

# MORE ALUMNI NEWS

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Card

## NATIONAL RADIO INSTITUTE ALUMNI ASSOCIATION

This is to certify that

Mr. \_\_\_\_\_  
IS A MEMBER IN GOOD STANDING  
FOR ONE YEAR FROM DATE  
(SUBJECT TO PROVISION OF BY-LAWS)

DATE \_\_\_\_\_ SECRETARY \_\_\_\_\_

All Alumni Association members will want to carry their membership cards at all times.

Show it whenever and wherever you have an opportunity, in connection with your Radio work.

The Association card is good heavy stock which will stand up under a lot of usage. It is made so—purposely, to permit frequent handling. The size, 4¼ by 2½ inches, is handy for your bill fold or card case.

Whenever you meet an N. R. I. graduate, find out if he belongs to your Association. Most likely he does—but if not—get him in line.

A number of Association members have had a neat black frame made for the “By-laws and Constitution” and have it hanging over their work bench.

Keep your copy of the N. R. I. Alumni By-laws and Constitution where you can see it frequently. Know the aims and purpose of your association and live up to these ideas always.

A colored preacher said, the reason why the lion did not eat Daniel was because most of him was backbone and the rest was grit.

ate this service is quite apparent from the number of Alumni applications coming in from these men. Many students are studying hard to finish up and graduate so they can apply for membership in the Association. There's a great incentive to belong to the “First known Alumni Association of a Home Study School.” Keep plugging, you students. We want to welcome you to our ranks, soon.

At the request of the Alumni Association, Mr. F. L. Sprayberry, who wrote the fine articles on set analyzers in the May and June issues of National Radio News, will give some further uses for the tester in the next issue. Among other things, he will cover the testing of pentode tubes.

We have also arranged to have published in the December News diagrams on some of the more recent Battery receiver developments for use of work in rural communities. Your Association is working tirelessly for you. **Back your Association.**

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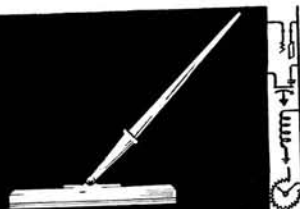
VOL. 4—NO. 4 WASHINGTON, D. C. NOVEMBER 1931



Col. Charles A. Lindbergh Honored  
(See Page Seven)

**SUCCESS NUMBER**

# My Own page



## The Naked Truth

STUDENTS of art will tell you that in order to properly draw the lines of a human being, in any clothing whatever, they must first have a thorough knowledge of the human figure in the nude. This is because all normal persons have fundamentally the same figures, regardless of how they appear in clothes of various patterns and designs.

It requires very little thought to realize that this holds equally true in Radio. Ever so often we see a man fall short on a job in Radio, because he is not thoroughly schooled in the fundamentals—Radio in the nude, so to speak.

That is why N. R. I. insists upon a thorough groundwork in the elementary side of Radio.

After all, when the fundamentals have been thoroughly mastered, it is only a case of knowing the various expansions and alterations—a case of applying advanced ideas to the principles.

Whether you are working on a three tube regenerative, battery type receiver; a ten tube, power operated super-heterodyne; or a television receiver, down in the heart of that set you are dealing with Radio in the nude, those principles you learned in the early lessons of your Course. The Naked Truth of the whole matter is—if you care to look facts in the face—that you will make your Success, more by your knowledge of those nude elements—than by your knowledge of them when they are fully clothed in the many modern improvements.



## Thanks to Contributors

SINCE the Alumni Association of the National Radio Institute took over National Radio News as its Official Organ, Alumni Members and Students have taken it upon themselves to assist the editing of the News by supplying copy for interesting articles. We, at the Institute, certainly appreciate this cooperative attitude.

I earnestly believe that one of the biggest factors in the success of N. R. I., its students, and graduates, is the cooperation between them.

Every bit of material which is sent in, marked for National Radio News, is carefully read by the Editor, personally. Of course, not all can be used—first, because there is not enough space, and second, much of the copy being on similar subjects, would cause repetition if published.

But it's a good practice for you fellows who like to write and who have a knack for journalism and it's really worthwhile to try a dozen times, if you finally succeed in getting in the columns, isn't it?

I'm sure every "News" reader appreciates the article by Graduate M. J. Reef in the September issue as well as the one by K. W. Griffith in October. We hoped to have an article in this issue by Harry Barschdorf, Vice President of the Alumni Association, but Harry was called out of town unexpectedly. However, we'll have his article in a forthcoming issue.

J. E. SMITH,  
President.

## THE MARINES WENT TO NICARAGUA . . .

and Student Adam G. Hileman went with them. He is attached to the Aircraft Squadrons, 2nd Brigade, Managua, Nicaragua. Below is an article written by Mr. Hileman for National Radio News.

THIS place, Managua, Nicaragua, may sound to you readers as if it is a "back in the woods" settlement. Well, believe me—you're right! It's back in the woods all right, but if you are looking for excitement, well—come to Nicaragua. We have earthquakes here that will make your hair stand on end.

