Radio, Television & Appliance Sales

A Dealer's Resolutions for 1951

See page 12

VOLUME VII NUMBER 1

JANUARY

1951

POULTER PUBLICATIONS LIM

TORONTO • CANADA

it never fails

Suggest more than one and you'll sell more than one

● Whether it's lamps or lemons, if you suggest more than one, you'll sell more than one! So make it a habit, when a customer asks for one lamp pick up a 3-lamp carton of the same wattage she asks for, and say; "Here's a handy carton of three for only 54c."!

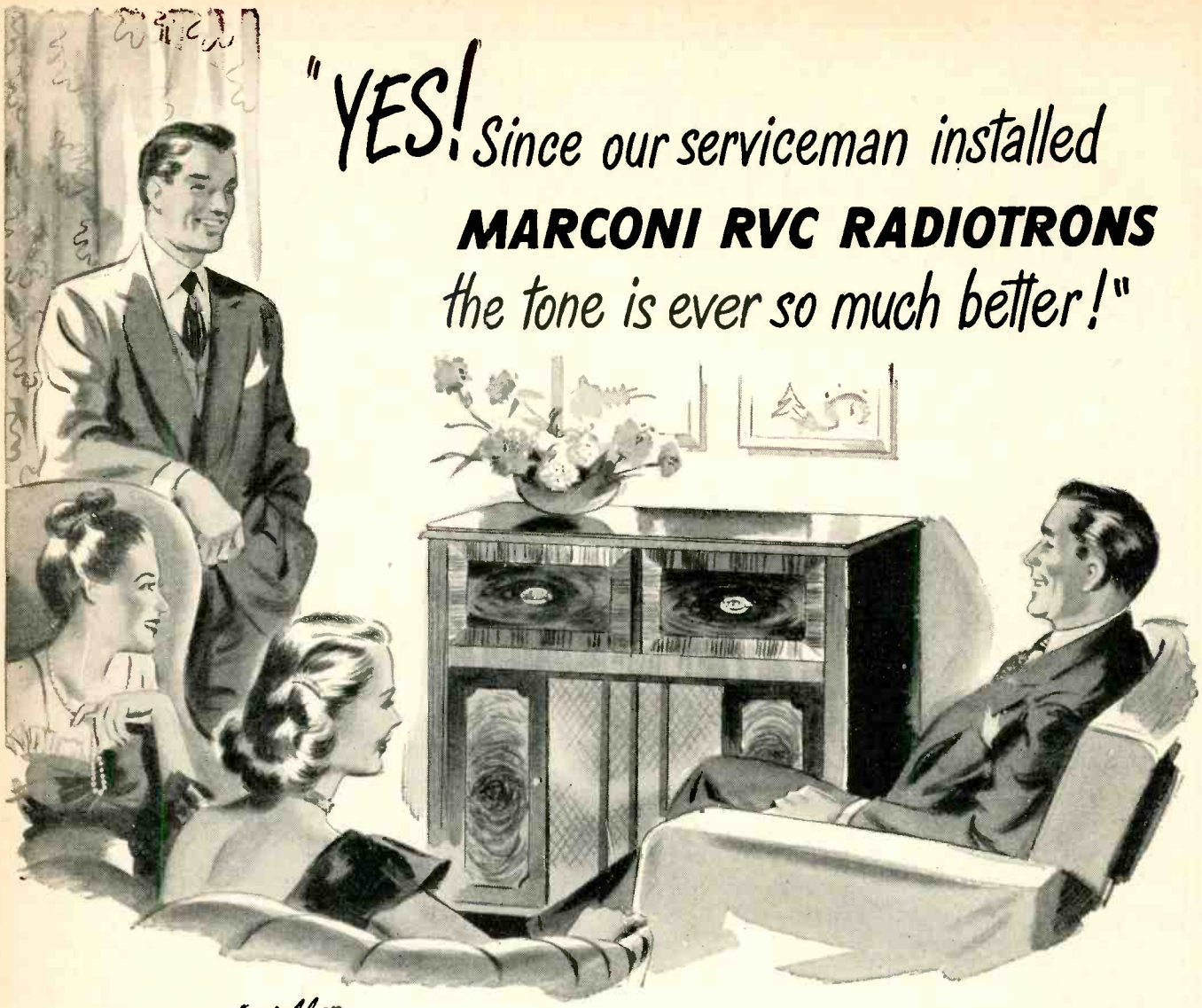
Customers like the 3-lamp carton because it gives them spares, is easy to carry and is easy to store! And from your point of view, it means more lamp sales - more profits! You sell three instead of one!

Order your needs now from your Westinghouse lamp jobber!

CANADIAN WESTINGHOUSE COMPANY LIMITED • HAMILTON, CANADA

SPARE REPLACEMENT SPARE

Westinghouse Lamps



"YES! Since our serviceman installed MARCONI RVC RADIOTRONS the tone is ever so much better!"

Ask your tube jobber about Marconi RVC Radiotron sales helps...

WALL HANGER PRICE LIST — when conveniently displayed near your tube stock, the clear, easy-to-read prices will establish customer confidence.

Customer goodwill is important . . . reliable, precision built Marconi RVC Radiotrons offer TOP PERFORMANCE, SALEABILITY, PUBLIC ACCEPTANCE and EXPERT CRAFTSMANSHIP. Experienced servicemen replace worn out tubes with Marconi RVC Radiotrons because they give

LONGER LIFE . . . BETTER TONE . . . GREATER POWER . . .

and good profit. Check your stock today and make sure it is complete.

Average price to consumer no higher than pre-war.

CANADIAN MARCONI COMPANY

Established 1903

Vancouver • Winnipeg • Toronto • Montreal
Halifax • St. John's

MARCONI RVC RADIOTRONS

CANADA'S FINEST RADIO TUBES

NOTICE

To Importers, Vendors or Users of Radio and Television Receivers

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While under the provisions of Section 45 of the Canadian Patent Act, the owner of a patent and his legal representatives have the "exclusive right, privilege and liberty of making, constructing, using and vending to others to be used" the patented invention, Canadian Radio Patents Limited, however, in accordance with the requirements of Sections 65 and 66 of the Patent Act, has licensed the following Canadian companies for the manufacture and sale in Canada of radio and television receivers embodying said inventions:—

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Brand and Millen Limited
Cam Radio Products Limited
Canadian Admiral Corporation Limited
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Canadian Marconi Company
Canadian Radio Manufacturing Corporation Limited
Canadian Westinghouse Company Limited
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The above companies are working the patented inventions in Canada on a commercial scale and are prepared and willing to meet the public demand for the patented articles in Canada on reasonable terms.

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Canadian Radio Patents Limited will be glad to furnish upon application full particulars and information in respect to the patents that it owns or administers relating to radio and television receivers.

CANADIAN RADIO PATENTS LIMITED

159 BAY ST. **TORONTO, CANADA**

Vol. 7
JANUARY

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1951

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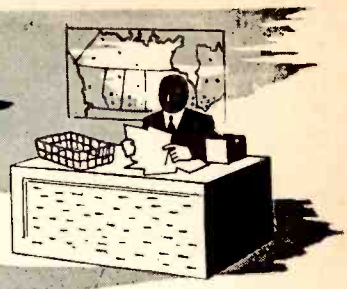
BNA

The EDITOR comments



Our Cover

OUR readers will, we hope, be agreeably surprised when they see the new cover on this issue. We think that the clean, simple design is easier to read, more pleasing to the eye and generally smarter in appearance.

It is with a certain amount of regret that we bid goodbye to the old cover but times are changing and in order to keep pace with the modern trend, we are bringing our readers this new cover — we hope you like it.

The Colour Television Furore Continues

RIGHT on the heels of the furore over the FCC's decision on colour television in the United States is the announcement that the Radio Corporation has developed a fully compatible system of colour TV. The new system was demonstrated in Washington recently before set manufacturers and members of the press and is said to have scored "a smashing hit."

The new system gave every evidence of good definition, stability and freedom from flicker and since it employs a tri-colour CR tube has no colour wheel or other moving parts.

The system is compatible and colour programmes may be received in black and white by a black-and-white receiver without attachments or in colour by the same b-w receiver equipped with an adapter. Colour receivers designed for the new system are said to be easy to operate, opponents of the CBS system claimed that receivers designed for use with it were difficult to operate.)

All in all it looks as if another milestone in television's history has been revealed. At the same time it must be borne in mind that colour television is still very much in the experimental stage. In fact General Sarnoff of RCA has stated that no colour system is ready for use in the home although he believes that his company's new system is closer to it than any other system so far proposed.

Furthermore the Federal Court, in session in Chicago, has just ruled that the United States Supreme Court must be the final tribunal in the action, instituted by RCA to have an injunction issued against the FCC order which approved the CBS system as the standard and which authorized commercial colour telecasts.

We believe that in any event the serious state of world affairs and the urgent need of re-armament would defer its adoption for a long time.

FM Again!

WE'RE still talking about FM and what's more intend to do so for some time yet because we still feel that as an industry we've missed the boat in not putting this superior form of broadcasting over the way it ought to have been put over. So take a good look at the FM article in this issue folks. It's pretty frank and to the point and seems to sum the situation up very neatly. The article is really a letter written by David Ker of CJSH-FM to the FM Development Committee of the Radio Manufacturers Association. With the letter we are reproducing two of the advertisements which the Hamilton, Ontario station, ran in Toronto papers. They too tell a story and, it is believed, created a good deal of interest.

There are some people who think that FM is a dead duck and that we ought to let it remain so. We don't agree. FM is here NOW and its full capabilities ought to be realized to the utmost. The stations are on the air and let's not throw stones at programmes or anything else until we get going on our own job of energetically manufacturing and selling good FM receivers at prices the public can afford to pay.

So read Mr. Ker's article now and whether you agree or not, drop us a line and tell us what **you** think about FM and what you suggest be done about it.

The Dealer's New Year's Resolution

THIS is the time of the year when the appliance dealer checks his inventory and makes up his year-end financial statement in order to learn the true state of affairs regarding his business, whether he has made money or lost it, and, what is even more important, what the trend is in his business.

But besides taking stock of the physical assets and liabilities of the business the smart dealer knows that it's good business to analyze his entire merchandising operation with a view to instituting necessary improvements to boost sales and profits, cut losses and give his customers better service.

As a reminder of what the dealer ought to be thinking about now, we present an article "A Dealer's Resolutions For 1951" which we think contains some good red meat which the dealer would do well to sink his teeth into.

Make your resolutions, Friend Dealer, and by gosh stick to them!

* brand new 1951 models!

Admiral

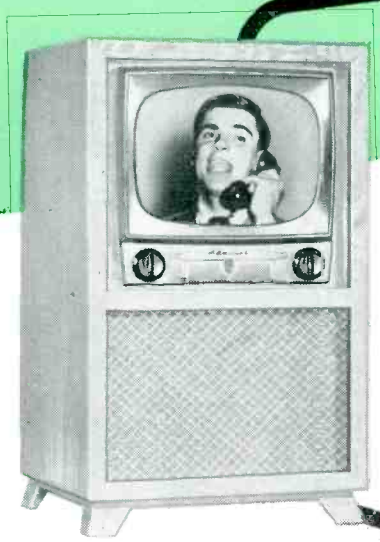
17 INCH TELEVISION COMBINATION

3 speed phonograph dynamagic radio

Model 37R65X . . . Brand new for '51 . . . the biggest and best home entertainment unit on the market . . . a magnificent Admiral combination ready to bring you three sales in one! 17-inch rectangular TV that is more life-like than ever. Amazingly compact Dynamagic unit with powerful radio and simplified 3-speed automatic phonograph. Superbly styled double-door console in hand-rubbed Walnut or Mahogany finish.

Prices and specifications subject to change without notice. Prices slightly higher in the West.

18th CENTURY STYLED CONSOLE



big-as-life 17 INCH PICTURES

Model 27K17X . . . Brighter, clearer, glare-free pictures with Admiral's revolutionary new 17-inch Filteray tube. Here's TV that is clear close-up **without distortion**. Rich, hand-rubbed cabinets finished in Walnut, Mahogany or Limed Oak. Your customers **will** want the biggest . . . feature this set now for fast TV sales!

Admiral
Radios Radio-Phonographs
Television Receivers
Refrigerators

CANADIAN ADMIRAL CORPORATION LIMITED, LAKEVIEW, ONTARIO

DISTRIBUTORS

SOUTHWESTERN ONTARIO:
Canadian Admiral Sales Ltd.,
650 Sandwich St. West, WINDSOR, Ont.

CENTRAL & NORTHERN ONTARIO:
Cochrane-Dunlop Hardware Ltd.,
1385 Bloor St. W., TORONTO, Ont.

BRITISH COLUMBIA AND YUKON:
Gordon & Belyea Ltd.,
101 Powell St., VANCOUVER, B.C.

QUEBEC & EASTERN ONTARIO:
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Draw people into your store

GENERAL ELECTRIC

LAMPS

Create Store Traffic . . . Boost Sales!

Light bulbs are something your customers need all the time . . . and four out of five people choose G-E Lamps. That extra traffic into your store created by this demand for the Lamp-brand Canadians know best leads to greater sales of major equipment. Easy-to-stock G-E Lamps—backed by advertising, display and promotional material— may be purchased on consignment, if desired. G-E Lamps—preferred because they're profitable—your *first* choice!

See your wholesaler or contact

CANADIAN GENERAL ELECTRIC COMPANY
LIMITED
HEAD OFFICE: TORONTO — Sales Offices from Coast to Coast

WL-450

These interior photographs of the T and L Electric gives some idea of how bright and cheerful it is. The small traffic appliance stands can be seen in the foreground of both views. The right-hand photo shows the wrapping counter with its display of smaller appliances and also shows the large mirror that adds so much to the apparent size of the store.

Service Holds Old Business And Brings New Customers

SERVICE is one of the biggest factors in getting new business and in maintaining existing business." This statement was made by Leslie Leck of the T and L Electric Limited in Sudbury — Northern Ontario city—and smart dealers everywhere will certainly agree with him.

By following this rule T and L Electric keep a staff of ten busy, both in the store and on outside calls.

T and L Electric's store and display room is very neat and modern with an excellent representation of merchandise displayed so that it can be readily seen and without any effect of overcrowding. Taller appliances are arranged along the back wall and are raised off the floor level by a platform running the full length of the wall. Smaller traffic appliances are kept on specially designed modern floor stands and also on the lower section of the wrapping counter.

Deep plate glass windows run the full length of two sides of the store and this, combined with the very light interior, makes the store extremely bright. Egg-crate fluorescent lighting is used throughout the store. The floor covering of green and grey mastic tile lends the proper touch of colour and a huge mirror behind the wrapping

(Continued on page 25)

Exterior view of the T and L Electric in Sudbury showing the large area of glass that makes the inside so bright and gives a good view of the merchandise inside. The small store that can be seen immediately behind the car in the left foreground was the location of T and L previous to their present location.

A Dealer's Resolutions For 1951

The Smart Dealer Is Making His Plans NOW to Get the Maximum Amount of Business — and Profits — in the Year Ahead

AFTER reviewing my sins of the past year I am resolved during 1951 . . .

1. That I Will Make a Greater Selling Effort

Most dealers, and I'm no exception have been lax in their selling efforts during the past year. After the last war, there was a great rush for new refrigerators, washing machines, radios and other appliances and many dealers and their salesmen, lacking the incentive to sell hard, degenerated into mere order-takers. Now, with the supply caught up with the demand in most cases, we dealers have had to revert back to the good old competitive selling days. But if everyone of us will look back over the past year, can we honestly say that we have taken advantage of every opportunity? I know I haven't!

There are quite a few items on the list of merchandise I handle that require a little more selling but are well worth the extra effort. Automatic washers and ironers, to mention two of the larger appliances, Pop-up toasters and three-way portables are among the smaller appliances. Many customers will want to stick to the regular washing machines, use hand irons instead of automatic ironers. They will say that ordinary toasters are good enough and they won't be able to see the sense of putting the extra money into a three-way portable over an ordinary portable or mantel set. They will offer a thousand and one objections to all of these new products, but don't let them get away with it. Make the same New Year's resolution that I'm making **to sell harder than ever!**

2. To Make Sure That All My Salesmen Are Trained

Perhaps I have put this resolution in the wrong place. Maybe it should go at the head of the list. At last I've become convinced that my future success depends largely on the selling ability of my organization. Even one improperly trained salesman on my staff of

ten can do me more harm than good.

What am I going to do about all this? Well to begin with I am going to have regular meetings of all my salesmen. At these meetings one of my best salesmen or myself will give a peppy talk on selling. Then I'm going to have each of my salesmen take turns at being the customer while another salesman gives the sales talk. Then a good postmortem to dissect his methods and point up the good and bad features of his presentation. To supplement these meetings I will have my salesmen attend any lectures or conventions at which selling will be discussed. Manufacturers and jobbers are always willing to do their part in helping to train salesmen and I intend to take advantage of all these things during the coming year to see that my men are alert, well able to meet the demands of modern - day retailing. What's more I'm going to have them attend C.A.R.A.D. meetings and conventions whenever possible.

