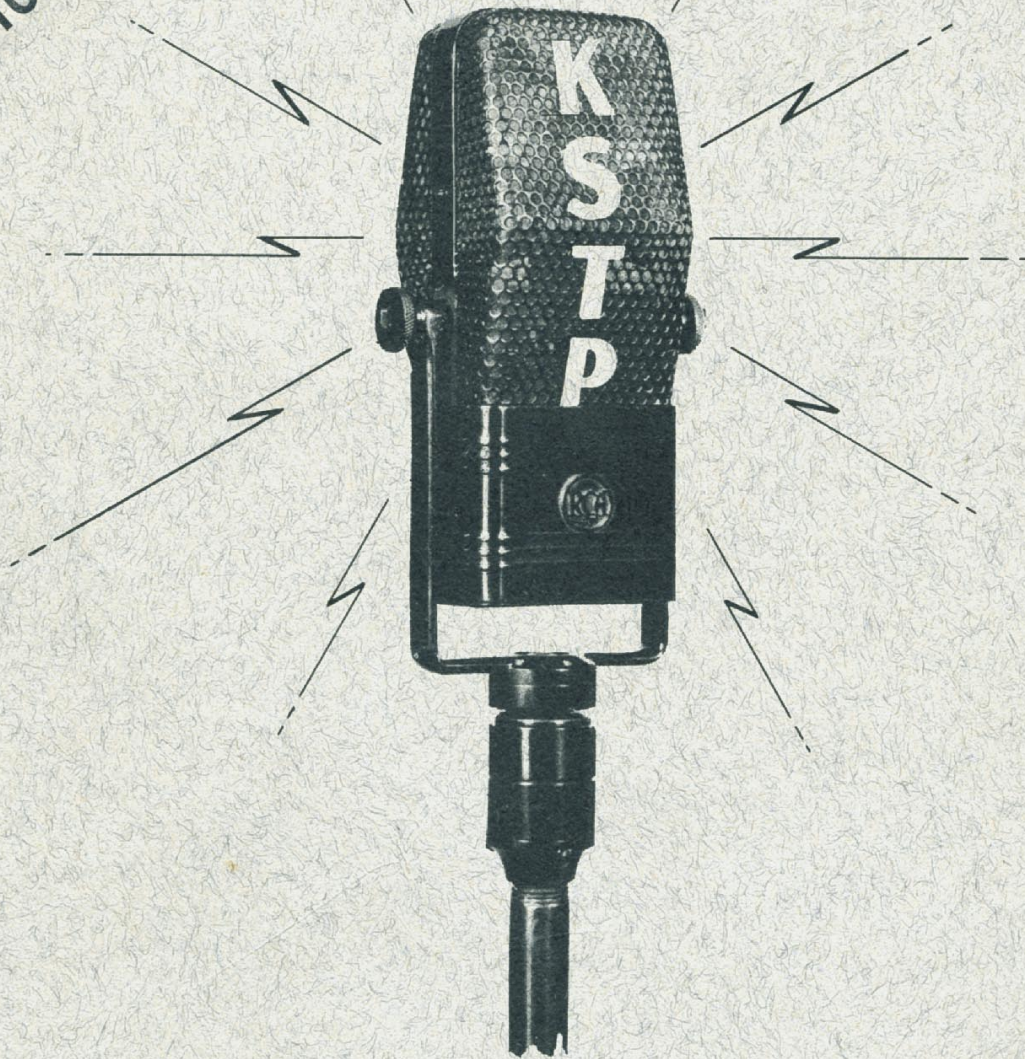


RADIO PRODUCTION FOR THE EDUCATIONAL BROADCAST



PREPARED FOR
KSTP CONFERENCE ON EDUCATIONAL BROADCASTING

OCTOBER 16, 1937

SAINT PAUL, MINNESOTA

AN OUTLINE QP RADIO PRODUCTION

for the

EDUCATIONAL BROADCAST

Prepared for

K S T P CONFERENCE QN EDUCATIONAL BROADCASTING

October 16, 1937

St. Paul, Minnesota

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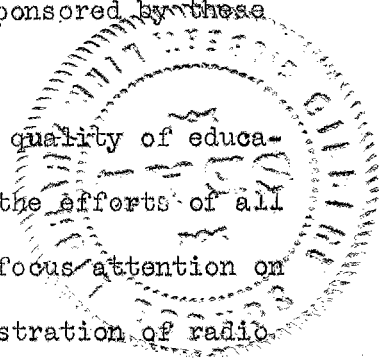
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INTRODUCTION

Education is essentially an individual problem. It cannot be denied that radio has had a profound influence on the attitudes and standards of the entire nation and of the world at large, but the modern phenomenon of broadcasting has yet to be analyzed from the individual's standpoint. The radio audience is a mass audience measured in millions, each listener reacting as an individual, and not as one of a group. It therefore becomes apparent that educational broadcasting must be considered from both ends of the telescope. We may establish principles and procedures for educational radio projects on a national basis, but we must also give consideration to these programs in their application to regional or local problems as well.

In calling the 1937 Conference on Educational Broadcasting, K S T P is attempting only to supplement the immensely important work of the National Advisory Council on Radio in Education, the Ohio Institute for Education by Radio, and the Educational Radio Project of the United States Office of Education. We are merely attempting to bring home some of the benefits of national conferences sponsored by these organizations.

Frankly, we are attempting to improve the quality of educational broadcasting in the Northwest, to correlate the efforts of all those who are concerned with such programs, and to focus attention on the possibilities of these projects through a demonstration of radio production methods and a discussion of new techniques and objectives for the educational broadcast.



What is facsimile broadcasting? Where is television? What are the duties of a production director? How is a radio script written? How does one speak into a microphone properly? How is a sound effect made? What material is best adapted to radio broadcasting? How can the program be used to best advantage in the classroom, or by the individual? What is educational broadcasting? These are the questions we shall attempt to answer.

For the first time in the Northwest, if not in the entire nation, a commercial station has invited representatives of educational institutions, civic, public service, and social welfare organizations to come to its studios, to learn the requirements of radio from the broadcaster, to teach the requirements of education to the broadcaster. It is a cooperative endeavor. It is a shared responsibility. The commercial broadcaster must serve the "public interest, necessity, and convenience", to quote from the license by which the station is granted the use of its channel. Education on the air is admittedly of primary importance in this service. The educator must distinguish between the true and the false in what he teaches. His responsibility in the field of radio education is obvious.

If we can succeed in this conference in eliminating wastage on the air through the use of better program techniques; if we can succeed in developing programs that will, genuinely supplement the work of the classroom, the library, and life itself as educational influences; if we can succeed in extending the acceptance of the educational program through a larger portion of our audience, our objectives will be realized,

For their encouraging support and assistance, we are sincerely grateful to the members of our general committee, each of whom has given freely of time and counsel to make this meeting a success. To Miss Daisy Brow, we are indebted for her splendid loyalty and constant interest in the educational endeavors of K S T P. The National Broadcasting Company, the University of Minnesota, the University of Wisconsin (through its station W H A), and the St. Paul Department of Education have rendered special assistance in the conference demonstrations. Mrs. George B. Palmer, Mrs. Judson R. Towne, Miss Mathilda Heck, and Dr. Esther McGinnis have been our advisors in the solution of many problems. Dr. Malcolm S. MacLean, director of the General College of the University of Minnesota, has courageously consented to define educational broadcasting. He is to be congratulated for a most stimulating contribution to this conference. Guy Fraser Harrison, conductor of the Rochester Civic Orchestra and guest conductor of the St. Paul Civic Opera Association, has honored us by his participation in our meetings. We are privileged, too, in having as general chairman of the discussion panel Mr. Henry Adams Bellows, a member of the original Federal Radio Commission, and for seven years chairman of the legislative committee of the National Association of Broadcasters. And finally, all credit is due Miss Judith Waller, educational director of the Central Division of the National Broadcasting Company, for that enthusiasm, energy, and inspiration which turns theory into practice.