When the last earthquake occurred our Radio was invaluable. During the first three nights after the quake about four hundred messages were sent out. They went to amateur stations in the United States, to be delivered to mothers, fathers, relatives, sweethearts, and friends. In some instances the Radio messages were received by the folks at home before they even knew there had been an earthquake. So the news in the papers didn't come as much of a surprise and a shock.

Before I started my Course with the National Radio Institute I didn't know anything about Radio except the Code. Now it is quite a different matter.

While I have completed only a few lessons, I have improved my knowledge about Radio enough that I have been able to install Radios (transmitter and receiver complete) in airplanes and have had good success with the installations.

One of the most interesting phases of my work here was a trip by plane made to the United States last July.

We left here on July 8th in a Ford Tri-Motored Transport plane for Anacostia, D. C., arriving there on July 13th, after making overnight stops at Tela, Honduras; Havana, Cuba; Miami, Florida; Charleston, S. C., and Quantico, Virginia. Our actual flying time was twenty-three hours and twenty-five minutes. An Aircraft installation of the Pan American type was installed in the plane. The receiver employs a one-tuned circuit. It consists of a 224 input coupling tube, a 224 regenerative detector and two stages of resistance coupled audio amplification which consists of a 224 and 227 output tube.

The transmitter is of the master oscillator power amplifier type. It employs a Hartley circuit for the master oscillator and a neutralized power amplifier using a total of two U. X. 210 tubes. The plate voltage supply for the transmitter is obtained from the high voltage windings of a dynamotor. The primary side is driven by a 12 volt direct current supply and has an output voltage of 450 on the high side. Excellent results are obtained from this installation, using a trailing antenna.



My return trip was made in a Marine Sikorski plane and the flying time was twenty-two hours and twenty-five minutes. The same type of Radio installation was used on the return trip.

I was able to keep in constant communication with the Pan American Radio Stations along the route, working on 52.7 meters. I also had good results in communication with Pan American planes flying over the same route. All stations on the route congratulated me on my transmitter and stated that I was coming in plenty loud.

For the benefit of some of my fellow students who might be doing aircraft Radio work, if you ever install a transmitter in a plane, and it will not radiate, and by checking it over you find that the set is okay—check over your ground connections on the plane. Sometimes the fault lies in the bonds of the planes and it will fail to serve as a ground. This fault especially occurs on Fokker planes. I suggest, if this happens, take a roll of antenna wire and install a counterpoise in the tail section of the plane and make your ground connection to this. Your radiation ammeter should then show a reading.

If any of the readers of this article would like more complete data and diagrams of the equipment, I shall be glad to give it to them if they will write to me.

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## A Chat With the N. R. I. Director

WHILE driving on the outskirts of a small town in Maryland, sometime ago, I had the misfortune to run a nail in a front tire of my car.

Just as I finished the uncomplimentary remarks, usual in such cases, a young man walked up to me and said: "Can I change your tire, mister?"

While he was hauling the heavy tires around, I asked him if he was connected with one of the local garages. "No, sir," he replied, "I just pick up odd jobs, here and there, for a living. There's not much chance for a fellow around a small town like this—so as soon as I'm able, I'm going up to the city where there's some opportunity."

"Are there any Radio stores or shops in this town?" I asked.

"Well, sir, there's one fellow who fixes up Radios, but mostly he don't do a good job and folks ship their sets to the big stores in Baltimore."

I wonder just how hard opportunity would have to knock, in the cases of some fellows, for them to see it—and realize that it was an opportunity. How many cases are there in this country of ours, where fellows plod along—pick up odd jobs for a living, not knowing most of the time where their next meal will come from, while opportunity sits right at the door—begging for entrance?

There's a fellow, down and out, looking for an opportunity to make 50 cents changing a tire—yet by his own admission—living in a town where there isn't a competent Radio man—where people have to ship their Radio sets away to have them repaired.

Upon returning to my office I looked up the statistics on that particular town and found that it had a population of 1,100 people. Probably half of those people have Radios—and are prospects for service work. The rest are good prospects for new sets. It doesn't take much reasoning to figure out that that young fellow, had he given his future a moment's thought, could have shortly become a trained Radio man and built himself up a business much more profitable financially than plodding along dusty roads looking for an opportunity to change automobile tires in a broiling hot sun.

It seems that the closer opportunity gets to some folks, the harder it is for them to see it. They only see opportunity in terms of long distances. They must get away from their homes—go some place else in order to find opportunity.

Oil wells and diamond mines have been lost because their owners were looking for opportunity elsewhere. Be absolutely certain you don't have a gold mine right at home before you start chasing opportunity half-way round the world.

E. R. HAAS,  
Vice President and Director.

### THE WAY TO WIN

It takes a little Courage,  
And a little self-control;  
And some grim determination.  
If you want to reach the Goal;  
It takes a deal of strivings,  
And a firm and stern set chin;  
No matter what the battle,  
If you're really out to win.

