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An American Manual of Radio

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New York
DODGE PUBLISHING COMPANY

LISTEN IN

PRINTED IN THE UNITED STATES
OF AMERICA

FIRST EDITION

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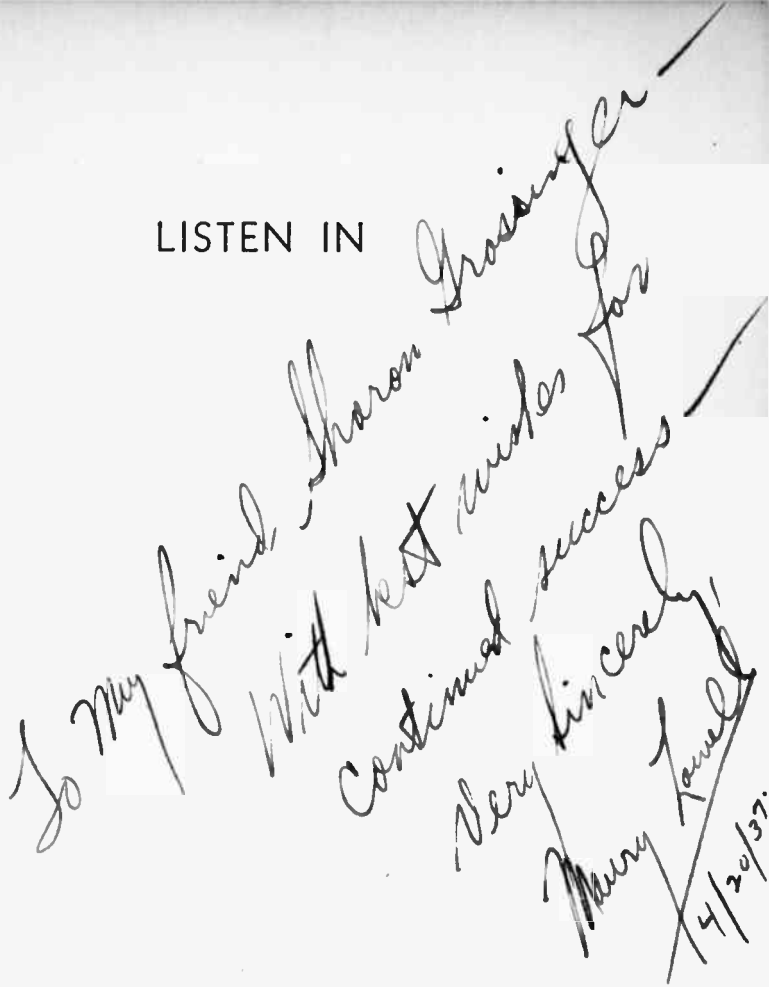
To my friend Sharon Grossinger
With best wishes for
continued success
Very sincerely
Mary Lowell
4/20/37

ACKNOWLEDGMENTS

For reading the manuscript and assisting in its revision, the author is especially indebted to Miss Judith Waller, Educational Director, Central Division National Broadcasting Company, Chicago. Others who have read the manuscript and offered valuable suggestions are:

Dr. Franklyn Dunham, Educational Director
National Broadcasting Company
New York City

Edward R. Murrow, Director of Talks
Columbia Broadcasting System
New York City

Charles Townsend, Engineering Department
National Broadcasting Company
Chicago

PREFACE

American radio presents the paradox of seeking, on the one hand, new recruits to fill the ranks of this phenomenally growing industry and, on the other, constantly turning away those who desire to enter any of its numerous branches of activity. Requiring only those who have had practical experience embracing all of its technical aspects, radio cannot employ the novice; but the novice who may be willing enough to study and learn this art and industry is faced with a serious and discouraging dearth of study and training opportunities.

It is, therefore, from the standpoint of actual needs that this manual has been written. Practical suggestions for the organization and operation of radio groups throughout the local communities, suggestions to script writers, artists, announcers and directors with respect to techniques applicable to each craft as well as steps to be taken in seeking employment, and a working vocabulary of radio language are offered.

Since the broadcasting stations of the United States are given life by the Federal Communications Commis-

sion requiring that all radio broadcasting stations shall serve public interest, convenience and necessity, it would seem logical that the general public, as well, should become more intimately acquainted with this medium, so that broadcasters, in the light of this new understanding, may be assisted in the solution of their own problems and become better able to discharge the trusteeship of their privilege to enter every American home.

If after the reading of these pages the general public and those who have ambitions to enter the professional field of radio should gain a new insight into the workings of this servant of society so that they become better able to serve and be served, the purpose of this manual will have been realized.

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PART ONE

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Glossary of Radio Terms

Glossary of Terms Used in Radio

Students and other non-professional groups who are turning in increasing numbers to the production of radio programs find themselves dealing with a new art and a new industry. Like other new arts or industries, radio is building its own language to meet its needs. Following is a list of terms peculiar to radio which has been checked and approved by the following: William S. Rainey, Production Manager, NBC, New York; C. L. Menser, Production Manager, NBC, Chicago; Hunter Reynolds, Engineering Department, NBC, Chicago.

I. CONTINUITY

The radio programs you hear begin with an idea which is created by a

Script Writer . . . One who prepares the text or dialogue with the accompanying directions for sound effects, musical cues, and transitions for a radio production. He is sometimes called a

Continuity Writer . . . Because in the period before dramatization became popular the chief activity of a radio writer was to keep the program continuously on the air with reading material to fill in the time between musical numbers.

Credit Writer . . . One who writes the advertising material for a commercial program.

Script . . . Or "continuity" is the text of a program looking not unlike the pages of a play, since it lists the speakers or actors and the lines they speak, as well as suggestions to the director and cast. Script applies usually to radio plays whereas

Continuity . . . Usually applies to text prepared to be read by the announcer only, such as introduc-

tions of musical numbers, introductions of speakers, commercial announcements, etc.

Credit . . . Also known as "plug." This is the material designed to acquaint the listener with an advertiser's product. It may be given by the announcer or by actors.

Show . . . The entire program which is to be broadcast.

Sustaining Show . . . A program which is produced by and at the expense of the broadcasting station or network.

Commercial Show . . . A program paid for by an advertiser. This includes payment for time on the air as well as for the talent and script.

Network Show . . . A program released simultaneously over two or more stations which are connected by telephone wire.

Local Show . . . A program released only through a single station.

Theme . . . The same music, sound or talk which opens and identifies a program from day to day or week to week.

Tag Line . . . The final speech of a scene or play exploding the joke, or the climax speech resolving the scene or play to its conclusion.

Gag . . . A joke or comedy situation.

Tie-in Announcement . . . A commercial announcement given by the local station announcer immediately after a prearranged cue given on the network. For example, the network program may conclude one minute early, whereupon the local announcers in the stations carrying the network program will then consume the remaining minute with a commercial announcement dealing with the product advertised on the network program and stating details such as where this product may be purchased locally.

Transition . . . Or moving from one scene to another. This may be done by an announcement describing the new scene to follow, by music, or by moving away from the microphone.

Across the Board . . . A program scheduled five days a week at the same time.

II. PRODUCTION

Production Director . . . This person is responsible for every detail of the program including the announcer, engineer, actors, musicians, and sound men. He builds and shapes the program by bringing all these factors into harmony. He may make corrections and any revisions he deems desirable in the script whenever he feels such are necessary for an improved program. Upon his shoulders rests the

complete responsibility for the quality of the program.

Cast . . . As a noun, the people who appear on the program, not including musicians. As a verb, the process of selecting those who are to take the speaking parts.

Audition . . . A studio test of talent or material or both prior to a broadcast to determine whether that talent, material, or both should be broadcast.

M C . . . Master of Ceremonies.

Juvenile . . . An actor whose voice carries an age quality of 17 to 24.

Ingénue . . . An actress whose voice carries an age quality of 17 to 24. She should have a sweet, sympathetic, youthful vocal quality.

Lead . . . An actor or actress whose voice carries an age quality of 25 to 35. The voice should be clear, definite, heavier in quality than the juvenile or ingénue, and should have a quality of authority.

Character . . . An actress or actor with an older voice (35 to 60) who can do dialects or who has eccentricity of speech and characterization.

Character Juvenile . . . (17 to 24) Male voice in dialect or having peculiar vocal quality.

Character Ingénue . . . (17 to 24) Female voice in dialect or having peculiar vocal quality.

Bit . . . A small part in the cast which usually consists of a few short speeches.

Free-lance . . . A radio artist or script writer not under contract to any one particular station.

Pick Up Your Cue . . . A command by the production director to an actor to begin speaking his lines immediately after the last word of the preceding speaker's last sentence.

Cue . . . A signal, either verbal or by sign.

Ad Lib . . . Impromptu speaking.

Read-y . . . A quality of unnaturalness by an actor or speaker, giving the listener the feeling that he is reading rather than talking.

Sneak It In . . . A command by the production director to the sound man or orchestra conductor to begin the sound effect or music very quietly and gradually increase the volume.

Fluff or Beard . . . Any word or phrase accidentally mispronounced or in any way distorted, resulting in an imperfect reading.

In the Mud . . . A lifeless delivery with very uninteresting quality resulting from the speaker's or actor's improper pitch and lack of nuance. Also the sound heard when the voice is spoken into a closed microphone and picked up faintly on a live microphone at a distance.

Schmalz It . . . A command by the production director to the orchestra conductor to have the music played in a sentimental style.

One and One . . . One verse and one chorus of a musical number.

Cut . . . A deletion of material whether spoken or musical in order to fit the prescribed time. It is also a term used by the production director in the form of a command to the engineer to close all microphones so that nothing more can go out on the air.

Clean It Up . . . A command by the production director to the orchestra conductor to rehearse a musical number until it is perfectly rendered, or to a dramatic cast to remove all hesitancies or defects in the delivery of lines.

Pace . . . Or speed of delivery. The pace of a sentence is the number of words per minute at which it is spoken. A variation of pace is used to express a variation of thought.

Accent . . . Or change of emphasis in a sentence or group of sentences. This is necessary for shade of meaning, relief from monotony, and for quality of speech.

Clearing Music . . . Determining whether the station has a license to perform the musical number or

numbers proposed to be played or sung on the air.

Tight . . . A program which in rehearsal times a few seconds over the allotted time and should either be cut or played rapidly, provided the material permits the rapid treatment.

Dress . . . A program rehearsed for the last time exactly as it is to be broadcast.

Stand-by . . . A command by the production director to the cast to be ready to go on within a few seconds. Also, a program whether dramatic, musical, or straight talk which is relied upon as an emergency, when the allotted time for a program already on the air has not been filled by that program.

Take It Away . . . Cue to begin a program given by production director to engineer who relays it via direct telephone wire to engineer at the program's point of origin.

Drooling . . . Padding a program with talk in order to fill the allotted time.

Dead Spot . . . Also known as "white space" or period of silence when a program is supposed to be on the air.

Cushion . . . When a program runs shorter on the air than it did during rehearsal, identifying theme

melody is used as a "cushion" to fill in the extra time. Sometimes an extra paragraph of credit is used instead of theme.

On the Nose . . . A program which, while on the air, appears to be on time to the second.

On the Head . . . A program which concluded on the exact second.

III. SOUND

Sound Man . . . One who creates, either by recorded effects or by manual effects, the sounds required by the script.

Pancake Turner . . . One who operates a sound effect machine for the purpose of playing recorded music on the air.

Platter . . . Musical records played on a sound effect machine.

Electrical Transcription . . . Sound transferred to a 16-inch disc, which revolves at a speed of 33 1/3 revolutions per minute, made for broadcast purposes and having high fidelity.

Phonograph Record . . . Sound transferred to a shellac composition disc of 10 or 12 inches diameter which does not have as high fidelity as an electrical transcription and is manufactured chiefly for

home use. It revolves at a speed of 78 revolutions per minute.

IV. ENGINEERING

Control Room . . . A small room usually enclosed in glass where the engineer and production man control the program.

V. I. . . . Or "volume indicator"—a delicate instrument containing a needle which indicates the volume of sound, enabling the engineer to determine whether the "level" is too high or too low.

P. A. . . . Public Address system consisting of a microphone, amplifier, and loud speaker. Certain types of microphones require a pre-amplifier in addition to an amplifier.

Gain . . . The increase in volume of sound obtained in the amplifier.

Riding Gain . . . Controlling the amount of increase of volume of sound as done by the engineer with the aid of a volume indicator.

Peaks . . . High points in the variation of sound which are the natural result of changes of pitch, accent, and explosions of certain consonants and vowel sounds causing the volume indicator to fluctuate in accordance with the volume of those respective sounds.

"Gimme a Couple of Peaks" . . . A request by the engineer via telephone line to an engineer at a remote point before the broadcast asking the remote engineer to speak into his microphone in order to determine whether the lines are clear. The phonetic yardstick used by the engineer in testing lines is "Woof" spoken explosively. (Announcers' definition of an engineer is "A Woof in cheap clothing".)

Level . . . A test of a speaker's voice for tone and volume to determine proper distance from the microphone for best listening qualities.

Balance . . . Blending different kinds of sounds to achieve proper volume relationships such as musical background for a dramatic sequence. If the music is so loud that the dramatic dialogue is lost, a poor "balance" results. Also, the arrangements of musical groups to obtain a natural blending of tone.

Mike . . . A microphone.

Carbon Mike . . . A microphone composed of a metal diaphragm enclosing a small group of carbon granules which transform the sound vibrations produced in the studio to similarly vibrating electrical currents. It is usually suspended from a circular steel frame by several small coil springs.

