

Production-Engineering-Distribution ♦ Radio-Television-Sound Projection

# RADIO Industries

With which is incorporated Radio Manufacturers' Monthly

MAY . 1931

Come To Chicago

•  
Approaching Television Sensibly

•  
Centralized Control Insures Profit

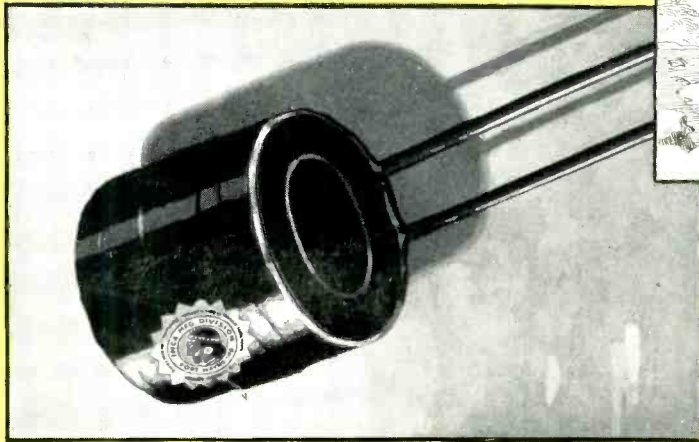
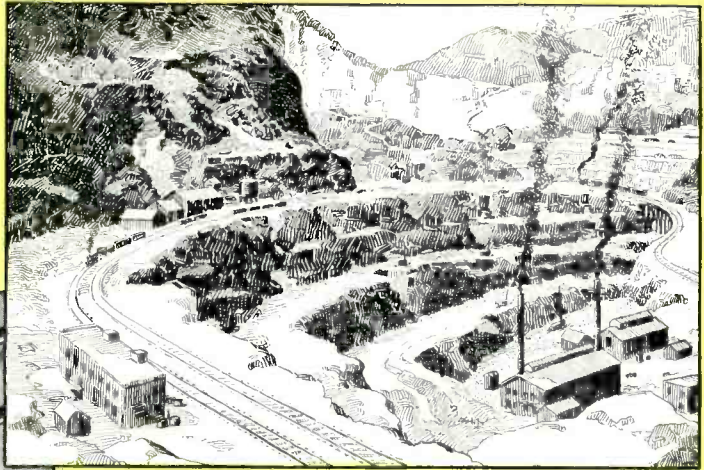
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Who Are The Successful Manufacturers?

THE PLANT PAPER



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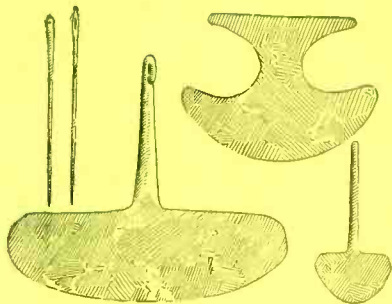
In the broader sense Inca wire is created, not just fabricated. For through National Electric Products and its associated companies . . . there is continuous control over the manufacturing processes from the mining of the ore to the labeling and packing of the finished coils.

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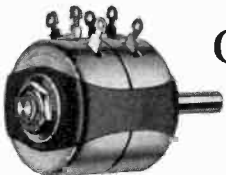
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Say You Saw It in Radio Industries

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Have you made your plans for attending the June Trade Show in Chicago? This year the most important convention and show ever held will take place. You can count those who won't be here on your fingers. Those who will be successful in the next year will be on hand. Hundreds of new products and developments will be shown for the first time. . . .

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As in previous years, Radio Industries will prepare a special show issue. Copies will be available for distribution to all engineers, manufacturers and jobbers on June 4th. (The Institute of Radio Engineers hold their convention the three days preceding the RMA Trade Show and Convention.) In all probability the RMA Trade Show attendance this year will exceed 30,000. . . . .

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Write your reservation or,  
wire collect

**RADIO  
Industries**

McGraw Hill Building  
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If you have not already made your plans for placing your advertising message before this large, wide-awake gathering, may we suggest that there is yet time? The advertising forms close May 25th. Reservations can be made before that date insuring choice position. Whether you use spreads in colors, a page or smaller space, your advertisement will be read by those you wish to reach, at a time when buying is most prevalent. . . . .

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# Absolutely Indispensable for Radio Experts and Engineers

A NEW AND REVISED EDITION OF

The Theory and Practice of

# Radio Frequency Measurements

By

**E. B. MOULLIN**

M.A., A.M.I.E., M.I.Rad.Eng.

Second Edition

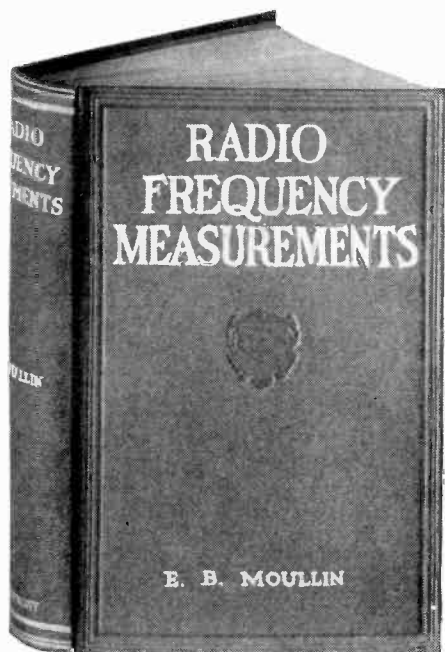
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**Index**

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This great laboratory manual, the most complete of its kind ever written, is now issued in a new edition, almost doubled in size, but following the same general scheme as the first. An enormous amount of new material on radio frequency measurements has been added, and the present edition of this work is not only the most thorough on the subject, but the most recent and authoritative.

A new section has been added developing the electromagnetic equations and calculating the field near circuits and aerials. This section should be useful as it discusses the mechanism of radiation, and its methods are used to calculate second-order approximations to the inductance and resistance of circuits and aerials. The formulae for calculating the effective impedance, resistance and resonance conditions of complex circuits have now been collected into a separate section and the section on the valve generator has been much enlarged and now contains a very complete discussion of the condition for oscillation of various forms of generators.

Radio broadcasting stations, radio manufacturers, experimental engineers, inventors, electrical engineers and students in universities and technical schools

will find this work helpful in a subject where written information is meager and full of technical inaccuracies. Though primarily a laboratory manual, the book will prove a valuable textbook for advanced students and experimenters. Keith Henney, Director of the Laboratory, said of the first edition in "Radio Broadcast": "I know of no book that is so necessary to the laboratory of the radio engineer." If you are interested in any kind of radio or wireless work, you cannot afford to miss this new, completely up-to-date addition of this invaluable book.

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# RADIO Industries

**PRODUCTION  
ENGINEERING  
DISTRIBUTION**

**RADIO  
TELEVISION  
SOUND PROJECTION**

With which is incorporated Radio Manufacturers' Monthly

VOLUME VI

NUMBER 1

## Contents

MAY, 1931

EDITORIALS .....	4
APPROACHING TELEVISION SENSIBLY .....	7
GEORGE GRUSKIN	
COME TO CHICAGO! .....	8
HOW AND WHEN SHALL WE SELL TELEVISION? .....	10
AUSTIN C. LESCARBOURA	
POWER COMPANY RETAILERS .....	12
ARTHUR ALLEN	
WHO ARE THE SUCCESSFUL RADIO MANUFACTURERS? .....	13
JEROME J. KAHN	
SELLING EUROPE .....	14
LOUIS BRUCHISS	
CENTRALIZED CONTROL INSURES PROFIT .....	15
R. L. REID	
THE RADIO INDUSTRY .....	16
A cartoon by BURTON BROWNE	
NEWS OF THE INDUSTRY .....	17
WITH DR. POWER ON THE COAST .....	20
CURRENT ABSTRACTS .....	22

## MONTHLY CHATS

Probably the outstanding development of the past month was the reduction of radio tube list prices by practically every manufacturer. This step was inevitable. The necessity for the change has been pointed out in the editorial columns of *Radio Industries* a good many times. While the new low prices will seriously upset the tube manufacturers' previous merchandising custom and possibly cause some losses all along the line, the theory of lower discounts is certainly sound and the plan should endure for all time.

So often, we hear that "television is just around the corner." In this issue appears a cartoon by Burton Browne, Advertising Manager of Silver Marshall, depicting the sensation caused when "someone" announced, "television is just around the corner." Mr. Browne's distinctive cartoons have appeared in such publications as *The New Yorker*, *The Chicagoan*, *Life* and others for some little time. In the radio industry, he draws exclusively for *Radio Industries*. During the past eleven months his cartoons in this publication have created wide interest and have prompted hundreds of comments from readers. In addition to his cartoon, Burton is preparing a special article for the June issue. It will deal with—Advertising. Be sure to read it.

Chicago is getting all set for the week of June 8. Over 30,000 visitors to the RMA Convention and Trade Show are expected. During the same week the RWA and NFRA will hold their conventions. The IRE will be here too, meeting a few days earlier. The convention of the music trades is to be held the week following that of the RMA. There will be much for each of these organizations to thrash out. Eager eyes will survey the new developments in radio and—television. The expense of a trip to Chicago in June will prove a most profitable investment to anyone in the radio business.

For the June issue, Mr. Gruskin has arranged for numerous articles by outstanding television engineers. Mr. Wunderlich will write on set design and engineering. Many other leaders in the industry will contribute, making the issue well worth looking for.

## RADIO INDUSTRIES

Publication Office: Beloit, Wisconsin.  
Editorial and Executive Offices at—  
520 North Michigan Avenue, Chicago, Ill.  
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RADIO INDUSTRIES is published monthly by Radio Industries Corporation, Beloit, Wisconsin. Editorial and General Offices at McGraw-Hill Bldg., 520 North Michigan Avenue, Chicago, Ill.

Entered as second class matter August 24, 1928 at the Post Office at Beloit, Wisconsin, under the act of March 3, 1879.

ISSUED MONTHLY, 35c the copy, \$3.00 a year in the United States, its possessions and Canada. Other countries \$4.00 a year.

Forms for June issue close May 25th.

CHANGE OF ADDRESS. Instructions for change of address should be sent to the publisher at least two weeks before the date of effect.

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# One responsibility for coils

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From copper bar to finished product, every operation in the manufacture of coils is performed in General Cable plants. Complete responsibility for fabrication of coils rests upon General Cable.

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methods of application—greater economy in production.

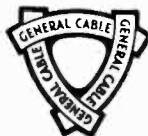
To effect such results General Cable marshals coil experience, manufacturing facilities, research laboratories, and personnel of an unusual character. Dudlo, Rome and the other organizations now part of General Cable supplement and strengthen each other.

One responsibility covering all factors, converges upon a single purpose—the assurance of unequalled satisfaction in the purchase and use of General Cable Coils for your products.

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*Say You Saw It in Radio Industries*

# EDITORIALS

A dark cloud is hovering over the radio horizon in the form of growing antagonism of certain newspaper men towards radio broadcasting.

## RADIO AND THE PRESS

At their convention just held in New York City, those gentlemen made known their desires in the matter. They would curtail radio broadcasting activities in the matter of sponsored programs and advertising, they would insist on broadcasters or program sponsors paying for space occupied by radio programs in the daily press, and they would prevent news associations and newspapers from furnishing news bulletins to broadcasting stations. By insisting on these measures, they would cure newspaperdom of its ills or imagined ills. How simple!

Of course we can sympathize with publishers who have lost a certain percentage of their advertising revenue during the past year or more of stress. But to blame broadcast advertising for their dilemma is quite another matter. Newspaper advertising attained enormous proportions just prior to the depression. Many newspaper plants were double and tripled in size so as to provide enough pages for each issue. Publishers of newspapers have tasted a veritable feast. Just because their business is 10 to 15% off the high water mark figures is no great cause for alarm or complaint. Broadcast advertising, on the other hand, has not yet reached its peak. It is gaining. Nevertheless, it is very definitely supplementing rather than replacing newspaper advertising. There is no cause for alarm. And if our newspaper friends would do away with broadcast advertising, why do they not suggest some other economic solution of broadcasting? Surely they could not expect \$31,000,000 of radio advertising in their columns if there were no worthy broadcasting to warrant radio set and tube sales!

The radio news bulletins and programs are services to the public. To find fault with these features is nothing short of childish.

The pros and cons of the midget radio set have been discussed many times. The situation remains enveloped in confusion. We shall not attempt to clear it up since there is too much controversy and too much danger

## PERSONAL RADIO

of creating bad feelings. However, we do believe that a new keynote can be struck in radio merchandising circles whereby the proponents and the opponents of the diminutive radio sets can meet on common ground.

If we sense the coming season correctly, there is going to be a big place for the diminutive set quite as well as the full-sized set. It is just a question of merchandising both in the proper light. The original midget set no doubt is tending towards higher and higher standards until the offerings of the coming season in many instances may match the performance of the full-sized, expensive console sets of a year or two ago. This must cause a

corresponding advance in the performance of the full-sized console if it is to compete. The situation is not unlike that when Henry Ford brought out his Type A car, and then found it necessary to improve the performance of his Lincoln so as to warrant the price differential.

It is our belief that while the diminutive set may be sold in homes that cannot afford the more expensive console sets, the trade will have to stress more the *personal* or second set angle. In other words, the diminutive set will tend more and more towards the title of *personal radio set*, to serve as the second or third set in the home already provided with a more expensive set, just as the low-priced automobile finds as great a market as a second car as it does as *the* car of the family of moderate means.

YES, we can sing the words of that outstanding theme song of any industry, "We told you so!" Last month on

## WE TOLD YOU SO!

this same page we stated: "The suicidal discounts are disorganizing the trade and the industry. The way the discounts are being steadily pyramided, one would imagine an auction sale rather than an everyday trade in session. Some brave tube manufacturer is going to break loose from this foolish situation and declare a lower list price with tighter discounts. The manufacturer will cut the Gordian Knot of the awful mess in which the tube industry now finds itself."

Only a few days after that editorial prognostication appeared, a leading radio tube manufacturer announced a drastic cut in list prices ranging from 25 to 50 per cent, confirming our own opinion that list prices have been entirely out of line with actual selling prices and production costs. So far, the other manufacturers have hesitated to follow the leader, but it is our best guess that others must soon drop their list prices to the new low levels.

PENTODE production is in full swing. Set manufacturers now turning out pentode sets are calling frantically for pentodes, and tube

## PENTODES

manufacturers not particularly over-burdened with orders for regular tubes have turned to pentodes with a vengeance. One manufacturer is turning out 4,000 pentodes daily, another claims 2,000, still another claims 1,500, and another is rapidly attaining the 1,000 per day mark.

A fairly intricate tube to make, we sincerely hope there will be no flarebacks due to hasty design and production. Some pentodes we have studied have alarmingly close spacing between filament and adjacent grid. We have wondered how such tubes could be successfully shipped, yet so far, there are no signs of trouble.

Certainly the tube industry is to be congratulated for getting so rapidly into production on the pentode, and having so few comebacks.



"The Plant Paper"

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## APPROACHING TELEVISION SENSIBLY

Distortion Effects Of Heaviside Layer and Non-Interconnection of Power Networks Should Be Considered By Manufacturers Who Intend To Market Televisors In The Future

By **GEORGE GRUSKIN**

*Managing Editor, Radio Industries*

**A** GREAT many set and parts manufacturers are awakening to the fact that television is on its way—whether in six months, a year or two years—and are making tentative plans to “break into the television game.” Some of them believe the inception of visual broadcasting will recapitulate the early days of radio, and are hoping to effect a quick cleanup by the sale of kit parts to a large market of easily satisfied experimenters. Others are setting out to develop a receiver suitable for living-room use. Whether a manufacturer falls into one category or the other, however, there are certain fundamental facts which he must keep in mind.