There's no easy path to glory,  
There's no rosy road to fame;  
Life, however we may view it,  
Is no simple parlor game;  
But its prizes call for fightings,  
For Endurance and for Grit;  
For a rugged disposition,  
And a "Don't-know-when to quit."

You must take a blow, or give one.  
You must risk and you must lose;  
And expect that in the struggle,  
You will suffer from the bruise;  
You mustn't wince or falter,  
If a fight you once begin;  
Be a man and face the battle,  
That's the only Way to Win.

Submitted by Graduate M. J. Reef.

# RADIO-TRICIAN SERVICE SHEET

REG. U. S. PAT. OFF.

COMPILED SOLELY FOR STUDENTS & GRADUATES

## APEX MODEL 8—PENTODE SUPER-HETERODYNE RECEIVER

### Condenser Alignment

A local and accurately calibrated signal generator as well as an output indicating meter is absolutely essential for correct alignment. This signal generator must provide a signal at the broadcast frequencies of from 550 to 1500 K. C. and in addition a signal of 262 K. C. for the intermediate frequency. The broadcast band signals of the signal generator must be accurately known as the dial scale of the receiver is calibrated in kilocycles and alignment of the gang tuning condenser must be made at definite frequencies in order to have the pointer at the correct location on the scale for the various frequencies. The intermediate frequency signal of the signal generator must likewise be accurate in order to align the I. F. stages at 262 K. C.

Several companies manufacturing test equipment including Jewell Electrical Instrument Company, Weston Electrical Instrument Company and Supreme Instrument Company have complete R. F. and I. F. signal generators on the market which have incorporated with them copper oxide meters for reading the output. The output meter is connected across the primary if it is of sufficient range.

### Aligning Intermediate Condensers

A non-metallic screw driver is necessary for aligning the intermediate condensers. The extreme limits of the signal generator signal are from 256 to 264 K. C. Remove the grid cap from the grid connection of the 235 1st detector tube and connect the lead from the signal generator to the grid of the 235 1st detector. As the shield should be left on for this test it will be necessary to bring the signal lead through the hole in the shield over this tube. To facilitate making this connection at the factory a hole of about 1" diameter is cut in the shield over the 1st detector tube. If many of these chassis are to be

aligned it is suggested that an extra tube shield for this chassis be purchased and such a hole made in it. Connect the ground lead of the signal generator to the ground post of the chassis.

The intermediate condenser adjusting screws are reached from the bottom of the chassis. There are two on each of the two porcelain bases of the I. F. transformer assemblies. The volume control must be at maximum setting and the power level switch at "H" power for all adjustments. Attenuate the signal generator signal until the output is 50 volts or less in order to prevent any action of the automatic volume control. Then adjust the four intermediate condenser screws until maximum output is obtained on the output meter. After all four have been adjusted the first time, go over them again and check the setting for maximum output.

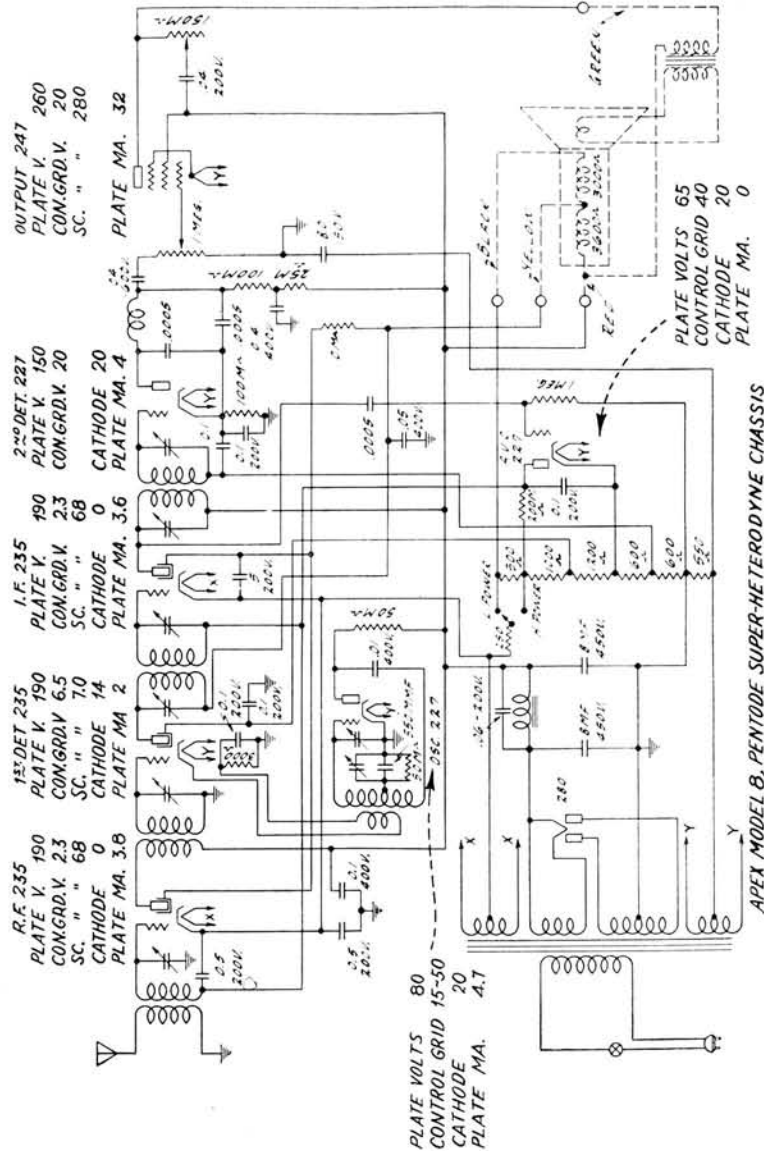
### Aligning R. F. and Oscillator Condensers