3. To Make My Window Displays More Attractive

In looking back over the past year I realize now that my window displays could have stood a lot of improvement. Like most fellows, I'm afraid I left my displays to the last minute. No wonder they've never been outstanding! I know, just as every good dealer does, that good display takes plenty of thought and planning — well in advance, and that money laid out for suitable props is money well spent.

This year I plan to take advantage of the fact that just as a person is judged by his appearance so a store is judged by its windows. After all it is the show window that attracts, or should attract — the people. I'm a poor businessman if I don't make that fact pay off.

As I see it, the first rule of good window display is to not put too much merchandise in them. Feature one type of radio, television or appliance and build a simple display around it. I'm going to try to make my windows **different;** use some gimmick or idea that is out of the ordinary and will be sure to attract attention. Another good rule-of-thumb for window dressing that I'm going to follow is to feature seasonable lines. When the holiday season is about to start I'll dress my windows with portable radios and in the heat of summer feature cooling fans and refrigerators.

Above all, regardless of how I dress my windows I mean to keep them clean even if it means cleaning them twice a day. Just as the effect of a fine pair of shoes is spoiled by a lack of polish, so the effect of a good window display is ruined by dirty window glass.

So, here's to better window displays and cleaner windows during 1951! How about yours, brother?

4. That I Will Do More and Better Advertising

I've often wondered why Bill Brown down the street does more business than I do. His store isn't any more attractive and I don't think his merchandise or his selling is any better. The answer may lie in the fact that he does more and better advertising than I. I notice that he is using direct mail, newspaper ads and some radio spots. This year, I must do the same.

After all, a relatively small part

of the general public passes by my store and to depend entirely upon this passing trade is to invite failure. If I can't go into all the homes in person I can at least reach into them by means of advertising. I'm going to budget my advertising carefully and not buy newspaper space or radio time just on a whim.

And another thing I'm going to do during 1951 is to build up my mailing list and send out attractive circulars and letters. The personal touch to this kind of advertising seems to bring good results.

5. To Pay More Attention to My Service Department

Like all departments in any business, the service department should be paying its own way. I'm afraid that I, like a lot of other dealers, have been inclined to treat my service department as a necessary part of my goodwill towards the customers and have not been the least bit alarmed if it didn't show a profit. This has been largely the result of wrong bookkeeping and also wrong thinking. The service department should and will show a nice profit if it is handled properly in regard to charges against the work and time of the technician.

To begin with I am going to see that proper charges for radio and appliance repairs are observed. RETA of Ontario Inc. have compiled a schedule of radio service charges that is fair and reasonable and if my service department follows this chart there will be no reason to take a loss in this respect and at the same time the customer will not complain of overcharging.

Another mistake that I am going to rectify is in allocating charges of the service technician's time against the proper departments. Installation charges and servicing articles under guarantee, for instance, should be charged against the sales department. I know that my technician serves part time on the sales floor when the salesman is at lunch or out with a customer. Or he may help to move new stock in or out of the store. He is called upon to give customers technical information. All of these items we have been (and wrongly) charging to the service department and as a result, it has been showing very little profit.

By the way fellows, did you read George Baldwin's article on this subject in **Radio-Television and Appliance Sales** for May, 1950?

6. Not To Indulge in Unfair Or Unethical Trade Practices

When business is good and merchandise is being sold without too much selling effort, there is very little evidence of unfair or unethical trade practices, But, the minute the competition starts to stiffen and selling takes a little more effort, then the weaker ones start to falter and in order to bolster their sagging business they resort to unethical methods of inducing sales. Sometimes the bigger fellows are guilty too.

Fortunately, Mr. Abbott's recent pronouncement on credit terms

has eliminated one of the worst practices but there is still plenty of other practices in evidence and during the coming year I intend to do everything in my power to help stamp them out both by setting an example in my own store and by campaigning against them.

7. That I Will Give My Customers Proper, Courteous Attention

No self-respecting dealer will allow himself or his staff to be anything but courteous to customers and this resolution of mine may, on the surface, seem a bit unnecessary. But when I think back during the past year, how many times have I been just a little bit impatient with an exacting customer? How may times during this past year have I been feeling a little out of sorts and failed to greet each customer with a sincere smile? How many times has a customer stood neglected and perhaps even left the store during a busy session when a nod and a smile of recognition from either myself or my salesmen would have made them wait a little longer with more tolerance.

And so during the coming year I am resolved to be very patient with every customer regardless of their demands. I will always have a smile for them (if it kills me) and I will do everything in my power to make sure that little extra something is present that sometimes means the difference between losing or gaining a sale.

8. To Keep My Store Clean and Attractive

I find that it's the little things that make a good or bad impression. As a general rule most dealers, like myself, make an honest effort to keep their stores clean and tidy. But just let me miss one or two places in the store and ten chances to one those are the places that my customers will see. Just as sure as not, when I'm about to demonstrate a beautiful big combination radio-phonograph I notice a film of dust on the polished top. Every other piece in the place might be scrupulously clean but that one undusted article could very well ruin a sale.

During the coming year I'm going to make sure that all packing crates are opened elsewhere than in showroom. Nothing looks worse than to see some pieces of lumber from the cases lying around a store. I'm also going to see that I and my staff always replace radios and appliances that have been brought out for demonstration. It doesn't take long for a store to become very untidy from not putting things back in their proper place. Above all, I want to try and remember windows and any other glass surfaces about the store. Dusty windows and glass surfaces are very depressing.

9. To Pay Stricter Attention To My Stock Inventory

This item can and sometimes does, mean the difference between success and failure in a business venture. This year I intend to see that stocks of any item are not allowed to stagnate. I'm going to keep a close watch on all items and put sales pressure on the slow movers while I can still make a profit on them.

Above everything else, I shall watch my buying. Too heavy a

(Continued on page 32)

• TELEVISION NEWS •

Urges TV Channels For Educational Uses

NEW YORK: "Television can be the greatest teacher of all time, effective in every educational field from children's education to medicine, agriculture and all phases of adult education," Paul V. Galvin, president of Motorola Inc., stated recently in declaring his support for the assignment of television channels for educational use.

Noting that television already has been used successfully for educational purposes in such cities as Philadelphia and Baltimore, and also at Iowa State College, Galvin pointed out that the issue now is "to establish the principle of the right of education to a place in the future expansion of television as the country's prime medium of communication."

"The radio-television spectrum provides mankind with untold possibilities for its own advancement," the Chicago industrialist said. "For the sake of the national welfare and for future generations, an equitable share of this spectrum should go to education."

"Television can be fairly described as a necessity in the educational field," he stated. "Our schools are overcrowded, our methods largely old-fashioned, and, for both children and adults, television may prove to be the cheapest and most effective way to educate the most people."

Stressing that, at this stage, this is a question of planning and establishing principles, Galvin noted that full scale utilization of television in education is many years away, if only because of the financial limitations of most educational institutions. As the educators who now are urging the use of television presently conceive their plans, channels would be assigned to non-commercial educational use or commercial stations would devote specified numbers of hours to educational programs, produced by schools and colleges. In either case, educational institutions would be expected to pay program costs to the station owners, Galvin said.

"Since the public interest is so deeply involved in the educational potentialities of television, I feel confident that ways can be worked out to serve the educational needs of our country on both VHF and potential UHF channels without unduly limiting the commercial broadcasters." Galvin declared.

Seven national educational groups now advocating a greater role for education in television are the American Council on Education, the Association for Education by Radio, the Association of Land Grant Colleges and Universities, the National Association of Educational Broadcasters, the National Association of State Universities, the National Council of Chief State School Officers and the National Educational Association.

Court Delays CBS Colour TV Until April

Chicago (AP).—A Federal Court ruled in favor of CBS color television but held up the start of color telecasts in the United States until April 1.

The decision dismissed a complaint by Radio Corp., of America seeking to set aside approval by the Federal Communications Commission of the CBS mechanical method of color telecasting.

The FCC had set last Nov. 20 for the start of commercial telecasts in color but the current legal proceedings had prevented CBS from beginning such programs.

The majority opinion of the three-judge court said the purpose of its order is to restrain the effective date of the FCC order (Nov. 20) until the parties to the suit can perfect an appeal to the Supreme Court of the United States.

Dealers Guarantee to Convert TV Sets if Colour Is Desired

A large chain of radio-television and appliances stores in the metropolitan New York area have advised the public that black and white television sets can be purchased now with confidence and without fear that they will become obsolete for years to come.

The president of the corporation pointed out that "some day colour will have a place in television programming, just as you now see some movies in colour, and when colour telecasting becomes a factor, this supplementary broadcasting can be received by adding a suitable converter to current TV models".

The firm has guaranteed to all past and future purchasers of TV receivers that their sets can be adapted to receive colour programmes transmitted in accordance with standards established by the FCC.

Two other chains of stores had previously guaranteed to purchasers of TV sets that they will be able to be converted to either CBS colour standards or any other standards which the FCC might authorize.

Increase in British TV Sales

London, England — Estimated expenditure on British television for 1950-51 will be £2.7 million as compared with just under £2 million for 1949-50 and £1 million in 1948-49. By the middle of 1951 there will be six outside-broadcast radio link equipments for vision compared with two at present. This will bring within range of television some events at present too distant from London.

Mobile TV Units for Canada

Two mobile television units are being constructed for the C.B.C. by a Cambridge firm of body builders. The value of the order is about $9,500, and the units are to be fitted to Canadian-made chassis.

TV May Keep Eye on Baby

CHICAGO (BUP)—A television manufacturer predicts that parents will be able to switch to a "child's channel" to check up on their youngster in his crib between regular TV programs.

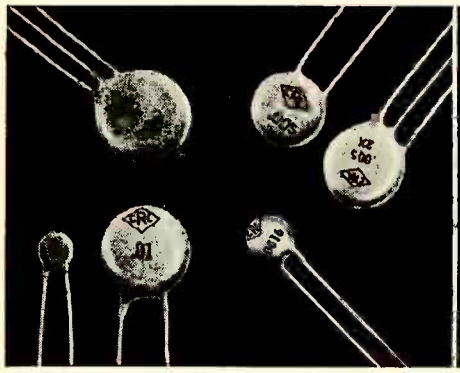
John S. Meck said a camera beside the crib could be used to keep tabs on goings-on in the nursery while papa and mama are in the living room.

Junior's picture would be relayed to the parlor via a closed circuit channel, Meck said. Closed-circuit television already has been introduced in the industry, he added.

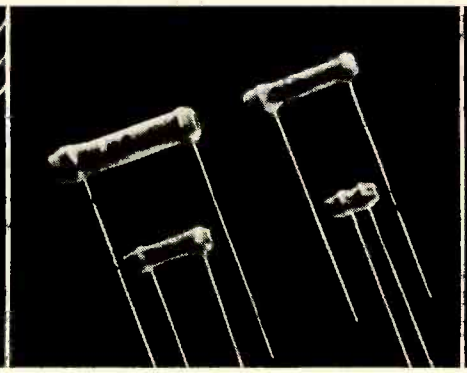
Recently, he said, a distillery vice-president appeared on a private video network to address 2300 salesmen in 17 cities.

ARE YOU QUALITY-CONSCIOUS?

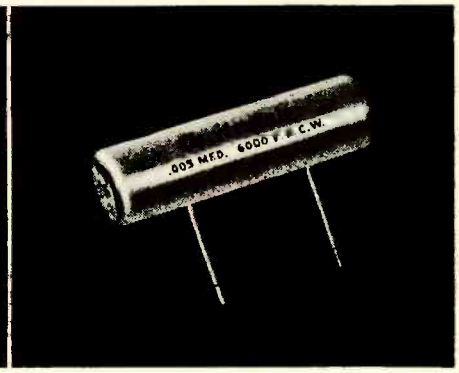
New Centralab parts give you the advantages of Centralab leadership in electronic component research



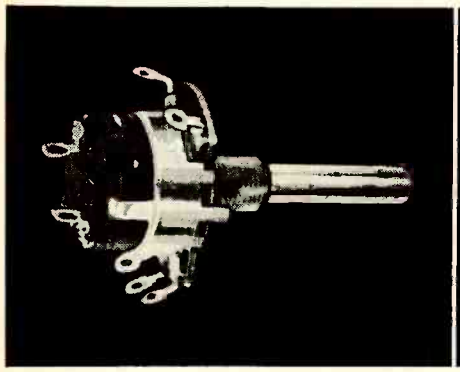
NEW! Centralab's new ceramic Hi-Kap capacitor line gives you discs and plates up to and including .1 mfd—tops in ceramics — your most permanent type capacitors.



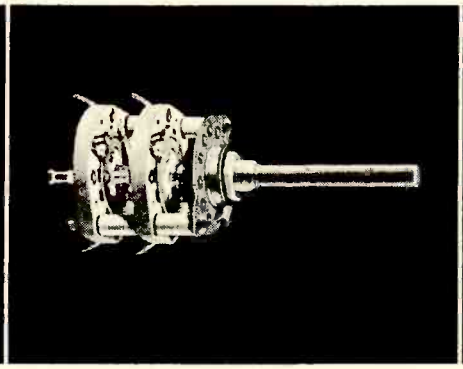
NEW! New BC Hi-Kap ceramic tubulars are now available in 48 different values. Best for r.f. by-pass and audio-coupling applications. For temperature compensating capacitors — ask for CRL'S TC's.



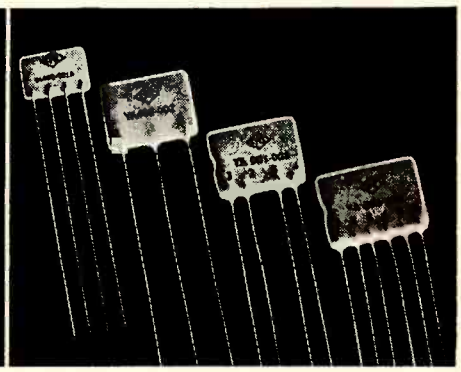
NEW! The best in ceramic stability, permanence and high-temperature characteristics in tubular form with ample external insulation. Pictured: CRL Cat. No. TV6-502 rated at .005 mfd. — 6000 V DC.



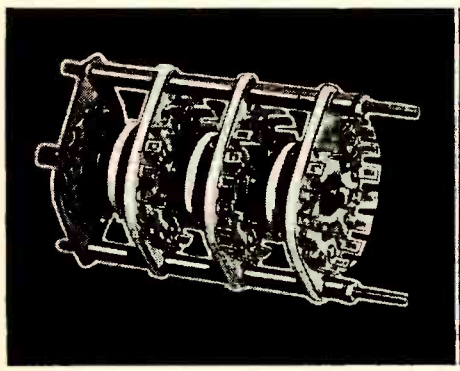
NEW! Centralab's new Blue Shaft Volume Controls are a complete line of all generally required sizes . . . plain and switch types. They're factory-assembled and tested . . . ready to install.



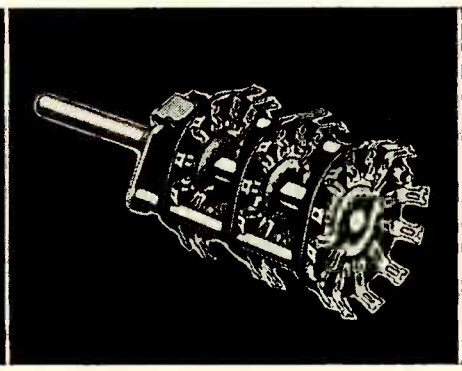
NEW! The famous CRL Ham Switch has a new look! It has heavier Steatite insulators — smoother action. You can't find a huskier amateur switch with a longer life . . . it's high quality at low cost.



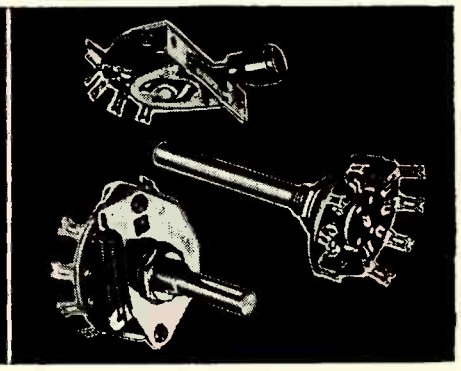
NEW! Now you can get CRL's famous Printed Electronic Circuits — everything from single value capacitors and resistor plates to complete 3-stage speech amplifiers. Ask your local CRL distributor.



POWER SWITCHES are specially designed for transmitters, power supply convertors and other applications. Efficient performance up to 20 megacycles.



ROTARY BAND SWITCH is used primarily for band change and general tap switch applications. Made with Steatite or phenolic insulation.



LEVER, SPRING RETURN, TONE SWITCHES. See your Centralab distributor for complete details on these switches—and all quality CRL parts.

