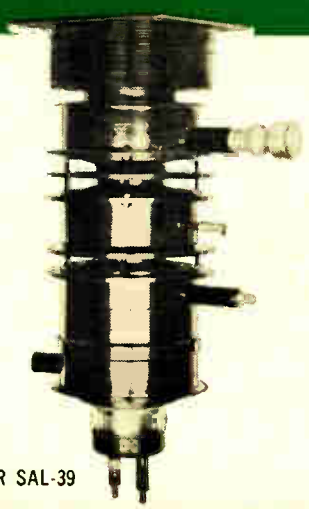


HIGH POWER TRANSMITTER SAS-28

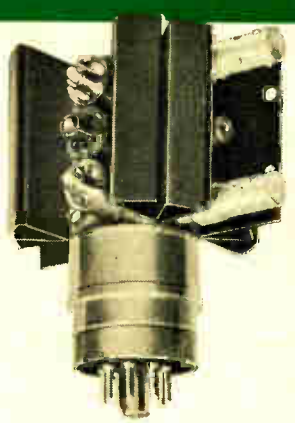
RADIO RELAY TRANSMITTER SRL-7C

RADIO RELAY TRANSMITTER SAC-41

HIGH POWER TRANSMITTER SAC-33



HIGH POWER TRANSMITTER SAL-39



HIGH POWER TRANSMITTER SAC-9

*Microline** Instruments

Since 1938, when Sperry sponsored the development of the Klystron, this company has extended its application to tubes for low, medium and high-power applications. As a pioneer in microwave measuring techniques, Sperry has developed Microline instruments which include every type of device essential to precise measurement in the entire microwave field. Research and development are continuous at Sperry and the results are always available to you.

*T.M. REG. U.S. PAT. OFF.

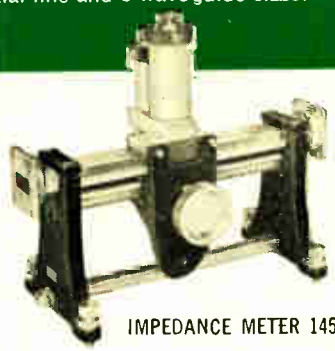
*Microline**

Test equipment covering 500 megacycles to 40,000 megacycles in 7/8 inch coaxial line and 8 waveguide sizes.

ATTENUATOR 152A

DETECTING SECTION 364

MIXER 337C

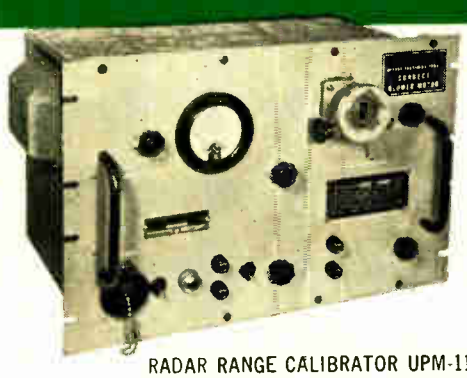


IMPEDANCE METER 145

DIRECTIONAL COUPLER 209

FREQUENCY METER 28B

WAVEMETER 537



RADAR RANGE CALIBRATOR UPM-11

VSWR TEST SET 539

RADAR TEST SET 38A

KLYSTRON POWER SUPPLY 555

On these pages, only one item in each product line is illustrated. Also included in the Sperry line, but not illustrated, are the following additional Microline instruments: Barretter and Thermistor Mounts, Barretter Elements, Impedance Transformers, Terminations, Adapters, Wattmeter Bridges and Adjustable Shorts. For complete details write our nearest district office.

SPERRY *GYROSCOPE COMPANY OF CANADA LTD.*

P. O. BOX 6121 • MONTREAL, QUEBEC

SPERRY GYROSCOPE OTTAWA LTD., OTTAWA, ONT.

First Canada-U.S. Mobile Radio Approved For Chrysler Corporation

The first two-way radio communications system controlling a trucking fleet operating from Canada across the United States border has been put into service here by Chrysler Corporation of Canada, Limited, after an Act of Congress at Washington and an Order-in-Council at Ottawa had paved the way.

The system is installed in a fleet of trucks crossing between Windsor and Detroit through the Detroit River tunnel and carrying supplies to the Chrysler truck and automobile plants in Windsor.

For a number of years two-way radio communication in cars, trucks and trains crossing the border has been impeded by similar laws in Canada and the United States which forbid aliens from operating radio stations. A Canadian truck driver on a U.S. highway could receive instructions from his home-office dispatcher but was not permitted to use his transmitter to reply while on U.S. soil.

Under the new regulations, which were drafted after representations had been made to the two Federal Governments, Canadian drivers with special licenses can broadcast from their trucks while in the United States and furnish information that will aid in the overall fleet operation.

● *Top:* Radio equipped truck emerging from the Windsor-Detroit Tunnel. *Bottom:* Home office despatcher shown issuing instructions to drivers of trucks while in transit.

At one time any two-way radio equipped vehicle had to have the transmitter sealed before it was permitted to cross the border.

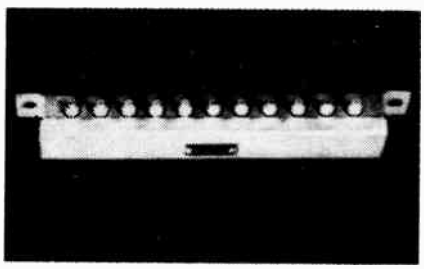
NEW PRODUCTS

(Continued on page 36)

● *Tapped Delay Lines*

Item 490

These new delay lines, featuring: Ten output terminals with different time delay, fast time rise and no over-shoot, hermetically sealed construction, small size—6" x ⅞" x ⅞" have been specially designed to meet the



increasing need for wide band tapped delay lines in electronic circuits.

Total delays of the various types available range from 0.1 us to 5 us, the delays between taps being one-tenth of the total.

● *Torodial Coil And Meter Catalog*

Item 491

A new 16-page catalog introducing a new line of subminiature torodial coils and torodial coil meters has been announced. The catalog also includes complete information on toroids, high quality coils and various audio filter networks.

The catalog also contains complete descriptions, attenuation and Q curves that will prove valuable to equipment design engineers.

● *Broad Band Amplifier*

Item 492

The Westlabs Model 24 Broad Band Amplifier utilizes a travelling wave tube to provide high gain over the 2000 to 4000 mc/s frequency range. Typically the small signal gain averages 35 decibels, and the saturation output power 15 milliwatts. Maximum noise figure is 20 decibels or less.

The unit is completely self-contained, including regulated power supplies and travelling wave tube focusing structure. The amplifier is housed in a case of JAN aircraft equipment dimensions (4⅞" wide by 7⅝" high by 19⅞" deep), and is directly usable as either a laboratory tool or a system component. Primary supply requirements are 108 to 122 volts at 1 amp, 50 to 800 cycles.

● *Heterodyne Voltmeter*

Item 493

A Model BL-2002 Heterodyne Voltmeter which is a selective vacuum tube voltmeter designed particularly for the measurement of high frequency voltages is now available in Canada. This instrument utilizes the basic superheterodyne principles, combining untuned input circuit with an IF amplifier of high gain and selectivity. An internal 100 kc/s signal generator is used to check and adjust the voltage sensitivity of the instrument. Maximum range with the use of an external attenuator is 10 volts; full scale.

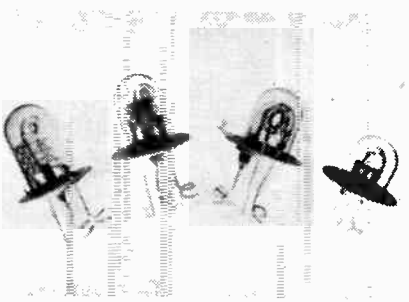
The BL-2002 has a frequency range of 20 kc/s—27 mc/s in 4 ranges. Voltage Range: Full scale deflection for 10,000 and 100 microvolts and for 10 and 100 MV. Input impedance is 5 megohms in parallel with 12 micromicrofarads. Frequency accuracy is approx. the short-wave range. Noise level is approx. 2% and Voltage accuracy ± 0.5 db in the broadcast frequency range and ± 1 db in 3-4 microvolts.

● *Ultra-High Efficiency Flashtubes*

Item 494

Photographers using, or planning to use, electronic flash will be keenly interested in this new flashtube development. Lighter weight power packs or more light for the same power is made possible through the use of ultra-high efficiency light sources and an increase in the working area of reflectors.

A pioneer flashtube manufacturer, has introduced five new models of ultra-high efficiency trigger type flashtubes having reflective bases of tarnish-proof Alzak aluminum. Neoprene bushings provide electrical insulation for the flashtube and also act as a resilient mounting for protection from mechanical shocks.



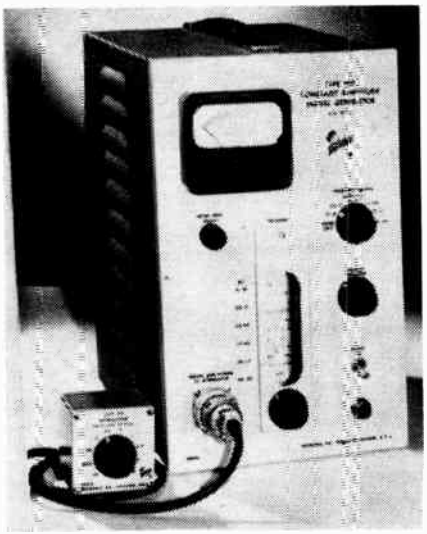
This basically new flashtube design permits construction of extremely shallow, lighter weight lampheads and eliminates the large, light absorbing area caused by the older type of tube basing. Directly soldered leads eliminate electrical losses and arcing.

New electrode developments have made higher power ratings possible and also extended tube life so that 50,000 to 100,000 flashes from the same tube is not unusual.

• *Constant Amplitude Signal Generator*

Item 495

Type 190 Constant-Amplitude Signal Generator generates sine waves in the frequency range of 350 kc to 50 mc. Output amplitude varies less than 2 per cent from 350 kc to 30 mc; less than 4 per cent from 30 mc to 50 mc. Frequency is continuously variable in



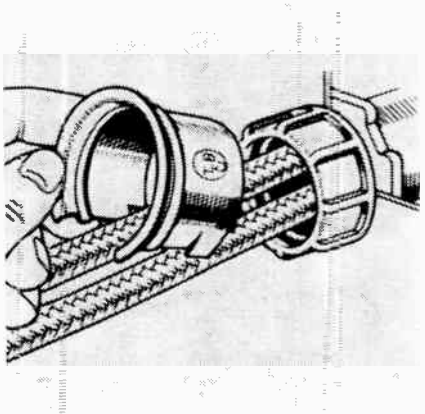
six ranges, with frequency indication accurate within 2 per cent. Output amplitude is continuously variable from 4 millivolts to 10 v peak-to-peak in 10 ranges, with amplitude indication accurate within 10 per cent. Output impedance, 52 ohms. The Type 190 is convenient for checking the high-frequency response of video amplifiers. Weight 24 lbs.

• *Insulated Sleeves*

Item 496

Insulated sleeves for electrical conduit connections are rapidly assuming greater importance. The insuliner is a split fibre tube that is slipped by hand inside a standard conduit bushing to insulate it and the conduit end on which it is mounted from the wiring running through the conduit. This is designed to protect wires and cables from possible abrasion damage after they are installed.

Electricians don't have to change their working habits while installing conduit-enclosed wiring systems. Wires or cables are pulled through the conduit and bushing in the standard manner, after which the insulation sleeve is snapped into place, making a safe, well-insulated installation.



The T&B insuliner sleeve quickly and simply insulates and lines the bushing and conduit. It is split to fit over conductors and snaps into the bushing without disturbing wiring. Insuliners can be installed before or after fishing wires or in old work.

(Turn to page 48)

TRENDS

(Continued from page 9)

★ **D. S. ROBERTSON, CHIEF OF THE CIVIL DEFENCE Communications Division of the Department of National Health and Welfare met recently in Washington with Colonel William M. Talbot, Director of the Federal Civil Defence Warning and Communications Division at a top-level, two-day conference between civil defence chiefs of the United States and Canada.**

★ **THE LARGEST TELEPHONE INCREASE and the highest gross expenditure on plant was reached last year by the British Columbia Telephone Company. An increase of 21,555 telephones was added to the system in 1953. During the year the company spent 15 million dollars on expansion and improvement of facilities.**

★ **PROPOSALS HAVE BEEN SUBMITTED to the U.S. Senate recently to bring the Communications Act into line with the Great Lakes Safety at Sea Treaty, an act negotiated between Canada and the United States. The agreement calls for radiotelephony as the uniform system of radio communications in the interests of safety and for navigational purposes on the Great Lakes.**

★ **A TEST TELECAST OF NEW YORK CITY'S** daily police lineup was tried out last month. Based on the success of the test it is anticipated that ultimately each of the city's 85 police precincts will be installed with television equipment. This would enable the 2000 New York and Brooklyn detectives to scan the daily lineup without leaving their offices.