For adjusting the R. F. and oscillator condensers the signal input from the signal generator should be made to the antenna post. Adjust the signal generator for a signal of exactly 1400 K. C. Then turn the tuning condenser rotor until the pointer is at exactly 1400 on the dial scale. Then adjust the three trimmers on the tuning condenser for maximum output, adjusting the oscillator trimmer first (trimmer nearest back of chassis). Turn the screws up or down until greatest deflection on output indicating meter is obtained.

Then set the signal generator for a signal of 600 K. C. and turn the tuning condenser rotor until the output is at maximum. The next step is to adjust the oscillator 600 K. C. trimmer condenser. The adjusting screw for this condenser is in front of the 1st I. F. transformer and is reached from the top of the chassis. To correctly adjust this oscillator 600 K. C. trimmer it will be necessary to turn the screw to several different positions using a non-metallic screw driver. At every position of this adjusting screw turn the tuning condenser rotor until maximum output is obtained. For each position of the adjusting screw there will be a maximum output and the correct position of the adjusting screw is the setting at which the deflection on output indicating meter is the greatest.

Next set the signal generator again for a 1400 K. C. signal and check the adjustment of the tuning condenser trimmers at this frequency for maximum output. Then set the signal generator for a signal of 1000 K. C. and turn the tuning condenser rotor until the output indicating meter shows maximum deflection. Then bend the slotted rotor plate sections of each tuning condenser bank which are last in mesh, in or out until maximum output is obtained. Tune in a signal at 750 K. C. and then at 600 K. C. and follow the same procedure, bending the rotor plate sections last in mesh until maximum output is obtained. Do not change the setting of the oscillator 600 K. C. trimmer in any way after it has once been set as indicated above.





# NATIONAL RADIO NEWS



Vol. 4—No. 4 November 1931

Published monthly in the interest of its students and graduates, by the

NATIONAL RADIO INSTITUTE

Washington, D. C.

J. E. SMITH, President.

E. R. HAAS, Director.

## THE OLD SWIMMING HOLE

By Milt Parsons

*We're glad to offer our readers another article by Mr. Parsons, who has not appeared in our columns lately. Readers will remember Mr. Parsons by his articles "Champions," "Playing the Game," "Pluggers," etc. We hope you like "The Old Swimming Hole."*

**R**EMEMBER way back, when Mother used to try with every ounce of effort she had to get us to wash our face and ears?

And remember how we'd turn on the water and make a lot of fuss to keep up appearances and just dab a bit of water here and there . . . then wipe the dirt on the towel? What a job washing was.

Until we grew up, mother never did quite succeed in getting our face and ears washed unless she did it herself.

But outside of the house—down at the old swimming hole—well, that was different. Off came our clothes, in April or even in March—and in we'd go with a splash; we didn't mind the water then.

Well, there was a difference. Washing at home was work—something we had to do, but the old swimming hole, that was play—and that made all the difference.

In the business world the fellow who looks on his job as work—something that has to be done in order to get the pay envelope on Saturday, is going to make his job hard work every minute of the time. He's not going to like his work and he is not going to get very far with it. He can't enjoy his Sundays because the next day is Monday, which sends him back to the grind again.

But the fellow who goes to his job as if it were play—a game, in which it is up to him to do better work than someone else, will accomplish something. The fellow who doesn't watch the clock, who is interested in what he is doing—is the fellow that is going to have a good time of life even while he's working and he will go some place in this world.

Let's jump into our jobs just like we used to jump into that old swimming hole—with the same fervor and spirit and we'll find that there is just as much thrill in our everyday business as there was in the tingle and splash of that cool water in the old swimming hole.

## ANOTHER LETTER WHICH WON A PRIZE IN THE RESULTS CONTEST

Dear Mr. Smith:

I have had wonderful results from my Radio Training with N. R. I. My course has more than paid for itself.

In times when work was slack in other trades and many men were walking the streets I had no trouble in keeping a job as Radio-Trician with the Hanson-Duluth Company, here. I am fully convinced that had it not been for your training, I would have been in the unemployed class myself.

I earned enough to pay for my course and also enough to keep me going financially during the dull period. I made quite a bit of money by erecting aerials, and even by building and selling crystal sets. In addition to this I had a lot of work servicing receivers.

At present I am employed as Radio Serviceman for the Quality Hardware Company and expect to go much further in this great Radio profession.

