POTENTIAL USES OF RADIO AND PUBLIC-ADDRESS SYSTEMS IN THE VARIOUS SCHOOL ACTIVITIES, WITH ESPECIAL EMPHASIS UPON THE ENGLISH STUDIES

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CHAPTER I

THE PROBLEM

Education should be a conscious, methodical application of the best means in the wisdom of the ages to the end that youth may know how to live completely.

-Austin O'Malley

Someone has described the wide-awake person as one who is interested in many things. A general statement such as this, of course leaves much unsaid; it certainly needs many qualifications. However, it may be stated without fear of successful contradiction that the alert teacher, at least, is aware of new philosophies, new methods, and new instruments in his chosen field. Not only should he be aware of them, but also he should weigh them mentally before he either accepts or rejects. Therefore the careful educator will be interested in possible uses of radio and public-address systems in education, which is the subject of this thesis. Furthermore, such an individual will have a desire to know something of the educational background of such a topic, in order to acquire a proper understanding of just what the problem is. Thus our first concern becomes one of getting clear in our minds the educational philosophy which permits
the entrance of radio into education.

Less than a century and a half ago existed a world which we of the present day find some difficulty in imagining. We who have grown up accustomed to having clever contrivances and inventions as much a part of our environment as the grass and the trees, discover that it is not an easy matter to picture an existence without the airplane, the steamship, or the automobile; without electric lights and neon signs; and without telegraph, telephone, or radio.

It was in 1807 that Robert Fulton's Clermont, belching dense pine-wood smoke from its funnel and emitting the then astounding noises of clanking machinery and splashing paddles, made its historic voyage of one-hundred and fifty miles from New York to Albany on the Hudson River. This was a part of Act I of the drama of invention— a drama unexcelled in the world's long history, and one which we suspect is by no means completed but only at the climax.

Since "Fulton's Folly," energy has been made captive by the intelligence of man and forced to perform all sorts of tasks by methods undreamed of alike in "Horation's philosophy" or by the liberators of intelligence of the Renaissance period. In all civilized countries of the world, men of inventive bent have set to work to find new ways of bringing nature to her knees.
America, particularly, possibly due to a tradition of "equality" and opportunity, was able to produce more than her share of machines, gadgets, and knick-knacks. We became proud of our record in this field, proud of our efficiency, wealth, initiative, and resourcefulness. However, foreigners did not understand this pride. They often thought Americans merely money-mad. As Bode points out,

We admired the inventor and we exalted the captain of industry, not because they made it possible for themselves and for others to heap up wealth, but because we felt in some obscure way, that they had improved and ennobled human life. Their wealth was chiefly a symbol of achievement.... The critic who sees nothing but materialism in America has not seen very far into the soul of the American people.¹

So long as our country continued to expand physically, and then industrially, just so long was the slack in man-power taken up, and just so long our undeniably loose and obscure philosophy of life sufficed for our intellectual and material needs. Until 1890 there was always new land to be brought into cultivation and production; after that, new industries, notably those involved in the making and equipping of automobiles, availed to continue our delusion that all was well.

But now comes disillusionment. There is widespread unemployment and dissatisfaction. We are blase. Some see

¹ Bode, Boyd H: Modern Educational Theories, p. 5; (The MacMillan Company, 1927).
machinery not so much as a friend as an enemy, because each new labor-saving device, each new mechanical contrivance, demands corresponding adjustments in our social structure which we have not been able to make.

Power over nature does not in itself make men more human; it makes them more terrible.2

How does all this affect education? Needless to say, education is an important part of the social structure. Needless to say also, education has not as yet been able to make all the changes necessary for conformation to an era of change; it, also, has been guilty of being static rather than dynamic. We need not glance back very far through the years to the time when people were of the opinion that education meant simply the act of going to school, or the acquiring of facts; when evidence of eruditeness was an ability to recite the words and thoughts of other men. Such concepts were commonplace less than fifty years ago, and certainly are by no means rare even today. In fact, these very ideas have been at least partially to blame for our reluctance in recognizing social change.

Education, speaking by and large, has always made much of handing down things ready-made....It made social change difficult if not impossible, except by recourse to violence, because it failed to get over

2. Ibid., p. 7
a realizing sense that the whole education of the human race on this planet is an adventure, an experiment, and that our institutions, our beliefs, our practices must all be held subject to revision as we go along.3

Yes, in the past education has been too much interested in, and preoccupied with, subject matter, without much consideration of the applicability of that subject matter—although it should be remembered that the application cannot always be foreseen, and that "It is a serious mistake to go to the other extreme by proceeding as though the development of intellectual interests could never be achieved or must at most always remain a more or less incidental affair."4

However, in spite of its past faults, education is beginning to make some progress. Gradually, new ideals, new methods, and new ideas which take cognizance of the needs of the time, are coming to the fore. It is being admitted that the older conception of education does not prepare for life outside the classroom, a life which is longer and therefore more important than that in the school itself.

To be sure, there are disagreements, especially among the leaders in education, as to how these new concepts can be carried out. All admit that a change is necessary, but some wish merely to exchange one pattern for another.

3. Ibid, p.31
4. Ibid, p.37
On the one hand, those led by Briggs⁵ think that since the public pays for education, it should be permitted to make the decision; on the other hand, those led by Counts⁶ believe that since the educators themselves are the experts in the field, they should be allowed to decide. Still others, notably Dewey, Bode, and Kilpatrick, claim that no definite pattern should be set. They argue that since modern life is fluid, the educational scheme should take this into account in order that changes in the social structure may easily be accompanied by changes in educational concept and method.

Amid ever novel conditions thinking is stressed, mere habit could not suffice. Each new situation is a problem, demanding its thought and study....Education ceases then to be mere acquisition of something handed down. It too becomes experimental. Otherwise it were no adequate preparation for a changing and experimental life....Citizens must then be continually criticizing their institutions to improve them. Social education must become a lifelong process.... The schools must accept the new task. The pupils must learn ever better, with their increasing years, to study and criticize our institutional life in order, intelligently, to improve it. The alternative is unintelligent indoctrination in the status quo.⁷

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⁶ Counts, George S.: Dare the School Build a New Social Order? (The John Day Company, 1932).
Thus we see that the school is beginning to leave behind the notion that its main purpose is simply to impart knowledge. The path of education in America has become an ever-broadening one which seeks not only the acquisition of information, but also to enable the individual to use that knowledge for his own development and to further his own adjustment in our highly-complex, ever-changing, society. Any educational method which leaves its pupils unadjusted or maladjusted, or which fails to get pupils to realize the shifting nature of modern life, we now believe to be worse than useless, for it is probably a waste of time, energy, and money.

The reason for this change in attitude on the part of modern educators is not difficult to find. In the past, the social system was simple, and so adaption of the individual to that society was comparatively easy, provided one took up no arms against the conventions. Two or three generations ago, according to Dewey, the entire industrial process was carried on in the home or neighborhood. People were familiar with the making of clothing from the shearing of sheep to the plying of the loom; they knew how candles were made. Flour, lumber, foods, metal ware, nails, hinges, hammers, etc. were manufactured in the immediate neighborhood. Furthermore,

there wasn't the enormous variety of careers from which to choose that we find today; everyone had a job and it was necessary for the good of the family that he do it.

There was always something which really needed to be done, and a real necessity that each member of the household should do his own part faithfully and in cooperation with others.⁹

Again, government necessarily was highly localized due to the absence of efficient methods of transportation and communication. A striking example of the slowness of the communication is the fact that the Battle of New Orleans was fought on January 8, 1815, and the victory was celebrated in Washington a month later when the news was received there. Still another week after that, people were surprised to learn that a treaty of peace had been signed in England two weeks before the battle was fought.

Conversely, we now find ourselves part of a world society which is interdependent. To all practical purposes, the globe is much smaller. Cities have enlarged, government has become national in character, and work is specialized. It is more important than ever before that the individual be given a chance to find his niche; it is more important that he take his rightful and, above all, his dutiful place as a

⁹. Ibid., p.7
citizen in a society that demands thinking people who have the knowledge, background, and ability to understand it as it is now, as well as to meet new problems as they arise. The following passage, although written forty years ago, was never more true.

One can hardly believe that there has been a revolution in all history so rapid, so extensive, so complete. Through it the face of the earth is making over, even as to its physical forms; political boundaries are wiped out and moved about, as if they were indeed only lines on a paper map; population is hurriedly gathered into cities from the ends of the earth; habits of living are altered with startling abruptness and thoroughness; the search for the truths of nature is infinitely stimulated and facilitated... Even our moral and religious ideas and interests...are profoundly affected.10

These changes have been recognized by the leaders in education, and they are attempting to change the system of instruction accordingly: "It is radical conditions which have changed, and only an equally radical change in education suffices."11 New methods, new materials, and new tools are coming into wide use. Textbooks which stress the use of facts for interpreting the modern scene, which call for clear, logical thinking, and which pose the problem rather than solve it are in demand. Teaching methods which follow the same line of attack are coming to the fore. The suspicion that education

10. Ibid., p.5
11. Ibid., p.9
not only is preparation for life, but actually is life, is rapidly becoming a conviction.\textsuperscript{12} And finally, schools are beginning to make use of the new social instruments: namely, the movie, the phonograph, the radio, and the public-address system.

The radio, especially, is an instrument which, as far as society as a whole is concerned, has proved to be more powerful than any yet discovered, with the possible exception of printing.

\textquoteleft\textquoteleft\ldots\textperiodcentered\textquoteleft\ldotsWe have in the radio a special kind of social instrument, more powerful, more intimate, more promising, I should say, than any social instrument since the development of printing. It definitely is an instrument of the masses, and it looks as if it might become the greatest social coherer of all the modern inventions. That you will recognize at once as both a benefit and a danger. We have all been alarmed by the uses to which the radio has been put in Germany, Austria, Italy, and Russia.\textsuperscript{13}\textquoteleft\textquoteleft

Whether these new tools can be used with effectiveness in the school is still a question in the minds of many teachers. The purpose of the present discussion is not to

\textsuperscript{12} For example, see: Parkhurst, Helen. Education by the Dalton Plan, p.23: (E. P. Dutton and Company, 1922).

attempt to settle the matter, but merely to present some possibilities for the use in education of two of them: to wit, the radio and the public-address system. It should be borne in mind that this thesis does not claim that the troubles of the teacher may be solved by the use of these two mechanisms. In fact, his work may only be added to, if the teacher regards his job as drudgery.

Such a purpose usually necessitates some sort of definition of the subject. However, whether radio be described scientifically as a mode of communication by means of waves in the "ether" without the use of wires, or simply as a method of sending information and entertainment, there is little doubt as to just what radio is. On the other hand, there might be some misgivings concerning what a public-address system (commonly termed simply a P.A. system) may be. Essentially, it is a means of communication which does, unlike the radio, depend upon the sending of electrical impulses by means of wires, and is very similar to the telephone except that at the receiver the sound is amplified by means of a loud speaker. This sound may be sent to as many different places as is desired. Thus a school may have a transmitter located in one room and from it send information, music, or other entertainment to all the rooms in the building, and even to those in other buildings, provided there are connecting wires to each. Some schools
have the two-way P.A. system, so that the desired sound may be sent either way.

In this opening chapter, then, we find the problem stated. It has been announced that the subject of the discussion has to do with possible uses of the radio and public-address systems in education. We have recognized the fluidity of modern life and the need for dynamic ideals in education, which in turn lead to the use of new, different, and better methods, and to the consideration, at least, of the new social instruments. Finally, radio and public-address systems have been defined.

Chapter II will deal with the functions of radio and public-address systems in contemporary life, to be followed in Chapter III by an account of their present status in the school. Chapter IV will be an attempt to demonstrate possible uses of these two agencies in the field of English composition and literature, while Chapter V will be devoted to their employment in several other fields in the high school. The final chapter will be an attempt to summarize the findings of the present study. Four appendixes have been included in the hope that they will prove of use to anyone interested in the topic. They are concerned in the order in which they appear, with radio terminology, radio sound effects, radio apparatus and supplies for schools, and vocational opportunities.
in radio at the present time.

In conclusion, and as a stepping-stone to Chapter II, the reader might forgive the statement of an obvious fact: Radio is here to stay. Whether we who are professionally interested in education like it or not, the radio has already had tremendous influence upon our way of life, upon our thoughts, upon our very ideals. Whether we like it or not, radio already is a powerful educative, out-of-school force. And whether we like it or not, radio has grown up largely without the assistance or guidance of the teaching profession. The real problem is, what are we going to do about it?

Chapter II will consider in detail the changes that radio has wrought upon and its functions in, contemporary life.
CHAPTER II

THE FUNCTIONS OF RADIO AND PUBLIC-ADDRESS SYSTEMS
IN CONTEMPORARY LIFE

Our discussion in the first chapter of the viewpoint of the modern educator toward radio has indicated two points of view: first, that the alert teacher should recognize that good instructional methods take cognizance of the pupils' daily lives; and second, that radio is making a bid to become a part of the newer teaching processes because it is an important part of present-day existence. This brings us face to face with the problem of just what are the functions of the radio in the modern scheme of things.

It probably should be made clear at this time that when we refer to radio, we mean also to include the public-address system. For although the P.A. system is, technically speaking, distinct from broadcasting, yet the two are such close allies that generally we may discuss them as one. Aside from utilization of the P.A. system in amplifying the words of speakers in public auditoriums and occasionally to advertise in business districts, or to save walking in large buildings, it has as yet had little influence apart from radio. Its greatest distinct contribution has been in connection with its use in schools, about which we shall say more in Chapters Three, Four and Five. Now let us continue with our present topic of the functions of radio and public-address systems.
in contemporary life.

The following apostrophe to the microphone although essentially humorous in character, nevertheless embodies truths which are easily recognized:

Little Mike, you have been our mouthpiece in many an expressive moment. Relieving our hunger to be heard, you fulfill those who hunger to hear: You bear our words to the ends of the world. These words may be but a bubble at the tea table, rising to a bubble before the liquored bar, and striding to a bickering before the enrobed bench. They may be fun, or foolishness, or furious indictment of great wrongs. You bear them all on the wings of fame, now to the fullness of fruition, now to the doom of oblivion.
You are the magic means to minds' meeting and merging with mind. You are the telling testament to the truth that in the beginning was the word, and in the middle, and at the end. You it is who constitute us ministers of magic meaning; you enable us also to serve who only stand and talk.
Little Mike, we honor you, we love you, and for the moment leave you—leave you to carry on your double mission of mercy and misery to mankind.

That Dr. T. V. Smith, the author of the above quotation, is an educator is evidenced by the line "...you enable us also to serve who only stand and talk." Also, there is little doubt that in spite of the humorous vein of his remarks, they aptly express the importance attached to this

new instrument by many of his colleagues. However, speaking as he has in a general way, he has only skimmed the surface; much is left to the imagination. Let us imagine no longer; instead, let us substantiate the implications of his statement.

It is obvious at the outset that if we are going to discover the functions of radio in life, we shall need to agree upon what constitutes life. For the purposes of the present discussion, therefore, we shall stipulate that life is to be considered as consisting of those phases of our environment which affect what we do or what we think: advertising; religion and education; entertainment, recreation, and relaxation; literature; news, government, and politics; war and diplomacy; safety and public health; arts and sciences; music; and communication and transportation. This list, admittedly, is arbitrary and by no means complete. However, with these and others which will be touched upon either directly or indirectly in the course of the chapter, we should be well equipped to judge of the impact of broadcasting upon our environment and upon ourselves. We shall consider, then, this impact upon the different phases of life one by one, first turning our attention to the functions of radio in advertising.

One of the most obvious manifestations of the power of radio in our own country is in the field of advertising. Literally from dawn to dusk and after, the protesting ears
and thirteen-year-old average minds of us radio listeners
are bombarded with an intermittent flow of entreaties, suppli-
cations, and commands to buy this or that product for the
sake of our health, beauty, vitality, or peace of mind. We
are told that this cereal supplies the vitamins which produce
champions; that a certain cigarette contains more tobacco,
less nicotine, is slower-burning, cooler, cheaper, or milder;
we are advised to use a certain mouth wash if we wish to keep
our friends or if they have a desire to keep us above ground.
On and on it goes, far into the once hushed stillness of the
night, day upon day, and year upon year.

No, 'twas not always thus. Time was, although it was
at the birth of broadcasting and shortly thereafter, time was
when advertising did not throw its discordant voice upon the
airways. Yes, it was the educators who first were interested
in the child of Marconi. From about 1920 until about 1928,
institutions of learning gleefully installed station after
station until over one-hundred of their kind were in existence.
Meanwhile, teachers chuckled inwardly to think that this
marvelous new means of communication was theirs to do with
as they wished, with very little fear of competition.

However, this seventh-heaven of "those who only
stand and talk" was doomed to end somewhat abruptly. More
will be said concerning the radio in education in another
section of this chapter and in later chapters. Suffice it
to say at present that the American way decreed that the big bad wolf of competition, in the form of commercial advertising, was to knock down all the small educational stations with a fist containing an adequate supply of legal-tender. Schools could not compete financially. Along came the big companies which firmly believe that advertising pays. They began to suspect the probable value to them of radio when station KDKA broadcast election returns in 1920, although the first actual instance of advertising over the air came in 1922 over WEAF in New York City. Commercial stations began to appear one by one until finally in 1926, the National Broadcasting Company was organized, to be followed in 1927 by the Columbia Broadcasting System, and eventually, several years later, by the Mutual Broadcasting System.

Thus we now have three national broadcasting networks, several regional networks, and seven-hundred and sixty-four individual stations (on January 1, 1939), of which only thirty-eight are non-commercial. Most of the individual stations are affiliated with one or more of the national chains, and "are under contract to take commercial network programs for a certain number of hours (on which the network has an option), if they are requested to do so, and the networks agree to

2. World Almanac, 1940.
furnish a minimum number of hours of service."  

All this adds up to a tremendous new business which had a gross revenue in 1937 of $114,322,906, increasing to about $200,000,000 in 1939, practically all from advertising. Opinions differ on whether this propaganda for commercial products in reality adds to the cost of those products, or whether the cost actually is lower due to increased opportunities for mass production. At any rate, there is no doubt that the cost of advertising is included in the prices of articles promoted on the air. Also, two issues are involved: (1) Is advertising a good thing for radio? and (2) Does advertising justify its use on the radio?

The very fact that a controversy is dubbed an issue implies that such a controversy has not as yet been settled. Thus we have arguments on both sides of the above-mentioned issues, but no deciding statistics; nor is it the office of this thesis to attempt to decide the matter. However, we might cite some evidence that the powers that be in broadcasting are making some effort to keep commercial propaganda within bounds. For example, in the spring of 1935, both the National Broadcasting Company and the Columbia Broadcasting System announced that they would not advertise laxatives (though this does not apply to the individual stations when they are not using network programs), and there does seem to be a gentlemen's

4. Ibid., p.75.
5. Ibid., p.84.
6. Tyler, I. Keith: Lectures, Education 601, The Ohio State University, Summer, 1940.
agreement to the effect that there is to be very little advertising of liquor, beer, or wine. To be sure, we always have with us the "lunatic fringe." Station WCHI, a small broadcasting unit licensed to the Peoples' Pulpit Association, included in one day's schedule arguments in favor of a tonic which described symptoms of gall stones as headache, constipation, and "run down" condition; a fortuneteller with magical powers; and a reducing remedy which would chase away fifteen pounds of fat in thirty days.7 Nevertheless, since 1934, when the Federal Trade Commission requested broadcasting stations to send in copies of all advertising broadcast, there has, on the whole, been some betterment of ethics. Another factor in this improvement is the Federal Communications Commission, established in 1934 (to take the place of the old Federal Radio Commission which had been created by the Radio Act of 1927), which exercises some control through its power of renewing licenses every six months.

On the other hand, it must be admitted that much remains to be done. This brings up the question of whether or not advertising on the airways has any real effect in changing our habits. Of this there can be little doubt: the fact that the hard-headed business men at the head of companies which furnish the money are willing to gamble so much in buying time on the air, is evidence that they, at least, are

7. Department of Research and Education of the Federal Council of the Churches of Christ in America; op. cit., p. 36
convinced of its value to them. They know that today approximately 28,000,000 families own at least 40,800,000 radios which are capable of reaching about 80,000,000 listeners, that the average radio is turned on from three to four hours a day, and therefore that any network broadcasting is a magic key which enables the advertiser to step into millions of living rooms throughout the country. Thus even if only a percentage of the recipients buy the advertised product, the increased sales will mount into the thousands or hundreds of thousands.

It pays to advertise by radio. Three quarters of our sample population of listeners sometimes buy products because they hear them advertised on the air; two-fifths sometimes write down the names of the products mentioned in sponsored programs; and one-third even take the trouble on occasion to note the phone number or address of the merchant sponsoring the program. A study made for a large broadcasting company shows that the purchase of radio advertised goods is thirty-five per cent higher in radio homes than in nonradio homes; another study shows that radio advertised goods are used twenty-nine per cent more than corresponding nonradio advertised goods. Whether or not we accept the exact figures, it is nevertheless true beyond a shadow of doubt that radio has been profitably employed by the advertiser.