The NEW products are listed in Catalog 27. Just tell us you are a radio amateur—it will be mailed at once.

Centralab CRL ®

Division of GLOBE-UNION INC. • Milwaukee

Represented in Canada by:

KELLY-HEENAN CO., 614 Eglinton Avenue, West, Toronto, Ontario

C. M. ROBINSON, 207 Scott Block, Winnipeg, Manitoba

Electricity Plays Vital Part In Nation's Productive Capacity

Electrical Manufacturers Equip "Production Front" For Peace or War

By H. M. TURNER
President, Canadian General Electric Company, Limited

CANADA can feel a justifiable confidence in her electrical industry during the strenuous days ahead. The strength of our economy and defence effort will continue to be based, in considerable part, on the effectiveness of our electric utilities and manufacturers.

The contribution of the electrical manufacturing group during the coming months will be determined largely by international developments. The prospect is for a year of great activity with increased emphasis on the needs of national security. The industry, recognizing its responsibility to co-operate fully in defence programs, is already playing a direct part through the production of equipment for the armed services. Most important also is its indirect participation in the defence structure through the capital goods it supplies for utilities and industry. Generators, transformers, wire and cable, motors, control and many other types of electrical equipment—these are highly essential weapons for the 'production front'.

To meet this challenge, the industry is equipped with greatly expanded production facilities; engineering of the highest calibre; manufacturing and installation skills based on long experience. All these are brought to bear, to produce the massive and intricate equipment which contributes as much to our nation's security in an emergency, as to its prosperity in times of peace.

The extent to which it will be possible also to maintain the flow of electrical consumer goods will depend largely upon the amount of raw materials — principally steel and base metals—made available for their manufacture. However, present indications are that—unless the situation worsens—production of appliances and other domestic products in most common use will be maintained at a fairly high level. This one considerable segment of the industry should not be considered "expendable"—for it has an important part to play in an "armed camp economy" which seems to be our prospect for some time to come. Provision should be made to serve not only the more urgent part of existing demand, but the needs of the increase in population, immigration and the special requirements of camps and defence housing.

Statistically, the record of the electrical manufacturing industry is an imposing one. The latest Dominion Bureau of Statistics' figures indicate that about 365 plants are in operation, employing almost 60,000, with wages and salaries currently being paid at an annual rate of $156 million. In 1950, goods of a gross value of over $500 million were produced. The industry now holds second place in Canadian manufacturing, in point of number of employees and in value added to materials by production.

It is interesting to note that the industry was able to supply an increasing part of national requirements for all types of electrical equipment — only about 18 per cent of the total being imported in 1950, as compared with 27 per cent in the immediate post-war years. In the face of continuing international currency and tariff difficulties, it was able also to maintain an export trade of approximately $15 million in 1949. Much of this was in apparatus and supplies to Central and South America and to the Caribbean.

H. M. TURNER

A healthy development of the mid-century is the increasing awareness, on the part of governments, utilities and general public alike, that adequate supplies of power must always be available to meet the nation's sharply increasing electrical needs. The vision and enterprise of our utilities in meeting this challenge is noteworthy. During 1950 a total of about 1,100,000 hp was added to our generating capacity, bringing the total of installed horsepower in electric utilities to about 12 million horsepower. An additional 3½ million is under construction or authorized, of which over 1,000,000 hp is expected to be added in 1951. In spite of the nation's increased generating capacity and a record-breaking output of approximately 50 billion kilowatt-hours during 1950, some utilities were faced with power shortages during the autumn.

While by far the larger part of power developments are hydro-electric, over 800,000 hp in steam turbine stations was in operation by the end of 1950, with approximately the same amount planned. A new power source — the gas turbine—is now emerging from the experimental stage, with successful installations already in operation in utilities. Large-scale production of these machines is now under way in the United States—and developments are being studied carefully, for possible application in Canada, especially where supplies of natural gas are available.

Canada's manufacturing and

(Continued on page 19)

NATIONAL CARBON LIMITED

WORKS
805 DAVENPORT ROAD
TORONTO 4, CANADA
AND
WELLAND, ONTARIO

GENERAL OFFICES
805 DAVENPORT ROAD
TORONTO 4, CANADA

DISTRICT
SALES OFFICES
MONTREAL, TORONTO
WINNIPEG

To our Friends in the Radio and Appliance Business:

Gentlemen,

On adding up the sales figures for 1950, we find that you sold more "Eveready" Batteries last year than in any previous year in this company's long and successful history.

It is with more than ordinary pleasure, at the start of this new year, that we express our appreciation to you, the Radio and Appliance Dealers of Canada, for the cooperation and merchandising skill that have made 1950 a sales record year. Too, we hope that you are as pleased with this achievement as we are.

For 1951 we promise to maintain and increase the quality of our products - to maintain and increase our advertising - to maintain and increase merchandising support for your efforts. We sincerely believe that "Eveready" Batteries - now outselling all other brands combined - will set a new sales record in your business during 1951.

Our best wishes for a happy and prosperous New Year.

Yours sincerely,

Ray F. Tilley

Ray F. Tilley:M

Vice-President in Charge of Sales.

ELECTRICITY PLAYS VITAL PART

(Continued from page 16)

mining industries are the largest users of electricity and electrical equipment. Over 70 per cent of all the power generated by utilities is used to drive motors, heat furnaces, control machinery and perform myriad service tasks. In addition to the continued expansion of established companies, over 1,000 new manufacturing firms have begun operations in Canada since 1945. Currently employing over 41,000, these constitute an important additional market for electrical equipment and power.

Hoist drives of exceptional capacity for Canada's mines (including the most powerful of any on the continent); complete electrical equipment for a new titanium-iron refinery in Quebec; motors, control and welders to produce pipe for oil pipe lines; paper machine drives for our expanding pulp and paper industry—these are only a few outstanding developments where electrical equipment is providing more and more horsepower for our nation's work force.

The field of electronics continues to extend its usefulness to the nation. In the home, it provides ever finer entertainment; in municipalities, in industry, in national defence, it is expanding its new and important communication role. Its most familiar product—radio receivers—again had a record-breaking year in 1950, with over 750,000 sets produced. In areas where TV reception is now available, about 30,000 television receivers are in operation—an indication of the part this revolutionary new form of cultural life will play, when Canadian telecasts become a reality.

By far the most significant electronic developments outside the home are taking place in the communication field. About 6,000 mobile Frequency Modulation units are now in operation by police, fire departments, logging and construction companies, taxis, utilities and hospitals. Important in times of peace, these new and expanding FM networks provide the basis for vital communication systems in times of emergency — capable of being integrated quickly by civilian defence, Red Cross or similar organizations. In addition, in the field of standard multi-channel communications, microwave radio is being employed increasingly by telephone and telegraph companies and other similar organizations in almost every province in Canada, as well as by the armed services.

The electrified housing units of Canada—now 2,600,000 in number —are always an important customer of the electrical industry. According to the latest D.B.S. figures, the average annual consumption of power in these units is 1,951 kilowatt-hours, at an average rate of 1.6 cents per kw-hr. "Saturation" for appliances varies widely from toasters and irons, which are almost 100 per cent, to home freezers, garbage disposals, electric dishwashers and other new developments for which a general demand is just beginning to appear. Electric refrigerators are in 35 per cent of all electrified homes and the demand for well-known brands still exceeds supply. Other major appliances considered essential to our standard of living —such as washing machines at 73.5 per cent, and electric ranges at 28 per cent—are still far from saturation.

The early months of 1950 found many appliances in fairly free supply, with still greater production facilities coming into operation or planned. During the last half year, demand remained generally high for appliances, lighting, air conditioning and heating equipment. However, conditions of raw material supply have made it difficult to meet this demand, even though it has been only slightly affected by "precautionary" buying.

New housing is a particularly significant part of the domestic market because of the importance of providing adequate wiring in the building structure to meet all the owner's needs today—and the almost certainly greater demands of tomorrow. Architects, builders and electrical contractors are helping to assure that new housing units are completely modern in their power facilities. The building rate in 1951 should approximate that of 1950, if supply conditions are adequate.

In the farm home, too—and in the farm "factory"—electricity is finding ever wider use. Almost 66,000 rural customers (of which about half were farms) were added in 1950 and it is estimated that in the next 5 years, 200,000 more will be served by electric utilities. Ever-greater production from a farm population decreasing in relative size is being achieved through further mechanization. Electric motors for pumping, milking, separating, refrigeration, hoisting and hay curing; electric incubators; welders for repair work — and many other devices add to the comfort and profit of farm life. Increased availability of power in smaller communities also makes possible further decentralization of industry to these areas.

The history of Canada's development is closely related to her railways. A great deal of interest has been shown, therefore, in the recent trend from steam to diesel-electric locomotives. The higher efficiency and greater economy of these sleek, new locomotives have been proved under the most difficult operating conditions. Increased supplies of fuel oil from Canadian sources, greater "availability" of diesel-electric locomotives, and many other advantages, make them most welcome to Canadians generally, as well as to those who operate and service the equipment. A total of about 500 are already in operation or on order for Canadian railways—over half of them built in Canada. Industrial concerns, too, are making use of diesel-electric switchers and more than 150 of these units are now in operation, adding to the intra-plant efficiency and safety of the companies concerned.

The electric trolley-coach continues to expand its usefulness in fourteen major Canadian cities from coast to coast. Hamilton is making its initial installation of these quiet and economical vehicles —bringing the total operating in Canada to over 900.

It has been said that modern living has an almost insatiable appetite for more and better light. In 1950 over 100 million electric light bulbs of all types were made in Canada. The spectacular development of fluorescent lighting — which in 1950 celebrated its tenth birthday as a commercial development—plays an ever-increasing part in this expansion. Made in Canadian factories, this high-efficiency lighting source is becoming available in a great variety of sizes, shapes and colours.

Floodlighting in many of Canada's parks and playgrounds is

(Continued on page 36)

A Broadcaster Makes Some Recommendations

Improving FM Sales

A Frank Criticism of the Industry's Neglect of This Superior Form of Broadcasting and Some Valuable Suggestions For Practical Promotional Activities

Shown above is the home of station CJSH-FM in Hamilton, Ontario.

Editor's Note—Here is another letter from an FM broadcaster who has been doing a great deal to draw public attention to this superior form of broadcasting. The writer, David Ker, is manager of CJSH-FM, Hamilton, Ontario. Mr. Kerr discusses the advantages of FM and makes specific recommendations for the improvement of FM sales.

This is another in a series of articles and letters being published by **Radio-Television and Appliance Sales** in co-operation with the FM development Committee of the Radio Manufacturers Association of Canada. J. G. Tufts, vice-president of Dominion Electrohome Industries Limited, Kitchener, is chairman of the committee.

Mr. Dealer, when you get through reading this letter, won't you take the time to sit down and write your views on this important subject?—R.C.P.

FM Development Committee,
Radio Manufacturers Association of Canada,
TORONTO, Ontario.

Dear Sirs:

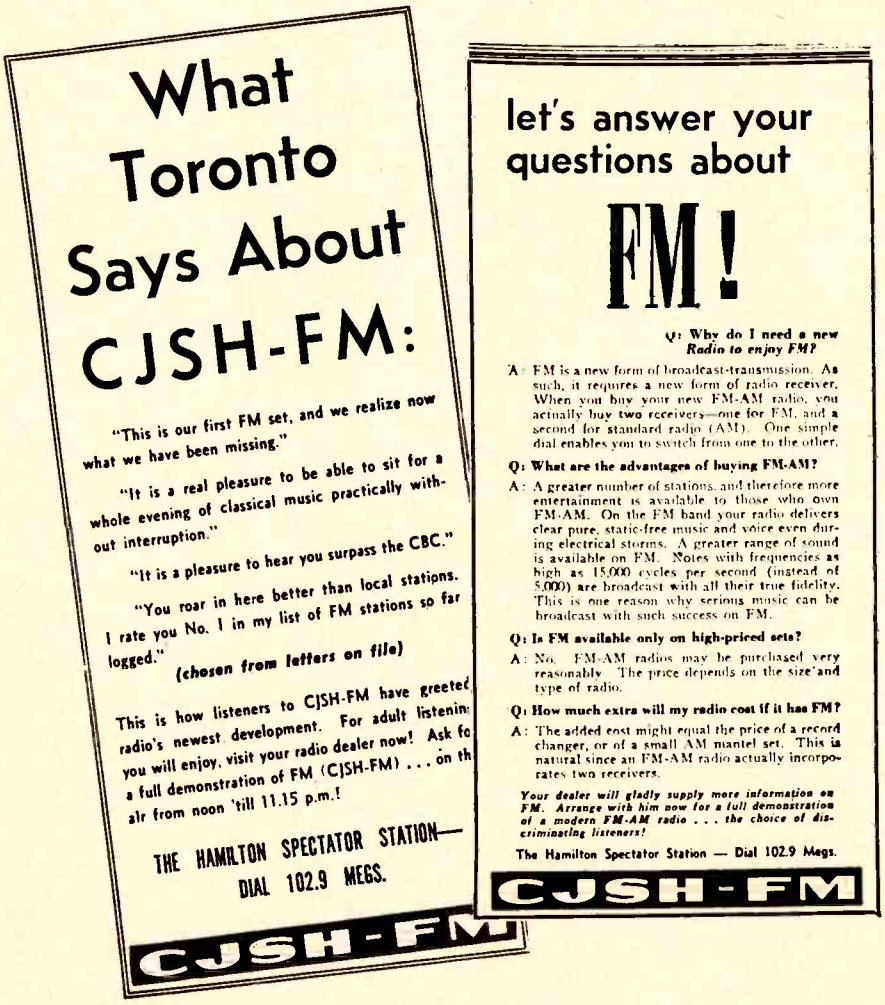
I am writing this letter in warm approval and support of the articles on FM which have appeared in recent issues of "Radio, Television and Appliance Sales" magazine. The very name of your committee is a good omen for the future of FM and the long overdue progress which this great improvement in transmission and reception is bound to make in the field of radio broadcasting.

Station CJSH-FM, owned and operated by the Hamilton Spectator, is unique among Canadian private stations in that it has not been operated primarily from a profit-making point of view as a commercial venture. From its high tower on West Flamoro Heights it transmits a signal which strongly covers the entire Hamilton-Niagara area, reaching well beyond Toronto to the North, to Buffalo in the South-East, and to London, seventy miles away, in the West.

Our principal concern since we began broadcasting on November 13, 1949, has been to interest the radio-listening public in the great improvements in radio reception that have been made available by the invention of FM and the licensing of FM broadcasting stations. Our programs, which have a large content of classical music, dance music, choral singing and drama, have been designed with the view of demonstrating and capitalizing these advantages. Emphasis is also being laid upon the development of Canadian talent.

We were aware when we undertook the development of this station that there was a very limited FM listening audience. A survey made for us by an impartial market research consultant showed

(Continued on page 32)

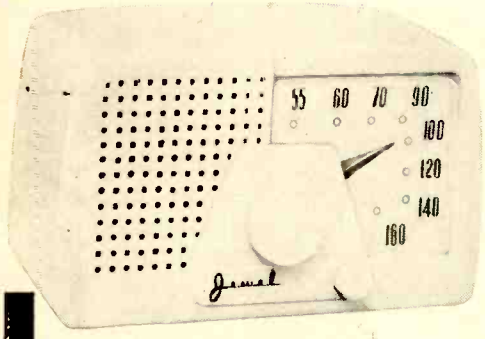


Shown above are two of the advertisements that were run in the Toronto daily newspapers by the Hamilton station CJSH-FM as part of their campaign to sell FM broadcasting to the public

Help Yourself!

THE JEWEL "WAKEMASTER"
MODEL 50-57

Two popular Jewel models now in production



JEWEL MODEL 956

We have to face the fact that shortages of materials and Government controls are bound to make production increasingly difficult in 1951. Rationing and allocation of supplies are features none of us would like to see. On our side, we are trying to avoid them by large-scale planning over a longer period than usual.

Prudent dealers will help themselves by making it easy for us to help them. You can do so by reviewing your own stock requirements without delay, and planning your ordering in the same way. JEWEL Distributors have already been given an outline of our manufacturing plans for the first part of the New Year. Consult your own JEWEL Distributors, and discuss your future needs with them.

They will be pleased to do all they can for you.

THE JEWEL RADIO COMPANY OF CANADA

Sales Office: 77 YORK STREET (Suite 302), TORONTO, ONT.

Telephone: PLaza 8639. Telegrams: Lewej, Torontoont.

Plant and Service Department: 347 Church Street, Mimico, Ont.

RETA NEWS and NOTES

Monthly Report of the President

HUGH BENNETT
President, R.E.T.A. of Ontario Inc.

THE Radio Technician, that oft-times brilliant individual who gives his all to the whims of John Q. Public; who burns much midnight oil in an almost fanatical desire to keep up with the incredibly speedy developments of his profession; who must at once be diplomat and specialist, and who is very often called upon to perform near miracles with inferior equipment, and who is also expected on occasion to be in two places at once, where is he headed? What does the immediate future hold for him? Is he to continue to render professional services, only to be rewarded with a pittance? What are the answers to these questions?