Condenser Mike . . . One which performs the trans-

formation of sound to electrical impulses by means of two slightly separated diaphragms which make up an electrical condenser.

Dynamic Mike . . . A microphone which works on the principle of reversing a dynamic loud speaker to receive sound and converts the sound to electrical impulses by means of a floating coil or wire in a magnetic field.

Ribbon Mike . . . Or "velocity mike"—A very directional microphone which transforms the sound vibrations into electrical currents or impulses by a metal ribbon freely suspended in a magnetic field. This microphone has become more and more popular because of its fine quality and excellent characteristics.

Set-up . . . The production director's arrangement of cast, orchestra, and sound effects microphones.

Pick-up . . . The reception of the sounds resulting from the "set-up." A poor set-up will result in a poor pick-up.

Blast . . . An explosive sound too close to the microphone, produced by voice, music, or sound effects.

Fading . . . This is an effect of movement from a foreground to a background position. It is accomplished by having the actor move away from the microphone as he speaks or having the engineer slowly diminish the volume by means of a Vernier

Fader which, if done slowly, is known as "sneaking it out."

Definition . . . The focus of tone. Any distortion or lack of quality of tone is called poor definition. It is comparable to the focusing of a camera lens.

Delight Box . . . An instrument panel in the studio operated by the announcer, which establishes contact with the transmitter, when the program is local, or the telephone company, when the program originates in a network studio, thus putting the program "on the air."

Nemo . . . Also known as "remote pick-up." Any program originating outside of the broadcasting studio.

On the Air . . . A program originating in a local station is sent by telephone wire to the local transmitter through which it goes out on the air as a broadcast. However, the major networks are not, literally, broadcasting companies, but program service companies. Their programs are sent from their studios to the telephone company via telephone wire and from there relayed by telephone wire to the local station transmitter which broadcasts the program.

Station Break . . . The identification of a local station immediately following a network program.

PART TWO

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The Aspirant

INTRODUCTORY REMARKS

There is a current notion among those outside the radio industry that it is impossible to break into the field. If this belief means that mediocre ability has little or no chance, it is perfectly true; if it means that unusual ability likewise finds no outlet, there is an unwarranted pessimism circulating throughout the land which should be dissipated.

Script writers, sound technicians, production directors, announcers, and artists have a brilliant future in radio provided they excel in their respective crafts. Local stations, network organizations, transcription companies, and advertising agencies are constantly on the alert for unusual talent. Unfortunately, the actual supply is small, but the law of supply and demand amply rewards the gifted and fortunate few.

The potential supply of talent is great, but it is of the raw and inexperienced variety. There are hundreds of persons in America of all ages, gifted with various talents, which if properly harnessed, trained, and developed, could find their respective places in radio. The difficulty arises out of the fact that while there may

be evidences of talent there is no development of technique, which is a condition precedent to professional radio work and for which there are no short-cuts. Technique is acquired after much study and practice. Commercial broadcasters are unable to devote the time and unwilling to spend the money necessary for apprenticeship training. It must be acquired elsewhere.

The script writer may take advantage of some of the excellent college and university courses in radio writing, or may be able to locate a job on the staff of a small station where he will have the opportunity to write all types of continuity, thus acquiring not only a more practical knowledge of his own craft, but a more accurate and complete picture of the entire radio set-up.

The actor, singer, and musician should likewise seek guidance and instruction in academic courses of study whenever possible and should supplement this training with actual participation in local station programs. While little or nothing can be expected by way of compensation, the opportunity to adapt the artist's talent to the limitations and considerations of the studio is not only valuable but a necessary step prior to seeking jobs from larger stations and network organizations.

The potential production director must possess many talents. He must be able to interpret literature and clearly convey his interpretations to others. He must be able, furthermore, to put words to paper. He need not, necessarily, be an accomplished musician, but he

must know music; and finally, he must know something of the strategy of handling people. A job in a small station will afford the opportunity to learn the technique of studio production. Here he will be required to write, announce, and participate in all manner of programs in addition to directing them.

There are those who fall into the error of believing that education and experience can be acquired much the same way as resistance to disease can be built up by an injection of virus into the arm. Unfortunately, this naïve conviction has given rise to a mushroom growth of radio schools which purport to teach every branch of radio in ten or fifteen lessons. It is safe to say that ninety per cent of these schools not only fail to live up to promises, but also harm the enrollee at his expense for the aggrandizement of their charlatan operators.

In the first place, those who set themselves up as radio teachers have, in most instances, never had actual radio experience themselves, and while even the best of them have had some academic speech training, they know nothing whatever of the studio or microphone. In the second place, they promise to teach all there is to know about every phase of radio in a dozen easy lessons.

More frequently than anyone else, the actor falls easy prey to this quackery, being lured by the alleged opportunity for obtaining actual radio experience. This is accomplished by purchasing fifteen minutes of time a week on the smallest local station available and de-

voting it to a program in which any or all of the pupils participate. But this device to swell the enrollment fails to provide its advertised benefits, not only because the student appears before the microphone on very few occasions, but because of the poor direction to which he is exposed if ever he does appear. At best, no apparent effort is made to achieve quality. The only purpose seems to be that of satisfying the pupil's passionate desire to "get on the air." Avoiding this type of school will save the aspirant time, money, and, frequently, heart-breaking disappointment.

THE SCRIPT WRITER

The size of the writing staff of any given station will depend upon the size of the station itself and the volume of business it enjoys. Most of the smaller local stations are financially unable to spend money on live dramatic or musical sustaining shows, and, therefore, depend to a great extent upon recorded music, health, safety, and other talks of civic interest by local citizens who, in most cases, offer their services gratuitously. In most instances these stations are unable to present more than the simplest kind of dramatic or musical program because they are technically unequipped to do so.

For example: the studio may be too small, microphones may be insufficient in number and quality, or the station may not have the necessary recorded or manual sound effects called for by the script. For the larger

musical and dramatic programs, most of the smaller local stations depend almost entirely upon the networks. Many local stations, however, are not affiliated with any network, and, as a consequence, their programs will generally be of the most simple variety.

These facts are most pertinent to the script writer's problem of finding a market for his talents. Obviously, he cannot expect to find an outlet in the five-hundred-watt station, either from the standpoint of financial return or the opportunity to write more than routine continuity for recorded musical programs. His best market, therefore, will be found in the larger cities where sustaining and commercial dramatic or musical programs alike are produced in the midst of superior technical surroundings.

The reason frequently given for the fact that many smaller local stations are unable to produce complicated programs requiring complete and modern equipment is that there is insufficient local advertising to justify the expense of such equipment. The problem here is much like the proverbial "Which came first, the chicken or the egg?", for others have retaliated to the effect that local advertisers do not buy this type of programs because the station could not attempt to produce it even if the order for it were placed. In other words, it is difficult to determine whether small stations are unable to spend the necessary money for improved facilities because there is insufficient local advertising to warrant this expense, or whether the advertiser will not place an

order for a complicated production which requires facilities which the station is incapable of supplying. But whatever the reason may be, there is no disputing the fact that the small stations do not offer a radio writer much opportunity.

Many of the large stations, as well as the networks, employ a continuity manager whose salary may vary from fifty dollars to one hundred and fifty dollars a week, and who hires a staff of writers, depending upon the size of the station, whose salaries vary from twenty dollars to fifty-five dollars. This represents, in most cases, the writer's basic salary, although it is the practice of the network organizations to pay a writer a staff salary plus additional fees for those programs written by him which are subsequently sold to a sponsor.

For example, for a commercial fifteen-minute program scheduled five times a week locally, he may receive an amount from twenty-five to seventy-five dollars weekly. A local thirty-minute show once a week may bring him from ten to fifty dollars in addition to his regular salary. A fifteen-minute network show "across the board" will mean one hundred to two hundred and fifty dollars weekly. A network half-hour show once weekly will net him thirty-five to one hundred dollars. These are average figures, and they do not cover those cases of special script writers who receive as much as a thousand dollars weekly for writing headline acts such as Jack Benny, Burns & Allen, Eddie Cantor, and others. Such writers are hired by the acts

themselves and usually come from the ranks of well-known radio, stage, and screen writers.

Application for employment should, in the case of most local stations, be addressed to the station program manager, and a similar letter addressed to the network continuity manager will find its way to the proper person within that organization. Details as to education, experience, and other qualifications should be freely stated. With this letter may be sent a few samples of the author's best work. Do not send stage plays, short stories, novels and the like! Submit radio continuity. You are to be judged only on your ability to write for radio. At the conclusion of the letter, ask for a personal interview appointment. If your letter and sample scripts look promising, the interview will be granted and you will be notified thereof within a short time.

Advertising agencies handling radio accounts usually employ free-lance script writers. Here the basic salaries are much higher because the shows are commercially sponsored. Writers of such programs as Betty & Bob, Ma Perkins, Jack Armstrong, Little Orphan Annie (all of which run fifteen minutes across the board) receive salaries in the neighborhood of two hundred dollars weekly. Inquiry by telephone will determine the proper person to see at the agencies, and the procedure outline for station contact is suggested.

Free-lance writers who desire to sell their wares to both stations and agencies must depend not only upon

their ability to write, but upon their ability to create a program idea. This is not to be interpreted to mean that the staff writer need possess little creative ability, or that the exercise of such ability is afforded no opportunity for expression; for while he may find some time for writing programs which he himself has conceived, most of his time will be filled with the daily task of grinding out routine continuities such as introductions to musical numbers played by an orchestra or sung by a soloist, speeches or speakers, announcements of station features, commercial announcements, and the like, all of which are specific program assignments. The free-lance writer, on the other hand, being unconfined to a definite schedule of work, may spend all of his time planning and creating programs of his own conception.

A general synopsis of plot in the case of the dramatic show, or details of the program's central idea and construction, in the case of any other type of program, should be prepared together with two or three sample scripts. If these are submitted to a local station, their fate will be determined, in most cases, by the station program manager who will judge the program's merits on the basis of a reading alone. This method is an unfortunate handicap to the writer because a script can be judged accurately only by listening to it. Many programs which seem to lack merit on paper come to life with a surprising amount of audience-interest possibilities when auditioned. The reverse is also true. A program has frequently been accepted by virtue of its at-

tractiveness as written material, only to have it fail miserably after it has been aired. For this reason, an audition of the program under consideration is the general practice of network organizations which are both financially and technically equipped to undertake this procedure.

Advertising agencies are excellent buying prospects. While the station or network may accept a script for sustaining or commercial release, advertising agencies are concerned only with the latter. If the program synopsis or outline seems to fit into the agency's general plan for the merchandising of its client's product and the script appears to be well conceived and written, the agency will arrange an audition. Should the program prove acceptable to both agency and sponsor, the writer's contract fee will depend upon the current local rates for the type of program in question, the writer's reputation, and his own bargaining powers. Those who conceive the program idea, title, and distinctive form as well as write the day-to-day or week-to-week scripts are usually given a contract for the run of the show. If the program idea and form are supplied by the agency and the writer contributes the scripts built around them, the contract will usually be placed upon a week-to-week basis.

Since it is impossible to know in advance which agency or agencies may be looking for a new program or a writer to prepare scripts built around an idea already conceived by the agency, it is wise to make thor-

ough contacts. Fears or inhibitions about making such contacts should be dispelled, for agencies with radio accounts are continually on the lookout for good ideas and writers alike. If you believe your ideas and their treatment are unusual, well-handled, and will be provocative of general public interest, do not hesitate to submit them for the consideration of every advertising agency in your city.

THE PRODUCTION DIRECTOR

The sudden rise of radio drama and the elaborate musical productions attendant upon the organization of our major network companies precipitated a serious personnel problem arising out of the fact that while such productions required expert direction there were practically no radio directors. The principal reason for this dearth was the fact that local stations which antedated the chain organizations were presenting programs consisting, largely, of speeches, recorded music and commercial announcements, all of which required no directorial abilities. Production directors were practically non-existent, and the art of radio direction was yet to be developed.

Faced with this problem, networks and agencies were compelled to draft stage producers and directors who were well grounded in the theater but knew little or nothing about studios or microphones and were faced with the responsibility for developing effective tech-

niques for the new entertainment medium. Out of this pioneer period, filled with technical and artistic gropings in the dark, evolved those techniques which make the better radio programs what they are today.

While ten years ago the serious dearth of radio directors offered unlimited opportunities to those interested in the field, today these positions within the networks are filled not only by those who first pioneered the field but by men with previous experience on the production staffs of local stations.

However, the field is by no means closed to the aspirant. Advertising agencies have taken many directors from the networks and larger local stations, both of which have been compelled to replace their losses with stage managers, stage directors, college drama instructors, musical arrangers and orchestra conductors who were, upon their initiation into the field, completely ignorant of radio techniques.

No effort has yet been made by the networks to provide apprenticeship training opportunities for directorship aspirants. This would appear to be a short-sighted policy, for an inexperienced director is not only of little value during the learning process but, given the responsibility for directing network programs at the very outset, may commit the costly errors of misjudgment in timing or presenting a program in a manner far short of network standards. Just as the major baseball teams "farm out" their prospects to the minor leagues, so might the networks give their prospective production

directors the necessary practical experience by arranging to place them either on staffs of their own local stations or on those of their affiliated stations.

Since radio production directors are actually hired from the ranks of the related arts, those who fall into these categories and seek production positions can lose nothing by applying to the production managers of the respective networks and larger local stations. But by far the wisest and most logical procedure would be to obtain the necessary experience in a smaller local station where opportunities for announcing, writing, acting as well as directing are readily available. Such training will provide for the aspirant a firm foundation of experience without which his future in radio would be most perilous indeed.

