

Chicago—The HEART of the RADIO and TELEVISION INDUSTRY

Four Television Stations—More than 30 AM and FM Stations—Leading Manufacturers—all contribute to Chicago's Leadership in the fast growing electronics industry!

During the years of World War II Chicago became the center of Electronics development and manufacturing. Much of practical Radar and other wartime developments found their beginnings in Chicago laboratories—and Chicago Electronics equipment production lines turned out untold thousands of receivers, transmitters and specialized apparatus of every description. Today that leadership in Radio-Television and Electronics continues. Chicago has four outstanding Television stations operating daily. It has over 30 AM and FM Radio stations. Many national network Radio and Television programs originate in Chicago studios—where large numbers of trained technicians help maintain and operate the equipment needed to carry out this vital service.

Famous Radio and Television receiver brand names are manufactured

here. Chicago is a center for High Frequency Radio and Industrial equipment as well as Police and Fire Radio communications equipment. Dozens of manufacturers who produce vitally important Radio parts are located here in Chicago. Many of the largest suppliers of radio components, public address equipment and test apparatus are headquartered here. Chicago is indeed the heart of the Electronics field.

Why is all this important to the student of the Sprayberry Academy of Radio? Naturally you will do all of your training at home in your spare hours . . . BUT it's good to know that your school is located in the very center of all activity in the Electronics industry. You KNOW that when new developments occur, Frank L. Sprayberry and his co-workers will be in position to investigate these developments. You can be SURE that you will be informed of these new developments at the earliest possible moment if they will affect your future work as a Radio and Television technician. All this adds up to outstanding training for you!

HERE IS A BRIEF DESCRIPTION OF THE NEW TELEVISION TRAINING NOW INCLUDED IN THE SPRAYBERRY COURSE . . .



Note: Read my large catalog for a complete description of other lesson material in the Sprayberry Course—the lessons outlined below were added to my Training after the catalog was prepared . . .

Television is a fast-growing industry—and while the basic fundamentals and ideas developed by the pioneers such as DuMont, Feghouth and Zworinkin will probably remain standard for you to come—it is a fact that new refinements are being introduced constantly by the manufacturers of Television sets and associated equipment. With our ideal location right in the heart of the Television manufacturing industry, my technicians and I will include these new ideas in my course as soon as announced. If they prove to be useful and practical. My lessons will be changed whenever necessary because I am determined that my Home Study Television Training will be the *best and most up to date available to you.*

In the following paragraphs I will tell you briefly what I include in my complete Television Training. Bear in mind that this training is IN ADDITION to all Training I tell you about in my large catalog. There will possibly be some gaps and trends that are unfamiliar to you—don't let that bother you because I train my students from the ground up and those words will become as familiar to you as any new one in your daily living.

I start my Television Lessons by giving you the all-important basic principles. I begin by proving why scanning must be used. This is followed by a discussion of scanning principles. Resolution and number of lines, rate of scan and frequency limitations are brought out. The National Television Standards are mentioned here, in part, as related to scanning, band-width and frequency allocation. The camera tube is discussed next with two prototypes described in detail, followed by a general discussion of the various types of camera tubes most used today. The video signal is discussed in the final modulated RF signal with superimposed blanking and synchronizing pulses indicated. The television transmitter is discussed in block diagram form. The lesson ends with a more detailed discussion of resolution and band-width.

Next, I devote an entire lesson to Cathode Ray Tubes. This is the most important subject and a complete understanding of the same is necessary to the fully trained Television technician. A detailed explanation of electron behavior is included. This treatment goes into the reaction of an electron in electrostatic and electromagnetic fields.

Next, the electrostatic deflection type tube is treated. This includes various tubes in this category, including different sizes, screen types and recently developed metal envelopes. Magnetic focusing is discussed, as well as ion traps and metal-backed screens and a positional screen for color television.