In presenting the following pages, it should be emphasized that we are attempting to give only a summary of radio production and its methods. Those who would produce educational broadcasts must learn by practice in school or college radio workshops, and it is hoped that a rapidly growing movement in this direction will continue.

Thomas D. Rishworth
Educational Director - K S T P

"Sixteen years of experience in broadcasting has taught that radio's chief role as a teacher is to stimulate thinking; to inspire listeners to study and follow up what the unseen teacher can merely call to their attention."

Orrin E. Dunlap, Jr.
in, THE NEW YORK TIMES
September 12, 1937

WHAT IS EDUCATIONAL BROADCASTING?

According to John Dewey, education is Life itself. Modern broadcasting is the reflection of our life and times, and it follows therefore that much that is on the air is educational in the larger sense. Education, however, specifically implies control, the control of that experience which is given the individual to prepare him for the adjustments he must make to society. True education on the air must consequently satisfy the demands that are inherent in all educational activity. It must not be a random method of trial and error. It must have purpose, coherence, unity. Perhaps no definition should be attempted, for all definitions are confining, and educational broadcasting recognizes only the limitations of space and intellect in its ultimate possibilities. It can be applied to an infinite field of experience. It can serve individuals in every walk of life at the farthest reaches of the world. An explorer in the antarctic, an aviator flying his course across the sea, the lonely ranger on some mountain top - all are listeners in the universal classroom.

Regimentation has no place in the field of radio education. We must develop the free mind, the questioning mind, untrammelled by dogmatic and stifling codes or edicts. We must carefully discriminate between true education and propaganda. We must remember, as Hendrik Willem Van Loon has said, that "there are no dull subjects in education. There are only dull teachers." We must also remember that there are dull pupils and that our efforts will never attain the popularity of a Jack Benny or a Charlie McCarthy, for education is not a "show". There are millions of minds, however, waiting to be awakened, stimulated, challenged, by broadcast education that is vital and direct in its appeal, in the hands of teachers who possess commanding personalities and the urge to adventure into new fields. Here then is our definition,

Educational broadcasting is the dissemination by means of radio transmission of knowledge, skills, and appreciations for the purpose of teaching the individual what life is, was, could be, and ought to be. And we should add that he who defines and runs away may live to define another day.

THE PRODUCTION UNIT FOR AN EDUCATIONAL PROGRAM

As radio broadcasting has grown, its personnel has become highly specialized. There was a day when the program was produced without rehearsal, script, or talent. The major criterion was audibility. The studio might be any vacant storeroom, its walls covered with burlap or monk's cloth. And a handful of listeners extending through a region up to fifty miles from the transmitter strained ears for the thrill of hearing sound, any sound, over the "wireless".

Broadcasting today is an art, and the effective program is the product of trained technicians and artists. A carefully organized staff is necessary to any program, regardless of its purpose. The modern broadcasting station has its production staff, announcers, sound effect engineers, control operators, script writers, casting directors,

music directors, publicity experts, promotion department, entertainers, booking agency, traffic division, and many other divisions of personnel. The successful producing unit for an educational program must be similarly organized, although on a smaller scale.

The production manager or director is in complete authority over all other members of his staff. It is his responsibility to correlate the efforts of his assistants through every step of the way. It is his task to fit together all units of the program: music, announcements, sound effects, dialogue, and engineering. It is he who supervises the final rehearsals, times the program, gives each participant his cues. During the actual broadcast on the air, the production director takes his place beside the control operator. He is the captain who steers the ship to port safely. If balance is lacking between voice and music, or between one voice and another, he must see that it is restored. If the program in broadcast is running more slowly than in rehearsal, he must see that the pace is increased. He must warn the control operator of all cues a moment before they are reached. With proper rehearsal and a good production director, the actual broadcast should proceed without error, but difficulties must be anticipated, and the production director must be on the alert at every moment to achieve a smooth performance. If "cuts" or omissions are necessary, they must be made without delay through pre-arranged signals to the performers. A skillful production director must have a sense of the dramatic - he must be a showman. He must be resourceful, spontaneous, forceful, imaginative, painstaking.

The script writer prepares the "continuity" of the program. All dialogue, announcements, music or sound effect cues, directions to actors or speakers, musical selections, and special effects must be specifically indicated in the script. If it is a radio drama, the script writer must observe the special technique required by the limitations of his medium. The radio drama is written to be heard, not seen. If the production director is captain of the ship, then the script writer supplies the map by which the ship is steered. The good writer for radio possesses a most vivid imagination, a keen sense of the value of sound, the instinct of the showman, the ability to be concise and objective. Time is all important in radio, and the script writer must not waste it with needless repetition or verbiage. Whether he writes a radio talk or a dialogue, he must remember that the listener cannot see the speaker or actor. His attention may be easily distracted. The script writer must therefore be economical of the means at his disposal and get the most out of his material with a minimum of apparent effort. And he must prepare his scripts at least a week in advance, not on the day of broadcast!

The casting director selects the performers for the program. He is responsible to the production director to find the best voices for each part, and voices that are best suited to the part. He must hold auditions for prospective members of the cast, and make his selections by ear and not by sight. He must have an extensive list of available talent from which to choose. He may assist in directing the preliminary rehearsals, especially if the script contains sections of dialogue. With

the advice of the music director, he secures the musical talent for the program. In a school or college production unit, the casting director may be required to find the proper announcer for a program. It may also be his responsibility to arrange for the services of faculty members or others who are to speak during the course of the broadcast. In short, the casting director must head the "supply" department of a radio production unit.

Musical selections, interludes, and other musical effects are the responsibility of the music director. He arranges special rehearsals for the orchestra or soloists. If the script does not indicate specific musical numbers, he must choose them. If there are to be interludes between the scenes of a radio drama, he must select music appropriate to the action or character of the scenes that precede and follow the interlude. In more ambitious projects, he may find it possible to have original arrangements of the music prepared. Perhaps a musical background is indicated for a poetry reading or a dialogue. We must study the script carefully to discover its demands, and in each instance, the music he decides to use must be appropriate, unobtrusive, and within the ability of his performers. Too frequently we hear the untrained voice singing an operatic aria, the unskilled violinist fiddling his way through a concerto. More than any other element in a radio broadcast, music is inherently a part of the "picture". We say "picture" advisedly, because it is music that supplies to a large extent the missing scenery of broadcasting. Although music is not necessarily a part of every program, the music director is an important member of any production unit.

The sound effects manager supplies all "sound" other than the music or words uttered by speakers in the program. He is involved principally, of course, in the radio drama, where sound is essential for the proper exposition of the action. He may be required to supply anything from the sound of a baby's crying to the effect of a multitude of thousands of frightened people on an open plain. From the ringing of an alarm clock to a heavy bombardment in modern warfare. He must be inventive. He must be a careful listener to criticize his own effects and judge their realism. He must be alert to anticipate his cues. He must read and study the script, and underline all cues requiring sound effects with perhaps the addition of a marginal note or two for further instructions.

Because we are primarily concerned here with production units for educational programs, we have chosen a "publicity" or promotion director as an essential member of the staff. Every program must build its own audience, and to win the largest following possible, it is necessary to publicize one's efforts. Announcements to the press containing information relative to future broadcasts, news items for the college or school daily, mimeographed bulletins for distribution to the listening audience, study aids, bibliographies, listeners' and instructors' manuals, and all other material especially designed to increase the value of an educational broadcast are the responsibility of the publicity director. Educational programs are only effective if they stimulate further study. Educators may broadcast day after day and year after year; listeners may listen through every waking hour, but unless the program

material is used, unless it kindles new interests, new lines of thought, new attitudes, a desire for further explorations into new fields of knowledge, it is time wasted. The publicity director, together with the teacher on the air, shares the responsibility of realizing the true possibilities in educational broadcasting.