ARTISTS

The best advice one can give the prospective radio actor and singer is to learn the "feel of the mike" in some smaller local station before attempting to seek employment from the networks, larger local stations and advertising agencies. Too frequently do individuals with genuine talent but suffering from lack of experience attempt to crash the "big time" before they are ready. This is regrettable not only because these aspirants handicap themselves and frequently make impossible any future chance of succeeding because of their unfavorable auditions, but because they frequently

deprive the stations, agencies and networks of their genuine talents which cannot be used unless with those talents are combined the technique which comes with experience. The method of selecting talent will explain why this is true.

Anyone and everyone can obtain an audition at the larger local stations, networks and advertising agencies. A telephone call or letter of inquiry will determine the proper person or persons to contact and the appointment will be granted within a reasonable time. The actor or actress will be asked to bring four or five cuttings from plays or original material of approximately forty-five seconds to one minute duration each. The actor should select material which best represents his talent and versatility, involving as much variety as possible of moods, emotions, characterizations and styles of treatment—farce, comedy, drama and melodrama. All of this, of course, will be difficult to accomplish in five minutes, but the actor should attempt only those rôles which he can best do. It is far wiser to present two or three different selections effectively than attempt as many as five or six in a mediocre manner. My experience in auditioning talent is that most aspirants bite off considerably more than they can chew. Young girls with ingénue voices make the mistake of attempting older character parts and even go so far as to attempt male impersonations. While this may serve the purpose of entertaining parlor company, it will hardly induce a radio director to cast a female voice in a male rôle.

Actors and actresses would do well to confine their auditions to the reasonable limits of their own voices. There are those who do possess "trick" voices and can run the gamut of ages convincingly, but this is the exception. The average actor should stay within the range of his own sex and age. The problem then narrows itself to a careful selection of several well written cuttings which will offer the best opportunities to display variety of interpretation.

The radio singer will be asked to prepare two or three musical selections and should bring his own music in the exact key in which it is to be sung. Unless told otherwise, it is unnecessary to bring an accompanist, for in most of the larger cities the studios provide a union musician for this purpose.

On the appointed day at the given time and in the specified studio, the audition will be conducted by one or more of the studio production directors. Usually, the entire group of auditionees will be placed in the same studio and will perform in the presence of one another. If the auditionee fears "mike fright," let him be comforted, if possible, with the knowledge that this is not an unusual phenomenon and is experienced by our greatest stage and screen stars who happen to be appearing before the mike for the first time. The production director in the control room will understand this and will not penalize you, for he knows how quickly this disappears when the actor or singer later becomes acclimated to the studio situation.

Do not worry about your position at the mike. It will depend upon the nature of the studio, the microphone, and the "level" of your voice. The director will properly instruct you. Once you are placed, remain fixed, but not stiff. No one can do his best until he is completely relaxed. Do not assume that because you are an "amateur" you need feel inferior, for most directors prefer good amateurs to bad professionals, of which there are all too many. Maintain your confidence and your poise for these will reflect in your performance and may materially determine the quality of your audition.

In most cases, this short audition will entirely determine your future in radio. Directors are so besieged with aspirants that they cannot find time to grant subsequent auditions to the same persons. Your first impression, therefore, is apt to be conclusive. It is this situation which prompted the statement that preliminary experience on a small station provides a more secure foundation for the aspirant so that when his one and only audition is given for the networks, agencies and large local stations, he stands a much better chance to succeed.

It is the practice at the NBC to conduct first a general audition out of which only those who demonstrate genuine talent are given a second opportunity to perform before the entire production staff. Those who are highly recommended may either be placed under contract or placed on the "recommended" list. An artist

placed under the Artist Service Bureau contract agrees to work exclusively for NBC which, in turn, usually pays the artist a fee for each perfomance, although it is the customary practice to pay novelty acts and singers a stipulated weekly salary for any and all sustaining programs.

The NBC actor is paid fifteen dollars for a local or network sustaining program, twenty dollars for a local commercial program and twenty-five dollars for a network commercial program, unless an advertising agency hires the actor from the NBC Artist Service Bureau whence the fee frequently runs as high as fifty dollars a performance.

If the actor appears regularly on a single fifteen-minute five-a-week program, he is usually given a flat salary of forty dollars a week for playing three or more performances. Should he appear less than three times in any given week, his remuneration reverts to a performance basis and he is paid fifteen dollars a performance. All these figures are subject to a ten per cent reduction as a commission to the Artist Service Bureau.

THE ANNOUNCER

Local station experience is as important and necessary to the prospective announcer as it is to the artist. Here he will learn the fundamental techniques of reading commercial copy, ad libbing by announcing athletic contests and other special events, and reading inter-

pretatively descriptive or narrative material. His basic salary will be comparatively small—varying from twenty dollars to thiry-five dollars weekly, but he has the opportunity to earn extra fees on local commercial programs. His hours will be long, frequently from 7 A.M. to 10 P.M. or midnight, and not infrequently he is required to work seven days a week.

This school of hard knocks should prepare him for the richer rewards to follow, for announcing opportunities are not limited to air shows alone but extend into the fields of transcriptions, movie shorts and news reels.

The aspirant to the staffs of larger local stations or networks may expect a basic salary varying from thirty-five dollars to fifty dollars weekly plus the extra fees obtainable for commercial programs. In most cases, the sponsor obtains the services of the station announcer as part of the cost of the time, but will frequently pay a weekly salary in order to be certain of getting a particular announcer whose style he likes. Many clients find that a fifty-dollar weekly investment in the form of an announcer's fee pays high dividends because it inspires the announcer to do a better job of selling. It can be truthfully said, in this case, that "money talks."

The announcer working for the networks or larger local stations enjoys not only a higher basic and extra fee income but more satisfactory hours of work. The working day is divided into two and sometimes three

shifts. The two-shift day lasts from 7 A.M. until 3 P.M., and from 3 P.M. until midnight, while the three-shift day is divided as follows: 7 A.M. to 1 P.M.—2 P.M. to 9 P.M., and 5 P.M. to midnight.

Application for an announcer's audition should be made to the station program manager or network chief of announcers. The auditionee should submit with his application full details as to age, education, knowledge of foreign languages and experience, stating specifically those stations in which the applicant has been previously employed. The applicant will not, in most instances, be asked to bring his own material but will be supplied with a set of typical announcements including a long commercial announcement, an announcement of a group of musical selections, and one or two pieces of descriptive or narrative material. To conclude the audition, the applicant will be asked to ad lib on an assigned subject. He may be asked to describe the studio or describe an imaginary football game or may be told to assume that a symphony program has concluded three minutes before scheduled time and that the announcer must consume the remaining time. Here the announcer is not only put to the test of being able to comment on the program itself but must be able to pronounce properly such titles as Tchaikowsky's *Symphonie Pathétique*, Rimsky-Korsakoff's *Shehera-zade*, as well as the major works of Gounod, Lalo, Beethoven, Wagner, Debussy, Stravinsky, Chopin and others.

The opportunities for free-lance announcing are more abundant, since stations and networks are staffed only with a number sufficient to keep the station going. A free-lance announcer may solicit employment from any and all advertising agencies which, in the final analysis, hire the actors, musicians, and announcers for most commercial programs and pay uniformly higher salaries.

It is hoped that these suggestions may help clear the air of those misunderstandings which frequently inhibit potential announcers from attempting to break into the field which is not as much a "closed corporation" as many aspirants seem to fear.

PART THREE

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The Student

ORGANIZATION OF STUDENT GROUPS FOR THE PRODUCTION OF RADIO PROGRAMS

More than two hundred school systems and hundreds of colleges and universities are now using radio sporadically or regularly. The near future will probably see the organization of many radio guilds in educational institutions. In contrast with the play or two per year now presented by many school acting groups, these radio guilds will produce one or more radio programs every week. A few colleges and universities will find an outlet for these programs through their own educational radio stations. In most cases, however, it will be necessary to obtain time on the air and studio facilities from the local station.

Local station managers want educational programs, but demand—and with reason—that such programs present worthwhile material in a manner that will interest the majority of listeners.

It is hoped that the following plan will contribute to the organization of school radio groups equipped to fulfill these demands and needs, recognizing also the fact that radio can be an important avenue of communication between school and community when skil-

fully used, and if skilfully used, that it can develop a coöperative relationship between schools and radio stations for the betterment of the community.

It is further hoped that such school organizations may provide the apprenticeship opportunities required by those who desire to enter the professional radio field but who, at present, have no such opportunity to gain the necessary training and experience.

I. ORGANIZATION

As the first step in the organization of this plan for high school and college radio production, it is suggested that the local superintendent of schools or the college faculty member in charge, call a meeting of those persons immediately concerned with and interested in this project, namely the high school principals, drama coaches, or any other person or persons interested in the project and competent to carry it forward. This group should consider the plan and appoint a committee to contact the local station manager.

II. CONTACTING THE LOCAL STATION MANAGER

Manifestly the coöperation of the local station manager will be necessary for the success of this project, and much will depend upon the manner in which the approach to him is made. Do not under any circum-

stances assume a demanding attitude, for time on the air is valuable. Remember also that a station manager makes his plans far ahead, and that it is necessary to discuss time assignments well in advance. In all probability, the station manager will be receptive to the plan and grant time on the air because

A. It gives him a program service at no cost to his station.
B. It can be an audience builder for his station.
C. It will create valuable good will for his station within the community.
D. It will help him fulfill the "public interest, convenience and necessity" obligation which is part of his license agreement.

If the station manager grants the time be sure to

A. Ask him whether it would be possible to arrange an informally conducted tour of his studios so that everyone concerned with the broadcasts may become immediately acquainted with the environment in which he is about to work.
B. Arrange audition time so that acting, announcing, and musical talent may be auditioned on a microphone at the studio.
C. Arrange for rehearsal time preliminary to the actual broadcast. For the average fifteen-minute broadcast three hours of studio rehearsal may be considered sufficient.

D. Request the services of an engineer for the complete rehearsal period.

E. Tell the station manager that this rehearsal will require the use of microphones.

F. Request the services, if and when possible, of the station's production director or an announcer who has had experience in directing radio programs.

G. Request the station manager to coöperate in stimulating public interest in these broadcasts. News releases should be prepared by the radio group and submitted to the station manager for his approval. Either the station manager or the students may make the contact with local newspapers. School publications should also carry advance notices of broadcasts. Remember that preparation of the audience before the broadcast is vital.

III. ORGANIZATION OF PRODUCTION GROUP

Those students who are to take part in the actual broadcasts should be placed in charge of the faculty member best equipped to assume charge. If the local station cannot supply a director or an experienced announcer the duty and responsibility of directing the program may be delegated to the teacher. The group itself may then be divided into those interested in script

writing, production, sound effects, music, acting and announcing.

Suggestions to the Director

A radio production director may be likened to a chef, who mixes the various ingredients, trims and cuts them into proper form and size, and then mixes them together in the proper manner and proportions. But because two cooks mix identical ingredients in the same amounts, there will be no certainty of similar results. No one will argue that a newlywed will achieve the same success with her biscuits as her more experienced neighbor, even though they have both mixed the identical ingredients in the same amounts. We are often too prone to underestimate the importance of the *manner* of mixing, paying entire attention to the *matter*, and too eager to seize upon formal rules as an easy road to success. While such rules can be helpful, they are not to be relied upon entirely. Much of the success of any radio program depends upon the coöperative effort of the cast and the willingness on the part of the director to learn by trial and error.

IV. CASTING

Radio, being a one-dimensional medium, paints all its pictures by means of sound. In choosing those who are to take the speaking parts it is, therefore, necessary to select only those voices which will help to paint the

most colorful pictures. This requires the choosing of colorful voices. What are colorful voices? Those which command attention and interest. Vocal quality, however, is not the sole test, for the selected voices must also be of sufficient variety in tone and color as to be readily distinguishable by the listener.

A simple method for determining whether sufficient contrast exists is to have two actors read a paragraph of narrative material without interruption between the two persons speaking, while the production director in the control room closes his eyes and listens. If he can readily distinguish the voices there is enough contrast. If he cannot distinguish them there is, obviously, insufficient contrast and other voices must be auditioned.

When a script calls for a voice of a specific age, do not assume that the voice will be correct merely because the actor or speaker is of the prescribed age. It is surprising to discover that the voices of people forty years or older frequently paint a picture of much younger people, and vice versa. Furthermore, the quality of the speaking voice is frequently far different when heard in the studio as compared with the quality when heard over a microphone. Never cast a part without first hearing the actor's voice as it sounds over a microphone.

V. REHEARSAL

1. At school. After the cast has been selected, a line rehearsal held at school may be called for the purpose

of familiarizing the cast with the contents of the script. After a first reading the director should outline characterizations, explain and clarify situations and make whatever changes are necessary in the dialogue. By means of a stop-watch the program should be timed from beginning to end. Should the program appear to be far short of the prescribed time, the director may either write additional material himself or return the script to the script writer with the information as to the amount of time deficiency together with any suggestion as to which scene or scenes could be most advantageously lengthened. If the program runs far over the prescribed time, appropriate cuts can now be made.

2. At the studio.

A. Underlining: Each person should have his own copy of the script with his character name underlined in the margin. This is done to avoid losing one's place during rehearsal or broadcast.

B. Microphone placement: The studio engineer will best be able to suggest a microphone set-up after the director tells him the exact number of persons in the cast, whether sound effects will be needed, whether music will be used and if so, the nature of the instrumentation. It is important to remember not to handle any microphone or other equipment in the studio unless the studio engineer consents.

