

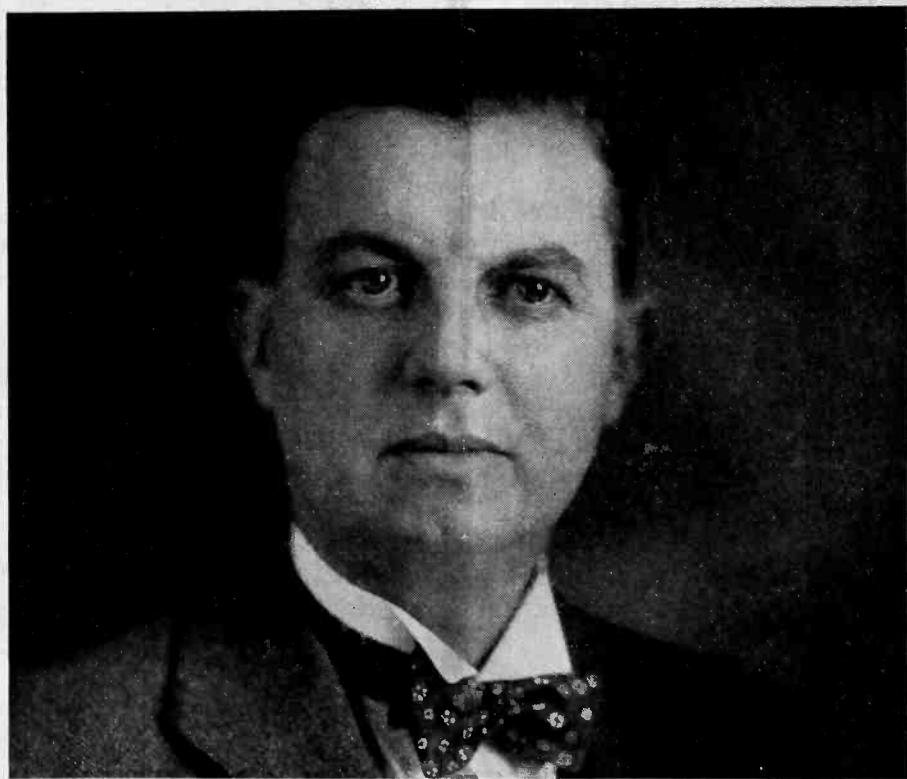
NATIONAL RADIO NEWS



VOL. 4—NO. 10

WASHINGTON, D. C.

MAY, 1932



J. A. DOWIE

Chief Instructor

JAMES ALBERT DOWIE

THE "Chief" hails from across the water. Merrie England is the land of his birth, and he obtained his education on both sides of the Atlantic.

At High School and Polytechnic Institute, London, England, he made a special study of Chemistry and Electricity.

After coming to America he graduated from the Chicago Electrical School and became interested in Radio as early as 1910. To further his training Mr. Dowie attended the Marconi School in New York City, following later with special Advanced Radio Training at Penn State College, Engineering Division.

Mr. Dowie has contributed largely to Radio through his journalistic efforts. He is the Author of "The Science of Radio Merchandising" and "The Radio Quiz Book," and Associate Editor of "How to Operate a Radiophone."

He has acted as Radio Technical Advisor for several prominent newspapers and has contributed articles to Electrical Record, Journal of Electrical Workers and Operators, Radio World, Radio Craft, Radio News of Canada, Popular Mechanics, Broadcast Weekly Diagnotrician, Radio News, and Radio Service.

"Chief" Dowie is a member of the Institute of Radio Engineers, the Radio Club of America, and the Society of American Military Engineers.

Since 1916, J. A. Dowie has been Chief Instructor at the National Radio Institute. He has trained thousands of men in Radio and looks upon his successful graduates as his life's best work.

STARTING AND OPERATING A RADIO BUSINESS

Part III

By P. J. MURRAY, Manager
Graduate Service Department

It is to be assumed that in preparing for your business you have some plans in mind for selling your merchandise or service. While the success of any business will depend upon the ingenuity of the proprietor in devising new sales methods, there are certain universal plans which can form the foundation of the sales policy.

It would be well for a person considering merchandising some particular product to obtain experience in the sales department of an organization handling a similar line of merchandise. As Radio salesmen usually work on straight commission, it is not difficult to connect as a salesman in a Radio dealer's organization. Such connections should be held for a period of three months or longer. Then when you are ready to step out into the field for yourself you will at least be on a par with the selling organizations of your competitors insofar as your knowledge of their sales organization is concerned. You will have learned their method of approach, closure, and policies and also many of the pitfalls to be avoided.

When you have obtained this experience and refer to your memorandum of the many things you have learned, you will find that dealers get the most of their business by door-to-door canvass, callers at the store, newspaper advertising, recommendations by satisfied customers, and direct mail letters to prospects who have been contacted in various ways.

At one time or another you will probably try out all of these plans. Some will not warrant further time or efforts being spent on them; others will give sufficient returns so that you will specialize on them. You will discard that which is of least value and promote that which pays. In working these various plans you will devise special sales ideas of your own—and therein may lie the success of your Radio business.

It is well to keep in mind always that your satisfied customer is your best advertisement.

It may be difficult at times to please an unusually contrary customer—but go any reasonable distance to suit him and consider it as advertising and good will.

Advertising, good will, and sales go hand in hand. I once heard of a man who obtained publicity for his business which resulted in a number of sales. He sold a Radio to a church, which was giving a fair, below actual cost. The set was kept on exhibition in the church hall for several months, prior to being raffled off at the fair, and all of that time it bore the card and address of the dealer, in full view of all those who inspected the set. The congregation was appreciative of his assistance. Good will and sales were the result. Later, this same man obtained a lot of service business, by donating, free of charge, to another church, five certificates which entitled the owner to free Radio service for a year. These certificates were later raffled off for the benefit of the church. The cost to the dealer was slight, but think of the number of people who heard about him and his Radio service while the tickets were being sold. Cooperation with clubs and lodges can also result in a lot of good business for the wide-awake dealer.