THE RADIO WORKSHOP IN SCHOOL AND COLLEGE

The requirements of a radio production unit may best be satisfied through the use of the radio workshop idea in educational institutions. All of the staff members whose duties have been previously described may operate as a unit within the school or college and responsible to all departments of the institution. The superintendent, principal, or executive head of the school is the final authority. He in turn selects an advisory committee of faculty members. This committee determines program policies and objectives and supervises the production of all broadcasts. Acting with authority from the advisory committee or the superintendent, a teacher is selected as radio chairman, and it is she who personally directs all students who are to participate in the programs. With the advice of the general committee, which represents as nearly as possible all departments of the school in which the subjects are adaptable to radio broadcasting, all programs are planned, developed, rehearsed, and produced by the students under the supervision of the faculty chairman. With its own student production directors, casting directors, and other staff members, the radio workshop proceeds not only to present actual broadcasts on the air but imaginary broadcasts as well in the classroom or after school hours. The practice broadcasts may be used as the basis for school assembly programs. They provide an excellent extra-curricular activity and a valuable supplement to the work of the classroom itself.

The day may come when school systems in our larger metropolitan areas are assigned their own channels for the operation of school broadcasting stations to serve the entire city in a correlated plan of supplementary education. The University of Wisconsin station W H A, the oldest educational station in America, is serving the school system of the entire state in this manner, and splendid results are being obtained*. It is also entirely within reason to forecast the establishment of classes in radio production in our secondary schools as educational broadcasting increases*. Not many years ago, courses in journalism were offered in but a very few of our secondary schools, but with the increasing importance of the press as a field requiring special training and with the increase in number of high school news weeklies, came the need for such courses. Similarly, as more schools participate in actual broadcasts on the air, and as educators realize the growing demand for radio workers who have been educated in the special technique of radio, the need for courses in radio will be recognized. Scores of colleges and universities are already teaching the subject.

At Ohio State University, ten courses in radio are being offered by I. Keith Tyler, supplementing a remarkably complete and extensive schedule of broadcasts from the university radio station. The University of Illinois offers a valuable series of subjects under the direction of Joseph Wright. Dr. Waldo Abbott of the University of Michigan is nationally recognized for the splendid work being done at that institution.

Ben Darrow, radio chairman of the National Congress of Parents and Teachers, and nationally famous as "Uncle Ben" of Ohio School of the Air, has rendered service of the greatest importance to educational broadcasting in his programs and courses of instruction in radio. Mr. Darrow is now educational director of W. B. E. N., Buffalo. The University of Wisconsin has Dr. H. L. Ewbank and Harold McCarty conducting courses in many phases of radio production. Our own University of Minnesota has recently entered the field with the assistance of E. W. Ziebarth, who is associated with the department of speech in offering special training to students interested in radio as a vocation.

The Federal Educational Radio Project of the United States Office of Education, under the leadership of Commissioner Studebaker, has for four years offered a summer "radio workshop" at New York University. The many courses and laboratories are directed by Philip Cohen, production director of the Federal Radio Project, assisted by a staff of nearly fifty members, all engaged in the production of experimental programs over local stations and the national networks.

Under the active guidance of the Parent-Teacher Associations and the public schools, preliminary work has been done in Minneapolis and St. Paul which has led to the establishment of radio committees in both cities. These committees, appointed by the Minneapolis Board of Education and the St. Paul Department of Education, have done much to develop the use of educational broadcasting in our schools. A radio consultant is now in charge of all programs in which the Minneapolis public schools are participating, and it is a possibility that microphones may be installed in the schools themselves to make possible the origination of programs within the classroom.

The true radio workshop in school or college represents the combined efforts of several departments. The creative writing or English composition classes may use the writing of radio scripts as an additional project. The music department naturally lends its assistance in the production of many programs. The classes in speech are responsible for the training of announcers. The drama department prepares radio versions of the classics, and original playlets for broadcast production. The actors and student production directors are trained in these classes. Finally, the interests of many other departments are combined in the presentation of a complete educational broadcast service in fields such as vocational guidance, civics, home economics, manual arts, history, journalism, literature, student self-government, athletics, health, safety education, and others. In each instance, the work of the classroom is being supplemented and the natural interest on the part of all students in the fascination of the microphone is being utilized as an added stimulus toward greater interest in learning. Program quality is improved, and in some cases future broadcasters are being trained to take their places among the Boake Carters, Don Ameches, David Sarnoffs, and Major Lohrs of the future.

PRELIMINARY STEPS IN ARRANGING THE PRODUCTION

When a series of programs has been planned, time must be secured from the local station. The program or educational director of the station is usually consulted, and broadcast time is definitely reserved. However, before the request for time is made, it should be emphasized again that a definite plan for the entire series of broadcasts must be ready for presentation. As a rule, time allotments are made in units of thirteen although this rule is not strictly observed, i. e., a series of thirteen programs, one a week, will be scheduled, or longer series in multiples of thirteen. This division of time is made merely because thirteen weeks represents one-fourth of a year, and it is a convenience in scheduling. Perhaps the program director requests an audition in order to decide on the merits of your plan. If your production staff has been organized in advance, and if preliminary rehearsals have already been held on at least the first broadcast of the series, the audition can be arranged immediately.

The educational director or other official of the local station will judge your program plans strictly on the basis of educational content and listener appeal*. It is essential therefore that the program be designed to hold the attention of more than a few listeners. It is a fault of many organizational programs on the air that the broadcasts are of interest only to those who may already be members of a club or group sponsoring the series. Actually, the members of an organization should be expected to have a rather thorough knowledge of the objectives and activities of their organization. In most instances, it is the non-member whose interest should be attracted. Expressing it in another way, the good student will listen voluntarily. The lazy student, the poor student must be persuaded to listen. This is not to say that program content must be written to appeal to those in lower intelligence levels. It means that the program must be sufficiently interesting to make listening a desirable experience. No censor in the modern world is more powerful, more final, and more rapid in action than the little knob on a radio receiver. A simple turn of the wrist, and your listener has walked out.

The time having been arranged, the next step is to schedule definite rehearsal periods and to secure the assistance of the station's production directors in these rehearsals. Any station should be willing to offer this service if the listening audience is to be maintained. When time has been granted for an educational program, the station management immediately assumes a large share of the responsibility for the effectiveness of the program. Perhaps extra assistance may be needed from the station's sound effects or musical staffs for the adequate production of the broadcast. Certainly the program deserves proper rehearsal under expert supervision before it reaches the air. The rehearsals may occur on the day of broadcast, immediately preceding broadcast time, or several days before, but a one hour rehearsal at the very least is essential. This does not include the preliminary rehearsals conducted independently by the sponsoring organization. And the entire program must be "monitored" at least once before the broadcast. "Monitoring" a program refers to the final hearing given the

broadcast on the loudspeaker system of the station, from the control room. The microphones are actually in use. Everything is being heard in an adjoining control room exactly as the listener will hear it when the actual broadcast occurs.