C. Pronunciation: A good dictionary should be referred to in all cases of slightest doubt as to proper word pronunciation. When alternative

pronunciations are given, the first pronunciation should be used.

D. Timing: The entire program from the opening signature up to and including the sign-off should be timed again by a stop-watch. After one or two mike rehearsals appropriate cuts should again be made if the program runs over approximately thirty seconds. If the program does not run over approximately thirty seconds do not make further cuts until after the dress rehearsal, because a smooth and polished performance is usually played at a faster tempo and the thirty seconds will have been picked up. During the dress rehearsal every half-minute of time should be marked on the director's script so that he may know at any time while on the air whether his program is running over time, under time, or on time, as follows: (30) (1) (1:30) (2:00). The first figure means that thirty seconds have elapsed, the second figure means that one minute has elapsed, the third that one minute and thirty seconds have elapsed, etc.

If, after the dress rehearsal the program has still run over the prescribed time, examine the script for possible cuts, always making certain that important dialogue is retained, and that the material to be cut leaves no gap in the story. If the program runs under the prescribed time, there exists the alternative of writing additional material or playing theme music at the close

as cushion. Time is, of course, of the essence, and a program on a local station should be timed to fourteen minutes and forty-five seconds exactly. Network programs must conclude "on the nose" after fourteen minutes and forty seconds.

E. Signals. When a program is on the air the production director, observing his time notes, can tell at any given moment whether his program requires slowing down, speeding up or whether it is on the nose. If the program is running too slowly he communicates to the actor by means of a signal the fact that he wishes the tempo speeded up. This signal is made by a circular motion of the index finger. To slow down the tempo the director makes a stretching out gesture with his two hands as though stretching a rubber band. The director's finger pointed at his nose signals the actors that the program is running on time and that the present tempo should be maintained. To begin a scene, sound effect or musical number the production director points a decisive finger at the actor, sound man or orchestra conductor, as the case may be. A signal to come closer to or move farther from the mike is made by pointing to the person or persons involved and then indicating a movement toward or from the mike. A lifted hand, palm upward, by the production director means that the voices,

sound effect or music should be louder. A lowered hand means that they should be softer.

VI. MUSIC

Before any music, whether it be live or recorded, can be played on the air, it is imperative that the station be notified at least one week in advance of the title, composer, and publisher of each and every musical selection to be played or sung. Unless the station manager can determine well in advance whether he has a license to broadcast any given musical number he would be subject to an expensive law suit and damages for airing music for which he has no license. Music must be "cleared" regardless of the quantity to be played or sung even if it is only one or two bars.

VII. DO'S AND DON'TS

1. Don't rattle the pages of your script. Turn them with great care since paper noise is not only distracting but destroys the illusion in the minds of the listeners.

2. Remain in a fixed position before the mike unless told otherwise by the director.

3. Do not retreat from the mike even though your part in any given scene has been completed, for it handicaps the actor who is presumably playing opposite you in the scene. Your physical presence provides the speaking actor with a mental and emotional stimulus.

4. Pick up your cues quickly; but not so quickly that you interrupt the preceding speech, unless that speech is a broken one.

5. The director should not cast anyone for any other reason save the fact that he or she is right for the part. By all means, never permit personal favor, bias or prejudice to influence casting. Personalities are unimportant—the show is the thing!

6. Don't trust those who perpetually tell you that it was a "grand program." You may be sure that mistakes have been plentiful. Try to determine what they are, why they occurred, and what can be done to prevent their recurrence.

VIII. SOME TESTS FOR QUALITY

Ask yourselves these questions about your radio productions:

1. Did the program run smoothly without hesitancies, slip-ups, fluffs, dead spots?
2. Were cues picked up promptly?
3. Was there sufficient contrast in voices?
4. Were the voices pleasing?
5. Did the sound effects paint an accurate picture?
6. Did the music effectively suggest the proper mood and heighten the dramatic value of the story?
7. Were the dialogue, music and sound effects effectively synchronized?

8. Did the actors sound as though they were really talking rather than reading; in other words, did they ring true?
9. Did the characterizations create a visual image of clear-cut genuine characters?
10. Was the time absolutely accurate?
11. Were listeners aroused to further interest in the program?

The student must be cautioned against any expectation that the religious adherence to any or all of the foregoing and following rules and suggestions will guarantee a perfect radio program.

It is impossible to set down any codification of principles which will create an artistic result. Art is not always born in the souls of those who wear long hair and a black tie and who gaze rapturously at the heavens awaiting some divine "inspiration." Art is the result of planned effort, created by practical people who possess not only talent but a tremendous capacity for hard work. It comes after much thought, study, effort and experiment by trial and error. It cannot be achieved quickly and easily; truly it is achieved by few and by them all too infrequently.

THE RADIO PLAY

From the days when radio programs were confined to speeches and songs and script writing amounted to the mere formal announcements, which were frequently left

unwritten and extemporized by the announcer, until today when slipshod methods have been replaced by carefully written and meticulously produced programs, showmanship has assumed a new meaning and a new importance.

What is showmanship? As well ask what makes a beautiful painting. It is far simpler to detect its presence or absence in any given program than to attempt to say in so many words exactly what it is. At best we can say in general terms that it is a method by which quality is achieved. We know that it is, fundamentally, a talent for saying and doing the right thing at the right time and in the proper manner and is based to a great extent upon a rich background of experience with audiences and a thorough knowledge of audience psychology.

How to determine the methods for saying the right thing at the right time and in the proper manner is, of course, the problem, and is a question whose answer might well be discussed in several volumes and still be left unanswered. But were all writers to ask themselves what single effect or mood they are trying to create and then set forth to do that which will help create this single effect or mood and refrain from anything inconsistent with or irrelevant to it, much will have been accomplished toward a good start, at least.

The script is the backbone of any radio program. It becomes of prime importance in the cast of the speech and dramatic program but has been known to make or

break a musical show none the less. A poorly written script may at times be saved by unusually fine acting and producing, but this is the exception—not the rule. A well written dramatic script, for example, makes it relatively easy for the director and his cast to provide a good show. The director becomes the author's interpreter and the actors are puppets who bring the written word to life. Upon the writer's shoulders, then, rests to a greater extent than anyone else in the radio picture the responsibility for the greatest share of creative activity.

Any book which purports to teach "How to Write," whether it be in journalism, the novel, short story or playwriting is treading on dangerous ground because it presupposes that anything and everything can be taught. True enough, certain fundamental principles can and should be taught, but after this has been done, success or failure depends upon inherent ability plus the process of learning by doing and listening and not upon analysis, research, investigation and all the other high-sounding words in many an academician's bag of hocus pocus. One reason is that little of much value has been or will be written for some time to come on the subject of radio drama, because the broadcast play is still in its infancy.

But this does not mean that there is no place in the school curriculum for practice in radio writing. On the contrary, since commercial broadcasters have found lit-

tle time and inclination, to date, to study and perfect radio drama, the colleges and universities of America find themselves strategically situated to conduct radio-drama workshops where techniques of writing plays may be developed and perfected without the pressure and inhibitions incidental to the selling of goods.

It is in the classroom where those who haven't a natural talent for writing to begin with should be promptly, and, if necessary, forcibly discouraged: first because talent is a condition precedent to successful writing, and secondly, there is enough literary garbage being turned out already without encouraging the production of any more. Those who do possess a flair for writing will learn that they must depend more upon learning by listening and doing than by reading.

This does not mean that writing requires no technique. It most assuredly does, but the technique is acquired after studying the content, form and structure of successful plays which were written long before there were any books on technique. It does mean that a successful radio writer must first possess a thorough knowledge of the technique of the legitimate theater; from that point he may go on to the job of learning how to write for radio. An awareness of the existence of certain fundamental differences between the stage and the broadcast play will help to guide the radio writer toward the proper approach.

The underlying difference in method between writing for the theater and radio is that in the theater the story

is told by words through action; in radio by action through words. It means, therefore, that radio dialogue must be more detailed and explicit, the characters fewer, the plot more simple, the manner of telling more direct. Being essentially impressionistic because it hits only high-lights in the lives of its characters, it employs many changes of scene, time and action, and requires, therefore, a technique different from the stage play which must conform to the unities of time, place and action. In this respect the radio play becomes similar to the motion picture, for both have the flexibility which makes possible these changes. In truth, the radio writer should imagine that he is working with a camera focused on characters who may move about from place to place, at the same time remembering that those characters cannot be in more than one place at a time.

But even over the motion picture the radio play enjoys the advantage of being able to employ swift and contrasting changes of place with a minimum of effort. Changing a scene from a French battlefield to the charm and quiet of the Italian Riviera is accomplished far more easily by means of sound effects, music or both than by constructing elaborate sets, properties and appropriate costumes.

Assuming that the potential radio writer has become familiar with the basic principles of playwriting technique and sees the necessity for a different approach to his new medium, he is not yet ready to begin the actual writing of radio plays until he understands the tech-

nical conditions and limitations of the microphone. These he may learn either by visiting studios, whenever possible, during the course of rehearsals, or by carefully studying the total result in front of the loud speaker or by doing both. This will enable him to see how entrances and exits are managed, how the effects of movement and distance are achieved, how music and sound effects are employed for transitions, atmospheric backgrounds and thematic purposes, as well as the opportunity to observe how sound effects, music and dialogue are blended into one harmonious whole to create a single effect or mood while none of these three elements is, on the one hand, overemphasized out of proportion to the whole, or, on the other, understated to prevent the drama from achieving the very highest emotional responses to the dramatic values inherent in the play.

The radio writer must know those subjects which are generally taboo on the air. These include discussions of sex, bastardy, perversions, venereal diseases, personal communications between individuals, the use of profanity and the unnecessary mention of the Deity. The reason frequently given is that while these subjects may be treated in the theater to which an audience willingly goes, most of them may not invade the sanctity of the home, into which the program enters as an uninvited guest.

This argument incorrectly assumes two things: one, that indecent treatment of subject matter can be con-

doned in the theater but not in the home; secondly, that a radio program enters the home as an uninvited guest.

The afore-mentioned subjects may legitimately be treated in a wholesome and helpful manner, and whether they are discussed in the theater or in the home should make no difference. It is the manner of their treatment that is important.

The assumption that a radio program is like an unwelcome visitor is apparently based upon the theory not only that people keep their radios going constantly, but that they have no opportunity to choose the programs they hear. Both notions are, obviously, wrong. The radio set is turned on upon the initiative and motivated by the desire of the listener, who has had an opportunity to determine whether he wants to listen and to what he wants to listen by surveying the programs listed in the daily newspaper. If he dislikes what he hears, he may immediately turn it off and choose something else; the theater-goer enjoys the same privilege but only at some expense.

It is this chance of being easily turned off plus the fact that the radio listener is subject to household distractions that precipitate the writer's first problem. He must win the interest and attention of the audience at the outset. The following suggestions may help him accomplish this result:

A. Use few characters. The medium is auditory and

if too many persons clog the scene it will be difficult for the audience to distinguish voices.

B. Construct simple plots, for time limitations of fifteen to thirty minutes mean that sub-plots have no time for proper development.

C. Remember that there is no drama unless there is some kind of conflict, whether it be between people or groups of people, a person or persons and their environment, or between an individual and his own conscience.

D. Remember that the audience likes to know something that some of the characters do not know. This makes for suspense.

E. Write natural simple dialogue. Be certain that the writing has an oral, not written, style.

F. Make the characters authentic, interesting and colorful.

G. See that the actions of the play strike some note of similarity in the audience's experiences. Butterfly collecting in the interior of China may interest museum curators but can hardly be expected to absorb the average listener.

H. Sound effects should be used for a specific purpose and not be inserted whenever an occasion presents itself for "atmospheric background." They must blend harmoniously and unobtrusively with the action of the play so that attention remains riveted to the play itself. While sound effects are employed to overcome radio's handicap

of blindness, they should not be inserted so frequently as to deprive the audience of an opportunity to use its imagination which has the power to picture a scene far more brilliantly and completely than a few sound effects. In most cases sound devices should suggest rather than attempt to paint a picture.

I. Transitions are accomplished by sound effects, music, pauses, fading out of and back into the microphone and by material read by the announcer. The latter method is by far the most inferior because it interrupts the flow of the program and calls attention to the fact that the audience cannot see what is going on.

J. Music, when used effectively, can be an invaluable aid to radio drama. Its functions are thematic (identifying the program at the opening and close), transitional (to shift a scene or bring the curtain down), creating a mood (emotion) and creating an atmosphere (time, place, or action).

These suggestions may prove helpful but should serve more the purpose of a life-saver than a rudder. Writing radio drama can be learned only by writing radio drama.

THE RADIO TALK

The chief function of the radio talk is to persuade people to do the things the speaker wants them to do.

A medical discussion of the dangers of overwork and fatigue is designed not only to inform an audience of precise physiological effects on mind and body, but to make that audience, if possible, refrain from overworking. This is a negative kind of persuasion. A politician may be expounding the need for a local street assessment, but his purpose is not only to convince his listeners of its necessity, but to get them to vote for it in the coming referendum election. An announcer who merely convinces his feminine listeners that his brand of face cream is superior to any other on the market has not succeeded until a substantial number of women purchase the product.

Persuasion, in other words, must include both conviction and action. Manifestly it is useless to convince an audience of the virtues of a policy unless that audience adopts that policy.

Those who use the radio talk for persuasion purposes must realize how difficult is their undertaking, for the competition of entertaining musical and dramatic programs must constantly be faced and can be met only by an astute awareness not only of the importance of the construction of the talk but of the delivery as well.