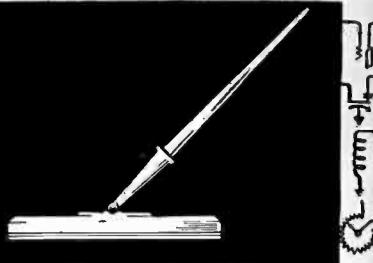
All too many Radio dealers are content to place a receiving set in the window and wait for some one to come in and buy it. There is entirely too much competition for this type of dealer. The set in his window will soon be replaced by a FOR RENT sign.

Spend capital with care. Spend only what is absolutely necessary, right at the start, and apportion your capital expenditures over a period of months to give your business a chance to gradually build up and get on a paying basis. Don't expect the business to support you right from the start.

As soon as you get started you will be beset by salesmen who will attempt to sell you products and services of all kinds. It is not wise to refuse to talk to them and give their propo-

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my Own page



Sitting Around — Waiting

TAKE a stroll some fine morning this spring (not too early in the morning). Seek out a bench in some warm, sunny spot. Don't be surprised to find it already occupied.



Who is the occupant?

A man—reading, whittling, probably just gazing—or possibly verbally settling the country's economic situation with an equally ambitious bench-sitter. If there is a thought in his mind it will probably be **hard times**. Just sitting around waiting for something to happen—doing nothing about it but talking.

Or, you can go into numerous offices and find the heads of large firms, men of affairs, also marking time. Talk with one. He'll tell you business is rotten—earnings are decreased—people are not buying. Investigate further—you'll find he has cut down his advertising—he has cut down his production—retarding the wheels of progress himself, but too selfish to see the error of his own ways.

The business man who has allowed himself to become depressed to a point where he quits trying, though claiming to be a real executive, is no better than the idler who sits in the sun—wishing and waiting for something, he knows not what.

This fellow who blocks the sunshine of progress from his own organization is a public economic enemy. He hurts himself by cutting his own earnings, but what is vastly more important he is a drag—a drawback to the thousands who may be directly or indirectly dependent upon his organization for a livelihood.

All of us, regardless of position, have the opportunity to assist in remedying our nation's present economic condition. We must increase our value to the world by productive and not destructive actions. We must work—we must produce—the more productive our work the greater our earnings. And these earnings are a necessity so that we may spend and place money in circulation. Nothing is to be gained by false economies, hoarding and the like.

Let's blast out these ideas of saving and waiting. We've had enough time to do our thinking—now let's act. There are a lot of men unemployed, I'll admit, but there has always been some unemployment and some of those unemployed now never wanted to work—this gives them a good excuse. Lots of men can find jobs of some sort to tide them over—lots of executives can find ways and means to start their businesses on the upgrade, but only by farsightedness—surely not by sitting around—waiting.

Moves are on in various communities to "Give a Man a Job." Plenty of fellows will be glad to have a few hours work and earn a dollar or so. Let's help wherever we can. There may be ashes to move, the garden to be dug up, refuse removed, jobs from painting the roof to cleaning the cellar. If you don't know where to find the man, call the local post of the American Legion or any local charitable organization. Give a man a job.

President.

RADIO-TRICIAN SERVICE

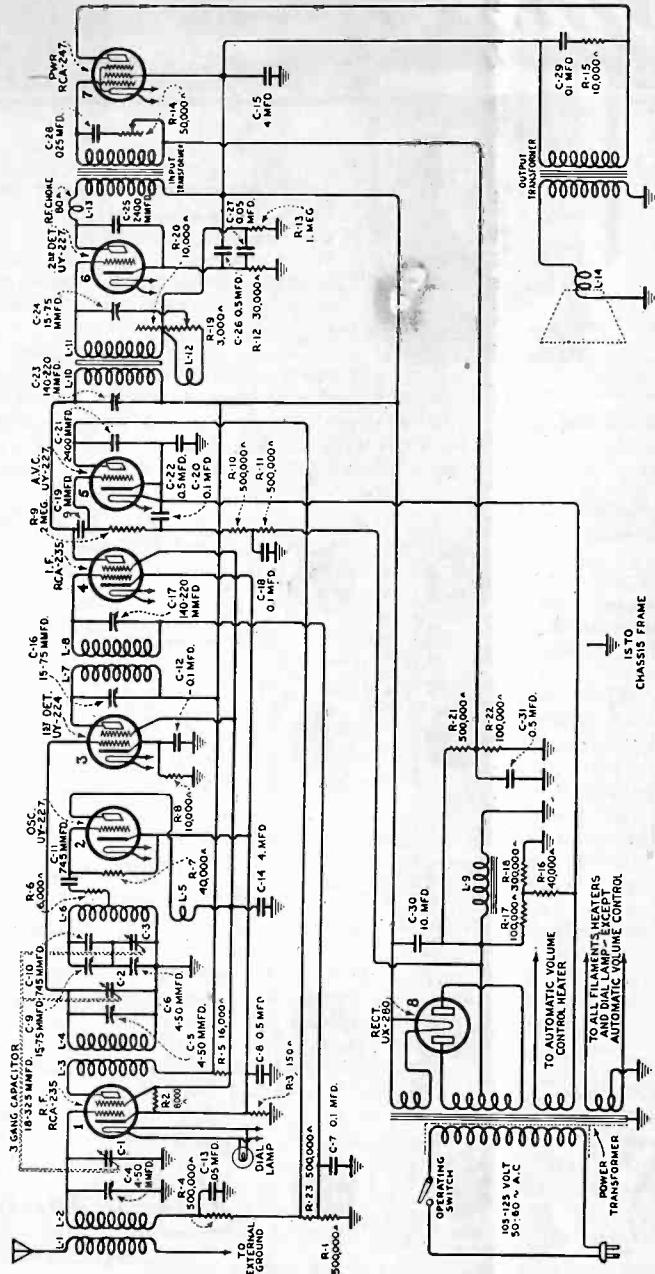
REQ. U. S. PAT. OFF.