★ **THE UNITED NATIONS EDUCATIONAL,** Scientific, and Cultural Organization has been looking into television on a world-wide scope. The results of a survey show that in 20 countries, public broadcasts are on the air; eight countries are conducting technical broadcast experiments and in 17 other countries governments or private organizations are actively engaged in an effort to have television introduced into their countries.

★ **A CAMPAIGN LED BY THE RADIO-ELECTRONICS-TELEVISION-MANUFACTURERS ASSOCIATION** of the United States to have the present tax of 10 per cent on black and white television sets reduced to eight per cent was announced recently by association officers. At the same time an effort will be made by the association to have color television sets declared exempt from tax to spark the sale of the new product.

★ **IN 1953 THE BRITISH COLUMBIA TELEPHONE COMPANY "exceeded all previous records for net gain in telephones and also for expenditures for new plant" Gordon Farrel, President of the company stated in his annual report.**

★ **UNITED STATES EXPENDITURE** for electronic equipment is expected to reach $3,800,000,000 by 1960 according to Don G. Mitchell, Chairman of the Sylvania Electric Products. The statement was made during the dedication ceremonies of a new electronic defense laboratory which will employ 300 scientists and engineers to work on "electronic counter measures".

★ **THE NATIONAL OFFICE MANAGEMENT Association reports the result of a survey which shows that there is one telephone for every 2.9 employees in U.S. and Canadian businesses. The survey revealed that the construction and extractive industries had the fewest workers per telephone while banks and insurance companies had the most.**

★ **INTERNATIONAL BUSINESS MACHINE** has now developed a transceiver capable of transmitting data stored on punched cards over an ordinary telephone circuit. The unit can also receive information automatically.

★ **WILLIS G. LIPSCOMB,** of Pan American World Airways addressed 2500 travel agents for one hour over a closed circuit telecast extending from New York to Los Angeles recently. The occasion is understood to be the first nation-wide closed circuit network ever used by the travel industry.

NEWS

(Continued from page 29)

R. C. Kahnert Sales Company To Locate In Willowdale

Formation of a new manufacturers agency, R. C. Kahnert Sales Co. with address Box 99, Willowdale, Ontario, is announced by Roly C. Kahnert. Mr. Kahnert was associated with P. J. Heenan Ltd. for the past two years. The new company takes over sales of the lines primarily sold through distributors which were handled by P. J. Heenan Ltd. Roly Kahnert was a representative for Minnesota Mining & Mfg. and Amalgamated Electric Corp. Ltd., prior to associating with P. J. Heenan.

R. C. KAHNERT

Open New T.V. Components Plant

Canadian Videocraft Manufacturing Company have announced the opening of their new television components plant at 42 Gladstone Avenue, Toronto, Ontario.

Mr. J. R. G. McVity is the firm's representative at the new plant and Mr. R. Belica is the chief engineer.

W. D. Forst Presented With Engineering Award

William D. Forst of Radio Station CKOM, Saskatoon, Saskatchewan, was the recipient of the Colonel Keith Rogers Memorial Engineering Award for 1954.

The award, made annually, is presented for outstanding service to the broadcasting industry of Canada in the engineering and technical field. Development of new engineering and operating techniques, devices, or systems resulting in greater efficiency, safety or economy. Gallant service in the event of an emergency. Activity in engineering and technical circles to the advancement of the status and usefulness of engineering and technical personnel and the performance of meritorious service in the national or international sphere.

Mr. Forst was presented with the award in recognition of his pioneering efforts in the field of unattended operation of broadcast transmitters.

Members of the awards committee selecting Mr. Forst for the honor were: Mr. K. A. MacKinnon, Consulting Engineer, Ottawa; Mr. W. B. Smith, Department of Transport, Ottawa; and Mr. G. E. McCurdy, McCurdy Radio Industries Ltd., Toronto.

● William D. (Bill) Forst, receives the Colonel Keith Rogers Memorial Engineering Award for 1954 in recognition of his contribution to the broadcasting industry.

Precision Electronic Components Represent Giannini Co., Inc.

Precision Electronic Components Ltd., have announced that they have taken over the representation of G. M. Giannini & Co. Inc., one of the leading companies in the United States making the following products: Rotary and linear potentiometers, Synchronous motors, Pressure switches, Roto steppers, Industrial and marine pressure switches, Pressure manifolds, Switching commutators and Magseal relays.

(Turn to page 44)

NEWS

(Continued from page 43)

Northern Electric Names Sales Division General Manager

The Northern Electric Company Limited have recently announced the appointment of Fraser F. Fulton, O.B.E., as General Manager of the company's Sales Division. Mr. Fulton became associated with the company in 1928 at which time he was connected with the electronics activities of the company.

Following his return from overseas service with the Royal Corps of Signals he again joined Northern Electric in 1946 being appointed Chief Engineer of the company's electronics division. In 1949 he became Government Contracts Manager. In 1950 he was appointed manager of the company's electronic plant at Belleville and the following year became Vice-President and Managing Director of the company. Shortly thereafter Mr. Fulton was appointed General Sales Manager reporting to the head of the division and served his company in this capacity until his present appointment.

F. F. FULTON

A. C. Wickham (Canada) Ltd., Appointed Canadian Agents

A. C. Wickman (Canada) Limited have been appointed Canadian Agents for the line of Material Testing Machines and Balancing Machines manufactured by the Firm of Losenhausenwerk, Dusseldorf.

Losenhausenwerk has a complete range, and the best known machines are the Universal Testing Machines with Hydraulic Pulsators and the Universal Fatigue Testing Machines for testing under fluctuating and alternating loads.

The machines are hydraulically operated and are arranged with the tensile axis in the vertical direction thus eliminating the additional bending force created by gravity, as met with in machines with horizontal axis. The lower head on the Bending Table is electrically adjusted and fixed during the test.

The machines are equipped with a load control panel and safety devices and for fatigue testing, work automatically without supervision. Standard sizes cover a complete range up to 200 tons.

Address of A. C. Wickman (Canada) Ltd., is The Queensway, Etobicoke, Toronto.

Andrew Establishes Canadian Affiliate In Whitby, Ontario

The organization of Andrew Antenna Corporation, Ltd., a Canadian affiliate, has been announced by C. Russell Cox, Vice-President and General Manager of Andrew Corporation in Chicago. The new company has been formed to provide an improved service to Andrew customers in Canada. Five and one-half acres of land have been purchased at Whitby, Ontario, and a factory is to be erected on this property for Canadian manufacture of Andrew antennas and transmission line.

Mr. John W. McLeod has been named manager of the organization, with headquarters in Whitby. Mr. McLeod, a graduate of Queen's University in Kingston, Ontario, is a member of IRE and a Registered Professional Engineer. He joined Andrew Corporation in 1945 as a sales engineer, and was previously associated with Northern Electric Co., Canadian Pacific Airlines and Canadian Marconi, in the communications and industrial field.

JOHN W. McLEOD

(Turn to page 49)

The Editor's Space

(Continued from page 15)

The Argonne National Laboratory in Chicago has unveiled the world's fastest computing machine. It can multiply 999,999,999,999 by 999,999,999,999, in less than 1/2000 of a second. Apropos this bit of news it is noted that the Stratford *Beacon-Herald* states: "Electronic computers cannot solve problems that cannot be solved by hand methods. Their superiority lies only in their speed accuracy and ability to grind away at the problem without tiring." So . . . . . .

* * *

Congratulations to Mrs. John Root who accompanied her husband to the I.R.E. National Convention in New York last month, hied herself off to a radio show and won herself a mess of aluminum pots and pans.

* * *

Had more than a few requests from our readers for the name and address of the model which appeared in the cover photo of our last issue. For those of you who may have been interested but didn't get around to writing her name is Joan Daly, and she lives at 30 Huntington Ave., Boston, Mass.

* * *

A fast trip to Ottawa last week brought us in contact with Dr. Henderson of the National Research Laboratories who is Regional Director of the Institute of Radio Engineers, Jack Argyle of the Deputy Minister's office, Department of National Defence and Mr. H. Modley-Jones of the Post Office Department. Many thanks for your co-operation in affording us interviews.

Spent the week of March 21st to 26th in New York on the occasion of the I.R.E. National Convention and had the pleasure of meeting no less than 250 good fellows all engaged in some sphere of the Canadian electronics and communications industries. Probably won't see some of you until the next I.R.E. convention but hope to see you all again on that occasion in the Canadian Room.

* * *

Doug Peacock of Computing Devices of Canada in Ottawa has sent me a copy of the firm's official publication the "Digit". Doug is editor-in-chief of the "Digit." If you're a space fan — and there's many of us whose thoughts turn to this fascinating idea in this day and age — get a copy of the "Digit" — if there's any left. You'll find it most interesting and informative reading.

* * *

Spent a most enjoyable hour and a half over coffee with Bill Forst of radio station C.K.O.M., Saskatchewan, and Mrs. Forst recently. Bill was on his way from the I.R.E. Convention in New York and the Quebec meeting of the Canadian Association of Broadcasters at which meeting he was awarded the Colonel Keith Rogers Engineering Award in recognition of his pioneering efforts in the field of unattended radio operation of broadcast transmitters. Bill who is well informed in the matter of broadcasting in Canada tells me of many interesting developments one of which is that the engineer is coming into his own in the field of radio station operation.

* * *

There is a fast growing opinion among purchasers of TV sets that service charges as they are now applied to the purchase of new sets could stand a little adjustment. Purchasers are asking why a refund of some amount can't be made if no service on a new set has been required? It's a good question and maybe some one can answer it for us.

● Peering through the microscope at a prepared sample of electric steel, laboratory technologist, T. G. Nilan studies the formations of magnetic domains within the sample's crystal structure.

Science - - -

Electron Microscopes Aid Research

FURTHERING research into the causes of energy losses in electric motor and transformer cores, scientists at U.S. Steel's Research and Development Laboratory in Pittsburgh, Pennsylvania, are conducting an extensive study of magnetic domains in electrical steels. Experimental work on magnetic domains, or tiny oriented magnetic areas within the crystals of steel, was instituted by American scientists in 1932.

Power losses in transformers are attributable to the characteristics of the steel used in making the cores. These losses are known as "core losses". There is a measurable loss through hysteresis, or lag behind the field when steel is magnetized by a magnetic field made to vary through a cycle of values. Another loss is created by eddy currents, or induced electric currents which lower efficiency and increase temperature of rotating metallic objects in a magnetic field. These two losses do not add up to the total core loss, so a third, unknown cause is being sought. This loss is called "anomalous loss."

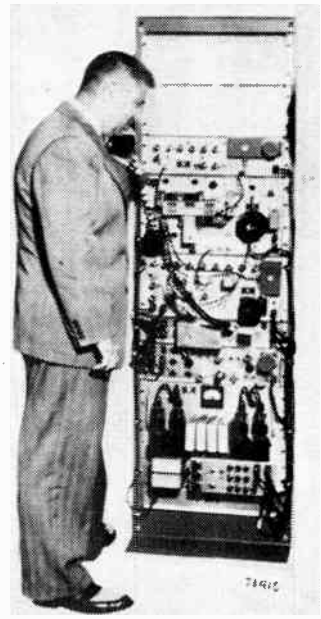
Modern electric motors and transformers have been brought to a high degree of efficiency through the use of silicon steels. These steels, first patented by Sir Robert Hadfield about the year 1900, permit the necessary alternations of the magnetic field without undue energy losses. In addition, they possess increased electrical resistance which diminishes that part of the loss due to eddy currents. They also exhibit relatively little aging effect.

In most sheet products, directionality of magnetic properties is undesirable, but in certain applications in the electrical industry it has a definite advantage. Cores can be wound or transformer laminations can be cut to take advantage of such directionality. Consequently, electrical sheet manufacturers strive to develop this characteristic to a high degree. This directionality of magnetic properties is achieved through crystal orientation. A crystal is composed of a certain periodic arrangement of the atoms of a material, which in the case of silicon steel takes the form of a cube with the iron and silicon atoms located at the corners. By closely controlled techniques of rolling and heat treating every effort is made to cause all, or at least most, of these cubes to align themselves in the same direction. This is accomplished to a high degree by present methods of processing.