He must discard the close analogy between present-day television and the infancy of radio. He must not expect to sell merchandise at random all over the country, as he did in the 1920-24 days. Instead, he must realize that good and even half-way decent television reception is limited to a very restricted area in the immediate vicinity of the broadcast station.

Two factors are responsible for this condition—the Heaviside layer and the non-interconnection of power networks.

Persons who have had any experience at all observing television “pictures” are familiar with the unbearable and frequent distortions occasioned by the passage of the skyward radiation from the antenna through the Heaviside layer. A perfect image—the ground wave—will appear in the televisor, and then suddenly—with the arrival of the belated sky wave—several “ghosts” of the same image will float across the screen. (See *Radio Industries*, November, 1930, “Ghost Images,” pp. 377-78). Also, all fading effects and other phenomena which may be comparatively imperceptible to a sound receiver, become menacing detriments to sight broadcast reception. As one worker has expressed it, “All television images arriving on the sky wave look as if they are coming through so much shimmying water.” It is obvious from these statements that any television signals passing through

the Heaviside layer must be looked upon as “public enemies,” and that only the pure ground wave can be depended upon to carry undistorted visual images to the receiver. For this reason, televisors must be placed only within the effective ground wave service area—the area in which the ground wave is strong enough to overbalance the effects of the sky wave. Beyond that point, the reception obtained may be described as having a negative value, for the poor results will engender in the average layman an antagonistic feeling toward the manufacturer whose “set is functioning so horribly.” It would therefore be dangerous to market a television receiver outside of the effective ground wave service area of the nearest broadcast station, which—depending on the power employed—may vary from five to thirty-five or forty miles.

**E**QUALLY important is the fact that the televisor’s scanning mechanism must derive its power from either the same power line that feeds the motor at the transmitter, or from a network that is inter-connected with the latter. (See *Radio Industries*, October, 1930, “Synchronization of Power Networks Is Necessary for Television,” pp. 330-31-32.) If a receiver is sold in a neighborhood that has its own power network, having no tie-in with the system at the transmitter, the received images will be out of phase and reception will be worthless.

*Radio Industries* believes it is of vital importance to the future of the radio industry that, from now on, concerted efforts be made by the radio manufacturers to hasten the nationwide interconnection of power networks. The utilities must be persuaded to tie-in as many power networks as possible in the course of the next few years, or else the marketing of television receivers will be tremendously stunted! So, too, any manufacturer intending to distribute televisors must be familiar with the network situation in those localities wherein he plans to sell.

# COME TO CHICAGO!

All Aboard For Chicago! . . . Seventh Annual RMA Convention and Trade Show . . . At Chicago, June 8-12, Inclusive . . . Reduced Railroad Rates . . . Many Special Trains . . . 25,000 Radio Trade Visitors Expected . . . 30,000 Square Feet of Trade Show Exhibit Space, Stevens Hotel, Manufacturers' Demonstration Rooms Also In Blackstone, Congress and Auditorium Hotels . . . More New Radio Products Than Ever Before Displayed . . . Meetings of RMA, NFRA, RWA and Other Trade Organizations . . . RMA "Stag Party" Wednesday, June 10 . . .

**A** PRELIMINARY program of the big annual radio business conclave, the Seventh Annual Convention and Trade Show of the Radio Manufacturers' Association at Chicago, June 8-12, will usher in a new era in radio business and progress.

One hundred and twenty-five leading radio manufacturers will exhibit thier products in the trade show at the Stevens Hotel, with more new radio products on display than ever before in one year. Admission to the trade show will be limited to the radio trade and about 25,000 visitors are expected, on invitation from President Morris Metcalf and the Board of Directors of the RMA.

Reduced rates, of one and one-half fares for the round trip, have been secured for the RMA convention and trade show. Special trains from New York, New England, and Pacific Coast, the Southwest, with many special cars, already have been arranged.

In addition to the trade show, requiring the entire Exhibition Hall and Grand Ball Room of the Stevens Hotel, manufacturers will have demonstration rooms and headquarters also in the Blackstone, Congress and Auditorium Hotels. Advance reservations indicate another most successful radio gathering, and "business without ballyhoo" will be the keynote of this year's conclave.

In addition to the RMA convention and business meetings, there will be meetings also of the National Federation of Radio Associations, the Radio Wholesalers Association, the National Association of Broadcasters, and other allied organizations. Interesting programs and prominent speakers for many business meetings for a discussion of vital problems in the radio industry have been arranged.

Just preceding the RMA "Radio Week," beginning June 8th, there will be held in Chicago, June 4-6, the annual convention of the Institute of Radio Engineers. During "Radio Week" about 25,000 other trade visitors are expected in Chicago for the annual "Furniture Mart" of the furniture industry. Also during "Radio Week," at the Palmer House, the Music Industries Chamber of Commerce and the National Association of Music Merchants will hold their annual convention and trade exhibits. Arrangements for an exchange of courtesies between the radio and music tradesmen and also for admission of those in the furniture industry interested in radio have been made.

**T**HE trade show is in charge of Major H. H. Frost Chairman of the RMA Show Committee, while arrangements for the reception and entertainment of the radio throngs is in charge of Leslie F. Muter of Chicago, Chairman of the RMA Convention and Entertainment Committee. The high-light of the entertainment program arranged for visitors during "Radio Week" is the RMA "stag party" on Wednesday evening, June

10, in the Eighth Street Theatre, immediately adjoining headquarters at the Stevens Hotel. A lively entertainment program will be presented informally, instead of the customary banquet held in the past. On the preceding evening of Tuesday, June 9, the radio visitors will be welcome at the annual banquet of the National Association of Music Merchants at the Palmer House. Other entertainment during the week is being planned by RMA Committees and also by individual manufacturers.

The influx of visitors to Chicago is expected to begin in force on Sunday, June 7, with the arrival of several RMA special trains. Doors of the trade show in the Stevens Hotel will be opened at 2:00 P. M., Monday, following registration of the thousands of radio visitors. On Tuesday morning there will be an open meeting in the Stevens Hotel with President Metcalf of the RMA presiding and an interesting program of prominent speakers.

**T**HE business meetings of the RMA Annual Convention will be held on Wednesday and Thursday mornings of "Radio Week" with President Metcalf presiding. New officers of the RMA for the coming year will be elected on Thursday and there will be reports by committee chairmen and interesting discussions of many radio problems now before the industry. Also there will be numerous committee and other business meetings during the week not only of the RMA, but also of the jobbers and dealers and other organizations. The annual conventions of the radio press organizations, the National Radio Editors Association and the Radio Press Association, will be held on Wednesday June 10.

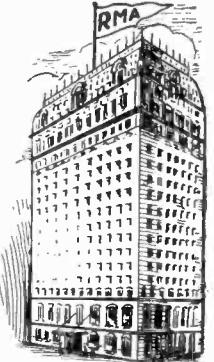
Television will be an important feature of this year's trade show. Television interest has been growing and the manufacturers of television apparatus, kits, tubes, etc., will be well represented in the show with the latest developments in this new branch of radio. There also will be more new radio apparatus of all kinds than ever shown before in one year.

Semi-annual meetings will be held during "Radio Week" of the National Federation of Radio Associations and the Radio Wholesalers Association, with discussions of special interest to radio jobbers and dealers.

Invitations and credentials for admission to the trade show were mailed May 1 to 30,000 persons in the radio industries. The public will not be admitted to the trade show, which is open only to tradesmen for the advance showing of the latest products of the manufacturers. There will be no vacant exhibit booths in the trade show as manufacturers this year are required to show their merchandise, and it will contain the largest number of new circuits, new designs, new tubes, and other accessories and products than ever before in any year.



STEVENS HOTEL  
(HEADQUARTERS)



BLACKSTONE HOTEL

TO THE  
FIFTH ANNUAL

# RMA Trade Show

AND 7TH ANNUAL RMA CONVENTION

# CHICAGO

# JUNE 8 to 12th



BU\$INE\$\$ FOR YOU WITHOUT BALLYHOO

*EVERYBODY WILL BE THERE.*

Bu\$ine\$\$ will be the key-note during "Radio Week" of June 8th. This will be a "bu\$ine\$\$" show and bu\$ine\$\$ for YOU, bu\$ine\$\$ for everybody in radio.

The National Furniture Industry and the Music Industry also will be holding conventions and exhibits in Chicago, drawing thousands of visitors, during "Radio Week."

All the new radio products on display in the trade show. Every leading manufacturer of receiving sets, tubes, speakers and accessories has reserved exhibit booths in the trade show and demonstration rooms in hotels. There will be more new circuits, new tubes, new speakers, new cabinet designs, and new radio products, including home talkies, television, remote control, and other radio devices and products than ever before in one year.

Thirty thousand (30,000) square feet of radio exhibits in the Grand Ball Room and Exhibition Hall of the Stevens Hotel.

ADMISSION TO THE TRADE ONLY — NO VACANT BOOTHS — ALL EXHIBITORS REQUIRED TO SHOW THEIR MERCHANDISE.

Twenty-five thousand radio manufacturers, jobbers and dealers expected to attend.

Reduced railroad rates have been granted on all lines — one and one-half fare rate. Secure certificates from local railroad agents. RMA special trains from all sections.

Official hotels — Stevens Hotel (headquarters), Blackstone, Congress and Auditorium Hotels, with demonstration rooms of manufacturers.

### INDUSTRIES AND EXHIBITIONS

Radio industries, June 8-12 — RMA, National Federation of Radio Associations, Radio Wholesalers Association and National Association of Broadcasters.

Music industry convention and exhibits, Palmer House — June 8-10, during "Radio Week."

Institute of Radio Engineers annual convention, Sherman Hotel — June 3-6.

Annual national "Furniture Mart" with 25,000 furniture buyers, jobbers, dealers and manufacturers — June 1-15.

Business meetings and entertainment for visitors during entire "Radio Week" — June 8-12 — RMA "stag" party Wednesday, June 10 — Music Industry banquet, Tuesday, June 9.

Apply now direct to hotels for room reservations.

RMA invitation credentials mailed to the trade about May 1st. For information or credentials write to Bond Geddes, RMA Executive Vice-President, Stevens Hotel, Chicago, or,



CONGRESS HOTEL

**RADIO MANUFACTURERS ASSOCIATION**

11-W. 42ND ST. N.Y. CITY

32 W. RANDOLPH ST. CHICAGO



AUDITORIUM HOTEL

# HOW AND WHEN SHALL

With Engineering Development At Its Present Stage, the Question of Merchandising Television Becomes Paramount Issue

By **AUSTIN C. LESCARBOURA**

*Mem. I.R.E. Mem. A.I.E.E.*

**S**PEAKING of television: as an experiment, of course it is interesting; as a future possibility, of course it is promising; as a manufacturing proposition, of course it is attractive. However, unless television can play a tune on the cash register of the radio trade, immediately, it is of very little value to the radio industry. Hence television must be scrutinized through the spectacles of dollars and sense in deciding its actual worth, which is the very purpose of the dissertation that follows.

First of all, what have we got NOW, ready for immediate presentation to the public?

We have a practical means of flashing animated pictures through space and reproducing those pictures with simple apparatus suitable for lay operation in the average home. The pictures may be in the form of (1) motion picture film, (2) simple studio scenes, preferably close-ups of persons reproduced in half-tone, or long-shots of figures reproduced in silhouette or plain black-and-white shadowgraphs, and (3) outdoor scenes with modest detail, preferably close-ups of persons. The pictures may be accompanied by sound if desired, calling for a second transmitter or channel, the signals of which are tuned in by a separate radio receiver.

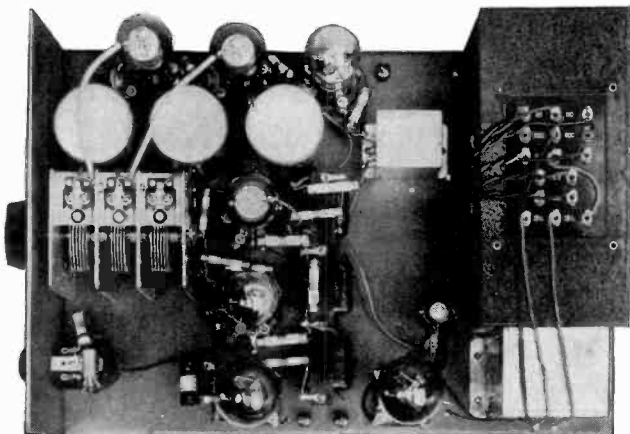
No claim is made for the perfection of the television technique now at our command. Engineers are agreed that the basic method is relatively crude, yet it is the only practical means now in sight. Some one, some where, some time, may develop an entirely new idea of practical worth, in which event the present technique would be dumped overboard without hesitation. But for the time being we are committed to the scanning method

at transmitting and receiving ends—a sort of blacksmith technique which is cumbersome and coarse, yet nevertheless lends itself to remarkable refinement in its various components. Certainly the earliest efforts in scanning made no promise of transmitting pictures quite so detailed as standard motion picture film, yet today the television workers are transmitting and reproducing standard film scenes with remarkable detail.

We have at this moment sufficient entertainment value to interest the average household, quite aside from the experimental interest in television itself. The entertainment value now is largely a question of securing real showmanship for our television stations. Until now, the television stations have been of a purely experimental character, in charge of engineers. The same films have been transmitted over and over again. The direct pick-up scenes have been nothing more thrilling than engineers and workers standing before the radiovisor—and not always very good-looking fellows either! Sometimes manikins, titles, charts and other objects have been placed before the radiovisor. Engineers have been frequently guilty of changing equipment so as to make the broadcasting attempt a purely haywire affair, even on the eve of an important demonstration.

**T**ELEVISION, if it is to ring the cash register, must first of all establish a definite television broadcasting service to the public. Let any television station go on the air with a definite schedule, day after day, and soon the public will want to look in. That's how sound broadcasting was established, when KDKA inaugurated a regular broadcasting service as contrasted with the experimental efforts of other radio telephone stations. Several television organizations are making a serious attempt at regular television broadcasting, particularly in the New York, Chicago and Boston metropolitan areas.

With satisfactory entertainment on the air, the next step is to get the news to the public. This feature is going to be relatively simple. To begin with, the television broadcasters are going to use sound channels so as to have "talking radiovision pictures." The sound channels will usually be within the broadcast band, so that they may be tuned in by the usual broadcast receiver. We strongly suspect that the first regular television programs are to be supplements of the usual broadcast programs, so that singers, speakers and musicians may be seen as well as heard by tuning in with a radiovision receiver. The regular sound broadcasters are showing a keen interest in television as a supplementary proposition, with the foregoing idea in mind. In other words,



*Television receiver assembled from kit of matched components, as designed by the DeForest and Jenkins engineers*

# WE SELL TELEVISION?



*Television receiver and radiovisor kits, with supplementary equipment kits, as merchandised by the Jenkins television organization*

it begins to look as though television will be added to the existing sound broadcasting, "illustrating" the present sound programs, rather than the other way about.

**T**HE newspapers and radio press may be depended upon to publicize radio television to the utmost. Certainly the public is being kept informed as to the progress of this new art.