Another more subtle manner in which commercial propaganda of this nature has affected the habits of the ordinary

8. World Almanac, 1940.
10. Ibid., p. 240.
person, is its effect in practically deciding for him the type of program, whether entertainment or otherwise, to which he shall listen. Since most of the merchants sponsoring radio programs are interested in getting their message to as many people as possible, these performances must appeal to as wide an audience as is feasible. Seemingly, this tends to standardize tastes, though admittedly there is no concrete evidence that such is the case. Finally, this new method of getting a product before the public eye has indirectly aided in beautifying the countryside by eliminating a few billboards— with the aid of committees of citizens with that purpose in mind. This, at least, is a definite benefit. Thus we see that radio advertising plays an important part in contemporary life. Let us now take a glance at the role of broadcasting in religion.

The United States is, in all probability, the only country in the world in which any religious speaker may present almost any religious topic if he can arrange to buy the broadcasting time. In Europe from 1932 to 1935 the amount of time given over to religion on the airwaves varied from one per cent in Belgium to four per cent in England and eight per cent in Sweden, but the programs were carefully scrutinized.11

In 1938, the time afforded in America for religious broadcasts of all kinds averaged 5.15 per cent of the total.\(^\text{12}\) Probably the most important of these programs are those presented by the National Broadcasting Company in cooperation with the Federal Council of Churches. Their offerings for July and August of 1940 are from 10:00-10:30 a.m. and 4:00-4:30 p.m. on Sundays, 6:30-6:45 on Saturdays, and 1:30-1:45 p.m. on the other days. Other N.B.C. religious broadcasts include a Catholic hour, scheduled every Sunday from 6:00-6:30 p.m., and Hebrew theological programs on Saturdays at 12:30-12:45 p.m., and 7:00-7:30 p.m.\(^\text{13}\) The Columbia Broadcasting System also cooperates with the various churches. Their Sunday schedule for July, 1940, is comprised of "The Church of the Air," sponsored by the various Protestant churches; "Wings Over Jordan," consisting of religious talks and spirituals by outstanding Negro leaders and educators, with a Negro choir of thirty-five voices; and a program by the Salt Lake City Tabernacle choir and organ. C.B.S. also presents Richard Maxwell's "Programs of Comfort and Cheer" on week days.\(^\text{14}\) In addition to the afore-mentioned programs actually sponsored by religious groups, are broadcasts by individual speakers such as Father Coughlin and Judge Rutherford, and offerings of

\(^{12}\) Ibid., p.131

\(^{13}\) N.B.C. Presents: Programs in the Public Interest, July and August, 1940:(National Broadcasting Company, Radio City, New York).

religious music by advertisers, such as General Mills or Proctor and Gamble.

We have no reliable figures to show the actual effect of all these programs upon the people in America, but it has been estimated that about one-half of the population, or approximately 65,000,000 persons, belong to one church or another. Therefore even if only a small percentage lends ear, there must be some effect. Especially in rural areas, it is probable that the Church reaches more people than was previously possible, although it is also probable that more families will remain at home on Sundays rather than make the usual trek of several miles to the place of worship. Another probable effect is the further weakening of denominational barriers between Protestant churches. Finally, religion on the air has the effect of modifying the church service itself, since the preacher must keep his radio audience in mind: there can be no long pauses or gaps and the speaker must abstain from bombastic utterances since the radio listener does not feel the stimulation of his fellow hearers.

Our next topic has to do with radio in education, and although Chapter Three will present in detail the present status of radio in the school, a few salient facts probably should be noted here. As has been indicated previously, educators were first in the field of broadcasting; but when the Federal Radio Commission was established by the Radio Act of
1926, the schools received a setback. It was decided by the Commission that because of excessive interference with one another, only broadcasting units which were well-equipped could be licensed. Since in the case of most schools the necessary finances were not forthcoming, there are now only about thirty stations owned or controlled by educational institutions.

Such a state of affairs has not been accepted peacefully by the educators, by any means. Many a time and oft they have raised a hue and cry against the "unfair competition" of the privately-owned enterprises. Although the latter are making ever-increasing attempts to produce programs "in the public interest," they have been accused of unethical advertising; of using all possible pressures, including the subsidizing of colleges and universities, in order to gain their own selfish ends;\(^{15}\) of conserving the best radio time for commercial programs while relegating cultural and educational broadcasts to the poorer and less salable hours; of giving poor cooperation in the planning and production of educational programs; of offering the facilities of a network and then delivering only a percentage of it; and finally, of "not providing reliable lists of such stations as would use these programs in time for teachers to receive effective publicity in advance.

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At present, however, there seems to be an armed truce while both sides are awaiting the outcome of further experiments. Both the National Broadcasting Company and the Columbia Broadcasting System realize the value of favorable public reaction and are attempting to appease their critics. The more responsible of the individual stations are attempting to do the same. There can be little doubt that although "...newspapers have some financial interest in nearly a third of all the stations"17 in the country, the manner in which national and international news broadcasts, roundtable discussions, and similar programs concerning the present war in Europe have been handled, has pleased the public. The generous amounts of time given over to broadcasting the presidential conventions have also left favorable impressions upon the minds of most of the people. At any rate, the teachers themselves willingly admit the value of such broadcasts, providing listeners do not swallow ready-made opinions without a generous dose of self-interrogation. Especially do these teachers who have used the Walter Damrosch Music Appreciation series, the Columbia School of the Air, and similar offerings, unanimously and enthusiastically vouch for their worth.18 The main difficulty seems to be one of fitting the programs into

17. Department of Research and Education of the Federal Council of Churches of Christ in America, op.cit.,p.79.
18. Class discussions, Education 601, The Ohio State University, Summer, 1940.
the present type of school time schedule. As all these issues will be treated more fully in the next chapter, let us leave this topic temporarily, to delve into the functions of radio in several other phases of life.

The part played by broadcasting in the fields of entertainment, recreation, and relaxation is well known. In fact, it is precisely here that protests have often sounded loudest. Although conditions have improved greatly since the following thought was expressed, yet there is some element of truth in it:

Dr. Lee Forest, one of the pioneer inventors who made the radio possible, declares: "Nine-tenths of what we hear is the continual drivel of second-rate jazz, sickening crooning by degenerate sax players, interluded with blatant sales talk."

Instead of nine-tenths, it might be presumed that only one-half of what we now hear is drivel—depending, of course, upon one's definition of the term "drivel." On the other hand, some programs might easily be considered wholesome, recreational entertainment. The Charlie McCarthy series, Jack Benny, and "One Man's Family," to name a few, while they are usually careful not to tax our thirteen-year-old average mentality, certainly give us some insight into human nature through their

semi-serious satire or amusing (at times) caricatures and exaggerations. Admittedly, at least the first two mentioned have little cultural value, and admittedly we should not want them as a constant diet; nevertheless they do provide relaxation, and probably do no harm. The same cannot be said for several other commercial programs such as "Mr. District Attorney," "Gang-busters," and the "Lone Ranger." Although again the evidence is not conclusive, such studies as have been made indicate that programs of this type tend to monopolize the time of the listener to the detriment of others less adventurous, thrilling, or horrifying.20

This causes some of our thoughtful people to point with envy to England, where the British Broadcasting Corporation is controlled by the government, and where a tax covers the cost of broadcasting. No advertising is permitted, so that the British are not subject to the problems which face us here in America. Nevertheless, other persons, who claim to be no less thoughtful, affirm that the programs we have mentioned above do no harm, adding that these and others such as the broadcast of ball games, prize fights, and the like, provide needed recreation. They also make clear their point of view that if done right, most of the "more worthwhile" programs could be as interesting, as nerve-tingling, as thrilling as anything else cast upon the airways, and so

could win listeners in their own right. Whether or not this be true is, of course, a matter of dispute, but no doubt most of us have heard some which seemingly could vie with the best of the "commercials." A final argument, though not necessarily a clinching one, is that certain studies tend to demonstrate that three-fourths of our people would not be willing to pay a small tax to rid themselves of radio advertising.\(^\text{21}\) Thus, although they dislike commercial propaganda over the air, they do like as yet the type of entertainment, and accept the advertising as a necessary evil.

What is the role of the radio in literature? In government, news, and politics? In war and diplomacy? In public health and safety? In the arts and sciences? In music? And in communication and transportation?

In the field of literature are reviews of books both old and new; talks about, and dramatizations of, the lives of great writers; formal and informal programs of prose and poetry; and finally, we should recognize that radio script writing has been accorded a place as a new art form which, though similar to the play, yet employs some techniques entirely novel.

As to government, news, and politics, it is probably safe to say that due to the large number of news broadcasts,

\(^{21}\) Ibid., p.26.
more people are better acquainted with everyday happenings than ever before. Also, due to town meetings of the air, round-table discussions, and the broadcasting of political conventions, the population probably is becoming better informed concerning politics and government. That they are taking more interest is evidenced by the fact that during the Republican presidential convention of 1940, one delegate alone received over four-hundred telegrams. Such happenings bring up the thought that perhaps the radio will enable the ordinary voter to have more voice in his government. Certainly the "fireside chats" by the President and similar talks by other officials, if continued, should tend to create more confidence between people and government, or at least better understanding between the two.

Radio has even influenced war and diplomacy. In fascistic countries it is used as an instrument of propaganda to create confidence in one's own government and either distrust of, or friendliness toward, foreign countries, depending upon the will of the men in power. It is used to present arguments favoring one's own way of life in practically every nation. Finally, it has been at the battle front in war in attempts to persuade the enemy to cease resistance.

In the fields of public health and safety have been broadcasts of accident statistics, traffic and safety talks, actual court-room happenings, health talks by doctors, dentists,
or others qualified to speak on the subject, and dramatizations of various kinds having to do with these and related subjects. To be sure, many people argue that the radio, by means of the automobile receiving set, contributes to the hazards of the highway. One study made on that subject, however, tends to disprove that conclusion.22

Nor have the arts and sciences suffered. Talks and dramatizations in these subjects are fairly numerous. As an example is a program presented by the National Broadcasting Company entitled "Adventure in Reading," dealing with writers whose thinking was closely bound up with the thinking of men and women of their times. Included for July and August of 1940 are dramatizations concerning Byron, Socrates and Plato, Leonardo da Vinci, Thomas More, Emily Dickenson, Sir William Blackstone, Thomas De Quincy, and Ben Johnson. Finally, we should not forget to mention here that the radio was itself a product of science, and that the study of radio is almost a phase of science in its own right.

In the field of music we are all familiar with the Damrosch series, with the Radio City Music Hour, Voice of Firestone, the N.B.C. Symphony orchestra, the Columbia Symphony orchestra, other concerts, other symphonies, string groups, dance bands, singing, and many more too numerous to mention:

It is now possible for everyone to hear every type of music, classical and popular, vocal and instrumental, old and new. The increased availability of music has doubtless increased its popularity....Radio is responsible for the effective revival of old song favorites, including hearth and home songs belonging originally to the plantation and to the frontier.23

Finally, radio has its place as an instantaneous and vital mode of communication, and is an important instrument in transportation. Without the worry and limitations of wires, speech or music may be sent thousands of miles. The radio is used by ships at sea, in airplaines, in automobiles (including police cruisers), on trains- in short, no matter how one travels, radio probably enacts an important role.

More could be said concerning the part played by radio in contemporary life- how it has changed existence in the city by often keeping the family at home grouped around the radio (unless there is a set in the car); or how it has brought about important alterations in rural life by keeping people in the country informed about current happenings and offering music and dramatizations never before within their grasp; how it has caused changes in diet through advice on dietetics; how it has affected interior decoration, style of dress, and even courtship; and how it has in many cases caused

a shift in the study and bed-time habits of children.

Yes, more could be said, but surely it is hardly necessary. Can there be any further doubt that radio actually is, as was stated in the first chapter, one of "most powerful, most intimate, and most promising" social instruments ever devised by the brain of man? Can there be any further doubt that it is a part- and a tremendously important part- of contemporary life? Can there be any doubt that educators and the school should at least take stock of it? If not, let us go on to Chapter III, in which we determine the present status of radio and public-address systems in the school.
CHAPTER III

THE PRESENT STATUS OF RADIO AND PUBLIC-ADDRESS SYSTEMS IN THE SCHOOL

The purposes of the preceding pages have been the establishment of certain basic attitudes toward radio in general, and toward education by radio in particular. In view of those purposes we have attempted to demonstrate the pervasive nature of broadcasting in its relation to contemporary life; and we have intimated that the school use of the radio and public-address systems has presented intriguing possibilities to many leading educators. Therefore our next and most natural step will be to determine exactly what of importance has been accomplished up to this time with these comparatively new instruments as far as the general teaching situation is concerned. In short, the present chapter will be devoted to determining the present status of radio and public-address systems in the school.

At the outset, we should have clearly in mind two fundamental principles. First: Any justifiable system of education should be based upon an underlying philosophy of education which in turn determines the purposes of the school. Second: Any method of instruction which does not contribute in some way to the purposes of the school has no right to exist. In the first two chapters of this manuscript we have
touched upon these points to some extent. We have stressed the importance of the development on the part of the pupil of certain attitudes regarding his social heritage; and we have emphasized the need for enabling him to adjust himself to take his rightful and dutiful place in a changing civilization which requires knowledge, ability, and thoughtfulness. Also, we have suggested that radio may be an aid to the teacher in accomplishing these objectives. However, the general purposes of the school probably should be stated more completely at this time, in order that later we may discover whether or not the particular offerings of radio justify its existence as a part of the school program.

The best known of these statements of school aims is that formulated several years ago by the Commission on the Reorganization of Secondary Education of the National Education Association. According to the Commission, the school has seven duties: It should contribute to the health, worthy home membership, command of fundamental processes, vocational possibilities, civic education, worthy use of leisure, and ethical relations, of its pupils.¹

This expression of educational aims is still valuable, especially since it is comparatively easily understood by laymen. On the other hand, the modern progressive teacher

finds that he is dissatisfied with the Seven Cardinal Principles, as they are called, because they give little intimation of the factor of change:

...the suggestion presents itself that our best clue to the educational problem lies in the concept of growth. Perhaps the most desirable and significant educational ideal for us to adopt is that of fostering intellectual and spiritual growth. If this be the case, then the aim of education, insofar as education can be said to have an inclusive aim, is to provide as adequately as possible for the creation of new aims... Life is a process in which the present is continuously enlarged and transformed. Present achievements become stepping-stones to further achievements; present appreciations prepare the way for further appreciations; present growth gives capacity for further growth. To set up fixed, inclusive ends in advance is to ignore the fact that life is too varied and too expansive to observe such limits. Our horizon retreats as we proceed; our aims and ideals change with the changes in our environment and with our growth in intellectual stature. It is precisely in this progressive self-expression, this enlargement of capacity, this continuous enrichment of experience, that life finds its fulfillment and its sufficient excuse for being.  

The underlying philosophy of the progressive movement in education has seldom been better expressed than in the above quotation. In line with these ideals is the following statement of the purposes of the school program:

The function of the school is to promote the continuous reconstruction, improvement, and enrichment of individual and group living.

To this end the school, among its manifold responsibilities, should seek to provide, in keeping with the maturity levels of pupils, a program that fosters the following:

I. The emergence of a personal point of view or philosophy of life compatible with the following purposes:

II. The ability to deal intelligently with problems of individual and social import. This implies cultivating:

1. Curiosity about and sensitivity to these major problems and significant values of living.

2. The disposition and tendency to make a critically considered choice among values and conflicting points of view with reference to one's philosophy of life.

3. The tendency and ability to formulate and carry into effect plans of action consistent with such choice.

III. The control of such resources (concepts, information, techniques, habits, and skills) as are adequate to the achievement of purposes.

IV. The discovery and cultivation of a wide variety of personal interests and the direction of these into channels which promise most for the society of which he is a part.

V. The conservation and promotion of optimal physical and emotional well-being.

VI. The judicious exercise of adult guidance and control which protects and promotes the optimal development of the child to the end that reasoned self-direction may increasingly emerge.3

3. Department of Education: The Purpose of the School Program: (The Ohio State University, 1935).
A somewhat more compact but basically similar expression of the purposes of the school is the following:

Among its manifold responsibilities, the school must simultaneously play two intermingling, major roles in the life of the community. One of these is that of stimulative and interpretative portrayor of the myriad phenomena with which humans are concerned. The other role is that of zestful proponent of individual and social growth. In its enactment of these allied roles-roles which frequently fuse into one-the school will seek:

1. To provide continuously, but with diminishing paternalism, those elements of guidance whereby the pupil's physical, intellectual, aesthetic, and social development and integration may be attained with maximum economy, fruitfulness, and happiness.

2. To foster in the pupil increasing curiosity about and sensitiveness to significant individual and social problems.

3. To stimulate the pupil's desire and to augment his capacity to interpret and analyze those significant individual and social problems and to achieve solutions for them that are currently tenable and subject to revision.

4. To provide an atmosphere wherein, as a phase of the pupil's individual contribution and group participation, he will constantly feel the need both for testing his own conclusions and for inspecting critically his social inheritance.

5. To promote, both in and out of school, such productive individual and group activity as is needful to give substance and reality to the pupil's intellectual behavior as described in objectives 2, 3, and 4.
6. To encourage the pupil's discovery and cultivation of varied aesthetic, intellectual, and utilitarian interests kindred to his present and potential individuality: to the end that his own life may be richer, and both his intimate human relationships and his larger-group participation fuller, happier, and more productive. 4

Thus we see that many modern educators in America stress the importance of interpretation of experience. They are concerned with aiding the pupil to envision what life in a democratic state is, and can be, and with helping him to grow and develop mentally and physically in such a state.

Before setting up specific objectives for the use of radio and public-address systems in schools, let us first examine what has been done with these two instruments by educational institutions. As has been stated previously, teachers were among the first to recognize the possibilities of broadcasting, and the result was the installation of over one hundred broadcasting units owned and operated by colleges and universities throughout the land. Even yet, in spite of severe competition from privately-owned stations, there are over thirty non-commercial broadcasting units in the United States. However, this enthusiasm on the part of teachers was limited mainly to certain localities until 1928, when the National Broadcasting Company's "Music Appreciation Hour," conducted by Walter Damrosch, stimulated many more schools

throughout the country to purchase radios. This stimulus was increased the following year by the broadcast of the presidential inauguration, and in 1930 by the beginning of the "American School of the Air."

In fact, many schools bought equipment "long before supervisors, principals, and teachers were ready to adapt it to the school situation. Use, misuse, and abuse of the classroom radio resulted." Sets were bought which were poor in lasting qualities, poor in reception, or which worked hardly at all. The traditional teaching method of forced listening and testing was used, and many of the actual programs, instead of being adjusted to the broadcasting situation, were simply replicas of classroom lectures. Usually the speakers had poor radio voices and poor radio personality, and even though they were experts in their respective fields, the results achieved were largely negative.

For several years, indeed there are vestiges even yet, educators and commercial broadcasters querreled violently and bitterly over their respective rights to the ether. In the annals of radio education, and couched in no uncertain terms, we find report after report on this subject. However, as is recorded in our second chapter, this bickering has largely died down. Especially is this true today, due mainly

to the present policies of the privately-owned stations, which have been enjoined by the Federal Communications Commission to encourage educational broadcasting. Mr. John Baker, of the United States Department of Agriculture, has given us two rules for securing the cooperation of commercial broadcasters:

Let me set forth two simple rules for getting along with commercial stations: first, establish friendly relations with the management of the station; second, present programs so good that they will be missed by the audience if they are taken off the air.6

Thus we see that educational institutions which have no broadcasting facilities of their own are not necessarily at a tremendous disadvantage. Networks and individual stations are willing and even anxious in most cases to work side by side with teachers in planning good programs for schools.

At present the most important school broadcasting of a national nature is the American School of the Air. The Columbia Broadcasting Company estimates that this program already serves some 200,000 American classrooms with an audience of 8,000,000 boys and girls.7 A survey completed in March of 1940 showed that in the area of Los Angeles alone,

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136,500 pupils in 3,900 classrooms used the program five days a week.8 The other important network, The National Broadcasting Company, also produces programs for schools. Its "Music Appreciation Hour" to which an estimated 6,000,000 children listen,9 is especially well known. Both networks produce a great variety of additional programs suitable for both in-school and out-of-school listening.

Information concerning local educational broadcasting is by no means complete. The radio listings in newspapers and the magazine Radio Guide are short and often without meaning. Nevertheless, a survey made in 1938 of American Communities of 8,000 and over gave the following results:

<table>
<thead>
<tr>
<th>Percentage of Various Types of Educational Institutions Having Certain Broadcasting Policies10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular Broadcasting Policy</td>
</tr>
<tr>
<td>-------------------------------</td>
</tr>
<tr>
<td>State Departments of Education</td>
</tr>
<tr>
<td>Public School Systems</td>
</tr>
<tr>
<td>Universities, Colleges, 28 Teachers' Courses</td>
</tr>
</tbody>
</table>

It is evident, therefore, that there is a great deal of activity in connection with school use of the radio. Institutions of higher learning lean toward adult radio education,

8. Ibid.
which, however, is an incidental factor as far as public elementary and secondary schools are concerned.

State and regional broadcasts are conducted in several sections of the country. The best known state schools of the air are those in Ohio and Wisconsin, while there are two public school radio systems, in New York City and Cleveland,\textsuperscript{11} the better known being that in Cleveland where extensive experiments have been conducted in actual instruction by radio. More will be said concerning the Cleveland situation later. The most important regional broadcasting has been done on the Pacific Coast in connection with the "Standard School Broadcasts," a program in music enjoyment sponsored by the Standard Oil Company.