PIONEER
TELEGRAPH
AND RADIO SCHOOL

SHEET

COMPILED SOLELY FOR STUDENTS & GRADUATES

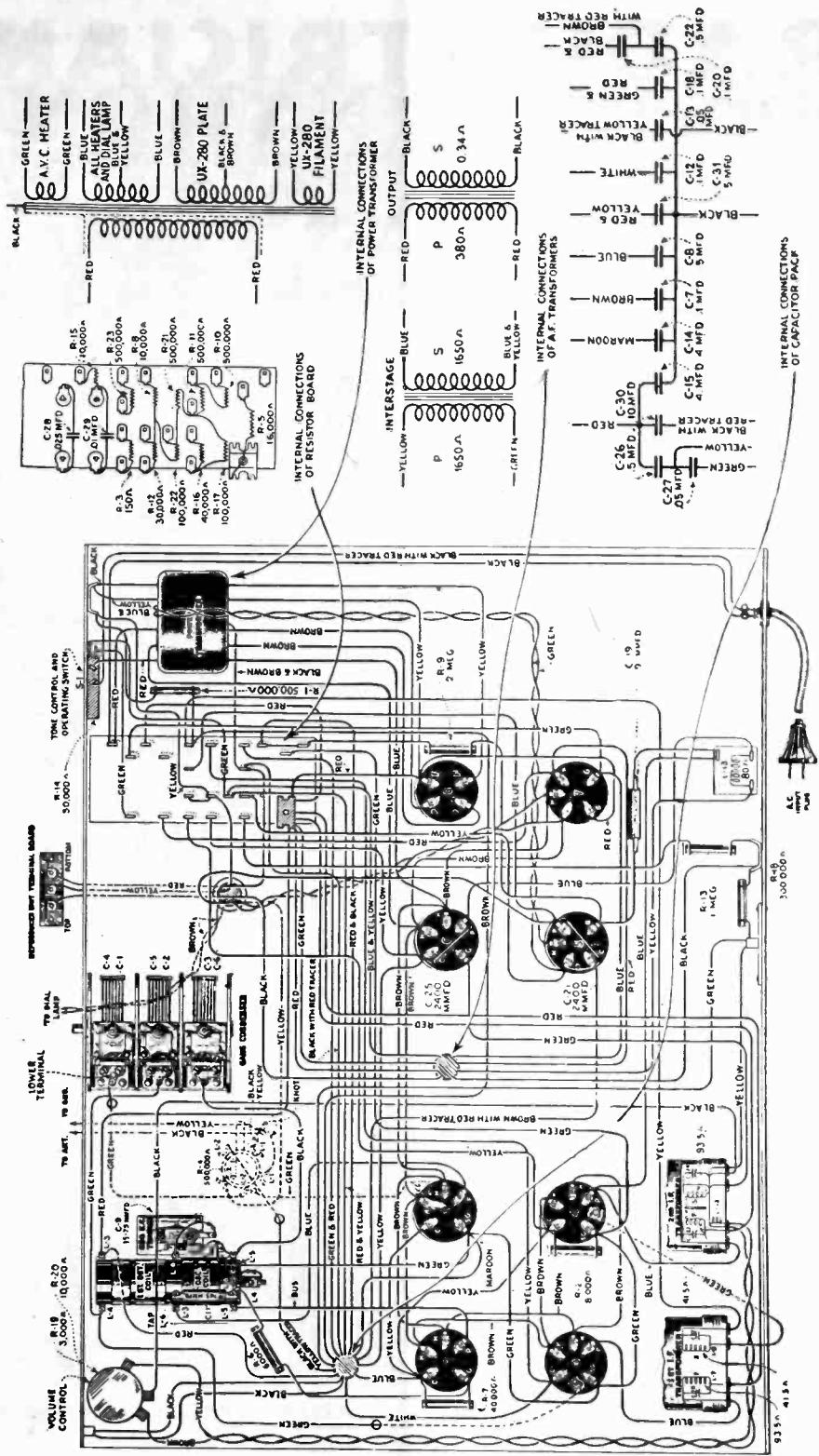
R. C. A. VICTOR MODELS—R-8, R-12, AND R-20



RADIOTRON SOCKET VOLTAGES

120 VOLT LINE

R. C. A. VICTOR MODELS—R-8, R-12, AND R-20





E. R. HAAS

Vice President and
Director

A CHAT
with the
N. R. I.
DIRECTOR

Rapid progress is being made on the work in Radio City in the heart of downtown New York.

Already the steel skeleton of the thirty-one story Radio-Keith-Orpheum office building has been completed. According to reports received from that quarter, plans call for the occupancy of this building by the Radio-Keith-Orpheum interests by October 1, 1932. That organization has a twenty-one year lease with a renewal clause.

Another victory may be credited the army against Radio Interference. Los Angeles—that wide-awake city out on the coast, has made Radio Interference a misdemeanor, punishable by a fine of \$500 or imprisonment up to six months. America is gradually becoming Radio-Reception conscious. More power to you, Los Angeles.

We will never condone crime—it has no just status in the economic or social scheme of things.

But since we must have it—and few will be found who dispute its existence—we can be thankful that it has done something though unwillingly and unconsciously for America.

It has given rise to the gradual perfection of the Police-Radio system. Fifty-three cities in the country now have well organized Police-Radio layouts—and they are operating to the complete satisfaction of all except the criminal.