And so we come to the merchandising of television equipment. Here we are dealing with two distinct appeals, namely, the experimental appeal, and the entertainment appeal. The former has to do with selling to those interested in television technique itself, while the latter has to do with those seeking a new form of entertainment. The experimenter is now being reached with such offerings as components to be assembled in any desired manner, complete kits of parts to be assembled into workable equipment, and simple radiovisors and receivers ready for immediate use although not necessarily dressed up for living room use. The entertainment seeker, on the other hand, is being reached with complete television equipment in the form of simple receivers and cabinet type radiovisors, ready for use, with the operation reduced to simplest terms. Even the question of synchronizing the incoming picture is taken care of by means of an automatic synchronizer.

In dealing with the merchandising of television equipment, it is well to bear in mind that we are, for the present at least, dealing with purely localized markets. Remember, while sound broadcasting today virtually blankets the entire country, so that a broadcast receiver may be sold and used almost anywhere, it is quite different with television equipment. The handful of television stations now on the air cover only a few metropolitan areas, leaving the rest of the country blank. Hence the merchandising efforts must be concentrated in the metropolitan areas now served by television broadcasters, leaving the balance of the country until a later date. Fortunately, however, some of the television broadcasters have a wide range, due to the peculiarities of short waves. The Jenkins transmitter W3XK outside of Washington,

D. C., for instance, consistently covers the eastern half of the United States. However, to sell in that entire area on a definite service basis would be risky, to say the least.

Television organizations are just coming into the market at this time. Their merchandising plans vary considerably. One Boston organization, for example, has hit upon the ingenious idea of merchandising components, designed for assembly into complete receiver and radiovisor, through the well-known S. S. Kresge chain stores. A recent Boston demonstration not only created tremendous public interest but sold a large amount of merchandise. Recent reports are quite favorable. For the most part, however, it is to be assumed that this organization is reaching the experimenters rather than the entertainment seekers, since components are being featured. The organization issue a very attractive book on television and the assembly of the components into kits, which is sold for a very small sum.

An organization in the New York metropolitan area is coming out with a simple receiver kit and a radiovisor kit, as well as complete receiver and radiovisor offerings ready for use. The merchandising scheme here is to sell direct to dealers, since little or no aid can be expected from jobbers in such a virgin field. Presumably the live-wire dealers in different sections are to be supplied with a complete radiovision equipment with which to give demonstrations and from which dealers can secure orders for kits or complete equipment.

For several years past, the Jenkins organization in Washington, D. C., has been building up a mail order business for simple television kits purely through its program efforts. It may be that some radiovision workers may build up a substantial market by mail, especially since their broadcasting efforts constitute the finest kind of advertising for the purpose.

**U**LTIMATELY, without a doubt radiovision will be thrown in with regular sound broadcasting so far as production and merchandising are concerned. Just as soon as the television technique reaches a stage of reasonable stability, we can expect set manufacturers to take up television production, at first as separate units and later in combination with the usual broadcast receiver and even phonograph feature. With this idea in mind, the various television organizations are slowly but surely building up an impressive patent structure which is certain to be of great value to radio manufacturers when the time comes to take television seriously.

Watch television during the next few months? Unless we miss our guess, it is going to make rapid strides. Everything now seems ready to go. And all signs seem to point to the confirmation of that old axiom, history always repeats itself. In this case it is going to be the history of sound broadcasting all over again.

# POWER COMPANY RETAILERS

Some Points That Will Help the Manufacturer Who Is Seeking Utility Aid in the Distribution of Radio Receivers

BY ARTHUR ALLEN

SEVERAL months ago there appeared in this magazine several articles on the power companies as retail outlets for the manufacturer of radio receivers. Out of the multitude of facts uncovered in a comprehensive survey conducted among nearly 100 utility companies serving many millions of homes there appeared various and sundry indications that the power companies and the set manufacturers both have something the other can use to advantage. Various relevant facts uncovered in an analysis of the survey formed the basis for previous discussions. But there still remains another angle which has been but lightly touched upon and which is of vital importance from the utility's standpoint and also from the manufacturer's—if the latter hopes to enlist the aid of the electric service company.

Good salesmanship is founded on answering the question invariably in the customer's mind, even though he doesn't give it voice in so many words:

"Just what is there in this proposition for me?"

That question must be comprehended and satisfactorily answered by any radio builder who wants to add utilities, with their manifold advantages, to his distributing organization.

All right! The questionnaires forwarded to utilities in the course of the aforesaid survey, originating as they did with a utility organization, put several queries that comprehended this very point and the answers will prove enlightening.

"What do you figure is your direct revenue from the operation of a radio set on your lines?"

Eleven utilities, in reply to that question, stated from \$10 to \$12 per year. Whereas another nine companies reported from \$5 to \$10 per year, there were still another four who figured between \$12 and \$18 and two who boosted the ante to as much as \$36 per annum. Still another company reported \$24. The remainder among those who answered this inquiry expressed themselves in kwh. so that, for our purpose, these replies are of no avail. Differences in the returns are, of course, explainable not in terms of demand created by the sets but rather by differences in residential rate. However, on the basis of even the most conservative figures advanced by the utilities themselves, there are few of the more popular electric appliances with which the power companies are striving to expend in the domestic field that afford opportunities for load building equivalent to those of the AC set.

And this is but a part of the demand added by a radio set. Those who listen to radio must also see and there is no doubt that broadcasting has deferred bedtime in a great host of homes. This point was covered in another question raised by the survey:

"What do you figure is your revenue from extra lighting?"

Though some disclaimed the ability intelligently to arrive at any estimate of this factor, more than a third of the utilities interviewed, and who must have given the matter adequate consideration even to attempt a reply, reported from \$3 to as high as \$25 added lighting revenue per year, thanks to additional radio sets on its lines.

The weight of the testimony in the case of both these queries is highly favorable from the aspect of the manufacturer who is interested in the potentialities of the power company as outlets for his radio products.

By very nature of the fact that the utilities constitute a monopoly, though they serve as fairly as they may and then turn the other cheek in addition, they are automatically confronted with a public relations problem. Every activity, of whatever consequence, must be considered in the light of public relations; at all events, and though the utility as has sometimes been said may be too timid in this regard, everything is considered in the light of this mystical bogey man and that, from the radio manufacturer's standpoint, is the important consideration.

In reply to the query, "How does merchandising radio affect public relations," while a small percentage of those who replied declared they could discern no visible effect, considerably over half the companies reporting on this point emphasized the result as distinctly favorable. Particularly in the light of such returns, it may safely be said that here is another instance when silence gives assent and that the absence of any noticeable tendency one way or the other on the part of some companies may be construed as decidedly favorable. For though a favorable effect on public relations, so-called, is always much to be desired, so long as there is no unfavorable effect discerned, then radio as a load builder takes up such an important position as a builder of both direct and indirect load as almost to compel attention.

AND, to be sure, there is plenty of evidence, including testimony from various power companies who have engaged in radio merchandising, to indicate that radio offers not only intangible advantages in a public relations way but also can be of decided service in stimulating the results of the merchandising operation as a whole.

There are also other factors to be considered such as the effect of radio merchandising by the utility upon the distribution of radio throughout the power company's territory by leaders in general. However, a brief discussion of this factor, a summing up of the survey's findings and a look ahead at what is likely to happen in radio distribution by the power companies, the discussion of this last factor being based upon close contact with and considerable study of the matter, must be left for another issue.

# WHO ARE THE SUCCESSFUL MANUFACTURERS?

The use of capital for unnecessary equipment does not produce success, thinks --

**JEROME J. KAHN**

*Standard Transformer Co.*

**T**HAT query brings to light many conflicting arguments and opinions. This article is not presented to acquaint the reader with the author's opinion of those manufacturers who have progressed in the industry, but rather, to define the difference in policy and principle of those who have succeeded and that of those who have witnessed the appalling avenues of retrogression and complete decay.

Obviously the majority of outstanding examples of success can be classed among those in the category of assemblers, while those who have aspired to the lofty plane of martyrdom in producing all they require, can, in most cases, be listed, with a few exceptions, as those whose progress is a negative quantity.

Statistics, which we usually class as "numerical blah," must bear some truths in cases applicable to the following thought. Let us tend to prove that consensus shows that a great number of major manufacturers are becoming assemblers of radio integrals. This fact proves that the opinions, resources, experience and facilities of the part specialists offer outstanding advantages to the producers of radio receiving equipment.

In an industry, such as ours, the manufacturers' financial problems deal popularly with problems of merchandising and not of production. We seldom hear of losses sustained thru poor manufacture, but rather thru unbalanced merchandising and distribution. Capital in no instance is so plentiful that it warrants any set manufacturer considering making investments in equipment, raw material and personnel to produce its own integral parts. Thru competition and advanced mechanical facilities, the experienced specialists of any part, are now in a better position to offer the set manufacturer its wares at figures that cannot be approximated by the cost of the aspirant of that psychological realm of martyrdom.

Economists show us that departmental overheads of any organization lead the list of costs over the may kindred classifications of general overhead.

We know that an executive in a parts department of a set manufacturer, who builds his own variable condensers, draws a salary comparable to that of a man in the plant of the specialist. We also know that of that salary six months is lost in preparation for the balance of the year or peak months. Thus, the production months, in reality, cost again as much as one would normally figure.



*"Jerry" Kahn*

In the example of the transformer manufacturer. The manufacturer who makes his own transformers is obligated to retain at least one man in an executive position for the entire year, to keep that particular department intact. This expenditure can only be regained during the production season. The transformer specialists, however, are still operating their plants, successfully keeping their organization together with such commodities as neon transformers, ignition coils, oil burner and bell ringing transformers; and are not obligated to load the bill with held over expenditures that must be met during any one productive season.

One most striking example of the folly of producing all one requires can be pictured in this case. A prominent set manufacturer proceeded to produce its own fixed paper condensers. Before going into production, however, it was necessary to purchase winding machines capable of handling their maximum production. A pre-heating and impregnating installation, notwithstanding all the necessary dies, jigs and sundries, together with the necessary steam connections. The total expenditure approximated \$50,000.00.

During the production season of 1930, condensers of first grade quality were produced in this ideal condenser plant to the tune of 70,000 filter blocks during the season. Alas, the period of design came upon this manufacturer with the entangling alliances of midget production and low costs. It was immediately made known that the electrolytic condenser must be used to meet competition in size, cost and sales psychology. How much of this array of equipment, dies and other necessary evils could be used in the production of the electrolytic type of condenser? None at all, and the cost of last year's job immediately

*(Please turn to page 24)*

# SELLING EUROPE

Europe should not be regarded as a "dumping ground" but rather as a very fertile market for many of the same types of radio merchandise sold in America

By LOUIS BRUCHISS

*European Editor*

**W**HEN the American radio manufacturer recognizes Europe as his really great foreign outlet and proceeds to consider seriously the means of developing this market, he will find that his production schedule will increase proportionately. It should be realized that Europe has an immense population, alive to the value of radio. It must not be forgotten that most European countries have large foreign colonies with whom they have intimate business relations, and that these colonies, in most cases, greater in area and population than the mother country, may be considered as subsidiary prospects.

The American is prone to ask himself these questions, however . . . .

*"Isn't Europe cold to American sales methods?"*

*"Don't they favor home products?"*

*"Is our merchandise suitable over there?"*

This writer wishes to assert that these considerations are not as formidable as they appear at first glance. Taking the thoughts of a number of foreign wholesalers and distributors, and certainly these men are in a position to authoritatively state the case, we find:

*First*, that European radio men are responsive to American products. They can be approached and dealt with as the American distributor is approached. After all, the burden of dealing with the retailer and the public falls upon these men and not the manufacturer. These foreign distributors understand the shortcomings of their countrymen and conduct their business accordingly.

*Second*, partiality for home products is only kept alive at the expense of extensive advertising on the part of foreign manufacturers. The independent sales organizations in Europe, however, as well as the general public, are favorable to American radio. They know that our products are technically superior and they expect new products, which are usually forthcoming. The average wholesaler here finds that a new American set or part is a fine talking point in his advertising.

*Third*, with the exception of receivers that are not wholly adaptable in several countries, there is no part or accessory that cannot be used in Europe. Current variations in the form of 220 v. A.C. may be encountered but this is not a major difficulty.

**W**ITH this assurance of a market, how does the American manufacturer proceed? About the same as he does at home. He appoints the most responsible, largest distributors he can contact. He puts on national or local advertising campaigns, and his efforts, as far as

sales are concerned, are at an end. In the States, he is careful to appoint only worthy distributors. He also guarantees them national or territorial sales rights. These are points which have been overlooked in some instances by Americans dealing in Europe. It has happened that in order to boost their foreign sales quota, they have sold anyone who would buy. Such tactics have a bad effect upon reputable radio men in Europe, and thereafter they are loathe to act for Americans. Perhaps a contributing cause to such action was poor distributorship selection, in which case they did not sell enough. At all events, the fault lies with the manufacturer who contacted these distributors. Mr. N. Diercxens, head of the General Radio Co. of Antwerp, and successful importer of American radio articles, brings this last point out in an amusing manner. He says, 'Nine out of ten sales representatives come here like plenipotentiaries of power, prepared to overwhelm us. They visit Paris. Dazzled by relations encountered there, they proceed to appoint agents with an apparent careless disregard as to ability or responsibility.'

**T**HE small manufacturer cannot organize his own foreign sales department. In this case he can resort to the export organizations, usually run by experienced men who know Europe, and who have established outlets there.

Regardless of the manner in which the manufacturer makes his foreign contacts, he should observe the following cardinal points:

1. Judicious selection of distributors.
2. Co-operation in several forms. If the sales possibilities warrant it, a definite amount for foreign advertising is not amiss. Exclusive rights for certain territory, as the case may be. Assurance and fulfillment of a fast delivery schedule.
3. Less discrepancy in prices for quantity goods. After all, foreign selling power is nothing like in the U. S. It is somewhat unfair to offer a particular distributor a price for disposing of a definite quantity and putting a much higher price on a smaller lot especially in cases where they happen to be in the same country, with close frontiers.

\* \*

Western Radio, Inc., (Les Taufenbach), Los Angeles, no longer distributes Brunswick. Previous to carrying Brunswick, it wholesaled Kolster. Now Silver Marshall products are occupying the time of the organization.

\* \*

Dr. Lee de Forest gets out the "Royale Luminous Tone Control" as an accessory for old sets.



# CENTRALIZED CONTROL INSURES PROFIT

By R. L. REID

*Specification Engineer, U. S. Radio & Television Corporation*




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Although but 30 years of age, Mr. Reid has a notable background in the field of engineering and production. He graduated from the University of Michigan and gained his early experience with the General Electric Company and Brunswick, Balke, Collender. Later he had several years experience in production management and cost engineering while connected with Showers Brothers' radio assembly plant and Ernst & Ernst, Industrial Engineers. Shortly after the organization of the U. S. Radio & Television Corporation, Mr. Reid associated himself with that organization as Specification Engineer and, under his direction, the Centralized Control System for plant and engineering operations has been developed.

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**P**ROBLEMS of the 1930 season have escorted into radio manufacturing a new era. The manufacturer's success "formula" known in what has been termed "The Good Old Days" has passed. No longer is the manufacturer able to call forth a new model from the laboratory and settle upon it a list price, insuring a handsome profit, jump into mass production, load the market to the saturation point, then dump the surplus at a close to cost figure, and have the set-up result in a satisfactory financial statement.

The picture shows a manufacturing plant capable of producing sets in large quantities, quality playing a secondary factor. The purchasing of the necessary raw material in quantities sufficient to cover the estimated seasons requirements, then an active Sales Department to dispose of the finished product.

Between the presentation of one new model and another the Engineering Department dropped almost completely from the picture. Aside from the correction of flagrant design errors they were not expected to greatly concern themselves with the models in actual production.