Besides these better-known experiments have been many others worthy of note. Detroit conducts extensive programs over commercial stations in that city, to which not only the schools in the immediate neighborhood, but also many in Toledo and other cities and towns in both Ohio and Michigan listen. Alameda, California; Rochester, New York City; Akron, Ohio, and other cities also have produced various programs for schools. In Cincinnati, safety programs are broadcast to the schools.\textsuperscript{12}

\textsuperscript{11} Ibid., p.218

\textsuperscript{12} Courter, Claude V.: "Safety Over the Air," \textit{Nation's Schools}, December, 1939, p.44.
At Providence, Rhode Island, the "Junior-Senior High School Quarter Hour" has been on the air for six years, over a commercial station at 8:30 a.m. Probably about 14,000 pupils listen. In this program faculty members and students announce important news items, and senior high school groups dramatize the news. Other broadcasts to schools in Providence include a news broadcast for elementary schools and dramatizations by Roger Williams Junior High School of famous books and short stories. On Thursday at 6:30 p.m. comes the program "Visiting Schools," designed to acquaint the general public with the educational work; and on Monday at 6:45 p.m. is the "Providence Radio Forum," also sponsored by the schools. After this latter broadcast, an open discussion on the subject of the evening is held at one of the school auditoriums in the city.13

Chicago has regularly-conducted school broadcasts, also. As in most situations where such is the case, a manual is issued for the convenience of the teachers. This manual includes a chart giving the program schedule for the semester, and information concerning each broadcast. The following program chart is taken from the Chicago School Journal, September, 1939:

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Radio Chart of the Chicago Public Schools—Fall Semester, 1939-40. Tentative Schedule of Radio Programs by Grade Levels

<table>
<thead>
<tr>
<th>Grade</th>
<th>Program</th>
<th>Day</th>
<th>Hour</th>
<th>Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kg,1-2</td>
<td>Hour of the Magic Boots</td>
<td>Monday</td>
<td>2:30</td>
<td>WAAF</td>
</tr>
<tr>
<td>3,4</td>
<td>Pieces of Eight</td>
<td>Wednesday</td>
<td>2:30</td>
<td>WAAF</td>
</tr>
<tr>
<td>5,6</td>
<td>Chicago and...... Tuesday... 1:15 ..... WLS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Your Science</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Story Teller.... Thursday.. 1:15 ..... WLS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Open Sesame...... Friday.... 2:30 ..... WAAF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>That's News to Me....... Tuesday... 1:30 ..... WJJD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7,8</td>
<td>Science Reporter....... Monday.... 1:30 ..... WJJD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>That's News to Me....... Tuesday... 1:30....... WJJD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>I will-Chicago........ Wednesday. 1:30....... WJJD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Let's Tell a Story........ Thursday.. 1:30....... WJJD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Student Chorus....... Friday.... 1:30....... WJJD</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

City schools are not the only ones using school broadcasting. For example, the rural schools of Henniker County, Minnesota, supply every teacher with a teacher's manual and classroom guide, and the teacher is then instructed
to schedule listening periods for classes.\textsuperscript{14}

However, probably the most interesting use of radio in education has been that at Cleveland. As early as 1925 radio lessons in music appreciation were broadcast to schools in that city. In 1929, arithmetic lessons were offered. Later, geography, English, and elementary science were included. Schools have always been free to accept or reject all such lessons, according to the report.\textsuperscript{15} Other subjects broadcast for shorter periods are art, safety, health, and social studies. Until September, 1938, these radio lessons were put on the air by local commercial stations, but it was thought that it would be better to have a station owned and operated by the school system. The advantages claimed for such a station are as follows:

(1) It can provide silent periods to give time for pupil activity or work, and for pupil-teacher reaction to the lesson.
(2) It can provide sufficient time to permit the presentation of a variety of radio lessons.
(3) It can permit the radio schedule to be adjusted to the school schedules.
(4) The length of the radio lesson can be adjusted to the needs and capacities of the learner.
(5) The schools can expect that the schedule will not be changed.\textsuperscript{16}

The opportunity for establishing such a station came in 1936 through a grant from the General Education Board.

\textsuperscript{14} Scott, Robert E.: "Rural Schools Listen In," The Nation's Schools, December, 1939, p.42.
\textsuperscript{15} Levenson, William E.: "Teaching with Radio in Cleveland," The Nation's Schools, December, 1939, p.36.
\textsuperscript{16} Ibid., p.37.
Cleveland applied for one of the twenty-five broadcasting channels in the ultra-high frequency band reserved for schools by the Federal Communications Commission. The station was constructed, and one hundred and fifty sets manufactured especially for ultra-high frequency were "tied in" with existing public-address facilities in various schools.

The operation of this station requires four studios, a master control room, a transcription room, and office space. A telephone line is leased from the studios to the transmitter six miles away. The staff consists of radio teachers, supervisor, schedule manager, chief engineer, studio engineer, transmitter engineer, two N.Y.A. announcers, and clerical help.\(^\text{17}\)

Programs are tested with experimental groups before actually being put on the air. Criticisms are relayed from these groups to the script writer, who changes the program accordingly. As a rule, one fifteen-minute period each week is devoted to each subject— at least, such is the case at present.

Cleveland admits that much experimenting still needs to be done for maximum attainment, but members of the radio staff there assert that their results certainly justify the additional expense and effort.

Whether or not lessons taught by radio are really

\(^{17}\text{Ibid. p.37}\)
more effective than regular classroom methods has not as yet been scientifically determined. This would depend, of course, upon the criteria set up. Also, many factors would affect the outcome. The quality of reception, the quality of teaching both on the air and in the classroom, the newness of radio, the abilities of pupils, the attitudes of pupils toward both radio and regular instruction, the attitude of the teacher actually in the classroom during a radio lesson, whether or not both lessons were in keeping with the maturity levels of the pupils—all would have some effect. Nevertheless, most teachers who have used the radio lessons, or who have taken advantage of other possibilities for education by radio, are convinced that they do have definite value. At least one study has been made which does throw some light upon the subject. According to the study, lessons taught by radio effect definite changes in pupils; factual materials are retained just as well, and pupils are able to use those facts to better advantage.\textsuperscript{18} Of course it is probable that the method of instruction used by the classroom teacher should be taken into account, but these findings do give definite indications of the worth of radio. Since any good teacher will vary his classroom procedure from time to time even if merely to avoid boredom on the part of students, surely there is a place in the school for radio.

We now have an overview of what has been done, and of what is being done, in the field of school broadcasting. Our next problem becomes one of the planning of education by radio. It is agreed by practically all authorities in the field that the purpose of radio in education is to act as an aid for improving and enriching instruction, not to take the place of the teacher. As a matter of fact, some courses which have been attempted over the air for college credit have failed dismally.\(^{19}\) This would seem to indicate that usually the teacher is a vitally necessary factor in the success of school broadcasting. Roughly speaking, then, there are five items paramount in planning radio education: First, the necessary equipment, consisting of radios, or radios and public-address systems, must be provided, as well as a transmitter (either owned by the school or one provided by commercial interests) from which the program is sent out over the air. Second, some sort of teacher training must be provided. Third, some provision must be made for servicing so that the individual teacher is not responsible for mechanical equipment. Fourth, the actual broadcasts themselves must be planned by committees and the time selected. Fifth, provision should be made for research and evaluation.\(^{20}\)

The equipment in the classroom itself may consist

19. Atkinson, Carroll: \textit{op. cit.}, p. 220
only of a small portable radio, or a large permanent unit. The former, if it is of a good make, is better, since it may be moved around the room or hung in front for better reception; or it may be moved from room to room if necessary. Again, the school may have installed a public-address system, in which case there is a central receiving unit with wires leading to amplifiers in the various rooms. The transmitter and the broadcasting studios may, as has been stated, be supplied by commercial stations. Finally, many schools have invested in recorders, so that radio programs, or programs of various kinds at the school or elsewhere may be recorded and used when wanted. Before making this last investment, however, schools should await the outcome of a bill now being drafted for Congress which has as its purpose the restricting of radio program recording.

Teacher training may be carried on by the school system itself. However, quite a few universities and colleges are now supplying that training. One study made in 1938 found that at that time there were one hundred and seventy-five courses in non-engineering radio with a total of five hundred and twenty-six credit hours.21

If a school does none of its own broadcasting, of course no committee will be needed for the planning of the

actual programs. However, most experienced educators agree that it is wise at least to have a radio committee to keep the faculty informed as to types of programs available and the time when they will be given, as well as to supply any other aids to the location of programs suitable for their classes. It is also advisable and necessary where there is a public-address system to have a radio coordinator, who decides upon conflicts in program scheduling.

Research and evaluation occupy an important place in school broadcasting, as they should in any phase of the educational program. The amount of research, of course, depends upon the desires of the particular school system. At present, much investigating is being done in connection with recordings suitable for school use. The Bureau of Educational Research at Ohio State University is now making an evaluation of available recordings, but no report is as yet available, although the investigators do say that there are about six hundred records of an educational nature. Evaluation of broadcasts may be done informally, as in Chicago, where each script writer visits classes to observe the reactions to programs he has written. Here is a sample report:

Date: March 16, 1939
School: Morris
Principal: Mary Sheridan
Program: Let's Tell a Story!
Preparation: Presented handbook material
Broadcast period: Good reception-attentive listening
Follow-up: Discussed program. Teacher led oral composition on suggestions for writing and speaking
School problems regarding radio: Three table model radios not very adequate. School needs more radios especially in lower grades.22

Or the evaluating may be done more formally, as at Cleveland where it takes place with control groups before the broadcast. Probably the most extensive evaluating is the one in which Detroit schools are cooperating with the Federal Educational Research Committee project at Ohio State University, called the Evaluation of School Broadcasts. In any case, it is easily discernible that evaluation is an important item.

Listening by pupils may be divided into two categories: in-school listening, and out-of-school listening. Each of these may in turn be subdivided into two types, depending upon the purpose of the broadcaster: those broadcasts meant to be used by schools, and those not particularly intended for the school, but which lend themselves to utilization by it.

This raises the problem of how both in-school and out-of-school programs may be utilized. More will be said concerning this in Chapters Four and Five of this thesis. However, in general, utilization may be said to consist of three steps:

preparation, listening, and follow-up. In other words, the teacher tries in some way, whether it be a five to fifteen minute talk or discussion, or by means of a demonstration, to make the class ready for the broadcast; then comes the actual act of listening, during which pupils merely make intelligent use of their sense of hearing, or one or two (very rarely all) may take notes; finally comes the follow-up, which may consist of a discussion, journey to the library if new interests have been created, or anything else of value, depending upon the ingenuity of the teacher. Each member of the faculty of course will probably decide for himself how he will carry out each phase of the process. He may (and for the sake of variety, should) modify the procedure from day to day or week to week.

Thus far in the present chapter we have done two things. We have stated the purposes of the school, and we have gotten a pretty good idea of the ways in which schools have used, and are using, radio. It must be admitted that, as was stated at the beginning, there has been much misuse and abuse of the radio by the school. Much educational broadcasting has been of the helter-skelter, hit-and-miss variety. There has been, at times, very little coordination with general educational objectives. There has been too much thought on "What can we do about radio?" and too little on "What can radio do for us?" Therefore it behooves us to ask ourselves the

latter question— and then to answer it. Such an answer should show how broadcasting can and should contribute to the general purposes of the school.

By and large, radio may be said to bring relaxation, growth, enrichment, or recreation. It permits the inclusion in our circle of acquaintances of many different men of differing ability and caliber. Seated in our room at school, or at the soda fountain, or nestled on the family sofa, we may hear the firm utterances of the President himself, or the garbled mutterings of a heavyweight champion. Radio broadens our contact with reality and social problems; it may be used as a stimulus for pupil activity. It frequently helps the pupil to discover new interests, teaches him to listen intelligently, and sets standards of speech. In short, the radio offers extremely effective supplementation for classroom work by providing the same educational experiences as books, papers, magazines, the theater, or travel "in an easy, economical, and gripping manner."24 According to Miss Bernice Orndorff, the following educational objectives may be realized through radio:

1. Exploring the social world
2. Learning to think critically
3. Getting acquainted with literary materials and facts
4. Understanding and enjoying literary values— appreciating the personalities of artists

24. Ibid., pp.620.
5. Projecting of activity—engaging in creative expression
6. Feeling social responsibility—sharing enjoyment with others
7. Acquiring skills and techniques

Another set of educational objectives for radio follows:

1. Radio serves as a source of materials (symphony, concerts, current events, plays, inaugurations, legislation, exploration in distant lands, dramatization of historical events, etc.)
2. Radio may serve to set standards for pupils (especially in speech)
3. Radio may increase the number, variety, and intensity of children’s interests
4. Radio may serve to acquaint the children with other parts of our country and with other parts of the world.
5. Radio may contribute to the worthy use of leisure (through discrimination in the selection of programs)
6. Radio may expose the pupils to conflicting points of view
7. Through radio, children may become familiar with well-known and prominent people
8. Radio may familiarize children with current events and significant topics of the day
9. Radio may serve to guide pupils in judgement and evaluation

Thus far, little has been said concerning the public-address system apart from its relationship to radio. The public-address system may be, and often is, used in the school without connecting it to the radio at all. When it is used in this way a microphone is attached to the unit, which becomes then a means of broadcasting to any or all the rooms in the building from a studio in the building itself. Naturally

25. Ibid., pp. 622.
this offers still further opportunities to the teacher. Regular programs, dramatizations, or newscasts, all done by the pupils themselves, may be presented. Programs may grow out of class activities or other happenings around the building. Records may be played for music appreciation. Clear speaking may be stressed. Finally, announcements may be made, lost articles described, or the system may be used in a great variety of other ways, depending upon the insight of teachers and pupils. Here are the special values of the public-address system, according to one writer:

1. It develops pupil initiative and responsibility
2. It helps to promote democratic living and an appreciation of the will of the majority
3. It stimulates pupil interest and pupil participation in school affairs
4. It offers opportunities for creative expression in oral and written English
5. It assists in discovering the special talents of individual pupils
6. It causes the pupil to see a need for self-improvement
7. It saves much time and brings the school closer together for administrative purposes. 27

Whether or not we accept these particular statements regarding the advantages accruing from the use of radio and public-address systems in the school, we cannot doubt that such advantages do exist. The evidence presented in this chapter weighs heavily upon the affirmative side. Therefore, having examined the present status of radio and public-address

systems in education, we may conclude that these two instruments are not found wanting. If anything has been found wanting, it is a sufficient number of school systems with enough vision to supply radios and P.A. systems, and a sufficient number of teachers with energy enough to use them in valuable ways already discovered, or with imagination enough to devise new ways of utilization.

In our next chapter we shall confine ourselves to the possibilities for the use of radio and public-address systems in the field of English composition and literature.
CHAPTER IV

THE POSSIBILITIES FOR THE USE OF RADIO AND PUBLIC-ADDRESS SYSTEMS IN THE FIELD OF ENGLISH COMPOSITION AND LITERATURE

True conservatism is substantial progress: it holds fast what is true and good in order to advance in both. To cast away the old is not of necessity to obtain the new. To reject anything that is valuable, lessens the power of gaining more. That a thing is new does not of course commend; that it is old does not discredit. The test question is, "Is it true or good?"

-Tyron Edwards

In our last chapter the statement was made that teachers should not employ any method of instruction which does not take cognizance of the general purposes of the school. Therefore the general aims of education were presented, and the admission made that much (not all) of the school use of radio and public-address systems has been haphazard— that although this use may have contributed to the progressive development of the individual, such a result has at times been more accidental than consciously striven for. Nor has the field of English, as an important part of the school curriculum, escaped this criticism. Teachers of English composition and literature have too often regarded the radio and the public-address system simply as novelties and sources of amusement, or as bothersome and
expensive playthings which are a pure waste of time and money.

Therefore, in our exploration of possible uses of radio and public-address systems in the field of English composition and literature, which is the subject of the present chapter, it behooves us to keep in mind that these two instruments are not to be regarded merely as sources of entertainment. They may be used for that at times, of course, but only insofar as such employment contributes to the general purposes of education in a democracy.

The acceptance of this point of view for the present discussion necessitates, first, the setting up of goals for English literature and composition which aid in the attainment of educational objectives; and, second, the devising of possible uses of radio and loud-speaker systems which contribute to those goals. Furthermore, the latter problem will be attacked, (a) from the standpoint of the present situation, and (b) from the point of view of possible future ideal conditions. Part I, then, will be a consideration of these questions in connection with the teaching of English literature, while Part II will deal with the same problems as they relate to English composition.

PART I

Sets of objectives for the "teaching" of English literature have been formulated by various educators and presented to
their colleagues with the claim that they are good expressions of the aims of teachers in that field. To a large degree this is true. Of course we always shall have among us those administrators and specialists in fields other than literature who feel, in spite of their inexperience in some areas of the school curriculum, that they are well qualified to speak about all of them. However, among quite a few statements of objectives for literature which have been published in recent years, there is a general similarity which demonstrates that the specialists in the field agree among themselves pretty well. One such statement of goals is that with which the present writer is most familiar, and which he feels is the most concise, as well as the most complete, of those which are based upon the progressive viewpoint in education. According to this statement, the teacher of literature should attempt to do the following:

1. Discover pupils' reading abilities and tastes, and to improve these abilities in reading and interpretation, and to heighten these tastes where necessary and possible
2. Foster the development of the reading habit, and help pupils to see that reading is a highly possible source of pleasure and enjoyment.
3. Develop in the pupil a discriminating taste in current publications, and foster the intelligent enjoyment and use of them
4. Instill intelligent respect and affection for our language
5. Assist in the honest integration of the pupils' school activities, and pupils' characters and personalities
6. Assist pupils in establishing for themselves ideals and standards of social conduct through their reaction to the personalities, events, and ideas found in books.

7. Promote intelligent respect and affection for worthy American ideals and traditions.

8. Contribute in enriching experience through living vicariously with many interesting people found in books.

Our statement in Chapter III of the aims of education in general, emphasized both the place of the school in aiding individual and social growth in a democracy, and its capacity as furnisher of facts which it attempts to get pupils to use thoughtfully. It is fairly obvious that the above goals for literature, if achieved, would also fulfill the demands of education in general. Notice the use of the expression if achieved; for whereas most literature "teachers" will agree that the goals listed are meritorious, many will disagree upon the means for accomplishing them. As a matter of fact, many teachers in this field have such a love for the "classics," or such a fear of the new or the unknown, that actually they are willing to sacrifice major objectives rather than leave the safety of well-worn trails and the security of the classroom. Of course, they realize that the pupil may dislike or even hate not only those "classics" which the teacher is so anxious to have him respect, but also that he may develop a positive distaste for reading of any sort. Yes, the teacher may perceive that he has failed, but at least the pupil has

1. Seely, Howard Francis: Lectures: Education 670, The Ohio State University, Summer, 1939.
had his chance for an "education," and his instructor's conscience is clear, which is what really matters.

On the other hand we find more and more teachers of literature who understand that pupils' tastes differ, and need to be developed slowly; who believe that a long-range program may necessitate a slow beginning; who are willing to try to understand the pupil and his home background and therefore his abilities or shortcomings; and finally, who are watchful for new ways and means of attaining their immediate or ultimate ends. These better teachers will appreciate the following list of methods for achieving the goals of literature teaching:

1. By the establishment of a flexible program of reading which takes cognizance of individual differences in pupil background, tastes, interests, and abilities
2. By supplementing the group reading with reading by the teacher and with free and complete use of all library facilities
3. By stimulating thoughtful responses to significant themes found in books rather than mere memorization
4. By increased employment of contemporary literature
5. By discriminating use of movies and the radio
6. By stimulating pupils to read widely and individually, under the sympathetic guidance of the teacher
7. By emphasis upon the significant content of books, not techniques, unless the latter make the work more meaningful and interesting
8. By observing skillful expression in books, and stimulating pupils to emulation
9. By unobtrusive emphasis upon admirable ideals, revealing events, and stimulating personalities in books.
10. By carefully coordinating the reading with pupils' present and probable future activities, both in and out of school

11. By closely and sympathetically cooperating with the other areas of the pupils' school life.

It will be noticed that the fifth means refers to the discriminative use of the movies and radio. Assuredly it should be discriminative use, for as has been stated, the aimless employment of broadcasting is of little value. We shall see, therefore, what this instrument and its sister device, the public-address system, when wisely used, offer the literature program.