Telephone Microwave

COMPLETE microwave radio relay systems especially designed for telephone circuits will soon be available to independent telephone companies.

The microwave radio relay portions of the system will be manufactured for Stromberg-Carlson by the Radio



● This is one of the relay components of the Stromberg-Carlson microwave system to be made available to independent telephone companies. *Opposite page photo* shows one of the Setco Channelling Cabinets.

Corporation of America, and will be similar to RCA microwave communications equipment already in use by a number of utilities, pipe lines and

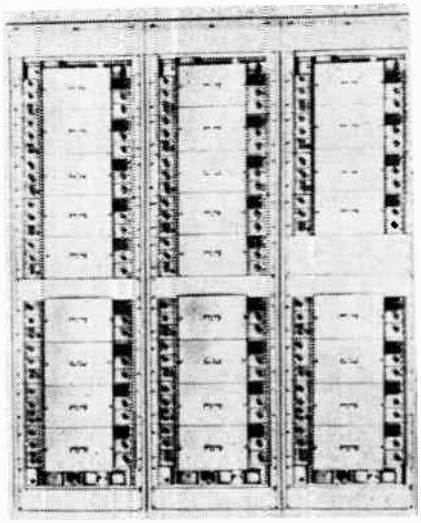
other industries in this country and abroad. The SETCO Division of Stromberg-Carlson, will manufacture the multiplexing and channeling equipment for the system.

British Columbia System

An RCA telephone radio relay system is used by the Northwest Telephone Company, in Canada, serving an area extending from Vancouver 220 miles north to Alert Bay, and providing economical communications in a region where wire or cable lines would have been prohibitively costly.

In order to obtain maximum use of the frequencies available, and to provide reliable and economical operation, the systems are of the single-sideband suppressed carrier multiplex type, operating in the frequency range of 2450 to 2500 megacycles. They provide duplex radio circuits capable of accommodating up to 30 voice channels.

This type of telephone microwave system, is easily co-ordinated with existing telephone equipment of either manual or dial types. The multiplexing system used in the SC-26 employs conventional type equipment such as has been in use for many years on wire lines. It permits the voice channels to be multiplexed over suitable wire lines and then connected directly into the microwave relay equipment. And, as it lends itself readily to dropping or adding channels, and to party-line operation, it provides wide flexibility of service.



Use of this frequency range makes it possible to employ standard long-life triode tubes. Circuitry is simple, and these factors combine to keep maintenance costs at a minimum. This frequency range also has fewer restrictions so costs of towers and other installation items are low.

Transmitters and receivers are connected to a single antenna, using either gas or air filled coaxial cable. The systems are not critical to power source voltage or frequency changes, and so do not require closely regulated power supplies.

NEW PRODUCTS

(Continued from page 41)

• *Etchall Marking Fluid*

Item 497

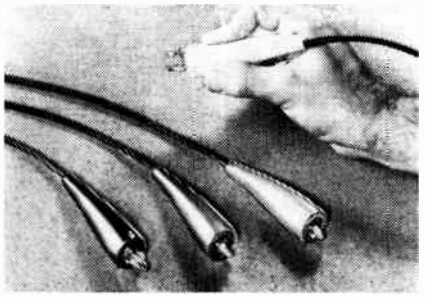
For identifying precision products, products of sheet metal, instruments, electrical parts, and other ferrous and non-ferrous metal surfaces that cannot withstand impact or pressure marking Acme offers Etchall. This is a device that imprints with an acid stain, and comes in a four-part set consisting of etching fluid, a porous stone to hold the fluid, a dropper, and a stamp of acid-resistant rubber. Pressure of the stamp against the saturated stone picks up a small amount of the fluid which, transferred to metal, etches a duplicate of the design cut in the stamp.

Inspectors' symbols, part and size numbers, trademarks, brand names, directions, and other material are quickly and easily inscribed. There is no distortion or malformation of the work and no effect on the finish other than the mark itself. The mark is relatively permanent unless a determined effort is made to buff or rub it off.

• *Colored Test Clip Insulators*

Item 498

A manufacturer of battery and test clips for the electrical, electronic and automotive industries, has introduced a new color coding possibility through the vinylite insulators used on their clips.



These vinylite insulators in two new coding colors — Electric Blue and Canary Yellow. Some of the new color coding possibilities are obvious: for identification of several different test leads, for marking 220-110 volt 3-line circuits, for 3-phase circuit test work, and for easier identification of leads in semi-darkness. The Electric Blue and Canary Yellow are available for seven Mueller clip sizes: No's. 26, 29, 47, 49, 62, 87 and 90. Designers, engineers, and all others who are interested in the advantages of the variety of colors for simplifying the explanation and use of their equipment, may obtain free samples of the new color insulators on request.

• *High-Vacuum Rectifier*

Item 499

A new data sheet describes this 3B24W High-Vacuum Rectifier. Sheet illustrates the tube, provides outline dimensions and general characteristics. Average plate characteristics for this ruggedized half-wave rectifier are shown graphically for full-filament and half-filament operation.

• *Electrical Tapes*

Item 500

How electrical tapes speed up electric motor construction and repair is the subject of a new 12-page booklet just announced.

Included in the illustrated booklet are specifications for 10 different electrical tapes for a wide variety of insulation and holding applications in motor work.

Also included is information on electrical insulation resin for complete encapsulation of motor coils against corrosive vapors, moisture, oil and shock.

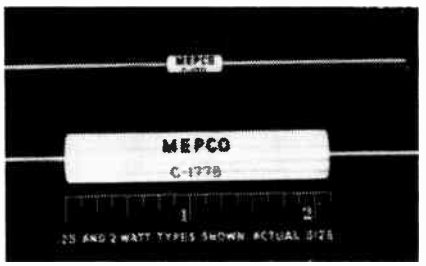
The motor booklet is available free upon request.

• *Hermetically Sealed Carbon Resistors*

Item 501

A complete line of hermetically sealed deposited carbon resistors with ratings from 25 watts to 2 watts is now available to the market.

These resistors are not the usual varnish coated types; they are completely sealed in steatite housing, assuring positive protection against moisture.



Available also, are resin coated types manufactured to MIL-R-10509A, glass enclosed and helium filled high stability types, and high frequency rod and disc units.

(Turn to page 53)

NEWS

(Continued from page 44)

W. M. Chamard
C.A.E. Executive

The President and Board of Directors of Canadian Aviation Electronics, Ltd. announce the appointment to the Executive Committee of Mr. W. M. Chamard and his election as Treasurer to CAE.

Mr. W. M. Chamard, until recently, was Comptroller for R.C.A. Victor Company, having joined R.C.A. in 1942 after his association with Campbell, Glendinning and Dever (C.A.) 1935-1938, the Auditor General's Office, National Harbours Board and Corporation Assessor for the Department of National Revenue, 1938-1942.

W. M. CHAMARD

Mr. William Morrison Chamard (Bachelor of Commerce — McGill, 1935) is a Member of the Quebec Institute of Chartered Accountants (C.A.-1938), the Controller's Institute of America and the American Management Association.

Mr. Chamard will direct financial planning and policy of all CAE's operations.

● **Front entrance of the new Canadian Aviation Electronics plant in Montreal. Termed by company officials as one of the most modern electronic plants in the country, it has been designed for the specific purpose of electronic production and incorporates all the special facilities for this task**

C.S.A. Specification On Communication Crossarms

This Specification covers the requirements of power and communication wood crossarms. It is divided into two parts: Part 1 — The physical properties of wood crossarms, and, Part 2 — the manufacture and preservative treatment of wood crossarms.

In addition to specification details, three appendices are included covering Sections and Zones for Crossarms: Knot Illustrations; and Typical Details for Power and Communication Wood Crossarms.

Copies are available upon direct request to the Association at $1.25 a copy.

Modern Electronics Plant Now In Operation

CAE's modern new plant on Cote de Liesse Road, Montreal, is now in operation. With a floor space of a hundred and thirty thousand square feet this plant houses operations previously carried out in five rented locations.

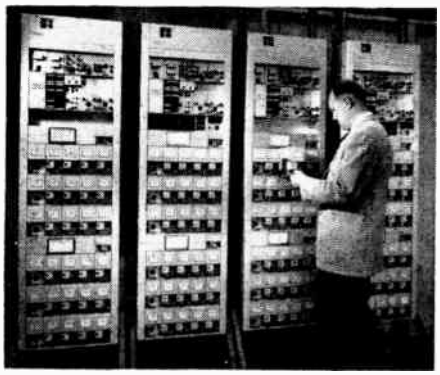
With a complement of over 300 engineers, technicians and draughtsmen, CAE's electronic engineering is carried on at all levels from creative design of new equipment through to final production, installation and maintenance. CAE engineers are ready to discuss the profitable application of electronics to your business.

(Turn to page 50)

Vacuum Melting Of Steel To Aid Electronic Industry

A development of major importance to the aircraft, electronic, automatic process and metallurgy fields, and to industry in general was disclosed recently with the announcement that Crucible Steel Company of America and National Research Corporation have joined forces to accelerate development of the vacuum melting of steels and other alloys.

48-Channel Carrier System



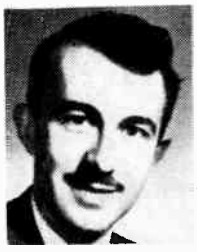
● H. K. (Chris) Kringel, manager of the system development engineering department of Lenkurt Electric Company, makes a final pre-shipment check on 48-channel Carrier System. System is for exclusive use on FM wide band UHF equipment. Terminals shown include a total of 96 voice channels.

Lear Honors Canadian G.E. For 1953 Sales Achievements

William P. Lear, world famous aircraft electronics scientist and Chairman of the Board of the prominent U.S. manufacturing concern that bears his name, recently presented the Canadian General Electric Company with the coveted Lear Hundred Grand Trophy in recognition of world-wide sales leadership of Lear aircraft radio, autopilots and radio navigation equipment. Only nine firms have been thus honored and it is interesting to note that in achieving this recognition, Canadian General Electric showed a sales increase of 298 per cent on Lear equipment in 1953 over the previous year. M. A. Fraser, National Representative for Lear Aviation Radio Sales, Electronics Equipment Department, Canadian General Electric Company, is shown receiving the gold Hundred Grand Trophy from Mr. Lear (right). The presentation was made at the conclusion of Lear's third annual sales rally recently held in Santa Monica, California. Mr. Fraser commented that much credit should be given the Canadian dealer organization. Dealers are located at major Canadian airports from coast to coast.

Charles Boisvert Broadcast Sales Representative For R.C.A.

Charles Boisvert has been named Broadcast Sales Representative for the Eastern District Sales Office, RCA Victor Company, Ltd., effective immediately, according to an announcement by B. J. Sibbold, Commercial Sales Manager, Engineering Products Department. Mr. Boisvert's territory will include Quebec, the Maritime Provinces and Newfoundland.



C. BOISVERT

Mr. Boisvert joined RCA Victor in August 1953. A graduate in Engineering from McGill University, he had previously been associated with C.A.R.D.E.

R. E. McElligott Appointed Secretary-Treasurer — Cossor

Cossor (Canada) Limited, of Halifax, N.S., Electronic Engineers, announce the appointment of Mr. R. E. McElligott, C.A. as Secretary-Treasurer. Mr. McElligott was born in Montreal and prior to joining Cossor's was for fifteen years a member of Price Waterhouse & Co. Chartered Accountants, in Ottawa and Montreal. During the war he served four years in the Canadian Army and retired with the rank of Captain.

R. E. McELLIGOTT

A. W. Paulson Discusses Electronic Applications

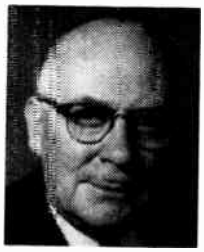
The further application of electronics to industrial and commercial machinery was the keynote of an address by A. W. Paulson, Chief engineer, Otis Elevator Co., New York, to a joint meeting of the Engineering Institute of Canada and the American Institute of Electrical Engineers in Toronto recently. A graduate of Massachusetts Institute of Technology (M.I.T.), Paulson has contributed largely to the development of elevator controls and has contributed a number of inventions in this field.

A. W. PAULSON

(Turn to page 56)

ELECTRONICS and COMMUNICATIONS

Dear Readers and Advertisers:



Norman McHardy

Just about a year ago the first issue of ELECTRONICS AND COMMUNICATIONS went out to its large audience across Canada.