In addition to municipal police stations there are eight state police stations, and one in process of building.

NATIONAL RADIO NEWS



Vol. 4—No. 10

May, 1932

Published monthly in the interest of the students and Alumni Association of the

NATIONAL RADIO INSTITUTE
Washington, D. C.

J. E. SMITH, President.

E. R. HAAS, Director.

The Official Organ of the N. R. I. Alumni Association

This one was too good to pass up even at the expense of plagiarism.

"Any service man can service any receiver!
All he needs is a
set analyzer or a
set tester or a
diagnometer.
(They are all our friends)
an oscillator
an output meter
pliers (many)
cutters (more)
screw drivers (left and right hand)
dummy tube
other tubes
socket wrenches
.....

ad infinitum

Oh, yes, also a knowledge of Radio
Yea bo—we're laughing too."

Reprinted from "SERVICE," a new magazine, and a good one, by John F. Rider Publications, 1440 Broadway, New York City.

There is no moment like the present. The man who will not execute his resolutions when they are fresh upon him can have no hope from them afterwards: they will be dissipated, lost, and perish in the hurry and scurry of the world, or sunk in the slough of indolence.—Maria Edgeworth.

Knockers will find their rightful place outside the door.

The first Radio broadcast of a complete program of entertainment from a rapidly moving train was achieved Sunday evening, March 27, when the Ever-Ready Radio Gaieties, featuring Belle Baker, Jack Denny, and his orchestra was picked up by short wave from a Baltimore and Ohio express speeding from Washington to New York, and rebroadcast over the coast-to-coast Columbia network.

On previous occasions the Columbia engineers have succeeded in transmitting entertainment programs from ships at sea and from dirigibles hovering over the sky-scrappers of Manhattan, but never before have they been faced with problems of the magnitude of those presented by an attempt to broadcast from a train travelling faster than a mile a minute. The almost perfect reception of the program by listeners throughout the country and the complete success of the undertaking mark a new peak in the achievements of Radio science.

Just 88 years ago, Samuel F. B. Morse made his first successful tests of the telegraph as a means of communication along this same stretch of the first railroad, the Baltimore and Ohio. On May 24, 1844, as a result of the tests conducted by Morse, the first telegraph line was installed for regular use between Baltimore and Washington. Pioneers in that field, the Baltimore and Ohio again took the lead in this country and joined the Columbia Broadcasting System in experiments in Radio as a possible means of communication between various points on the line.

The reception of the program was so perfect and the absence of extraneous noises so

SPECIAL TO NATION

MUSICAL PROGRAM SPEEDED

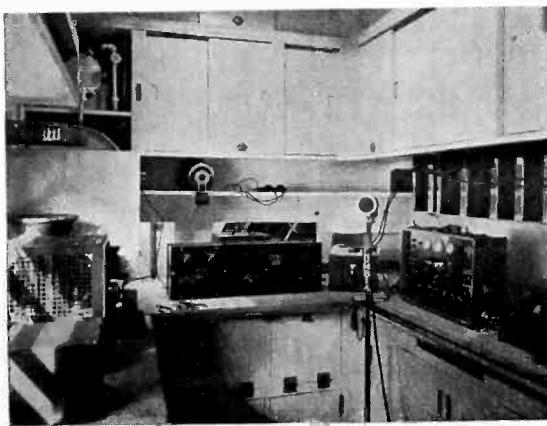
Courtesy the Columbia Broadcast System

complete during preliminary tests that it was necessary to place a microphone under the studio car next to the wheels in order to get enough train noise to provide for the actual broadcast. The success of the experiment demonstrates beyond question the possibility of Radio communication for railroad use. It points to the time when Radio connections may enable one to converse with passengers aboard a speeding train, airplane, or steamship, just as telephone wires now connect adjacent houses. It indicates that in the not too distant future, Radio may supplement the telephone as a means of business communication.

The address delivered by Clarence C. Dill, United States Senator from the State of Washington, delivered aboard the speeding train during the broadcast, expresses clearly the scientific significance of the experiment:

"History tells us that when an officer of the French army would report some success on the battlefield to Napoleon, Napoleon would turn to him and say, 'What do you intend to do tomorrow?' Just so in participating in this program broadcast from a moving train by the Columbia Broadcasting System, I feel like saying, 'What will you do in the tomorrow of Radio development?'

"I congratulate the Columbia System on this achievement and I congratulate the American people on having a Radio client who inspires



Short-wave transmitter in the narrow confines of kitchen on B. & O. dining car.



ALL RADIO NEWS**BROADCAST from TRAIN***at the Baltimore and Ohio Railroad.*

such efforts and expenditures as to bring about this achievement.



"There is indeed a Hand of Mercy that weaves that opaque and mystic veil which shuts out the future from mortal knowledge. If we had known a few years ago what present achievements would be, how restless we should have been during the period of development! But we did not know. So we rejoiced at every advance. We hailed every new accomplishment with a shout of victory.

"It seems fitting therefore, that on this Easter night, in these closing hours of the day that proclaims the Resurrection, we should give thanks for all that

science and invention have wrought, and then give thanks again, too, for the limitless field of possible development in Radio communication in the future.

"These limitless possibilities challenge our best efforts. They are the open doors of opportunity to the children of America. In them we find the promise of a closer human association, a more real human brotherhood the world 'round."

The mere reading of this accomplishment may tend to under-emphasize the vast problems of engineering this project. The prime requisite was, of course, to construct a mobile studio, capable of accommodating a twelve-piece orchestra and other talent.

After a survey of the B. & O. road, the

stretch between Washington and Baltimore was selected. It was then necessary to find the railroad car best suited. A regular Colonial type dining car of the B. & O., the latest model in diners, air cooled, equipped with ball bearings, rubber shock absorbers, and permanently sealed windows, was decided upon. It was stripped and equipped with drapes to reduce reverberation.