IRVIN S. DUNCAN,

Duluth, Minn.

## THIS MONTH'S COVER

Col. Charles A. Lindbergh, on the eve of his flight to the Orient, is presented with a medal by the Columbia Broadcasting System, in recognition of his distinguished contribution to the art of Radio. He is the first American to be so honored. The Colonel has been a persistent advocate of the use of Radio on all passenger carrying airships.

In a recent address Colonel Lindbergh is reported to have stated: "I advise any young man looking to Aviation as a career to take the Radio side of it. That is the coming thing."

# They Studied for SUCCESS

It may be the successful operation of a business of your own—showing increased business and consequently higher profits as you go along. Or it may be a promotion to the next higher job with an increase in salary and responsibility. It may be in the form of an invention upon which you have labored long and with painstaking efforts—finally working out to your entire satisfaction.

Consider the thrill of going into your own place of business each morning—opening your own door—regulating your own activities, pitting your skill against the world. You are the boss. You give the orders; you take the profits. Your earnings are regulated only by the amount of time, study, and effort, along with the ability you've put into the game.

Take, for instance, the case of John Kirk, of Ontario, Canada. He is proprietor of the Eastwood Radio Service Company. Part of his fine show-room and an outside view of his store are pictured above. A fellow can well be proud to have his name connected with a business of this kind. It is well worth the study necessary to put it across.

In the lower right hand corner of page 9 is the neat work-shop of the Stamford Radio Service Company, Glenbrook, Connecticut, in which Student George Morton is senior partner. George is glad he studied to attain this success.

Is it not easy to imagine the pride that Graduate Earl Montgomery takes in his new

Before completing half of his N. R. I. Course, J. W. Sessums, of Dallas, Texas, obtained a position as Radio Engineer with The Thomas A. Edison Laboratories. Flattering offers have been received, but he prefers to stay with Edison. A salary increase of 400 per cent and a good job prove to J. W. that study pays.



James W. Riney of Omaha, Nebraska, is in charge of the Service Department of Wright and Wilhelm, Radio Wholesalers. His shop is acknowledged to be the best equipped in Omaha. If you doubt the advantages of study or if you doubt the opportunities in Radio, ask Riney.

job as Radio operator and Radio service man for the U. S. Veterans Hospital, Lexington, Kentucky? In a letter to Mr. Smith, Earl states: "Out of 150 men who took the examination for the job, I stood highest with an average of 95.5%, thanks to N. R. I." Montgomery is another boy who is attaining success through diligent study of the N. R. I. Course. Training does pay.

While the National Radio Institute Employment Department was directly responsible for placing Graduate L. E. Biar as a Radio teacher with the Meridian School of Commerce and Radio, at Meridian, Miss., this was made possible by the energy Biar put behind his training. He studied for success and he is getting it.

For similar reasons W. Howard McKinney is with the Government at Bahamas, B. W. I., as Radio operator and A. W. Hammontree is operator for the American Airways, Inc., in Cleveland, Ohio. Both of these N. R. I. boys deserve every bit of success they've achieved.

Graduate W. T. Nodine, now connected with the Philadelphia Storage Battery Company as Service and Sales Supervisor in the Western Division of the Niagara Hudson Power Company, writes: "The investment I made in the N. R. I. Course surely brought results. It's something I'm darn glad I did. It

meant study and work, but look at the results!"

Recent reports point out that James Gleason of Louisville is with WLAP and Earl Temple is with Kolster in Newark. Both of these boys will tell you that success comes through study.

Chief Instructor J. A. Dowie, of the National Radio Institute, gives us some mighty good ideas along the line of studying for success, but from a slightly different angle, when writing on the subject of "Looking Forward."

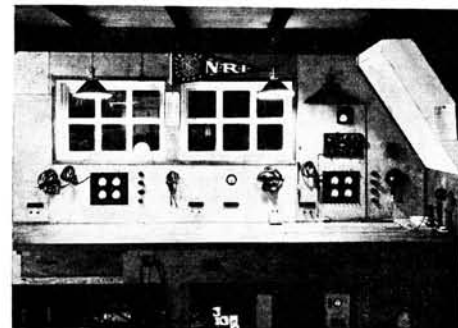
The Chief points out that the Radio Industry started in the form of a small enterprise known as wireless, but in a very short time it became one of the largest and fastest-moving industries in the world.

In a short period of time it was developing and expanding so rapidly that it was difficult to keep pace with it. The truth was that so many people didn't realize the possibilities of Radio that it got the "jump on them"—in other words, they were unprepared.

The situation as it is at the present time is very similar with regard to some of the off-springs of Radio, such as Television, Talking Moving Pictures, Aircraft Radio, etc. A Radio man, no matter how well trained he may be, can make a grave mistake if he shows only a mild interest in these new happenings in his industry. The first thing he knows, Television will be here in full force—so will those other branches just mentioned, and the Radio man will find himself groping in the dark, wondering what it's all about. In other words, it will just be a repetition of the same old thing—the new industry will have the jump "on the Radio man." These ideas bring us to a point where it is easy to see the necessity not only of making a study of Radio, obtaining a Diploma and starting out to do Radio work, but it is of prime importance that we keep up to date in this ever-growing, ever-expanding field.