The lesson also covers electromagnetic deflection tubes, with characteristics and practical applications shown. Finally, the precautions in handling tubes and the care of the tubes are treated. For perfect reception of Television pictures and sound, great care and thought must be given the antenna installation. In my lesson on Television antennas, I cover not only the theory and design problems, but also cover every part of the practical installation. I discuss the various types of antennas in common use and the advantages and disadvantages of each. There are plenty of pictures to illustrate normal as well as more difficult installations. I show you the practical difference between coaxial and twin-lead transmission lines and suggest when you use each type. You will learn when and how to use "boosters" in locations distant from the antenna. I complete this lesson by showing the steps necessary to make a satisfactory antenna installation.

Now you will be ready for the actual Television receiver. We start with a lesson on the Television RF Amplifier stages. This lesson begins with an emphasis on the frequencies used for Television transmission with a special note concerning relay frequencies and proposed color frequencies. A brief discussion of the characteristics of components and tubes at high frequencies is included. The lesson then progresses to a discussion of RF amplifier, oscillator and mixer theory. The separator circuit is touched upon to give a link to the discussion on IF stages in the following lesson.

The remainder of the lesson deals with practical front end circuits and assemblies as found in various receiver models. All of the important basic types of meters, including continuous variable, switched and push button assemblies are treated in sufficient detail that the student is thoroughly acquainted with them and will be prepared to analyze any new modifications of these as they are brought on the market. The next step is a discussion of the Television Intermediate Frequency Stages. This lesson starts with the separator stage and proceeds in parallel paths through the IF channels. Along with the practical circuit discussions, suggestions concerning alignment and trouble shooting are given.

The effect of the several variable values in the circuit is brought out, in preparation for later discussions on alignment. At appropriate points, the discussions include automatic or manual controls which are found in these circuits.

The intercarrier system is described with an eye toward future popularity of this system, which is relatively unexplored by manufacturers at present.

Since the Television set is actually two receivers in one—an AM picture receiver and FM sound receiver, we cover the video and sound circuits individually and in combination with each other. I show you how the wide band video amplifier operates and also the method used for video detection. The audio (or voice) circuits are discussed just as completely—then we continue on to the separator circuit where sound and picture are "unscrambled". This lesson actually takes you through the set to the cathode ray tube and the speaker.

No subject in Television is more fascinating than the study of the Sweep Circuit—a term that may mean little to you now, but which becomes vitally important once you begin your Sprayberry Television Training. This lesson deals with the two types of sweep systems used in Television receivers, electrostatic and electromagnetic. They are treated separately in theory and in practice. The discussions stem from the sync amplifier or separator and proceed through to the actual formation of a raster.

The manual and automatic controls are described at appropriate points in the discussion. Also we will take up trouble shooting methods. Certain of the electromagnetic sweeps are the most remarkable examples of electronic engineering which have been presented in domestic appliances. The lesson concludes with a discussion of the sweep raster and its use in interpreting television faults.

Most likely to break down and require servicing are the high and low voltage power supplies of the Television receiver. I devote an entire lesson to this subject so that you will be prepared to service this equipment easily and correctly. You will learn about the necessity for the high voltages employed in the picture circuit. I include a discussion of sweep impulse voltage supplies, tying this in with information you receive earlier in my training. I also cover all specialized Television circuits—such as clipping, clamping, grid blocking, beam cutoff, etc.

Of interest to every Television service technician is the test equipment he will be called upon to use in his daily installation, adjustment and service work. I explain in detail the various test units employed in Television servicing and show you how to use, read and interpret them. I also suggest how and when to use boosters, remote control, special lenses, filters and other accessories.

All of my specialized Television Training has been leading you up to the actual job of installation and practical repair or servicing. As this point I go into this subject extensively—explaining installation procedure for maximum customer satisfaction—and then I take up the job of aligning a set when this becomes necessary. A specific and simplified alignment procedure is given for you to follow.