The warm reception it received showed beyond a doubt that this new expanding market in Canada wanted a business publication of its own and that ELECTRONICS AND COMMUNICATIONS had hit upon an editorial formula that seemed to fill the bill. Many hundreds of letters and telephone calls from readers and advertisers were received and all said "Good wishes and well done".

Twenty-nine advertisers used this first issue. To them we will be ever grateful. Their use of ELECTRONICS AND COMMUNICATIONS at this stage of its publication was evidence of their faith in themselves — their faith in the market and their confidence in this publishing house's ability to do a good job.

Since then ELECTRONICS AND COMMUNICATIONS has come out every second month with each issue showing satisfactory improvement over the previous one in advertisers' acceptance and reader response. It was the sixth issue, the first in 1954, which however really showed what was happening among advertisers. It carried the messages of fifty-three advertisers and 37 per cent more advertising than any previous issue. Twenty-four out of the original twenty-nine advertisers of the first issue were still present.

And now this issue — now in your hands, the first in ELECTRONICS AND COMMUNICATIONS' second year of publication, reaches you with 20 per cent more advertisers and 20 per cent more advertising than the last one.

So we think that ELECTRONICS AND COMMUNICATIONS has probably set a new high speed record in Canada for new publication acceptance by both readers and advertisers in Canada. Perhaps this is only to be expected in this fantastic industry where ideas that a couple of years ago could only be printed in a "Dick Tracy" column, are now realities. Where Radar, Microwave, Color Television, Electronic Computing Machines, Electronic Microscopes and many other amazing products are already coming out of the laboratories and factories.

Dr. A. N. Goldsmith, when receiving a Founders Medal at the recent I.R.E. gathering in New York, said — "The role of electronics in industry will steadily widen. Manufacturing, production, storing, retailing, accounting or billing will all draw heavily on electronics. Communications to the home and to vehicles will expand until tomorrow's color television will be only the foreshadowing of some even more comprehensive system of the future.

Electronics will be applied to cooking, refrigeration, air-conditioning, cleaning, advanced lighting and heating. Perhaps even acoustic silencing will be based on electronics. Detailed knowledge of the universe will be more available and more expert diagnosis in the field of medicine due to electronic microscopes and delicate instrumentation, may contribute greatly to the health, comfort and long life of man."

What an interesting challenge it is to publish a periodical to serve and report the developments of such a field as electronics and communications. ELECTRONICS AND COMMUNICATIONS is proud to have been associated with the rapid progress made in the Canadian field during the past year. It looks forward to walking hand in hand with it during the coming eventful years.

Norman "Nick" McHardy
Vice-President,
Age Publications Ltd.

NEW PRODUCTS

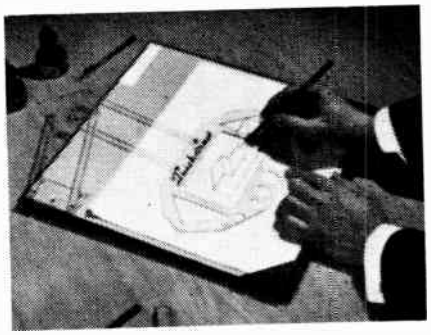
(Continued from page 48)

● *Quickdraw Drawing Instrument*

Item 502

The "Quickdraw" is an ingenious device which provides an invaluable aid to the production of drawings and sketches, either for the professional or amateur. It will give continuous service and it needs no accessories beyond pencil and paper. It enables a person, with little or no experience to draw and make plans, sketches and other outlines, rapidly and accurately to scale.

The template is fastened to a toggle hinge by strong metal eyelets, preventing any possible slackness or sideplay, forming a pantograph, and the whole is securely fixed to the base of the folder. The pantograph



can be removed and fitted on any suitable board.

The folder is 14-in. square and covered with strong rexine leather cloth. The base is $\frac{1}{16}$-in. thick and serves as a drawing board. Corners are provided to hold the paper in position and only one drawing pin is required to hold the paper rigid. The lid of the folder it fitted with a pocket to hold spare paper, sketches, etc. Total weight of the instrument including folder is only 2 lbs. Maximum paper size 10-in. by 13-in.

There is no limit to the potentialities of the "Quickdraw" and, moreover there is nothing to wear out; nothing at all to go wrong; it will last a liftime and will repay its initial cost in a very short period when used for quick but reasonably accurate drawings for submission to clients; illustrating an article by a sketch on a letter; sketches for development from the Tool Room instead of the so often rough scrawls; wiring circuits, especially those to be taken on the site, and clear and accurate sketches of clients' discussion points.

● *Ferranti Tesvac*

Item 503

The Tesvac is a portable and safe source of High Voltage High Frequency output which may be employed for vacuum testing and many other applications. The circuit is similar to the well-known Tesla circuit and includes a spark gap fitted with tungsten tipped electrodes. The length of this spark gap can be adjusted.

The Ferranti Tesvac incorporates the following special features:—

The frequency is unusually high for instruments of this type and the discharge is therefore less disruptive than that obtained from units which operate at a lower output frequency. The transmission of energy through the glass walls of a vacuum system is more efficient because of the higher frequency. The spark gap and condensers are built in with the power unit. The exploring electrode is therefore very light and can be manipulated easily. The casing of the exploring electrode is made from special material which is capable of withstanding considerable mechanical shock. The components are easily accessible and the exploring electrodes are interchangeable.

The Tesvac unit enables the operator to estimate the degree of vacuum in any glass system or in a metal system fitted at some point with a glass indicator tube. If the exploring electrode is held close to the glass wall of the vacuum system, visual indications are given whereby the approximate pressure may be estimated.

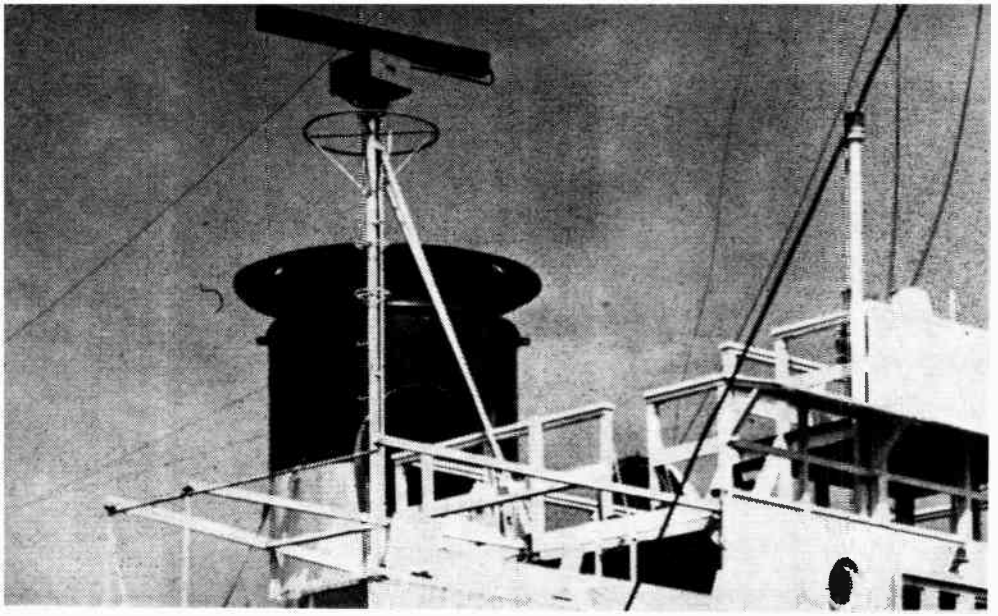
● *Leak Detection Test Station*

Item 504

A leak detection test station is now available on the Canadian market through the Canadian agents of the American manufacturer of the equipment.

Features of the Model MS-8 VEECO Spectrometer Helium Leak Detector and a single port test table make it a particularly valuable piece of equipment for the electronics, nucleonics, chemical, metallurgical and drug industries.

(Turn to page 58)



● Typical slotted waveguide radar antenna installation of the type used on the C.S.L. vessel T. R. McLagan.

Marine Communications - - -

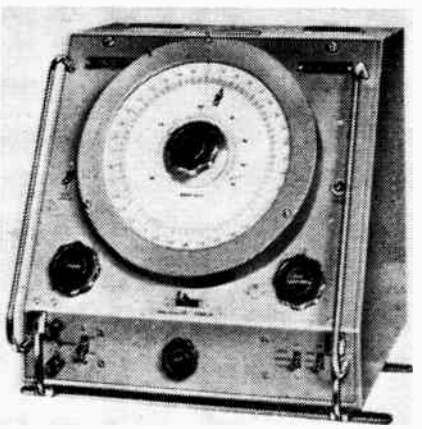
Great Lakes Shipping Aid

WHEN navigation opens this spring on the Great Lakes, Canada Steamship Lines carrying capacity will be augmented by the latest addition to their Upper Lakes fleet, the SS "T. R. McLagan".

The "T. R. McLagan" is the largest vessel ever built in either a U.S. or Canadian Great Lakes shipyard and when she takes over her role as flagship of the C.S.L. fleet, the culminating point in her owner's bulk carrier expansion program will have been reached, for the time being at least.

In accordance with their usual practice Canada Steamship Lines have equipped the "McLagan" with the latest in Marine communications equipment and electronic navigational aids. Radar is today in widespread use in merchant shipping, not only on ocean-going vessels but also on the Great Lakes where it is invaluable in the congested and frequently fog bound channels of the St. Mary's and St. Clair Rivers. Before the advent of Radar, costly delays were encountered at these and numerous other points on the Lakes when adverse weather conditions did not permit safe navigation. Fortunately, however, these delays have been reduced both in frequency and duration and with little danger to life, ship or cargo by the intelligent use of Radar which is playing an ever-increasing part in the maintenance of shipping schedules all over the world.

The "McLagan" is one of the latest additions to the long list of Canadian vessels fitted with Canadian Marconi Type LN27 Radar. This equipment uses the P.P.I. (Plan Position Indicator) type of presentation on a 10 inch electro magnetic cathode Ray Tube with a P7 long persistance screen. A maximum range of 20 miles is obtainable and objects may be discerned as close as 75 feet from the vessel. The Transmitter operates in the X band of 9345-9405 megacycles, and transmits amplitude modulated pulses of 0.2 microsecond duration at a pulse recurrence frequency of 1000 cycles per second. The R.F. Generator is a 725A Magnetron with a peak pulse output of 45 kilowatts.



● The "Lodestone" direction finder (comprising goniometer, receiver and filter units) is contained in a cast case of moderate dimensions and arranged for desk or bench mounting.

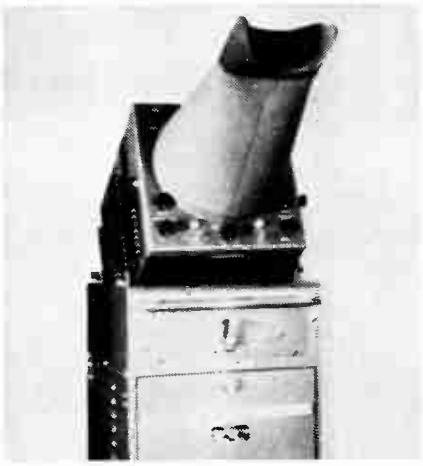
An interesting feature of this installation is the slotted Guide Antenna which has several advantages over the horn-fed truncated parabolic Reflector commonly used with Marine Radar equipments. Because of the shape of the Antenna, the wind-loading problem is greatly reduced in comparison with the parabolic Reflector. Side lobe Radiation is minimized eliminating

false echoes when navigating in narrow channels or near relatively large land targets. A wide vertical beamwidth is obtained to compensate for ship's roll, and the narrow horizontal beamwidth provides for excellent azimuth discrimination.

A Marconi "Lodestone" M.F. Direction Finder aids in accurate position fixing by taking cross bearings on the many D.F. Beacons located on the shores and Islands of the Great Lakes. This particular installation has an added feature in the form of a true-bearing pointer driven by a repeater motor connected to the master gyro compass.

Communications

The main communications set is a Marconi Type C N 3 6 C M amplitude modulated Radiotelephone operating in the 1.6 to 3 and 4 to 6 megacycle



● Marconi LN27 radar console shown with viewing hood fitted over picture tube. The complete equipment is contained within this cabinet with the exception of the antenna and associated gear box.

bands into a quarter wave antenna common to both Transmitter and Receiver. Both the Transmitter and Receiver have eight Crystal controlled channels can be selected by means of Any one of these eight pre-tuned channels can be selected by means of a single switch.