A few minor considerations should be mentioned, minor in importance only because they are, or ought to be, understood implicitly by all who produce radio programs. If any musical selections are to be used, they must be cleared by the music department of the station. All stations are licensed by music publishers for the broadcast rights to thousands of compositions. Certain selections are restricted from use on the air, and others are definitely banned. Penalties are provided for violations of Chase regulations. "Clearing" the music means approving the music for a specific broadcast. Also, it is expected that scripts are to be submitted to the station at least one week in advance. Too frequently, a so-called educational program is attempted on the air from a script which is largely a few scribbled notes taken at the last minute by a willing but sorely tried announcer or production director. Publicity should be sent to the newspapers; bulletins for the listening audience should be mailed; and any other necessary material should be made available at once, and in advance of the first broadcast.

PRODUCTION METHODS

The first step in the actual production of a program, after scripts have been prepared, is the casting. The school or college producing unit will find a public address system valuable in this and many other phases of program planning. However, if a public address system is not available, the cooperating station may lend its services for casting purposes. All aspirants for parts in the program should be heard and not seen. They should be given excerpts from the script to read, and attention should be given not only to the voice quality of the applicants, but to their flexibility, variety in inflections, their ability to re-create through the voice alone an adequate mental image of the character being attempted, their diction, naturalness, and lack of affectation. The principal criterion in the judging of radio actors beyond physical and technical equipment in voice and delivery is naturalness. Too many radio actors sound "read-y". They are reading the lines as they have been written, but they fail to give an illusion of reality. They are speaking, but the words they say fail to have meaning. All of sound values are missing*. The poor radio actor may as well read from the dictionary. An illusion of "the first time" must be given, i. e., the spoken words must become the words of the actor himself as he utters them. They must become a part of him, as if they had come to mind for the first time but a moment before they were spoken. Remember, too, that the good radio actor, like all other actors, must respond readily to direction. He must have a good sense of timing, and to a far greater degree on the radio than in any other medium, he must have the capacity of restraint. Over-acting is immediately apparent on the air. The microphone is intimate and can reproduce the most delicate shadings and intonations of the voice.

Casting the musical portion of the program need not be explained other than to say what has been said before, i. e., that the singer or

instrumentalist an the air must be adequately trained. A vibrato in the voice; a sustained note at the end of a phrase that wavers painfully; a shrill, piercing soprano; a guttural baritone; a wheezing saxaphono; a thin; papery tone from the violin; or a slight tondoncy to stray from pitch are undesirable, to express it mildly.

Sound effects may be recorded or created by means of special devices in the studio. It is easier and far more simple to use the effects which are available on scores of records. A complete Library of recorded effects is available from several manufacturers, including the distant cries of coyotes, the starting of a Model-T Ford, the sound of walking on snow, the cacophony of chopping a piano to bits with an ax, or the lapping of water against a row boat in motion. These recorded effects can be easily cued in their proper places, and as a rule they give a much more realistic effect than the similar sound created by manual devices. Certain sounds can, of course, be managed by means of simple apparatus available to any one; for example, the sound of horses' hoofs on a hard-surfaced road (two halves of a cocoanut shell clapped together), the slam of a door or a door opening (a small door mounted in a convenient frame), the ringing of a door bell (an actual bell mounted on a small box containing a battery), the sound of stabbing for the mystery melodrama (the thrust of a knife into a potato), the crackle of fire (crumpling sheets of cellophane in the hand), the tramping foot of an army (a wooden frame in which are mounted many small lengths of wood, suspended loosely on long sections of string), a crash of wood (breaking a berry box), moving through the underbrush (twisting a bundle of straw), the note of a tree-toad (rubbing the fingers across the teeth of a comb), and many others too numerous to mention here but available for experimentation by anyone.

The choice of music has been mentioned previously. Suffice it to say that the music selected must be varied and appropriate to the purposes and mood of the program. There are many splendid high school and college choirs, orchestras, bands, glee clubs, and string ensembles. Many individual soloists are of striking ability. However, having found the talent, the importance of rehearsals cannot be over-emphasized. Shading in music, the more subtle nuances and elements of phrasing, is of first importance in broadcasting. Precision of attack is essential. If a single voice or player is lagging by merely a fraction of a second, the result is ragged. Proper balance among sections in a choir or orchestra is to be determined through careful monitoring. The group must be heard time and again on the monitor system, and various arrangements before the microphone must be tested until the right one is discovered. It is well to permit a line of not more than twenty singers in a row when presenting the larger vocal groups. Dependent on the number of singers, additional rows may be arranged behind the first row to give extra depth and resonance. The rows should be arranged in an arc before the microphone to make certain that each voice in a given row is equally distant from the point of pick-up. In arranging the orchestra, the strings should be nearest the microphone, of course, with the brasses, drums, and tympani farthest away. With amateur groups, it is difficult to suggest any rules for microphone placement. It may be found that the woodwinds are over-balanced by other sections of the orchestra and consequently must be moved forward. Customarily the lower

tamed instruments have the least volume, especially the cello, the double-bass viol, the bassoon, and others. Naturally, the trombones, trumpets, and more strident-toned instruments are placed in the rear.

Piano accompaniments For the soloist or choir deserve special mention. The accompanist usually overbalances the true soloist. The forte pedal is not to be used as a general rule; in fact, little pedal is to be desired in any accompaniment, for the piano merely supplies a background for the singer or instrumentalist. In many programs, an otherwise effective solo is ruined by the accompaniment through the use of an over-simplified arrangement of the selection. We refer especially to the umph-da umph-da umph-da of the pianist who has reached page thirty-two in his Czerny Etudes.

Soloists should be instructed in microphone technique, too. The sudden and unexpected forte on a sustained high C may reproduce on the air like a blast; unless the singer turns slightly away from the microphone. The pianissimo passages may be nearly lost if the singer fails to approach the microphone. Even after a thorough monitoring of the program, the average control operator cannot be expected to anticipate all changes in volume throughout the selection. He must have the assistance of the soloist to assure proper reproduction on the air.

Theme songs are not essential in radio production. If an opening or closing musical effect that is truly striking and original can be achieved, then a theme is properly used. In educational programs, its only advantage is in timing. With the best of rehearsal by stopwatch time, the actual broadcast on the air may move faster or slower. If a musical effect is indicated at the end of the script, it may be valuable in stretching a fourteen minute program to the required fifteen minute allotment.

Many school and college musical groups have been responsible for outstanding performances on the air. Witness the world-famous St. Olaf Choir, the excellent Carleton College Band, the thrilling music of the University of Minnesota Band. Among the finest performances on the air during KSTP's last season was a program by the choir of Brainerd High School. The Eau Claire (Wisconsin) High School Choir deserves mention. Among public school bands, that of Minneapolis South High School is worthy of special praise. The Mechanic Arts High School Choir of St. Paul has given many remarkable broadcasts, as have the choirs of Johnson High School, St. Paul, and Minneapolis West and North High Schools. In each instance, the programs indicated an evident search for music that was truly worthwhile and compelling. There are too many compositions of unquestioned quality to waste time on the hackneyed and cheap. The performance of any music as well as the pleasure of listening to it should be an experience of beauty if we are to uphold standards.

This is not to eliminate the folk songs from our consideration. A group known as the Madrigal Singers of St. Louis Park High School in Minneapolis is responsible for many of our finest moments in educational broadcasting from K S T P. These young people, meeting during their luncheon hours and after school, have devoted themselves to the singing of old English madrigals for the sheer pleasure of the singing. That

there was real joy in the performance must have been obvious to both those who listened and those who watched them in the studio. For any of us, there is definite advantage to be gained in approaching each broadcast with real pleasure and enthusiasm. It is infectious, even through the medium of radio, and most certainly has a place in the performance of any music on the air. The heart has spoken for many generations through the folk music of the world, and we need to hear more of it on the radio.