The control, amplifying, and short wave transmitting equipment were placed in the kitchen compartment of the car. Power supply was obtained from storage batteries having a capacity of 1000 amperes.

Two separate antennae were mounted on the roof of the car—one for transmitting—the other for reception of instructions from the master control station. The transmitter, station W2XDY, operated on a frequency of 1542 kilocycles and operated on 50 watts power. A special antenna tuning unit equipped with a monitoring rectifier and a dummy antenna was included as a part of the transmitter.

An unusual feature of the broadcast was the 30 mile copper telegraph wire which could serve as an aerial to receive the signals sent from the train in addition to the small antennae installed at each of the pick-up points.

Two pick-up points were used, one at Beltsville, Md., ten miles out of Washington—the other at Laurel, twenty miles from Baltimore. It was from the master control station, at Laurel, that the program was transmitted over the Columbia nation-wide network and to foreign countries.



Mr. E. K. Cohan, Director of Technical Operations and Chief Engineer A. B. Chamberlain of the Columbia System in the master control room at Laurel, Md.

WORKING OUT A SERVICE PROBLEM

By J. B. STRAUGHN

N. R. I. Technical Staff

I was recently called upon to service a tuned R.F. receiver which used grid suppressors to prevent oscillation. The set was troubled with a terrific hum. The removal of the detector tube cleared this up and on inserting a new detector the hum ceased. However, the volume did not seem to be normal, so I tested the tubes. The R.F. and first audio tubes were all bad and were replaced by new tested tubes.

While one of the old R.F. tubes was in the checker I noticed that the meter reading went up and down. This condition was accentuated by tapping the tube, indicating an internal short circuit which a continuity test tube showed to be between the grid and plate.

As soon as a station was tuned in, using the new tubes, the hum reappeared. This happened only when a station was being received and on any station. As before, removing the detector stopped the hum. Replacing the detector tube the last R.F. tube was removed and the hum continued; the tube was replaced. On taking out the next R.F. tube the hum ceased. This was the socket in which the tube with the grid to plate short had been used. The new tube was replaced in the socket and I put my fingers across the grid suppressor. The hum ceased and a continuity test showed the resistor to be open. A thousand ohm resistor was connected in the circuit and the set operated perfectly.

In summarizing this job I found that the first hum was due entirely to the bad detector tube (a '27). No hum was caused by the bad grid suppressor because the tube in that stage had no amplifying power at all. When a new tube was inserted in that stage a hum was produced by the open grid circuit. This hum could only be heard when tuned in on a station because the tube was in the R.F. end of the set and could not amplify audio signals themselves. When a station was tuned in the hum was modulated (placed on) the carrier wave of that station and was amplified with it at R.F., detected, amplified in the A.F. and reproduced in the loudspeaker along with the signal from the station. The fact that the plate of the tube was shorted to the grid was positions thought, but buy carefully. Mostly

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STARTING AND OPERATING A RADIO BUSINESS

(Continued from Page 3)

they will have something you do not need in your business, at least not right at the beginning. Their literature can be filed for future reference. You will probably get some mighty good selling slants for yourself by listening to what these salesmen have to say.

And then there will always be the temptation to buy large quantities of merchandise to take advantage of the better prices offered for big orders. Guard against this temptation. Your capital, when your business is young, is worth more to you as a reserve than the discount you could gain for increasing your purchase order. Besides if your place of business is small, space will be too valuable to permit large stocks being carried.

Another point against buying in large quantities is that styles change. You cannot afford to be caught with a lot of obsolete merchandise on your hands. If this happens you will find it necessary to cut prices to move the stock. This will more than offset the saving you made by ordering in large quantities.

From the very start, you should confide your financial problems to your banker; he can give you much good, sound advice and he is a fine man to have on your side. When you find, as you probably will, the need of additional capital to help you put across some deal or to enlarge your business, the best advice I can give is see your banker. He should be able either to help you or suggest where you can get assistance.

As pointed out in an earlier installment of this article, you will find it necessary to do business on a credit basis. This brings us to a point where so many dealers fall down on the job. The point is collections.

If you arrange to sell your accounts to a finance company they will do most of the collecting up to a certain point. However, it is the job of the dealer to make these collections as easy as possible. He can do this by rendering good service and keeping the customer in a good frame of mind. And he must do this job thoroughly, because in that customer's account he (the dealer) has a contingent liability until the account is settled in full. If the customer should fail to pay the account, the dealer will be called upon to reimburse the finance