The answer, gentlemen, lies with R.E.T.A., the movement founded solely to assist the technician in solving the problems of his profession. The association was organized with the object of fostering good will among its members, in short, to get each member to know the other fellow; to elevate the work of the technician to the status of a recognized profession; to raise his financial standing through the adoption of a fair scale of charges; to co-operate at all times with other branches of the industry; to give a helping hand to those just entering the profession, rather than treat a newcomer as though he were afflicted with the plague—this, unfortunately, has happened in the past.

To most of you the foregoing is perhaps old stuff, but to the fraternity at large it is a challenge which the technician very definitely cannot afford to ignore. To sum up, R.E.T.A. works in your interest at all times, and the bigger the movement grows, the better off Mr. Radio Man is going to be, and I would urge all technicians who are not members to contact the local chapter of R.E.T.A. or, if this is not possible, a request to the editor of **Radio-Television and Appliance Sales** for information will be answered promptly.

Your executive has immediate plans for a revised scale of charges, including television service, and we also have a membership folder which promises to be really something. I understand it will be off the presses very shortly.

One big item of news that I must pass on to you is that, according to reports, several manufacturers are arranging to conduct lectures and demonstrations on TV and FM in most of the cities of Ontario in the very near future, and I earnestly request all technicians, whether members of R.E.T.A. or not, to attend all of these lectures, if for no other reason than that they will be put on for our benefit, in a spirit of co-operation, between the manufacturers and the man in the field. One cannot ignore the fact that the manufacturer goes to considerable time and expense just for us.

Yours sincerely,
Hugh Bennett, President.

R.E.T.A. of Ontario Inc. Hamilton Section

THE regular meeting of R.E.T.A. of Ontario Inc., Hamilton District, was held in the studios of CKOC on December 11, with 23 members and 9 visitors present. A motion was carried that the election of officers be held in January of each year. A nominating committee was appointed for the slate of officers for 1951. Two new members, Vic Williams and Ed Nash were welcomed into the association.

Sandy Day of the engineering division of Dominion Electrohome Co. Ltd. presented a very interesting talk on service problems in TV and how they are affected by design and engineering work and changes. A hearty vote of thanks following his talk showed Mr. Day how well his talk was received.

R.E.T.A. of Ontario Inc., Bay of Quinte District

OCTOBER MEETING — Owing to illness, Jack Moring was not in the chair and an informal discussion on R.E.T.A. was held. The following points were discussed and on motion of Jack Scott it was agreed that they should be brought to the attention of Provincial Council:

1. R.E.T.A. has no provision for protection or guidance of the "hired" technician. The wording of the Aims and Bylaws of the Association were all for and about the private dealer.

2. It was suggested that that section in the "Aim of the Association" reading "to set up a scale of suggested service charges" be changed to read " — to set up a scale of suggested service charges and wages of employed technicians".

3. Members should be graded as to actual experience, type of experience, demonstration of radio ability or training.

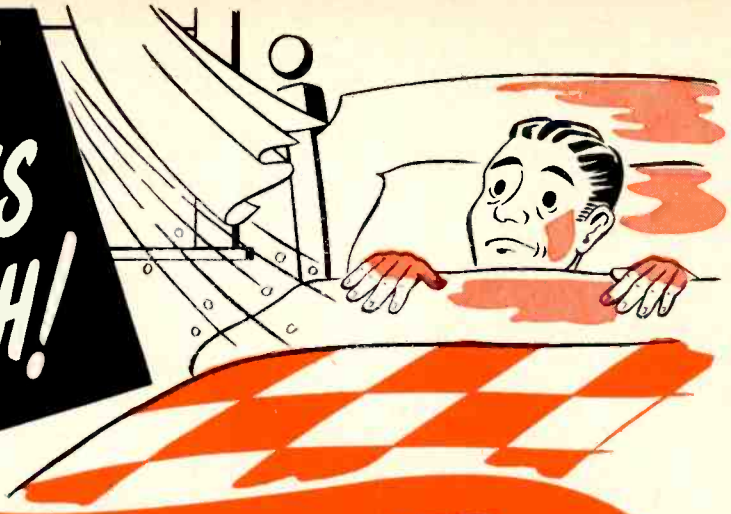
4. Provincial council should publish in R.E.T.A. News and Notes a financial statement at the end of their Fiscal Year.

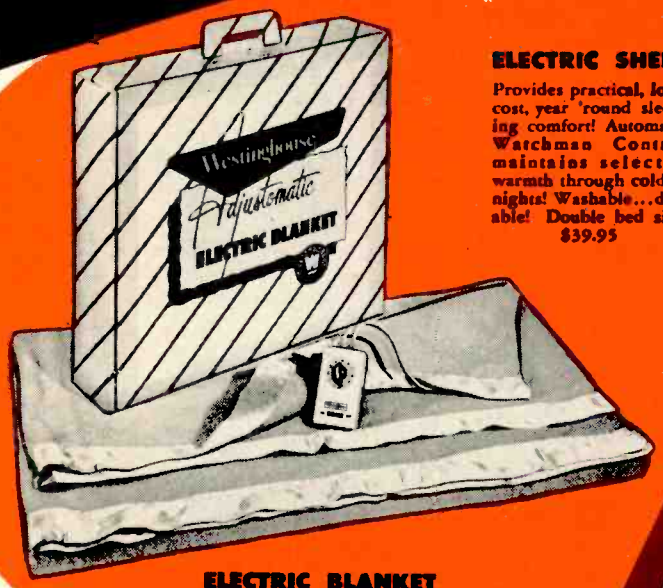
5: That "Service" be stressed in National Radio Week.

Following this discussion, an article from a magazine (which was immediately voted "trash") was read. The article warned its readers to " —beware of radio, TV rackets" and stated among other infamous remarks that many repair men think nothing of making a week-long $10 repair job out of a simple loose connection. After appropriate remarks by all present it was decided to ask Provincial Council to take the matter of such

(Continued on page 25)

HOW TO TURN COLD PROSPECTS INTO COLD CASH!





ELECTRIC SHEET

Provides practical, low-cost, year 'round sleeping comfort! Automatic Watchman Control maintains selected warmth through coldest nights! Washable...durable! Double bed size. $39.95

ELECTRIC BLANKET

Soft as down! Gives soothing, relaxing warmth all over — without weight! Convenient bed-side control! Washable — saves washing time and storage space! Double bed size.

SINGLE CONTROL	$48.50
DUAL CONTROL	$58.50

Comes January and February — comes cold nights, cold prospects! So set-up *now* to turn those prospects who shiver at the thought of a cold bed, into cold cash — by promoting Westinghouse Electric Bed Coverings! Put in a special window ...use store display...feature them in your newspaper advertising! Sales records show a steady demand for these increasingly popular electric bed coverings. Get your share of this business — contact your Westinghouse Distributor today!

PROMOTE AND SELL Westinghouse Electric BED COVERINGS

15T 1002

NEW! Westinghouse ELECTRIC WARMING PAD

Featuring the new, convenient "Brailway" Switch with three separate and distinct heats! Easy to regulate — even in the dark! Ideal for the bedroom or nursery! Model W.P.D. 42 (Deluxe) $9.50. Model W.P. 32 (Standard) $7.95.

CANADIAN WESTINGHOUSE COMPANY LIMITED • HAMILTON, CANADA

Some Interesting Features In New Canadian Receivers

by

H. F. SHOEMAKER

Member of the Faculty, Radio College of Canada

NOWADAYS when we encounter a receiver with 10 or more tubes and not incorporating FM, we usually find some interesting features and the Viking 51-106, shown below, is no exception. As a matter of fact, since the 12AT7 is a dual triode, it might well be described as an 11-tube receiver.

R. F. amplification ahead of the converter is provided for both broadcast and short wave bands. A 4700-ohm load is used in the R.F. plate circuit and the band switch throws either the primary of a BC interstage transformer or an SW interstage coil in parallel with it. Thus the plate circuit is not open even when the selector switch is in the phono position.

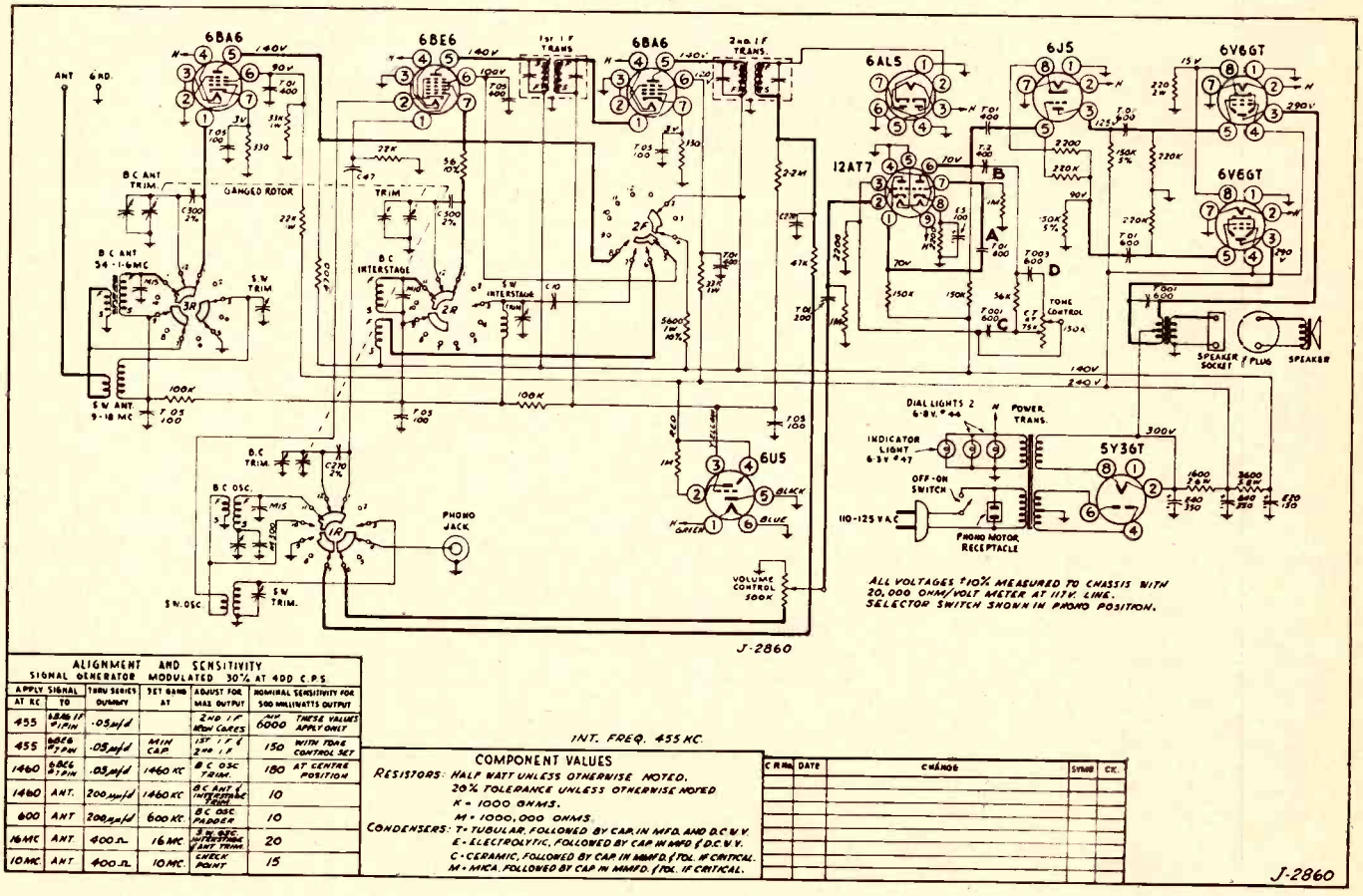
AVC and First Audio

Demodulation and a.v.c. is provided by one half of the 6AL5, the other diode being idle. Through the volume control, which is part of the diode circuit, the signal is fed to the grid of the first triode section of the 12AT7 which in turn is resistance-coupled to the second triode section. It is at this point that we encounter an interesting innovation in tone control. It will be seen that the plate of the second triode section is not only resistance-coupled to the grid of the 6J5 and to the grid of the lower 6V6GT but is also coupled through condenser B and the tone control network to the cathode of the first triode section. Evidently this provides feedback which might be either positive or negative depending upon the number of phase shifts. However, we will have 180° phase shifts at the following points: From grid to plate circuits of the first triode section, at the condenser A, from grid to plate of the second triode section and at condenser B. This even number of phase reversals means that the signal voltage at the right-hand side of B will be in phase with the signal voltage on the grid of the first triode section. But this voltage is fed to the cathode at the top of an unbypassed cathode resistor and so its effect must be degenerative.

Tone Control Circuit

The tone control has a tap at dead centre and when the contact arm is set for this position condenser C is shorted out, the low frequencies have a resistive path down through a 56K resistor and the highs have a capacitive path through D. The degeneration for all frequencies is such as to give a

(Continued on page 46)



Circuit diagram for the Viking 51-106

R.E.T.A. in Western Canada

Vancouver Chapter

A SOCIAL meeting was held on November 13 at the home of Al Clarke, now residing on the North Shore at an elevation of 340 feet. The higher than usual attendance figure was remarkable in view of the very mixed weather prevalent in Vancouver at the time, but those hardy enough to venture out through fog and snow were amply rewarded, as we understand that both the television reception and the refreshments were on a high level.

The entertainment chairman has promised members a trip through the U.B.C. Laboratories in the near future, which should be of interest to one and all.

Saskatchewan Council, Saskatoon

THE monthly meeting of R.E.T.A. was held in the King George Hotel, November 1st, 1950. Committees appointed for 1950-51 period include: Membership — Fred Reid; Newsletter and Mailing —Merv Olsen and Ralph Gillespie; Entertainment—Milt Fuhr and Cec Brandt; Publicity — Allan Young and Fred Fisher.

A short discussion on various business matters followed. Suggestions of advertising R.E.T.A. were brought forward. It was felt that joint advertisement by all shops (members of R.E.T.A.) be inserted in local newspapers once a month and that pamphlets be made available to all prospective customers showing the benefits obtained from such a growing organization.

Mr. Williams, accountant from Bowman Bros., gave the first of a series of lectures on Business Accounting.

Victoria Chapter

THE regular monthly meeting of the Victoria Chapter was held on November 27 at the Monterey Restaurant, about 25 members being present. After dinner the meeting was entertained by the showing of an outstanding color film on New Zealand, photographed and presented by E. H. Scott. The film was a delight to the eye and ear as the recorded commentary and background music were of the highest standard. This film, incidentally, has been chosen by the Government of New Zealand to show to selected groups all over Canada and the United States as an incentive to tourist traffic. Many enquiries were made by members as to the cost of passage to this Island Paradise! Mr. Scott was for many years President of the Scott Radio Corporation of Chicago, Ill., makers of high quality custom built radio receivers, and despite his amateur status in motion picture photography produces results of truly professional standard.

During the business session, two new members were formally welcomed into the Chapter, Jack English and Bob Macadam, and presented with their certificates of membership. Advertising was discussed after a proposal had been made by the chairman of the Advertising Committee, but was eventually turned over to the executive for further investigation. The secretary reported on correspondence sent to the Vancouver Chapter, the membership expressed itself in agreement with the steps taken by the executive, and will await with interest a reply from the parent body.

agreed with President Jack Moring when he expressed his appreciation on behalf of our association for the highly educational and interesting talk. An informal question and answer period ended the meeting.

Interest in R.E.T.A. seems to be growing in this district and hopes for future progress are strong.

R.E.T.A. NEWS

(Continued from page 22)

libelous articles under consideration and act as they see fit.

All members present went home feeling better to have relieved themselves of some of their "beefs".

November Meeting—This meeting was held as usual in the Quinte Hotel with President Jack Moring in charge.

Mr. Childerhose of Rogers Radio Corporation spoke on "Projection Television", using slides to illustrate his lecture. The association members and several visitors found this lecture extremely interesting and informative and a hearty vote of thanks was heartily given the speaker.

December Meeting—Lloyd Graham and Jim Sands of Canadian General Electric presented Mr. Graham's lecture on "Theory of TV Test Equipment and Method of Procedure".

All members present heartily

SERVICE HOLDS BUSINESS

(Continued from page 11)

counter increases the brightness and apparent size of the store.

One of the biggest boosts in the T and L's business has been supplied by the recent electrification of several nearby rural communities. You can well imagine the immediate call for electrical appliances in homes that have been lit by coal oil lamps, where all cooking had to be done on a wood-burning stove, and all the family washing done by hand. There would also be battery radios to change as well as a host of other appliances such as ironers and toasters.