With this equipment the "McLagan" can communicate with other Radiophone equipped ships or with the Coast Stations located at Port Arthur, Sault Ste. Marie, Midland, Point Edward, Port Burwell, Toronto and Kingston on the Canadian side or with the various Stations located on the U.S. shores of the Lakes. Direct telephone connection can be made from these Coast Stations into the land telephone system permitting the Ship's Master to converse directly and with a reasonable degree of privacy to his office or home.

The CN36CM is supplemented for communications purposes by a Marconi DN16 VHF FM equipment operating in the 156 to 162 megacycle band at spot frequencies allocated to Marine requirements. F.M. is comparatively new in Great Lakes shipping and the "T. R. McLagan" will be the first Canadian vessel to be fitted.

NEWS

(Continued from page 51)

Association Of Broadcasters Now Has New Name

The 29th Session of the Canadia Association of Broadcasters held at Quebec City on March 22nd last saw the name of the association officially changed from the Association of Broadcasters to the Canadian Association of Radio and Television Broadcasters. In announcing the change of name F. H. Elphicke, President of the association saw it as "a mark of our growth" of the organization.

Appointed Ontario Manager

Adams Engineering Ltd. announce the appointment of Mr. F. W. (Bill) Deacon as Ontario Manager.

F. W. DEACON

Mr. Deacon has been associated with the tube and components industry in Canada for several years. In his new position he will handle the Ontario accounts for Adams Engineering Limited from their new office at 65 Bloor Street West, Toronto.

SYLVANIA ELECTRIC (CANADA) LTD. TO MAKE T.V. SETS

Ralph E. Niedringhaus, President of Sylvania Electric (Canada) Ltd., announces the company has purchased a 12-acre property at Dunnville, Ont., where a plant will be built to manufacture Sylvania television sets.

Initial investment in the project will be in the neighborhood of $750,000. The new plant will be a single storey unit with an area of some 61,000 square feet and equipment will be the most modern available in the electronics industry.

Appointment of R. R. Forbes as plant manager is also announced. Mr. Forbes, educated in Canada, was formerly Division purchasing agent for Sylvania Electric Products, Inc., in Buffalo.

R. E. NEIDRINGHAUS

R. R. FORBES

Copper Wire Products Move To Larger Premises

J. R. Longstaffe, President of J. R. Longstaffe Co., has announced that during February the offices and manufacturing plant of Copper Wire Products were moved to 300 Campbell Avenue, Toronto. The plant, which specializes in the manufacture of Jensen Speakers and Transformers, was formerly located in Guelph, Ontario, and the offices at 351 Carlaw Ave., Toronto.

The move will enable the company to effect expansion plans but the 30,000 sq. ft. of floor space in this modern, up-to-date building all on one floor makes it possible for more economical mass production.

Vicom And Company (Canada) Ltd. To Establish in Kingston

A new Ontario industry, Vicom and Company (Canada) Limited, will be established in Kingston it was announced recently by the Honorable W. K. Warrender, Q.C., Ontario Minister of Planning and Development. A well known British firm, Vicom and Company Limited, has leased a ten acre site and four buildings providing 12,000 sq. ft. at the Norman Rogers airport in Kingston. The parent firm specializes in the manufacture, installation and repair of radio, radar, and electrical equipment used in aircraft.

At Kingston a workshop will be established to make sub-assemblies of electronic equipment for other Canadian manufacturers. A group of twenty technicians, all experts in this field, will be sent out from Britain. The Canadian firm will have as President Mr. Eric Lane-Burslem, Managing Director of the parent firm. Mr. John MacKay of Winnipeg, who has been in Britain for three years, will be General Manager.

Marconi Appoints Dr. L. L. Hill As Senior Research Physicist

J. J. Kingan, General Manager of Canadian Marconi Company in Montreal, has announced the appointment to the Company's research staff of Leslie L. Hill, Ph.D. He will hold the position of Senior Research Physicist.

German-born Dr. Hill was educated in Germany, France, Austria and Britain, and specialized in aviation and metallurgy. In Berlin he studied under the renowned physicist, Dr. Max Planck. After his graduation in Munich in 1932 he worked in France, Italy and England; during the war he served in the Royal Electrical and Mechanical Engineers in the British Army.

After the cessation of hostilities he spent four years in Egypt, doing metallurgical work in aircraft materials for the British Ministry of Supply, later on accepting an appointment at Fouad University, and acting as liaison officer with the Egyptian Air Force. He first came to Canada in 1951, then moved on to the United States, where he was director of research at Land-Air, in Chicago.

DR. L. L. HILL

Dr. Hill speaks English, German, French, Italian, Spanish and Arabic. He has also a number of patents pending, several of which he intends to put at Canadian Marconi's disposal.

Hammond Takes Over New Post At Marconi

Canadian Marconi Company announces the promotion of J. Allan Hammond, Manager of the Company's Montreal radio station CFCF, to the position of Broadcasting Manager. He will take over many of the duties of W. V. George, who left this month for a new post in England. In his new appointment Mr. Hammond will supervise Marconi's Broadcasting operations.

Mr. Hammond was born in St. Lambert in 1920 and is a graduate of St. Lambert High School. His association with CFCF began in 1940, when he joined the staff as an announcer. In January, 1941, he enlisted in the RCAF and went overseas, serving in the Coastal Command and Bomber Command. He was shot down over France in March 1943, and escaped to Switzerland.

J. L. HAMMOND

(Turn to page 60)

NEW PRODUCTS

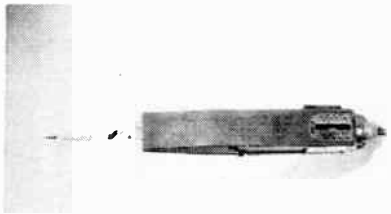
(Continued from page 53)

• *Tension Gauges*

Item 505

A complete series of gauges to measure any spring-set tension between 4 and 2,500 grammes in the following ranges is now available to the trade: 4 to 24 grammes; 10 to 80 grammes; 50 to 250 grammes, all with detachable operating strips and 100 to 500 grammes; 200 to 1,600 grammes, and 500 to 2,500 grammes all with fixed operating strips.

Each gauge is a precision measuring instrument at any tension within the limits for which it is designed.



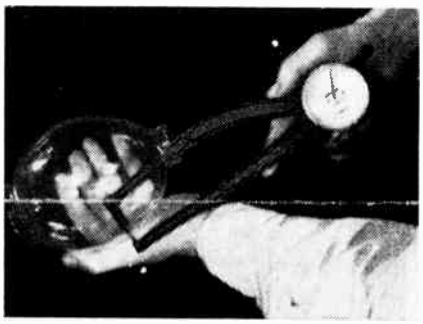
An operating strip, projecting from the case, is applied to the tip of the spring whose tension is to be measured. Deflection of the operating strip to either side, simultaneously with movement of the spring under test, indicates that the spring tension is equal to the gauge setting. The gauge is set before use by rotation of a knurled nut at the opposite end from the operating strip, the setting being ready by means of an indicator on a clearly-marked scale on the side of the instrument.

• *Dial Caliper Gauges*

Item 506

For the rapid yet accurate measurement of the thickness of any material the Quicktest Dial Caliper Gauge is the ideal instrument. A Miniature type A External Caliper Gauge with a dial diameter of $1\frac{3}{4}$" and $1\frac{1}{2}$" distance between contacts and instrument case is an extremely handy, yet quite inexpensive instrument. It may be supplied with ranges 0-0.20" or 0-0.50". In the former range one division equals 0.001", in the latter 0.0025". The gauge is available with four different contact pairs: Style K are balls for the measurement of sheet metal, pipe sections, glass, hollow wire, hard leather, wood, etc.; Style S are points for the measurement of grooves, pipe-threads, slots, etc.; Style F is a knife-edge against a level surface for the measurements of sections, rounds, wire, etc.; Style T are plates for the measurement of foil, paper, cardboard, felt, fabrics, soft leather, sheet-rubber, veneer, etc.

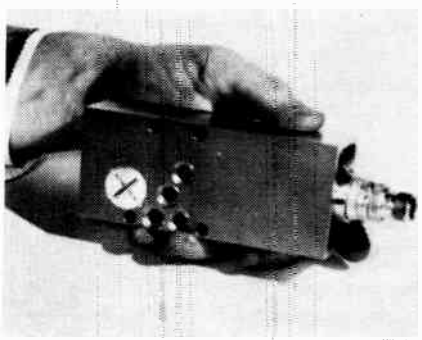
Larger external caliper gauges have ranges up to 3" dials of $2\frac{1}{8}$" dia. with distances between contacts and throats varying from $3\frac{1}{4}$" to $7\frac{5}{8}$". In addition two types of internal caliper gauges are available.



• *Self-Clearing Hydraulic Servo Valve*

Item 507

Announcement of the design and production of a new low leakage, self-clearing hydraulic servo valve has been made by the maker. It is a two-stage, four-way hydraulic servo valve with internal mechanical feedback for the transformation of low-level electrical information into controlled hydraulic energy.



The unit is completely sealed against magnetic particles and can be operated without oil filters. This transfer valve exerts a clearing force of up to 500 pounds in the first stage to remove sludge, dirt or metal particles that tend to jam the valve. Its frequency response is flat from 0 to 150 cps. It has a linear output up to 14 hp., with no external leakage and a zero signal leakage of only 60 cc min. Power amplification is 5000 with pressures up to 3000 psi. Input power is less than 2 watts; input current is 15 ma.; resolution is 0.03%; time constant is 0.001 seconds. The valve is $1\frac{5}{8}$" x $2\frac{5}{8}$" x $5\frac{1}{2}$" with a volume of less than 18 cubic inches and has a flow of up to 12 GPM. It weighs less than $1\frac{3}{4}$ pounds. The lower flow models are correspondingly smaller and lighter. The life of the unit is at least 4 million cycles.

(Turn to page 62)

COLOR TV IN CANADA

(Continued from page 33)

Q. Will there by any difference in home antennas for color reception?

A. No, the same antenna will serve for both color and black and white reception.

Q. How many adjustments will the user make on a color TV set?

A. The color set owner will have to adjust about the same number of controls as is necessary on a black and white set. However, since there will be about 30 pre-set controls on a color set (compared to six on a black and white model) the assistance of a qualified TV service man to adjust the pre-set controls will be required much more often for a color receiver.

Q. What are the basic colors necessary for color TV?

A. Red, blue and green. In color TV, a transmitted code causes red, blue and green dots to "lighten up" in varying proportions on the TV picture tube screen.

Q. To what point has the development of color TV progressed?

A. While the color transmission system has been standardized, the development of color receiver circuits, components and tubes is in its infancy. Tremendous efforts are now being made to simplify picture tubes and increase their size, and to reduce the complexity of circuits. We expect that the color receiver in production several years from now will cost less and produce a larger picture.

Q. Will all TV programs eventually be in color?

A. Most authorities are of the opinion that black and white programs may always outnumber color telecasts. The use of color in television might follow the same pattern as in the motion picture industry. Color motion pictures are far from new. They were introduced 31 years ago. But, even to-day, black and white motion pictures still outnumber color films.

● He's working on a filter to take the commercials out of radio programs!

NEWS

(Continued from page 57)

1954 List of CSA Publications Now Available

W. R. McCaffrey, Gen. Mgr., Canadian Standards Association announced that publication of the 1954 List of CSA Standards is now available upon request. The list contains the titles and prices of all CSA Specifications available at the CSA Head Office at Ottawa. The standards listed therein concern Civil Engineering; Mechanical Engineering; Electrical Engineering; Canadian Electrical Code, Part I—Inside Wiring Rules; Canadian Electrical Code, Part II — Approvals Specifications; Canadian Electrical Code, Part III — Outside Wiring Rules; Canadian Electrical Code, Part IV — Radio; Canadian Electrical Code, Part V — Mines; Railway Work; Ferrous Metals; Non-Ferrous Metals; Steel Construction; Welding; Photography; Timber; Safety Codes; and a number of miscellaneous subjects.

These codes, specifications and standards are of direct interest and useful to everyone interested in the application of standardization and in particular to the design, production, purchasing and maintenance departments of industrial organizations of all kinds.

Copies of the 1954 List of CSA Publications are available from the Canadian Standards Association, National Research Building, Ottawa at no charge.

CROSLEY EXPANSION PLANS ANNOUNCED BY AVCO

● Pictured above are D. R. Moffat *(left)* executive vice-president of Avco of Canada Limited, and Ivor M. Leslie, general manager of Crosley Radio and Television in Canada — a division of Avco. They are reviewing Crosley's new expansion plans which were announced recently by Avco of Canada, Limited, and which call for the opening of a new and imposing Crosley plant in Weston, Ontario.