Individuals and groups who knew general business principles flocked to the radio industry, adopted these well known policies and prospered. But just as they were considering the industry well stabilized something happened. The beloved "formula" had lost its potency, and now has passed into the shades of history, and more alarming still had dragged the glittering Mistress "Profit" from the picture.

I believe that the few manufacturers who made money in the now historic 1930 season without exception were those who quickly recognized that conditions had not only changed but would continue to change monthly, weekly, almost daily.

At the first glance the new order of affairs looked almost hopeless. Constant falling list prices coupled with reduced volume in the total available business, aggravated by increasing competition, and the insistent and continuous public demand for a better radio set. The conclusion was simple. Value and volume had at last been wed. The belief that value would beget Volume an

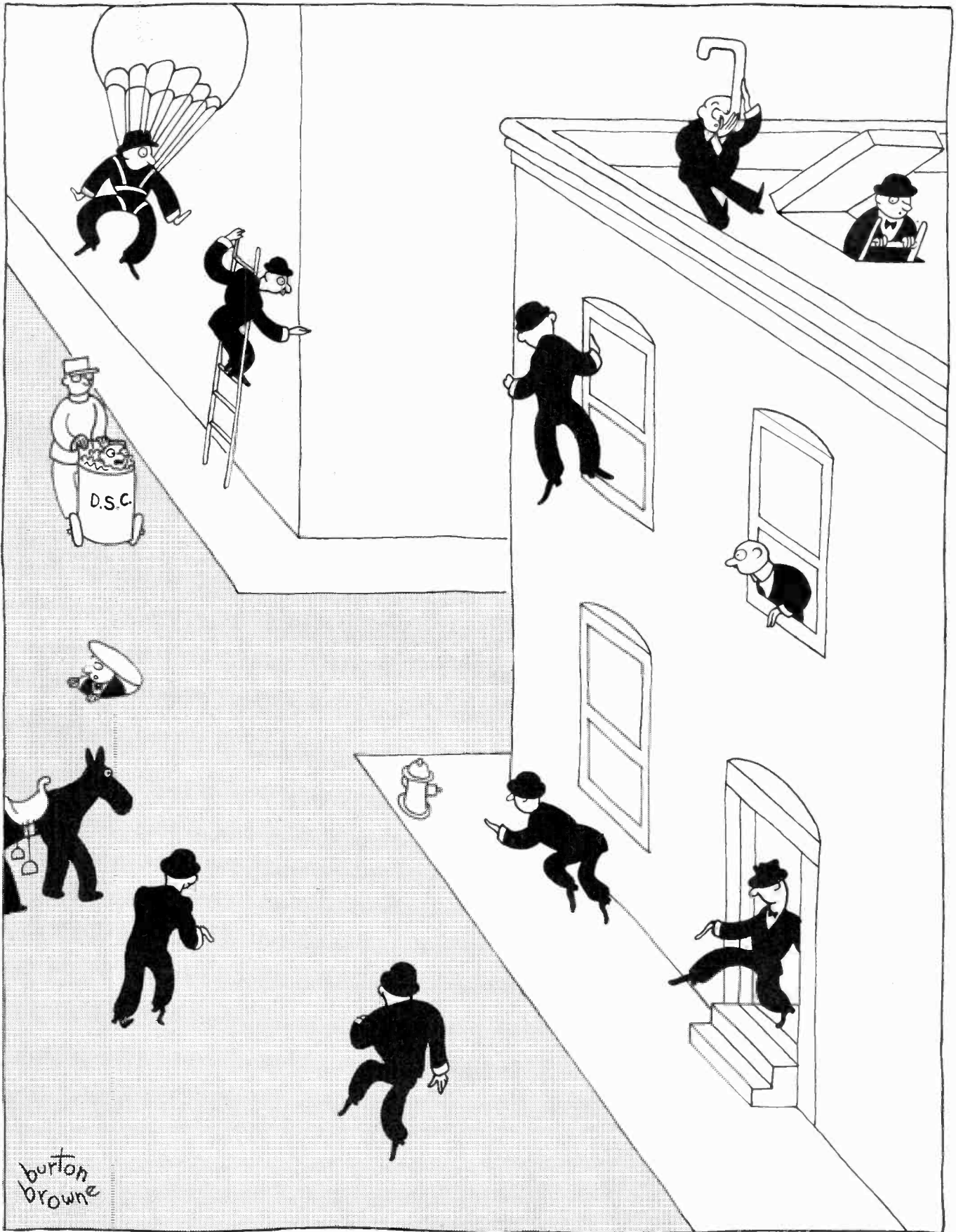
that Volume would unquestionably beget Profit enjoyed widespread acceptance throughout the radio industry with the coming of the spring of 1930.

It seemed satisfying to the radio manufacturer that he once again possessed a formula, the adoption of which would assure a satisfactory business adventure. The sad thing about it was that the new Value-Volume-Profit set-up would not stay put. Another factor, Time, was obviously operative within this new formula. Time and its inevitable product, Change!

To succeed against such market conditions was not to quarrel with them. Rather a remodeling of organizations was necessary to meet this market condition. Such a set-up demanded flexibility far in excess of any previous experience in the radio industry. Systems had to be adopted whereby complete predetermining of production costs and all its variable elements could be kept well under control. This has been successfully handled under a Centralized Control System. Such a system is based upon the coordination of Engineering, Purchasing, Production and Cost Departments and the control of all interlinking details being centralized in a specification Engineering Department. This department provides a "Clearing House" for all instructions and specifications according to which all departments function simultaneously. This set-up assures maximum grasp of every variable. It operates smoothly, definitely and quickly.

**T**HE purchasing of raw materials for building a luxury commodity such as radio today becomes an art in itself. Today we talk in terms of saving pennies where in the past our conception of savings seemed worthless below the dollar mark. Better sets must be made and sold today at figures far below those in the past. It is impossible to emphasize too strongly the necessity for watching and saving every individual penny possible in the manufacture of radio receivers. Furthermore, it is needless to say the economical purchasing of our incoming material and the correct timing of their arrival is extremely necessary in this new order of things where purchasing must be held close to production. Those

*(Please turn to page 25)*



A cartoon by Burton Browne, Adv. Mgr., Silver-Marshall, Inc.

# THIS RADIO INDUSTRY

XI. "TELEVISION IS JUST AROUND THE CORNER?"

# NEWS OF THE INDUSTRY

## MANAGES ENGLISH SUBSIDIARY

The appointment of Matthew Edwin Ricketts as managing director of the Brunswick Radio Corporation's English subsidiary, Warner-Brunswick, Ltd., London, has been announced by R. W. Jackson, vice president and general manager. Mr. Ricketts comes to the newly organized company from the managing directorship of the Chappelle Piano Co. Ltd., the outstanding merchandising organization in the music industries of Great Britain.

Mr. Ricketts sailed for England last month after a two weeks visit in the



United States devoted to a careful survey of the facilities of Brunswick and its future plans. Upon his arrival in London, he will relieve J. W. Bishop, chief plant engineer of the Brunswick Manufacturing Division, who has been at the helm of Warner-Brunswick, Ltd., at the new Sheapherds Bush, London, Brunswick Record factory. Mr. Bishop went to England to effect proper organization of personnel, installation of equipment, etc., all of which he has accomplished in a most able manner and in record time.

Discussing the record situation in Great Britain, Mr. Ricketts stressed the fact that the gramophone is still the major feature for musical home entertainment, since the English, who have always been great music lovers, make a great deal of music in the home and insist on having the selections of their choice always available. Over fifty million records are sold each year in Great Britain.

## STACKPOLE DEVELOPS NEW RESISTOR

With the more general and widespread development and use of the super-heterodyne circuit and its high-gain amplification has come the need of resistors which are absolutely noiseless. The Stackpole Carbon Company of St. Marys, Pa., found some time ago in connection with their research work on the improved application of carbon resistors to the super-heterodyne circuits that a good deal of the internal noises found in various makes of super receivers was attributable quite directly to resistors having noisy characteristics.

The Stackpole engineers further found that much of the so-called "circuit hiss" carrier tuning swish and instability of the oscillator circuit could be entirely eliminated by the use of carbon resistors of the proper structure such as has been incorporated into the new Stackpole Noiseless carbon units.

The new Stackpole noiseless carbon resistor units, it is said provide perfectly quiet operation whether used in circuits having direct current, audio-frequency or radio frequencies currents and they maintain their original resistance value under the widest range of load conditions and varying humidity.

The resistor units are made in all of the sizes required to carry up to as high as five watts. A resistor chart recently put out by the Stackpole Carbon Company displays each of the types and sizes available for manufacturers' use and a description of their application. One of these charts for wall posting will be sent to engineers and purchasing agents upon request to the Service Dept. of *Radio Industries*.

The Stackpole Carbon Company, St. Marys, Pa., is among the oldest manufacturers of carbon and carbon products of a diversified line ranging from the smallest motor brushes to immense electrodes for electric furnaces and electrodes for paper mills in the process of paper bleaching.

This company has associated with it capable and experienced radio engineers who are always glad to be of service to manufacturers and laboratories to assist them with their problems.

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## TROSTLER JOINS FADA

Arthur A. Trostler, former sales manager of the Brunswick Radio Corporation, and previously vice-president in charge of sales of Freed-Eisemann Radio Corporation, has been appointed a special sales representative for F. A. D. Andrea, Inc., manufacturer of Fada radios.

## HEADS INTERNATIONAL DIVISION

Announcement has just been made of the appointment of B. Gardner, president of the Canadian Victor Company, as manager of a newly created International Division of the RCA Victor Company. As manager of the International Division, Mr. Gardner will be in charge of all the foreign business of the RCA Victor Company and of its subsidiary companies. He will continue as president of the Canadian Company.

Mr. Gardner joined the Canadian Victor Company in 1920, as director and treasurer. From then until 1927, toge-



ther with Edgar M. Berliner, he was the active directing head of that company. He was then entrusted with the work of organizing a subsidiary company in Japan. In the two and a half years which he spent in the Orient, Mr. Gardner supervised the construction of one of the most modern phonograph manufacturing plants in the world. He established facilities for recording, and placed into operation an unusually successful system of merchandise distribution. The Japanese Company is now one of the most prosperous of the RCA Victor subsidiary companies. He also organized a pioneer selling staff in the Chinese territory which was later the nucleus of a separate subsidiary company there. Early in 1930, Mr. Gardner was appointed president of the Canadian Company, which position he now retains in addition to his new duties.

**JUNE 8 -- CHICAGO  
BE THERE!**

# NEWS OF THE INDUSTRY

## GLASER JOINS MICARTA

With the announcement that Micarta Fabricators are moving in 4619 East Ravenswood Avenue, likewise came information that they have added R. W. Glaser, formerly of Kellogg Switchboard and Supply Co., to their sales staff. He will have charge of the states of Indiana and Michigan.



For the past thirteen years, Mr. Glaser has been connected with the Kellogg Switchboard and Supply Co., and his familiarity with the requirements of the radio industry will make it possible for him to explain the special grades of Micarta that have been developed by the Westinghouse Elec. & Mfg. Co., for certain applications where the orthodox type of laminated phenolic material will not suffice.

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## PILOT MAKES CHANGES

A complete reorganization of the engineering department of the Pilot Radio & Tube Corporation, of Lawrence, Mass., is announced by Charles Gilbert, vice-president and manager of plant operations.

Wayne W. Cowan, formerly in charge of the set department, is now chief engineer, replacing John Geloso, resigned. Mr. Cowan has had considerable experience in radio manufacturing, having been connected with the Edison, Splidtdorf and Kolster companies.

Kenneth Harkness, well known for the circuits bearing his name, is supervising receiver design, with the assistance of J. Leonard Montgomery, formerly with General Electric at Schenectady.

## TO MAKE CRC SOCKETS

The Central Radio Corporation, Beloit, Wisconsin, announces that they have completed arrangements for their radio sockets to be manufactured in the Dominion of Canada for the Canadian trade.

The sockets will be manufactured by Hale Brothers, Limited, Montreal, Quebec, who have for many years enjoyed a good reputation as manufacturers of Bakelite electrical specialties.

There is a very strong sentiment in Canada in favour of purchasing Canadian made material and judging from the comments, which have been made by several of the Canadian radio manufacturers, the Halebro-CRC sockets will enjoy a large volume of sales.

Hale Brothers' head office and factory are located at 6224 Chambord Street, Montreal, Quebec, and they are represented in the province of Ontario by A. C. Simmonds, 218 Front Street East, Toronto 2, Canada.

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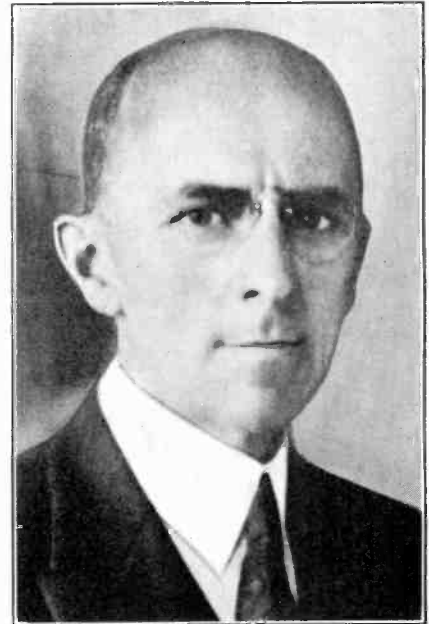
## NEW RCA VICTOR APPOINTMENTS

Announcement has just been made of the following promotions and appointments in the Sales and Advertising staffs of the RCA Victor Company, in Camden. E. A. Nicholas, formerly head of the distributing company bearing his name, has been appointed General Sales Manager in charge of all sales excepting the foreign field, and succeeding H. C. Grubbs, resigned; Ernest H. Vogel, formerly manager of Radiola Sales, has been promoted to manager of Domestic Sales; Pierre Boucheron, who for eight years was advertising manager of the Radio Corporation of America, and later in charge of the Atlanta district office, has been appointed manager of Advertising and Sales Promotion; L. W. Yule, formerly Pacific Coast district manager, has been made assistant manager of Domestic Sales; William F. Arnold has been appointed manager of Record Sales; Walter W. Clark, formerly manager of the Record Department has been placed in charge of Artists and Repertoire; E. M. Hartley is manager of Service Department, and B. Aldridge and A. R. Beyer have been placed in charge of Distribution Order Routine and general distributor contact.

The new appointments mark the completion of a reorganization consolidating the Victor and RCA Radiola Divisions of the RCA Victor Company. According to the announcement, realignment of the wholesale distribution system of the two divisions has been practically completed.

## THROCKMORTON MADE PRESIDENT

Appointment of George K. Throckmorton as president of E. T. Cunningham, Inc., radio tube company, was announced recently by David Sarnoff, Chairman of that company's Board of Directors. He succeeds to the office, Elmer T. Cunningham who has just been appointed president of the RCA Radiotron Com-



pany, Inc. Mr. Throckmorton previously was executive vice-president and general manager of the Cunningham organization.

Mr. Throckmorton has already assumed his new duties and continues his headquarters at the executive offices of the Cunningham Company at 370 Seventh Avenue, New York City.

« »

## BAIRD JOINS HFL

L. S. H. Baird has joined the sales department of High Frequency Laboratories, Chicago, as an assistant to the sales manager. He was formerly city representative for the old Leslie F. Muter Company, Chicago.