One of the largest selling items in the store is oil-burning space heaters. In far-flung rural areas and in the bush sections where most of the heating is supplied by stoves, the space heater is a great boon and is rapidly supplanting the old cook stove as the main source of home heating. T and L also installs and services oil-burning units for furnaces.

T and L Electric does not take a back seat in their advertising policy either. They carry quite an extensive advertising campaign in the local newspapers as well as a 15-minute spot over CKSO, Sudbury. The programme, "This Is the Story ' is jointly sponsored by Canadian Westinghouse.

The store was originally located in a much smaller store next door but rapid expansion of business necessitated the move into their present larger quarters. The accompanying photograph of the store front shows the relative sizes of the old and new locations.

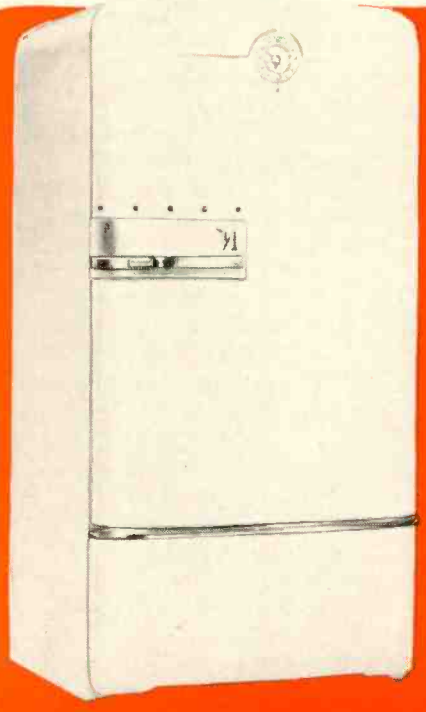
T and L Electric is a limited company under Leslie Leck, Larry Tuddenham and Robert Bryson. Other activities of the store include household wiring and the installation and servicing of fluorescent lighting.

Addison HOT WATER HEATER

Model 421

New, modernistic design featuring skirt base that eliminates dust and dirt under the heater. Built-in heat trap conserves hot water. Baffled cold water intake at bottom of tank. Twin adjustable thermostats; Gas or electric models. Safety cut-out switch.

The line is The profits You will sell GO AHEAD with



Addison-NORGE REFRIGERATORS

Model SDA85

Popular, 8½-cu. ft. refrig with exclusive "Night Watchman" automatic defroster; super-size Hydrovoir to keep vegetables and fruits garden-fresh; Coldpack to keep meats perfect; Tiltabin for storage of staple foods. Freezer holds 33 lbs. of frozen foods. Rollator compressor gives lowest operating cost.

Addison-NORGE WASHER

Model W200P

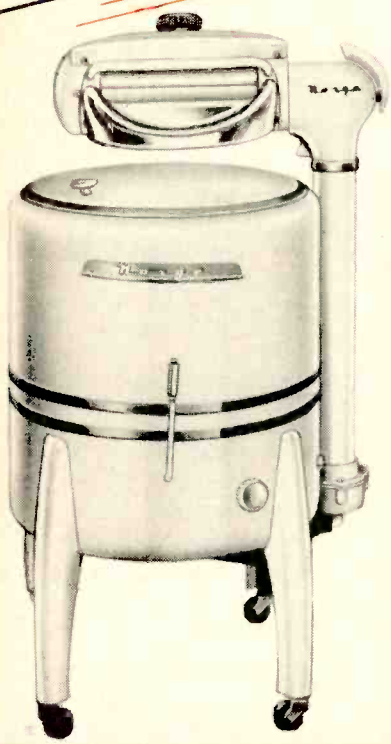
Lots of customer appeal in this beautifully styled Addison-Norge washer. Triple-wash action for cleaner clothes; 3-vane aluminum agitator; "Safety First" wringer; Positive pump—operates only when emptying tub; automatic, reversible drain board; quiet, smooth motor performance.

ADDISONS

VANCOUVER CALGARY WINNIPEG

BIGGER, are BETTER, more THAN EVER, in '51!

Addison



Addison-NORGE

ELECTRIC RANGES

Model E4CC

Beautiful, modern electric range, featuring a 1,250-watt element for quick pressure cooking. Blended Heat—top and bottom synchronized oven elements. Fully automatic control panel. Seven cooking speeds with Tele-Switch controls. Warming oven and utensil drawer.

LIMITED

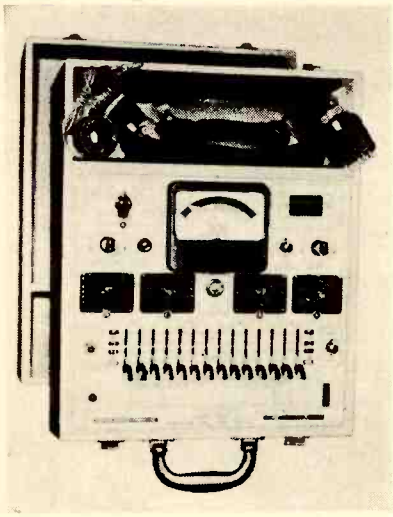
TORONTO MONTREAL MONCTON

New Products

Precision Cathode Ray Tube Tester

Precision Apparatus Company, Inc., announces a new cathode ray tube tester, Model CR-30. It is a complete, self-contained instrument which will test all TV picture tubes (electrostatic as well as electromagnetic,) 'scope tubes and industrial CR tubes, including special tests for all tube elements.

The CR-30 performs such tests without removing the tube from a TV set or tube carton. It is thereby ideal for in-set testing by service technicians, for on-floor testing by CR tube distributors, and speedy sorting and warehouse testing for "field rejected" tubes by tube manufacturers.



Precision CR Tube Tester.

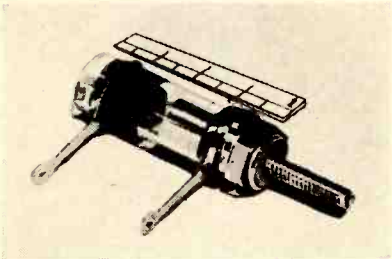
Designed to eliminate guesswork in determining CR tube quality, the CR-30 has test parameters based on true beam current (proportionate picture brightness) principles, and was performance tested at production and reject-analysis labs of several leading CR tube manufacturers. The true beam current test circuit checks all CR tubes with electron-gun in operation, giving accurate indication of proportionate picture brightness and tube condition.

In addition to a 4⅝" full vision meter with special scale plate, the CR-30 has telephone type cabled wiring, heavy gauge, etched and anodized aluminum panel, completely transformer-isolated test circuits and other proven features for highest accuracy and rugged use. It measures 13¾" x 17¼" x 6¾".

For additional information write Precision Apparatus Co., Inc., 92-27 Horace Harding Blvd., Elmhurst, L.I., N.Y., or the Canadian representative, Atlas Radio Corp. Ltd., 560 King St. W., Toronto.

New JFD Piston Type Variable Capacitors

The JFD Manufacturing Co., Inc. of Brooklyn, New York, announces a new piston type variable trimmer capacitor which provides the minimum capacities needed for exceptionally accurate and stable electronic adjustments.



JFD Variable Capacitor.

Tubular in design, it delivers continually uniform change of capacitance in relation to rotation. Extremely compact, the space-saving JFD Trimmer Capacitor is only one inch in length and offers approximately zero temperature coefficient; "Q" rating of over 1,000 at 1 mc; 55° c. to plus 100° c. operating temperature; 10,000 megohms insulation resistance, single-unit movable electrode and adjustment screw made of special alloy having lowest temperature coefficient of expansion known.

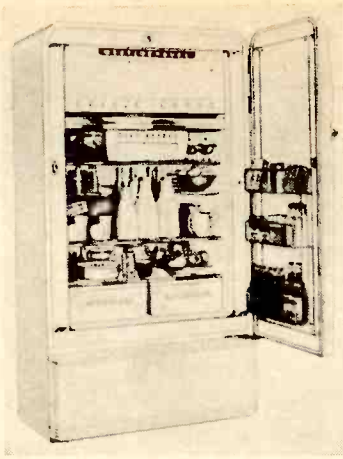
Canadian distributor for JFD products is John R. Tilton, Waterloo, Ontario.

New Westinghouse Refrigerator

The Canadian Westinghouse Company is introducing a new 9 cu. ft. refrigerator — the MF-9 — with a "Colder Cold" freeze chest which stores up to 60 pounds of frozen foods.

A newly designed plastic meatkeeper provides storage space for 15 pounds of meat. The ice cube storage tray stores more than 100 cubes — equal to thirteen pounds of ice. Other new conveniences include twin Humidrawers that hold one half bushel of vegetables or fruit and a flexible shelf arrangement to allow various food storing methods. A redesigned Stor-Dor gives more front row storage space than ever before.

Permanent features include Fiberglass insulation and a hermetically sealed economizer mechanism which



New Westinghouse Refrigerator.

provides the "Colder Cold" in the Freeze Chest while the Westinghouse Tru-Temp control maintains proper storage temperatures in the food compartments.

Centralab Announces New Ham Type Switch

Rapid band switching in medium power transmitter and exciter units with voltages up to 1,000 and inputs up to 150 watts is accomplished readily with Centralab's new "ham" type switch.

Connstructed of heavier than normal steatite insulation (.203 in. thick), the switch itself will handle 15 watts and its steatite spacers afford a higher than usual breakdown-to-ground rating. It is also equipped with heavily silver-plated spring brass clips and contacts. All other metal parts except these are heavily cadmium-plated.

The switch is non-shorting, has a 90-degree positive action index and is adjustable from two to four positions. It is available in one to five sections.

Centralab's Canadian representatives: Eastern Canada — Kelly-Heenan Co., 614 Eglinton Ave. West, Toronto; Western Canada — C. M. Robinson Co., 207 Scott Block, Winnipeg.

(Continued on page 30)

Rider's TV Receiving Antenna Book

John F. Rider Publisher, Inc., 480 Canal Street, New York 13, N.Y., announces their new all-inclusive antenna book, "TV and Other Receiving Antennas" (Theory and Practice) by Arnold B. Bailey, will be available at Rider jobbers late in October.

Initially, the book prepares the reader for what is to come by giving a completely understandable review of definitions of terminology used in antenna practice, an analysis of the television signal, conditions that determine signal levels at the receiver, and the problems of propagation as they relate to operations up to 1,000 Mc.

It then goes on to antenna theory

proper and the practical applications pertaining to it. Much of the information presented is entirely original, emanating from the author's active 22 years of designing and supervising the installation of commercial antenna structures. Formulae and graphs are given for cutting antennas of various thicknesses to the proper physical length for resonance, for the determination of antenna behavior at the multiple resonance points, etc.

A section of data pages never before published, on approximately 50 different basic types of antennas, enable the user to anaylze and pre-select various antennas (by type) as they are made available on the market. Each page in this section shows an illustration of a basic type antenna, its performance characteristics, impedance, directivity patterns, requirements for proper matching, frequency band-width characteristics and other very important details.

The final chapter on the practical aspects of antennas tells what basic type antenna to use in a given area and reveals the advantages and disadvantages of one type of antenna over another.

Contains 603 pages. Cloth binding, 310 illustrations.

3rd Edition of List of Electrical Equipment

Toronto, December 1st, 1950. The Third Edition of List of Electrical Equipment approved by Canadian Standards Association, has been announced. This book of over 700 pages, arranged alphabetically both as to subjects and manufacturers names, gives a detailed description of the electrical equipment, apparatus and supplies, which was listed on the approved records of the Canadian Standards Association May 1st, 1950. This comprehensive book, together with Supplement A dated September, 1950, is now available at the Canadian Standards Association, 71-77 Florence Street, Toronto. The subscription price of $10.00, which covers cost of printing and mailing, includes all supplements covering a two-year period. An invaluable book of reference for business. A limited edition.

The velocity of flowing water is being measured, without the introduction of instruments into the stream, by means of ultrasonic sound waves. A transmitter is placed on one side of the water flow and pick-up instruments on the other side, but displaced a known distance along the stream. The phase angle between the transmitted and received sound wave is measured and converted to velocity.—Ohmite News

NEW PRODUCTS

Philco Radio-Phonograph, Model 731

Circuit Description—Philco Radio-Phonograph Model 731 includes a Philco automatic record changer Model M22 and 6-tube superheterodyne which provides reception in the standard broadcast band.

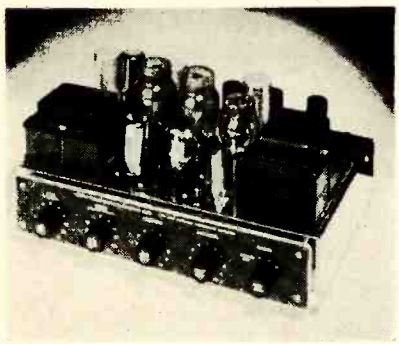
A tuned r-f amplifier stage using a 7L7 provides good sensitivity and selectivity. A 7A8 is used as a converter and phone pre-amplifier.

The low impedance loop aerial normally gives adequate signal pickup, if greater signal pickup is required, an external aerial may be connected. High-gain transformers are used for coupling in the i-f and r-f circuits. The diode section of the 7B6 provides detection and a-v-c action. The triode section of this tube functions as the first audio amplifier, and is resistance coupled to the 6W6-GT output tube. The loud speaker is a permanent magnet, dynamic type. The power supply employs a 7x6 full wave voltage double rectifier, and a resistor, condenser filter network.

The Model 731 incorporates a filament power transformer into the circuit which greatly reduces the incidence of tube burn outs due to line voltage irregularities. (See illustration outside back cover this issue.)

Wide Range Amplifier

A new wide range audio amplifier, Type 210-B, has been announced by H. H. Scott, Inc., Cambridge, Mass. (Canadian representative — Electrodesign Company, 145 Normand St., Montreal, Quebec).



Dynaural Audio Amplifier.

The 210-B Dynaural Amplifier reproduces music and voice with astonishing fidelity, having a frequency range of 12 to 22,000 cycles; a harmonic distortion less than 0.5 per cent at full 20 watts output; first-order difference-tone intermodulation (the distortion most annoying to the ear) less than 0.1 at full output; automatic loudness control to compensate for the insensitivity of the ear at low volume; hum level 4 db or more below full output; and the Dynaural Noise Suppressor which virtually eliminates record scratch and rumble without affecting the music response.

Although this is an improved version of the Model 210-A, the price is lower.

Rogers Majestic 16 Inch Television Receiver

A new 16-inch rectangular "dark face" picture tube television receiver currently being presented by Rogers Majestic, as model VR-721, provides maximum picture quality and area in minimum cabinet space.

Rogers Majestic Model VR-721

The use of this modern tube gives 135 sq. ins. of brilliant, sharp focus picture. The dark face increases contrast range and reduces light reflections, so that picture can be viewed satisfactorily under normal lighting conditions. The "Duo-Sonic" tone system assures excellent reproduction of sound. Cabinet available in walnut or mahogany.

Other features claimed: simplicity of operation; high sensitivity; picture stability; 21 tubes in all; built-in aerial; phono-input jack.

New Electronic Mixer Announced by Pentron Corporation

"Audio-Mix", a new professional type electronic mixer for **all** audio systems, and claimed by its maker to meet the most exacting requirements for multiple mike recording on tape, wire or disc, or for public address systems, is now being presented to the public by the Pentron Corporation.

Although designed essentially for discriminating audio engineers in the professional field, the new Model MM-1 Audio-Mix, with its low price and simple operation, is an ideal accessory for all recorder users.

The compact Pentron Audio-Mix has four individual controls which permit a wide range of audio blending applications on each of its four channels simultaneously, with professional results. There are six high impedance inputs, four microphone, two phonograph; microphone gain, 8db., phonograph gain,—22db. Frequency response 20 to 20,000 cycles. For full information write The Pentron Corporation, 221 East Cullerton Street, Chicago 16.

Centralab's TV6 Ceramic Capacitor

One of the newest replacement aids to TV servicing is Centralab's TV6 tubular, ceramic capacitor, rated at 6,000 working volts, d. c., (10,000 volts, d. c., flash test).

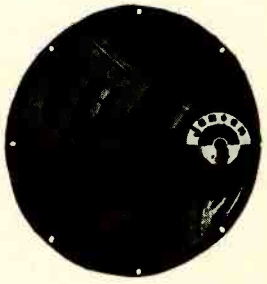
Intended primarily for coupling the deflection amplifier's output to the high potential, vertical and horizontal plates of an electrostatic picture tube, the TV6 is available in one capacity, .005 mfd.

Centralab's TV6 is molded in tubular form and insulated adequately against "shorts" from other components. It is ¾ in. dia. and 2¾ in. long.

Centralab's Canadian representatives: Eastern Canada — Kelly-Heenan Co., 614 Eglinton Ave. West, Toronto; Western Canada — C. M. Robinson Co., 207 Scott Block, Winnipeg.