According to an announcement by Avco of Canada, Limited, Crosley Radio and Television — a division of Avco — will move into a new and imposing plant at Weston, Ontario, specially constructed to house their activities. Ivor M. Leslie, General Manager, says that the new plant will swing into production in June, in time to meet the requirements of the peak fall market for radio, television and electronic products.

The new plant is a modern, one-storey building and its 90,000 square feet of floor space will house all Crosley radio, television and electronic operations.

With seven television stations already on the air and sixteen to be completed this year, the market in Canada has as yet no foreseeable horizons. In view of this, Crosley are not only building for present needs but the new site will permit of quick expansion as the market grows.

Gordon V. Richdale Named President of Baker Platinum Of Canada Ltd.

Gordon V. Richdale has been named President of Baker Platinum of Canada Ltd. and its newly acquired subsidiary, Goldsmith Bros. Smelting and Refining Company Ltd., Charles W. Engelhard, Chairman of the Engelhard Industries group, announces. The Engelhard organization, with manufacturing and sales facilities in United States, Great Britain, Europe, South Africa, Australia, Japan, South America as well as Canada, constitutes one of the world's largest houses engaged in refining and working precious metals.

G. V. RICHDALE

Mr. Richdale has been elected President of the other companies composing the Engelhard group of companies including American Platinum Works, Amersil Company Inc., Baker & Co. Inc., Charles Engelhard Inc., East Newark Realty Corporation, Hanovia Chemical & Manufacturing Co., Irvington Smelting & Refining Works, and Nieder Fused Quartz Co., — all located in Newark, N.J., area; also D. E. Makepeace Co., Attleboro, Mass., and National Electric Instrument Co., Inc., Elmhurst, L.I. In addition, the group includes manufacturing and sales subsidiaries in London, Paris, Copenhagen, Zurich, Milan, Johannesburg, Melbourne, Tokyo, Bogota, Rio de Janeiro and Toronto.

C.G.E. To Manufacture C.B.S. Color TV Sets

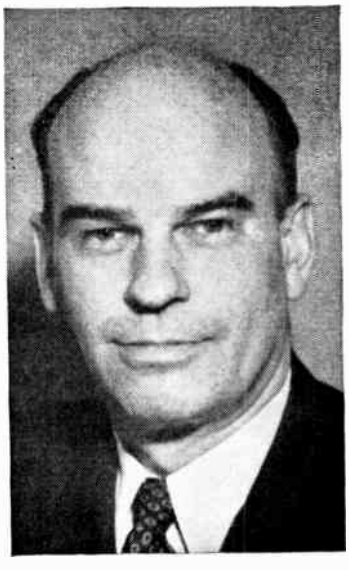
The General Electric Company has signed a patent license agreement with Columbia Broadcasting System Inc., granting G.E. the right to manufacture and sell color television apparatus developed by CBS, it was announced jointly recently by the two companies.

Included in the CBS-developed equipment to be produced by General Electric are the single-tube "Chromacoder" color television camera and the "Chromacoder" introduced last October and now in use in regular CBS Television color broadcasts under the National Television System Committee color standard adopted by the FCC on December 17th.

The agreement also gives G.E. the rights to produce the color cameras and related apparatus for industrial and closed circuit television use.

Powertronic Equipment Co. Forms Burlec Sales Limited

J. C. BURKHOLDER



F. J. McDIARMID

Powertronic Equipment Company has announced the division of the firm into two separate operating entities, Powertronic Equipment Limited, which is now the manufacturing set-up and the newly organized Burlec Sales Limited which handles the Canadian distribution of the products built or manufactured by the international companies they represent in Canada.

In making the announcement, J. C. Burkholder, P.Eng., President of the firm also announces the appointment of F. J. McDiarmid, B.Sc., P.Eng., as General Manager of the companies. Among the important positions held by Mr. McDiarmid in sales and engineering during the past twenty years was Assistant General Sales Manager, Algoma Steel Corp., for which company he later served as Chief Engineer. He was also Assistant General Sales Manager, John Inglis Company Limited and Chief of the Production Division, Canadian Department of Defense Production in Washington.

(Turn to page 66)

NEW PRODUCTS

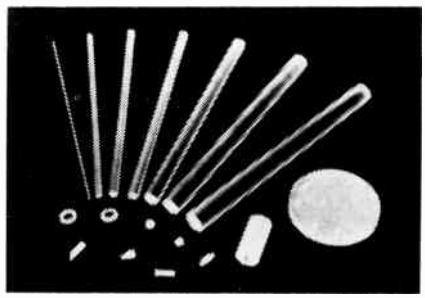
(Continued from page 58)

• *Industrial Plastic*

Item 508

An industrial plastic known as "Polypenco" Q-200.5 has been developed to meet the need for a lower cost ultra-high-frequency insulating material with good heat resistance and excellent machinability.

This material is used for electrical, electronic, communication and allied equipment where a stiffer material is required. Applications have been successful for such items as coaxial spacers, UHF antenna insulators, stand-off insulators, coil forms, connector beads, etc.



"Polypenco" Q-200.5 is a rigid, clear and transparent heat hardening polymer with a low dielectric constant of 2.4 to 2.5. It shows only a slight change in the dissipation factor (less than .0002" at 30 megacycles) over the entire frequency range.

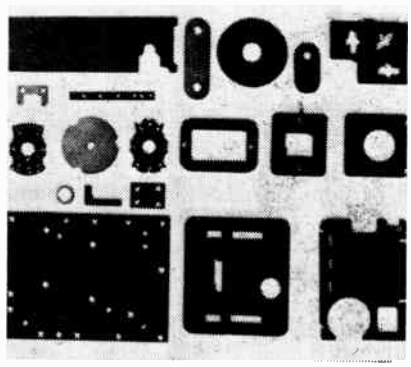
Insulators made from this material are said to withstand temperatures up to 400°F. under light load conditions. The heat distortion temperature is 220° to 225°F. at a 264 psi fibre stress.

• *Phenolic Stampings*

Item 509

Low cost, short run phenolic stampings to meet requirements for radio or electronic frames, insulators, panels, socket bases, mechanical gaskets and spacers or cams has been announced by the manufacturers.

Phenolic stampings are die-cut to client specifications by "controlled tolerance" methods, holding tolerances to ± .002" under standard conditions, the manufacturer states.



Used for experimental projects, pilot runs or limited quantity production, the phenolic stampings can be produced, according to the stamping firm, in any size or shape up to 9" x 12" x $\frac{1}{8}$".

Other non-metallic materials such as vulanized fibres, plastics and insulation paper (fish paper) can be used also, the firm stated.

• *Portable Recording Instrument*

Item 510

A new portable recording instrument for obtaining a permanent record of alternating current and voltages is available from Canadian General Electric Company's Apparatus Division.

(Turn to page 68)

BOOK REVIEW

RECEIVING TUBE SUBSTITUTION GUIDE BOOK, by H. A. Middleton, is the Second Supplement, in addition to the original volume and the First Supplement to it, and is an accumulation of over twelve years of experience in substituting tubes in radios, television receivers and other electronic equipment. It is a never-ending process which we shall continue in an effort to keep your information as current as possible.

Most of these addtional substitutions are for use in television receivers and therefore, because of their critical application in some cases, special consideration should be given your selection when you have a choice of substitutes. A stage-by-stage discussion of the most popular circuits used in television receivers is included in the First Supplement. If there is any question as to whether or not the stage being substituted is a critical one and which characteristics of the substitute should be given special consideration, take a moment to read the article covering the stage in question.

The information herein, in the large part, calls for substitutions only. It is not the object of these instructions to tell you how to improve radios, television receivers and other electronic equipment but rather to help you use the tubes you have, in order to replace those that are not available.

RECEIVING TUBE SUBSTITUTION GUIDE BOOK, by H. A. Middleton, is published by **John F. Rider Publishers Inc., 480 Canal Street, New York.** Contains 48 pages, paper bound; Cost — 99 cents.

The second edition of **APPLIED ELECTRONICS, by Truman S. Gray,** retains the purpose and much of the plan of the first edition. The major aims in the revision have been: to improve and clarify details; to bring the coverage up to date; and to include new developments such as the transistor and its applications.

The first part of the book is devoted to a discussion of the physical phenomena which form the foundation of electronics. This material is followed by an explanation of the way the phenomena combine to govern the characteristics, ratings, and limitations of electronic devices. The final chapters provide a treatment of the applications of electronics to the various branches of electrical engineering.

The author's emphasis on clarity and reasoning makes the book useful for independent study. He has been careful to provide all the links which the experienced engineer takes for granted but which may easily be overlooked by the student. In general, he places less emphasis on advanced mathematics than on a scrupulous attention to such thought-aids as the precise definition of symbols and their interpretation in terms of physical quantities.

For engineers and students with little knowledge of the subject, Applied Electronics presents an understandable discussion starting from elementary facts and principles. For those who have already gained a basic knowledge, its foundational treatment and practical illustrations and problems will provide a useful means for further study and reference.

APPLIED ELECTRONICS is co-published by **Wiley and the Technology Press of M.I.T.** May be obtained from **John Wiley and Sons Inc., 440 Fourth Avenue, New York. Price — $9.00.**

"HOW TO USE METERS" by John F. Rider, is a practical book. The theoretical aspects of current and voltage measuring devices are held to a minimum in these pages. Here and there some reference is made to theory, but by and large the main theme is expressed by the title of this book. Its purpose is to serve the needs of the electronic maintenance technician, the technician in industrial and electronic laboratories, the radio amateur, the experimenter in electronics, and the men and women who are studying electronics in commercial, academic and military schools — in general all those who have a practical interest in the application of a-c and d-c voltage and current measuring devices.

The physical construction of electrical meters receives only such attention as is necessary to give the user of the device some idea of what is inside the instrument that he is working with. The major portion of the space between the covers is devoted to the application of meters to home electronic devices such as radio and television receivers, amplifiers of various kinds, transmitters that might be used by radio amateurs and basic measurements in electricity and electronics.

Measurements in the power distribution field and special design engineering applications are omitted, although it is recognized that engineers have occasion to make measurements similar to those performed by maintenance technicians, students and experimenters. It is difficult to set boundaries on the application of meters or to set apart the possible applications of panel meters, volt-ohm-milliammeters or vacuum tube voltmeters. These are selected and used as dictated by the needs of their users, and the book attempts to cover the details which make such selection and application easiest.

"HOW TO USE METERS" is published by **John F. Rider Publisher, Inc., 480 Canal Street, New York 13, New York. Cost — $2.40.**

Orders for the books reviewed may be placed with Electronics and Communications, 31 Willcocks St., Toronto 5, Ont.

READERS' SERVICE PAGE

We realize that our readers are busy people and may not always have time to write letters of enquiry to manufacturers regarding advertised products that are of interest to them. Therefore, to save you the time of writing a letter, we offer you the use of this Readers' Service Page. It is designed for your convenience in obtaining free and without obligation detailed information on any advertiser's product or New Product appearing in this issue of *Electronics and Communications*. Check as many New Products or Advertisements as you like on the attached coupons and send to *Electronics and Communications*, 31 Willcocks Street, Toronto 5, Ontario. We will see that detailed information concerning your enquiries is in your hands within a few days.

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☐ 481	☐ 486	☐ 491	☐ 496	☐ 501	☐ 506	☐ 511
☐ 482	☐ 487	☐ 492	☐ 497	☐ 502	☐ 507	
☐ 483	☐ 488	☐ 493	☐ 498	☐ 503	☐ 508	

COMPANY NAME .....

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YOUR POSITION .....

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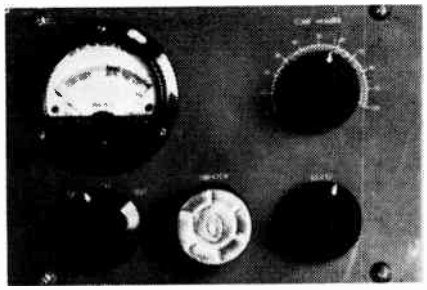
Construction - - -

Concrete Mixes Checked In Minutes

MOST persons have heard the old biblical admonition to the effect that a house should not be built on a foundation of sand. The statement, of course, is not intended to be interpreted literally to derive its theological significance but no better literal advice could be heeded, and indeed has been heeded for years, by building contractors. One of the first principles of good construction is to build on a foundation of rock. This, however, is not always possible, hence the use of cement which takes the place of rock.

In recent years the formula for concrete mixes has become increasingly important to engineers and architects who have become more conscious of the necessity of effective control with respect to the grading and aggregates and the control of water/cement ratio in concrete mixes.