Musical "bridges" or transitions between scenes are frequently transcribed, i. e., a recorded musical selection is used. The well equipped radio station of today has a complete library of transcribed musical selections from which to choose, many of them specially recorded as "mood" music for use as interludes in dramatic programs. If a "live" orchestra or instrumental ensemble is available, it is of course preferable to make use of it.

In producing educational programs, it may be possible to record the broadcast from a special performance in the studio or from the actual program on the air. Those "transcriptions" are then available for use again on other stations. National organizations wishing to conduct an educational program simultaneously throughout the nation may transcribe their broadcasts to great advantage. It is possible, for example, to omit an opening and closing announcement on the record, permitting the local chapter of the organization to prepare its own copy especially adapted to local needs.

REHEARSALS

Before a program is monitored for the first time, it should be thoroughly rehearsed for at least a week preceding its broadcast. Many of our network broadcasts receive twelve hours and more of rehearsal, in addition to smaller group rehearsals. The rehearsals in the preliminary stages should be for the purpose of reading the lines or playing the musical selections and perfecting them in all details. Tempo should be stressed, for the program that "drags" loses its listeners. A momentary pause between speeches in a dramatic dialogue seems much longer on the air. Those handling scripts must be cautioned against any rattling of the pages as they move them. In broadcast, the clip should be removed to separate the pages, and as each one is read it may be quietly placed behind the others at the bottom. It is not well to drop used pages on the floor, for the actors may be standing ankle-deep in radio continuity before the end of the broadcast is reached.

The monitoring rehearsals, and final auditions should strive to develop additional pace and adequate sound values as well as the necessary coherence of each unit of the program. In stressing timing and pace, it is not intended to hurry through the program to the extent that the listener is exhausted in attempting to follow it. A pause, if used properly, is most effective on the air, for attention values are increased at once. And sound values may be greatly enhanced through experimentation in microphone placement. For example, the actor who

stands away from the microphone and speaks with more than normal value may achieve a desired "hollow" effect as if he were speaking in a large empty hall. The actor who speaks in a whisper immediately in front of the microphone may achieve effects that are impossible on the stage. Experiments with the use of sound filters have been made, permitting the "squeezing" of voice or other transformations that are remarkable, i. e., certain frequencies in the voice may be removed electrically to make it smaller in actual physical dimensions of volume and range. Remember that sound is being dramatized. Sound is a psychological factor of great importance in any radio program, and many possibilities have yet to be realized in this field. The "March of Time" uses sound in this respect for dramatic values of startling significance, e. g., the building of a climax through the rapid succession of a series of short speeches, each spoken by a different voice, and each voice differing in quality, pitch, and projection.

MECHANICS - TYPES OF MICROPHONES

Microphones in common use now are "alive" on two sides, i. e., characters in the program may stand opposite each other in reading their lines. If more than two persons are involved in a given scene, it is well to allow no more than four persons to use a single microphone in any one scene. They are arranged, two on a side, and, of course, incidental actors may be moved in momentarily only to back away when the speech has been finished. Standing too far towards the "dead" side of the microphone will result in a fading of the voice. If two speakers or more using the same microphone are not properly balanced, one voice will dominate another. If a speaker begins before the microphone has been turned on, his words will not be heard. Studios have a signal light which indicates whether or not the microphones in a given room are "dead" or "alive", and these signals should be watched in addition to the signals from the production director. Sound effects must be placed properly before the microphone in order to achieve the desired result and to prevent their over-balancing the voices.

The velocity or "ribbon" mike is bi-directional, i. e., it is alive on two sides. Further, it is directional within only a limited range angle; it will not pick up properly if the speakers or musicians are too far at the side. This range of pick up represents an angle of approximately ninety degrees on either of the two "live" sides of the microphone. Within the ninety degree angle, sounds are reproduced with comparatively uniform volume. Outside this angle, loss in volume will result. There may be variations, of course, depending on the sound reflected from the walls of the studio. The velocity microphone is the most widely used type in the broadcasting industry.

The dynamic microphone is in use in many studios. It is excellent in high fidelity qualities, giving a most faithful reproduction of the original. However, this microphone is alive on only one side, and more recently a variation of the type has been available, known as the "eight-ball" microphone, because of its resemblance to the billiard ball. This microphone is an advantage in the broadcasting of dramatic programs because it is equally sensitive to sound in all directions. Hence, a group of players may stand in a circle around it, and all will be heard with uniform volume. The "salt-shaker" microphone is a variation again of the "eight-ball", distinguished from the latter because of its lighter weight, its greater ruggedness, and its adaptability to the use of a deflector, where semi-directional effects are desired. Without a deflector, the salt-shaker is non-directional, i. e., it is equally sensitive in all directions. In using a dynamic microphone, it is well to stand at an angle of about forty-five degrees off center.

The crystal microphone is used frequently in public address systems because of its comparatively low cost, and the quality of reproduction is entirely satisfactory. It may be secured in any one of three types: uni-directional (sensitive in only one direction), bi-directional (sensitive in two directions), and non-directional (sensitive in all directions). This microphone is known as the crystal type because of its construction and operating principles.

High-grade crystal microphones are also occasionally used in broadcast work, but the lower cost types are found principally in public address systems. The high-grade type is similar in appearance to the metal frame of a hair brush - without the bristles, of course!

The control room is the "central" of the radio studio. It is here, under the supervision of the control operator, that all the mechanical operations of a studio broadcast are directed. The control operator turns on or off all microphones, blends in all recorded or "live" musical effects together with the speech, controls all necessary transfers from one studio to another, prepares the correct hook-up for each program, and "rides level". The term "level" refers to the volume of sound being reproduced from the studio, and by means of a volume indicator, the control man makes certain that the level is maintained within a comparatively uniform range. When the production director gives the command, "Stand by", the cast and control operator prepare to start the broadcast within the next few seconds. At the scheduled moment, the production director says, "Take it away!" This is the cue to begin the program, for all concerned. Sudden peaks in volume are caused by changes in accent, loudness, or incorrect balance in either the music or speech of a program. The operator attempts to keep these peaks within definite limits, for an unexpected increase in volume may easily blast on the air, or it may cause momentary interruption of the circuit. A passage that is too low in volume will result in the opposite effect, of course, in which the listener will hear very little or nothing.

The control operator must always watch, with the production director, for the actor who "hugs" the microphone, who stands firmly before the microphone and allows no one else to share it. This type

is similar to the actor who takes center stage and constantly "steals" the act from others in the cast. There is a tendency, too, for amateur performers to creep up towards the microphone gradually but invincibly, destroying the balance of the voices. Auditions may be monitored, of course, from auxiliary control rooms, and the actual broadcast itself may be controlled from these auxiliary rooms, but eventually, all of the sound impulses are centered in the main control board and go from there to the transmitter where they finally reach the air.

SCRIPT WRITING

A special technique, over and above the usual rhetoric of the composition to be read or acted on the stage, is required in the writing of radio script. Radio continuity, or script, is not to be read, or to be presented for a visual audience - at least in the present stages of radio development - but it is to be heard. Therefore, the involved sentence structure appropriate to some styles of writing is ineffective on the air. Sentences should be periodic, and the thought must not be interrupted by frequent parenthetical phrases or clauses. The choice of words must be governed by the demands for objectivity and simplicity on the air. A certain degree of repetition and rather more emphasis than usual is to be expected in the radio script*. Although it may appear contradictory, writing for radio should also be concise. The element of time demands that the writer condense his thoughts to achieve the best effect in the shortest period.