P 12 R Speaker an Important Addition to Jensen Line

To meet an insistent demand for a speaker of good fidelity to sell at a price within the purchasing limits of an increasingly competitive market, the manufacturers of Jensen speakers announce a new model P 12 R Special loudspeaker, single-unit direct-radiator type. Designed as a do-all speaker for



wide application, the P 12 R Special attains an unusually high level of performance by proper extension of the frequency range and control of those factors which lend "presence" to reproductive quality.

In addition to new set application, the P 12 R Special is ideal as a replacement-improvement unit in existing radio, television and record playing equipment.

For further details write to the manufacturers, Copper Wire Products Ltd., 351 Carlaw Ave., Toronto.

Here it is!

the NEWEST... the BIGGEST-SELLING Combination in the APPLIANCE FIELD!

it's the

BELLTOWER VACUUM CLEANER

Mounted on the BELLTOWER *Car-ree-vac*

The combination that will double your Vacuum Cleaner sales in 1951

They are amazing! These new precision-made Belltower Vacuum Cleaners that retail **below the cost of all other comparable machines now on the market.** Housewives all over the country are asking to see the Belltower because the Belltower is the smartest, most attractive design yet seen in the vacuum cleaner field!

And that's not all! Housewives are **buying** the Belltower Car-ree-vac *with* the Belltower vacuum cleaner. Yes, the Exclusive Belltower Car-ree-vac offers them a handy, compact carrying unit that saves them time — saves them trouble! The Car-ree-vac carries all the Vacuum Cleaner attachments — keeps everything in order — stores away in a corner of a closet, ready for instant use!

Get a line on these two terrific sales items now! Be the first in your district to handle these sensational new Belltower lines! You can double your vacuum cleaner profits in 1951. But don't delay! Phone, write or wire us for complete information and dealer discounts now! Be the first in your neighborhood to cash in on spring cleaning sales with BELLTOWER.

PRICED BELOW
any comparable vacuum cleaner now on the market!

Retail
Belltower DM4 Super-de-Luxe in Black and Chrome as illustrated. **$119.00**

DM4 De-Luxe Models in Green and Chrome and Beige and Chrome $104.00.
Model P4 Standard in Green, Beige or Cream with Chrome Trim—$89.50.

Car-ree-vac (in various colours) **$19.95**

Retail prices slightly higher in Western Canada.

WE HAVE A VACUUM CLEANER FOR EVERY PRICE AND PURPOSE!

Exclusive Stencil Lines of Vacuum Cleaners of various other designs ore available to Distributors, Jobbers, etc., under their own brand nome. Quotation and details on request.

BELLTOWER DISTRIBUTORS LIMITED
35 Gerrard St. West — Toronto, Phone PL. 8756
Manufacturers of Electrical Products

Watch for Sensational New Belltower Lines

IMPROVING FM SALES

(Continued from page 20)

that there were approximately 1500 FM-equipped homes in the immediate Hamilton area. Seven months later a mid-summer survey conducted for us by Elliott-Haynes Limited showed that this figure had risen to an estimated 3866 FM-equipped homes, and that 86.6% of them were listening to the station either regularly or occasionally during this season when presumably indoor radio listening would be low. The survey further estimated that we were reaching over 20,000 FM-equipped homes within our clear signal coverage area.

The Canadian manufacturers are familiar with the measures which this station and the **Hamilton Spectator** have taken to bring the advantages of FM to the attention of the public.

For whatever the reason may be, however (possibly the necessity of disposing of heavy AM inventories), the radio manufacturers and dealers made little effort to capitalize on our FM promotion. What mention they have made of FM in their advertising has usually been in small type. Such success as we have had, therefore, in promoting the sale of FM hereabouts, far beyond the sales made in any other part of Canada, has been virtually without the assistance of the manufacturers and their dealers.

It would seem, indeed, that the public, in this area at least, have been more anxious to secure FM sets than the manufacturers and dealers have been to sell them. If it has been a question of inventories, and perhaps assisting the AM stations for a time, the neglect of FM by manufacturers and dealers may, from their own short-term points of view, have been excusable, but from the long-range point of view nothing could justify the discouragement of would-be FM buyers.

In pioneering FM as we have, it should not have been necessary for us to do more than build a first-class station and make good reception of top-notch programs available to FM listeners, the while letting people know about it. We have done all this, and greatly increased our audience, but the increase would have been larger and quicker if FM dealers had enthusiastically called attention to the FM bands on their sets, and manufacturers had regarded mention of the FM bands as something more than an insignificant afterthought in their advertising.

Specifically, I would make the following recommendations for the improvement of FM sales:

1. Produce and market good, low-priced FM-AM and FM-TV sets.
2. Explain FM's advantages thoroughly to dealers and to the public.
3. Feature the FM band in your advertising in those areas where good FM reception is available.

Sincerely yours,
(Signed) David I. Ker, Manager,
CJSH-FM, Hamilton.

A DEALER'S RESOLUTION

(Continued from page 13)

hand in buying means that I will be certain to have some left over. On the other hand, to buy short means loss of sales. The only reasonable solution is to keep an accurate record of sales of all the different types of radios and appliances and when a new item appears on the market I will always be able to refer back to the last time such a commodity was handled in my store and govern my buying accordingly.

During 1951, I must remember, a successful business doesn't depend entirely upon the ability to sell. A good part of success comes from good buying.

10. To Give Particular Attention to Credit

One thing I'm resolved to watch closely this year is credit. From what I've been able to find out, too many retailers get into trouble because they grant credit too freely or because they are afraid to ask a customer to pay his overdue account. The dealer is expected to pay his accounts promptly. So. in turn, should his customers. I can't afford to have a lot of delinquent accounts and I'm determined to be more careful about it from now on.

As an example I intend to spend more time on collection letters. Many successful dealers have learned that skilfully written letters and personal calls will bring in the money without upsetting the customer. But if a customer turns out to be a deadbeat I'm going after him; I don't want his future business anyway.

MONTHLY BAROMETER

(Continued from page 9)

Regina, Sask.: November sales compared with October — washers, records up; no change in any of the other commodities. November sales compared with November, 1949 — radio, refrigerators, ranges, records up; vacuum cleaners down; no change in washers, traffic appliances. Business outlook fair. No change in sales resistance. Collections fair. Instalment sales up. All service business up.

Saskatoon, Sask.: November sales compared with October — radio, vacuum cleaners up; no change in any of the other commodities. November sales compared with November, 1949 — vacuum cleaners up; radio, refrigerators down; washers, ranges, traffic appliances no change. Business outlook fair. No change in sales resistance. Collections fair. Instal-

(Continued on page 46)

RADIO-TELEVISION and APPLIANCE SALES

NEWS

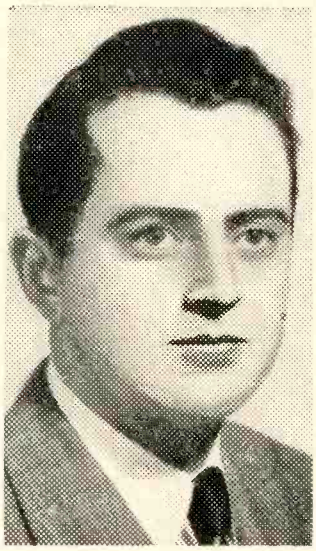
Vol. 7 JANUARY, 1951 No. 1

Philco Appoints New Sales Representative

W. H. Jeffery, general sales manager, Philco Corporation of Canada Limited, recently announced the appointment of R. M. Wilson as Western Division sales representative.

Mr. Wilson is a graduate of the Department of Commerce, University of British Columbia. He was awarded the Hudson's Bay Company Scholarship in 1948 which allowed him post graduate studies at the London School of Economics, London, England.

Prior to joining Philco, Mr. Wilson had several years sales experience with radio and appliance distributors in British Columbia. During the past year he has been responsible for Philco radio sales in the Central Division.



R. M. WILSON

JAN. J. MUNK

Whose appointment as sales manager in Eastern Ontario and Quebec is announced by Powertronic Equipment Limited. Educated in Vienna and London, England, Mr. Munk came to Canada in 1937. During world war 2 he served with the R.A.F. and the R.C.A.F. and later graduated from McGill University in Electrical engineering.

Quality Now Wears King Crown

One of the best-selling "independent" labels in the United States, King, is now affiliated with Quality Records in Canada. The best sides produced by such King artists as Moon Mullican, Johnny Long and his Orchestra, Cowboy Copas, Wynonie Harris, Grandpa Jones, Bob Haymes, Lucky Millinder, and many others, will be identified by the King crown on the Quality label, effective with the release now being shipped to radio stations.

Only lack of effective distribution and promotion has kept many of the King stars from becoming the big names that they are south of the border. Quality aims to correct that situation.

There are five Quality-King records in the first release and each has something special to offer in its own field. Moon Mullican works up a wonderful lather on WELL OH WELL . . . Wynonie Harris, solidly supported by Lucky Millinder's great band, does happy things with TEARDROPS FROM MY EYES — a tune that's headed for the top as a pop and western item, too . . . Lee Richardson sings I'M GETTING SENTIMENTAL OVER YOU and DON'T BE THAT WAY in sock fashion.

CEMA Social Get-Together at Brant Inn

On December 8, 1950, at the Brant Inn, the members of CEMA's Household Refrigeration Section and its Service Managers Committee were hosts at a social get-together with representatives from the Frequency Standardization Division of The Hydro-Electric Power Commission of Ontario and its frequency conversion contractor, the Canadian Comstock Company. The purpose of this gathering, which was purely a social get-together, was to bring together the key area personnel of the Ontario Hydro and Comstock Company interested in the installation of hermetically sealed refrigerator units with the service representatives of our household refrigerator manufacturers. Approximately 150 people were in attendance.

Four distinguished guests get together at the Brant Inn, Burlington, where the Canadian Electrical Manufacturers Association held a social evening. Left to right: George Baldwin, Westinghouse, Chairman of the Service Managers' Committee of C.E.M.A.'s Household Refrigeration Section; Harry H. Leeming, director of Hydro's Frequency Standardization Division; R. E. Powers, Vice-President in charge of Frequency Conversion at Canadian Comstock, and J. R. Wright, Moffats, Chairman of the Household Refrigeration Section of C.E.M.A.

Wire Association Meets in April

The Wire Association will hold its Canadian Regional Meeting April 19th and 20th, 1951, at the Royal Connaught Hotel, Hamilton, Ontario. Chairman of the Main Committee for this Meeting is James W. Galloway, B.Sc., P. Eng., Member ASME. Further information regarding this meeting can be secured by writing the chairman, c/o B. Greening Wire Company, Limited, Hamilton, or the secretary, E. V. Larson, The Larson Company, 98 Wellington St W., Toronto.

The Wire Association is a non-profit organization with International membership of Wire Mill executives, superintendents and foremen. It also includes plant engineers, traffic men, wire machinery and supplies manufacturers and all others engaged in the production of cold drawn bars, rods, wire, strip, insulated wire and cable, and the manufacture and fabrication of finished wire products.

Its specific purpose is to improve production methods and afford a clearing house for ideas on management problems, and reasearch work in all phases of practical wire drawing and wire working, and to develop and maintain friendly relations among its members.

Aerovox Announces Staff Appointments

Walter H. Furneaux, vice-president and general manager of Aerovox Canada Limited, Hamilton, has announced the following staff appointments: James Key, assistant to the general manager; Harvey Pickett, chief engineer; Jack Cartwright, general sales manager; Jack Markle, director of personnel and advertising manager; Harold Llewellin, comptroller; L. West, purchasing agent; Percy Douglas, factory superintendent; Ben Hore, assistant factory superintendent. These appointments have been made in view of recent plant expansion required to meet the increased demand for television and electronic equipment.

JAMES KEY

JACK CARTWRIGHT

Named Mallory Senior Vice-President

Ray F. Sparrow has been named senior vice-president of P. R. Mallory & Co., Inc., Indianapolis, Ind., according to an announcement by the board of directors of that firm.

Mr. Sparrow has been vice-president in charge of Mallory sales since 1931 and also has been a member of the board for many years.

Immediately after World War I, Mr. Sparrow became a salesman of electrical parts. Soon thereafter, he became a manufacturers' agent in the same field.

In 1923, Mr. Sparrow joined the Yaxley Manufacturing Company of Chicago and in 1931 brought that nationally-known organization to Indianapolis consolidating it with P. R. Mallory & Co., Inc.

At the time Mr. Sparrow joined the Mallory company the gross sales were $2,000,000 annually. Under his guidance as Vice-President in charge of sales, that figure has risen to more than $35,000,000 in 1950.

Fine Window Displays Feature Toronto Stores

Some mighty fine window displays were to be seen around Toronto during the Christmas season. Shown above are just a few of these fine displays. Top row (left to right)—Modern Living, Eglinton Ave., West; Elliot Music Stores Ltd., Bloor St., West; Radio Trade Supply Ltd., Yonge Street. Centre row—Williamson Radio and Electric Ltd., Bloor St., West; Ted Weale Ltd., Eglinton Ave., West; Eddie Black Ltd., Yonge Street. Bottom row—Reid and Campbell, Yonge Street; J. D. Ford Radio and Appliance Co., Bloor St., West; Binnington's, Bloor St., West.

ELECTRICITY PLAYS VITAL PART

(Continued from page 19)

now adding as much as 25 per cent to their "in-use" time. New street lighting and traffic control installations in many of our cities and towns are adding to civic efficiency and safety.

In 1950, the sharply increased expansion of Canada's aircraft industry has resulted in the development of a great variety of electrical equipment required for airborne and ground installations. Communication and navigation units; electrical systems, lighting and testing equipment and many types of instruments and control devices are being supplied for the new jet planes now being produced in Canada.

The study of the possibilities of nuclear energy for power applications has continued during 1950, but reliable predictions are still not available. Revolutionary reduction in power cost is not anticipated where electric power is now readily available at reasonable cost, because the cost of fuel or hydraulic drive which would be replaced, is only a comparatively small part of the cost of electricity to the consumer.

There is no way at present of converting directly to electricity any significant amount of the energy released from the splitting of the atom. Present research is based on the assumption that the

heat of nuclear fission will be used to generate steam to drive a conventional steam turbine. Investigations were begun during the year to apply this technique to the propulsion of ships and these findings may eventually be applied to land-based power station developments.

The long-term prospects of Canada's electrical industry are challenging. Adequate supplies of electricity, utilized at rates as low as any in the world, have contributed in a great variety of ways to our nation's prosperity in peace and to its strength in war. The industry is prepared to make a full contribution to even greater development in the future—for ourselves, for our children, and for those who come from other lands to share our heritage with us.

Caplan Radio in Fine New Branch

Above is shown a view of the very modern new branch store which Caplan Radio has recently completed and opened at the prominent corner of Dundas Street and Pacific Avenue in Toronto's West End shopping section. The all-glass front is one of the striking features and virtually turns the entire store front into a giant showcase. A more detailed story of the growth of this well-known Toronto dealer will be featured in our next issue.

First TV Set Theft Occurs

Vancouver police got a definite indication that television has arrived in Canada.

The first TV set to be stolen in the city was reported carted away from a truck parked in a lane behind the 400 block Main.

Two eyewitnesses said the heavy, $550 set was hijacked by a man in a truck who took it from the parked truck of Allan Young, manager of Young Communications, 337 Gore.—From the Vancouver Sun.

I.R.E. Canadian Council Annual Meeting

The Annual Meeting of the Canadian Council of the Institute of Radio Engineers was held at the Ryerson Institute of Technology, Toronto, on Thursday, December 28.

The meeting was opened by the chairman, F. H. R. Pounsett and following a discussion of the minutes of the last meeting and business arising therefrom, reports were presented by the chairmen of the various committees, all of which indicated a considerable amount of activity in furthering the interests of I.R.E. in Canada and in co-ordinating the activities of the various sections and sub-sections. I.R.E. now has five full sections in Canada at Montreal, Ottawa, Toronto, London and Vancouver and two sub-sections at Hamilton and Winnipeg.

The financial report presented by the secretary-treasurer, I. C. R. Punchard showed the Council to be in healthy financial condition.

Among the many subjects discussed at length during the full-day meeting was the Canadian I.R.E.'s Television Technical Advisory Committee; the section boundarys; a report on the Canadian Council of Professional Engineers and Scientists of which I.R.E. was a member but which was recently dissolved; the annual convention and the proposal for a joint parts show to be participated in by all interested groups and to run concurrently with a convention; the Silver Anniversary of I.R.E. in Canada; student branches; customs duty on I.R.E. Year Books, etc.

The committee chairmen for 1951 were elected as follows: Papers—Graydon Lloyd, Toronto; Education — R. G. Anthes, Winnipeg; Professional Status — R. C. Poulter, Toronto; Membership — R. P. Mathews, Montreal; Awards—Dr. F. S. Howes, Montreal; Regional Convention — G. J. Irwin, Toronto; Closing Duties —J. C. R. Punchard, Belleville. Mr. Punchard was reelected secretary-treasurer of the Council.

A. B. Oxley, Montreal, newly elected regional director of the Institute, who now becomes chairman of the Canadian Council, spoke on 14 proposed activities of the Council for the coming year.