To become proficient in writing an interesting radio talk one must learn something of the arts of playwriting and journalism; to become expert in the delivery one must know something of the art of acting. Unfortunately few possess these combined talents; yet those

who do not dare to write and participate in a dramatic program will agree to prepare and deliver a radio talk without question or hesitancy. And this when more talent, thought and effort are required than for any other type of program!

The preparation of the talk is the first problem. What shall be the subject and how shall it be written? It is simple enough to say that the subject should be interesting. The trick lies in taking almost any subject under the sun and making it interesting. Frequently one finds oneself compelled to speak on what seems on the surface to be a "dry" subject. The problem is not solved by refusing to discuss it; it might be solved by careful preparation and delivery. Here again it is futile to attempt to codify rules governing the proper construction of a talk for the reason that no one formula can be successful for all speeches and all speakers. Listening to those who have mastered the radio talk technique will prove that none follows any rule except to be interesting. President Roosevelt, Lowell Thomas, Edwin C. Hill and Boake Carter are eminently successful, yet each has an individual style of writing. The sentence structure and choice of words vary with the speaker. On the other hand, there seems to be a universal recognition of the following rules for speech composition:

A. Make your meaning clear by organizing your material so that a problem is introduced, solved and from it a conclusion drawn.

B. Subordinate the unimportant material to the important.
C. Do not attempt to develop more than one or two ideas in any one broadcast.
D. Avoid ornate words and elaborate sentence construction.
E. Avoid statistics. Convert "3,287,624 people" into "about the population of Chicago."
F. Find synonyms for technical words.
G. Write "oral" English—not written. A helpful method is to dictate the talk to a stenographer. After it has been transcribed it should be read aloud to correct awkward sentence construction, faulty rhythm and difficult combinations of words.
H. Vary the composition with such devices as quotations, questions and answers and specific examples.

Most discussions of "How to Deliver a Speech" fall, similarly, into the error of assuming that there is one and only one way to speak. The success of the speaker's delivery will depend to a great extent upon the quality of his voice and his own speech mannerisms. The voice quality can frequently be improved by proper placement resulting in proper pitch and tone and by learning proper breathing. These principles can be learned after diligent practice and guidance by competent teachers in voice and speech.

The danger here lies in innocently accepting inferior instruction. Incompetent teachers, and there are many,

must be avoided lest faulty habits at costly prices will have to be unlearned. For example, teachers of diction are too inclined to make their pupils so speech conscious as to cause a meticulous and pedantic separation of words in a sentence. The secret lies in successfully steering between the Scylla of running words together, causing a confusion of thought, and the Charybdis of stilted, deliberate articulation and phrasing, resulting in a fatal unnaturalness.

A radio speaker above all must be essentially himself, for any traces of insincerity, coyness or affectation will spell failure. The word "essentially" is used qualifiedly because while errors in delivery may present the speaker strictly as "himself" they should obviously be corrected. In other words, the speaker should give his own personality the best opportunity to express itself unimpeded by faulty speech traits which diminish his effectiveness.

THE PRODUCTION DIRECTOR

The ideal production director should combine all the talents of a good dramatic director, playwright, critic, sound technician, musician and tactician—but of course he will never be found. Upon his shoulders alone rests the complete and final responsibility for the quality of the program. If the actors fail to extract as much as possible from their rôles, the director not only feels it his responsibility but is summarily blamed. If the music

which played behind the dialogue was so loud that the actors could not be heard, the orchestra conductor and the engineer are not held liable in the courts of critics, but the director.

His functions as critic and playwright begin when the script arrives in his office. Here it is studied and criticized and recommendations made to the author for changes in scene structure, dialogue, characterizations, musical numbers and their order in the program, and the deletion or addition of sound effects. More frequently than not the director himself makes these changes. The announcements, whether explanatory or commercial, are likewise subjected to his close scrutiny for awkward construction or violations of company policy with respect to commercial claims.

While the total effect of a program is best determined after it has been once rehearsed over a microphone and heard over the monitor loud speaker in the control room, the experienced director, trained to read with his ears instead of his eyes, can judge the need for revisions even before the rehearsal begins. He must, however, remain intellectually and artistically open-minded after the rehearsal gets under way to revise anything previously corrected.

During the studio rehearsal the director conducts a preliminary reading of the script, explaining lines and situations and suggesting how the lines should be played. It is during this first rehearsal that the director sows the seeds of tact and diplomacy in the handling

of his cast so that the actual performance will bear the fruits of the actors' best abilities. Changes in dialogue may again be made at this rehearsal, for a script sounds far differently than it reads; the director may not have seen all the necessary changes when he read the script for the first time.

Now the sound effects are rehearsed to begin at the exact time with the proper volume relationships and to go out exactly at the right time and with the volume diminishing at the proper rate. The effects themselves must be tried and tested to determine whether they accurately suggest the effect to be created. These effects are frequently recorded on records but are also created by manual equipment specially built by the sound technicians. However accurate may have been the recording or the building of the manual equipment, their constant use will have changed the quality of the effect. In fact, the most minute differences of temperature, distances from the microphone, character of the floor or object upon which the effect rests and speed of revolutions of the recording turn-table will change the quality and character of the sound effects; and the director, listening to them in the control room, must not only sense the existence of these differences but suggest steps to correct them.

During this time, the cast has been studying their lines and the orchestra conductor has been rehearsing the music. The director now checks the routine with the conductor, making certain of the selections to be

played and their order, the exact cues for beginning and concluding the music, when the music should begin softly, where it must increase in volume and where it should "sneak out." For transitions of curtains, four or eight bars of appropriate music must be chosen from the score of a musical number and their cues made definite and certain. Changes in the orchestration or arrangement of the score may be suggested. Vocalists and solo instrumentalists must be rehearsed and suggestions for improvements in style and quality made.

The ingredients of music, sound effects and dialogue are now ready for synchronization, and the director now suggests a microphone set-up to the engineer. This will depend upon the size of the cast, complexity of the sound effects, and size of the orchestra. A show containing a small personnel can frequently be produced with one ribbon microphone by placing the orchestra on one side and the cast and sound effects on the other. A more complicated show may require separate microphones for cast, sound and music. Effective synchronization of the three principal elements requires that sound and music cues be picked up on the exact second and with the proper volume relationships lest either become too prominent and the dialogue lost. Usually the sound man will take his cues from the script itself unless the music is so loud that he cannot hear the actors, in which case he takes the cue from the director in the control room. The director, during rehearsals and broadcasts, in giving cues to the an-

nouncer, cast, sound man and orchestra leader, directing the engineer to open and close microphones quickly or by slow fading, signaling the cast to speed up or slow down, signaling the sound man to cut his "level" and the orchestra conductor to play more quietly or loudly, controls and directs every phase of the production much like a maestro conducting a symphony orchestra.

But a concert played in a symphony hall need not conform to split-second time limitations. The radio director must arrange his program to play fourteen minutes and forty seconds, twenty-nine minutes and forty seconds, or fifty-nine minutes and forty seconds, as the case may be, *exactly*. Frequently he will be compelled to make cuts and changes in the program even while it is on the air, when, for example, the program previous to his has run overtime.

Let us assume his program is scheduled to go on the air from three to three-fifteen. This means that the preceding program must conclude at two o'clock fifty-nine minutes and forty seconds. During the following twenty seconds the local stations identify themselves, and at two o'clock fifty-nine minutes and sixty seconds exactly, the program whose rehearsal we have traced is to begin.

Our production director has timed his program to fourteen minutes and forty seconds exactly; this means that by three o'clock fourteen minutes and forty seconds the announcer will have signed off. Assuming that due to poor timing the previous program has run over thirty seconds, concluding at three o'clock and ten sec-

onds; it means that our program cannot begin before three o'clock and thirty seconds. In order to conclude "on the head" our director must pick up those thirty seconds.

During the actual broadcast he may signal the actors to speed up the tempo or may elect to shorten the closing announcement by thirty seconds, or still, he may quietly enter the studio and whisper to the orchestra conductor that the fourth musical number should be played without the verse, which, during the rehearsal, timed to thirty seconds.

As if all these problems were not enough to turn his hair gray, the production director must retain his good nature on those rare but none the less disturbing occasions when a client may arrive at the studio just before the rehearsal begins and promptly proceed to tell the director exactly what is wrong with the program and why. Most clients have come to realize that the manufacture of merchandise being one thing and the production of radio programs designed to sell that merchandise quite another, the problems of program building, casting and production are best left to those who are specialists in the craft. Today there are, fortunately, but few clients who become obnoxious by impresario-istic delusions and still fewer who insist upon dragging into the program those sisters, cousins, aunts and friends who imagine themselves to be great but unappreciated artists. It is only upon such occasions that the man in the control room says, "Verily, like the policeman's, the production director's lot is not a happy one."

RADIO ACTING

Probably the most underestimated, abused, frowned upon, belittled, misunderstood art in the world is the art of acting. No other form of human expression is so quickly attempted by so many because its mastery seems, on the surface, to be so easily achieved. No one would hope to play the violin or paint a beautiful landscape after five lessons and a few weeks' practice. Yet the average person, admitting it only to himself of course, visualizes himself as a great actor whose talents have yet to be discovered. And this because the entire sum and substance of acting has popularly come to mean a process of "just being natural."

One reason for this attitude lies in the fact that the real art of acting has been seen rarely and demonstrated only by a mere handful of individuals in the world's history. If the art of Salvini, Duse, Bernhardt, Mrs. Siddons, Booth, Coquelin and other such immortals had been preserved in concrete form, we should have more understanding of what true acting can and must be. But, unfortunately, when the actor dies, his genius dies with him.

Would it surprise the average person to know that the true actor-artist has developed and coördinated his body by diligent and strenuous practice of the arts of dancing, fencing, and gymnastics; that his mind has been nourished by the study of psychology, painting,

music, sculpture and the finest literature; that his own soul has been made fertile by a powerful concentration of observation and memory upon the actions and emotions which are expressed through the senses? Possibly. Yet these are the actor's working tools and without them he is only an imitator—not a creator.

The actor's tools are all instruments by which his technique may be developed and ultimately perfected. But technique without talent is useless, and talent is something which is inborn. If ability is present to begin with, it can find expression through technique, but not otherwise.

The essential difference between acting in the theater and before a microphone is the absence of physical action, in the latter, which is expressed only through words. The actor, relying solely upon his voice, becomes seriously crippled, for characterization is a portrayal of another person's mind, emotions and body, and requires the visual manifestations of these elements for complete study and expression. Removing the visual medium, therefore, is like amputating a dancer's leg, and requires a far greater concentration of memory and observation upon those manifestations of characterization which can be expressed vocally. This is, indeed, a difficult task. Perhaps it explains in some measure the reason why the best actors and actresses of our stage quake with fright before a microphone.

Furthermore, the radio actor is not as fortunate as his stage-playing colleague, who can spend many weeks

in creating a rôle after much thought, observation, and trial and error. The radio actor's rôle may be assigned to him twenty-four hours before the performance. The play actor has an opportunity to "feel out" his audience and, profiting therefrom, can make changes in interpretation or stage business. Radio being a one-time performance, played to an unseen audience, offers no such opportunity.

There are many who attempt to point out a further distinction by saying that while "overplaying" is necessary in the theater, "underplaying" is necessary at the microphone. If by "overplaying" they mean exaggerated inflection produced in a loud voice, they are wrong, because this is as fatal in the theater as it is before the loud speaker. If they mean a loud voice alone, they may be right to a degree. The usual exaggerated inflection spoken loudly and with a slight vibrato is often taken for "deep emotion," but too frequently means that the emotion is as epidermal as a potato peeling. A sincere thought or emotion is expressed no differently on the microphone than it is on the stage, except for differences in volume of the voices. The point is that superficial acting is more easily detected on the microphone, by which its emptiness and artificiality are amplified over a thousand times, than in the theater where, from the time the voice leaves the footlights until it reaches the second balcony, bad acting has lost some of its odor.

Faced as he is with the necessity for turning out

mass production performances, what are the things the radio actor looks for when handed a script and assigned a rôle? The radio script frequently bears no introductory description of the characters, and the actor must determine the physical, mental and emotional qualities of the character he is to portray as they are revealed in the lines of the play. If they are inadequately revealed by the author he must take the license of creating out of his imagination a character which is consistent with the lines written for him and the other actors.

Having created the character as an entity by itself, he must understand its physical, mental and emotional relationship to every other character in the play, in addition to its physical, mental and emotional reactions to every situation. In other words, the actor must study not only his own lines but those of every other person in the cast. This will provide an understanding of the inner meaning of his own lines. The proper delivery of those lines can come only after such study has been made.

Comprehension of characterization and meaning is not all. Every play is predominated by a single mood. The actor must determine, to begin with, whether the play is farce, comedy, drama or melodrama, for each requires different treatment. For example, a farce is built around exaggerated situations (coincidences) and exaggerated characterizations (caricatures), and is played at a very rapid tempo. Comedy usually involves

exaggerated situations, authentic characterizations, and is generally played at a fairly rapid tempo. Drama is based upon authentic situations, authentic characterizations and is played at a slower tempo. Melodrama consists of exaggerated situations, exaggerated characterizations and is usually played at an extremely slow tempo.