In dramatic script, it should be remembered that the listeners cannot see the actor who is speaking at a given moment. This must be indicated within reason, i. e., one cannot preface each remark with the indication of the speaker's name, but if there are more than two voices concerned in a given dialogue, after they have been identified in the listener's mind, it is necessary only to specify their names occasionally. For this reason, it is well to strive for contrast in voice quality in casting the program. It is an aid to the listener and to the script writer as well. The exposition, which is comparatively easy for the writer of stage plays, must be managed in a different manner for broadcasting. If certain actions are requisite to a complete understanding of the radio dialogue, the speeches must indicate what is happening. For example, the young lady may be smiling enigmatically at her suitor, and on the stage the smile is obvious. For radio purposes, however, the suitor should tell us that she is smiling. In the mystery play on the stage, the sinister shadow entering the room may be noticed at once, but the radio listener hearing the same play should be told in the frightened whisper of one of the actors that a shadow is approaching.

On the other hand, if a door is slammed after the exit of one of the actors in a radio script, it is ridiculous to include a spooch such as this one from a recent amateur script, "I'm going to leave this room." The other character replied, "Don't slam the door!" If a character is to be represented as moving from one position to another, it may be indicated by a cue to the actor: "Off mike", which means that the character concerned is to say his next speech away from the microphone. When the same character is to assume his original position again, precede the proper speech with the direction, "Up to mike".

It is necessary to indicate all sound effects and musical cues in a dramatic script. These directions should not be placed in the body of the script but on a separate line in capital letters, clearly apparent to the eye. Some writers prefer to begin each direction in the margin to make it stand out from the rest of the script, and some underline all of the direction to make it even more apparent.

When the climax - the moment of highest dramatic suspense - has been reached, end the script as quickly as possible. Waste no time in exposition. Let your characters explain the setting, identify themselves, and describe the original situation at once, and incorporate the exposition as a part of the action. The usual dramatic script can be divided into as many scenes as are desired, and transitions from one scene to another can be indicated by a musical interlude, a moment of silence following a gradual fade-out from the preceding scene, the insertion of a few descriptive words by the announcer relative to the intervening action and the scene to follow or a combination of all these methods.

All script writers should read Archibald MacLeish's radio drama, "The Fall of the City", an example of the high literary skill and imagination that can be applied to this new medium of expression. Hack writers in radio are disappearing, and more frequently each year as radio progresses the best radio scripts are demanding the services of our finest writers. Irving Ashkenazy who was author of "Three Who Found Death", an original radio sketch produced on the Rudy Vallee program several years ago, has also contributed significant work to the field of broadcast drama. His sketch was based on the Pardoner's Tale of Chaucer, with an original musical background by Wilfred Pelletier of the Metropolitan Opera.

Concerning other requirements of the radio play, all sound effects, necessary musical selections, and a cast of characters should be listed at the beginning of the script. Standard size manuscript paper should be used, and lines must be double-spaced for clarity. Extra copies should be available for the sound effects director, production director, musical director, control operator, and all other staff members concerned in any way with the production. Each actor should have his own copy, of course. In indicating the speakers, the name of the character should be placed in the middle of the page on a separate line rather than in the margin.

Good taste must not be offended, regardless of the type of script. However, in writing the dialogue, it must be natural, and it must "ring true". The affected, stilted dialogue of the eighteenth century is not for radio writing. Study your characters and let them speak for themselves in their own vernacular. Remember that actual conversation has its interruptions, its half-finished sentences, its casual asides, its ejaculations, and let your radio actors speak accordingly. Action can move much more swiftly on the air. The scene may jump with ease from one place to another, and it has been found that radio listeners are not at all disturbed by these swift transitions.

The script for a radio talk should never be longer than ten or fifteen minutes, even with the aid of speakers. And here, as in radio drama, the tests for good and skillful writing are clearness, directness, and naturalness. A radio speech is not an oration. It is a conversation with a number of individual listeners seated in their homes. It should be friendly, informal except in a very few instances, and concise.

An entire book could be written, in fact, several of them have been written, on radio scripts and their technique. Suffice it to refer you to the bibliography at the end of this manual.

RADIO SPEAKING

We can only list the qualifications of a good radio speaker or announcer within the limits of this brief outline. To be effective on the air we again say at the risk of needless repetition that the speaker must be natural and unaffected. He must use a conversational style, a friendly and sincere manner, and a direct approach. The radio speaker must visualize his audience and try to sense his contact with the listeners. He must realize that he is a guest in the home, and no guest is welcome who adopts the soap-box manner. His training must have given him the ability to "ad lib", to speak impromptu without hesitation and with the use of a vivid and ready vocabulary. His diction must be clear and clean without undue emphasis. So-called stage diction is not adapted to the radio. His inflections must be varied. They must not be confined to a monotonous pattern, but in tonal variety, pitch, range, and projection, he must constantly stimulate his audience. Sectional accents or dialects have no place on the air. There is a common form of American speech that has been developed largely through the radio's influence, an articulation and style of delivery that is best exemplified by President Roosevelt. Over-emphasis of word-endings, undue stress of syllable sounds, and explosive articulation of vowels are unpleasant to the ear, especially in broadcasting. The radio speaker must not talk too rapidly, but it is helpful to vary the rate while on the air. Cantril and Allport, in their "Psychology of Radio" give these general rules for speed in reading on the air: for the average material, 115 to 160 words a minute; for theoretical material, 110 to 130 words a minute; for factual material, 120 to 140 words a minute; for argumentative material, 140 to 170 words a minute; for directions, 90 to 135 words a minute; for news reports, 120 to 140 words a minute; and for simple narrative, 220 to 150 words a minute.

As a general rule, women's voices do not reproduce as well as men's voices. The reasons are not immediately apparent, but it would seem that the lower tones of a man's voice are more pleasing to the ear, and similarly, a woman's voice that is low in pitch and tonal quality is also more pleasing. Radio reproduction responds equally well to both high and low frequencies in the musical scale, but evidently the lower frequencies, with their overtones, are psychologically better adapted to the air. It is for this reason that a violin solo on the air frequently sounds thin, unless it is played by a true artist.

Dr. Vizetelly in his book, "How to Speak: English Effectively", gives these rules for the radio speaker or announcer:

1. A Clear speaking voice,
2. An ability to enlist the voice in the service of good speech.
3. A knowledge of the tonal quality of words and their psychological effects beyond their dictionary meaning.
4. A complete understanding of his script before he attempts to speak it on the air.
5. A knowledge of the effect of understatement as well as emphasis.
6. He must never try to inflate by false accentuation what is essentially a simple, homely phrase to the proportions of grandeur. The phrase will die of pomposity.
7. He must remember that he is talking to live human beings who have loved, struggled, laughed, dreamed, despaired, and hoped.
8. He must bear in mind that the cheap wisecrack is as offensive as the direct insult.
9. An announcer must know when he knows not and make it his business to find out.
10. If the announcer expects to be received into the home, he must come with credentials of grace, sincerity, and warm Fellowship, and these must be found in his voice.

TYPES OF PROGRAMS

Dramatizations are most frequently used for the educational broadcast. They serve to vitalize the facts of education, to re-create past and present events, to give life to the pages of a textbook.

Radio talks have been discussed in previous sections of this manual. As a technique for broadcasting, they should be confined to the trained radio speaker who possesses in addition to practical microphone experience that intangible, radio personality. This can be defined only by comparison. Alexander Woolcott, Boake Carter, Bing Crosby, Rudy Vallee, Walter Damrosch, President Roosevelt, Dorothy Thompson, and Claudine MacDonald - all are radio personalities. The radio talk at best should be short, and it should be reserved only for those subjects which cannot be presented in any other manner.

"Actuality broadcasts" is a term chosen for those programs which present actual events as they are occurring, perhaps a broadcast of the opening session of Congress, or a political convention, or an interview with a passerby on the street. This type is of inestimable value for the class in civics, political science, world history, and current events.