The next annual meeting of the Council will be held on November 28, 1951.

Toronto Section, I.R.E.

Frank Margolick was the speaker at the Dec. 4th meeting of the Toronto section of the I.R.E. He described the automatic ionosphere recorder designed and built by the Canadian Marconi Co. for the Dept. of National Defense. The requirement was for a transportable and flexible unit capable of measuring and recording the critical frequency for vertical incidence against the layer height. The unit sweeps the spectrum from .6 to 20 mcs. in a period that may be varied from 4 secs. to five minutes, with a transmitter power from 5-15 kw. The received pulses are displayed on a scope with height and frequency markers and also a time and date indicator — this pattern is then photographed on 16 mm. or 35 mm. film for later study.

A number of films were shown including a record of a very disturbed period when layers were rapidly forming and reforming at widely differing heights. C. J. Bridgland moved a vote of thanks to the speaker and the meeting adjourned at 10 p.m.

The next meeting of the Toronto section of the I.R.E. was held on Jan. 15th, 1951 at 8.15 p.m. in Room 135 of the MacLennan Lab. building of the University of Toronto. The speaker was Dr. J. Wilson McRae of the Bell Labs. who spoke on the subject

"Microwave Super-Highways for Television and Telephony." Dr. McRae described the broad band microwave equipment used in the New This was a joint meeting with the American Institute of Electrical Engineers, and was one of the most notable meetings of the season.

A regular meeting of the Toronto Section of the I.R.E. will be held on Jan. 29th, 1951, in Room 21, Electrical Bldg. University of Toronto. The speaker at that time will be a representative of the Dept. of National Defense. Ottawa, who will speak on military communications. All interested are urged to attend this meeting and a special invitation is extended to attend the supper meeting which precedes.

Students' Night of the Toronto Section

The annual Students' Night of the Toronto Section of the Institute of Radio Engineers will be held in Room 21, Electrical Building, University of Toronto on Monday, February 19th at 8.15 PM. At this meeting two students from the University will address the Section on the subjects relating to Communications. All interested are invited to attend this meeting, also the Supper meeting held in Hart House at 6.00 PM.

Hamilton Sub-Section of the I.R.E.

On Monday, December 11, 1950, the Hamilton Sub-Section held its regular meeting at McMaster University. Dr. A. B. McLay, Professor of Physics, McMaster University, who is presently engaged in the research field of Microwave Optics — Interference and Diffraction of Microwaves, Microwave Spectrascopy, presented a very interesting paper on "Optical Effects with Radio Microwaves." The address was well illustrated with slides and interesting practical demonstrations were given at the close of the evening."

J. H. Hamilton Appointed Manager, RCA Victor Hotpoint Appliance Department

Montreal — James H. Hamilton has been appointed, effective January 2, 1951, manager of the Home Appliance Department, it was announced by F. W. Radcliffe, Vice-president, Consumer Sales, RCA Victor Company Ltd.

J. H. HAMILTON

Mr. Hamilton comes to RCA Victor with a substantial background of experience in the merchandising of home appliances. His appointment marks another step forward in RCA Victor's plans to broaden its Hotpoint line and operate the department as a completely integrated unit.

Mr. Hamilton served five and a half years in the Canadian Army, including overseas service. Prior to the war he was associated with the Appliance Division, head office, of the Canadian General Electric Company. Mr. Hamilton was discharged from the Army in 1945 with the rank of Major. He has since been closely associated with radio and household appliance manufacturing and distribution. Mr. Hamilton will make his headquarters at RCA Victor Company, Ltd., head office, Montreal.

Sudbury Star Radio Station Sold

The Sudbury (Ont.) Star and radio station CKSO have been sold for about $1,500,000 to a group of Sudbury business men headed by J. R. Meakes, it was disclosed recently.

The announcement was made by the Canada Permanent Trust Company, an executor of the W. E. Mason Foundation, set up by the will of W. E. Mason, publisher of the Star, who died June 22, 1948.

A. H. Ginman Resigns Presidency of Canadian Marconi — Succeeded by S. M. Finlayson

A pioneer whose association with wireless telegraphy goes back to the days of the first trans-Atlantic signals, will retire on December 31st, when A. H. Ginman of Montreal relinquishes the presidency of Canadian Marconi Company, though remaining a member of the board.

Almost half a cenury has elapsed since Mr. Ginman resigned a post he held from 1895 with the British-owned Cuba Submarine Cable Company to return to England and enter the service of the original commercial wireless undertaking, Marconi's Wireless Telegraph Company Limited. While scoffers were branding Signor Marconi's revolutionary invention a fake, and cynics were trying to break

A. H. GINMAN

his basic patents in the courts, Ginman and other young men, caught by the global vista which wireless threw open, were beginning to devote their lives to the creation of a vast network of invisible communications.

Early in the century, Mr. Ginman went to the United States where he was engaged in training wireless operators for service in Canada and the United States. During this period he was also concerned with the erection and operation of several stations on the Atlantic Coast.

The days of derision were past. The luxury liner "Republic," after colliding with the "Florida" off the "Nantucket Lightship," had sent out the early wireless call for help, the C-Q-D signal which was received by the Marconi Station at Siasconset where Mr. Ginman was the officer-in-charge. From that station vessels were directed to the scene of the disaster and hundreds who might have perished, were saved. The "Titanic" disaster of 1912 brought home sharply and tragically the essential safeguards of Marconi's invention — without it, the ocean leviathan might have disappeared from human ken with loss of every life aboard.

Later Mr. Ginman moved West and from 1911 to 1917 managed the Marconi's Wireless Telegraph Company Limited of America at San Francisco. From this post on the Pacific Coast, Mr. Ginman inaugurated and brought into successful operation the first radio service, joining the United States and the Hawaiian Islands. This linking of the United States to its island possession was hailed as a great forward step, bringing Hawaii closer to America's Western door. Toward the end of his stay in San Francisco Mr. Ginman established the first direct radio telegraph circuit from the United States to Japan, a vital link in what would soon be a worldwide, globe-circling ring of communications.

Mr. Ginman returned to England, whence he was appointed special representative of the Marconi's Wireless Telegraph Company Limited in the Far East. In 1917, he arrived in China, and for more than a decade he shuttled between Peking, Shanghai, Hong Kong and Tokyo and, later, organized and became chairman of the Chinese National Wireless Telegraph Company, now Marconi (China) Limited. Of this enterprise it could be said that in awakening the interest of Far Eastern business and political leaders in the new invention, Mr. Ginman did much to arouse the great cities of the Orient to modern radio communications.

Early in 1929, Mr. Ginman was called home to London, to become joint general manager and in 1932, general manager of the parent company in Britain. In 1935, he became president of Canadian Marconi Company and general manager in Canada for Cable and Wireless, Limited,

S. M. FINLAYSON

Britain's world-girdling communications system. In this latter capacity, Mr. Ginman has been responsible for operations in Canada of the Pacific Cable Board, Imperial Cables and the Halifax-Bermuda cable, while also serving as a director of the Commercial Pacific Cable Company of New York.

The scope of Mr. Ginman's experience has brought him recognition as a leader in worldwide communications. The half century of his association with the communications business has seen all quarters of the globe brought into effective telephone and telegraph connection with one another with incalculable benefits to mankind.

Succeeding Mr. Ginman as Canadian Marconi president, S. M. Finlayson of Montreal has been in the Company's service since 1919. Mr. Finlayson, a graduate of McGill University in electrical engineering, has moved upward in the Marconi service from his original role as an apprentice-engineer through factory management to the position of general manager in 1945 which post he retains in moving into the presidency. His appointment is in line with Marconi tradition of naming to executive positions, individuals who have come up through operating and production ranks. In recent months, Finlayson has been prominent in promoting in Canada one of radio's newest contributions, television, and his company foresees for this new medium advantages for Canadians that will far surpass those of radio broadcasting which had its birth in Canada and was first introduced by this Company's station back in 1919.

New Format of RCC Manual Received Enthusiastically by Trade

Important changes made recently in the format of the Radio College Service Manual have had an enthusiastic reception from the trade throughout Canada. The new format, first adapted with the Volume 5, Part 1 supplement, recently released is considerably more convenient and is printed on heavier, more durable paper.

Each supplement is now published in 96 page side-bound units — no danger of sheets getting detached or lost. The index is printed on the front cover.

A new-type heavy duty binder has been made available for use with these new supplements. The binder will stand on a shelf and has the name stamped in gold on the back.

The new supplement contains more technical data — all the information on circuits, values of components, voltages, socket and trimmer layouts, alignments, dial stringing diagrams, parts listings.

Service managers and technicians like the new format very much and numerous letters to this effect have been received by the College.

These new supplements are now available at authorized jobbers throughout the Dominion.

Marr Connectors Approved for 600 Volt Circuits

CSA Approval 985 has been granted to the Marr No. 1 connector for connections on certain electrical fixtures up to 1000 volts and for all general wiring up to 600 volts.

The Marr connector, which employs a set screw to give a safe, permanent connection, yet one which may be changed so easily for servicing, has been constantly improved over the years since Mr. Marr first invented it. It is widely used in the electrical trade and the line now offers a full range up to 600 volt connectors.

R.M.A. News

1951 Town Meetings of Service Technicians

The National Advisory Council for Town Meetings of Radio Technicians met in Toronto, January 10th, to approve plans for the holding of 1951 Town Meetings in both Toronto and Montreal. The Toronto Meetings will be held at the Ryerson Institute of Technology, Monday, Tuesday, Wednesday, May 14, 15 and 16, and the Montreal Meetings are expected to be held at the Montreal Technical School May 15, 16 and 17. C. O. Baldwin, Philco Corporation of Canada Limited, has been appointed co-ordinator for the Montreal Meeting.

TV Sales Hit New High

Canadian television receiver sales for the month of November reported by 14 RMA member companies totaled 4,980 units with a list of value of $2,384,894. This figure was 15 per cent over the previous record of 4,267 television receivers sold in October and brought the total sales to date to 32,660 units.

CRTB Annual Meeting

The sixth annual meeting of the Canadian Radio Technical Planning Board was held in the Board Room of the Ryerson Institute of Technology, Toronto, on Wednesday, Jan. 17, under chairmanship of President R. A. Hackbusch. The board received progress reports from panel and committee chairmen and planned future activities and engineering study of such matters as frequency allocations.

RMA Service Activities

Chairman M. E. Nylin of the RMA Service Committee has called a meeting of the committee on Thursday, Jan. 25th, in Montreal to consider final approval of a number of new bulletins prepared for distribution to all service technicians in Canada. Any Canadian service technicians not already on the mailing list for these free RMA bulletins are advised to send their name and address into the RMA offices at 159 Bay Street, Toronto.

CSA Television Specifications

F. H. R. Pounsett, chairman of the RMA Engineering Committee, has appointed a sub-committee under chairmanship of A. B. Oxley to prepare and submit to CSA a suggested appendix to Specification C22.2 No. 1 (Power - operated Radio Devices) to cover television receivers.

8th Annual Convention and Merchandise Show

PLANS are now well under way for a big Annual Radio and Appliance Dealers Convention at the Royal York Hotel, April 2, 3, 4.

Events are moving ahead swiftly these days. International developments and resulting economic changes are affecting every phase of the retail trade. What changes should you watch for in 1951? How must policies be reshaped to meet these conditions? These and many other questions will be discussed at the dealers' big Annual Meeting.

The Association has invited prominent American and Canadian businessmen to attend the Convention as guest speakers and on various discussion panels, to bring to the dealers the most up to date information and recommendations to guide the dealers during 1951.

The Merchandise Show will again be one of the feature attractions of the Convention and it is evident that a great deal of interest will be centred around this event again this year.

Advance registration is now open to all dealers, manufacturers and distributors. This may be obtained by writing to the Association office.

London Televised From Air

For about two hours recently, BBC video viewers saw something of London from the air. A plane carrying video cameras and transmitting equipment circled over London and North Weald Aerodrome transmitting pictures of St. Pauls, Blackfriars Bridge, Westminster Palace, and a number of aircraft in flight. Reception was not very good, but from an experimental point of view much valuable data was collected. Together with earlier similar tests, the stunt cost £20,000.

Superb Electric in Fine New Quarters

Superb Electric Industries Limited, Ontario distributors for Fleetwood radio, television and recording equipment, and Canadian distributors of the British Ormond electric hair dryer, are now settled in their fine new premises at 751 Bathurst Street, near Bloor Street, Toronto. A feature of the new location is the very modern show window fronting on Bathurst Street, which permits of excellent display of the products the Company handles. The accompanying photograph will convey the advertising value which the large show window gives to the products the company handles, although their sales are confined entirely to the wholesale trade.

Canadian Distributors Alliance "Tenna-Rotor"

Alliance Distributors Limited, of Toronto, have been appointed Canadian distributors of the Alliance "Tenna-Rotor" developed in the United States by the Alliance Manufacturing Co., of Alliance, O.

The Tenna-Rotor directs the antenna for best reception, and is controlled from a small box designed to sit on top of the TV set. By simply turning a knob on the control box, the viewer can change the position of the antenna to sharpen up the image or to pick up stations not ordinarily available. It is particularly useful for improving reception on "fringe" areas.

R. A. Crichton Assumes New Post

Hamilton — R. A. Crichton has taken over the post of special representative to the district manager, Ontario District, for the Canadian Westinghouse Company. His duties will be special assignments from C. W. Hookway, the company's Ontario District manager.

Mr. Crichton graduated in electrical engineering from Edinburgh University in 1926 and spent subsequent years in the United States and Canada in the electrical and associated industries. He is well known in the Ontario district and served as president of the Niagara District Electric Club a few years ago.

Sales Engineer, Alliance Tool and Motor Co.

F. O. Hipwell, general manager of Alliance Tool and Motor Company Ltd., Toronto, is pleased to announce the appointment of Bill Quinlan as sales engineer. Mr. Quinlan, who was previously employed with the B. F. Goodrich Rubber Company, is a graduate in engineering of the University of Toronto, and well known to the retail trade.

BILL QUINLAN

CSA Reorganizes Approvals Laboratories

OTTAWA, Jan. 5th, 1951—J. G. Morrow, chairman, Canadian Standards Association, announced today important changes in the organization of their Approvals Laboratories, which are now located in the Association's own building on Florence Street, Toronto.

Formerly the division was operated by an administrative board which also had the responsibility of recommending approvals to the Interprovincial Approvals Council.

The new procedure, which has been announced in detail to over five thousand subscribers to the approvals services, gives the recently appointed director, Gerry Moes, prescribed responsibilities and brings into existence a technical advisory committee, one for each distinct branch of approvals work, such as electrical, fire hazards and any future new branch. The services of this technical committee will be available to the submittor and would include the adjudication of an appeal against the withholding of approval of any device.

Better and faster service to the inspection departments of all provinces and the manufacturers is anticipated.

Winner in RCA Victor "45" Record Album Sales Contest

Mrs. Germaine Brasseur of the record department of Ed. Archambault Inc., Montreal, came out well on top in a national contest sponsored by the RCA Victor Company, Ltd., winners of which were announced recently.

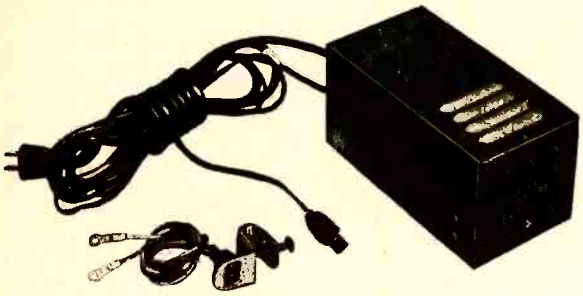
The contest, which ran from September 1st to October 31st, gave RCA Victor dealers' record sales personnel a chance to win from one to fifteen pairs of Gotham Gold Stripe nylon stockings and/or a $100 bonus prize.

To give everyone equal opportunity, six population zones were set up so that competition would only be among salespeople located in centres of comparable population. Nylon hose prizes, ranging from two to fifteen pairs, were awarded to the six contestants in each zone registering the highest dollar volume sales of RCA Victor 45 RPM Record Albums. Contestants who did not qualitfy for one of the key prizes received a consolation pair of hose if their album sales totalled $75 or more. The cash bonus was awarded to the record salesperson in each zone selling the greatest dollar volume of RCA Victor "45" Instruments (Models 9-EY-3, 9JY or VA-45).

Mrs. Brasseur sold a total of nearly $1,800 worth of RCA Victor "45" Albums during the two-month period to top by a wide margin any other single effort, and, of course, to win first prize in the zone including centres of population of 400,000 and up.

MRS. GERMAINE BRASSEUR — in the record department of Ed. Archambault Inc., Montreal.