Every television man should know a good deal about the study of optics as related to Television. My training covers this subject thoroughly and also takes up the operation and installation of special Television receiver types—such as the projection and reflector units now in common use.

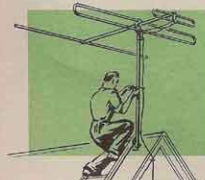
I complete my Television Training by giving you a thorough and practical knowledge of what to do when a Television set needs servicing—and the exact steps to take in handling the job. I show you what to look for, how to isolate the faulty circuit, the precautions necessary and the importance of selecting proper parts.

This is Television Training that I believe is the most complete and now practical ever offered. This is Television Training that will enable you to do the job right and profit handsomely for your time and effort.

SPARE-TIME MONEY MAKING OPPORTUNITIES IN TELEVISION

I SHOW YOU HOW TO DO PROFITABLE JOBS WHILE LEARNING. My students often write me these days to ask if they can look forward to spare-time earnings in Television even before they complete Sprayberry Training. The answer is YES! Of course my large catalog covers your spare-time cash opportunities in the field of Radio Servicing—but you may also add to your income by doing certain important jobs in Television. For example, you may assist the experienced Television serviceman in his antenna installation work (a two man job) or you may do such relatively simple jobs as focusing the picture tube, centering the picture on newly installed sets, adjust receivers before delivery, etc.

The best plan is to make contact with one of the established stores or service organizations in your area just as soon as you begin your Television Training. I will help you in every way possible. The experience you may gain through such work will prove quite helpful to you later on—and can well provide you with a worthwhile extra income during your training.



Now is the time to get into TELEVISION. See Back Page for Facts About the Sprayberry Academy . . .

My New Television Laboratory

Will Always Be on the Alert to Bring You the Latest Technical Developments as They Are Announced by the Set Makers

I have spent a considerable amount of money to equip my new Sprayberry Television Laboratory—and I plan on spending still more to make it possible to test new circuits and new techniques in Television just as fast as they are announced to the trade. The big job my laboratory has to do is keep one step ahead of the times. As new or improved circuits are announced, I will see that they are explored thoroughly—and if they appear practical and generally accepted, they will be included at once in my Training. In Television as in Radio, Sprayberry Training is just as modern and up to date as it's possible to make it!

The photograph shows my technical director, Mr. Fred Veditti, and me working on a Television set. Both of us spend a good many hours each week working on practical projects in our laboratory because it helps us to keep right up to date on the practical aspects of all new Radio and Television developments.



In this laboratory we make through tests of new Radio, Electronics and Television equipment as released by manufacturers.



My office door is always open to my students.



This is a general view of our new Chicago offices.

JUST RELEASED!

F. C. C. Authorizes 42 Additional Television Channels Providing Room for 2245 TV Stations Throughout the U. S.!

The Federal Communications Commission has just paved the way for Television in every community in our nation—even bringing this modern electronic miracle to the smallest cities and towns! In addition to the 12 VHF (Very High Frequency) channels on which TV stations have been operating during the past eight years, the F. C. C. has just opened 42 entirely new UHF (Ultra High Frequency) channels—which, it is estimated, will accommodate a total of 2245 TV stations in over 1,400 cities.

This means that *Television is ON ITS WAY TO YOUR AREA*. Perhaps at least one local TV station is now in operation in your town. More will follow shortly. As Television sets are sold and installed, the need for trained Television technicians will continue to grow rapidly. The man who has prepared himself will be in greatest demand—and this is the man who will be given his pick of the best job or start his own highly profitable Television Service Shop.

Television is moving *fast*—keep in step by starting your training now.

I Moved My School to **CHICAGO** to serve you *Better!*

Now Located in the Electronics and Transportation Center of America to Assure You Faster, More Complete Service
—Plus the Latest in Television Progress . . .