Among the main types of literature dealt with in the school, four may be considered most common; namely, poetry, drama, the short story, and the novel. Let us first see how the teacher concerned with developing in pupils enjoyment of good poetry may use the radio. In this connection it should be noted that the first poetry consisted of sagas and ballads which were sung by bards or by the common people; thus they were handed down from generation to generation without being written at all. It is a fact, therefore, and one which cannot be reiterated too often, that poetry is meant to delight the intellect by appealing to the ear rather than to the eye. It is precisely here that broadcasting has something to offer. Admitted, every "teacher" of poetry should be a good reader of verse—but is he? Surely programs over the air such as

2. Ibid.
the National Broadcasting Company's "Pilgrimage of Poetry" and "Between the Bookends," as well as quarter-hours of verse on local stations, could be used to advantage under present conditions. Furthermore, some recordings of poems read by the authors themselves—Robert Frost and Vachel Lindsay, for example—are now available. They could be used either on turn-tables or over loud-speaker systems. It is the belief of the present writer that the hearing of good, masculine reading of verse will aid in arousing pupil interest in, and appreciation of, poetry. It is an unforgettable experience to hear "The Highwayman," for instance, read over the air with a background of appropriate music and sounds. Until one has had such an opportunity, one finds it difficult to realize the thrill which can come from listening to poetry read under ideal conditions.

After the interest of pupils in poetry has been aroused so that they are ready to read more and to discuss the significant ideas and themes found in poems, and after genuine appreciation has resulted, they may attempt to do some writing of their own. If this is the case the public-address system might be used as an added means of motivation, and as an incentive to group participation. The class might work together in preparing a program of original or other poetry for in-school broadcasting. They could explain the reasons for their selections, could do the reading themselves, and might
secure the cooperation of the music department for furnishing background music where appropriate. If such a program were broadcast in the school to classes of sufficient maturity, who will deny that the result would be a heightened appreciation not only in the participants themselves, but also on the part of the individuals with whom they have shared their enjoyment?

Thus far we have confined ourselves to possibilities for using radio and public-address systems under average present-day conditions, for almost any classroom may now secure a radio of some kind, and the number of loud-speaker systems in schools is increasing at a rapid pace. There are, however, certain disadvantages at present which probably could be made to disappear under ideal conditions. For instance, the poetry now broadcast is meant for general consumption rather than for specified grade or maturity levels. In some cases it is not well read, in others the repertoire is too limited or too poor, and in most instances the time of the program does not easily fit into the schedules of classes.

Ideal conditions probably would consist of a broadcasting station owned and operated by all the schools of each county acting as a unit. As has been stated, twenty-five broadcasting channels in the ultra-high frequency band have been reserved for schools by the Federal Communications Commission. A new principle, that of frequency modulation, has
recently been invented which makes such a plan highly practicable. In frequency-modulation broadcasting (abbreviated simply FM), in the ultra-high frequency channels, there is absolutely no static or interference of any kind. Furthermore, it is said that one station may be heard as easily as another within a certain radius, and it is estimated that "as many as fifty FM stations may operate in a single community without conflicting with each other." The possibilities for school-owned and other non-profit stations in this field are extremely encouraging at present.

Under such conditions, then, the educational station could be on the air continuously with programs intended for specific areas of school work and particular maturity levels. In the field of poetry, the master teacher could read, explain, and provoke thoughtful discussion about poetry appealing to groups of pupils who have reached definite stages of appreciation. Information concerning the content of these programs would be supplied in advance to the classroom teacher, so that he could decide whether or not to use them for his particular class— or better yet, the classroom teachers could meet with the master teacher so that they could work out the programs together. In any case, the using of broadcasts should not be made mandatory, for only the person in charge of a group of pupils fully understands their abilities and weaknesses.

However, in case the broadcasts are used, any discussion about them, to be thoughtful, should not come too soon after the programs are heard. Pupils should be given questions of the thought-provoking type for discussion after the poems have been read by the pupils themselves. Or another plan might be used: First, the classroom teacher could ask students to peruse for themselves the poems about to be read over the air. Second, a discussion about them might be held. Third, the pupils could listen to the broadcast, and, fourth, they could decide whether or not their opinions have been changed by hearing the poems over the air. Finally, they might decide to memorize passages which they like very much, or to read to the rest of the class other verse by the same author, or other verse which is similar in theme or form.

Before we leave the subject of poetry, it might be well to say a word concerning the order in which pupils should be exposed to the different types. Of course the master teacher will understand this, but the classroom teacher also should have it clearly in mind; otherwise results even under our proposed plan may be unsatisfactory. We have previously been reminded that ballads and the like were the first sort of poetry to appear. Usually they are short, earthy, and full of action. Therefore, this is the first type of poem which should be presented to the pupils. The latter are then better prepared for longer narrative verse, which should come next. Last, and not
until pupils are ready for it, should come poetry of a lyrical or meditative nature. If this order is used by both radio and classroom teacher, and if both are well qualified for their respective positions, the radio should become a definite contributory factor to pupils' enjoyment of good poetry.

The same may be said concerning drama. At present there are numerous programs which may be used for both in-school and out-of-school study and appreciation of the play. For example, during the last school year the series "Great Plays" was broadcast on Sundays over the network of the National Broadcasting Company. It included such well-known dramas as Tartuffe, Beggar's Opera, The Rivals, The Pirates of Penzance, L'Aiglon, Strife, and Winterset. The "Campbell Playhouse," with Orson Welles as director and actor, and the "Columbia Workshop Plays" also were well worth while. The last named included two dramas written specifically for radio by Archibald MacLeish, namely, Fall of the City, and Air Raid. Other programs such as the "Lux Theatre" and "Grand Central Station," or even the "soap serials," might be used for introduction to the enjoyment of drama or for comparison of techniques, worthiness, and skill.

It has sometimes been claimed that radio reduces reading. However, one study made in 1938 tends to show that

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broadcasting usually stimulates reading instead of reducing it. In this study\(^5\) one hundred and fifty boys in the third year of high school were the subjects. It was found that the following dramatizations over the air had been heard by one or more of them:

Ahi Wilderness
Amateur Gentleman
Bambi
The Blue Carbuncle
Brewster's Millions
Cappy Ricks
Captain Applejack
Captain Blood
Captain Blood Returns
Cavalcade
Chloe
Christmas Carol
Cyrano de Bergerac
Dr. Hans
Dr. Jekyll and Mr. Hyde
Enemy of the People
Evangeline
Gilded Lady
The Girl Who Came Home
The Gold Bug
Graustark
Green Pastures
The Guardsman
Hamlet
Internes Can't Take Money
The Last of Mrs. Cheyney
Legionnaire and the Lady
Life of Louis Pasteur
Lost Horizon

Macbeth
The Man Who Married a Dumb Wife
The Man with the Iron Mask
Masque of Kings
Melting Pot
Men in White
Merchant of Venice
Midsummer-Night's Dream
Mr. Deeds Goes to Town
Mutiny on the Bounty
On the Avenue
Third Floor Back
Paul Bunyan
Quality Street
Romeo and Juliet
Saturday's Children
Sea Devils
Sea Hawks
She Stoops to Conquer
The Speckled Band
Theodora Goes Wild
Thin Man
Three Men on a Horse
The Three Musketeers
Three Smart Girls
Twelfth Night
The Virginians

According to the report, many books and plays were read as a result of hearing the above dramatization. These

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included seven librettos, three magazines, five books dealing with science, three books by De Kruif, seven by Dickens, six by Conan Doyle, three by Dumas, one by Dumas Fils, three by Farnol, one by Lamb, three by Sinclair Lewis, one by Marlowe, one by McKenna, a short story by Maupassant, two books by Nordhoff and Hall, five stories by Poe, one by Raspe, four by Sabatini, one by Sedgwick, six of the plays of Shakespeare, one story by Stevenson, one by Twain, one by Van Dyne, one by Wells, two by Westcott, one by Zimmer. Miscellaneous books and newspaper accounts also were read.6

Probably we should not accept the report as conclusive evidence, for the method used in obtaining the data was somewhat unscientific, and the manner of reporting incomplete; but it does give an idea of the really good dramatic material available on the airwaves even at present.

Furthermore, teachers may again make use of the school public-address system. One phase of the method of teaching drama advocated by Howard Francis Seely7 is the reading in cast of entire plays or sections of plays. This reading in cast is a very good activity, to be sure; but could it not be still further improved by in-school broadcasting, so that the listeners could visualize the setting, costumes, etc. for themselves, just as they do when listening to the radio at home? This should not be done too often, of course, for pupils

7. Seely, Howard Francis: Lectures: Education 670. The Ohio State University, Summer, 1939.
are not finished actors, but certainly it would be a good source of motivation when used sparingly: students would be likely to read lines as distinctly and with as much meaning as is in their power. Could not the plays of Dunsany, Barrie, Shaw, and Galsworthy, to name only a few, be extremely effective over the loud-speaker system?

Under our ideal conditions, with the use of the school-owned station, plays by the above-mentioned authors and many others could be produced and acted by experts. If the same general plan as was proposed for the "teaching" of poetry were employed, so that the dramatizations could be suited to pupils' maturity levels, with discussion before and after, who will deny that truly great things might be accomplished? Certainly it should enhance the appreciation of good drama, and stimulate further reading in this field on the part of pupils.

The third and fourth general phases of literature in the school include the short story and the novel. The ends to be achieved are similar to those for poetry and drama; namely, increased reading for entertainment and enjoyment, increased understanding of human life, social and intellectual tolerance, and the development of discriminative taste. 8 The present broadcasting situation presents opportunities in plenty for hearing reviews of, discussions about, and dramatizations of novels and short stories of all kinds. The main trouble is in getting information concerning these broadcasts far enough

8. Seely, Howard Francis: Ibid.
in advance to be of value. Nevertheless, the discriminating and alert teacher can take advantage of many of these possibilities. Again, the ideal conditions of the educational broadcasting unit, if used according to plans proposed for its use with poetry and drama, could and should bring corresponding results.

Finally, we should probably say a word in this connection concerning the essay and the biography. They do not lend themselves easily to use over the radio or public-address system unless they are dramatized, for the first requisite of any broadcast, whether it be educational or not, is that it should be interesting. By its very nature the radio limits the number of senses which may be utilized, to one; therefore there must be a very definite and powerful appeal to that one sense, the sense of hearing. Thus it is that most essays and biographies must be changed somewhat if they are to be used in broadcasting.

Let us now turn our attention to the possible relationships of public-address systems and radio to the teaching of composition.

**PART II**

Thus far, in our analysis of possible uses of radio in the English studies, we have said nothing concerning oral and written composition. This has not been accidental, by any means. The reason for the omission is that we have not yet set up goals toward which the teacher who is concerned
with correcting and improving pupils' writing and speech should work. Aims to which most instructors in this field will agree follow:

1. To develop and foster in our pupils a sincere and personal respect for our language
2. To make it apparent to pupils that the skillful use and clear understanding of our language are fundamental to their every intellectual endeavor
3. To instill in our pupils correct habits of diction and usage
4. To provide for intellectual and emotional growth by stimulating interest in self-expression and in the finding of meanings in ideas and experiences
5. To assist in the development of the intellectual and ethical character of pupils by indulging in them the power and desire: to see clearly, both visually and mentally; to evaluate and interpret logically and honestly, and to report clearly, directly, and without prejudice what they have seen and interpreted.

Composition-teaching may be divided into three phases or sections: the teaching of the fundamentals of writing and speech— in other words, getting the pupil to understand and use the "conventionally-accepted principles of word functions, relations, and usage"; oral composition; and written composition. We shall discuss their possible relationships to radio and loud-speaker systems in that order.

The aims for the teaching of the fundamentals may be said to be the following:

9. Seely, Howard Francis: Lectures, Education, Ohio State University, Summer, 1939, p. 671.
1. To foster the development of a progressively increasing desire on the part of pupils to express themselves effectively in language

2. To bring pupils to recognize that effectiveness of expression depends in no small part upon the employment of the various language symbols according to accepted standards

3. To establish the fact that language is at once the tool of thought and its mirror; that both thinking and its expression are only as accurate and meaningful as the language employed in the kindred processes

4. To assist pupils to eradicate from their usage the most flagrant and destructive errors to which their expression is individually subject

5. To make sure that major principles of usage are so well understood and mastered by pupils that they will function automatically

6. To promote habits of using various aids offered them for solving language problems which confront them

It should be pointed out at once that the teaching of the fundamentals is primarily the office of the classroom teacher. He, and he alone, knows (or should know) the abilities and shortcomings of the pupils in his particular class. Therefore he is the only one qualified to work with those pupils in this particular field. He should as soon as possible, by observing the pupils' writing and speech, make note of their individual and group weaknesses. He may use diagnostic tests for this purpose— if he uses them as they should be used, and not as ends in themselves. Then he should set about eradicating the general weaknesses of the class. The failings of individual students should be corrected by individual work.

However, it is not the function of this manuscript to propose ways and means of accomplishing these ends, except insofar as radio may have some effect. Under present conditions, only the first three aims of the teaching of the fundamentals listed above could be implemented by use of present broadcasting materials. By listening critically to good speakers who talk on subjects of interest to the pupils, the latter could be made to realize that good speech depends upon the skillful employment of words, as well as upon good pronunciation, articulation, and the like, and that good thinking is based upon the proper use of language. Eventually, therefore, pupils may desire to express themselves effectively through their speech. The desire on the part of students is a prerequisite in any undertaking of this nature.

Under our proposed ideal conditions, the radio may be employed. It is not really necessary if the teacher is skillful—indeed, in the lower grades, broadcasting probably could not be used at all. However, if the radio is to be employed in the junior high or high school, it might be in the following manner: 12

1. The classroom teacher determines just what general weaknesses of the class in the fundamentals need correcting.

12. The procedure followed here parallels that proposed by Howard Francis Seely in On Teaching English: (American Book Company, 1933).
2. The master teacher gives a series of lessons which may or may not be tuned in by any one class, depending upon the needs of that particular class.

3. If the weakness is one of grammatical construction, the procedure would be as follows:
   a. The radio teacher illustrates the principle profusely by reading and commenting upon sentences which are correct.
   b. The radio is silent while the class discovers and states the principle.
   c. The radio teacher proves the principle by means of further illustrations.
   d. The radio is silent while previously-prepared drill exercises are given the pupils. These drill exercises are groups of sentences which:
      (1) Illustrate the principle
      (2) Have one blank, omitting, for instance, the pronoun, if the work has to do with pronouns and antecedents.
      (3) Have two blanks, omitting, for instance, both the pronoun and the antecedent.
e. The radio is silent while the learning is
tested with new sentences in which there
is an occasional erroneous usage.

4. If the weakness is one of punctuation or capital-
ization, the procedure would be as follows:

a. The radio teacher justifies and explains
the usage in a correctly punctuated and
capitalized mimeographed or printed passage
which is in the hands of pupils, or for which
lantern slides are used.

b. The radio is silent while the class capital-
izes and punctuates a passage in which all
capitalization and punctuation is omitted
except the capitalization of the initial
word of each sentence and the period at the
end.

c. The radio is silent while the class justifies
the capitalization and punctuation.

d. The radio is silent while the class capital-
izes and punctuates a passage entirely de-
void of all marks and capitals.

e. The radio teacher dictates a passage which
pupils write, capitalize, and punctuate:

(1) Radio teacher reads passage aloud
first in a natural manner
(2) Radio teacher reads passage aloud at a rate which will allow pupils time to take it down—this rate of speed should be determined carefully.

f. The radio is silent while the class is given a few minutes to correct the work.

As was stated, all the above might well be done by the classroom teacher. The only advantage accruing from the use of the radio teacher here is that a new or different voice, or the novelty of radio itself, may serve as additional motivation to the pupils. Much work on the fundamentals will be done in connection with pupils' actual writing and speech. As for most of the other fundamentals which have not been mentioned, such as penmanship, spelling, paragraphing, et cetera, they will in all probability be exclusively under the guardianship of the classroom teacher.

One last use of the radio in connection with the "fundamentals" might be mentioned here. The use of slang by pupils is, to some educators, a constant source of worry. However, it is a pretty safe bet that the teacher who never, under any circumstances, makes use of it, will be classed as dull and uninteresting; and that the subject matter which he attempts to teach will be termed boring and irksome. Slang is, as a rule, picturesque and extremely expressive, figurative language, and may under certain circumstances be highly effec-
tive. We teachers must recognize and accept this fact in order to get our pupils to see that under certain other circumstances such expressions are out of place, and therefore that their use should not become a permanent habit. The radio offers many opportunities to stress these facts. For instance, we hear plays which make ridiculous, people who use slang at inopportune times—people who are cast as servants or as misfits among their "betrers." A speech by the President or other high official could be contrasted with the talk of a sports announcer in order to demonstrate that in one case slang might be appropriate, but out of place in the other. Over school-owned stations, selections from writings of the past which are obscure because of the generous employment of slang could be read, in order to prove that, in general, such expressions are only temporary. Finally, high figurative poems could be compared with slang expressions as to effectiveness, and the reasons discovered as to why the poet's words probably are better. Would it have been more effective, for example, if Rupert Brooks had said, "If I should croak" instead of "If I should die"? Why is Kipling's "brow of a lighthouse" good usage, when "hit on the dome" is slang? Is this better:

That's my last Duchess painted on the wall
Looking as if she were still alive.

Or this:

That's my old lady slapped up on the wall
Looking as if she were still kicking.
Is "The Chief's peeper flashed" better than "the Chief's eye flashed"? In short, why are such terms as "flipper," "pan," "doe" (feet), "lamp" (eye), "ticker" (heart), "pins" (legs), "bread basket" (stomach), "dukes" (hands), and the like sometimes out of place? These are indeed fascinating possibilities.

Our next topic is that of oral composition. Here the radio and public-address system have quite a bit to offer. First let us list the aims of oral composition:

1. To promote in pupils exact, direct, and purposeful habits of thought
2. To develop the pupils' skill in the selection and arrangement of materials for oral presentation
3. To improve the pupils' oral vocabularies
4. To raise the pupils' speech standards at least to their written standards with respect to grammatical correctness
5. To enable pupils to develop poise—increased ease of manner, improved posture, and voice
6. To foster in pupils the desire for more pleasant tonal qualities and to promote their attainment\[\text{13}\]

One thing is fundamental in work with oral composition: The best time for the practice of speech is when the activity is a natural result of a situation. In other words, teachers should take advantage of all natural opportunities to get pupils to talk. These chances would come in connection with the school work of the pupil in all subjects of the curriculum, and especially with his activities in the English class. For example, there would be opportunities when the pupil reads poetry, stories, or drama orally; when he

\[\text{13} \text{. Seely, Howard Francis: On Teaching English}, \text{ p.173: (The American Book Company, 1933).}\]
recites memorized passages, essays, and the like; when he
discusses special topics of interest to himself and the
class; when he presents related material on books or authors;
when he discusses political events; when he talks informally
about his outside reading; when he discusses the fundamentals
of writing and speech; when he criticizes papers or talks by
his fellow pupils; when he discusses the writing projects
of himself and the rest of the class; and finally, when he
talks on current events or hobbies, and when he examines
processes or does debating.

Of course the radio is not absolutely necessary for
the above work— in fact we have tried to stress the idea that
the device is not to be regarded as a be-all or an end-all,
but merely as an additional aid to the teacher. However, it
is precisely here that this instrument and the public-address
system have their greatest value. Even under present con-
ditions much has been and can be done with them in this field.
For one thing, pupils hear the speech of many different an-
nouncers and speakers. A good activity would be the com-
parison and contrasting of the language of a few of them.
They might compare the pronunciation of an Easterner with
that of a Southerner or person from the Middle West; or the
articulation, diction, and ease of manner of announcers on
networks and local announcers or newscasters. This activity
would serve to make pupils speech-conscious, at least. Further-
more, many radio stations are willing to use pupil dramatizations,
talks, or forums, all of which is excellent practice in oral composition. In some communities the school even goes so far as to take over the local station for a day. Pupils sell the advertising (with the school getting the profits), make up the programs, are the announcers, and supply the music and dramatizations— in short, they conduct the entire business of the station for that day. What could be better or more natural motivation of pupil oral and written composition than this?

Over the school loud-speaker system, pupils may supply their fellows with school, local, and national news, conduct forums, give announcements, dramatize the news or stories, give plays, readings, and recitations. In fact, the possible uses of a public-address system for oral composition are practically unlimited— and pupils like it. It not only gives them practice in speaking and writing, but also, since radio speech must be especially clear due to absence of gestures, serves to emphasize the importance of good enunciation, articulation, and pronunciation, as well as clear and concise expression. Lastly, it is a strange phenomenon that people who ordinarily are bashful and backward may not be so at all when it comes to talking into a microphone. They lose their self-consciousness and often become really good speakers.

In reference to the ideal situation to which we have referred so often, only this need be said in connection with
the teaching of oral composition: that its sole advantage over present conditions would be in affording a larger amount of time over the air for the various activities mentioned.

Our last topic concerns written composition. The objectives are similar to those for oral composition, except that they refer to writing rather than to speech. We want pupils to understand that writing is done for the purpose of communicating our thoughts, experiences, and feelings; to preserve records; to interpret and solve problems; and finally, to express ourselves.14 Here again, as was the case with speech work, the teacher must use materials that are natural, not forced. For this reason, all other school and outside activities of the pupil should serve as sources of materials for written composition.