The water/cement ratio plays a most important part in achieving the required strength specifications but once the aggregate grading has been determined and the water/cement ratio decided, the problem on the site of the construction job is to ensure the continued production of concrete with a consistent quality.



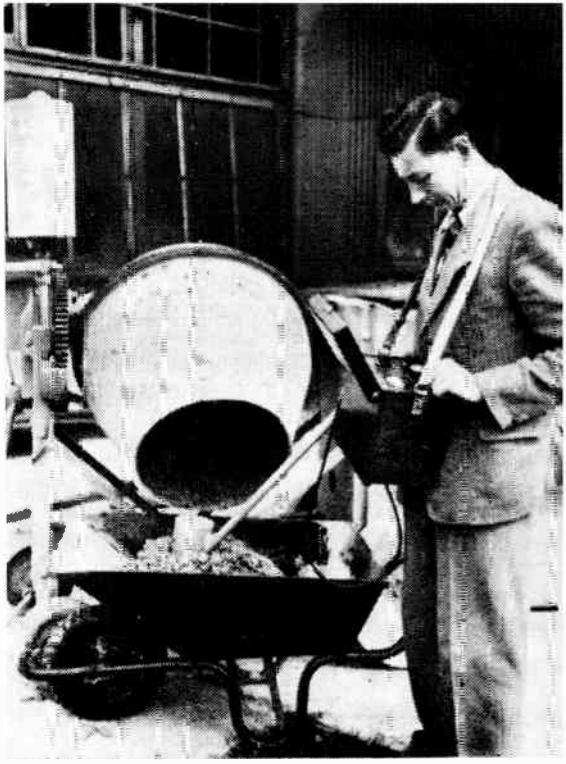
● Simple to read panel of the "S. G. Concrete Mix Tester".

In the past the job of checking on the consistency of concrete has been a slow one and the only means of performing the check was by a time consuming chemical analysis. The time required to perform this type of routine check is obviously not always available on a construction pob. Now, however, a device has been perfected by which an analysis of the water/cement ratio of concrete can be made in the matter of minutes. The instrument, which is electronically operated is known as the "S.G. Concrete Mix Tester".

Simple To Operate

The instrument is composed of two parts, the case housing the controls and the instrument panel and a canister in which the electrodes are contained. To operate the device the canister or "prodder" is plugged into the socket on the side of the instrument case. Next, an adjustment knob is moved to bring the pointer on the "Too Wet" and "Too Dry" dial to zero and the instrument is ready for use.

The actual concrete test is made by immersing the lower half of the canister into the sample mix to be tested and partially, but slowly, withdrawing it until the electrodes only, on the base of the canister, are immersed. The code regulator knob is then adjusted until the pointer is opposite the "OK" zone. The code number indicated is then the appropriate one for the particular mix. All ensuing mixes of a similar design can then be tested with the code regulator knob set to the code number arrived at from the test on the sample mix. The pointer on the dial will then indicate whether or not the following mixes are drier or wetter than the sample mix first tested.



● Now it only takes minutes to test the water cement ratio of concrete mixes.

NEWS OF THE I.R.E

Toronto Section I.R.E. Hears Dr. H. LeCaine On Electronics In Music

Members of the Toronto Section, Institute of Radio Engineers heard an address by Dr. H. LeCaine of the National Research Council in the Electrical Engineering Building, University of Toronto at their recent meeting. The subject of Dr. LeCaine's paper was Electronic Music. After touching lightly on the history and nature of musical scales, Dr. LeCaine described the characteristics of certain instruments and the human voice, using graphs and recordings and demonstrated how these characteristics could be produced electronically.

A feature of the evening's demonstrations was a homemade model of an electronic organ, designed by the speaker. Downward pressure on the keys controlled intensity while side pressure varied the pitch by as much as one octave. This permitted a smooth transition from one note to the next, a characteristic found in some musical instruments.

The meeting was preceded by the usual informal dinner at Hart House where the after-dinner discussion covered the possibilities of the printed circuit and printed wiring in Canadian radio manufacturing.

Toronto Section I.R.E. Elects Officers For 1954-55 Season

The Toronto Section of the Institute of Radio Engineers held its Annual Meeting on April 5th in the Electrical Building, University of Toronto. Officers elected for the 1954-55 season were as follows: Chairman, E. L. Palin, Vice-Chairman, A. H. P. Barclay, Secretary-Treasurer, Fred Heath.

The Speaker of the evening was Mr. H. Griffiths, Air Armament Section, Engineering Dept., Canadian Westinghouse, who spoke on the subject, "Some Problems Associated With the Design of Microstrip Lines. These lines, said Mr. Griffiths, show possibilities of replacing conventional waveguides for many applications. Microstrip components for X band were described and their properties compared with waveguides and coaxial lines. Some characteristics of microstrip lines were demonstrated.

Final meeting of the season will be held on April 26th when a tour will be made of the Hillcrest Control Center of the T.T.C.

I.R.E. National Convention Attracts Close To 40,000

The more than 40,000 radio engineers and scientists who attended the I.R.E. National Convention in New York City from March 22 to 25 last makes it without doubt the world's largest engineering convention and exhibition. A total of 243 papers were presented in 51 sessions by leading engineers and scientists in the radio field. Technical sessions held in the Waldorf Astoria Hotel kept the auditoriums filled to capacity during the convention with the sessions being held every day with the exception of Monday, the first day of the convention.

The radio engineering show held in Kingsbridge Armory comprised 604 exhibits and left little vacant space on the four-acre floor of the giant armory. The latest electronic apparatus and techniques were displayed in the largest exhibit of its kind ever assembled.

The annual banquet held in the Waldorf's Grand Ballroom had Dr. Alfred N. Goldsmith, Editor Emeritus and recipient of the Founders Award as the principal Speaker. The subject of his talk was "IRE Past and Future".

● **Early morning risers of Canadian Sections of the I.R.E. have breakfast in the Oyster Bar, Grand Central Station, New York, during the I.R.E. Convention. Among those having an early repast are: E. O. Sevan, Toronto; J. F. Pond, Toronto; R. Fortier, Montreal; J. R. Bain, Toronto; S. Whitaker, Montreal; and S. Bonneville.**

(If any of the above gentlemen are missing from the photo we extend our apologies. E. and C.'s camera let us down on this picture.) — Editor.

Stark Holds T.V. Test Equipment Clinic At Ryerson Institute

Stark Electronic Instruments Limited recently held a demonstration on the operation and use of TV Test Equipment at the Ryerson Institute of Technology, for the TV Technicians class.

Eddie Reale, Stark Field Service Consultant and Harold Cohen, Stark's Chief Engineer conducted the meeting. They gave a brief outline of the intercarrier system and of TV alignment procedure compared to AM Alignment; showed how vertical sweep circuits were checked with the oscilloscope and vacuum tube voltmeter in peak to peak voltage measurements for both A.F. and R.F. potentials, and explained the advantages of using the Model 650 Television Videometer with an oscilloscope as a TV trouble-shooting instrument. High point of the evening was a demonstration of trouble-shooting and alignment of a TV Receiver.

(Turn to page 71)

NEW PRODUCTS

(Continued from page 62)

The new volt-ammeter, designated G-E Type CF-7, combines features of a self-latching multirange hook-on current transformer and the simplicity of the Type CF recorder in equipment suitable for indoor and outdoor applications.

It is expected to be particularly useful for checking loads on distribution lines, verifying motor loads, and in detecting overload circuits, transformers, motors, and other a-c apparatus.

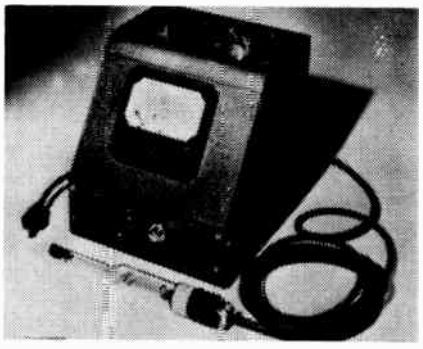
The equipment consists of a hook-on current transformer, a connecting lead, and an inkless recording volt-ammeter. All three components are completely interchangeable with no sacrifice in accuracy.

According to engineers, alternating current can be measured and recorded on both insulated and non-insulated conductors in circuits operating at potentials up to 8700 volts. This is accomplished by hooking the current transformer around the lines and connecting the recorder to a 120/240-volt a-c source. The procedure obviates the necessity for production-line work interruption while load surveys are made.

• *Pirani Vacuum Gauge*

Item 511

The development of a new Pirani Vacuum Gauge has been announced by the makers. Designed to operate in the pressure range



between 1.0 and 0.001 mm Hg (1000 to 1 microns), the Model 516 Pirani Vacuum Gauge has several unique features. The exclusive features include:— a low impedance power rectifier that eliminates the need for voltage adjustments during operation, one meter that is used for both voltage adjustment and pressure reading, and a compensating element mounted inside the cabinet; this facilitates installation and transportation of the gauge. There is, however, no loss of accuracy resulting from mounting the compensating head inside the cabinet.

Another new feature is the incorporation of the outgassing circuitry on the pressure range selector switch. This permits outgassing at any pressure without danger to the filament. The gauge cord is 10 feet long but cords up to 100 feet in length may be used without loss of accuracy.

Pirani Gauges are widely used in the electronics industry for manufacturing radio and TV tubes, in the plastics industry for pressure control in vacuum coaters, and in the metals industry on vacuum annealing and vacuum melting furnaces. Pirani Gauges are used when fast and accurate readings are needed between 1000 and 1 micron pressures.

The NRC Model 516 Pirani Vacuum Gauge, operates on 60-cycle, 110-volt, alternating current.

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Here are the smooth performing, trouble free *quality* changers used by most leading makers of radio and TV phono combinations. Proven by radio and TV-set manufacturers the world over to be trouble free and sales boosters. Investigate the many plus features available only with the VM Tri-O-Matic changers.

High Fidelity VM 935

This all new high fidelity record changer incorporates "custom precision" quality for the discriminating buyer. Its many exclusive features have a tremendous appeal to all interested in lifelike reproduction of recorded music. These features include: die cast tone arm — a minimum of lateral pressure — muting switch — V-M 45 spindle — exclusive four-pole Audio Tool motor — gentle Tri-O-Matic spindle — manual operation.

A Radio and Television Industry "Best Seller"

Specifically designed for three-speed automatic operation, this famous Tri-O-Matic record changer features: positive record protection — simple, centralized one knob control — completely jamproof — minimum mounting space — automatic shut-off — automatic manual operation — automatic set-down selection.

The VM 950

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7. Less voltage change as units heat up.
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- ★ MINIATURE DIMENSIONS.

Type	Capacity	V. DC. WKG.	L.	D.
SCE 70D	5 MFD.	50	1⅜"	⅜"
SCE 70C	10 MFD.	25	1⅜"	⅜"
SCE 79C	25 MFD.	25	1 3/16"	½"
SCE 79DE	25 MFD.	50	1 3/16"	½"
SCE 74PE	8 MFD.	450	1 1/16"	.6"

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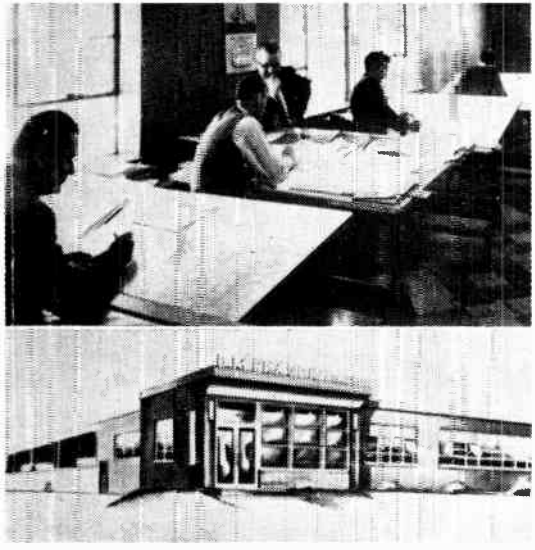

● *Top:* The modern drafting office in D. M. Fraser's new plant on Birchemount Road. *Bottom:* Front view of the new building.

New Building For C.S.A. Laboratories

Work on the construction of the new modern Canadian Standards Association Laboratories to be erected on a 10-acre site on Rexdale Boulevard Township of Etobicoke, got under way recently when the first sod was turned by Dr. W. P. Dobson Research Consultant Hydro Electric Power Commission of Ontario.

Increased space was required because the number of applications for approval has doubled since the Laboratories acquired its own building and severed connections from the H.E.P.C. in 1950.