The round-table discussion on the air is adapted to argumentative material. No more than four speakers should be used, and each should represent a different attitude toward the subject for discussion. One of the speakers must lead the discussion, and the remarks can be impromptu, with only a minimum of planning in advance. Perhaps the speakers involved in the discussion may meet together several days in advance of the broadcast to consider the main divisions under which the topic should be analyzed, but in all other respects, the impromptu form is preferred. Speakers tend to petrify their discussion if a debate is written in advance. The natural "give and take" of an informal discussion can only be gained through the freedom of impromptu address.

Interviews are adapted to many types of educational broadcasts, principally those of an informal nature. For example, the famous statesman, explorer, scientist, professor, army officer, monarch, or man on the street can be interviewed for opinions and background information that genuinely supplement the formal learning processes. The radio interview may be prepared in advance and read from script, unless the person to be interviewed is accustomed to broadcasting. For the roving microphone type of program, in which the microphone is moved from one place to another as in a visit to a laboratory, each student may be interviewed directly at his desk, and the questions can be related to the particular experiment on which the student is working. The British Broadcasting Company attempted not long ago a series of interviews originating in the homes of laborers and tradesmen, an intensely interesting and significant survey of the working man and his attitudes.

Directed activities broadcasts are concerned with the detailed explanation of supplementary classroom material. This type is to a degree formal instruction on the air. The listeners in the classroom are instructed to solve problems and participate in definite activities according to the direction of the radio instructor. The technique is principally adapted to music, art, science, English composition, rhetoric, languages, and related subjects. Even mathematics has been taught successfully in this manner.

Competitive activities and audience participation programs should be classified as a separate type. The spelling bee, the debate, the inter-high school music contest, the question and answer period, and the public forum broadcast all fall within this category. It may be argued that these programs include some that are rather far removed from formal education, but it is evident that spelling has become a game through the influence of the radio spelling bee, that the Umbrella Court and Professor Quiz programs are nothing more nor less than a classroom recitation, except that a radio master of ceremonies asks the questions.

and not the teacher. Students can well enjoy their recitations if occasionally they become an adaptation of a radio technique. It is not desired that radio enter the classroom and sensationalize its routine. This would seriously interfere with the true objectives of the classroom, but it is argued that some of these techniques can be transferred, not only from the school to the broadcast, but from the broadcast to the school as well.

USING THE EDUCATIONAL PROGRAM

The educational program is of no benefit unless it is heard, and to assure an adequate audience for these broadcasts the establishment of listening groups is a valuable aid. European broadcasting has made great progress in this field. Thousands of listening groups follow various programs regularly, in private homes, in schools, colleges, universities, or public meeting places. The topic of the broadcast is discussed by members of the group at the conclusion of the program, and a leader directs a study program of outside reading correlated with the entire series.

Like listening groups for the adult, the classroom in the school is the logical unit for broadcast reception. However, the mistake is frequently made of permitting too many students to listen in a single group. Proper equipment for the school demands an individual loudspeaker or radio receiver in each classroom to keep the group within a maximum of forty or fifty. If the single receiver is placed in an assembly hall before an audience of a thousand or more, no program has sufficient appeal to hold the attention of such a group. The intimacy and directness that are essential to an effective broadcast are lost because of the inevitable distractions present in large audiences. The assistance of the teacher in a follow-up discussion of the broadcast is lacking.

It is a requisite of all good educational broadcasting that the facts or opinions stated on the air lead to further thought on the listener's part. The radio program acts merely as an assistant teacher, to borrow a phrase from Ben Darrow. She in turn must assist the program by preparing her students in advance of the broadcast. If the program discusses great artists, the teacher has secured reproductions of the familiar Titians, Rembrandts, and Michelangelos for display in the class. They have learned something of the lives and times of the great masters. Their interest has been aroused, and they are ready for the radio presentation of the subject and for further discussion at the close of the program.

David Sarnoff of the Radio Corporation of America has said: "We have what seem to be two fundamental departments in education. The first is the training of the mind; the second, the feeding of the mind. Radio, in common with other forms of mass communication and entertainment, belongs to the second of these two educational fields. Radio programs can be created to inform the mind and elevate the spirit, but when one seeks to impose upon them the requirements that they also

furnish mental training and discipline, one narrows their appeal and risks the dispersion of the invisible audience, thereby defeating the purpose for which the program was prepared.

This is the principle which has guided us in calling the Conference on Educational Broadcasting, and if we can contribute to the greater service of education in the feeding of the mind, we shall have made definite progress in realizing the ultimate possibilities of radio broadcasting.

FUTURE DEVELOPMENTS IN RADIO EDUCATION

During the past decade great advances have been made in the technical end of radio communication. We have all been familiar with the progress of radio broadcasting from a somewhat interesting boy to one of the greatest mediums of informal education. Other engineering advances have taken place that may have considerable bearing on the use of radio by the public. Most highly publicized probably, is television. The engineering of television transmission and reception has now progressed to a point where very satisfactory pictures can be reproduced in the home. While further improvement is needed and will undoubtedly be made, television at its present state of development could be used by the public with considerable satisfaction*. To date, no television receivers have been made available to the general public.

A number of factors such as standardization of frequency bands, line and frame frequency, etc., determine the ultimate set design and must be universally agreed upon by the various manufacturers to prevent later obsolescence of equipment. This fact, together with the necessity for reduction in cost of both receiving and transmitting equipment, has convinced those responsible for its development that television is not ready for general use.

Facsimile, the transmission of single pictures by wire or radio, has progressed to an advanced stage and has been used to a very great extent over the past few years in the transmission of pictures for newspaper use with which we are all familiar. There is every indication that such transmission by radio for reception in the home will soon come into general use. The degree of definition possible in picture transmission is limited only by the cost of the transmitting and receiving apparatus, and even with moderately priced equipment, very satisfactory pictures can be transmitted.

The increased use of high frequency for radio transmission has opened up a new field of service for broadcasting. The so-called international broadcast on the medium-high frequencies has been in somewhat general use for several years and has undoubtedly contributed greatly both to international understanding and in giving radio service

to many localities which were without normal broadcast service. The use of so-called ultra-high frequencies for local broadcasting promises to make facilities available for much needed additional broadcasting. Since these frequencies, by their general nature, do not travel to any great distance, it is possible to duplicate such a service on the same frequencies in a great number of localities. The further use of the ultra-high frequencies will undoubtedly result in the wider use of radio broadcast for many special services such as educational broadcasting.

The past few years have witnessed a great increase in the use of so-called relay broadcasting, where a radio channel outside the broadcast band is used to carry a program from some relatively inaccessible, remote point to the studio for transmission over a regular broadcasting station. This service has made available to the radio audience a great number of broadcasts of public interest originating at points where either the total inaccessibility of wire services or the prohibitive cost of this service would have precluded the broadcasting of such a feature.

The improvement in technical standards of fidelity, both in transmission and in reception has undoubtedly made radio broadcasting a much more acceptable medium for the reproduction of good music. While the present receiving equipment used by the average listener still falls far short of satisfactory reproduction especially in the case of symphonic music, we have every reason to believe that further improvements will be forthcoming in receiving sets which will still further enhance the value of this medium for the proper enjoyment of good music that is not available to that audience by other means.

In general, these new developments will make possible the use of high frequency channels by school control systems over a small area; and also, with the advent of visual elements in radio transmission, it is entirely possible that the pages of text books, maps and charts, pictures of an opening session of congress, all will be practically achieved. The end result will be a further vitalization of the supplementary influences of education and the introduction of new and genuinely exciting teaching additions into the classroom. The world in reality, both through sound and sight, will be brought to the smallest school house in the backwoods.