In the present discussion we are not concerned with the writing of pupils except as it relates to their radio listening. Students might jot down notes on broadcasts heard, or they may hear something which creates a desire to investigate, and write about it. After hearing a play or dramatization over the radio or the loud-speaker system, the individual pupil might write on one or more of the human problems involved, might compare and contrast the characters of the different persons in the play, or might criticize the probability

of the plot, scene, or characterization. Or he might write
dramatizations of short stories or novels, or scripts for
newscasts or announcements - all for use over the public-
address system. Again, the possibilities are practically
unlimited either under present or future ideal conditions.

Thus far in the present chapter we have listed objec-
tives for literature and composition which are in accord
with the general objectives of the school; and we have at-
ttempted to show how radio and public-address systems can
aid a teacher of the English studies to attain those objec-
tives. Since a mathematical axiom has it that "two things
equal to the same thing are equal to each other," it follows
that ways and means proposed in our discussion for the utili-
zation of these two instruments contribute not only to the
objectives for literature and composition, but also to the
general purposes of education.

However, before going on to the next chapter it
might be profitable to list the ideas on the relationship
of radio to the English studies, of other writers in this
field.

According to a section on radio news in the December,
1939 issue of The Nation's Schools, a "Good Books" series was
conducted over a local station at Evansville, Indiana, Because
of those programs, the teachers observed development in
the following aspects:

1. Pupil Aspects: It created a real motive
for pupils in producing worthwhile pro-
gress; it offered an opportunity for ex-
ploratory activities; it developed re-
sponsibility, cooperation, precision, under-
standing, originality, and critical appreci-
ation; it provided a possible vocational in-
terest for a minority, and it competed satis-
factorily with other leisure time pupil
activities.

2. Speech Aspects: It promoted a better use of
the spoken word; it enlarged the vocabulary
of those participating in the creative work;
it promoted group discussion among script
writers, actors, and auditors, both in school
and at home; it enhanced the interest in
diction of both actors and auditors, who be-
came acutely aware of pronunciation, inflec-
tion, and the difference between standard and
substandard speech, and it assisted the trend
of modern English in the closer relationship
between spoken and written English.

3. School Aspects: It assisted in the trend of
modern thinking to break down departmental
lines; it fitted into a city curriculum for
the purpose of enrichment; it promoted the
taking of field trips; it provided a psycho-
logically-sound incentive other than coercion,
reward, exemption, and school marks to insure
practically one hundred per cent participation
in the extensive reading program; it intro-
duced a new method of teaching, and it appealed
to individual differences.

4. Community Aspects: It afforded an excellent
opportunity for the schools to give an account
of their stewardship of the youth of the com-
munity; it assisted in adult education, en-
couraging the use of library facilities and
wide reading in many areas.

In the light of these aspects, together with
the statistical data gathered in this study,
the educator can with confidence introduce
the radio into the classroom for the purpose
of stimulating leisure reading, and of en-
hancing the ability of high-school pupils
in understanding, appreciating, and enjoying a wide variety of literature...15

Another expression of the objectives attained by radio is found in the January, 1939, Educational Method:

1. Development of appreciative enjoyment of all types of literature
2. Development of discrimination and critical thinking
3. Development of a purposeful interest in current social problems16

Margaret Harrison, in her book Radio in the Classroom, also suggests ways in which radio may contribute to the English studies: She states that there could be correct speech programs, book reviews and talks, children's original poems, music, stories, etc., dramatizations of classic stories and plays, storytelling, music, the reading of poetry, debates, anniversary programs on Shakespeare, Virgil, et cetra.17 She also quotes the following from the Denver (Colorado) Course of Study:

How to Use Radio Programs for Improving English

I. Discernment of the content of the program

1. What was the problem of the speech, or the theme of the dramatization, story, or news item?
2. Climax or high point?
3. Most interesting points?
4. What questions does the program raise in your mind?

5. What are the studies, texts, and books which may answer our questions or help us to learn more about the problem we are discussing?


II. Our own criticisms of the radio production we heard. Give examples.

1. Speaker's tone of voice
   a. Tone
      (1) Voice loud enough?
      (2) Well pitched and flexible?
      (3) Emphasis good?
      (4) Speaker pause when necessary?
      (5) Speaker's accent good?
      (6) Speak slowly enough?
   b. Emunciation
      (1) Emunciation clear?
   c. Pronunciation
      (1) Speaker accent his words correctly?
      (2) Sound his letters correctly?

2. Choice of words by speaker
   a. Employ meaningful adjectives?
   b. Avoid overworked words?
   c. Use "live" verbs?
   d. Use words that gave exact meaning?
   e. Avoid needless repetition?
   f. Avoid use of slang and foreign phrases?

3. The speaker's ability in practical discussion
   a. Did the speaker narrow his subject for discussion to a topic that could be dealt with in a given time? (Illustrate)
   b. Did he choose the phase of the subject and facts that are best calculated to interest the audience? (Illustrate)
   c. Was the speaker's material arranged in a clear, orderly, interesting form, without the use of needless sentences?
   d. Did he use direct or indirect quotations in telling anecdotes?
   e. Did he give credit for quotations? (Illustrate)
   f. Did he include all necessary facts when giving announcements or messages, explanations or directions?

4. The speaker's use of anecdotes and stories
   a. Did he tell his story with events in logical order?
b. Did he tell his story so as to arouse interest and sustain it to the end?
c. Did he feel his story and make it personal?
(Give examples whenever possible.) 18

Lastly, we have various suggestions made in the *English Journal* of October, 1939:

1. Experiences in exploring the social world
   a. Exploring the air waves
      (1) Amount, variety of information to be derived from listening in?
      Any misinformation?
      (2) Discover "the public mind" by sampling speeches, music, variety programs.
   b. Visit a radio studio

2. Experiences in learning to think critically-to be discriminating
   a. What's what in radio programs
   b. How to listen
   c. What may I believe?
   d. Programs for children
   e. Radio English
   f. Start a radio guild
   g. Plan for an ideal series of radio programs for an imaginary station

3. Experiences in getting acquainted with literary materials and facts
   a. Treatment of the classics on the air
   b. Keep a radio log or diary
   c. Comedians of the ether

4. Experiences in enjoying and appreciating literary values
   a. Analysis of radio personalities of all sorts—why they attract the public
   b. Comparison of well-known drama broadcasts
   c. Radio as a medium of fantasy
   d. Possibilities for poetry
   e. Dramatic criticism
   f. "Fine style" on the radio

5. Stimulation to creative activity-creative expression

a. Reference reading
b. Reports, discussions, round tables
c. Radio log or diary
d. Radio guild
e. Clippings
f. Classroom dramatizations

6. Social behavior
a. Home listening
   Radio manners
b. Possibilities of radio for vocational guidance
c. Sharing programs

7. Learning new skills and techniques
a. Diction on the air
b. Taking notes
c. Filing notes
d. Interviews
e. Reports
f. Reviews and criticisms
g. Student scripts
h. Editorials for the school paper
i. Dictionary of radio terms
j. News writing for school broadcasting
k. Tests and quizzes
l. Summaries
m. Letter writing—intelligent fan mail

These are, then the ideas of a few teachers on the utilization of radio in the English class. No doubt we should accept most of these proposals as worthwhile, and reject a few. At any rate, when they are added to our previous discussion of the possible uses of radio and public-address systems in English literature and composition, we have a unified and fairly complete view of the field.

However, one possible approach to language, which has been neglected by some teachers, remains to be investigated. It is the matter of the use of speech and writing as

tools of propaganda and falsification, and as substitutes for thought.

Since the English teacher is concerned primarily with words and their uses, and with enabling pupils to become critical thinkers, it probably is one of his important duties to help his charges to see behind the scenery of the language employed by themselves and by others:

Among themselves adolescents often develop a special idiom, consisting largely of stereotyped "wise-cracks," slogans, and stock phrases. This peculiar speech undoubtedly provides them with different kinds of satisfaction: it is a sign of membership in the group; it gives a pleasant illusion of cleverness and sophistication; it gives a fresh sense of novelty, for the "slang" changes constantly; and, most important, it offers them an opportunity to say just the right thing without spending the time and creative effort that would be required to examine whatever they are talking about. 20

We have previously discussed the attitude of the teacher in regard to pupils' use of slang; therefore we are not primarily concerned with that phase of the "mis-use" of language here. On the other hand, it is important to impress pupils with the idea that terms such as justice, human rights, socialism, equality, democracy, fascism, and the like, are general and not definite— that as definitions they are subject to the interpretation of each individual using them or hearing them. The Pavlov experiment with the dog provides

an apt parallel. The dog had been so conditioned that the ringing of a bell caused his mouth to water. In like manner many people have become so conditioned to general promises as expressed by advocates of the various "ham and eggs" proposals, that their mouths water also, both literally and figuratively— and regardless of the implausibility of such schemes.

Pupils may be led to recognize that language may be used in a variety of ways: to relate actual facts and experiences, to express opinions, or to mislead. Students may be led to an understanding of writing and speech, therefore, "through examining the ideas to which words refer." Thus by an examination of the words and actual meanings of speeches, dramatizations, and advertisements; by detecting emotionalism and maudlin sentimentalism, false logic, mere wordiness, abstractions, and glittering generalities; and by recognizing the other common devices of propaganda such as name-calling, the omission of facts, unsubstantiated conclusions, insinuations, testimonials, and the like—by these activities, pupils will gain an insight into language usage which will function everlastingly to their great benefit. In short, every pupil can be, to some degree at least, a discriminating reader, speaker, and listener.

21. Ibid., p.23.
Commercial radio may be valuable here as a source of materials, since it supplies speeches, talks, dramatizations, and advertising in plenty. Also, the school-owned broadcasting unit or public-address system, or the turntable (phonograph), may be utilized. Recordings of commercial radio programs may be played (and re-played, if necessary) to illustrate the particular types of appeals under observation.

The radio teacher might use a still more basic and fundamental approach to language. He might begin by pointing out that even our most common words may be used in a variety of ways. For example, the simple word is may be employed, first, to identify:

This is my hand.

Secondly, is may be used in the sense of "belonging to a general class":

That man is a hypocrite.

Or it may mean "for our purposes" or "let us say":

Fascism is anticommunistic.

Then the radio teacher might point out that the first sentence is the only one which may not need substantiating. Obviously, the man in the second sentence may, or may not be a hypocrite, and at present many people will dispute the statement that fascism is anticommunistic. We need more evidence in those cases.
Again, the radio teacher might read other sentences which appear similar to the first one above, thus:

This is my book.
This is my car.
This is my money.
This is my world.

Obviously, again, these statements may be debatable. In the last sentence just above, for instance, does the person speaking mean that the entire world belongs to him, or does he simply imply that he is a part of it?

Another possibility would be to examine shades in meaning, as in the following sentences:

What I have written, I have written.
I have written what I have written.
I have finally revised what I have written.22

Still another opportunity for the radio teacher to take advantage of this approach to language is to point out the different interpretations possible for such expressions as good, bad, great, and the like. For instance, many persons consider Napoleon Bonaparte a great man. Is a man who caused untold suffering truly great? Did he have as much effect upon the world as any one of a number of inventions— the cotton gin, for example?

Finally, the radio might be used to demonstrate the various ways in which different combinations of words may be

22. Ibid., p.91.
made to give the same meaning. Thus *plurality* may be expressed by changing the internal structure of the word (*men, teeth*), by the use of added letter or letters (*-s, -es*), by prefixes (*multi-*), by employing separate words (*many, numerous, several*), or by word-groups (*more than one, a number of, several*).²³

These are only a few of the possible ways in which both radio and classroom teacher may approach the problem of language. We have seen enough, however, to realize that the method is a truly functional, interesting, and beneficial one to both teacher and pupils.

Surely we may now conclude that not only are radio and loud-speaker systems important in contemporary life and in the school as a whole, but also that they present great possibilities to the teacher of English literature and composition in particular. Therefore is it not probable that these two instruments may have definite contributions to make to other subjects in the school? We shall see in Chapter V.
CHAPTER V

POSSIBLE USES OF RADIO AND PUBLIC-ADDRESS SYSTEMS IN SEVERAL OTHER FIELDS OF THE HIGH SCHOOL

As the title of the present chapter indicates, we are now ready to discuss the possibilities for employing radio and public-address systems in several phases of the high-school curriculum other than the field of English composition and literature. Almost every subject in the school could be supplemented in some way by the use of these two inventions; however, for purposes of practicability, we shall confine ourselves to a consideration of their employment principally in the fields of the sciences, the social studies, and music.

During the course of the discussion we should keep in mind that the several divisions of the high-school course of study really are not separate, compact units. The English teacher, through his employment of historical and contemporary material, is also a teacher of social science. In science and social-studies classes, both teacher and pupil must use language— and use it carefully, clearly, and effectively; In this respect, every class is an English class. Again, both English and social-science classes may employ scientific materials and methods; and the music class uses materials from all phases of life, since music is simply a different mode of
human expression. These are only a few examples of the ways in which the subjects of the high school overlap and are interdependent, but they prove that after all, organization of the total school program is truly a problem in integration.

In Chapter I was emphasized the modern progressive point of view that life is a dynamic adventure which confronts the individual with ever-changing, ever-new problems. Therefore the all-inclusive aim of education, if it may be said to have an all-inclusive aim, is to promote habits of careful thinking. This objective should permeate the entire work of the school, whether it be in the English class, the social or physical science class, or in music, art, home economics, and industrial arts. If the school supplies the future citizens of our democracy with the necessary materials for good thinking, and at the same time promotes the logical use of the tools of thought, it has accomplished successfully its two-fold duty in a democracy.

It is here that the radio and loud-speaker systems may be very valuable in supplementing the work of the classroom teacher, for both these instruments are never-ending sources of materials for the development and testing of critical thinking. We shall discuss, then, the possible uses of broadcasting in the fields of science, the social studies, and music, in that order.
The best known science programs broadcast directly to the classroom have been presented by the Rochester, New York, School of the Air. This school of the air, which uses the facilities of station WHAM in Rochester, was initiated February 7, 1933, and has been maintained successfully ever since. It is estimated that 18,543 pupils, as well as many adults, listen to the science programs, which are broadcast for the fifth, sixth, seventh, and eighth grades. The claim is made that the programs are extremely worth while for both pupils and teachers. If the following amusing poem, sent by a pupil listener to Mr. Harry Carpenter, who is in charge of the broadcasts, is any criterion, we should certainly admit that the programs are getting astonishing results, to say the least:

Science is the study of the birds, bugs, and bees.
The germs that try to harm us, and those that try to please,
How very large the earth is, how very small a hair,
Of wiggly worms and dinosaurs,
Of gravity and air,
How chickens can come out of eggs,
Of how our hearts can beat,
And why the lights go on and off, and how a snail can eat,
And man in his environment
How very small he seems,
How crude and rough his implements,
How foolish all his dreams.2

In science, the following aims may be considered most

important in connection with educational broadcasts:

1. Attitudes and Appreciations
   To recognize that truth is partial
   and not absolute, that truth
   changes...

2. Interests and Self-motivation
   To develop an interest in scientific discoveries and developments

3. Critical Thinking and Discrimination
   To develop habits of critical thinking

Over commercial stations, science broadcasts which
may be used for both in-school and out-of-school listening
are fairly numerous. For example, on Sundays the National
Broadcasting Company presents "The World is Yours," a series
produced by the United States Office of Education in cooperation with the Smithsonian Institute. Titles from May through
June of 1940 included "Our Changing Wildlife," "Radium," "The
American Inventor," "Dinosaurs: Giants of the Past," "The
Fly," "The Natives of Hawaii," "One Hundred Years of Postage Stamps," and others. Other science broadcasts include
the National Broadcasting Company's "Radio Magic," "Stars of
the Summer Nights," and "Nature Sketches," and the Columbia
Broadcasting System's "Adventures in Science," as well as many
more which might be employed by the school.

As has been stated, the best-known in-school broad-
casting has been at Rochester. It is interesting to note that

3. Heil, L. M.: "Evaluation of Science Broadcasts in
for the purposes of that city's School of the Air, each science class is organized as a Department of Science. There is a Chief of Staff, Chief Observer with assistants on astronomy, weather, plants, animals, and the like, a Chief Health Officer, and a Chief of Records whose duty is carrying on correspondence with the broadcaster. The broadcaster describes simple experiments which may be carried out with homemade apparatus (for few of the classes are well equipped) and suggests that the listeners perform these experiments either at school or at home.4 According to a questionnaire sent out to teachers, ninety-one per cent of the children enjoy doing the experiments, with only three per cent not doing anything at all.5

Such results are practically ideal, providing the concomitant learning, especially that of critical thinking, may be considered also to have resulted; for science presents numerous opportunities to demonstrate the pitfalls which are the consequences of false and illogical reasoning. Educators in general recognize that fact, and because of it would prefer to broadcast over school-owned stations, where they would be permitted to go off the air for several minutes at a time while pupils carry on classroom discussions or perform experiments. This is not possible over a commercially-owned

unit, for the latter can ill afford to have listeners turn their radios off or switch to some other station. The Rochester situation is, however, closely akin to the ideal, except that thus far the science broadcasts have been confined to general science. Perhaps if more time were available over the air, the radio might be used also in chemistry, physics, zoology, and the like, which might also benefit through the use of supplementary radio material.

In-school science broadcasting through the public-address system could be carried on in an interesting fashion. Members of the science classes could give talks on the daily weather situation and the reasons for it, or on recent discoveries in the fields of botany, zoology, chemistry, or physics. They could secure the cooperation of the English department in writing dramatizations of how famous discoveries of the past in the field of science were made, or could explain and analyze the latest inventions. A very intriguing possibility would include talks or dramatizations explaining how scientific innovations have changed our ways of living, our ideas, and our opinions on right and wrong. Both participants and auditors should profit immeasurably by such activities.

The social studies probably have benefited by the employment of radio and loud-speaker systems as much as, or more than, any other subject of the public-school curriculum. News
and news-analysis broadcasts over national and regional networks, and by local stations, are legion. Speeches by the President and the heads of foreign governments may be heard at school or at home. Round tables, forums, the "American Town Meetings of the Air," and local town meetings of the air may be used. "The National Farm and Home Hour" is extremely profitable. On July 3, 1940, a series entitled "This Our America" began over the National Broadcasting Company network. Another series, "I'm an American," ends July 27. The Columbia Broadcasting System offers "Public Affairs," "People's Platform," and last year one day's program of the "American School of the Air," entitled "This Living World." Thus we see that there are broadcasts in plenty in the field of social science.

Our problem now, after our preliminary exploration of the wealth of material available for use in the social studies, is to decide what to do with it. Probably most teachers in the field will agree to the following objectives:

1. To get pupils to think critically
2. To make pupils tolerant of opinions other than their own, and to expect these differences in belief
3. To inculcate in pupils a desire to be fair-minded
4. To develop in pupils a sympathetic understanding of other peoples and other times
5. To get pupils to appreciate distinctions in racial attitudes and characteristics
One of the first duties in any class, whether it makes use of the radio or not— but especially if it does so—is to enable pupils to detect propaganda. In order to do so, the pupils must be able to recognize the common devices, such as name-calling, the omission of vital facts, unsubstantiated generalities, illogical conclusions, slogans, testimonials, emotionalism, and the like. In other words they will have to discover, preferably for themselves under the wise guidance of the teacher, the different types of appeals and techniques used over the radio and elsewhere to get people to buy the advertiser's product, or to "think" as the speaker wants them to "think."

It seems to the present writer that the social studies teacher has an unusually good chance to accomplish this end of helping pupils to become critical thinkers. By listening to and examining carefully the talks of newscasters and newsanalysts, and of speakers on both sides of every issue, pupils would become conscious of the tricks and devices used. They could pit a Hitler against a Churchill, isolationist against non-isolationist, theorist against practical politician, New Dealer against anti-New Dealer, a Communist or Socialist against a Democrat or Republican—when there is a difference. Another possibility is a comparison of the written and spoken word as mediums of expression; that is, pupils might compare speeches over the radio with the same speeches as they appear
in newspapers. By such activities it is possible that we might see the day when a Southerner might vote the Republican ticket, or a dyed-in-the-wool Republican or Democrat cast his ballot in a thoughtful manner, putting loyalty to country above loyalty to party. We might even persuade practically all citizens to vote, and vote intelligently, and to see the possibilities of social action! The famous Orson Welles broadcast of "The War of the Worlds" (the so-called "Man from Mars") is sad evidence that thus far we teachers have failed to induce our pupils to exercise good judgment. If our belief in democracy and individual freedom is to stand the test of time, we cannot fall short in this respect much longer!

As has been stated, there are good radio programs which may be employed in the social studies. Furthermore, if a school or school system desires to initiate a series of programs of its own, scripts in practically every field may be borrowed from the United States Office of Education Radio Script Exchange at Washington, D.C. Last year the series "Americans All- Immigrants All" was produced by the Office of Education over the Columbia Broadcasting System, and the scripts are now available for schools. A sample script from a similar series produced in 1937, is included in Appendix E of the present manuscript. Certainly a pupil who hears such a broadcast is educating not only himself, but to some extent his family as well!
With a school-owned radio unit available, these broadcasts could be worked out by the radio committee in cooperation with teachers of social science, and the amount of time given over to them increased over the present amount accorded by commercial stations. Then too, the programs could be suited to the different maturities and backgrounds of the pupils, and their effect consequently enhanced.