The determination of what classification any given play falls into governs the general treatment of the lines; but within each classification there may exist a variety of moods. For example, if a farce contains a scene in which a character is supposed to cry, the actor's purpose in crying is not to arouse audience sympathy but, paradoxically enough, to stimulate the audience to laughter. Therefore the emotion, in this case, cannot be a sincere expression of tragedy but must be so superficial as to become ludicrous and, therefore, funny, for this is the effect the author intended. In the drama, on the other hand, the general mood of the play may be one of gaiety; yet one scene may be as poignantly tragic as any Shakespearean tragedy. But because this is drama and not farce the actor must sincerely feel and express the tragic emotion. Thus we see the importance of determining not only the general mood of the play but the manner in which the sub-moods must be played.

In summary, then, the radio actor must thoroughly comprehend the meaning, the mood and the characterization.

PART FOUR

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The Listener

HIS STATE OF MIND

When you consider the fact that radio has almost overnight transformed the Campana, Pepsodent and hundreds of other companies from small business ventures into gigantic corporations, that it had the power to enlist some five million persons in the late Huey Long's "Share the Wealth Club" after only four broadcasts, and that an appeal for funds for sufferers in a recent flood disaster brought contributions of eight hundred thousand dollars after a single broadcast, no one will argue with your conclusion that here is the most potent and powerful instrument for influencing human beings that has yet been devised.

What is the secret of the power which compels so many to tear off box tops and send them in with ten cents in coin or stamps for various and sundry free samples of flotsam and jetsam? The obvious answer to the question of how radio can affect the buying habits of so vast a number of people, is that it can reach a maximum number with a minimum amount of effort. Every other mode of communication requires some effort on the part of the person to whom the communi-

cation is addressed. The newspaper must be purchased by the reader and carried home before the message can reach him, and even after the newspaper has been read, the message will have reached only a comparatively small number. Members of an audience must see to it that the dinner dishes have been washed and dried, their clothes changed, and the children put to bed before they can even undertake to drive to the town hall where, together with five hundred others, they expect to hear a political speech. And for those who crave entertainment outside the home, there is the necessity of going to the movie theater or play house, paying an admission, sitting for two hours in a fixed position, and then returning home. The radio listener, on the other hand, is seated comfortably in his own home, and, desiring entertainment, merely twists the dial, selects the program and settles back to listen.

In spite of the fact that radio is no longer a fad attracting attention by its mechanical ingenuity, the average person still tunes in a program not only with the anticipation of being entertained, but also with the naïve conviction that what he is about to hear comes to him absolutely free of charge. Many an individual has remained at home of an evening not only because he was too tired to seek amusement elsewhere, but because he would rather stay at home and get his fun for nothing. Although this same listener knows, in his conscious or subconscious mind, that radio is an industry supported by the public's purchase of goods

advertised on the air, he joins the vast army of listeners with a feeling that he, at least, is one individual who will not be "sold."

If, before tuning in, he were even vaguely to suspect that his half hour of "free" entertainment would eventually cost him a few box tops or possibly the price of an automobile, it is doubtful whether he would accept the hospitality of the advertiser. This is not to be interpreted to mean that radio advertising necessarily persuades and cajoles people into buying things they do not want or need. The point is, rather, that Mr. and Mrs. Listener are attracted fundamentally by the prospect of free entertainment, and though they know well enough that the program will open with, be interrupted by, and close with a commercial "plug," they regard the announcer's ballyhoo merely as a strange interlude, during which there is time to comment on the comedian's last archaic joke, see whether the tea-kettle is boiling in the kitchen, or even enjoy the smooth glibness of the announcer's diction.

It is only after the program is over and a smile of satisfaction flickers across their faces that our listening friends suddenly realize that "all's well with the world —and the Dryasdust Breakfast Food Company." This attitude of good will toward the advertiser and his product is almost all that can be achieved up to this point. Rarely do satisfied listeners determine at the conclusion of the broadcast right then and there to buy that brand of cereal next time the supply runs out.

What really happens, in a majority of cases, is that the program's conclusion (if it is a good program) leaves with it a residue of good will which is converted into the act of buying only when, several days later, Mrs. Housewife surveys the grocer's shelves to determine what to buy, and, spotting the radio advertised goods remembers the program and joins the vast sorority of women who she imagines must also be using this product.

It is this sense of participation in a common activity which not only draws the listener to the program in the first place, but which also motivates the actual purchase of the product.

It is a well known fact that comedians do their best work in studios attended by "live" audiences, not only because of the give and take between actors and audiences, but also because the millions listening in enjoy a sense of fraternal participation in the proceedings. The most comic of comedians will fail miserably in an almost empty theater, but will stop the show in a packed house. Audiences like to participate either actually or vicariously in that which commands their sympathetic attention. And it is far easier for the radio audience to become actively associated with others who can be heard, as in the case of a studio audience, than when it must attempt first to conjure up a picture of millions who, like themselves, are seated at home before their respective fireplaces.

In the case of the political speech, there is a similar

psychology of participation which, if employed, seems to promise more effective results in persuading a large number of people. There are those who call radio the "intimate art," and will point for positive proof to the successful "fireside chats" of President Roosevelt, during which none but the President, the announcer, and the engineer are permitted to be present. In the first place, the President's talks are sent out over every major broadcasting chain, and over practically every station in the country. This alone means that everyone in the country is either listening to the President or else has his radio set turned off, easily creating in the minds of those who do listen the feeling of audience solidarity.

Furthermore, Mr. Roosevelt happens to possess one of the finest radio deliveries in the world, and may fairly and truthfully be called America's outstanding radio personality. May not this fact also contribute to the splendid reception accorded his talks? And finally, to those who still cling to the theory that radio is an intimate art, it might well be that the success of the fireside chats resulted in spite of, rather than because of, the fact that Mr. Roosevelt spoke alone and not before an audience.

Radio is intimate only from a physical standpoint insofar as it is heard in the privacy of the home. From that point on it may become personal but not intimate, for even though the program has no studio audience, the listener is transported by the exercise of his imagina-

tion to the realms of fact or fancy which hold his interest and provide for him a means of escape from dull routine.

The listener's interest having been aroused, what, after a decade of broadcasting, has been the principal effect upon his mental life? Since the invention of printing, the harnessing of radio waves to band the country into a universal network of sound has become the greatest democratizing agency in history.

The very fact that radio is accessible to such a great number of people and that it penetrates all social and economic strata, clearly indicates that it is a powerful democratic agency knowing no class distinction, no color or creed, no politics or partisanship, no race or religion.

Psychologists agree that radio has begun to teach people to think. It is slowly but surely encouraging people to become more thoughtful of their common problems, and to become more and more critical of obsolete opinions, petty prejudices, and dead dogmas. In short, it is pointing the way to independent thought, but, more important, to independent action, and it is this which is the essence of true democracy.

Recently the Columbia Broadcasting System sold time on its network to the Communist Party for a political speech delivered by Earl Browder, the Party's candidate for President. Immediately thereafter certain reactionary groups belligerently protested that radio

facilities ought not to have been granted to this "radical organization."

It is these very groups which seek to decide arbitrarily and for themselves who shall and who shall not be granted the right to use the air, that may well themselves be called "radical," for theirs is a policy of censorship and suppression ultimately precipitating a dictatorship which neither knows nor enjoys the freedom of speech necessary to nurture and preserve a true democracy. Subject, of course, to the obvious necessity for observing the rules of good taste, and refraining from anything indecent or obscene, the air must be kept free to all who wish to use it for the discussion of controversial subjects. Just as a germ thrives in the fetid air of a dungeon, so will it die when exposed to the sunlight.

FROM MICROPHONE TO LOUD SPEAKER

Sound is the sensation produced in the brain when the ear is acted upon by a succession of changes in air pressure, which constitute a sound wave. These waves travel about 1,130 feet per second. The three characteristics of sound are pitch (frequency), loudness (intensity), and quality (timbre). Pitch is determined by the number of air waves per second produced by the vibrating source of the sound, or by the number of air waves received by the ear per second. The sounds of low pitch, for example, are produced

by the bass viol and the tuba, while sounds of high pitch are produced by the flute and piccolo. The human ear cannot hear frequencies below sixteen or above twenty thousand vibrations per second. The loudness or intensity of a sound, at a given pitch, depends upon how violently the air is set in motion by the vibrating source, whether it be the human voice or a musical instrument. Quality, or timbre, is the result of the combination within a sound, of several tones or pitch components, called partials. The lowest of these is called the fundamental, while the higher partials are called overtones, and their frequencies bear simple arithmetical relations to the fundamental. A fundamental, or basic tone, is produced when a string or air column vibrates as a whole, whereas an overtone, or harmonic, is produced when a string or air column vibrates in segments. These two modes of vibration can, and usually do, exist together in the same sound source.

The sound waves radiating from their source in the studio are intercepted by the microphone, whose sensitive element vibrates with these sound waves, setting up feeble electric currents which are intensified by a microphone amplifier. From the microphone amplifier these electrical impulses are sent to the control room by a connecting cable. Here they enter equipment for combining the currents from several microphones, and controlling volume, which the studio engineer adjusts. From the studio control room the currents are sent

to the main control room where, by means of the studio amplifier, their power is raised several thousand times. From this point the program is fed to wire lines which carry the amplified electrical impulses to the station's transmitter.

At the transmitter the radio carrier is generated. The "carrier" is just what the name implies—a separate current which is to transmit the sound impulses to the home receiver. It is obtained from an "oscillator," which is the name used to designate a certain piece of equipment for generating high-frequency current. By high-frequency is meant those rates of vibration lying above 100,000 cycles per second. These frequencies are usually written with the word "kilo," from the Greek word for "thousand," replacing the last three zeros. Using this scheme, 100,000 cycles would be written 100 kilocycles.

The frequency a particular station is to use for its carrier is determined by the Federal Communications Commission in order to avoid the interference which would result if two or more stations were too close to each other. The transmitter's oscillator and amplifiers, then, are adjusted to the correct rate of oscillation, and the carrier is then ready to be used.

In order to carry the program the carrier must be so controlled by the currents from the studio that its power varies in accordance with the power of the original sound wave in the studio. To accomplish this the current from the wire line is again amplified, and

sent to the "modulator" which produces the desired variations in carrier power in one of the transmitter's amplifiers. From this amplifier the now controlled carrier is fed to the station's antenna.

The antenna may be a wire, or wires, stretched between two tall towers, or, more recently, a single metal tower, whose height is calculated to suit the particular station's carrier frequency. When high-frequency alternating current is fed to an antenna, radio waves which have the same rate of oscillation as that current are radiated from it. These waves travel outward in all directions at the speed of light, which is about 186,000 miles per second. Their "wave-length" is the distance they travel during one cycle of oscillation. These distances are generally measured in meters for convenience; so, since the waves travel about 300,000,000 meters a second, we need only divide that number by the frequency of the wave to get its wave-length. For example, for a frequency of 870 kilocycles we have 300,000,000 divided by 870,000, equaling approximately 344 meters as its length. Some home receivers use wave-length rather than frequency calibration on their dials. This is entirely a matter of individual preference.

When the radio waves strike the receiver aerial, they set up in it minute currents which are exact reproductions of those in the aerial of the transmitting station. Naturally, all radio transmitters set up currents in the receiver's aerial at the same time, so if any one pro-

gram is to be heard, some method of selecting a particular carrier must be employed in the receiver. This selection of a carrier is called tuning. The circuits of the receiver are adjusted by the tuning condenser so that their fundamental frequency is the same as that of the carrier of a particular station, and the currents of that frequency in the antenna are amplified and sent on through the machine. Receiver tuning is very much the same, in its fundamentals, as tuning a string, or reed or air column. Any of these can be made to vibrate in sympathy with a source of sound, if they are tuned properly. Adjusting the length, or tension, or weight of a string is physical tuning. Adjustment of the condenser or coil in a receiver is electrical tuning.

After the radio currents are amplified in the receiver, they are sent to the detector, the function of which is to separate the carrier from the program it carries. Once this has been done the sound impulses are again in the same form they had been when they emerged from the microphone in the studio. They can now be amplified, as they were by the studio amplifier, and sent to the loud speaker.

The loud speaker in a receiver is constructed on the same principle as an ordinary motor, except that in it the power does not cause rotation, but only vibration. These vibrations are used to drive a paper cone which displaces enough air to reproduce the original sounds properly.

STATION ORGANIZATION

A limited number of wave bands in this country necessarily restricts the number of stations which can operate without the interference and overlapping which, for a time, caused such confusion on the air as to require Federal regulation. The Federal Communications Commission, created by the Communications Act of 1934, has been given the power to regulate interstate and foreign commerce in communication by wire and radio. This power specifically includes the power to classify radio stations, assign bands of frequencies for each individual station and determine the power which each station shall use and the time during which it may operate. It may also determine the location of classes of stations or individual stations, regulate the kind of apparatus to be used with respect to its external effects, and the purity and sharpness of the emissions from each station, study new uses for radio, establish areas or zones to be served by any station, make special regulations applicable to radio stations engaged in chain broadcasting, prescribe the qualifications of station operators and fix the forms of their licenses, inspect all transmitting apparatus to determine whether in construction and operation they conform to requirements, designate the call letters of all stations, and grant to any applicant a station license if public convenience, interest or necessity will thereby be served.

Licenses for the operation of broadcasting stations are granted for a term no longer than three years, and those for any other class of station are granted for a term no longer than five years. Upon the expiration of licenses, a renewal may be granted upon application.

The Commission further has the power to revoke any station license for false statements, failure to operate as set forth in the license, or for violation or failure to observe any of the restrictions and conditions of the Federal Communications Act, or of any regulation of the Federal Communications Commission.

There is no inconsistency in the fact that most radio stations in the United States are profit-seeking enterprises, and the fact that their fulfillment of public needs is a condition precedent to their existence. On the whole, most station owners are becoming alert to the fact that putting the social function of commercial broadcasting above the self-interests of broadcasters is a policy of enlightened self-interest for the broadcaster.