« »

## HUTTER OF TCA IN EUROPE

A. J. Hutter, director of exports for Transformer Corporation of America, recently arrived in Italy.

« »

## DIRECTS RADIO SALES

Oden F. Jester, formerly director of sales for the radio division of the Stewart-Warner Corp., Chicago, has joined the Transformer Corp. of America, Chicago, as sales manager.

He succeeds E. J. Dykstra, resigned.

# NEW DEVELOPMENTS

## RCA VICTOR INTRODUCE END TABLE COMBINATION INSTRUMENT



A small, economical record playing instrument which will transform practically any radio into a modern electric phonograph-radio combination and serve as a useful end table when not in use has just been introduced by the RCA Victor Company, according to an announcement.

The new instrument includes all the equipment necessary for playing records through the

amplification system of any modern electric radio receiver. It consists of an ingenious pick-up device with a convenient radio-record transfer switch and a small control knob for regulating volume. The equipment is housed inconspicuously in a walnut finished end table with a movable lid. It is furnished with a twenty foot length of connecting cable. The list price is \$59.50.—*Radio Industries*, May, 1931.

### OHMITE ANNOUNCES NEW RESISTORS

D. T. Siegel, general manager of the Ohmite Mfg. Co., 636 N. Albany Ave., Chicago, announces the formation of a **RADIO RESISTOR DEPARTMENT** for the manufacture of two new types of units especially designed and developed for use in radio receivers.

The new units are:

1. Carbon resistors in all resistance values having the trade name of "Carbohm," intended for use in dissipating one watt and less.

2. Wire wound resistors up to 25,000 ohms even smaller in size than three watt carbon resistors, and covered with a new red cement which they have developed. These units are known under the trade name of "Wirohm Red Devils." These are capable of dissipating up to ten watts and although wire wound they compare very favorably in price with carbon units of the three and five watt sizes. They can be furnished with lugs or leads and can also be supplied with an intermediate tap which makes them very economical to use. Larger units with many taps are also made up to order.

### ROLA ANNOUNCES NEW SPEAKER

A new dynamic loudspeaker unit, designed to meet the exacting requirements of 1931 radio sets and home talkie outfits, has been announced by the Rola Company of Cleveland.

The new Rola unit, to be known as Model F, is said to provide an astounding performance in a very small package, being only eight inches overall diameter and weighing under five pounds.

B. A. Engholm, Rola's vice-president and responsible for the development of Model F, says "Our problem was to design a unit that would be more compact, more efficient and more economical to manufacture than existing types, and a speaker that would match the critical load requirements of the new Pentode power tubes. Our new model F successfully meets these requirements."—*Radio Industries*, May, 1931.

These two types of units—"Carbohm" and "Wirohm Red Devils" cover the complete requirements for radio receiver resistors.—*Radio Industries*, May, 1931.

## NEW IMPREGNATING APPARATUS

A development of interest to all who use Vacuum Impregnating Equipment in their production is the increased tendency to heat such apparatus by electricity. This tendency is well illustrated by the recent experience of the F. J. Stokes Machine Company of Philadelphia, specialists in the making of Vacuum Impregnating Apparatus and Auxiliary Equipment.

Within the past six weeks, this company was called upon to furnish two electrically heated impregnating jobs for export, one to go to Brazil and one to the Danish West Indies. Just previous to this, they had supplied electrically heated impregnating apparatus for the research laboratories of a leading radio manufacturer and an important telephone company.

The tank sent to Brazil is for use by a street railway repair shop. Repaired coils are dried and then impregnated under vacuum with an insulating and protective compound. The tank is 12' high and 6' in diameter. The West Indies job is similar, except that there is an extra tank for storing the compound. In this installation, about 100 lbs. pressure, in addition to atmosphere, is used to force the compound into every crevice of the coils, while they are in the impregnating tank and after all possible air has been removed.

The two laboratory installations are for research work in the respective fields of the companies concerned. In the case of the radio installation, glass tops were furnished to enable the research workers to observe the complete operation.

According to the manufacturer of this equipment, the use of this most modern method of heating is due to grow rapidly, not only in the electrical but in the process industries as well and wherever the furnishing of dependable, controlled heat is a problem.—*Radio Industries*, May, 1931.

« »

## CROSLY PENTODE SUPERHETERODYNE

The Crosley Super Buddy Boy, just announced by the Crosley Radio Corporation, is a new mantle type Superheterodyne Pentode receiver incorporating many new features and exclusive developments. It lists at \$65.00, complete with tubes and Crosley Tennaboard.

According to Crosley officials, the chassis is an exclusive development. It uses seven tubes, six of which are screen grid. It employs a new type -47 five element Pentode tube in the output stage; two type -37 newly developed Exponential or Variable Mu tubes in the radio frequency and intermediate frequency stages, and a type -24 four element screen grid tube in the Pliodynatron oscillator circuit.

Additional features of the new set include an illuminated angular vision ribbon dial with vernier drive; full floating moving coil dynamic speaker, continuous (stepless) satic control; continuous (stepless) variable tone control; combined volume control and on-off switch; and the patented Crosley Tennaboard, a device which eliminates the use of aerial for powerful distant or local station reception.—*Radio Industries*, May, 1931.

« »

## NEW ARCTURUS PHOTOLYTIC CELLS

So popular has proved the principle of the Arcturus Photolytic Cell, according to announcement, that insistent demands have been made upon the Photo-Electric Division of the Arcturus Radio Tube Company, Newark, N. J., manufacturers of this device, to produce two additional cells of different sizes to be utilized in equipment where space is limited.

Two new cells designated as Arcturus Type P-23 and P-27 have been placed into production. The P-23 is a tubular type of cell, 2-5/8" high x 1-5/32" wide. The P-27 type of cell is considerably reduced in overall size, measuring 1-5/16" high x 1-1/16" wide.

While the overall size has been changed, the photo-sensitive surface area is identical to that of the well-known type P-4 Photolytic Cell which was introduced by Arcturus more than a year ago. The same inherent advantages of Arcturus Cells are maintained in these two new cells.

Because of the ruggedness and principle of the Photolytic Cell these units are non-microphonic and require no polarizing potential. Background noise is entirely eliminated and because of the extremely low impedance of these cells there is no pick-up of parasitic noises. The high sensitivity of these cells provides an exceptional audio frequency response which is characteristic of the Photolytic principle.

A new folder describing the complete line of Photolytic Cells has just been issued. Copies may be had upon request.—*Radio Industries*, May, 1931.

# With Dr. Power on the Coast

ALL IS NOT WELL on the battle front of radio in California of the south. Seems as though dissention has entered the rank and file, to say nothing of the big shots.

Representatives of 14 licensed Los Angeles manufacturers met in solemn conclave and bitterly resented the fact that others, unlicensed, manage to get identical parts at practically the same cost as those who are licensed and pay a royalty fee.

The licensed boys claim that those who dodge the license fee have the edge on them to the tune of about \$3.10 a set. It is understood that in the royalty scramble RCA gets about 85 cents; LaTour and Hazeltine 25¢ and 35¢ respectively, and Gilfillan scoops in the rest for supplying the space to his sub-licensees.

It seems, too, as though RCA has dashed out with a new ruling which compels the sub-licensees to manufacture their complete chassis at the Gilfillan Brothers plant, instead of a few operations to make it legal, as formerly. This increases the ante for the licensed boys, because of additional haulage to and from the factory, additional administrative force and so forth, while the unlicensed gang continues to run up the amount they can shade over licensed outfits.

This seems to be about the gist of the manufacturers' meeting . . . purpose . . . "tie-ing in a bit closer in a co-operative way."

**SCENE TWO.** Independent manufacturers to the number of ten, of course only a fractional part of the total, held a meeting for the "purpose of combatting propaganda and for their own mutual protection in securing supplies and the necessary parts." This, in brief, is the essence of their secret grouping . . . unlicensed firms.

**CURTAIN FOR THE THIRD ACT.** Manufacturers representatives, sort of between the devil and the deep blue sea, met secretly in order to decide what their stand would be in the controversy between the two groups of manufacturers. Some 31 bona fide members called "aye" in the roll call. The boys definitely decided nothing at all . . . except that "undesirable manufacturers should be stopped from getting stuff (parts) at low down prices." This, of course, was a nice vague motion but one not so good for the men as individuals in a business way.

**FINALE.** The manufacturers' representatives again met . . . repealed the former motion (account of unfair trade and because the mere fact that a firm is unlicensed it does not follow that they are necessarily unreliable). Motion made and carried to rescind the former motion and strike it off the records.

**RECAPITULATION.** Everything is now all quiet on the western front. Manufacturers' agents to meet once a month; general meeting of manufacturers and their agents once a month; manufacturers themselves to meet when . . . and if they feel an insistent urge to do so.

In the meantime rumor has it that license holders are to sue one retailer in Los Angeles and four manufacturers.

\* \*

THE WEST COAST, at this time of the year, is getting sort of convention minded. Of course a goodly representation will trek to Chicago for the trade show of June, and the allied gatherings being held there at about the same time.

But the Pacific coast's own meetings naturally will attract a considerable number of radio people. Yet, more so than in other years, 1931 finds things up in the air so far as dates and meetings are concerned out here.

Reams of publicity have gone out for the Western Music and Radio Trades Convention, which was to have been pulled off in Vancouver late in June. In fact the boys were getting their bottle openers and corkscrews all polished up for the occasion.

But it seems as though, despite the fact that the customs were willing to bond United States sets over the border, the

Canadian patent office objected rather strenuously on some pretext or another.

At this writing there is every indication that the Vancouver convention is entirely out. Probably the only solution will be to hold a day's session of the association during the Los Angeles radio show in order to have committee reports and elect officers for the coming year.

\* \*

THEN THERE IS the San Francisco annual trade show which got a good start last year when the radio and music trades met up in the bay region at the same time. George Curtiss, secretary of the 'Frisco group, reports that indications point towards a two-day trade show up there in the early summer, although no definite time has been set as this is being written.

\* \*

Finally we come to the third coast affair, the ninth annual radio show in Los Angeles . . . a public, rather than a trade event. In previous years this has always been slated to open on Labor Day for its run of a week.

However, this year the Los Angeles Sesquicentennial Fiesta celebration is due for September 3 to 12th inclusive and, because of this . . . likewise because Waldo T. Tupper, director for the radio show, is also manager for the Fiesta . . . plans must be made for a different time.

One group believes that October 4th is the best bet, because most of the people will be back from their vacation days, that many new lines will not be ready until then, and that the signal success of Chicago and New York public shows is in October.

Others think that the week of August 2nd is the logical time, because then the business needs to be stimulated, because it would follow closely the Chicago trade showing, and most of the new models will be out at that time. Just now it seems as though the August 2nd group will emerge the winner.

At any rate, definite information on these three western conclaves will be announced in this department for June issue.

\* \*

Keller-Fuller (Los Angeles) have standardized on three models numbered 50, 60, and 90 . . . bantam, midget, console.

\* \*

California Radio Co., 2352 West Washington St., Los Angeles, has started up . . . managed by Tom Reed (formerly of Master and of Taylor-Travers) and Jack Dayton, once engineer at Keller-Fuller's. They plan to engage in manufacture and distribution of small sized sets.

\* \*

Another new firm . . . H. D. Crane Co., 119 North La Brea St., Hollywood, midgets and consoles.

\* \*

A. J. Carlson, formerly with Plymouth and once with Bosch, both in Los Angeles, becomes radio sales manager for Waterhouse-Lester-Scovel Co., northern California Bosch distributors.

\* \*

**SOME OF THE COAST VISITORS** the last few weeks . . . P. W. Bialowsky, coast sales manager for Crosley, has been going up and down the coast (headquarters in Seattle); Bill Leer, of the Chicago Coil and Wire Company, meandering into the west; Al Hirsch, of Micamold Co., Chicago; Bill Garstand, from the P. R. Mallory Co., Indianapolis, and Bill Lane, now in San Francisco with Waterhouse, Weinstock Scovel Co. (Bosch distributors), but formerly with the John G. Rapp Corporation in Los Angeles.

The Peerless Radio Manufacturing Co., 4915 South Broadway, Los Angeles, (Ferris and Edwards) are making their "Peerless" brand consoles and midgets.

R. W. Gilbert, 2357 West Washington blvd., Los Angeles, is now making his own line of receivers for distribution.

Masterola Manufacturing Co., 3929 South Broadway, (Ralph Cohen) has ready for the trade its Masterola outfit, which it announces as "smallest 6 tube midget made."

Brown and Manhart, known for their Ranger line, now do business as the Hoover Radio Co., 6219 South Hoover St., Los Angeles, with the Hoover mantle-type set.

Trojan Radio Corp., Ltd., 5826 South Hoover St., Los Angeles, prominent a couple of years ago for their low priced consoles, now market their junior set with Claude A. Burroughs as general manager (brother of James Burroughs, tenor, over KFI and NBC). "Trojan De Luxe" is the console type, and two projected type would make a total of four models. Joe Grison, lately with Perryman tubes on the coast, has recently joined the sales force of Trojan.

The Superior Radio Corporation, (Hammond Lumber Co.) is now licensed . . . 2010 South Alameda St., Los Angeles, John Corbridge, manager. They feature console models.

The Tung-Sol Lamp Works, Ltd., 1816 South Flower St., Los Angeles, opens offices for the Pacific coast division with L. A. Dernier as manufacturers representative . . . distribution for Tung-Sol radio tubes . . . branch at 445 23rd St., Oakland.

The McGrew-Austin Co., at 6725 Santa Monica blvd., Los Angeles, enters the field to specialize in its own brand of ban-tam midgets (pee wees) . . . Austin was formerly with Echo-phone as manager of the Western Pacific division.

Barrie C. Bloeden pops up again in the radio field . . . now president of Kenwood Radio Corp., Ltd., 2043 Venice Blvd., Los Angeles, with Irving Steinberger as treasurer. Steinberger used to be chief engineer for Avalon radio . . . Barrie once with Zaney, Gill and lately with Avalon. They are to have consoles and midget models . . . manufacture and distribution.

Mission Bell, 1125 Wall St., Los Angeles, is now known as Consolidated Radio Mfg. Co., (Percy Fleming and Herman Schmieter) bringing out a super-het chassis for the trade.

The Banta Corporation, 1805 South Hill St., Los Angeles, jobbers of automotive accessories for years . . . once also Freed distributors . . . re-enter the radio field with their own set, according to advance information. No name had been selected as this was written the middle of April. George Stephenson, with the DeForest Los Angeles company, joins the Banta group as radio manager.

N. Earl Borch, interference man for the radio trades in San Francisco, left April 1st. to head the new radio engineering dept., of the California Electrical Construction Co., at 639 Mission St., San Francisco . . . northern California distributors for "Multicoupler" aerial system.

The Sargent short-wave converter is being made by the Radio Constructors Company, Oakland . . . short wave reception on the present-type receiver . . . with Northern California distribution handled by Kierulff and Ravenscroft, 121 Ninth street, San Francisco, and the same firm in southern California at 135 West 17th street, Los Angeles.



# "Because it's safe, Smith!"

"I've been making sets for years, and I know there's only one safe soldering flux for our kind of work—rosin. Kester Rosin-Core Solder carries a rosin flux inside itself—and it's a plasticized rosin that even age can't impair!"

Kester Rosin-Core Solder always goes the best one better. Its virgin tin and lead exceed even the A. S. T. M. Class A specifications for purity. It's fast, too—a time and labor saver. Radio and electrical manufacturers who use it see production costs go down at the same time standards of efficiency go up!

Write to our Industrial Development Department. Let us untangle your knotty solder problems. We can do it!

Kester Solder Company, 4216 Wrightwood Avenue, Chicago, Illinois. Incorporated 1899.