In-school broadcasting over the public-address system has been touched upon previously. School broadcasts and dramatizations of news, news analyzations by individual pupils, speeches, student forums and round tables, dramatizations of the lives of important men or important periods of history and the like, could be given. There could be dramatizations showing the effects of great movements of population, discoveries, inventions, et cetera.

An example of a script which might be produced over a school loud-speaker system, primarily in a unit of junior high school social science, is the following prepared by the present writer. The purpose is to interest pupils in pioneer living conditions, at the same time relating the information given to the present. For this reason the idea of teamwork and cooperation is made to permeate the entire story. The script is an attempt to show that coordinated action is basic not only in present-day life, but also that it was important even under pioneering conditions. It is expected
that in a discussion following the broadcast, these ideas will be investigated, and that they should lead into a further discussion regarding social action in the future. Lastly, it is hoped that the information given in the script may pique the curiosity of pupils, and thus may influence them to read in the library or elsewhere for further and more complete study of pioneering conditions. Probably the one major weakness of the following dramatization is that the opening and concluding scenes are too obvious; however, the reader may judge this for himself:
CAST

ANNOUNCER

BOY: TYPICAL "TEEN AGE"

GIRL: TYPICAL "TEEN AGE"

2ND BOY: TYPICAL "TEEN AGE"

1ST VOICE)

2ND VOICE)

3RD VOICE)

4TH VOICE) VARIOUS IMPRESSIVE ADULT MALE AND FEMALE VOICES GET CONTRAST

5TH VOICE)

6TH VOICE)

NARRATOR: IMPRESSIVE VOICE

2ND NARR: IMPRESSIVE VOICE

AGNES: GIRL OF FIFTEEN

MRS. NEWCOMB: TYPICAL WIFE

JOHN: BOY OF FOURTEEN

PAUL: BOY OF FIVE

MR. NEWCOMB: TYPICAL HUSBAND

1ST HORSEMAN) ADULT MALE VOICES,

2ND HORSEMAN)

3RD HORSEMAN) TYPICAL PIONEERS


SOUNDS

MUSIC
CRACKLING OF FIRE
STAMPING OF FEET
LIFTING OF DOOR LATCH
WIND
CLOSING AND OPENING OF DOOR
SOUND OF WOODEN BENCHES ETC. BEING DRAGGED ALONG FLOOR
CLATTER OF WOODEN DISHES
MUSKET SHOTS
THUMP OF ARROW HITTING WOOD
HOOFBEATS
CREAKING AND RUMBLING OF WAGON
TEAMWORK!

Music: (Up, then down)
Ann'r: Teamwork!

Music: (Up and under)
Ann'r: Teamwork- this is a story typical of America. It is a story of friendliness and help, hardship and danger. It is one of the many tales which show why our great nation, rich, powerful, and sturdy-strong in war and gentle in peace- has risen from the wilds of a continent. But mostly it is a story of friends and neighbors and cooperation.

Music: (Up and out)
Boy: What d'ya mean, cooperation?
Girl: Why, we get along all right, don't we?
2nd Boy: Sure, we don't need anybody to help us. Our fathers work don't they?
Boy: Yeah, you don't hear of any of us starvin', do ya?
1st Voice: Your fathers work, yes, but do they build their own...

2nd Voice: Houses?
3rd Voice: Tables?
4th Voice: Or chairs?
1st Voice: Do they grow their own...
2nd Voice: Wheat?
3d V: Corn?
4th V: Rye?
5th V: Oats?
6th V: Sheep for wool?
2nd V: Flax for linen?
3d V: Pork for sausage?
4th V: Or lard?
5th V: Or soap?
1st V: Where do you get...
6th V: Milk?
2nd V: Meat?
3d V: Fruit?
4th V: And vegetables?
5th V: Nails?
6th V: Hammers?
2nd V: Automobiles?
3d V: Medicine?
4th V: Heat?
5th V: And light?
1st V: Can you make your own...
6th V: candles?
2nd V: And clothes?
3d V: Brooms, and...
Boy: Of course we can't. Why should we?
Girl: We don't have to.
2nd Boy: All we have to do is go to a store or someplace and buy 'em.
1st V: Then you do depend upon other people!
Boy: Huh?
1st V: You really don't live alone, do you?
Boy: Huh? Yeah... Say, that's right. Say, Mister, is that what you're driven at?
1st V: Yes. When people live together they have to cooperate. They have to work together. That's what cooperation is and what it has always been.
Girl: I don't see it.
2nd Boy: Yeah, I see it. He means people have to work together now.
Girl: Oh, I guess we do work together, now. I mean I don't see the "has always been" part of it.
Boy: Huh?
Girl: I mean I don't think people used to work together much.
1st V: For answer, we'll turn back the pages of history! Is the time machine set?
2nd V: All set!
1st V: Then let 'er go!
SOUND: (LOUD BUZZING AND HUMMING OF ELECTRICITY, INCREASING IN VOLUME, ENDING IN LOUD CRASH)
Narrator: 1690! The English colonies have just begun to prosper. People of many nationalities were coming
to America for religious freedom and economic liberty. Boston has changed from a settlement of rude log cabins to a town of substantial wood, brick, and stone houses. Pioneers were moving up the river valleys to the foothills of the Alleghenies.

2nd Narrator: Most of the people were farmers, but each home was also a factory.

Narr.: Here they made their own...

1st V: Candles.
2nd V: Soap.
3d V: Woolen yarn.
4th V: Brooms.

2nd Narr.: And much more. They grew their own...

5th V: Flax.
6th V: Hemp.
1st V: Corn.
2nd V: Potatoes.
3d V: Wheat.
4th V: Rye

Narr.: By trading they could get...

5th V: Nails.
6th V: Salt.
1st V: Iron.
2nd V: Cloth of silk.
3d V: Dishes of pewter.

2nd Narr.: They had...

4th V: Beans.

5th V: Peas.

6th V: Parsnips.

1st V: Turnips.

2nd V: Carrots.

3d V: Huckleberries.

4th V: Blackberries.

5th V: Strawberries.

6th V: And grapes.

Narr.: They ground their own corn and that of their neighbors.

2nd Narr.: Or ran a sawmill, or produced turpentine, tar, and potash from the forests.

Narr.: Land along the coast was rocky, not very good for farming, so people were continually moving westward.

2nd Narr.: When they did so, they usually located near a settlement, for mutual aid and protection against the Indians.

Narr.: Near a small town in Western Massachusetts lives the Newcomb family.

2nd Narr.: Nathan, the father, has gone to a town meeting, for information.
Narr.: He is going to make a momentous decision. Shall he run the risks of moving his family?

2nd Narr.: The rest of the family remains at home. As evening approaches, preparation for the evening meal is in progress.

SOUND: (FADE IN CRACKLING OF FIRE)

Agnes: Mother, this hotchpotch is about done.

Mrs. N.: John, help Agnes lift the kettle off the hook.

John: (Off mike) I'll be finished with this broom in a minute.

Mrs. N.: You can finish that first thing tomorrow. Come help Agnes!

John: (Off mike) All right.

Mrs. N.: You didn't bring in enough broom-corn anyway.

John: (On mike) Here, Agnes, I'll do that.

Agnes: Watch out, it's hot!

John: Ouch! I know it! (Grunts) There!

Paul: When's Father comin' home?

Mrs. N.: Now Paul, you've asked that a dozen times. He should be home soon. Be quiet, now.

Agnes: I hope he does get back soon.

John: Think he found out anythin'?

Mrs. N.: Don't know. I almost hope he didn't.

Agnes: Why?

Mrs. N.: We're gettin' along pretty good here. I'm afraid we'd be worse off, 'stead of better.
John: I think it'd be fun, movin' west.
Agnes: Pa says the land's better, there.
Mrs. N.: Yes, Guess 'tis. But I don't like leavin' here very well.
John: But if the land's better...
Mrs. N.: John, don't know what it means, leavin' the old place here where all 'o you was born.
John: I spose ya do hate to leave, but...
Mrs. N.: And day after day, joltin' along a trail hardly wide 'nough for the wagon.
Agnes: We'd have trouble gettin' across the rivers, wouldn't we?
Mrs. N.: Yes. There's lots to think about.
Paul: Is there any real bad Injuns?
John: Most Injuns is friendly, ain't they, Ma?
Mrs. N.: Yes. Most of 'em.

SOUND: (STAMPING OUTSIDE)(CONTINUING)
Mrs. N.: Listen, John- is that Jenny?
John: Well, it's not loud enough fer Pa.
Mrs. N.: Run lift the latch. She'll have 'er hands full.

SOUND: (LIFTING OF LATCH, WIND)(STAMPING OUT)
Agnes: It is Jenny. How did the soap turn out?

SOUND: (DOOR CLOSES. WIND OUT)
Jenny: Fraid it won't be so good.
Mrs. N.: Lye not strong enough?
Jenny: Guess that's the trouble.
Mrs. N.: I was afraid o' that. We didn't save enough ashes.
Agnes: Well, it's better than no soap at all.
Mrs. N.: Yes. It'll keep things clean enough.
Jenny: Ain't supper ready? Father's home.
Mrs. N.: Is he? Where is he now?
Jenny: He's down at the brook gettin' washed up.
Agnes: Shall we get down the table boards, Ma?
Mrs. N.: Yes, and we'd better hurry.
John: Yeah. If we don't eat soon, we'll have to get out some candles.
Paul: Can I help?
Mrs. N.: Are you big enough to pull the trestles over to the middle?
Paul: Sure, watch me.
John: Here, I'll help you.
Paul: No! No! I can do it!
SOUND: (WOODEN TRESTLES BEING DRAGGED ALONG FLOOR)(CONTINUING)
Paul: Keep away.
John: Watch out, you're gonna hurt yourself.
Mrs. N.: Careful, Paul.
John: There, that's far enough.
Jenny: Yes, we can put the boards on them now.
SOUND: (WOODEN TRESTLES OUT)
Paul: See! I can do it.
Agnes: Our little brother's growin' up.
Mrs. N.: Yes, too fast. Hurry, girls, get things on the table.

SOUND: (STAMPING OUTSIDE) (CONTINUING)

Mrs. N.: Father will be hungry when he...oh, there he is now!

SOUND: (LIFTING OF LATCH, DOOR OPENS, WIND) (STAMPING OUT)

Jenny: Hello, Father.

SOUND: (DOOR CLOSES, WIND OUT)

John: Are we gonna move, Pa?
Paul: Will we see real bad Injuns?
Mr. N.: I'll tell you later. Supper ready, Martha?
Mrs. N.: Almost, Nathan. Get the bowls, Jenny.

SOUND: (CLATTER OF WOODEN DISHES, CONTINUING UNDER)

Jenny: All ready!
Agnes: Sit down, Pa.
Mrs. N.: Draw up the benches, John.

SOUND: (BENCHES ALONG FLOOR)

Mr. N.: What's that, a hotchpotch?
Mrs. N.: Yes, Agnes made it.
Mr. N.: Smells good.
Mrs. N.: Agnes'll make some man a good wife.
John: (Laughs) You're makin' 'er blush, Ma.
Mrs. N.: Don't worry, Agnes. You won't be married for a year or two.
Mr. N: She's fifteen. Martha. Wasn't that how old
you were when...

Mrs. N: Now, Nathan.

Jenny: Oh, tell us, Pa.

John: What happened?

Agnes: Was Ma only fifteen when you married her, Pa?

Mrs.: Yes, I was. But never mind that now. We'd better
finish eating before it gets dark. Sit down, Paul.

SOUND: (BENCHES BEING MOVED)

Mrs. N: Not there, Paul. Your place is at the foot.

Paul: But I'm always 'way down there.

Mr. N: Quiet!

All: (Mr. N. begins, others chime in) The Lord is my
shepherd; I shall not want. He maketh me to lie
down in green pastures. He leadeth me beside the
still waters. He restoreth my soul. Yes, though
I walk through the valley of the shadow of death,
I will fear no evil: for Thou art with me. Surely
goodness and mercy shall follow me all the days of
my life: and I will dwell in the house of the Lord
forever.

Mr. N: (Alone) Our Father, we thank Thee for all that we
have. We ask only Thy help on our journey to a
new home in a land which is strange to us. Amen.

John: (Subdued, but excited) We're goin' to move!
Paul: Where we goin'?
Agnes: How far is it?
Mrs. N: So you think we'd do better further west, Nathan. What did they say at the meetin'?
Mr. N: Well, suppose we eat now, and I'll tell you about it.

**Sound:** (CLATTER OF DISHES UP THEN DOWN)

Mrs. N: John! Your father's portion comes first!
John: I'm sorry, Sir. Guess I was excited.
Mr. N: Just remember, son, that at table, and everywhere else, for that matter, you must respect your elders.
John: Yes, Sir.
Mrs. N: Pass the milk bowl to your father, Jenny. Do you think we all might have a bowl of our own sometime, Nathan?
Mr. N: They say people in Boston have 'em for each one.
Mrs. N: It's really extravagant, though.
Mr. N: Yes, I guess it is. But it would be handier than passin' the bowl around. It'd be good to have more plates, at least, so two or three wouldn't have to eat from the same one.
Mrs. N: Maybe we could get some porringer before we leave.
Agnes: Pewter ones? Oh, they're beautiful!
Mr. N: Well, we'll see about it.
Paul: Will we see the bad Injuns?
Mr. N: Injuns? Where'd you hear about Injuns?
Mrs. N: He's been talkin' about Injuns ever since we talked o' leavin'!
Jenny: We're all curious, Pa.
Mr. N: Well, at the meetin' there was a man that says there is good land to the west to be had for the askin', so I guess we'd better go. He told me how to get there.
Agnes: How soon are we goin'?
Mr. N: That's what we'll have to decide.
John: Well, the hemp is all watered, and the flax's rippled.
Mrs. N: The corn ought to be ripe soon.
Mr. N: That's true. And we can swingle the flax in a couple o'days. When are you goin' to spin, Martha?
Mrs. N: Next week, if you get the flax ready.
Mr. N: And I suppose you girls can dip the candles?
Jenny: Yes, we can handle the kettles all right.
Agnes: Then John can help in the fields.
Mr. N: Yes, he'll have to help me. We have to get things ready and sell and trade all we can.
Paul: Why do we have to sell it?
Mr. N: Because we can't take much in the wagon.
Mrs. N: I suppose we can take the cow along behind. Well, is everybody about through?

Mr. N: Yes, I am.

John: So am I.

Jenny: I'll be through in a minute.

Agnes: So am I. And so is Paul.

Mrs. N: We'll have to wash the platters. Light the Betty lamp, John.

John: All right.

Mrs. N: And get the turn-up bedstead off the wall. We'll have to get to bed.

Mr. N: I'll get the table boards and trestle out of the way.

Paul: Can't we stay up and hear more about the trip?

Mrs. N: Not tonight, son. Off to bed with you.

Agnes: Can't we stay up just a little while?

Mr. N: No, we'd better get to bed. There'll be time for that later. We've got a lot to get done in the next two weeks.

Music: (Up and out)

Narr: The Newcombs did have a lot to do—crops to get in and then sell or trade, flax to spin, candles to make, cloth to weave, and much more. But they got it all done, finally. They have everything packed in the wagon, and are about ready to leave.
But before going, they have one more job to do. The Newcombs have little money, and nails are scarce, so Nathan has decided to burn their old cabin in order to get the nails. John and his father are preparing to set it.

John: The Johnsons up the trail said we could stay there 'till we're ready to leave, Pa.

Mr. N: That's good. I thought they wouldn't mind.

John: Si Johnson said he'd help us rake the ashes after they're cold.

Mr. N: That'll be tomorrow.

John: The Johnsons is pretty nice.

Mr. N: John, we couldn't get along very well without good neighbors. We help each other.

John: Here comes Jenny and Paul.

Jenny: (Off mike) Mother says to tell you everything's out of the house.

Mr. N.: All right. John and I'll take a last look around, then you women can take Paul to the Johnsons while we set the place afire.

Paul: Why do we have to burn down our house? (On mike)

John: To get the nails.

Paul: Why do we have to get the nails?

Mr. N: Nails is expensive.

John: Yeah, but there's plenty o' wood for the next person to build a cabin.
Jenny: Does seem a shame to burn it. (On mike)

Mr. N: Yes, but nobody around here wants the old place.

John: D'ya want me to get a fagot from the fireplace?

Mr. N: Yes. You get that while I look around to see if we've missed anything. Wait here a minute, Jenny.

Jenny: All right.

John: (Off mike) Here's the fagot Pa.

Mr. N: (Off mike) All right. But don't start the fire yet.

John: (Off mike) I've got corn huskins and tar. Where'll I put 'em?

Mr. N: (Off mike) At the north corners. The winds that way. But wait, now.

John: (Off mike) All right.

Paul: I want to see the fire!

Jenny: Father says to take you with us.

Paul: Well I want to see it!

Mr. N: (Off mike) Oh, Jenny, here's the bed warmer.

Jenny: The bed warmer! How did we ever forget that?

Mr. N: (On mike) I don't know. We'll be needin' it next winter.

Jenny: I'd hate not to have one.

Mr. N: Well, you take it on down to the wagon. Then you'd better go down to the Johnsons.

Paul: Can I stay and see the fire?

Mr. N: No, you might get hurt. Run along with Jenny, now.

Paul: But I want to help!
Mr. N: Now you do as I say. Take him along, Jenny.

Jenny: All right. Come on, Paul.

Mr. N: We'll be through this afternoon.

Jenny: All right, Goodbye. Be careful.

Mr. N: We'll be careful. Here, don't forget the bed warmer.

Jenny: (Off mike) Oh, yes. Well, let's go, Paul.

John: (Off mike) Shall I start it, Pa?

Mr. N: Wait'll I get over there.

John: (On mike) The wind's pretty strong.

Mr. N: (Off mike) Yes. She'll go fast.

John: Well, here goes!

Mr. N: (On mike) All right, start it.

SOUND: (CRACKLING OF FLAMES) (CONTINUING)

John: There she goes!

Mr. N: Watch out! Don't get your jacket on fire!

John: I already burnt my hair a little.

Mr. N: Well, be careful now!

John: Want me to set the other corner now?

Mr. N: Guess you'd better. These logs 're good and solid.

John: She'll go fast then all right.

Mr. N: But don't burn yourself.

John: (Off mike) I'll be careful this time.

Mr. N: At this rate we'll be able to rake the ashes to-

PAUSE: (HOLD FIVE SECONDS - FADE IN NEXT SCENE)
Paul: Here's another nail! Here's two more nails!
Mrs. N: All right. Now you go on over to the wagon.
Paul: Can't I look for any more nails?
Mr. N: No, we've got enough. You go on like your mother said.
Mrs. N: The rest of them are over there.
Paul: All right (Off mike) Look, John I found another nail!
Mrs. N: Well, Nathan, this is all that's left of the old place.
Mr. N: Yes, Martha. We've spent twenty decent years here.
Mrs. N: And raised a family of four children.
Mr. N: (Subdued) And we'll be leaving two more over on the hill.
Mrs. N: (Sighs) Yes.
Mr. N: This land will always be a part of us, Martha.
Mrs. N: And we'll always be a part of it, because we're leaving two of our children to keep it company.
Well, we'd better get on over to the wagon.
Mr. N: Yes, we'll have to get started for our new home.
(Pause)

PAUSE: (HOLD FIVE SECONDS. FADE IN CREAKING AND RUMBLING OF WAGON)(CONTINUING UNDER)

John: Are we almost there?
Mr. N: We should be at the settlement in about an hour.
John: Be glad of that. We had plenty o' trouble—especially fordin' those rivers.

Mr. N: We did have a little trouble.

John: A little trouble!

Mr. N: Well, when I was a boy we didn't even have a trail to follow. Couldn't use horses at all.

John: Why not?

Mr. N: The woods was too thick.

John: Did you walk all the way?

Mr. N: And took our chances with the Injuns besides.

John: The Injuns is fr...

**SOUND:** (SHOT)

John: What was that?

**SOUND:** (WARWHOOP)

Mrs. N: Injuns!

John: Redskins!

Mr. N: Stop the wagon, John! Quick!

**SOUND:** (SOUND OF WAGON OUT)(WARWHOOP)

Mr. N: Quick! Everybody down in the bottom!

**SOUND:** (SHOT)

Paul: I'm afraid!

Mrs. N: Here. Crawl over beside me!

Agnes: Father, you're hurt!

Mr. N: That first shot just nipped me on the cheek. Never mind that, now.
Jenny: But Father...

**SOUND:** *(SHOT)*

Mr. N: Now you stay down behind those kettles. That shot came pretty close.

**SOUND:** *(THUMP OF ARROW HITTING WOOD)*

John: There's an arrow!

Mr. N: There can't be very many Injuns.

John: How many, do you s'pose?

Mr. N: Think there's only two.

John: And only one's got a gun.

Mr. N: He prob'ly can't shoot straight. Injuns never can.