Boost Midwinter Sales with the C. T. BATTERY BOOSTER



FEATURES

Recharges Battery Quickly. No overcharging. Gives Stronger Radio Reception. No Interference. Gives Quicker Starting and Brighter Lights. No messy liquids; No tubes; no battery freezing; Recharges battery quickly; Noiseless and Rugged—No moving parts.

Available in 2 Models

6 Volt Model	12 Volt Model
Model 101C — 110 V. 25 cycle	Model 109C — 110 V. 25 cycle
Model 102C — 110 V. 60 cycle	Model 110C — 110 V. 60 cycle

Prices and Discounts on Request

- SALEABLE
- SIMPLE
- DEPENDABLE
- ECONOMICAL
- PROFITABLE

ELORA INDUSTRIES
LIMITED

CANADIAN TRANSFORMER DIVISION
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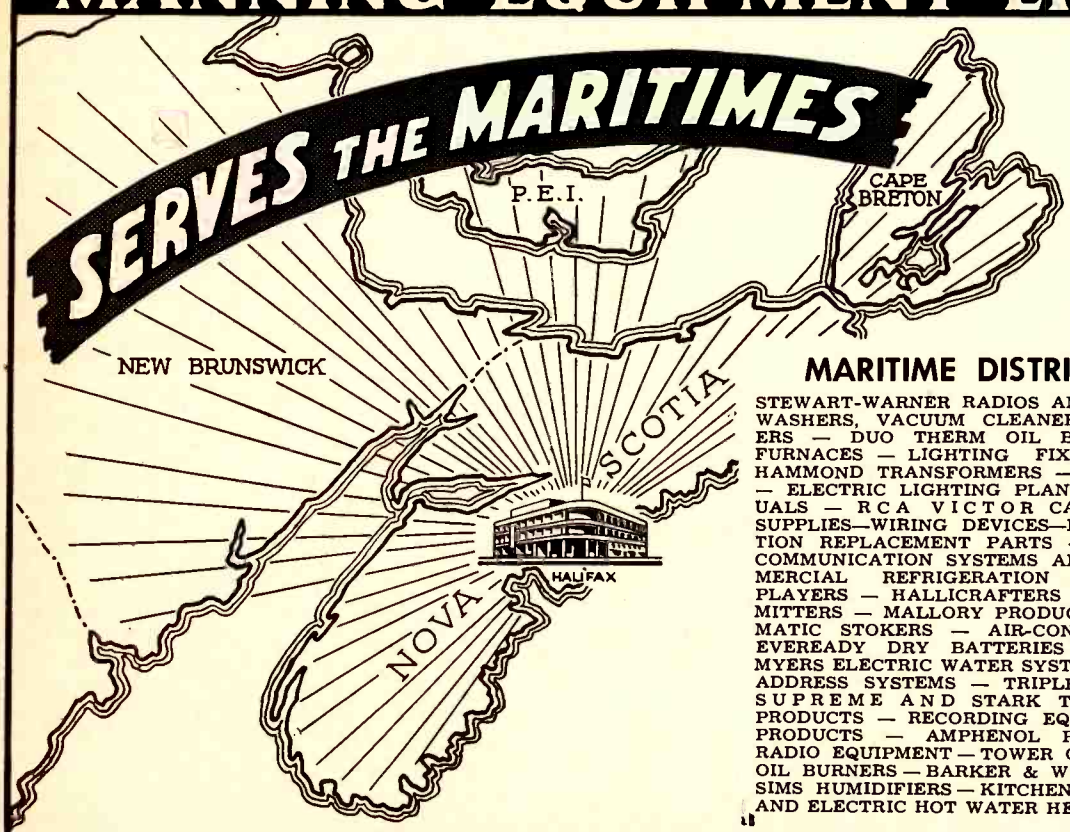
Manufacturers of . . .
POWER TRANSFORMERS, FENCER TRANSFORMERS, SOLENOIDS, INPUT AND OUTPUT TRANSFORMERS, BATTERY BOOSTERS

MANNING EQUIPMENT LIMITED



MARITIME DISTRIBUTORS FOR:

STEWART-WARNER RADIOS AND CAR RADIOS — EASY WASHERS, VACUUM CLEANERS AND FLOOR POLISHERS — DUO THERM OIL BURNING HEATERS AND FURNACES — LIGHTING FIXTURES AND LAMPS — HAMMOND TRANSFORMERS — DEEPFREEZE FREEZERS — ELECTRIC LIGHTING PLANTS — RCC. RADIO MANUALS — RCA VICTOR CAR RADIOS — ELECTRIC SUPPLIES—WIRING DEVICES—RADIO AND REFRIGERATION REPLACEMENT PARTS — STROMBERG-CARLSON COMMUNICATION SYSTEMS AND AMPLIFIERS — COMMERCIAL REFRIGERATION EQUIPMENT — RECORD PLAYERS — HALLICRAFTERS RECEIVERS AND TRANSMITTERS — MALLORY PRODUCTS — SPEAKERS — AUTOMATIC STOKERS — AIR-CONDITIONING SYSTEMS — EVEREADY DRY BATTERIES AND FLASHLIGHTS — MYERS ELECTRIC WATER SYSTEMS—SOUND AND PUBLIC ADDRESS SYSTEMS — TRIPLETT — CANADIAN — SUPREME AND STARK TEST EQUIPMENT — IRC PRODUCTS — RECORDING EQUIPMENT — CENTRALAB PRODUCTS — AMPHENOL PRODUCTS — AMATEUR RADIO EQUIPMENT — TOWER OIL BURNERS — FURNACE OIL BURNERS — BARKER & WILLIAMSON PRODUCTS — SIMS HUMIDIFIERS — KITCHEN SINK UNITS — OIL, GAS AND ELECTRIC HOT WATER HEATERS.

UNITED SERVICE BUILDING **100 SACKVILLE ST. • HALIFAX, CANADA**

SOME INTERESTING FEATURES

(Continued from page 24)

nice balance between highs and lows. As the control is moved upward condenser C is brought into the network again and the resistive path for the lows is increased. Thus the degeneration for low frequencies is reduced and the bass rises. Conversely, if the control is moved downward considerable resistance is introduced into the path that the highs must take; thus high frequency degeneration is reduced and the treble rises. Actually the impedance must change a little for both frequencies as we move past the tapping point but the effect is most pronounced for the highs or lows in each instance.

The Phase Inverter

The two output tubes are operated in push-pull and the 6J5 functions as a phase inverter. The output from the second triode section of the 12AT7 is fed to the grid of the 6J5 and to the grid of the lower 6V6GT. A reversal in phase occurs in 6J5 and so its output is fed to the grid of the upper 6V6GT. The inverter should operate without appreciable gain and it may be presumed that the relatively large unbypassed cathode resistor will provide enough degeneration to give this effect. It might be noted that in the lower 6V6GT there is a connection missing from the cathode to terminal 8.

The Power Supply

Since the speaker is the permanent magnet type, resistors only are used in the power supply filter circuit and it will be seen that the voltage drops from 300 to 140 by the time it gets through this network. However, the circuit that requires the least filtering, the push-pull output stage, takes its voltage from the first filter condenser and avoids the resistors. This is quite feasible because hum will balance out in a push-pull circuit.

The broadcast band covers from 535 to 1650 kc. and the short wave band from 9 to 18 mc. The I.F. is 455 kc, the undistorted output 6 watts and the maximum output 9 watts. The changer is a Webster-Chicago Model 100.

ADVERTISERS IN THIS ISSUE

JANUARY • 1951

MONTHLY BAROMETER

(Continued from page 32)

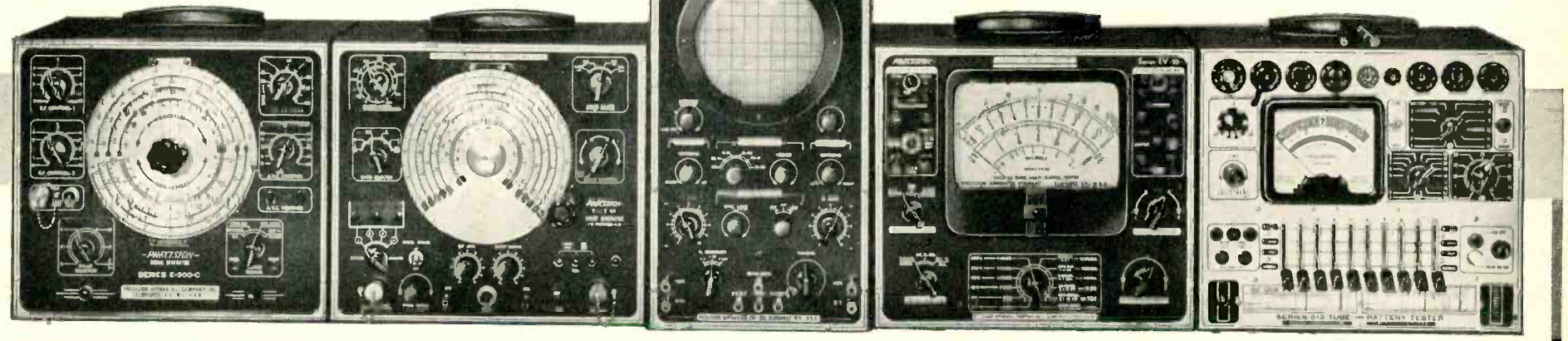
ment sales up. No change in any of the service business.

Vancouver, B.C.: Washers up; vacuum cleaners, traffic appliances down; radio, refrigerators no change. November sales compared with November, 1949 — vacuum cleaners, refrigerators up; traffic appliances down; no change in radio, ranges. Business outlook good. Sales resistance increasing. Collections fair. Instalment sales up. Not much change in any of the service business.

★ Build Your Service-Sales Future on a Firm Foundation with . . . .

PRECISION
TEST EQUIPMENT
Standard of Accuracy...

. . . These 5 Matched "Precision" Instruments provide a Complete MODERN SERVICE LABORATORY for TV-FM-AM at only moderate cost.



SERIES E-200-C — Modern Multi-band SIGNAL and MARKER GENERATOR for A.M., F.M., and TV alignment.

Exceptional Accuracy and Stability! 1000 pt. vernier calibrating scale! 0-100% Modulation! A.V.C. substitution network! Direct reading 88KC to 120 MC! Complete with output cable and tech. manual. In matched, heavy gauge case 10½ x 12 x 6".

NET PRICE $94.30

SERIES E-400 — Wide Range R.F. SWEEP SIGNAL GENERATOR. Direct Reading from 2 to 480 MC.

Narrow and Wide Band Sweep for F.M. and TV • 1500 pt. vernier calibrating scale • Multiple Crystal Marker • 8 tubes including V.R. and rectifier • RG/62U Coaxial Terminated Output. Complete with 2 crystals. In heavy copper-plated case 10½ x 12 x 6".

NET PRICE $174.90

SERIES ES-500 — 20MV High Sensitivity, Wide Range, 5 inch C.R. Oscillograph.

V. Amp. Response to 1 MC! Low C, High R input Step Attenuator! Z axis modulation terminals! 9 tubes incl. V.R. and 2 rectifiers! Complete with light shield and mask. Heavy steel case 8¼ x 14½ x 18".

NET PRICE $209.65

SERIES EV-10 — True Zero-Center VTVM — MEGOHMMETER with large 7" meter — plus complete 1000 ohms per volt functions.

59 ranges to 6000 Volts, 2000 Megs, +70DB, 12 Amps • Voltage Regulated bridge type circuit • Constant 13⅓ Megs input resistance to 600 V. 133⅓ Megs at 6000 V • Optional RF probe. Complete with test cables. Matched heavy gauge steel cabinet 10½ x 12 x 6".

NET PRICE $135.95

SERIES 612 — Modern Free-Point Cathode Conductance Tube Tester, and dynamic A-B-C Battery Tester.

Incorporates RMA recommended circuit principles! 10 lever free-point element selection! Built-in roller chart! Dual short-check sensitivity! Noise, Ballast and Pilot Tests! Complete, ready to operate. In matched heavy gauge steel cabinet 10½ x 12 x 6".

NET PRICE $91.75

BUY PERFORMANCE — NOT SPECIFICATIONS

For over 15 years, "Precision" **PERFORMANCE, ACCURACY, WORKMANSHIP** and **VALUE** have set a standard of comparison...products of an organization whose sole efforts are concentrated *exclusively* in the design, development and production of the **FINEST TEST EQUIPMENT**...nothing else!

"Precision" Performance engineered instruments are on display at leading part and equipment distributors.

PANEL MOUNTS, PORTABLES, COUNTER TYPES

Most "Precision" instruments are available in various enclosure styles to suit your individual application, field or shop. **WRITE FOR OUR LATEST ILLUSTRATED CATALOG** describing the full line of Precision quality test equipment for all phases of modern radio, television and communications.

SERIES TV—Super-High Voltage Safety Test Probes.

Extends range of Series EV-10 (above) up to 30 KV or 60 KV direct reading, with full safety to operator and equipment. Multiplier cartridges available to match most VTVM's and 20,000 ohms/v. test sets. Complete with 30 KV cartridge for FV-10.

NET PRICE $22.65

"Precision" — The very best in quality at competitive prices.

ATLAS
RADIO CORPORATION LTD.
560 KING ST. W. TORONTO, ONT.

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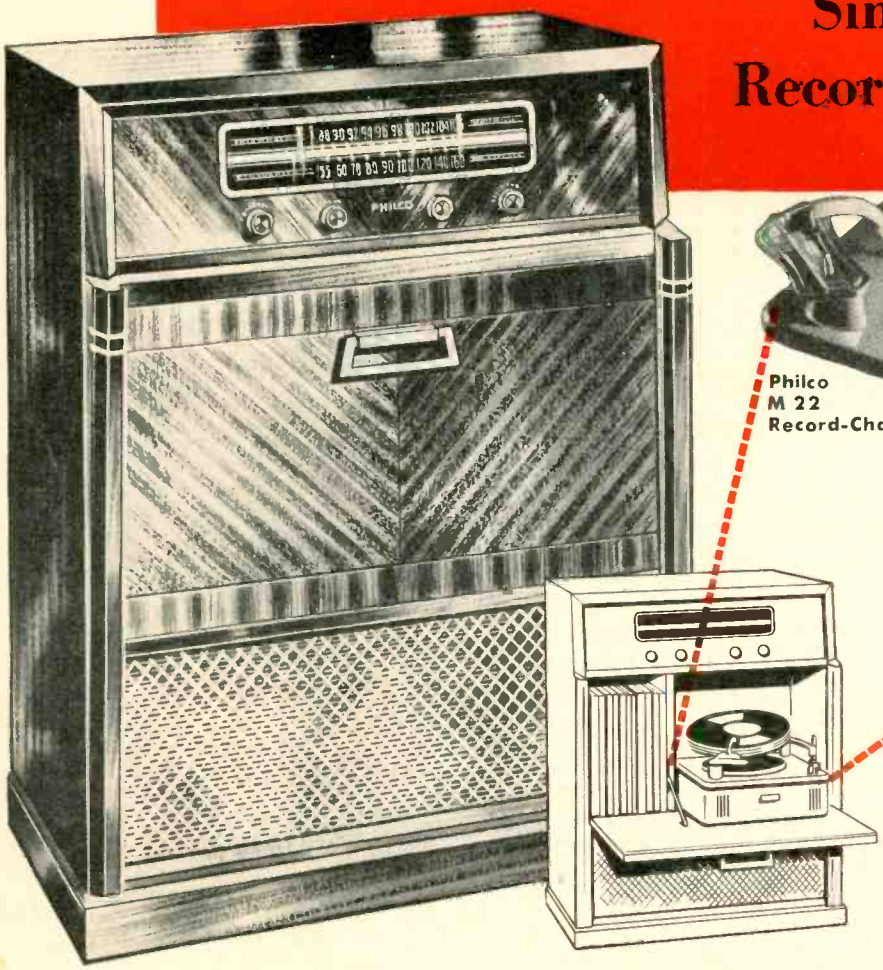
· TV · AM · FM · TV · AM · FM · TV ·

PHILCO

FIRST FOR '51

Brand New Radio-Phonograph

with a completely New, Simplified Record-Changer



Philco
M 22
Record-Changer

Here it is! New record-changer, based on a new principle of operation developed by Philco engineers, that makes three speed automatic record changing utterly simple. ***Only*** Philco has it and ***only*** Philco offers it in this smart new 1951 combination model '731'. Philco ends all confusion—your customer is ***always sure*** of the ***right*** speed, the ***right*** needle for all records. This 3-speed record-changer is fool-proof—even a child can play it with complete safety to all records. And as always, Philco gives the finest tone, ever achieved from records. Special glide-away changer mounting makes loading or unloading of records super-easy.

For technical details see page 30.

Philco 731. Standard band-tuned R. F. stage and 3-gang condenser—6 tube circuit with miniature tubes—P. M. speaker—continuously variable tone control—beautifully designed modern cabinet in Mahogany or Walnut.

The easiest-to-demonstrate and easiest-to-sell combination ever built! It's new through and through.

Ask your **PHILCO** *Distributor*