The CSA Laboratories are operated as a non-government, non-profit national testing organization to ensure that electrical and oil-burning equipment conform with the standards and minimum requirements set by the Canadian Standards Association from the standpoint of safety from fire and shock hazards.

The new Laboratories, which will cost over $500,000, and consist of a single-storey laboratory and office building of 50,000 square feet will provide for future expansion as it seems likely that the laboratories will be asked to provide a certification service on other products besides electrical equipment and oil burners.

The Canadian Room

(Continued from page 20)

dian visitors to the I.R.E. Convention in years past. Its continued operation under a committee of representatives from the Canadian electronic and communications industries is looked forward to in future years. Members of the committee of the Canadian Room recently held in New York were: Clyde Adams, Adams Engineering Limited, Montreal; John Root, R.O.R. Associates, Toronto; John Houlding, Canadian Westinghouse Company Limited, Hamilton; P. J. Heenan, P. J. Heenan Limited, Toronto; D. Peacock, Computing Devices of Canada Limited, Ottawa; Bill Holroyd, Canadian General Electric Company Limited, Toronto; Jack Cartwright, Aerovox (Canada) Ltd., Hamilton and Len Davidge, Hackbusch Electronics Limited, Toronto.

Vicom Canada Ltd. For Kingston

Vicom & Co. (Canada) Ltd. is established on a ten acre site at Norman Rogers Airport, Kingston, Ontario. Present facilities cover 12,000 square feet of floor space, including an electronic workshop and machine shop.

The parent Company has plants at Bourn, Cambridge, and at Ipswich and is a major electronic contractor to the R.C.A.F. in Europe. It is also engaged in the manufacture of electronic equipment for the Ministry of Supply, the B.B.C., British Marconi, De Havilland, and many other large British concerns.

The Canadian company has been formed under Canadian management with a nucleous of imported British technicians to undertake similar work in Canada, particularly in the communications and radar fields.

Vicom (Canada) Ltd. is already an accredited service and overhaul base for Decca and RCA radar and is negotiating with the other major manufacturers in marine electronic equipment.

The Company is also the sole Canadian distributor of specialized communications and test equipment manufactured by Schuttig & Company Inc., Washington, D.C.

B.C. Gets Longest V.H.F. Chain In North America

The construction of a 13-station radio relay chain costing in the neighborhood of $1,500,000 will be added to the long distance telephone circuits between Vancouver, Prince George and Kamloops in British Columbia. The system will be used in conjunction with the British Columbia Telephone Company.

For the first link in the system microwave frequencies will be used but the remainder of the system will employ VHF radio. The use of VHF in the system is due to the uneven and rugged terrain of the west coast province in which it is difficult to get a line-of-sight route for microwave. As far as is known the system will be the longest VHF chain in North America.

The radiotelephone portion of the system will be the first to be used in the interior of British Columbia although the Northwest Company is now operating a chain of VHF stations which reaches out from Vancouver up the B.C. coast serving land stations, vessels and mobile installations.

United States Report

From

Telecommunications Reports Service

RETMA BOOKLET URGES REVISION OF WALSH-HEALEY ACT, CITES "PITFALLS" — The Walsh-Healey Act, which empowers the Secretary of Labor to establish in specific industries a minimum wage with compliance required of every company that enters into a government contract of $10,000 or more, is described as "obsolete and archaic," an impediment to the government's procurement program, and of "great potential harm" to the national economy in a booklet made public Monday, April 12, by the Radio-Electronics-Television Manufacturers Association.

Prepared by RETMA's Labor Legislation Committee, the booklet says the Walsh-Healey Act, as administered in recent years, "is a bear-trap for the businessman who accepts a government order" without full knowledge of the requirements. The association urges that the Act be revised when it comes up for Congressional consideration in the near future.

* * * *

CIVIL DEFENSE COMMUNICATIONS TO BE TESTED IN "OPERATION ALERT" — Communications facilities that would be available in the event of an enemy attack will be tested on a continental basis June 14 and 15 when "Operation Alert" is held by the Federal Civil Defense Administration in cooperation with the Department of Defense, the Office of Defense Mobilization, and the FCC.

Along with all 48 states, the territories of Alaska and Hawaii, and Puerto Rico, all 10 Canadian provinces will participate in the civil defense test that will assume attacks on 43 cities.

The FCDA's secretly-located emergency headquarters' sites will be connected for the test with regional offices of FCDA and other federal agencies by TWX and telephone; regional offices, in turn, will be connected in the same manner with state headquarters; the latter will employ TWX, telephone, state-owned radio systems, and radio amateur civil emergency service members' facilities to connect with local communities. Hawaii, Alaska and Puerto Rico will be contacted through the Military Affiliate Radio System. FCDA will coordinate communications down to the state level, while the states will coordinate their own services.

Because the June 14-15 test is considered "national training," matching funds will be available to the states for message costs incurred in using TWX and telephone services.

* * * *

US-CANADIAN MEETING ON EARC IMPLEMENTATION HELD APRIL 12-15 — US Interdepartment Radio Advisory Committee (IRAC) delegates met with Canadian officials in Ottawa April 12-15 in an informal discussion of frequency matters pertaining to the past and future implementation of the Extraordinary Administrative Radio Conference (EARC) international frequency tables as they affect US-Canadian activity. The meeting is the second in a series of proposed sessions — the first having taken place about 18 months ago.

The US delegation, headed by Chairman Walter Lober, of the Office of Defense Mobilization and Vice-Chairman Donald MacQuivey, of the State Department's Telecommunications Policy Staff, will also consist of FCC Safety & Special Radio Services Bureau Chief E. L. White, George Stelzenmuller and William F. Bradley of the FCC's Frequency Allocation & Treaty Division; Donald Mitchell, of the Commission's Aviation Division; John Corley, of the US Air Force; Marvin Price, of ODM, C. A. Petry, of Aeronautical Radio, Inc., and E. D. Shores, of the Civil Aeronautics Administration.

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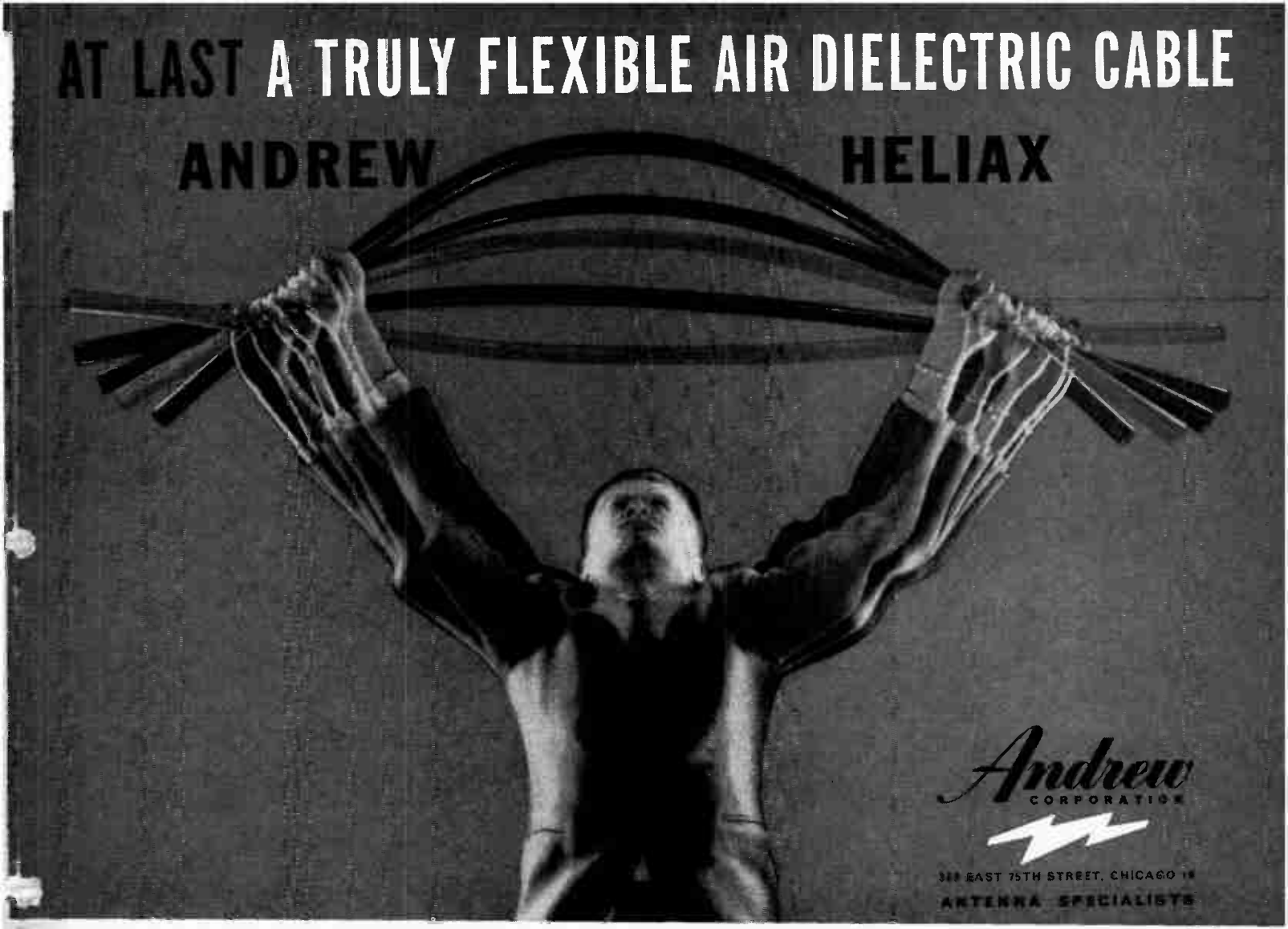

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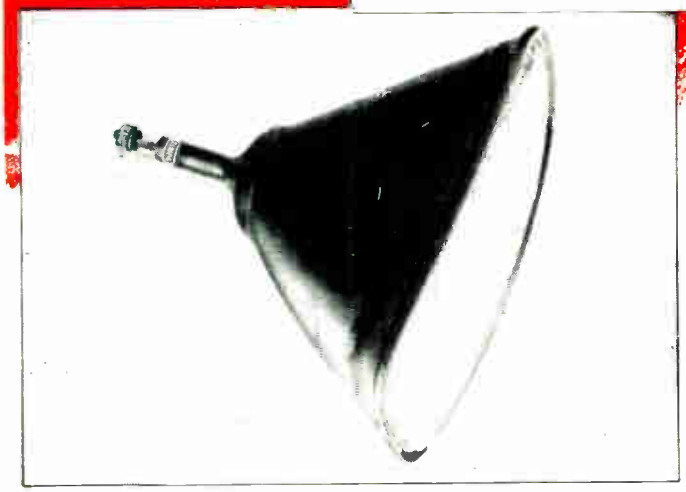

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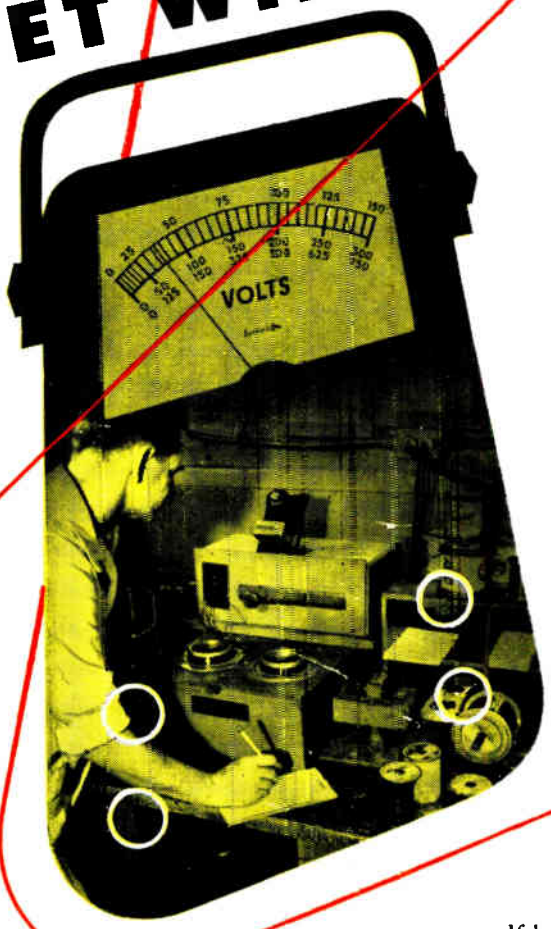

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