The man who knows is the man who wins all the time, provided he has a few of the necessary characteristics to put him forward to success, such as initiative and personality. The day of the untrained or the "back number" Radio man is fast going. Commercial organizations are coming more and more to demand the man who is on his toes—the man with the up-to-date, working knowledge of the game.

Student George Morton, senior partner of the Stamford Radio Service Co., of Glenbrook, Conn., designed and built this layout. Study showed the way.



Graduate John Kirk, in his fine store in Ontario, Canada. John is so sure that study brings success that he enrolled six of his acquaintances in the N. R. I. course in the month of September.

"I will study and prepare myself, and some day my chance will come."—Abraham Lincoln.

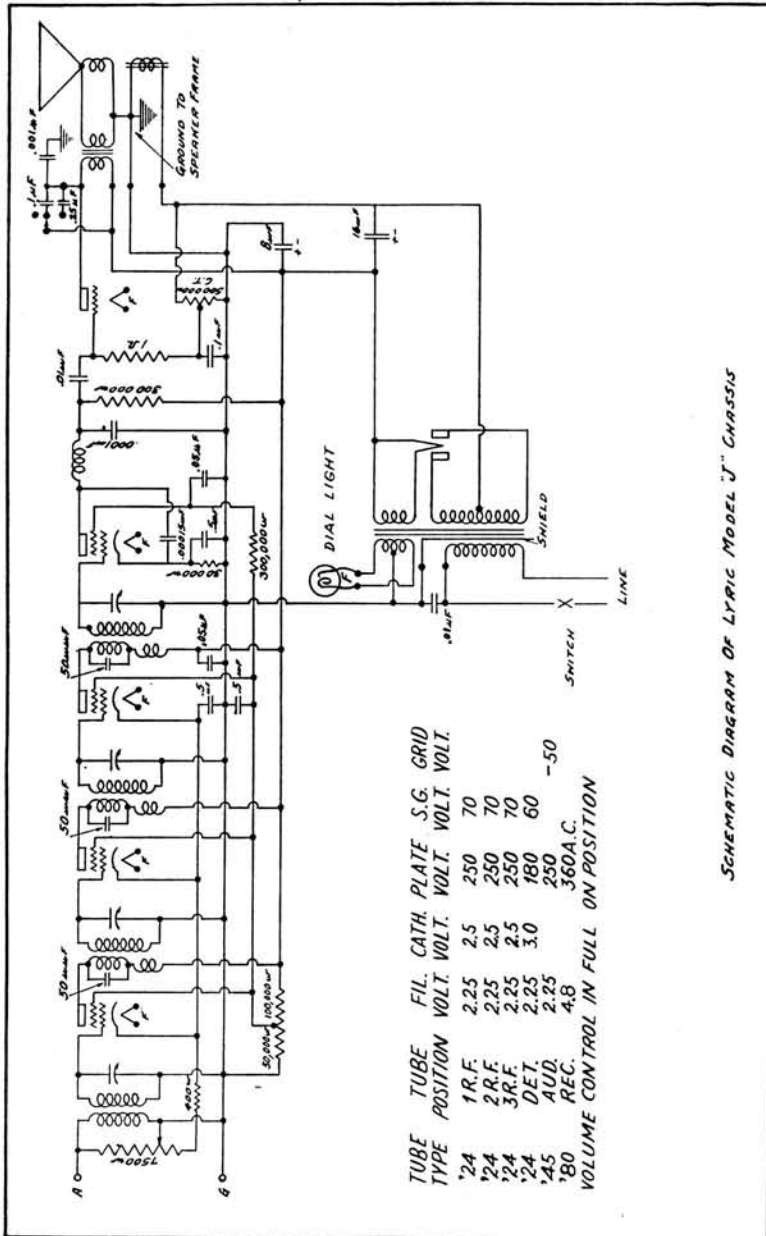
OCCASIONALLY we hear of a fellow falling into a good job by luck or pull or some other such means. While one man in ten thousand may succeed by these means—the other 9,999 would do well to be on the safe side and follow the plan which carried the obscure young Abe Lincoln—and so many men since his time—to greatness. By far, the majority of successful men have made their climb by study and hard work.

The greatest thrill in the battle of life comes from achieving success. But it is not the man who jumps from the bottom to the top at one leap—by the methods mentioned in the first paragraph—who really knows the joy which accompanies success, because his promotion was not an earned one. And usually he is on a very hazardous footing. He knows his promotion was not earned and he fears it will not last—because deep down in his heart he knows he is not the man for the job.

But the man, who by study, is advancing gradually to his goal, experiences the happiness of success, not once—but continually during his climb. He sees his goal in sight—he knows his promotions are justified—and he is confident of his ability to hold each new job and work forward another step.

Success may come to you in various forms.





THE officers of the Association feel that the new plan of taking over National Radio News, as the official organ of the Association, is largely responsible for our greatly increased membership.