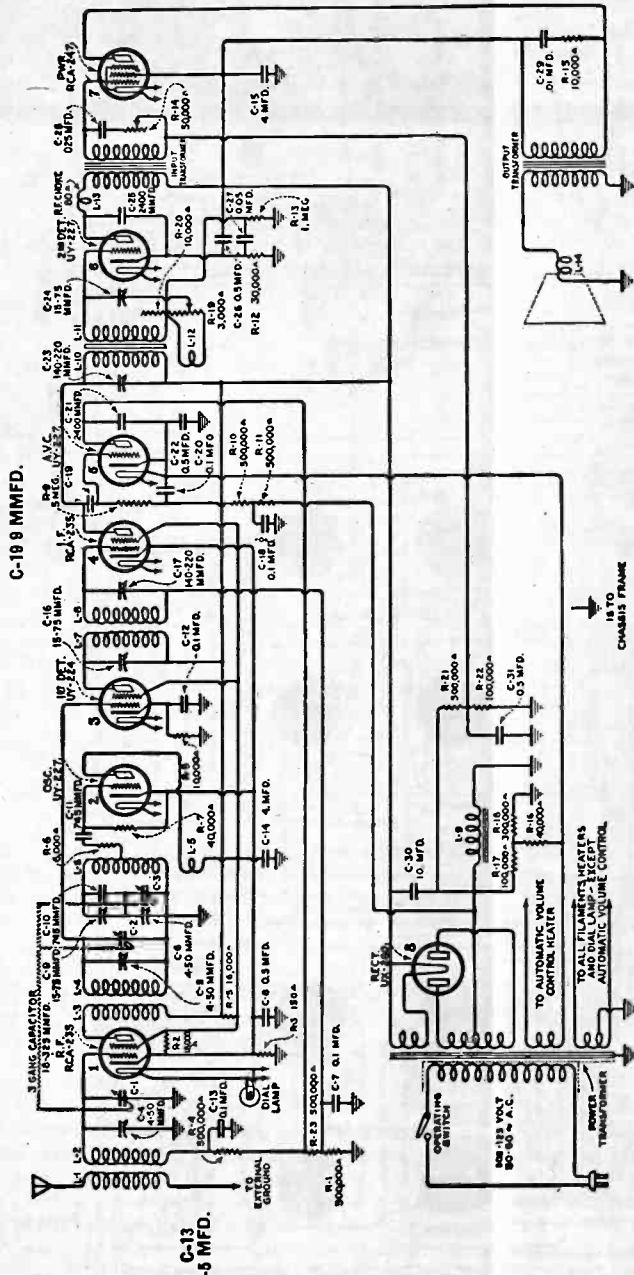
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RADIO-TRICIAN SERVICE

REG. U. S. PAT. OFF.

STUDENTS & GRADUATES

R. C. A. VICTOR CONSOLE, R-10



RADIOTRON SOCKET VOLTAGES

110 VOLT A. C. LINE

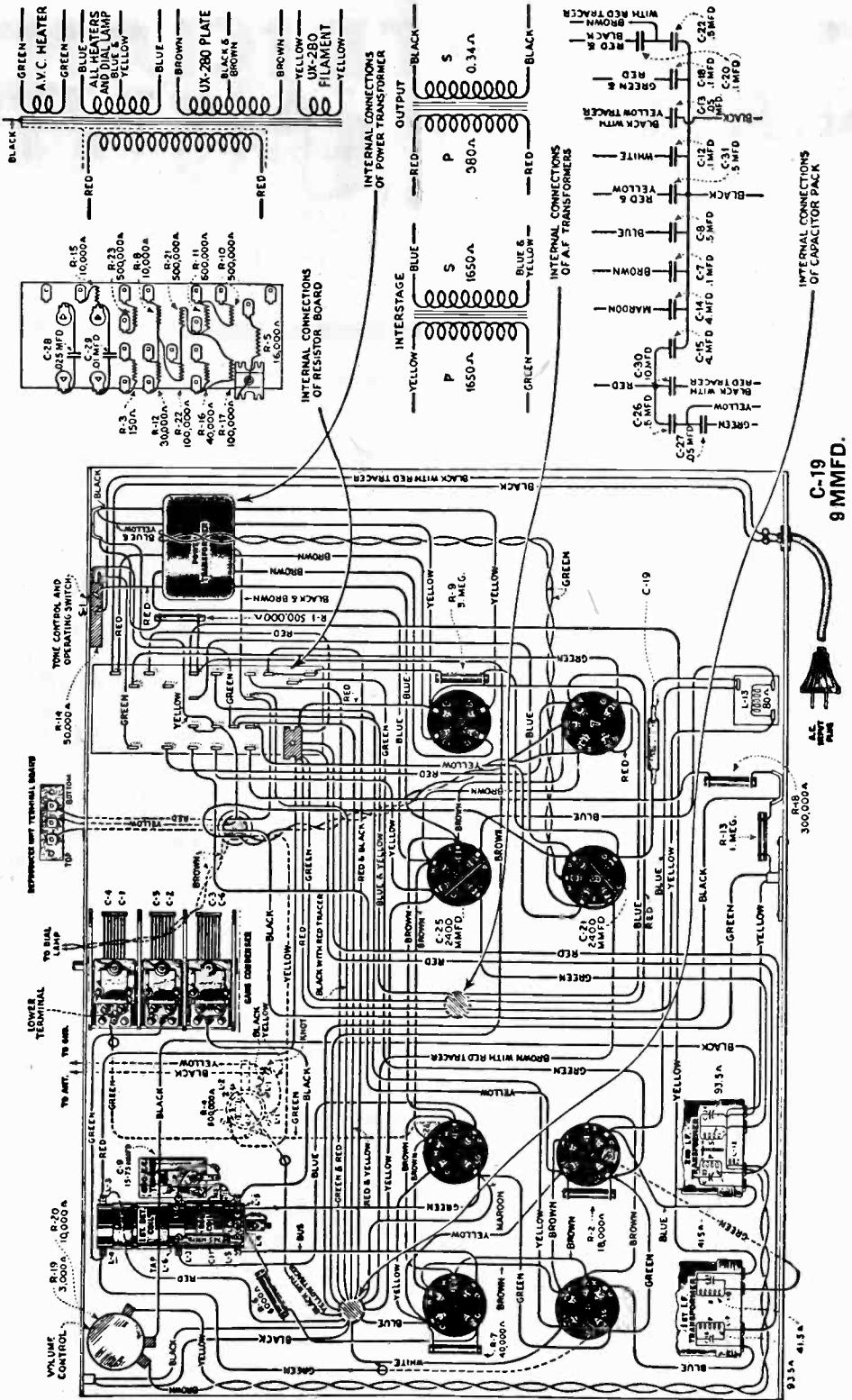
(Voltage Control Setting Direct Volts (After Voltmeter))

Radiotron No.	Cathode to Heater Volts, D. C.	Cathode or Filament to Control Grid Volts, D. C.	Cathode or Filament to Plate Volts, D. C.	Plate Current M. A.	Screen Current, M. A.	Heater or Filament Volts, A. C.
1	2	9.1	75	210	5.0	0.5
2	8	0	—	60	5.0	—
3	7	7.0	70	205	0.5	0.1
4	2	-9.1	75	210	5.0	0.5
5	0	0	—	30	0	—
6	20	-9.0	—	185	0.5	—
7	—	10	210	25	—	2.2

*Not true reading due to resistance in circuit.