The National Broadcasting Company, for example, observes the following policies in the operation of its facilities:

A. To furnish to the listening audience which it serves through its own and its associated stations, educational and entertainment programs of the highest standard.

B. To keep the American people informed regarding their government by providing an open forum

for the free discussion of governmental policies and administration and of political and public questions.

C. To coöperate with musical, cultural, educational and religious interests by providing the means through which the respective organizations and leaders in these fields may bring their views and work to the American public.

D. To effect better understanding of the aims and problems of labor, agriculture, and industry in their relations with each other and with the public.

E. To improve international understanding and friendship by arranging for the exchange of cultural and entertainment programs and by making it possible for the radios of various countries in all fields to be heard internationally.

F. To provide American business with an effective means of advertising its products and thus to promote economical distribution of goods.

G. To take all possible steps to advance the broadcasting art and industry.

H. In the furtherance of all the above aims, to maintain American standards of free speech, of fair play for all people, regardless of race or creed, and of decency and good taste, and to carry on all its relations in accordance with the high standards of business ethics imposed by its leadership.

The National Association of Broadcasters, whose members comprise virtually every station owner and operator in the United States, has as its code of ethics the following:

Code of Ethics

1. Recognizing that the radio audience includes persons of all ages and types of political, social and religious belief, every broadcaster will endeavor to prevent the broadcasting of any matter which would commonly be regarded as offensive.
2. When the facilities of a broadcaster are used by others than the owner, the broadcaster shall ascertain the financial responsibility and character of such client, that no dishonest, fraudulent or dangerous person, firm or organization may gain access to the radio audience.
3. Matter which is barred from the mails as fraudulent, deceptive or obscene shall not be broadcast.
4. Every broadcaster shall exercise great caution in accepting any advertising matter regarding products or services which may be injurious to health.
5. No broadcaster shall permit the broadcasting of advertising statements or claims which he knows or believes to be false, deceptive or grossly exaggerated.
6. Care shall be taken to prevent the broadcasting of statements derogatory to other stations, to individuals, or to competing products or services, except

where the law specifically provides that the station has no right of censorship.

7. Where charges of violation of any article of the Code of Ethics of the National Association of Broadcasters are filed in writing with the Managing Director, the Board of Directors shall investigate such charges and notify the station of its findings.

NETWORK ORGANIZATION

The National Broadcasting Company owns and operates fourteen local stations, and the Columbia Broadcasting System, eight. Of the one hundred and four stations on the Columbia network, and the ninety-seven stations on the National Broadcasting Company networks (the red and the blue), those not owned and operated by the networks are owned and operated independently, selling their time to the networks for commercial programs. The networks, in turn, charge the advertiser, the rate depending upon the amount of time, the hour of the day and the coverage, or number of stations on the network. For example, the cost of broadcasting a full hour program between 6 P.M. and 11 P.M. on the entire Columbia Broadcasting System network is $18,395. The same program broadcast between 8 A.M. and 6 P.M. costs $9,312. It must be remembered that these figures are the bare cost of time alone, and that when script, music, director, dramatic cast, and sound effects costs are added, the figure is substantially

higher. While these latter costs may vary in proportion to the amount of time on the air, they will not vary as to hour of the day.

Non-commercial programs, called "sustaining" programs, are supplied by the networks to their respective affiliated stations, under a blanket fee per month. For example, the National Broadcasting Company will supply any of its affiliates with sustaining programs throughout the day for $1,500 per month. This figure does not vary in accordance with the number of programs accepted by the local stations. The fee remains exactly the same whether the local station accepts any or all of the programs offered. At the end of the month the local station determines how much it is entitled to, for commercial programs aired through its facilities, and sets this figure off against the amount due the network for sustaining programs supplied.

Under this system a practical difficulty arises when, in advance of any sustaining program, the network desires to ascertain exactly which stations throughout the country will carry the program. Since the local station, paying for a network program under a blanket fee, may accept or reject any or all sustaining programs, thus permitting it to substitute its own local program at any given time, the network has no way of determining the proposed program's coverage. This may be extremely costly to the network when, for example, it may have gone to great pains and expense to schedule a symphony to be broadcast by short wave from a for-

eign country, and a survey after the broadcast discloses the fact that only a handful of affiliated stations has taken the program. Had this information been available in advance of the broadcast, a change of plans would undoubtedly have been made. Another serious difficulty precipitates when an attempt is made to publicize future sustaining programs. Manifestly, it is impracticable to send out advance publicity to the various local newspapers when it is impossible to determine which local stations will at the last moment accept the program.

CHAIN BROADCASTING

A popular notion exists that the chain network systems are broadcasting companies. While it is true that each of the two large network organizations in the country does own and operate several local stations throughout the country, and is therefore actually in the broadcasting business on a local basis, it is, as a network organization, primarily a program service company, feeding sustaining and commercial programs to local stations throughout the country which in turn do the actual broadcasting.

A network program originating in the National Broadcasting Company studios in Radio City, for example, after leaving the studio and the master control room is "piped" by telephone line to the New York City telephone exchange. From this point, it is dispatched by separate telephone lines to those cities receiving the

program. Assuming that the program is being fed to a National Broadcasting Company affiliated station in Kansas City, it first arrives at the telephone company in Kansas City. From here it is sent out by special telephone line to the station transmitter and it is only then that the program first goes out on the air. The use of the term "chain broadcasting," therefore, is actually a misnomer for the only actual broadcasting which takes place is that occurring after the program has reached the various local stations scattered throughout the country. A more appropriate title for network organizations would be "Chain Program Service Companies."

EVOLUTION OF THE PROGRAM

The Quality Grocery Company operates a chain of stores throughout the United States, and has never engaged in any advertising medium save newspaper and magazine. The Board of Directors, desiring to expand its advertising campaign, votes to adopt the radio medium for this purpose. It appoints a committee to confer with the executives of its general advertising agency.

This agency consists of advertising specialists trained in the planning, creation and execution of sales promotion campaigns for its clients, and receives a commission usually amounting to fifteen per cent of all advertising costs.

At the conference between the company committee

and the agency executives, it is disclosed that the year's appropriation for advertising has already been substantially spent on other media, and that the budget will permit an expenditure of only $700 per week for a period of thirteen weeks for radio advertising.

It is apparent that this sum of money will be insufficient to purchase network time, line charges, and program costs incidental to a campaign of national network advertising, and that it would therefore be advisable and necessary to devote this sum to a merchandising campaign on a local station.

Thus, at a relatively low cost, the agency can experiment with the program itself so that, at the conclusion of the thirteen-week period, the program will have been perfected from an entertainment standpoint. Furthermore, it might be wiser to invest a relatively small amount of money in order to determine whether radio advertising pays on a small scale, before undertaking a heavy expenditure on a large scale.

The agency points out that the radio hour is divided into periods of fifteen minutes, half an hour, and one hour, and that such time over station WENR Chicago, for example, will cost $240, $360, and $600 respectively between 6 P.M. and 11 P.M. It is recommended that a quarter-hour period once a week be purchased. The company committee asks why it would not be advisable to purchase a half-hour period for $360 and the agency replies that it is far better show-

manship to be on the air for a short time with excellent entertainment than for a longer period of time with something of mediocre quality. In other words, it is wiser to spend less money on time and more for high quality talent than would be possible were the budget almost completely eaten up by time costs alone.

The question now arises, which quarter hour between 6 and 11 P.M. should be purchased? The agency knows that station WENR is now producing a sustaining or non-commercial program every Wednesday from 6:45 to 7 P.M. and that this quarter hour is being offered for sale. It so happens that programs of other stations in the Chicago area on this particular day and at this time are non-network, contain no outstanding radio personality, and would therefore be less competitive than any other quarter hour during the week. It is agreed that an effort be made to purchase this time after a satisfactory audition of a program has been given the committee. At this point the meeting is adjourned.

The agency executives now call in their radio experts, who discuss the question of what the nature of the program should be, bearing in mind that any program must be appropriate for its sponsor, must be harmonious with his published advertising campaign, and, in this case, should be designed to appeal to the general buying public and not to any particular group or class.

Types of Programs

It must now be determined whether the program shall be musical, dramatic, informative, or a combination of music and drama.

Radio drama has enjoyed great success in merchandising goods. Amos and Andy, the Goldbergs, Vic and Sade, First Nighter, One Man's Family, and The Cavalcade of America, to mention only a few, have greatly benefited their sponsors. But it is interesting to note that the first three programs mentioned appear for fifteen minutes, five times a week, while the latter three are half-hour programs, once a week.

With few exceptions, the fifteen-minute dramatic program is serially continued from day to day and week to week, whereas the half-hour drama is complete and a new play is presented each week. The reason lies in the fact that a complete radio drama requires at least thirty minutes for presentation. Like any drama, it must introduce the characters involved in the play, must develop a situation into which some or all of the characters fall, precipitate a conflict, either between the characters themselves or some environmental circumstance, and must work itself out of this conflict to a conclusion.

Musical programs constitute sixty per cent of all programs heard on the air, and seventy-five per cent of all commercial programs, and audience analyses show that they are by far the most favored of all types. This fact alone, however, should not be conclusive in its favor;

for if all sponsors were to choose musical programs, it is obvious that their monotony would lead astute sponsors to choose a program of a different nature. Musical programs on the whole are more expensive than any other type, because musicians' salaries are uniformly higher than those of actors.

A combination musical and dramatic program is generally the most effective because it combines the elements which will find some common denominator of audience taste. Obviously, however, this type is the most expensive.

An informative program, such as a news commentator, is as effective as the personality of the commentator himself. It would be difficult, if not impossible, to discover someone in the local community who can match the brilliance of such high-salaried men as Boake Carter, I. V. Kaltenborn and Edwin C. Hill.

The agency thus finds itself somewhat in a dilemma. It hesitates to attempt a fifteen-minute dramatic program, once a week, and is worried lest a musical program will cost more than the budget will allow. Let us assume that after investigation, the agency discovered that a musical program would not extend the budget beyond its limits, and that it has decided to build this type of program.

Program Building

An agency representative calls the sales department of station WENR and presents his problem. The station sales manager replies that his station will build a

program along the lines described, and will present it for an agency hearing within a week. The scene now shifts to the local station.

The sales department now notifies the station program manager that the agency is interested in not only the purchase of time, but also in the purchase of the program itself, and requests that the program department build a musical show to cost $400 per week, fifteen minutes per week, for thirteen weeks.

The program department operates what is known as an Artist Service Bureau, which contracts to pay its artists a stipulated weekly salary for services on any or all sustaining programs. These artists, who have agreed to work exclusively for this station, do not include musicians whose salaries are determined by agreement between the Artist Service Bureau and the local Musicians' Union. It includes, therefore, actors, vocalists, announcers, comedians, special script writers and the like.

When time on the air is not sold, the station must, of course, keep the air occupied with some kind of entertainment, and it is this type of program which is called the sustaining program. Its purposes are not only to keep the station on the air, but also to feature programs which may attract an advertising client and to build public good will with symphonic, dramatic, and educational programs. Among the better operated stations, such programs are built and produced with as

much care and finesse as go into the production of a commercial program.

When an audition request is received for a program such as the one we have been describing, the program department may decide to offer one of its sustaining programs already on the air. On the other hand, it may decide to build a new show using, for example, a comedian from one sustaining program, a baritone soloist from another, and a popular girls' trio from still another, incorporating a studio orchestra of ten musicians. The program department, having chosen the ingredients, now turns the problem over to the production department.

The production manager calls in his chief continuity writer, explains the general nature of the program, who the soloists are to be, and what the commercial announcements are to contain. The chief continuity writer may assign the job of putting the show together to one of his staff, or may work in collaboration with him. Together or separately they search for a fresh, unusual and interesting device around which the program may be built, recognizing the fact that the routine, outmoded method of opening with a theme song, following this with a commercial announcement, and then perfunctorily introducing each soloist, has become entertainment platitude. A new angle and a new approach must be found to give the program a personality which will be provocative of audience attention, thought, sympathy and interest.

After the program has been returned in completed form by the continuity staff, the production manager then assigns one of his production directors to produce the program, which will be heard two days hence by the station planning board.

The planning board consists of the station executives who pass upon every program under construction for agency and client hearings, as well as its own sustaining programs. It also serves as a double check upon those persons responsible for checking commercial announcements to prevent illegal claims or reflections upon a competitor's product, as well as making certain that no material in the program violates the Federal Communications Act forbidding vulgarity or obscenity and that there are no infringements upon musical, dramatic, or literary copyrights.

The production director reads the script, determines the number and kind of talent called for, sets a rehearsal period for the following day, schedules a studio and an engineer, and if sound effects are needed, notifies the sound department of the day and hours for rehearsal and the approximate nature of the effects needed. Then he notifies the talent of the rehearsal time and studio number.

If no specific names of artists are mentioned on the assignment sheet he receives from the production manager, he must use his own discretion in choosing talent and will usually call those persons whom he has previously used, whose ability and dependability have been

tried and tested. The program will be rehearsed for only two hours before it is shown to the planning board. He cannot afford to take chances. It is this fighting-against-time situation which makes it impracticable for production directors to experiment with new and untried talent, and is one of the reasons why actors experience difficulty in their attempts to break into big-time radio.

During the rehearsal, on the following day, the production director, again fighting against time (for the studios are in constant demand for rehearsals of other programs) may allow the orchestra conductor to rehearse the musicians in one corner of the studio, while he rehearses the cast in another corner. After this has been done, he will rehearse the sound effects with the sound technician. These rehearsals take place in the studio without the use of microphones, and merely acquaint the artists and musicians with the routine and content of the program.