As you read my big book, "How To Make Money In Radio-Television and Electronics," you will notice that the Sprayberry Academy of Radio was, until recently, located in Pueblo, Colorado. Since the book was printed, I have moved our entire school to Chicago—for several very good reasons.

Here in Chicago I can serve my students better than I ever could before. We are right in the center of Radio and Television activity. Four Television stations are operating in Chicago and more are scheduled to be built. More than thirty AM and FM radio broadcasting stations are located in this great city. Chicago is the acknowledged hub of the communications industry . . .

Equally important, Chicago is the heart of the great Radio and Television manufacturing industry. My instructors and engineering staff can keep close watch on the newest ideas produced by the makers of Radio and Television sets—and pass this information on to Sprayberry students at once.

Another reason for moving the Sprayberry Academy to Chicago is the ideal location for mail and parcel post. Hundreds of planes and trains carrying mail leave Chicago or arrive here daily. There simply isn't another location in the country that will permit the same efficient mail service.

On this page I've reproduced several pictures of the new Sprayberry Academy of Radio offices. If you live in or near Chicago—or if you plan a trip through here at any time—be sure to stop in for a talk with me.

Frankly it cost a lot of time, effort and money to move the Sprayberry Academy of Radio to our new location—but I am convinced it was well worth the trouble and expense. Ever since I founded the Academy way back in the dark days of 1932, I have done everything within my power to improve the service to my students—and to provide the very finest and most complete Radio Training. Now that Television has become so important a part of our industry, my training has been enlarged to include this remarkable new development. Moving the school to Chicago is just one more case of my insistence that my course continue to be the very best training of all for you.