Graduate A. D. Taylor, of Daytona Beach, Florida, makes a bid for being the Champion of the Alumni Association in so far as age is concerned. He's 77 years of age and going strong.



Frank McClellan, Alumni Member in Troy, New York, is handling the Ozarka line of receivers. Naturally he runs into the "trade in" problem and here's how he solved it:

He removes the old chassis from the console and installs an Ozarka 93 or 93B chassis in the place. He can sell these revamped sets at a good price. The old chassis he uses for a supply of replacement parts in his service business.

The idea of using his "trade in chassis" as a supply department came to him when a manufacturer asked more for an audio transformer than Frank had allowed for the whole set on a "trade in." Thanks for the tip, Frank.



Funny little incident occurred the other day. A fellow wrote in to the Institute and asked permission to join the N. R. I. Alumni Association. Said he was a graduate of the (\_\_\_\_\_) School. Of course we had to refuse his application as we only accept N. R. I. graduates. But it is interesting to know that our organization is getting so well known.



She: "I simply adore that new dance step of yours—where did you pick it up."  
 He: "Dance step the devil—I'm losing my garter."

Make Friends,  
and  
Keep Them

A Step Toward  
Success

By E. E. Winborne  
N. R. I. Alumni Member



I HAVE been extremely successful in my Radio business and I believe my success has been due, more than any other reason, to my friends.

When I started in the Radio business, handling sales and service, I immediately set out to make friends. I made a friend of every one of my customers, by giving them a square deal and rendering good service.

I have never sold one of my customers a piece of merchandise of a type that I would not care to own myself and I have never overcharged a customer yet. If an adjustment is necessary I make it in favor of the customer rather than in favor of myself and if I lose money on that particular transaction I consider it well spent for the purpose of keeping a friend.

It has never been necessary for me to advertise. My satisfied customers do that for me. My business has grown to a point where I could not possibly handle it if I did any advertising. One of the most interesting features, I believe, of the present day Radio situ-

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## THE MARINES WENT TO NICARAGUA

(Continued from page three)

I've heard a lot of talk lately about the lack of prosperity, and I'll attribute it in most cases to the fact that the individual person himself is at fault because he does not try to obtain the necessary knowledge that it takes to pull through when times are hard.

I know of no better form of specialization at this time than Radio. It is a subject that a man can take an interest in—there is a lot to be learned and he can study and become prosperous. Of course, he must study properly—he must learn the "how" and the "why" of these delicate instruments if he desires to make his name stand out as a real Radio-Trician. Then he must learn by doing. First he knows why, then he learns how, and as far as I can see the answer to the how and why of studying Radio is "The National Radio Institute's Course."

## MAKE FRIENDS AND KEEP THEM

(Continued from page thirteen)

ation, is the fact that your customer is getting more and better Radio for his money now than he ever did before. But no matter how good the Radio is, it will require service eventually. It is upon the type of service that you render, the way you treat your customers, the personality which you put into your business, that depends your success in the Radio field.

Don't make the mistake that all too many dealers of Radio make today. Don't look upon your customer as a profit to your business only insofar as the amount of money you can get out of his pocket is concerned. The sale you make to that customer is only incidental to your future business. Please that customer and he will send others to you.

## CONDENSERS BY FLECHTHEIM

A. M. Flechtheim & Company, Inc., 136 Liberty Street, New York City, announce several new types of small, compact, low and high voltage, by-pass and filter condensers for all types of Radio repair work.

New Catalog No. 24 lists these types, which are available in all ranges of capacity from 1 to 4 mfd., 200 volts; 400 volts; 600 volts and 1000 volts, D. C. The Flechtheim Co. will gladly send their latest literature upon request.

Especially outstanding is the type NU rated at 600 volts, D. C., Uncased Condenser of a design which can readily fit into the smallest space for replacing burned-out Condensers.

## 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.*

## ALDEN ADAPTERS

The Alden Manufacturing Company, 715 Center Street, Brockton, Mass., announce new adapters for using 247 Pentode in place of the 245, and a twin adapter for using 238 Pentode in sets having 171 push-pull. Also a complete line for testing Pentodes in various tube checkers and analyzers.

## BITTAN SALES CO.

The D. R. Bittan Sales Co., Inc., 27 Park Place, New York City, manufacturers-distributors of Radio and electrical equipment, announce that they are in a position to supply tubes and aerial equipment as well as replacement parts. Mr. Bittan will be glad to hear about your needs.

## ELECTRAD PAMPHLET

Electrad, Inc., 175 Varick Street, New York City, announce a new pamphlet covering replacement lines for the service man.

A copy of this pamphlet may be obtained free of charge by writing to Electrad.

## POLYMET UNCASSED CONDENSER KIT

The Polymet Manufacturing Company, 829 East 134th Street, New York City, announce a special kit for service work, particularly useful in the repair of blown-out filter blocks. Contains 25 uncased condenser sections of various capacities, working voltages, and dimensions. Selection sufficiently wide to enable the Radio-Trician to replace practically any defective section. Supplied with flexible insulated wire leads, both coming out of the same end. If unit must be slipped into a filter block, it can readily be soldered. Condenser sections have pure linen condenser tissue, are guaranteed to be built in strict accord with R. M. A. standards.