Now the production director enters the control room, instructs the engineer as to the number of microphones he will require, as well as their placement, and will order an arrangement of chairs for the orchestra to complete the "set-up."

At this point, a staff announcer, having been previously scheduled for this rehearsal, enters the studio. Unless the sponsor specifically requests a particular announcer, the practice is to assign anyone of the announcing staff to the program at the discretion of the chief of staff. However, once an announcer has been

assigned to a commercial program, the policy is to keep him on the program from day to day or week to week. Obviously, the quality of announcers varies, and should a sponsor desire a particular staff announcer, he may request his services in exchange for a fee of which ten per cent reverts to the Artists Service Bureau, as a commission, and the balance goes to the announcer. Frequently a sponsor may wish to pay an announcer's fee, but may be uncertain as to which announcer he wishes to employ; whereupon, a competitive audition among all the announcers on the staff will be held. The usual practice is to assign a number to each announcer, who is thus identified, and who reads a commercial announcement for the agency and client, seated in an adjoining room. While able to hear the voices as they sound over a loud speaker, they are unable to see who the speakers are. This enables them to judge more accurately from the listeners' standpoint, for all too frequently the handsome announcer is unable to speak as colorfully and convincingly as his less attractive colleague.

The director is now ready to put the show together. The announcer introduces the program, the orchestra bursts into melody, and the program is interrupted by the director because of hesitancies or mistakes on the part of the artists and musicians, or for changes necessary in the script itself. The entire responsibility for the quality of the program rests upon the director's

shoulders. According to his best judgment, musical numbers may be substituted for others, their order within the program itself changed, actors instructed to adopt an interpretation of character other than the one described in the script, scenes may be shifted about, lines changed, and situations explained. Having reconstructed the script so that the program has unity, coherence, rhythm, and balance, the director must now make certain that everyone on the program knows exactly what to do, when to do it, and how to do it. The director can never be satisfied with anything short of perfection. For one thing, he knows that his own reputation depends upon the quality of the program he produces from day to day. He can never relax and rest on past laurels. It is amusing, though none the less disturbing, that his superiors easily forget the high quality of programs he has produced in the past when his most recent effort has fallen short of par.

But the director, who is a true artist, is not only concerned with self-interest in his demand for perfection, for he delights in creating something beautiful and knows that, unlike a performance in the theater which can be perfected even after it has opened to the public, a radio production cannot be corrected after the program goes on the air.

At its conclusion, the show is discussed by the planning board, suggestions are made for improvements in the script, talent, or the production as a whole. The

production manager communicates these recommendations to the production director.

On the following day, with these criticisms, suggestions, and changes incorporated into a revised script, and, frequently, a revised cast, the production director spends another two hours or more in rehearsal and the program is now ready to be heard by the advertising agency. In some cases, special private telephone lines are set up between the agency executive offices and the station so that a trip to the studio will be unnecessary. In most cases, however, the agency executives gather in the station's audition room.

After the audition, the agency may likewise make recommendations for changes in the program structure, and will then offer to bring the sponsor to the station for a client's hearing on the following day.

If the client likes the program, he may immediately request the agency to purchase the time and the talent. Should the program meet with his disfavor, the agency may decide to build a program of its own, with script writers and other talent to be purchased by itself in the open market. Such talent, under contract to no single station, is known as "free-lance" talent. The agency's own production director may request the use of the station's studio and an engineer for this proposed program. The station will extend this courtesy hoping that, although it was unable to sell its own talent, it will yet be able to sell its time.

AUDIENCE REACTION

There are various methods by which the effectiveness of a radio sales campaign is judged. If the program has resulted in a great increase in sales, it will be called successful. This is today's test of radio advertising success, for until advertisers become more concerned with creating leisure and loveliness in the lives of their listeners, the increased revenue derived from increased sales will continue to remain the success yardstick.

A client will find greater rewards in creating and dispensing beauty than in dishing out trivia. The public does not object to "culture" per se as much as it objects to the methods by which "culture" is forced down its throat. Until now, the responsibility for a great proportion of so-called cultural broadcasts has been delegated to educators, who have been more concerned with adapting radio to culture than culture to radio, and whose complete ignorance of showmanship techniques has been largely responsible for the fact that programs of cultural value have not penetrated commercial broadcasting to the extent they should.

Press comments as to the quality of the program are valuable to some extent in determining the program's success.

Fan mail, either criticizing or praising the program, gives the sponsor only a vague idea of the size of his audience. This is universally agreed to be an inferior

test, because most listeners do not write fan mail unless induced by the bait of contest prizes, free samples, etc. Even when such devices are employed, a vast number of listeners do not respond.

The need for a scientific method by which audience size and reaction could be determined gave rise to organizations such as the Crossley Service Company, whose audience-analysis surveys are available to all stations, advertising agencies and clients at a stipulated fee. It employs hundreds of men throughout the country, who make thousands of telephone calls daily and call at random a certain number of names in a given community, asking specific questions of the person called. For example, in a city of one hundred thousand, the interviewer may call one thousand telephone numbers taken at random from the city directory, and will ask the following questions:

"Are you listening to your radio at the present moment?" If the answer is "Yes," "To what station are you now listening?" Then a series of questions such as: "To what program are you listening now?" "Do you listen to it regularly? Do you like the program? Do you purchase the product advertised on the program?"

The answers to these and similar questions put to a sample number of individuals in any given community represents a cross-section of the entire community and can be relied upon as a fairly accurate test of listener reaction.

Other surveys, conducted in this or in a similar man-

ner, also secure information with regard to the number, economic status, geographic distribution, sex, age, intelligence, social status, occupation and activities of the listener.

Questionnaires and report forms have also been used in obtaining reaction information. The latter have been used quite extensively in school broadcasting to determine the success of programs in the classroom. The questionnaire, frequently used by local stations, is sent to the public at large, teachers, local merchants and professional groups.

The Crossley report indicates that the Quality Grocery Company program has built up a large audience following within the Chicago area. This convinces the Board of Directors that the sales campaign should be extended to a national scale.

Chain vs. "Spot" Broadcasting

The agency now advises the Quality Grocery Company of an alternative between the usual chain broadcasts and the use of what is known as "spot broadcasts," or electrical transcriptions. It points out that on a network basis the client must pay for network time, program costs, and telephone line charges, while on spot broadcasts he pays for local time, program costs, and a certain amount per record. It further points out that in network broadcasting the client must generally accept those stations which are affiliated with that particular network and cannot select his own stations

throughout the country by his own choice. Spot broadcasting, on the other hand, enables him to purchase time from any local station, and should he decide to increase his coverage later on by adding several more stations, there is no increase in costs involved in line charges.

It is further pointed out that spot broadcasting eliminates the costly necessity for repeat broadcasts which are necessary in the chain system because of different time zones. For example, if an advertiser desires to catch a dinner-hour audience he must broadcast at 7 P.M. in the East, which will be 6 P.M. in the Middle West; but must repeat the program later in the evening for mountain and western time zone audiences. Spot broadcasting enables the local station to play the recording at the appropriate time.

The agency points out, however, that for certain types of programs, like the "March of Time" for example, which are emergency and require building at the last moment and airing immediately thereafter, spot broadcasting would be impossible.

Perhaps the most serious argument against the use of spot broadcasting is the fact that Federal Communications Commission rules require that recorded programs be identified by the announcement, "this is an electrical transcription." Most people like to hear things "in the flesh," and will often tune out an excellent recorded program containing a fine orchestra and the best singing talent in the United States, in favor of a much inferior program containing "live" talent. This phe-

nomenon has been observed many times when a screen personality, appearing in a new motion picture, seems to cause no undue excitement at the box office, but when he or she makes a personal appearance at a local theater, it is necessary for the police department to send an extra squad of men to handle the crowds. People do not like "canned" entertainment when they can obtain "live" entertainment just as easily. Until this attitude changes, or until the requirements for the announcement, "this is an electrical transcription," will no longer be imposed, spot broadcasting will hardly be able to compete with chain broadcasting.

TRENDS IN BROADCASTING

EDUCATIONAL BROADCASTING

Commercial sponsors are fast approaching the entertainment saturation point. Almost every conceivable peg upon which to hang a musical or dramatic program is either being used at the present time or has already been discarded. A new approach, a fresh twist, a new angle must be found; and, believe it or not, clients are moving in the direction of "educational" programs, as a solution to this problem.

The question of what distinguishes an educational program from a non-educational program is one which is still occupying the serious attention of most educators (and some broadcasters) who seem more concerned with metaphysical definitions than with ideas.

It is far easier to find agreement on whether a given program is or is not educational than on a precise word definition of what the term must include or exclude.

It is suggested that if those concerned with this question were to spend more time on the problem of creating and executing excellent educational programs which will be interesting and, therefore, entertaining, and less time in quibbling over definitions, the public as well as themselves would be far better served.

Educational broadcasting by educators has usually confined itself to speeches prepared in a written style, and delivered by someone in a dull style. It has concerned itself so much with the subject matter and so little with the manner of its presentation as to alienate audience interest at the very outset.

One reason for this has been the educators' and educational stations' lack of funds with which to produce quality programs. The other reason lies in their unwillingness to recognize the fact that unless showmanship techniques are applied to educational subject matter, the programs will continue to command neither attention nor interest. How to adapt education to radio and not radio to education is the problem which should be faced and can be met only by carefully studying approved techniques and enlisting the help of those who are making radio broadcasting their life's work. Dull, heavy, ponderous material presented in a similar manner will not only win no converts to education but, what is more

serious, will eventually alienate those who are at present its friends.

Thus, the field for educational broadcasting lies ahead—a veritable gold mine, whose surface has been only scratched by such programs as the NBC Music Appreciation Hour, The Columbia School of the Air, the broadcasts of the United States Office of Education and a few commercial programs such as The Singing Lady, The Ford and General Motors Symphonies and the programs sponsored by the Better Speech Institute of America.

The question of whether the program is furnished by a non-profit-making organization on the one hand, or by a commercial sponsor on the other, is no criterion by which to judge its educational merit; for the significant thing is not the forces or factors which make the broadcast possible, but the general effect produced upon the audience itself.

The real purpose of education, wherever and however it may be disseminated, is to enable people to become more perfectly adjusted to their fellow men and their environment, so that life may be enjoyed to its richest and fullest extent.

Is there anything to be gained by subjecting an unwilling audience to a Bach fugue, merely for the sake of discharging some high and mighty duty to "uplift" and "educate"? Or, is its real purpose to awaken within the listener that most delightful happiness which comes with the ability to sense and appre-

ciate beauty? What is there to be gained by discussing science over the air if its purpose is merely to present a cold and dry discussion of natural phenomena for the mere sake of the facts alone, when its real purpose should be a more perfect adjustment of human beings to their fellow men and their environment? The truth is that we have become virtual slaves to education; education must be made to serve us. The opportunities are limitless, for American radio, sponsored though it may be by private capital, is yet more genuinely at the public service than in any other country in the world.

TELEVISION

"When will television be here?" is a question being asked by almost everyone. The answer is that television is already here, but its actual use in the home is being retarded more by practical marketing and financing problems than because of mechanical imperfections. The chief technical problem is not in the perfection of the receiving set, for this has already been achieved, but in the transmission of the televised pictures. The necessity for extremely powerful lights in the broadcasting studio results not only in an extremely costly use of electricity, but in the production of so much heat and light as to make it most uncomfortable, if not impossible, for actors to work under the lights more than a few minutes at a time.

Unless this and other difficulties of transmission are

solved, one is led to suspect that television will sooner or later mean the broadcasting of motion picture films. The transmission of images from film is a relatively easy matter because there is no difficulty in concentrating large quantities of light through the film on to a photo-electric cell.

Another consideration pointing toward the use of televised film rather than live talent, particularly in dramatic programs, is the fact that the visual medium would destroy any illusion sought to be created, when, for example, the audience could see a group of actors reading from script, the sound effects employing devices altogether different from the effect to be created, and the scenery not unlike the kind used in legitimate theatrical productions.

If the actors are to memorize their lines and the drama presented as though before a theater audience, considerations of lack of time for rehearsals, expense in the daily construction of scenery, limitations of that scenery, and similar problems must first be solved.

Should televised film be used, what its effect upon the movie industry may eventually mean is a guessing game in which we prefer not to participate.

RADIATHERMY

Recent newspaper and magazine articles describe a new radio phenomenon called "the greatest discovery in

the field of medical science since Roentgen's discovery of the X-ray."

It consists of a short wave radio therapy machine which is a precision instrument accurately calibrated and designed for the purpose of measuring the electrical balance of the organs and tissues of the body.

It is said to be based upon the principle that the human body is an electro-chemical phenomenon, and that each tissue has a characteristic vibratory rate. Also that health results as long as each tissue maintains its normal vibratory rate, while the slightest change sooner or later leads to disease. This radio instrument is said to be so sensitive that it detects any change occurring in the tissue, and thus locates disease even in its earliest stages.

The leading exponents of this new device hasten to explain that radionic diagnosis does not replace proved methods of diagnosis but is a valuable aid in that many conditions are revealed before laboratory and other methods of diagnosis can detect their presence. In treating with the instruments, the doctor is said to be able to "tune in" to the correct wave-length which will aid in correcting the condition, and the instrument, while treating, generates short and ultra-short waves which are transmitted to the patient.

Whether this device is a bit of quackery or whether it may actually revolutionize the practice of medicine is a question which should be answered within the next few years.