Mail Your
Enrollment Application
To Me NOW—

SPRAYBERRY ACADEMY OF RADIO

111 N. Canal Street, Chicago 6, Illinois

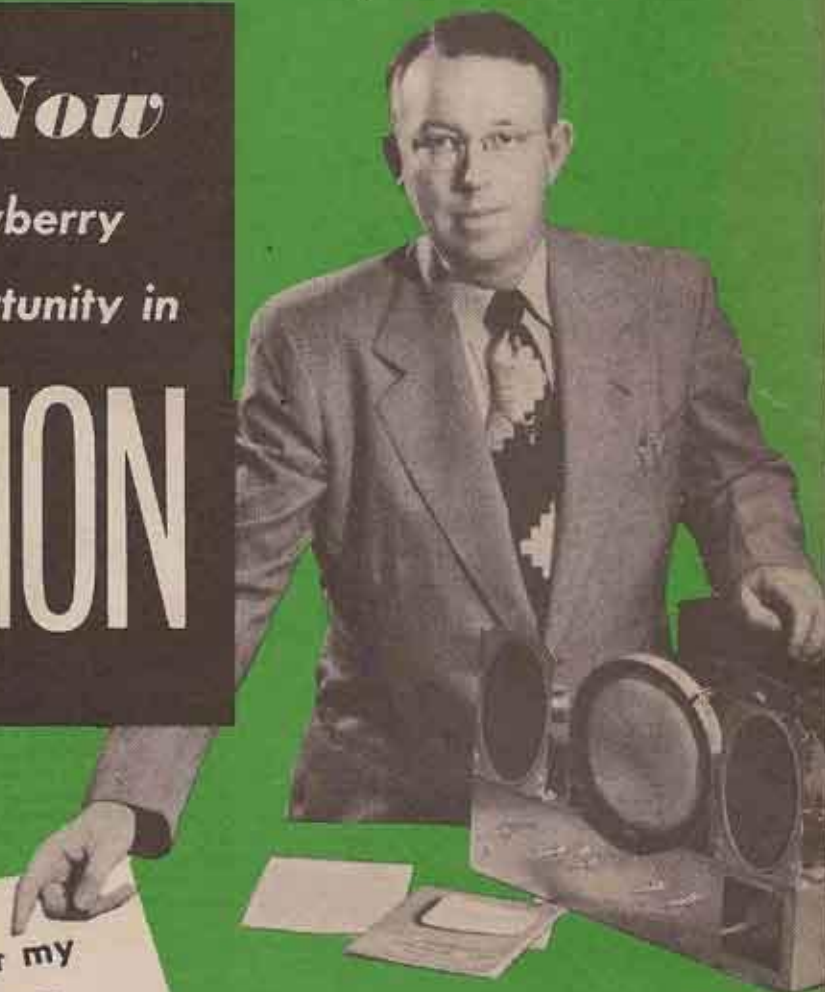
IMPORTANT LAST MINUTE NEWS

FOR YOU AND EVERY MAN INTERESTED IN SECURITY
AND LARGER EARNINGS FOR THE FUTURE . . .

Prepare Now

with Frank L. Sprayberry
for today's big opportunity in

TELEVISION



Every student enrolling for my
SPRAYBERRY TRAINING
learns how to handle practical
jobs in **TELEVISION**
Installation and Servicing

Special Note
This is a supplement to my large
descriptive book titled, "How To
Make Money in Radio-Television
and Electronics"

READ EVERY WORD OF THE PAGES THAT FOLLOW—THEY'RE IMPORTANT TO YOU! →

I WANT YOU TO KNOW EXACTLY
What's Ahead for You in

TELEVISION

Meet Frank L. Sprayberry—the man who has taught hundreds of successful Radio and Television Technicians.

A Few of the Job Opportunities Open to Men Who Know Television...

- Television Station Equipment Maintenance
- Television Set Installation
- Development Laboratory Assistant
- Television Service Shop Technician
- Factory Television Set Alignment
- Production Line Testing
- Tuning Alignment Technician
- Fringe Area Antenna Specialist
- Jobbar Sales and Service
- Your Own Television Business
- Sales Engineer

The growth of Television in America is almost unbelievable. Even to those of us in the industry, the speed with which Television has "caught on" is nothing short of startling. We expected a steady, substantial year-after-year growth—but time after time, the seemingly impossible predictions made by the most optimistic Television leaders have been exceeded many times. It is predicted—and I feel that the prediction must certainly come true—that *within five years or less, Television will be one of our first 10 American industries!*

As Chairman Wayne Coy of the Federal Communications Commission put it, "A new force (has been) unleashed in the land. I believe it is an irresistible force."

You've heard a lot about the big money in Television. Perhaps you live in an area now served by one or more Television stations. You probably know Television installation and servicemen who are constantly being sought after for their knowledge and experience. And quite naturally you want to know how you can fit into the Television industry.

First let me answer your question by saying that Television has been developed to a high point of perfection. From improvements will be made as they constantly have been made in Radio for many years. Television sets sold today will be in use for years to come. Television in its present form will be extended to city after city, town after town until it blankets the entire country. This expansion will come far faster than most people realize—and the alert man will prepare now to meet the exceptional opportunities just ahead by training and preparing NOW.

I've seen it happen over and over again—in New York, Philadelphia, Chicago and many other cities. When one or more Television stations go on the air, the trained man who knows the ins and outs of Television is the man who steps into big money in a hurry. He is in demand constantly to install, adjust and service Television sets as fast as they're sold.

The Federal Communications Commission is doing everything it can to encourage the development of Television, and is now opening up many additional channels to accommodate large numbers of additional stations.