## The meeting place for Radio-Tricians



"Tell it in The Mailbag"

You win fellows—you who want the mail bag to "stay put." The "Boy from Washington" was ruled out. Only three of the hundreds of letters received—agreed with him. Long live the Mailbag.—Editor.

And here's one from Felix Espino, an old-timer who graduated back in the fall of '28. Felix is from Hutchinson, Minnesota. Let's see what he says:

"I've been in the Radio game ever since I graduated and have averaged around \$2000 a year. I'm well satisfied and give N. R. I. full credit for what I've made. I graduated from another Radio school but like N. R. I. far better."

Thanks, Felix.

"Will" Sandberg from Chicago writes: "Before I took the N. R. I. Course I thought I knew Radio from newspapers and magazines, but all I made was about \$5 a month and a lot of dissatisfied customers. I nearly quit Radio—but I'm glad I didn't."

"I've built my business up to over ten times what it was and my satisfied customers are aiding me in the work by their recommendations. Thanks to N. R. I."

"I find," says T. E. Swisher of Benton Harbor, Michigan. "The Crosley 120 Plio-dynatron Super-het will occasionally stop in the middle of the program. In the oscillator circuit is a 6500 ohm resistor. Place between this resistor and the coil another resistance of 100 to 150 ohms. On some of these sets is a small wire resistor, placed cathode to ground in the oscillator circuit. Ground it out completely. And by the way—keep up the good work with the News: I'm lost without it."

From out Detroit way comes a letter from Theo. Critzon in which he says: "I'm for the Mailbag Page, folks. Whatever else you do to National Radio News, leave the Mailbag as is."

Wm. J. White, Poland, Ontario, Canada, writes: "When I started to study Radio with the National Radio Institute I didn't know much. But it's different now. I am out of the rut to stay."

"I am now making around \$100 per week fixing Radio sets, testing tubes, installing sets. It is sure nice to be in the game. Radio is the best trade of today."

"It was the National Radio Institute of 16th and You Streets, N. W., Washington, D. C., that put me where I am today."

Wide horizons tend to enlarge the mind; limited horizons, on the contrary, circumscribe it. Stagnant water is not inclined to flow.—Victor Hugo.

Today well lived makes every yesterday a dream of happiness and every tomorrow a vision of hope.—Dr. Tehvi Hsieh.

## WOW

FOR Heaven's sake, don't discontinue "The Mailbag." That is my inspiration! Whenever I get discouraged and things seem hard, I get out all my "News" and read over the Mailbag. And when I get through I want to study harder than ever. And besides there are always good hints and suggestions by ones who have had experience.

The man from Washington must have got up on the wrong side of the bed, or perhaps he doesn't like to see others succeed.—C. M. Hastings, Campbell, Cal.

Herb Heimer, San Antonio, Texas, is the only boy in the family. He takes care of a 650-acre dairy farm. According to his statement, if it was not for his thorough knowledge of Radio, he could scarcely make a living, as farm products are so low now. For a bushel of wheat that he sells he can only buy three loaves of bread back again.

Two months ago he wired his place with Radio. He has loudspeakers in the dairy barn, feed barn and bottling rooms. Several dairymen have seen the job and had him wire their barns and even workshops with Radio. They say they are receiving marvelous results by having music while the cows are being milked. They boast milk from "contented cows."

This goes to show that in every locality there is new opportunities in Radio. This is a real tip for you fellows in farm communities.

Alumni Association Member M. Barduca warns us to "Watch those innocent looking carbon resistors. The 245's of a Silver Marshall super had a negative of 150 developed on the grids; 800 ohm resistor looked O. K., but on touching it—it fell to pieces. Carbon resistors at times have a habit of making large variations in value."

Another country heard from. This time it's Canada. Up in Ladner, British Columbia, where Ed. Fawcett fixes the Radios which won't "perk properly," a fellow had an A. K. 20 that he bought second-hand. It went fine for three months, then BLAM—continual trouble. Three Radio shops recommended the junk pile for it, then Ed. put in a new by-pass condenser. Now the set owner knows who's who in Radio in Ladner. Ed says, "Trust N. R. I. men to get the 'Cream of the Crop' always." (With apologies to Luckies.)

Writes Frank Steiner of West Reading, Pennsylvania: "I know you are interested in my progress and am writing to tell you how you've helped me. Before taking your Course I was not able to write very good English. I find that your Course has helped me in more ways than one. The Course has helped me master the English language and Radio at the same time. I am very glad I took this training."

A radio salesman rushed into a hotel and said to the clerk: "Have you A. C. current here?"

"Not registered," replied the clerk, scanning the book.

The teacher was discussing the rhinoceros family with her class and then said: "Now someone name some things that are dangerous to get near to and that have horns."

"Automobiles," promptly replied little Jimmy.