**KESTER**  
**FLUX-CORE**  
**SOLDER**  
 Acid Core · Paste Core · Rosin Core

# Current Abstracts

*Reflection of Electromagnetic Waves at Tonized Media with Variable Conductivity and Dielectric Constant*, by G. J. Elias (Technical University, Delft, Holland). Using the electrical properties obtained by the higher atmosphere an account of the ionization caused by the ultra-violet radiation of the sun and the corpuscular rays sent out from it conclusions are drawn about the height where electromagnetic waves are reflected and the reflected amplitude. In this way results can be obtained in good agreement with the observations. The influence of hydrogen in the upper atmosphere is discussed. Finally the reflection-time for a signal is calculated.—*Proceedings of the I.R.E., May, 1931.*

\* \*

*Selectivity, a Simplified Mathematical Treatment with Oscillographic Demonstration*, by B. deF. Bayly (Department of Electrical Engineering, University of Toronto). This paper gives a simple formula for finding the voltage gain of a resonant circuit at different frequencies in terms of that at resonance. Tables and curves are given in decibels below the resonant value so that calculations are quickly made.

Means of converting the ordinary radio-frequency circuit into an equivalent simple resonant circuit are given so that a close approximation of its behaviour may be obtained, especially in cascaded circuits of diverse tuning.

The criteria for maximum gain etc., are discussed by means of the equivalent circuit. A new expression for selectivity is proposed in terms of decibels below resonance. The principle of diverse tuning of cascading circuits to obtain bandpass effects is discussed.—*Proceedings of the I.R.E., May, 1931.*

\* \*

*Oscillations in the Circuit of a Strongly Damped Triode*, by F. Vecchiacci (Naval Electrotechnical and Communications Institute, Livorua, Italy). The following is a study of the particular action produced by a triode oscillator when the relation of the inductance to the capacity,  $L/C$ , is greater than the square of the internal resistance,  $p^2$ , and when the reactively coupled plate-grid is greater than the limit required for starting oscillation. The shape of the oscillation curve is clearly other than sinusoidal, the frequency is much lower than that usual in the LC circuit, and is determined essentially from the constants of the triode and from the current.—*Proceedings of the I.R.E., May, 1931.*

*Test Procedure for Detectors with Resistance Coupled Output*, by G. D. Robinson (U. S. Naval Academy, Annapolis, Md.). This paper presents a simple circuit for use primarily in determining the response, to modulation, of a detector with resistance coupled output. Only d-c, 60-cycle a-c, and the corresponding meters are used. The theory of operation of the circuit is briefly explained: This theory neglects the effects of capacity reactances at modulation frequencies but not at carrier frequencies. Sample curves obtained by this method show marked differences between the positive and negative peak values of the audio output of the detector with high percentage modulation of the carrier.—*Proceedings of the I.R.E., May, 1931.*

\* \*

*Output Networks for Radio-Frequency Power Amplifiers*, by W. L. Everitt (Ohio State University, Columbus, Ohio). At high frequencies a transformer consisting of primary, secondary, and mutual inductances cannot be constructed to match a generator effectively to a resistive load. By introducing capacitative elements, such a match can be obtained.

The design of reactance networks to connect a resistive load efficiently to a source of power can be carried out most conveniently by the theory of image impedances. Such reactance networks can provide not only for high efficiency but can also attenuate undesired harmonics.

A variety of configurations can be designed to accomplish the desired result. The network can also be arranged to provide extremely high attenuation at designated frequencies.

The most efficient network is one designed for critical coupling, assuming a constant Q for the inductances. The efficiency also depends on the impedance ratio.—*Proceedings of the I.R.E., May, 1931.*

\* \*

*Theory and Operation of Tuned Radio-Frequency Coupling Systems*, by Harold A. Wheeler and W. A. MacDonald. The subject is the tuned r-f coupling systems commonly used in the broadcast receivers, to couple the antenna to the grid of the first tube, and to couple the plate of each r-f amplifier tube to the grid of the following tube. The simple tuned r-f transformer used in the 1923 neutrodyne receiver has been improved by the co-operation of different kinds of impedances in the primary circuit. The "equivalent mutual inductance" is thereby caused to vary with frequency in a predetermined man-

*On the Amplitude of Driven Loud Speaker Cones*, by M. J. O. Strutt (Physical Laboratory, Philips' Glow Lamp Works, Ltd., Eindhoven, Holland). Bragg's method for measuring small amplitudes of vibration was developed technically for the measurement of amplitudes of driven loud speaker cones. It is shown, that amplitudes of 1 micron at 500 cycles may easily be measured within a few per cent. Nodes of symmetrical cones may be radial or circular. It is shown, that radial nodes do not influence the effective sound radiation area and the effective mass although circular nodes do. A quantity  $n$  is calculated from experimental data, to which both, effective mass and effective area, are proportional. It is shown, that circular nodes exist at as low as 500 cycles in most of the paper cones measured, except especially stiff ones, which up to 2200 cycles did not show any circular node. Effective mass and effective area of most cones diminish rapidly with increasing frequency, so as to become very small at, say, 1000 cycles. Here again, especially stiff cones made a favorable exception. Different loud speaker systems were tested as to proportionality of amplitude to a-c strength. A direct method for measuring the effective mass as a function of the frequency offered a check on these conclusions.—*Proceedings of the I.R.E., May, 1931.*

ner, without the use of any moving elements except the tuning condenser; this is also referred to as a varying "effective turns ratio." The gain of an amplifier can be held uniform or made to vary with frequency in any desired manner consistent with the amplifying ability of the tube and the tuned secondary circuit, and without appreciable loss of selectivity. A large variety of these improved coupling circuits is shown and classified in terms of the fixed and varying components of the equivalent mutual inductance. A large number of these coupling systems from commercial broadcast receivers are described in terms of coil structure, electrical constants, and performance. These include antenna and amplifier circuits dating from 1924 to date, and used in unneutralized, neutralized, and screen-grid receivers. Special attention is paid to antenna circuits for unicontrol receivers, whose tuning is substantially independent of antenna capacitance and of the adjustment of a shunt rheostat sometimes used as a volume control. The problems involved are treated mathematically with general theorems and specific examples.—*Proceedings of the I.R.E., May, 1931.*



STATEMENT BY PRESIDENT METCALF

Reasons why everyone in the radio trade should attend the annual RMA convention and trade show at Chicago, beginning June 8th, are detailed in a statement just issued by President Morris Metcalf of the RMA.

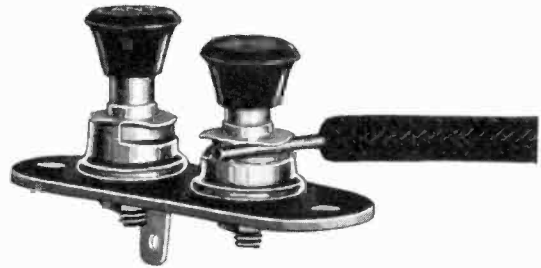
"This year's trade show will be the most important one the RMA has ever held," said President Metcalf. "There will be more new radio products this year in the trade show than ever before. The trade show has become a fixture in many industries and dealers and distributors have come to realize that it saves them many times what they spend to attend it. The opportunity afforded to view new merchandise, styles and trends, to become posted on manufacturing and technical developments, to make personal contacts, get the gossip of the trade, and even buy and sell, is invaluable. It enables the entire selling organization to do in one week what would otherwise take many months.



Morris Metcalf, President, R.M.A

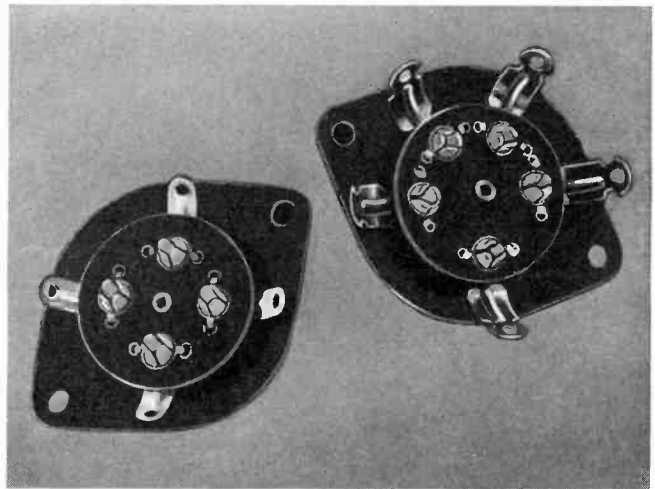
"The rapid and extraordinary development of the radio industry makes a trade show a necessity, and in my opinion, no individual in the selling, engineering, or manufacturing division of the industry can afford to miss it. Practically everyone of any importance in these branches of the trade will be in Chicago the week of June 8th, and it will take four of Chicago's largest hotels to hold them.

"The rapidly growing community of interest between the music and radio trades, and the simultaneous holding of the two conventions in Chicago, makes the importance of both shows doubly great this year, and I think it is not going too far to say that any radio jobber or dealer who is able to and fails to get to Chicago during the week of June 8th, writes himself down as indifferent to his own best interests and his future relations with the radio business."



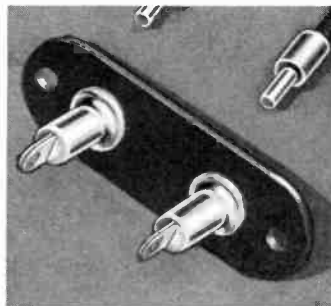
**New!---the Cinch Push-Button Binding Post!**

At last . . . a brand-new binding post! Cinch's *Push-Button* principle gives a *quicker*, easier connection than ever before. As the above illustration shows . . . just press the button . . . insert wire . . . and a firm, perfect contact is established. No threading. Completely equipped with soldering lugs. Cinch *quality* throughout! Write for sample and full details . . . today.



**CINCH Radio Sockets!**

Leading manufacturers have been quick to adopt these inexpensive, *fool-proof* radio sockets. Improved contact points, positive constant contact on all prongs, assembling ease, soldering accessibility, prompt shipment and *low prices!* Five different types. Write for samples and prices.

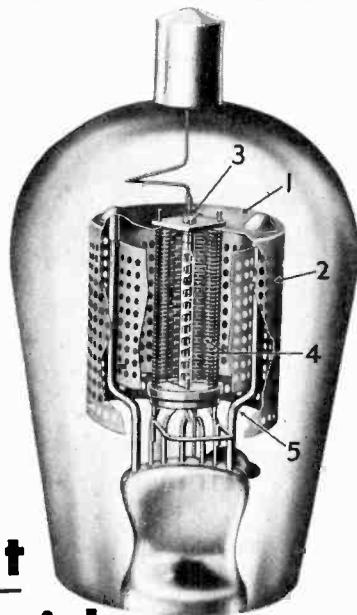


**The CINCH Improved, Money-Saving TIP-JACK**

Serves better . . . costs less! Rigidly mounted in bakelite . . . cleanly marked according to their purpose. The inserted tip finds the center *naturally*. Scientific principle makes vibration impossible! Three or more contacts can be supplied, instead of two, if desired. Samples and prices on request.

**C I N C H**  
**MANUFACTURING CORP.**  
 2335 W. Van Buren St. Chicago, Ill.

# IT'S EASY TO IDENTIFY 1931 TUBES



## Look for Clean-Cut Screen-Grids

Minimum metal for maximum electrical and mechanical strength—that is the true test of a screen-grid tube. De Forest engineers have attained those prerequisites by

1. Plate instead of mesh for greater degassification, increased strength and closer tolerances.
2. Perforations to decrease possible secondary emission.
3. Patented De Forest notched cathode insulator for practical quick-heater performance.
4. Molybdenum wire for both grids, costing 20 times as much as nickel. Higher melting point permits greater degassification.
5. Continuous support for outside screen, insuring maximum rigidity.

These and many other advanced features found in every type of Fresh De Forest Audion, insure the 1931 performance of any radio set.

**de Forest**  
AUDIONS  
RADIO TUBES



DE FOREST RADIO CO.  
PASSAIC, N. J.



After all, there's no substitute  
for 25 years' experience



## WHO ARE THE SUCCESSFUL RADIO MANUFACTURERS?

(Continued from page 13)

advanced seventy cents each over the estimated cost of that particular part of the season past.

This case is directly analogous to any other of the major parts of the radio set and the kindred expenses of making "your own".

Another interesting case which has been called to my attention is that of another manufacturer who, when designing his midget receiver, was obligated to use a much larger power transformer than was required. This decision was due to the fact that he had no lamination dies, bracket dies, or half shell dies which he could use on a properly designed power transformer for the midget receiver. He also found that he could not stand the additional outlay of tools and decided to be penalized on each set produced.

Had this manufacturer presented his specifications to a parts specialist, in view of obtaining the proper unit, his costs could have been materially decreased and the old question of "meeting competition" would never have been a baffling subject.

The point we desire to make specific is that the parts specialist is in a better position today to give the exact type of unit required in any instance, on a much greater value basis. At no time in the industry's history has the parts manufacturer been in a better position to give greater dollar for dollar value to a set manufacturer, thus alleviating the unseen bugaboos of production, equipment, overhead and losses incurred in trying to make your own.

We suggest to the set manufacturers who are now producing their own parts, to compute an honest cost on their material. By honest we mean giving proper analysis to raw material losses, amortization of equipment, overhead on additional space, cost of maintenance, personnel, defective parts and other numerous "vultures."

After this information is compiled, call in the parts specialist and let him prove to you that he can offer a like product on a more attractive basis.

\* \*

L. P. Naylor, former salesmanager of Arcturus Radio Tube Company, Newark, N. J., has resigned in order to assume the management of Arcturus activities on the Pacific Coast. He will establish an Arcturus branch with headquarters at Los Angeles.

\* \*

At a meeting of the Board of Directors of the RCA Victor Company, Inc., J. R. McDonough was elected executive vice president of the company, according to an announcement.

\* \*

Leon Brin has been appointed general sales manager of the Pilot Radio & Tube Corporation, radio set and tube manufacturers, and will make his headquarters at the company's plant at Lawrence, Mass. Mr. Brin was formerly connected with the RCA-Victory Company at Camden, N. J.

\* \*

The third annual New England Radio Trade Show, sponsored by the Radio Wholesalers Club, Inc., will be held in the Hotel Statler on June 30, July 1 and 2, according to an announcement made by the Sheldon Fairbanks Expositions, Inc., managing directors of the annual trade and public radio shows.

## CENTRALIZED CONTROL INSURES PROFIT

(Continued from page 15)

phases can be easily and definitely guided by the Centralized Control System.

Chassis and models are always the expression of collective opinions. They are generally engineered to a price, to be sure. But, under the new order of things it is essential that the engineering on these chassis or models continue throughout their entire sales life. A successful phase of Centralized Control lies in the maintaining of a continuous study of every item and every process which enters into production, never relenting in search for alternatives either in materials or line processes which will reduce base cost and increase wanted net profits. Continuous "Electrical and Commercial Engineering" supplies the essential information so vital to the maintaining of an economic position with relation to all other similar products offered in the industry at any particular moment.

Specifications which are fresh, comprehensive and complete must be continuously available on every model and chassis. Such specifications must be coupled with a simple and flexible distribution system making possible an effective control of an ever changing product. Such a system coupled with a deep and thorough knowledge of every possible source of supply for every "in use" or "alternative" piece of substance entering into production attained and maintained through a never ending study and constant trade inquiry.

If almost constant change is necessary, and apparently it is; and if chaos is to be avoided, and it must be; I know no better means than the *Centralized Control System* which eliminates *Panic* and assures *Profit*.