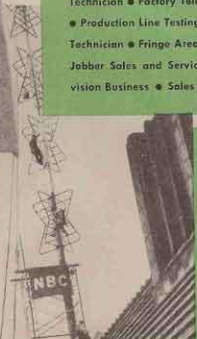
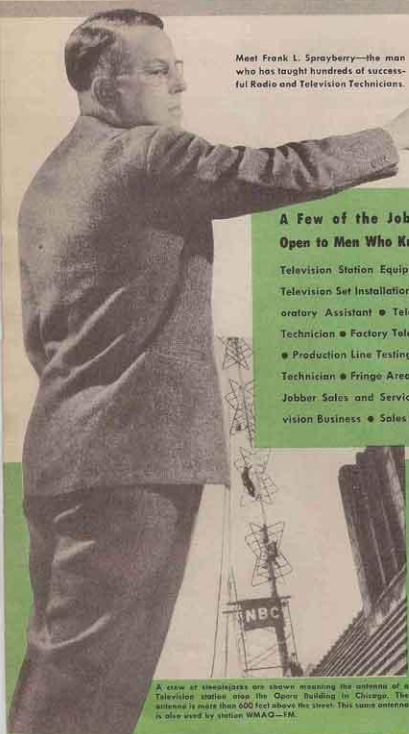
Television is here—a practical reality—right now. The U. S. public has spent over a billion dollars for Television sets so far. Television is growing extremely fast and before long it will be even more important to our daily lives than radio is today. By the end of 1949 over 5 million Television sets will have been sold—with an audience of over 12 million viewers. New applications and new uses for Television will increase its value—and each new application will open additional jobs for men who know how to work with Television equipment.

Even if you have never seen the inside of a radio set in your life, my practical, down-to-earth Training will prepare you to handle any service or installation job in Radio and Television. As you would expect, the Television receiver has more parts than the average radio set and many of the circuits are new to the man who has been servicing only radio sets. For this reason, the experienced radio serviceman needs my training just as vitally as the man who is just starting. In these days of fast moving developments in Television the "bluffer" is always left far behind the properly trained man.

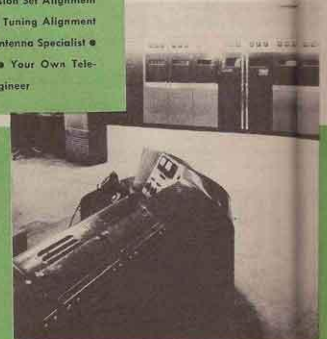
While you are still training with me, there are many Television jobs I will teach you to handle so that you can make spare time cash. In this way you will not only have the opportunity to add substantially to your income while learning Radio and Television—but, equally important, you'll be getting plenty of valuable practical "on-the-job" experience.

This is one of those very rare times in your life when you are able to get in on the ground floor of a great new industry—Television. The men who learn Television now will have all the advantage over the fellows who come in later. I stepped into the Radio industry in its earliest beginnings—and I have never regretted my decision for a minute. And when you have your own start in Television you'll be just as fascinated by your work.

In a single word, you have a great future ahead in Television—and the chance to earn more money and enjoy greater security than in perhaps any business or industry you could select. The facts to back up my belief are in this folder and I invite you to read every word carefully—then decide to get into Television now—the Sprayberry Training way.



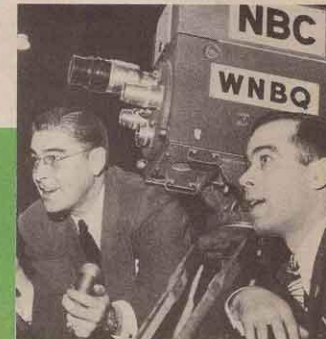
A crew of telegraphers are shown measuring the antenna of a Television station atop the Queen Building in Chicago. The antenna is more than 600 feet above the street. This same antenna is also used by station WMAQ-TV.



This is a corner of the master control and transmitter room of a Chicago Television station. Each Television station simultaneously operates separate transmitters for voice and pictures.



The mobile unit of the Television station is actually a complete transmitting station. The picture is relayed to the main transmitter where it is rebroadcast. Notice the disk-like relay transmitting antenna.



NBC cameraman and announcer "cover" a televised sports event in the Chicago area. As many as three to five cameras are often required to televise a single event to provide a variety of camera angles.

SPRAYBERRY ACADEMY of RADIO 111 NORTH CANAL STREET, CHICAGO 6, ILLINOIS