John: *(Whispering)* Pa! I see one!

Mr. N: Where? I'll take a shot at 'im.

John: *(Undertone)* Over there behind that stump!

**SOUND:** *(SHOT)*

Mr. N: Missed 'im! Watch out! He's gonna shoot!

**SOUND:** *(SHOT)*

Mr. N: Gimme the other gun while you load this one.

Mrs. N: What if they shoot the horse?

Mr. N: Nothin' we can do about that. Just have to hope they don't think about that.

Jenny: What are we goin' to do? What if they keep us here 'till dark?

Mr. N: We'll think about that when the time comes.
SOUND: (SHOT)

John: Did you get 'im that time?

Mr. N: Don't think so. He's too close to the ground.

SOUND: (HOOFBEATS IN DISTANCE) (CONTINUING)

Mrs. N: What's that?

Jenny: More Injuns?

John: Can't see 'em very well yet.

Mr. N: If it's Injuns we'll have to run for it!

SOUND: (HOOFBEATS APPROACHING)

John: It's white men!

Mr. N: Men from the settlement!

Mrs. N: We're saved!

Jenny: Thank heaven!

Mr. N: Stay down. Those Injuns is still there.

John: No, there they go!

Mr. N: Watch out. I'll take another shot at 'em!

SOUND: (SHOT)

John: They're gone!

Mr. N: Well, let 'em go.

SOUND: (HOOFBEATS APPROACH AND STOP AMID SHOUTS OF WHOA! WHERE'S THEM PESKY REDSKINS, ETC.)

1st Horseman: Whoa! Where'd they go?

2nd H.: Where's the redskins?

Mr. N: The Injuns is gone, thanks to you.

3rd H.: Figured somebody was in trouble.
Mr. N: You was right about that all right.

John: The Injuns left when they saw you comin'.

Mr. N: Didn't think there was any Injun trouble hereabouts.

1st H.: Haven't had much till last week.

2nd H.: Last week some renegade white man stole a bunch o' pelts from a couple Injuns, and we've had trouble ever since.

3d H.: Yeah. I'd like to get my hands on that white man.

Mr. N: Well, we're mighty grateful to you people.

1st H.: That's all right. It's lucky we heard the shots, though.

2nd H.: Where you headed?

Mr. N: We're headed for the settlement. Plan to settle around here if there's any land.

3d. H.: Well, there's plenty o' land. We'll be glad to have you folks with us.

Mr. N.: By the way, this is my son John, my wife, little Paul, and over there behind the kettles my daughters, Jenny and Agnes.

1st H.: We're glad to know you people.

2nd H.: When you get ready to clear your land, we'll help you.

3d H.: Yeah. We all like a log- rollin'.

1st H.: The women folks can stay with us, 'til your cabin's done. My wife'd be glad of the company.
Mr. N.: That's very good of you. I hope we can help you people out sometime.

1st H.: You'll have plenty of chance for that later.

2nd H.: Yeah, that's what neighbor's for. We help you, and you help us.

John: Say, that's just what Pa said before we left!

1st H.: And he was right. It takes a lot o' teamwork for folks to live long in this country!

Music: (Up for ten seconds, and out)

Mrs. N.: Quiet, Paul.

All: (Mr. N. begins, other chime in) The Lord is my shepherd; I shall not want.

Music: (Steals under and continues)

All: He maketh me to lie down in green pastures. He leadeth me beside the still waters. He restoreth my soul. Yea, though I walk through the valley of the shadow of death, I will fear no evil: for Thou art with me. (Fade) Surely goodness and mercy shall follow me all the days....

Music: (Up strongly, and out)

PAUSE: (HOLD TEN SECONDS)

Girl: Gee, I think I understand now.

Boy: Yeah, we see.

Girl: Yeah. If we all do our job right, we can help our neighbors, and they can help us!
2nd Boy: Teamwork, that's what it is, teamwork!

Music: (Up, hold fifteen seconds, and out)

As has been stated before, the success or failure of any broadcast depends not only upon the program itself, but upon its utilization by the classroom teacher as well. This is true of in-school broadcasting over the loud-speaker system as well as of programs from a regular radio station. However, our perusal of the place of radio and loud-speaker systems in the field of the social studies proves that there are plentiful opportunities for the employment of these two instruments in this area of the work of the school. The true test, as always, is in the results obtained. If through the use of the two devices, pupils become more tolerant and fair-minded, more sympathetic with other peoples and times, and, finally, if they come to be more critical in their thinking than they would have been otherwise, we may conclude that our efforts have been well spent.
Our final topic is concerned with the relationship of music to radio and public-address systems. Music probably lends itself more easily to utilization over the airways than any other phase of the school curriculum, because of the tremendous amount of material in this field already available in usable form. Programs must be interesting as well as educational, so that in science, the social studies, and the like, special scripts must be written. Not so with music; except for introductory talks, it may be used just as it was originally written. Music, like poetry, is concerned with the rhythmic expression of the ideas and emotions of mankind; and rhythm, which is marked by regular recurrence of quantity, accent, and the like, is basic in human nature. The world therefore has known music in some form for countless ages—probably as long as human life has been in existence.

The all-inclusive aim in music on the air in education may be said to be the development in the pupil of appreciation for this mode of human expression. This concept may be broken down into the following more specific aims:

1. To cultivate a true love for music
2. To get pupils to feel beauty in music
3. To enable the pupil to see that music is the result of a desire on the part of human beings for the ultimate in expression
4. To help pupils to participate in the enthusiasm of the artist
5. To encourage pupils to enjoy good music
6. To furnish pupils with some information concerning the various musical instruments
7. To bring the school into closer contact with the public and to help school patrons and taxpayers become better acquainted with objectives and achievements in the music phase of education

Because of the fact that it is so basic in human life, and because of the large quantity of material available, music occupies more time upon the airways than anything else. Not all of it is good, from the point of view of most music teachers, to be sure; but at least jazz, swing, and the like might be used as starting points or even continuing points, in the cases of some pupils. We probably should appeal to their present understandings in order to "elevate" their tastes and achieve our aims.

The "Damrosch Music Appreciation Hour," over the National Broadcasting Company network, is probably the most famous program of this nature on the air today; last year was its twelfth season. It consists of four series graded to meet the requirements of different age levels:

A. Orchestral instruments and the human ear
B. Music as an expressive medium
C. The musical forms
D. The lives and works of great composers

Another National Broadcasting Company presentation, on the air since 1934, is the "Music and American Youth" series, in which pupils from various localities participate. Broadcasts for the fall of 1939 included musical programs by such schools as Pittsburg, the schools of New Jersey, Evanston (Illinois), Ilion (New York), Los Angeles, New York City, and Cleveland Heights (Ohio). Still other programs usable for both in-school and out-of-school listening are broadcasts by the Columbia Symphony Orchestra, Radio City Music Hall, the N.B.C. String Symphony, United States Navy, Marine, and Army Bands, the Rochester Civic Orchestra, the Rochester Philharmonic, and the Metropolitan Opera.

Besides utilizing these programs, many schools have inaugurated series of their own. In Humbolt County, Colorado, music lessons are broadcast daily on a county-wide basis. The plan for these broadcasts follows:

Primary lesson plans:
1. Play salute
2. Patriotic song
3. Tone drill
4. New song
5. Music appreciation lesson
6. Review of old songs

Lesson plan for upper grades:
The entire course was based upon a study of the history of America, and was called "America in the Making." The major portion of the time was spent on music, but music was incidental and supplied the background for history.
1. Flag salute
2. Patriotic song
3. Program for the day:
   First broadcast: The American Indian
   Second broadcast:
   a. Discovery of America by the Scandinavians
   b. Discovery of America by Columbus
   c. Colonization by European countries
   Third broadcast: The Revolutionary war
   Fourth broadcast: Thanksgiving and Christmas
   Fifth broadcast: Pre-Civil War
   Sixth broadcast: The Civil War
   Seventh broadcast: Reconstruction
   Eighth broadcast: Industrial movement and World War
   Ninth broadcast: Post-War period

It should be noted in the above program that for the upper grades, the music was incidental to the program. In other words, music may be easily integrated with other phases of the school curriculum. A similar plan is followed in the Sangamon County, Illinois, schools, where the facilities of station WCBS, Springfield, are used.

One difficulty in supplying music for schools over commercial stations is that the professional musicians' union often objects, and probably rightly so, to the employment of school orchestras and recordings. This difficulty may be surmounted by the use of the school-owned unit, as has been done at Cleveland. Thus more direct-school broadcasting could be done.

Opportunities for using the school public-address system are, as has been true in other subjects in the educational field, fairly numerous. Recordings, the school orchestra, and voice groups may be taken advantage of for developing music appreciation during home-room periods or at other times. They may used to supply the entire program or incidentally to celebrate Armistice Days, Thanksgiving, Christmas, Labor Day, first days of autumn, winter, and spring, Fire Prevention Week, Columbus Day, Halloween, first airplane flight, New Year's Day, Valentine's Day, Easter, Saint Patrick's Day, Mother's Day, Flag Day, the birthdays of famous men, and the like.

In the present chapter, then, we have scrutinized the possibilities for the use of radio and public-address systems in science, the social studies, and in music. We have discovered that these two instruments have much to offer when used as supplementary aids in these areas of the school curriculum, and when employed as possible means of integrating the work of the school. With this chapter we complete our study, except for a summarization and conclusion, which will be found in the next and final chapter of this thesis.
The purpose of this thesis was stated in the first chapter. It was pointed out in the opening quotation that

Education should be a conscious, methodical application of the best means in the wisdom of the ages to the end that youth may know how to live completely.

Therefore, it was stated that the skillful teacher, whether he be described by the use of the term "progressive," or simply dubbed "alert," will constantly be striving to better his educational methods. It was explained that such a teacher will be sensitive to the great changes in our democratic way of life, so that new instruments, new devices, new inventions, may, if they are worthy, become a part of his instructional procedure. It was argued that education in the past has, to a large extent, held to the concept that the purpose of the school is simply to impart knowledge; but that in reality the goal of education has broadened to include the adjustment of the individual to the society of which he is a part. It was further stated that radio is one of the most promising and powerful social instruments devised since the invention of printing. Therefore it was claimed that the recognition

1. See page 1.
of this potency of broadcasting, plus the fluid nature of modern life and the consequent new aims in education, necessitates the consideration by teachers of possible uses for radio and public-address systems in the school. Finally in Chapter I, radio and public-address systems were defined.

Chapter II was an attempt to demonstrate the importance of radio and public-address systems in contemporary life. It was pointed out that these two instruments already occupy influential positions in such fields as advertising; religion and education; entertainment and recreation; literature; news, government, and politics; war and diplomacy; safety and public health; arts and sciences; music; and communication and transportation. Lastly, it was stated that in the United States approximately 28,000,000 families own at least 40,800,000 radios capable of reaching about 80,000,000 listeners.

Our next step was to investigate the present status of radio and public-address systems in the school. It was argued that if these two devices are to be employed in the school, they should be used in accordance with present educational objectives; acceptable aims for the school were then presented. It was explained that teachers have been aware for some time of the importance of broadcasting, and of its possibilities for the school, but that too often radio equipment has been purchased before any well-organized use could
be made of it. It was pointed out that the quarreling between educators and commercial broadcasters has now largely died down because of better cooperation between the two. Further, it was shown that many individual schools, as well as school systems, now make good use of broadcasting in one way or another: through their own educational stations, through employment of the various schools of the air, or through the use of suitable programs not particularly intended for school use. Finally, in Chapter III, certain specific objectives for radio and public-address systems were suggested.

In Chapter IV, it was pointed out that broadcasting may be used to advantage in the field of English composition and literature. Objectives and means of accomplishing them were proposed for the English studies, and suggestions were made for utilizing radio and public-address facilities in this connection. This discussion was followed in the fifth chapter by a similar treatment of possibilities for the employment of the two devices in the fields of science, the social studies, and music.

It seems advisable, then, to terminate this thesis by summarizing our findings and the relating conclusions.

First, it is apparent that every teacher should take cognizance of the relation of the radio and long-speaker systems to his particular field. Our study seems to indicate that these two inventions probably affect in some manner every subject taught in the school—principally because they
occupy so important a position in the out-of-school life of
the child. Further, we may conclude that in practically all
phases of school life, radio and public-address facilities
may be used to advantage as novel, interesting, and effective
aids to teaching.

It is clear, however, that these two instruments
should not be used out of proportion to their worth. Like
the movie and the phonograph, they should have a proper place
in the educational scheme. They are not destined, as some
people have believed, to take the place of the classroom
teacher— as a matter of fact, much of their effectiveness
depends upon that teacher.

It should be born in mind that broadcasting utilizes
only one sense, the sense of hearing. Therefore a radio pro-
gram must be made as interesting as possible, through the use
of dramatizations, numerous illustrations, and music or other
entertaining devices.

The following general conclusions also may be formu-
lated:

1. The ideal situation would include a
   radio unit owned and controlled by the
   school system, because of:
   a. The greater availability of time on
      the air
b. The increased possibility of building programs more suitable to the particular ages, backgrounds, and maturities of pupils

c. The possibilities for broadcasting in a greater number of educational fields
d. The greater feasibility of allowing time during the broadcast for activities in the classroom itself

2. There is a need for more radio scripts usable for education in the different fields of the school curriculum.

3. Schools without broadcasting facilities of their own are not necessarily at a tremendous disadvantage, since they may often take advantage of the facilities of commercial stations and networks.

4. Many individual stations and regional networks, as well as the various schools of the air, already offer a variety of programs suitable (even though sometimes not intended) for both in-school and out-of-school listening.

5. In general, the utilization of radio programs consists of the following:
a. Preparation (five to fifteen minutes, in which a discussion is held concerning the broadcast about to be heard, or material relating to the program is presented)

b. Listening

c. Follow-up (may be discussion or other activities, to be decided upon by the classroom teacher)

6. Schools should make a very careful investigation of the possibilities of radio and public-address systems in their own situation, before investing in expensive equipment.

7. Radio and public-address systems in schools should be administered in a democratic fashion, so that teachers, script-writers, and principals may cooperate in producing the most effective programs, and in order that these programs will be utilized to the fullest possible extent.

8. The radio and public-address systems may serve as added means of motivating the pupils to increased activity and participation in the work of the school.

9. The radio and public-address systems may serve to integrate the work of the school by requiring the cooperation of several areas of the
curriculum for the production of programs of high quality.

10. Finally, one disadvantage at present is the difficulty in dovetailing educational programs on the air with the school schedule of classes.

Ultimately, the problem of educational broadcasting in any particular school system will be solved in one of four ways: First, teachers may not employ the radio or public-address system in any way whatsoever. Second, teachers may "get along" by utilizing, whenever possible, educational radio programs presented by commercial stations and schools of the air, and by taking advantage of the facilities of commercial stations. Third, the school may purchase a good machine for making recordings of important programs suitable for school use; these recordings may then be played and re-played whenever it is desirable to do so. And fourth, radio stations may be owned and operated by counties, regions, or large school systems.

These four possibilities for dealing with the question of education by radio present an interesting challenge to the educator. The one which is selected by any one school or school system will be dependent upon conditioning circumstances—upon the financial situation of the school district, and upon the alertness, energy, experience, and ingenuity of teachers and administrators.
Appendix A

Radio Terminology

(Note: The following information is taken largely verbatim from a pamphlet supplied by the Radio Script Exchange of the United States Office of Education. This pamphlet may be obtained free of charge by anyone interested, by writing to the Office of Education, Federal Security Agency.)

I. Continuity

The radio programs which are heard over the air 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**: 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. Usually he is called a script writer, at present.

**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 an announcer only, such as introductions of musical numbers, introductions of speakers, commercial announcers, 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 broadcast.

SUSTAINING SHOW: A program for which time is not purchased by a commercial company. Since broadcasting companies must maintain service throughout the time span agreed upon, that time which is not sold must be filled with "sustaining" programs.

COMMERCIAL: 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: 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. A gag-show is a program made up of a succession of jokes or alleged jokes.

TIE-IN ANNOUNCEMENT: A commercial announcement given by a local station announcer immediately after a prearranged cue given on a 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, by fading out of the microphone, or a short period of
silence.

ACROSS THE BOARD: A program scheduled five days a week at the
same time.

BRIDGE: Sound effects or music used to link dramatic episodes.

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 programs by bringing all
these factors into harmony. He may make corrections and any re-
visions he deems desirable in the script whenever he feels such
are necessary for an improved program. On his shoulders rests
the complete responsibility for the quality of the program.

CAST: As a noun, the people who appear on the program not in-
cluding musicians. As a verb, the process of selecting those
who are to take the speaking parts.

AUDITION: A studio test of talent, or a show, or both, prior to
a broadcast to determine whether that talent, show or both should
be broadcast.

M.C.: Master of ceremonies.

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

INGENUE: An actress whose voice carries an age quality of 16 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 ingenue and should have quality of authority.

CHARACTER: An actor or actress 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 INGENUE: (16 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.

PICK UP YOUR CUE: A command by the production director to the actor to begin speaking his lines immediately after the last work of the preceding speaker's last sentence.

CUE: A signal, either vocal 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 of 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 a 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 the 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 hesitations or defects in the delivery of the lines.

PACE: Speed of delivery. A variation of pace is used to express a variation of thought.

LIGHT AND SHADE: Variations from calmness to tenseness, softness to shouting, which keep a production from dull sameness.
ACCENT: A 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 man to the cast to be ready to go within a few seconds. Also, a program whether dramatic, musical, or straight talk which is relied upon in 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 a 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.

ACROSS-MIKE: This term is applied when sound is directed across the face of the microphone.

BACKGROUND: Music or sound effects used behind or under dialogue or song.

BITE IT OFF: A direction to stop the music in a radio program.

CROSS-FADE: Where one set of sound, music or otherwise, is being faded out while simultaneously other sound is being faded in. A technique commonly used to make transitions between dramatic scenes.

FUZZY: A term usually applied to vocal sounds which are not clear.

HOLD IT DOWN: A command to the engineer at controls to reduce volume.

MONITORING: Means listening to a production for the purpose of studying it. Monitoring is very important in determining the proper levels for sound effects.

BLANKOUT: To reduce volume of the microphone and then turn it completely off.

BLASTING: A distortion of sound caused by overloading the microphone, speaker, or other transmitting equipment.
BRING IT UP: A direction to increase volume.

LOG: A record required by law of every minute during which a station broadcasts.

DEFINITION: Clarity of transmission. It is that characteristic of a good production which enables the listener to distinguish between actors in a drama or to identify various musical units in an orchestra.

III. SOUND

SOUND MAN: One who creates, either by recorded effects or manual effects the sounds required by the script.

PANCAKE TURNER: One who operates a sound effect machine for the purpose of playing music on the air.

PLATTER: Musical records played on a sound effect machine.

ELECTRICAL TRANSCRIPTIONS: Sound transferred to a 16-inch disk, 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 disk of 10 or 12 inches diameter which does not have a 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 from which 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 loudspeaker. Certain types of microphone 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. The engineer does this 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.

LEVEL—OR VOICE 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 arrangement of
musical groups to obtain a natural blending of tone.

**CUT A PLATTER:** To make a recording.

**DAMPEN THE STUDIO:** The increase absorption of sound by using
such portable sound equipment as monks cloth screens, draper-
ies, and rugs or by bringing more people to the studio.

**LIVEN THE STUDIO:** By taking sound absorbing materials out of
the studio, pushing back curtains exposing window and wall sur-
faces, and by setting up sound-reflecting screens.

**DEAD END:** The part of the radio studio which has the greatest
sound absorption.

**LIVE END:** The part of the studio giving the greatest sound re-
flecting qualities.

**DUBBING:** The process of transposing recorded material from one
record to a new record.

**REMOTE CONTROL:** Refers to the engineering aspect of controlling
a program produced outside the regular studio and relayed by
shortwave or wire to the studio.

**NETWORK:** A term frequently used by radio engineers to designate any
programs broadcast which do not originate in their local studios.

**KEY STATION:** The station where a network program is produced.

**HAM:** An amateur radio transmitter operator.

**LEG:** A branch or link of stations in a network.

**PIPED PROGRAM:** A program which has been transmitted over wires.
**PICK UP:** Acoustical value of program. Also location of microphones in relation to program elements. The origination point of a broadcast. Also a device containing an electro-mechanical member which vibrates when in contact with a moving phonograph record, a modulated electric current for the purpose of making the record audible from a loud-speaker. Primary apparatus used to convert sound to electrical energy.

**ECHO CHAMBER:** A small room with resounding walls, used to give a hollow effect to certain dramatic scenes. The studio output is run into the echo chamber on a loud-speaker and picked up again on another microphone, thus giving the boomy echo effect. Latest developments are rendering the echo chamber obsolete. The echo effect is produced in modern studios by running the studio output through a mechanism which delays part of the sound, then feeds it back to the main line. The result is a distorted hollow effect.

**MIKE:** Short for microphone— an electrical device for translating sound vibrations into tiny electrical impulses which can then be transmitted over a wire or through space to a remote receiving station and there translated back into the original sound.