SAMPLE PAGES FROM A TYPICAL RADIO SCRIPT

TITLE: "Pages of American History"
SPONSOR: University of Minnesota
DATE: January 28, 1935
TIME: 5:00 - 5:15 P.M.

Station K S T P
Program NO. 14
Subject: Erie Canal
Author: Harriet Premack

CAST: Announcer
Narrator
Mrs. James Brisbane
Joseph Ellicott
Governor DeWitt Clinton
Commissioner Seymour
General Porter
Judge Wilkinson
Henry Lovejoy
First Commissioner
Second Commissioner

MUSIC: Introduction to "American Fantasie" (Herbert) (Theme)
Scherzo - "Now World Symphony" (Dvorak)
The Mill (Raff)
Dance of the Harpies - "Atonement of Pan" (Hadley)
Rustle of Spring (Sinding)
Rustic Dance (Traditional)
Perpetual Motion (Strauss)
The Deluge (Saint-Saens)

SOUND EFFECTS: Slow trot of horses on forest trail
Gallop of horses
Applause - fifty people in small hall
Large group of men Calking
Shout of assent - two hundred men
Heavy roar of river rapids
Pounding on door
Confused voices - large, mixed group
Blare of trumpets
Pouring water from a keg
Applause - audience in large hall

PRODUCTION DIRECTOR:
SOUND EFFECTS DIRECTOR:
CONTINUITY EDITOR:
MUSICAL DIRECTOR:
DRAMATIC DSRECTOR:
CONTROL OPERATOR:

(Sample script continued on next page)

"Pages of American History"
No. 14 - Page 2

ANNOUNCER: "Pages of American History"! This is the fourteenth in a series of programs presented for young people of high school age by K S T P, with the cooperation of the University of Minnesota, through the University Theatre.

1. ORGAN: THEME - INTRODUCTION TO "AMERICAN FANTASIE" {(HERBERT)
(MUSIC FORIE TO END OF THEME AND CUT)

NARRATOR: History is the story of man, the story of real men and real women in real adventures, As we have already learned, sometimes it is the story of warriors or of explorers or of statesmen, and sometimes it is the story of builders; engineers and inventors and scientists who have dreamed of new ways in which to make this a better world. Today the Pages of American History open to the story of the building of the Erie Canal. (MUSIC CUE) Last week we learned of the War of 1812. This time let's go back to a few years earlier - to the year 1802. Joseph Ellicott, an engineer, and a friend, Mrs. James Brisbane, are riding horseback through a quiet lane in a New York forest.

2. ORGAN:

(MUSIC UP AND OUT)

SOUND OF HORSES AT A SLOW WALK THROUGH FOREST: HOLD IN BACK

MRS. BRISBANE

Have you ever seen anything more beautiful - these tall trees, and the lake there through the leaves, Mr. Ellicott?

"Pages of American History"
No. 14 - Page 3

ELLCOTT

Never! It makes me even more certain that I am right, A
city must arise here!

MRS. BRISBANE

It would be a beautiful city,

ELLCOTT

It shall be! (WITH GREAT DETERMINATION) I'll start on the
plans tomorrow!

MRS. BRISBANE

But how do you know - how - I mean - you must have people
to live in a city.

ELLCOTT

They will flock here, Look - there, on that wooded hill -
that is where I shall build my house!

MRS. BRISBANE

(WITH A GAY LAUGH) You are looking far into the future,
Mr. Ellicott.

NOTE: The above excerpt from a script which was presented by K S T P in 1935 serves to indicate a practical form to be followed by the radio writer. The list of characters in the dialogue, musical selections, and sound effects on the opening page assists the production staff in preparing the program for rehearsal. Space is allowed for writing in the name of each player after the part to which he has been assigned* Each member of the production staff signs his name at the bottom of the opening page on the original copy in the spaces indicated for future reference. On page two, the first musical cue indicates that the theme is to be played to the conclusion of the selected passage, when the music is to end for the narrator's opening remarks. The words, "Music Cue", in the narrator's introduction indicate that the second selection, the musical "bridge" or interlude, is to start at that point, in the background, as the narrator continues without interruption. A wide margin is left to permit notations by the production staff or members of the cast. Every direction for music, sound effect, announcements, or dialogue is carefully indicated to insure a good performance. Rehearsals will bring out added directions which may be penciled in by those concerned as they occur. During final rehearsals, the elapsed time must be carefully recorded in the margin at regular intervals for later reference during the actual broadcast.

PRODUCTION SIGNALS

During rehearsals, and especially during the broadcast, the production director, the control operator, or other members of the staff frequently use a "sign language" of their own to indicate their instructions to the cast. To avoid the disturbing impression that an epidemic of lunacy has suddenly descended on the staff, it is well for the amateur to know the meaning of the most commonly used signals.

Lowering the hand, palm downward, indicates a decrease in volume. If it is to be louder, the hand is raised, palm upward. Lowering the hand also indicates a "fade", when the music, voice, or sound effect, after starting at full volume, is to continue softly in the background.

A rapid circular motion with the index finger or entire hand indicates that the program is running slow and that a faster tempo is required. Drawing the hands apart slowly in a "stretching" motion indicates "slow down".

Pushing the hand away from the body, palm outward, is the signal to move away from the microphone. Drawing the hand towards the body, palm inward, is an order to move closer to the microphone.

Drawing the index finger across the throat in a cutting motion is an order to "cut" or stop. It may mean to stop the rehearsal or to take out a sound effect. It may also mean to end a musical selection or to turn off a particular microphone. A "chopping" motion with the hand and forearm also indicates a "cut".

If a musical number is to fade out gradually and then, the hands are lowered, palms down, and then spread apart.

Touching the tip of the nose with the index finger indicates "all's well" as far as timing is concerned, that the rehearsal or broadcast at a particular point in the program is running on schedule. The program that ends "on the nose" has ended exactly on time.

Raising the hand and holding it, palm outward, resembling a salute, is the signal to "stand by" as the program is about to begin. Dropping the hand suddenly from the "stand by" position means to "take it away", i. e., to begin the broadcast or rehearsal.

In an audition or broadcast, when timing is of the utmost importance, the production director or control operator frequently indicates the time remaining before the program must end by raising the proper number of fingers. Three fingers raised indicates that the program must end in three minutes. Half-minutes are indicated by crossed fingers.

If the production director or control operator raises his hand and forms a circle with the thumb and index finger, especially at the end of a broadcast, the signal indicates that the program was perfect. In the days of the Roman gladiator, the emperor raised his thumb for the same purpose. To Nero's talents as firebug and fiddler, we might perhaps add those of the radio production director.

AFTERTHOUGHT

We have presented in the preceding pages only a brief sketch of radio production methods as applied to the educational broadcast. There is much that has been left unsaid, but we can only refer you again to the Bibliography, which in itself represents but a very small portion of the many books that have been written for the person interested in radio. The Office of Education of the United States Department of the Interior has established an Educational Radio Script Exchange, available free of charge to all educational institutions. Copies of sample scripts, which are available for production on the air by educational institutions only, may be secured gratis through the Exchange. Radio has its special vocabulary and many other interesting and important problems which could not be covered in the present manual. The Variety Radio Directory for 1937, published by Variety Magazine, the radio executive's "Bible", contains a remarkably complete survey of the broadcasting industry, and it should be read by everyone who is concerned with broadcasting in any of its phases. It is hoped that the Conference on Educational Broadcasting may become an annual meeting for it is only through the exchange of problems and ideas and through the constant experimentation in techniques that educational broadcasting may reach its highest degree of effectiveness. In offering this manual, therefore, we hope that the suggestions we have made will lead to further study and practice in the immensely important field of education by radio, and it should be emphasized that this broadcasting station *stands* ready at all times to assist the educator in developing a better program.

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