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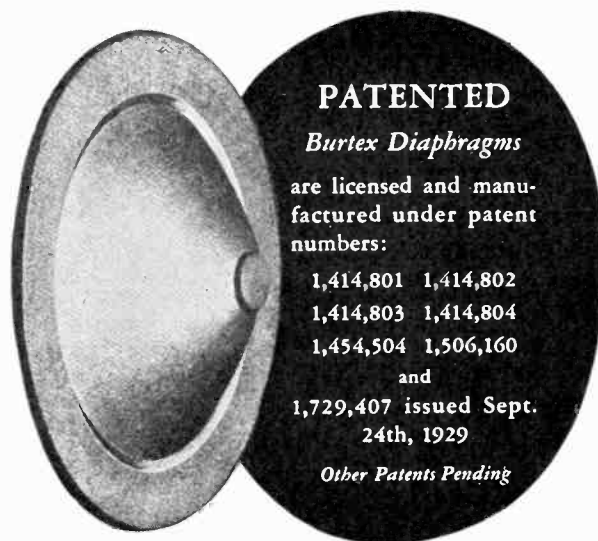
### I. R. E. CONVENTION

The Sixth Annual Convention of the Institute of Radio Engineers is scheduled for June 4, 5 and 6 at the Hotel Sherman in Chicago. A number of important technical papers are to be presented during the program. In addition to several inspection trips, an exhibition of component parts for broadcast receivers, measuring and laboratory equipment and other material of interest to engineers will be held.

---

Phil Belchamber, sleek haired and slightly heavy, now represents Echophone distribution in San Francisco and central California . . . Rogers and Goetz, Ltd., Los Angeles, being official distributors in Nevada, California and Arizona.

The Rob Roy Metals Company (Cass Altshuler), via Watsonville, Cal., for mail, is putting out the "Improved S. O. S. Magnetic Ground" . . . especially active in the northwest through dealers in Olympic, Centralia, Chehalis, Portland, Everett, Ballard and Tacoma.



**PATENTED**  
*Burtex Diaphragms*  
 are licensed and manufactured under patent numbers:  
 1,414,801 1,414,802  
 1,414,803 1,414,804  
 1,454,504 1,506,160  
 and  
 1,729,407 issued Sept. 24th, 1929  
*Other Patents Pending*

# BURTEX

Radio manufacturers seeking maximum frequency response, freedom from resonance peaks, a minimum of covering noise or fuzziness, ability to withstand mechanical shock, moisture, temperature changes and climatic conditions in general—in a word, the ideal loud-speaker diaphragm—have found it in Burtex.

These original, patented, impregnated cloth diaphragms have found their way into millions of radio sets after competitive tests.

Burtex diaphragms are available in all sizes and designs to meet your particular requirements.

## Best Tone -- Lowest Cost

And now—lower prices on Burtex diaphragms. New developments in our production processes are reflected in lower quotations, quite in addition to the marked savings effected in your own production and assembly operations due to the one-piece feature of Burtex. Cone, flexing member and mask, as well as voice coil collar, all in one piece, if you so desire.

**Write** today for technical data on Burtex diaphragms. Also, do not hesitate to lay your radio acoustic problems before us. We shall gladly co-operate with you in securing the best tone quality known to the art today.

**STEVENS MANUFACTURING CORP.**

See Stevens for Sound Advice

42-48 Spring Street

Newark, N. J.

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## EASTON COIL COMPANY

Manufacturers of High Quality Coils for

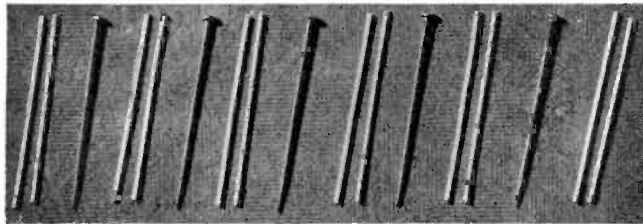
**RADIO  
ELECTRIC CLOCKS  
NEON SIGNS  
RELAY CLUTCH CONTACTORS  
IGNITION SYSTEMS  
TELEPHONES  
BELLS  
TELEVISION EQUIPMENT  
ELECTRIC TOYS**

The EASTON COIL COMPANY also manufactures high quality transformers for Radio, Talking Picture Equipment and Neon Signs.

### EASTON COIL COMPANY

New Address

22-17 41st Avenue, Long Island City  
New York



## Pants for Tubes

**I**NSULATOR tubing about the size of an ordinary pin as shown above, slips over each leg of the hair-pin filament in certain quick-heater radio tubes. A precise formula to meet thermal, electrical and chemical requirements, together with rigid mechanical tolerances, has assured the success of this and other applications of

CROLITE

Not just the name of a precision product for severe service applications, but a complete research and engineering service dedicated to the solving of difficult problems.

*Write us regarding your severe service problems and we shall gladly supply engineering advice, samples and quotations.*

**HENRY L. CROWLEY & COMPANY, Inc.**  
Specialists in Severe Service Materials  
1 Central Avenue     ::     West Orange, N. J.

## IRE PROGRAM SIXTH ANNUAL CONVENTION CHICAGO, JUNE 4-6

*Thursday, June 4—8:00 A.M.-10:00 A.M.*—Registration and inspection of exhibits—*10:00 A.M.-12:00 Noon*—Opening session. Addresses of welcome by Ray H. Manson, President of the Institute, and Byron B. Minnium, Chairman of the Chicago Section and Chairman of the Convention Committee.

*Technical Session*—"The 'Spokesman' for the Radio Engineer," by Captain S. C. Hooper, U. S. Navy. "Thyratron," by J. C. Warner, General Electric Company. "Music in Colors," by E. B. Patterson, RCA Radiotron. "Amplitude, Phase and Frequency Modulation," by Hans Roder, General Electric Company. *12:00 Noon-1:30 P.M.*—Official luncheon. Address by Colonel Ishan Randolph, President of the Association of Commerce of Chicago. *1:30 P.M.-2:00 P.M.*—Inspection of exhibits. *2:00 P.M.-5:00 P.M.*—Trip No. 1 to Grigsby-Grunow Company and Stewart-Warner Corporation. *2:00 P.M.-3:30 P.M.*—Technical Session. "The Saxonburg Radio Station," by Frank Conrad and R. L. Davis, Westinghouse Electric and Manufacturing Company. "Field Strength Measurements and Broadcast Coverage," by C. M. Jansky, Jr., Jansky and Bailey. "Developments in Common Frequency Broadcasting," by G. D. Gillett, Bell Telephone Laboratories. "New Method of Frequency Control Employing a Long Line," by C. W. Hansell, J. L. Finch and Conklin, RCA Communications. "Some Observations of the Behavior of Earth Currents and their Correlation with Magnetic Disturbances and Radio Transmission," by Isabel S. Bemis, American Telephone and Telegraph Company. *2:00 P.M.-3:30 P.M.*—Trip No. 2. Shopping trip for ladies. *3:30 P.M.-5:00 P.M.*—Inspection of exhibits. *3:30 P.M.-5:00 P.M.*—Trip No. 3. Ladies tea and fashion promenade. *4:00 P.M.-5:30 P.M.*—Trip No. 4. American Telephone and Telegraph Company and Illinois Bell Telephone Company. *4:00 P.M.-5:30 P.M.*—Trip No. 5. National Broadcasting Company studios. *8:00 P.M.*—Lecture on "Modern Conception of the Electron" by Professor A. H. Compton of the University of Chicago. *8:15 P.M.-11:00 P.M.*—Theater party for ladies. *9:00 P.M.*—Inspection of Ryerson Laboratory of the University of Chicago. *9:00 P.M.*—Annual meeting of the Committee on Sections at the University of Chicago.

*Friday, June 5—9:00 A.M.-10:00 A.M.*—Inspection of exhibits. *10:00 A.M.-12:00 Noon*—Technical Session. "Technique of Loud Speaker Sound Measurements," by Stuart Ballantine, Boonton Research Corporation. "Acoustic Problems of Sound Picture Engineering," by W. A. MacNair, Bell Telephone Laboratories. "Rochelle Salt Crystals as Electrical Reproducers and Microphones," by C. B. Sawyer, Brush Laboratories. "High Audio Output from Relatively Small Tubes," by L. E. Barton, RCA Radiotron. *9:00 A.M.-12:00 Noon*—Trip No. 6. Ladies sight-seeing tour. *12:00 Noon-1:00 P.M.*—Inspection of exhibits. *1:00 P.M.-5:00 P.M.*—Trip No. 7. Hawthorne Works of the Western Electric Company. *1:30 P.M.-4:30 P.M.*—Trip No. 8. Luncheon and bridge for ladies. *5:00 P.M.-7:00 P.M.*—Inspection of exhibits. *7:00 P.M.*—Banquet, entertainment and dancing.

*Saturday, June 6—9:30 A.M.-12:00 Noon*—Trip No. 9. Ladies trip to Art Institute, Field Museum, or Aquarium. *10:30 A.M.-12:00 Noon*—Technical Session—"Constant Frequency Oscillators," by F. B. Llewellyn, Bell Telephone Laboratories. "Electron Tubes as High Frequency Alternators," by E. D. McArthur and E. E. Spitzer, General Electric Company. "Development of Directive Transmitting Antennas for Short Wave Transmission," by P. S. Carter, C. W. Hansell and N. Lindblad, RCA Communications. "Development of Short Wave Directive Antennas," by E. Bruce and H. T. Friis, Bell Telephone Laboratories. *12:00 Noon-1:00 P.M.*—Inspection of exhibits. *1:00 P.M.*—Trip No. 10. Riverbank Laboratories (ladies invited).

\* \*

Wood and Anderson, manufacturer's representatives, at 915 Olive Street, St. Louis, Mo., have been appointed representatives in the St. Louis territory for the Polymet Manufacturing Corporation.

\* \*

Fred Kriven, for the past year field representative for the Brunswick Radio Corporation, has been appointed Metropolitan New York Sales Representative for the Easton Coil Company, which has just located in Long Island City.

## BOOK REVIEW

### COMMUNICATION NETWORKS

*Author: E. A. Guillemin, Mass. Institute of Technology. Publisher: John Wiley & Sons, Inc.*

Although fundamentally the same as other kinds of networks, those of communication are generally more complicated. This book fills the growing need for a text that is elementary and yet provides for the more advanced methods needed in attacking these problems.

In "Communication Networks" the author has prepared a skillful treatment of the subject carefully written for the beginner. It is elementary in that it does not presuppose any particular knowledge of the field. Advanced mathematical methods, however, needed in this study because of their greater power of compressing ideas, are introduced wherever it is advisable.

No formulae are given, but only the methods by which specific situations may be worked out, thus leading the student to solve problems himself by logical analysis.

Throughout the preparation of the text one objective has been kept in mind—that the student may see the operation of the network from a new angle through the study of the various theorems and methods of analysis as they are presented here. In fact, the main feature of the book is the presentation of as many ways of looking at the general network problem as possible.

\* \*

### "THE MENACE OF OVERPRODUCTION"

*Its Cause, Extent and Cure*  
*Author: Scoville Hamlin. Publisher: John Wiley & Sons, Inc.*

Many are the wonders, luxuries, and comforts, that the Machine Age has given us. But with it have grown up two serious evils which go hand in hand—Overproduction and Unemployment. The economic situation throughout the world is becoming increasingly serious. The gap between world production and world consumption is growing wider and wider. What can be done about it? The answer will be found in this book.

"The Menace of Overproduction" is not Revolutionary. It is Evolutionary, and particularly timely. While newspapers are carrying such headlines as "Whole World Involved in Present Depression," Mr. Hamlin's book critically analyzes the situation and then suggests certain remedies. The sane and practical constructive suggestions offered by this brilliant symposium will make the book important not only nationally but internationally.

Eighteen different phases of industry are discussed, each by a keen, farsighted specialist who knows from personal, practical contact, the problems of his own field. All are agreed as to the fundamental reason for the present business depression. Their views on the cause, extent, and cure of overproduction are startling, enlightening and convincing.

\* \*

Leo J. Meyberg Co., Oakland and San Francisco, RCA distributors, add a new line . . . Victor radio and phonograph products. A. H. Meyer, president, announces that sales, service and advertising for each line will be kept separate and distinct. The California Victor Distributing Co., (San Francisco) discontinues operation and Otto L. May, executive head, becomes Pacific coast sales manager for the R. C. A. Victor Co., with quarters in the ritzy Russ building, San Francisco.

\* \*

Herbert H. Horn, Los Angeles, maker and distributor for his own Tiffany Tone line announces his 10 tube superheterodyne, both as a console and as a large sized midget model.

\* \*

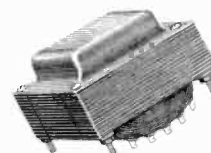
The Pioneer Radio Manufacturing Co., 1133 Market St., San Francisco, is now making a midget line . . . Ralph Lamm, formerly of Los Angeles, as production engineer.



## Setting THE PACE!

● ● ● Halldorson Tested Transformers and Coils meet their responsibility squarely. In perfection of design and construction, they fulfill the most exacting demands of your designing department.

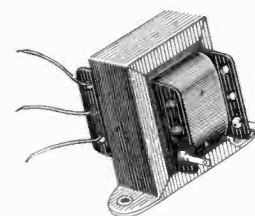
Carefully manufactured—rigidly inspected—accurately tested—Halldorson Products are now used by many of the leading Radio, Speaker, Electric Clock and Amplifying System Manufacturers.



### Quick Deliveries

Our central location assures the manufacturer of quick deliveries to any part of the United States.

Our Engineers will be pleased to make designs promptly according to your specifications. Forward to us your suggestions or actual samples for quotation.



### THE HALLDORSON CO.

4500 RAVENSWOOD  
CHICAGO ILLINOIS

POWER TRANSFORMERS  
AUDIO TRANSFORMERS  
SPEAKER TRANSFORMERS  
FILTER AND OUTPUT  
CHOKES  
LAYER WOUND  
COILS

# ACME TRANSFORMERS



Acme Step Down Transformer. 50 to 350-watt sizes available.

Power and Audio Transformers for Radio Manufacturers' use. Prompt quotations given on your specifications.

Send for these new bulletins:—

- Voltage Step Down Transformers for export shipments, Bulletin No. 121
- Replacement Transformers for service organizations, Bulletin No. 122



The Acme Electric & Manufacturing Co.  
1440 Hamilton Ave. Cleveland, Ohio

## EDITORIALS

(Continued from page 6)

A legitimate field of activity for the radio manufacturer is that of light control, or the practical application of light-sensitive cells. Recently, we note with keen interest the rapid advances

### LIGHT CONTROL

made in this art by our friends across the Big Pond, particularly the British and Germans. However, there is always danger of becoming foolish in our appraisals of the applications of light-sensitive cells, so that we have hesitated to become over-enthusiastic at the prospects.

Such applications of light-sensitive cells as opening doors by a beam of light, burglar alarms, turning on and off the home lights according to the available daylight, and so on, are highly impracticable even if entirely feasible. However, there are many practical applications now known and to be known in the future, which should create a vast market for light-sensitive cells and associated apparatus.

Highly encouraging is the fact that new and simpler light-sensitive cells are obtainable at this time, doing away with the intricate vacuum tube amplifiers heretofore required with the usual photo-electric cells. There are light-sensitive cells now available that operate a polarized relay direct, yet are highly responsive. It is in such cells, rather than the highly critical photo-cells heretofore available, that our greatest hope lies in developing a new field for radio manufacturers.