Readers who file Service Data in separate binders remove page carefully: trim on dotted line for same size as Data published heretofore.

R. C. A. VICTOR CONSOLE, R-10



NRN ALUMNI News

The Radio-Trician and the "Talkies"

By ALPHY L. BLAIS
Radio Engineer

(Canadian Vice President,
N. R. I. Alumni Association)



AFTER reading the very interesting information on the subject in the February issue of National Radio News, I wish to offer a few comments and pointers on the "Talkies" which may come in handy for the Radio-Trician called in on the job of repairing a Talkie Outfit.

Leave your business card with the managers of your local theaters. Have a talk with them if you possibly can. Congratulate them on their shows. They're human and it will please them.

Offer to test the tubes in the equipment (free of charge). That will give you a chance to glimpse at the projection outfit. By the time you are through you will have gathered a fair idea of the equipment used. There isn't much more to it than one or two power amplifiers besides the projector proper with a sound-head attached. (This is for sound-on-film.)

If you can't approach the manager, try the projection men. You may get more data from them. They're proud to show you the outfit, how it works.

If the theater is a small one, you will find that two projectors are in use with one amplifier only, minus much of the equipment used in larger theaters. If anything goes wrong there and you are called you may be sure it will be a rush call. The show is held up until the trouble has been cured.

When called, go at once, taking your analyzer, a few spare tubes—224—227—210 or 250—281, a flashlight and a few newspapers to spread on the oily floor in case you have to squat down on your knees to work.

You might find a raving manager in the projection room and nervous projection-men. Be calm. And ask questions. Ask, in detail what has happened, what they noticed, exactly how the trouble was first detected and what happened at the moment the equipment ceased operating. What did they do on the machine from the moment it stopped working. This is extremely important to know. They may have added more trouble by their tampering—this is meant for operators who are not familiar with the technical part of a "talkie machine."

According to what has been told you, you may know whether it is only a question of one or several dead tubes. Some theaters use "bootleg" tubes for economy—75 per cent of troubles met with here were due to defective tubes in the amplifier. The UX-281's are the first to go. Take out all tubes and test them. Exchange poor tubes for good ones and then use the analyzer for determining any trouble which may exist in the amplifier.

If everything is O. K. try the machine for a few moments. If when the new tubes have been inserted you notice that the volume is still low in spite of maximum setting of volume control, look at the following: (all data given in National Radio News—February, 1932; page 7-10-14.)

Possible sources of trouble:

- Voltage on photocell too high—reduce until ionization ceases in tube (blue glow disappears).
- Exciter lamp dirty or badly placed in socket.
- Accumulation of oil from machine on photocell socket prongs. Clean freely with wood alcohol.

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STARTING AND OPERATING A RADIO BUSINESS

(Continued from Page 10)

company for their loss. This will also mean the trouble and expense of repossessing the merchandise, carrying out-of-date material in stock, and selling at a loss.

There will also be the problem of collecting service accounts. Try to collect for service at the time the job is done. However, this is not always possible. Bill the customer as soon as you can after the job is finished and if payment is not made in a reasonable length of time, follow it up with a very gentle reminder. Do not get hard boiled at this point. Your customer may have overlooked the payment—or he may not have had the ready cash available. Give him a chance. You can be firm and still courteous.

After several reminders have been sent with no results, make a personal call to collect the bill. That money belongs to you, provided you have done a good job, and you are entitled to pay for your work. But you still want the customer's good will. It is only after you have made repeated attempts, with no success, to collect the bill that you can become very stern in your demands for the money. By that time you will have satisfied yourself that you really do not want the good will of such a person. Be careful, however, of what you say or write, so no action could be brought against you.

It would be impossible to go into the matter of the contents of sales and collection letters, but it is a good idea for every person going in business to make a study of them. Many good books on these subjects are available at most every public library.

In business we must work and we must think. All the work we may do may be lost if we fail to devote the necessary time properly thinking out ways and means. Plan your business carefully, operate with the customer's viewpoint in mind. Spend wisely. Give personal attention to your outstanding accounts and do not let them become too old; and above all believe in your product or service, and believe in yourself and in your ability to succeed.

Here's one to tell the children about. It is claimed by good authority that the last shot in the Civil War was fired by Col. David N. Oseyor. And Col. Oseyor is an N. R. I. student.

Trade Notices

Trade Notices in this column are not accepted as advertising and National Radio News assumes no responsibility. Please handle any correspondence with the firms direct. In writing them please mention National Radio News.—Editor.

D. R. BITTAN SALES CO.

The D. R. Bittan Sales Co., 27 Park Place, New York City, offers a new line of Midget and Console Radio sets at a price range from \$18.50 to \$29.50 each. They will supply catalog upon request.

OZARKA

J. Matheson Bell, President of Ozarka, Inc., 1257 Fullerton Street, Chicago, Ill., announces a new sixteen-tube Radio. Mr. Bell will send information to those requesting it.

AUTOCRAT

Graduate R. B. Gubbins, Jr., is President of the Autocrat Radio Co., manufacturers of Midget and auto Radios. Details on request. Write him at 3855 North Hamilton Avenue, Chicago, Ill.

MILES REPRODUCERS

Summer is coming on. Sporting events and fairs, to say nothing of the election campaigns, will create a big market for public address systems.

Sales, installation and operation of portable and stationary systems should mean good money in the pockets of fellows who go after this work.