ALL the television talk and demonstration amounts to little or nothing unless translated into the dollars and cents that come out of sales.

### TELEVISION SALES

Therefore the ray of sunshine that now breaks upon the television situation.

During the past month, we have noticed a marked attempt to market television. Radio dealers have taken kindly to television when located within the limited service range of good television stations. Department stores have also taken on television, not so much from the standpoint of immediate profits, perhaps, but rather as an added attraction to their public. A healthy mail order and direct sale business has grown up with television manufacturers, in the absence of sufficient jobbing connections.

The television situation is developing along logical lines. First, television workers are evolving programs of real entertainment value; secondly, television organizations are producing complete sets and kits of matched components; thirdly, the press is supporting the television interests with ample publicity and informational material. The merchandising end is certain to work out satisfactorily.

\* \*

El Rey consoles and midgets make their bow into the field. El Rey Radio Manufacturing Co., is the new firm at 8406 South Broadway, Los Angeles (O. J. Bates and L. I. Fogg).

\* \*

Brecht Radio company, 1008 West 53rd St., Los Angeles, is among the newcomers in the bantam and console field with which they make and distribute (Brecht Drug Co.)

**F**AITHORN Typographers continually are adding new fonts of modernistic type faces. Faithorn Engravers delight in complex problems of "Art Moderne" reproduction. Faithorn automatic presses click to the modern tempo. A large number of prominent advertisers and advertising agencies swear by Faithorn Progressiveness.



Only ONE contact and ONE set of orders will cover your every requirement

## THE FAITHORN CORPORATION

Ad-Setting ▾ Printing ▾ Engraving  
504 Sherman Street  
CHICAGO

**RADIO TO PARTICIPATE IN WORLD'S FAIR**

"Nick" Carter, president, Carter Radio company, and vice-president, Utah Radio Products, has just been appointed chairman of the Radio Industries committee of the Chicago World's Fair.

Col. J. Franklin Bell, chief, Applied Science and Industry division of the Fair, made the selection of the veteran radio manufacturer, whom all radio men know as one of the four founders of the Radio Manufacturers' association.

The industry, according to Mr. Carter, is to have a place of major importance among the "live" exhibits at the exposition, which is expected to draw 350,000 visitors daily during its run of five months. June to November, 1933.

M. F. Flanagan, executive secretary, Radio Manufacturers' association, is Mr. Carter's first appointment. He will serve as secretary of the Radio Industries committee. A strong and vigorous membership of leading radio manufacturers will complete the personnel of the committee and guide its destinies.

During the forthcoming RMA convention and trade show, in Chicago, Mr. Carter and Col. Bell plan to entertain RMA directors and interested members of the association, at luncheon, and to provide an opportunity for them to inspect the buildings already erected along the lake shore for exhibition purposes.

\* \*

**DISTRIBUTING SAMPLE RESISTOR KITS**

The Stackpole Carbon Company of St. Marys, Pa., manufactureres of the Stackpole noiseless carbon resistors, are now distributing to the various engineering organizations a most comprehensive sample kit containing the full range of different values and sizes of Stackpole carbon resistors.

The kit contains hundreds of all the essential values in carbon units and they are all conveniently located in individual sections of a handsome three drawer, polished walnut case.

The Stackpole Carbon Company announce that they would be glad to supply one of these valuable resistor kits to any engineering group upon receipt of a request from the engineer in charge.

\* \*

**COOTS MADE HFL SALES MANAGER**

E. Don Coots now heads the sales department of High Frequency Laboratories, Chicago, long known in the field of fine custom-built superheterodynes. Mr. Coots brings to the organization a wealth of experience. Lately western sales manager for the Grigsby-Grunow Company, being responsible for sales from Cleveland to the Pacific Coast and Canada, he came into radio, as so many have, from the phonograph business in which he was sales manager for the Sonora Phonograph Company and field sales manager for the phonograph division of Thomas A. Edison, Inc. Now directing radio sales, Mr. Coots will be found either at the H. F. L. factory, 3900 North Claremont Avenue, Chicago, or at its display room 14106 of Field's big Merchandise Mart.

Continuing with its nationally advertised mastertone superheterodyne, using the Hopkins band-rejector system, High Frequency Laboratories now produces a full line of mantel receivers, in both five and eight tube models. In addition, under Mr. Coots, who just organized the private brand department of another Chicago radio manufacturer, High Frequency Laboratories will specialize in private label receivers and chassis employing the superheterodyne circuit. Pentode and variable-mu tubes are used. And in prospect is a four tube set.

\* \*

Leaving his association with Bert Knight, Russ Hines starts out in business for himself . . . coast representative for Cornell resistors, Premier coils and Reliance variable condensers . . . 924 Beaux Arts building, Los Angeles.

\* \*

"Vari-Tuner Distributors," 814 Stock Exchange Building, Vancouver, B. C., have announced that they are open for representation in the northwest territory.

# HIGH GAIN TRANSISTORS

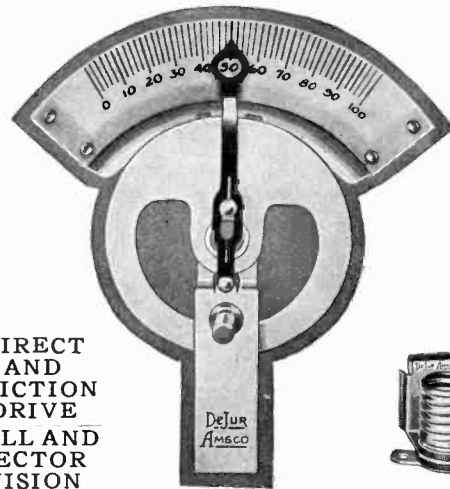


A shielded intermediate-frequency transformer with "Varitor" condenser tuning in primary and secondary circuits. One hundred and fifty to two hundred kc, with standard production windings or step-up ratios. Mechanically suited to upright or inverted mounting.

Manufactured in three standard values of gain and selectivity, meeting the requirements of any intermediate frequency amplifier.

**COMPLETE LINE OF MANUFACTURERS'**

# DIALS



**DIRECT AND FRICTION DRIVE FULL AND SECTOR VISION**

The DeJur-Amsco complete line of dials meets the manufacturer's predominate requirements of excellence, economy and standardization.

This new line of DeJur-Amsco Full Vision Dials combines the economical requirements of midget receiver design with the luxury and refinement of console types. In kc and metric scales.

*Write for literature describing the complete line of DeJur-Amsco radio manufacturers' parts.*

*See Our Display at Chicago Trade Show*

# DeJUR-AMSCO CORP.

Varitors—Variable Condensers—Power Rheostats—Dials  
Pilot Lights—Escutcheons  
95 Morton Street New York City

**A TRIAL WILL CONVINCe YOU**  
 30 years experience insures dependability

*We manufacture*

**PERMANENT MAGNETS  
 METAL STAMPINGS  
 TOOLS AND DIES  
 LAMINATIONS**

**THOMAS & SKINNER  
 STEEL PRODUCTS CO.**

23rd and Alvord Sts., Indianapolis, Ind.

**Resistance Engineers!**  
 Write for your copy of  
**Bulletin D11.2**  
 today.

**ACHESON OILDAG COMPANY**  
 PORT HURON, MICH.

**HOTEL  
 HARRISON**

**CHICAGO'S NEWEST  
 DOWNTOWN HOTEL**

RUNNING ICE WATER  
 IN EVERY ROOM  
 \$2.50 AND \$3.00  
 WITH BATH  
 NO HIGHER

**RADIO  
 IN EVERY  
 ROOM**

**NO  
 PARKING  
 WORRIES**  
 DIRECT ENTRANCE  
 FROM HOTEL TO  
 HARRISON PARKING  
 GARAGE

HARRISON STREET JUST OFF  
 MICHIGAN BOULEVARD

**CHICAGO**

**KAUER TO LEAD CECO DELEGATION**

Ernest Kauer, president of the CeCo Manufacturing Company, will head the large delegation of CeCo personnel which will be in attendance at the RMA trade show in Chicago in June.

Quite a number of department heads from Providence will attend, as well as supervising sales heads from many sections of the country. Among those who are coming in addition to Mr. Kauer, will be the following:

From Providence: S. J. Helsper, director of sales; Joseph C. Buckley, advertising manager; O. H. Brewster, chief engineer; Max Mautner, treasurer; and Ray Walker, assistant sales manager.

From New York: Fred E. Kauer, head of the New York branch; John Klein; Ed Fuller, of the J. Walter Thompson Co., advertising agents for the CeCo Manufacturing Company; and Fred Baer, of Fred Baer & Associates, publicity representatives for CeCo.

Also the following branch manager and representatives: from Philadelphia, Irving Witz; from Pittsburgh, Emmett Tydings; from Cincinnati, Eric Machete; from Chicago, Larry Hardy and Ed Zuley; from Minneapolis, H. G. Henneman.

Administrative headquarters for CeCo will be maintained in Suite 2200, Hotel Stevens.

\* \*

**TOOTH-PICK TYPE TRANSMITTING CONDENSER**

The popularity enjoyed by the metal-clamped tooth-pick mica condenser has met in certain super-heterodyne and tuner r.f. receiving circuits, has resulted in the development of a larger version for use in transmitting and other high-voltage circuits. The Dubilier Condenser Corporation of New York City now announces the Type 704 or large sized tooth-pick condenser for radio telegraph and telephone transmitters, carrier current work, Tesla coil high-frequency circuits, and electro-therapeutic applications.

The Dubilier Type 804 condenser is of the mica dielectric type, rigidly permanently held by a brass clamp casing. The design assures a predetermined pressure or definite capacity, constantly maintained, even over an extremely long temperature range. The unit will handle 2 amperes at 140 meters, and has an effective A.C. voltage rating of 2000. It is exceedingly compact and neat, the protruding tinned plate tabs permitting of soldered connections. The unit measures 2 1/2 inches long by 17/32 inches wide by 21/64 inches thick. The design permits of vastly improved characteristics over the usual moulded condenser of equivalent voltage rating. Most important of all, the production cost is low, being reflected in attractive low prices for quantity lots.

\* \*

**GENERAL ELECTRIC ANNOUNCES JUNIOR CONSOLE**

Believing there is a very definite market for a set of standard cabinet design which fills the gap between the large standard and the new Junior models, the General Electric Company has introduced the Junior Console at a price which should prove most popular. This price is announced as \$89.50, complete with tubes.

The Junior Console, following the cabinet design of the large standard models, is particularly adaptable to small apartments or cramped quarters. At this price it should be welcome to the limited pocketbook and to the young couples who at this time of year are planning the establishment of new homes.

\* \*

Hatfield Wire and Cable Co. is the new name for the former Hatfield Rubber Works, Inc. With expanded plant facilities this organization is now manufacturing a complete array of radio and electrical wire and cable with warehouse stocks in 28 cities.



**IRREGULARITY OF EMPLOYMENT SHOWN**

An amazing growth accompanied by unfortunate irregularity of employment is the history of the radio industry shown in a recently published bulletin of the Women's Bureau of the U. S. Department of Labor. Based on records obtained from 26 firms making radio sets, from 15 making radio tubes, and from 10 making various parts and accessories, the report covers, according to the Radio Manufacturers' Association, plants producing 80 to 90 per cent of the sets and at least 90 per cent of the tubes made in 1929. The data on parts and accessories, while less inclusive, are fairly representative.

Since the broadcasting of the 1920 election returns, radio manufacture has grown by leaps and bounds, but there has been little or no smoothing out of the fluctuations of employment. For 10 plants making tubes the bulletin shows that the average number of employees more than trebled, between 1926 and 1929, and for 8 plants making receiving sets the average more than doubled. But with this rapid growth, irregular employment has become an increasingly serious problem. During 1929, more than 42,000 men and women employed at the peak of the season in 38 radio factories were again off the pay rolls at the low ebb of employment in December.

The amazing increases and decreases in employment are shown in the bulletin by the use of charts. In the plants making receiving sets, men and women seem equally affected by the swings of employment, August, September, and October are the peak seasons but with the late autumn and winter comes the abrupt decline. In the tube plants a striking difference in the employment of men and women is shown. Apparently five times as many women as men were hired and fired from spring until the end of the year.

Such swings of employment present a challenge of first-rate importance to business management, if the radio industry is to achieve regulation and stabilization.

\* \*

J. Graboski, formerly with the Westinghouse Lamp Company, has been made Sales Engineer by Goat Radio Tube Parts, Inc., Brooklyn.

\* \*

The Easton Coil Manufacturing Company, formerly of Keplers, Pa., has moved its factory and executive offices to Long Island City. Already part of the equipment has been set up and it is expected that all the manufacturing operations of Easton will be located at 22-17 41st Avenue, Long Island City, within the month.

\* \*

William E. Parsons, well known throughout the Iowa radio trade, and formerly sales manager of the Sioux City branch of the A. A. Schneiderhahn Company, Atwater Kent radio distributor, has been appointed sales manager of the Schneiderhahn organization in Des Moines, it was announced by A. A. Schneiderhahn recently.

\* \*

John R. Bizzelle, formerly assistant sales manager of Pacent Electric Company and Pacent Reproducer Corporation has been made general sales manager of both those organizations, according to an announcement received from Louis Gerard Pacent, president of both companies, who authorized the appointment. Mr. Bizzelle at present is abroad on a business trip through Europe.

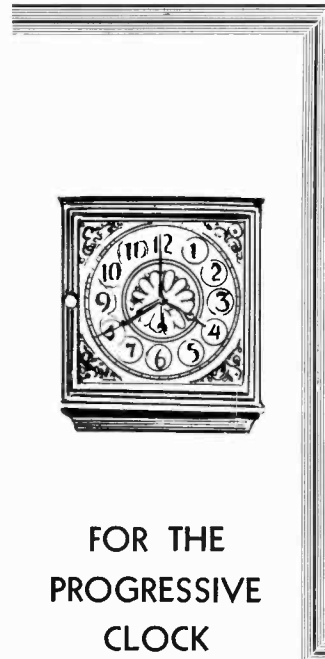
\* \*

Crowe Name & Plate Manufacturing Co. have issued two new booklets describing and illustrating the many types and models of dials and escutcheons manufactured by that organization. Many of the designs depart radically from those previously used. Copies of both booklets, 41 and 41A, are available to readers upon writing *Radio Industries*.

**GRANDFATHER CLOCK CHASSIS**

**AND DIALS**

FOR RADIO SETS » » »



FOR THE  
PROGRESSIVE  
CLOCK  
AND  
RADIO  
MANUFACTURER

**W**E can supply complete dials and chassis, as well as motors for midget sets, to the progressive manufacturers of radios and clocks. To the radio manufacturer who does not wish the clock dial, we offer the chassis alone—an electric clock motor unconditionally guaranteed for 25 years.

Write at once for samples and prices. If you are in doubt—let us know your problems, and we shall be glad to have our engineers work them out with you.

**ELECTRIC CLOCK CORP.**  
OF AMERICA  
DIVISION OF FAY MFG. CO.  
500 SOUTH THROOP ST.  
CHICAGO, ILL.

**Acme Wire Products**

**Coils, Magnet Wire Wound  
Magnet Wire — All Insulations  
Aerial Wire — Stranded and Solid  
Varnished Insulations  
Parvolt Filter & By-Pass Condensers**

All products made to Recognized Commercial Standards including those of:

*National Electric Mfrs. Assn.  
Radio Manufacturers Assn.  
American Society for Testing Materials*

For more than 25 years manufacturers and Suppliers to the largest and most discriminating users.

**THE ACME WIRE CO.**

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