A letter to the Miles Reproducer Co., Inc., at 26 East 22nd Street, New York City, will bring their literature on this equipment.

The wise Radio-Trician will change this summer from "play time" to "pay time."

THE MAILBAG



ELMER SANGSTER, STELLARTON, N. S.

Here's one for you "Hum Hunters."

I was called out to a house one evening to fix a set that had so much HUM that on a night when the signals were weak the hum drowned them out.

Well, I tested the tubes, resistors and everything I could think of and found everything O. K.

I lifted my tester up on top of the Radio and had to move a Radio lamp. On moving the lamp, the hum stopped. I figured the reason of this to be, the cord from the lamp was plugged in a floor receptacle and the cord ran up past the detector tube and caused the hum. The lamp was removed from the Radio and now there is no trace of hum.

FRANK MINTERN, PARKMAN, OHIO

Had a service call on an A. K. set and found that it would howl with great vigor for no apparent reason. A thorough check of the set showed nothing wrong either with the set or speaker. I tried it with another speaker and it worked fine. Another check of the speaker still failed to show anything wrong. So I took it out of the cabinet where it also worked O. K. with the set. I then found that the packing had come out from between the sounding board and the set. When this was in place and the speaker replaced and tightened up, the set worked perfectly. This may answer some of those questions on obscure causes for howls that are forever coming up.

VALENTINE OBAL, SO. OMAHA, NEBR.

A noise on an R. C. A. 60 that puzzled several service men was eliminated by replacing the power transformer.

Clicking and fading noises on several Atwater-Kent 60's were eliminated by sweating all joints on the R. F. coils.

Watch your fuses on R. C. A. Victor sets, as a set going completely dead may be the cause of a fuse blow-out.

If an Air-King S. W. converter fails to respond properly, test the value of the cathode resistor in the osc. and R. F. as I found one that tested 10,000 ohms instead of 150 ohms.

I also find that a lot of internal noises in sets are caused by tubes.

WANTED

Don't forget that the Mailbag Editor and the Alumni Editor want your articles for National Radio News. Send them in.

N. R. I. TRAINING HELPS SOLDIER

When I started the N. R. I. Course I was a Chief Electrician (enlisted man) in the U. S. Army. I had long hours and slight chance for advancement, since I was already the Chief.

But when I finished the Course I took an examination for the rating of Radio Mechanic, First Class, in the U. S. Air Corps, passed with a grade of 98 per cent and was placed in charge of trouble shooting in the Communications Department.

Six months later I was advanced to Corporal and given charge of Radio Communications for an Air Corps Squadron. Thanks to N. R. I. I am also a rated operator, with transmission and reception speed of thirty words per minute and have commercial licenses.

I now hold the grade of Sergeant, Air Mechanic (Radio), Radio-Technician, Radio Operator and Non-Commissioned Officer in charge of Communications Department for an Observation Squadron, U. S. Air Corps. I was one of the men selected for the communications problem on the big air concentration last summer. The trip was worth a lot to me.



I see big things ahead in Radio. Since I knew very little about Radio before I started the N. R. I. Course, I say "Thanks to N. R. I. for my success."

CLAUDE L. ALLDAY,

Sergeant, 22nd Observation Squadron, Air Corps, Radio Department, Brooks Field, San Antonio, Texas.

JUST A REMINDER

When you send in your payments, be sure to remit by check or money order, or, if you send cash—register the letter. These are the safe ways to send money. Sending cash through the mails in an ordinary letter may cause you to lose some money.

THE RADIO-TRICIAN AND THE "TALKIES"

(Continued from Page 13)

(d) Jack for sound on disc or power amplifier, defective. This occurs when the theater is equipped solely for sound-on-film projection, but where a turntable is available for ordinary records to be played through the amplifier occasionally where the sound-on-film machine goes wrong the projectionist will plug in the turntable pickup plug in the jack usually provided for such emergencies. Very often we have traced trouble to that jack. It is seldom used, so dirt accumulates there and the jack goes wrong when the pickup plug is pulled out.

Of course these remarks apply to smaller theater equipment where one kind of pictures only are shown.

In the majority of cases trouble is due to the tubes. Don't be too nervous. Take your time. If you weren't there the show couldn't go on anyway, so it matters little if an additional half hour is taken for the job.

If you can service a radio set, you can service a talkie amplifier also. There's no trick to it. Just everyday work as you've done before. If you're a good Radio-Trician the job will be an easy one and the pay—GOOD.

The Alumni News has received a lengthy, interesting article on a test set from Alumni Member Sam Kyburz, Jr., of Forrest, Illinois. We wish we had space to print it in the News. Thanks, Graduate Kyburz.

Alumnus Abe hands us a lot of good philosophy in one small bundle. He says: "If you make fifteen calls in one day and don't sell anything—you really can't blame conditions. Chances are you'd have made a sale on the sixteenth call. Then at that rate, if you'd done a real day's work and made forty-eight calls, you'd have made three sales and a durn good day's pay. Take it from an ol' timer—loafin' is great fun—for your competitors."



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WORKING OUT A SERVICE PROBLEM

(Continued from Page 10)

almost sure to mean that the grid circuit had been burned out.

Whenever a hum is heard only when stations are tuned in it indicates difficulty in the R.F. It may be due to bad filtering, which a bypass condenser will clear up, bad tubes or to open grid returns, as in this case.

Incidentally a check with a set analyzer would have shown up this open grid circuit at once in the form of no grid voltage. The analyzer was not used as in the first place the hum seemed to be due to a bad '27 type tube and in the case of the second hum the cause was immediately apparent. When you run across a bad grid suppressor make sure the tube in the set is good before installing a new suppressor, otherwise the new suppressor also may burn out.

GRADUATES—JOIN YOUR ALUMNI ASSOCIATION