**CARBON MIKE:** Microphone which accomplishes the translation of sound into electrical impulses by the use of small carbon grains contained between two thin metal plates, called diaphragms, which are vibrated by the sound. It is no longer used for broadcasting purposes in most studios because of its tendency to produce an
annoying hiss.

**CONDENSER MIKE:** Microphone which accomplishes what the carbon mike does without the use of carbon granules by using the two diaphragms as the plates of what is known as an electrical condenser. The vibration of the plates caused by the sound correspondingly varies the electric current in the condenser and amplifier. This microphone is less sensitive than most other types and therefore requires a small amplifier within a few feet of the microphone itself and is usually built into the microphone casing or into the base of its mounting stand. There are many standard cases for this type of microphone and the various names sometimes given to it are usually descriptive of the case—the mike itself being fundamentally the same. A few examples are: camera mike, bullet mike, and desk condenser. These mikes are still used in some studios although they are gradually being replaced by the "velocity" or "ribbon" mikes.

**VELOCITY OR RIBBON MIKE:** Derives its name "ribbon" from the fact that it translates the sound into electrical impulses by means of a suspended metal ribbon which vibrates in accordance with the sound between the poles of a permanent magnet. This mike is so directional in its response that sounds coming from the sides of the microphone are only faintly heard over the loudspeaker, if at all. Actors can perform "fades" very easily on the ribbon mike by merely shifting their position from in front of the mike to the side.
**DYNAMIC MIKE:** Microphone which obtains its name from the dynamic loud speaker, the principle of which is just the reverse of the dynamic microphone. Whereas the dynamic speaker transmits the impulses in a moving coil of wire which is in a magnetic field, to a diaphragm which in turn translates these impulses into corresponding sound vibrations understandable by the human ear, the dynamic mike receives the sound vibrations upon the diaphragm and translates these into electrical impulses in the moving coil. Although this microphone was being generally replaced by the velocity mike, it is now finding favor again in many studios in a new, improved form called the-

**BALL MIKE:** (or any other name by which it may be called, as eight-ball, billiard, etc.) which is essentially a dynamic microphone about the size and shape of a billiard ball. This microphone is non-directional and sounds are therefore picked up with equal intensity from any angle, thus allowing a large cast to work around a single mike.

**BRUSH MIKE:** A very rugged type of microphone which looks like the frame of a mental hairbrush. Its small size and dependable ruggedness combined with high fidelity make it an excellent mike for portable and outdoor radio pickups or public-address systems.

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**SIGN LANGUAGE USED BY DIRECTORS OF RADIO PROGRAMS DURING THE BROADCAST**

- **Increase volume:** Move hands up, palms up.
- **Decrease volume:** Move hands down, palms down.
Begin your speech: Direct point at actor.
"Stretch it out": Draw hands apart slowly as in stretching a rubber band.
Speed up: Turn hand, with index finger extended, clockwise rapidly.
Move away from mike: Move hand away from face.
Move toward the mike: Move hand toward face.
Avoid the provisional cut: Tap head.
Watch me for cue: Point to eye.
Give the network cue: Show clenched fist to announcer.
Fade-out: Lower hands slowly, palms down. Turn clenched fist slowly.
O.K.: Form circle with thumb and forefinger. Other fingers extended.
Is program running according to planned schedule?: Touch nose quizzically (studio sign).
The production is proceeding as planned: Touch nose.
How is the balance?: Touch ear with forefinger, balance with both hands, palms down (studio sign).
Start the theme melody: Form letter "T" with forefingers.
Take the first ending and repeat the chorus: Hold one finger vertically.
Take the second ending and conclude: Hold two fingers vertically.
Repeat: Same as above.
Play entire arrangement: Lower hands, palms vertically.
Conclude with the chorus: Clench fist during selection.
Play predetermined fanfare: Salute.
Start at the beginning of the musical number: Point up.
APPENDIX B

SOME RADIO SOUND EFFECTS

(Note: The following information is taken from a "Handbook of Sound Effects," a pamphlet which may be obtained free of charge by writing to the Educational Radio Script Exchange of the United States Office of Education.)

Airplane Motor

a. Operate an electric vibrator with a soft rubber attachment on the membrane surface of a small tom-tom.

b. By properly placing a piece of folded paper so that it will strike the blades of an electric fan, a fairly good effect may be produced.

Animal Sounds

A dog's bark can be made by cupping the hands over the mouth and "woofing" into them. There may be persons present who can imitate other animal sounds needed.

Battle Sounds

Heavy background noises may be produced by using bass drums or kettledrums together with the thunder sheet described under "thunder." (See shots and machine guns.)

Bells and Chimes

a. Triangles and chimes often found in high-school community orchestras might help. Glasses with varying amounts of water, tapped lightly on the edge will give a reasonably good effect.)
b. Some excellent bells can be made from automobile brake drums. Brake drums of different sizes will give different tones.

**Bird Calls**

Bird calls can be made by an imitator, or a warbling sound which simulates the twittering of a canary can best be done with a small bird whistle of the type which holds water.

**Bird Wings (flapping)**

Flap pieces of canvas near the microphone.

**Bones Rattling**

Suspend wooden sticks with strings from a board. Manipulate the board so that the sticks clack together.

**Breeze (summer breeze)**

Fold two sections of a newspaper in half, then cut each section into parallel strips. When these strips are swayed together the rustling sound of a summer breeze is produced.

**Brook Babbling**

Blow air through a straw into a glass of water. Experiment with varying amounts of water and varying speeds.

**Building Crashing**

Crush two strawberry boxes near the "mike"; drop crash box containing gravel and pieces of window glass, with the roar of a kettledrum or thunder sheet held in background.

**Bushes Crackling**

Manipulate a small bundle of broom corn close to "mike."
Chopping Wood

Chop a piece of 2 by 4 wood with a small hatchet near "mike."

Clock Sounds

Use old clocks—have a variety of them.

Coal Cars

The sound of loaded cars approaching can be made by rolling a pair of roller skates over a piece of iron, starting off mike and bringing them in close as desired. A little gravel sprinkled on the iron may help the effect.

Coins Clinking

Some coins cannot be used because they produce a high note that is lost in transmission. Use nickels, quarters, half-dollars, dollars, or lead washers.

Cow Being Milked

Squeeze water-filled syringes alternately into a bucket.

Destruction Noises

Crush and break strawberry boxes etc. held close to "mike." Add breaking glass by dropping box filled with broken glass, and "thunder" sounds, if desired.

Dishwashing

Actually wash dishes before the microphone.

Door

Hollow clang of iron doors opening—Draw a roller skate over an iron plate. Rattle heavy chains and key in lock to add to the effect.
Ordinary door—A "studio door" with appropriate hardware hinged into a frame is necessary. It need not be full size, but should be substantial enough to give the correct sound. Heavy hardware must be used.

Squeaking door—Squeeze the surfaces of a leather billfold together so that they slip just enough to squeak. Some old wooden chairs might give the desired effect.

Echo Effect or Speech in a Tunnel

Suspend a solid waste paper basket or any other good sized container horizontally so that the open end faces the diaphragm of the microphone. The actor then stands behind the mike so that most of his voice goes into the container and then is reflected back into the microphone.

To give the voice a hollow ghost-like sound, place one end of a 10-foot length of a two-inch pipe about two feet from the mike. The actor will then speak into his hands which he cups over the other end of the pipe.

The illusion of a voice coming over an old radio or a telephone receiver, sometimes called "talk-back effect," may be obtained by having the person in front of the microphone talk into a large glass jar.

Engines

A toy steam-engine operated near the mike will give a fairly good imitation of a large steam-engine.
Explosion—followed by hissing blast of wind

The effect can be made with heavy blows on a drum; then bring in wind machine.

**Explosion**

Drop about a dozen shot into a stem type standard basketball bladder, and blow the bladder to normal size. Hold the bladder by the stem to within three inches of the "mike," then give it a sudden upward jerk.

**Falling Body**

A squash provides the dull sickening thud of a body hurtling to the sidewalk. By dropping a gunny sack half-filled with sand on the studio floor, one can produce the sound of a heavy object falling to the ground or floor.

**Fighting Sounds**

Many fights are fought on the radio by whacking a rubber sponge with the fist.

**Fire**

The crackling of fire may be produced by twisting cellophane near the "mike"; also, the breaking of the stems of broom straws, or the crushing of wrapping paper will give the various effects of crackling fire.

**Footsteps on Stone or Cement**

This sound may be produced with hard-heeled shoes on composition stone.
Gangplank Lowering

Take two two-foot lengths of two by four wood; pad both by wrapping in cloth. Knock the two blocks together to give a "thud" sound and then follow with "chain noises." For raising plank, start with chains and finish with thud.

Glasses

The clinking of glasses can be made by setting glasses down on wood at intervals; and water poured into them will give the effect of bartender filling them up.

Hail

Drop rice on glass, tin, or wood.

Hinges Squeaking

Turn pegs in holes drilled in a block of white cedar wood.

Hissing Sounds

The hissing may be made with any of a variety of wind machines and compressed air tanks. If no such equipment is available, have two or three persons hiss into the sound "mike", spelling each other as one stops for breath.

Hoof Beats

A pair of cocoanut shells clapped together in proper rhythm will give a "clappety clap" of a horse on a hard road. Two plumber's suction cups pounded against the chest will give sounds of hoofs beating on turf. Half cocoanut shells or rubber suction cups "clapped" slowly in a box containing earth give a very satisfactory effect.
Horns

Horn sounds are frequently needed. Use electric horns with different tone qualities, mounted on a padded board with terminals for battery attachment and with individual push-button controls.

Ice Crackling

An electric light carton crumpled near the microphone gives the effect of crackling ice.

Ice Jam Creaking

Twist a child's balloon which is inflated.

Indian War-whoops

Have group of men imitate Indians in background.

Insects—Cicadas, Katydid, Crickets

Use actors who can imitate them, or toys that make clicking sounds.

Key Grating

Use large key in an actual lock.

Machine Gun

Rap two sticks on a pasteboard carton (oatmeal box), or use an electric vibrator, passing it over a drum.

Machinery

Use a toy motor or other small motor near microphone.

Marching Feet

Construct a wooden frame about two feet square. Across the frame string wires or strong cords, laterally and about two inches apart. From the wires suspend wooden pegs about five
inches long and an inch in diameter. Space the pegs so that they are about two inches apart along the wires or cords. By dropping and raising the edges of the frame so that the pegs drop upon different surfaces in the proper rhythm, the sound of marching feet, whether that be on hard roads or turf, can be effectively produced.

Motorboat

Use rattles and ratchets of the type used on Hallow'een.

Oars in Oar-locks

Twist or turn one block of wood on another. Simultaneously turn an ordinary doorknob in rhythm with the intended action of the oars. This should be done close to the "mike."

Picks and Shovels - to give effect of miners at work

Use a child's toy spade in a box of dirt, to give a scraping and shoveling effect, and simultaneously strike the dirt and stones with a hammer.

Rain

Rain can be simulated by sand or salt slipping through the fingers or through a funnel onto cellophane, or by water poured from a sprinkling can into a tub with some water already in it. Or try a ball of crumpled cellophane loosely wrapped in tissue-paper and lightly rolled between the hands.

Rapping

Strike a desk with an ordinary gavel.
Roar of a River

Fill a large washtub half-full of water and draw a flat paddle through the water. Experiment for speed and vigor.

Rocks Crashing

Drop an armful of rocks onto other rocks in a box. To lengthen the crashing sound have more than one person drop the stones.

Screech of Automobile Brakes

Slide a drinking glass with the top placed against a pane of glass. Or drive two or three nails through a piece of wood and rub the points of the nails on a pane of glass.

Ship Pulling at Mooring Lines

Rotate an ordinary hair brush on the surface of a base drum to give the sounds of waves breaking away from the boat. Might also use the sound of straining mooring lines.

Shots

Shots are usually made with a small tamborine-like frame with a membrane, to which is attached a pliable metal spatula. When the spatula is bent back away from the membrane, then quickly snapped against it, the sound is like a shot. Another good way is to strike a padded leather cushion with a thin, flat stick or with a whip. Try a balloon pricked with a pin. A shot similar to that of heavy artillery may be produced on a bass drum or a tympano. If the whistling sound of the bullet or shell is desired, it may be produced vocally by whistling quite close to the microphone.
Shutter Banging

At irregular intervals slam two pieces of wood together.

Slap

Slap the hands together—not to close to the microphone.

Splash

Drop a flat block of wood into a tub of water well off "mike." Be careful not to hit the sides of the tubs. As a precaution, line the tub with canvas.

Steps, Limping, etc.

This sound can be made with the hands on a table on which twigs and leaves have been placed, in an increasingly heavy manner to suggest approach. The limp is suggested by putting one hand down more heavily than the other.

Surf

Rub a stiff scrubbing brush with a rotary motion over the head of a drum or tympano; or roll a few beans on a window screen or drum head. A splash cradle can be used for this effect. It consists of a water-tight box mounted on rockers and containing two or three inches of water. Rock the cradle back and forth slowly, allowing water to swish from side to side.

Swords

Clash iron rods together.

Telegram Key

Use a regular telegraph key. (Sending an intelligible message is prohibited by law.)
Thunder

Thunder-sheet- Your hardware dealer can furnish you with a piece of thin metal which you can suspend vertically from a wooden clamp. Strike the sheet with a padded mallet, or twist the sheet so as to make it reverberate. A bass drum and tympano can be used to advantage. An inflated basketball bladder containing about fifty small buckshot gives a convincing rumble when agitated near the "mike."

Train

Perforate the bottom of an ordinary break or cake pan with a tenpenny nail, pounding the nail through from the inside out so that the flanged tin makes a rough bottom. Attach a very stiff scrub brush to the edges of the pan with a short length of small steel chain. By rubbing the brush in proper rhythm over the bottom of the pan, so that the chain also grates over the rough surface, you may create a fairly convincing train sound. A double-value whistle, if blown intermittently, will add to the effect.

Underbrush Noises

Twist a bundle of straw near the microphone.

Walking on Gravel

Fill a long shallow box with gravel and have someone actually walk on it.

Walking Through the Snow

Squeeze a box or bag containing corn starch with the finger,
in front of the microphone. By twisting the thumbs in a bowl of cornstarch, a sound of walking through heavy, crusty snow may be effected.

Water Effects

One of the most indispensable effects is that of water splashes, swimming, lapping of water against a boat, etc. A square metal tub of heavy copper twenty inches by twelve inches deep should be made, or if this is too expensive, purchase a galvanized washtub. Inside of this fit a canvas lining to keep the water from hitting the metal walls. A removable paddle-wheel may be mounted horizontally, not vertically, in the tub to facilitate operations.

A garden variety spray tank with several gallon capacity, equipped with a hand pump and a hose can be utilized for a water faucet, shower bath, water-hose, and other effects.

Whistles

Steamboat whistle—There are square, box-like whistles on the market which are used in major studios for this effect. Or perhaps a boy or man can be found who can imitate the steamboat whistle if he stands away from the mike and cups his hands. Or the sound may be made by blowing into an ordinary section of pipe held just below the lower lip. The blower must vocalize the correct tone as he blows.

Frisco whistle—A whistle with a slide that can vary the pitch in a sliding manner.
Wind

A drum made of screening material, set up so that it can be rotated against a fixed piece of canvas stretched across the revolving surface of the drum is most effective. The intensity of the wind may be governed by the speed of the rotary drum. A fly-wheel of wands when rotated by a high speed electric motor will give a fairly good effect.

Wood Splintering

Crush match boxes, strawberry boxes, or peach crates according to the nature of the sound desired.
APPENDIX C

RADIO APPARATUS AND SUPPLIES FOR SCHOOLS

(Note: The purpose of the list below is merely to provide the reader with a rough conception of the apparatus necessary for schools deciding to employ radio and public-address systems. The prices quoted are as of the present (July, 1940), and are neither high nor low, but represent moderate costs for good, dependable equipment.)

1. Individual classroom radio: Any radio of well-known make may be used, but actual experimenting with those of different makes should be done, for some types give better reception in certain localities than others. The price may be from $40 to $70.

2. School radio and public-address system:
   a. Radio receiver: Complete with 10 room switches, 15 watt amplifier, 3 1/2 inch watt call-reply amplifier, standard phonograph headphone monitor input. (Some schools will not want to use the monitorial apparatus.) This radio has a capacity for up to 40 room switches. The approximate (moderate) cost, less tubes, $360.
   b. Kit of matched tubes for the above: Cost, about $25.
   c. Additional switches: For each group of ten, about $40.
   d. Phonograph equipment: Either a 10-inch record changer, or 16-inch turntable (latter is more practical), or
both. Price, about $55 for either one.
d. Master switch: For up to twenty rooms; Price, about $20. For up to forty rooms, about $30.
f. Wire and incidentals: Unless conduits have been installed when the building was constructed, shielded wire must be used. This costs about 3¢ a foot. In a large building, several miles of wire will be used. Little can be said regarding incidentals, which include the cost of installation. These will depend upon labor cost, difficulties encountered, etc.
g. Classroom speakers: Cost of each, from about $18 to about $30.
h. Microphones:
   (1) Dynamic: Not easily affected by climate, rugged, good for general purposes. Price, from $25 to $35.
   (2) Crystal: Fair speech production. Price, from about $15 to $40.
   (3) Velocity: Somewhat more sensitive, price, from $25 to $50.

3. Recorder: Should be very good quality, and handled by one or two people only. Prices vary from $60 to $700.

(Note: Prices quoted are subject to the usual school discount.)
APPENDIX D

VOCATIONAL OPPORTUNITIES IN RADIO AT THE PRESENT TIME

(Note: Due to fluctuation both in number employed and wages, and because of the wide range in salaries, detailed information on the subject of vocational opportunities in radio is difficult to obtain. Therefore only data of a general nature is presented here.)

1. Total annual payroll of the radio industry: $500,000,000 estimated).\(^1\)

2. Total number employed in the radio industry: 400,000 estimated).\(^2\)

3. Set manufacturing:\(^3\)
   a. Annual payroll: $80,000,000.
   b. Number employed: 75,000.
   c. Approximate average weekly wage: $23.

4. Broadcasting stations:\(^4\)
   a. Full-time employees (including regularly-employed artists, actors, etc.): 18,359.

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2. Ibid.
3. Ibid.
4. Broadcasting, April 15, 1939, p.15. This includes only 660 stations. There are now (see Broadcasting, January 1, 1940, p.14) about 810 stations.
b. Average weekly salary, full-time employees: $45.20.

c. Part-time employees (not including high-salaried network artists, actors, etc.): 4,377.

5. Index of employment (as of December, 1939) in the radio industry, based on a three-year average (1923-1925) equal to 100:5

a. Employment index: 162.3.


c. Average weekly earnings: $22.71.

d. Average number of hours worked weekly: 38.6.

e. Average earnings, hourly: $.59.

The figures presented indicate the following general conclusions:

1. The average weekly wage to regular employees of broadcasting companies is high ($45.20); however, the salaries of the extremely well-paid artists and actors probably are responsible for this high average.

2. Only a comparatively few (less than two in every ten thousand of the population) are employed either part-time or full-time by broadcasting companies.

3. Less than six persons in every ten thousand of the population are employed in radio set manufacturing, and those at an average weekly wage of $23.

4. Wages for the radio industry as a whole average about $1250 yearly.

5. About three persons in every thousand of the population is employed in the radio industry as a whole.

In addition, it may be concluded that vocational opportunities in the radio industry, as elsewhere, at present are limited. However, the field is expanding continuously: More broadcasting stations are being licensed; more radio sets are being built, and more are being sold; more actors, artists, radio engineers, "gag" writers, script writers, announcers, program managers, advertising solicitors, etc. are needed. Therefore persons with the proper ability will, in all likelihood, find that there is yet opportunity to establish a vocation in the field of radio.
APPENDIX E

EDUCATIONAL RADIO SCRIPT

"CHRIST OF THE ANDES"

This program is one of a series of 26 chapters of "BRAVE NEW WORLD", a weekly presentation of the United States Department of the Interior, Office of Education, and the Columbia Network's Department of Education, dramatizing important epochs in the history of the Latin-American countries, presented in cooperation with the Pan American Union and the Works Progress Administration. (Nov. 1, 1937 - April 25, 1938). The script remains the property of the Government and must not be sponsored commercially.

(Written by Bernard G. Schoenfeld)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Office of Education
CAST

VOICE: Disembodied...confidential voice.

2ND VOICE: The same, but a different voice level.

WIFE, HUSBAND: Any young wife and husband sitting at home, listening to the radio.

RADIO VOICE: A news commentator.

GENERAL,

COLONEL: Typical harsh army men; get contrast in voices.

MAJOR,

CAPTAIN

AIDE: A young career diplomat.

ROCA: President of Argentina; impressive voice.

BISHOP: Kindly, philosophical; pleading.

POLITICIAN: Suave, gracious talker; almost to point of sarcasm.

SHIP CAPTAIN, 2nd SHIP CAPTAIN: Non-national voices; contrast; vigorous, salty voices.

DEMAGOGUE: True to type; effective in propaganda.

CHILD: About 6 years old; get quality of sweetness and innocence in voice.

WOMAN: (Senora de Costa) Vital; full of bravo.

MAN: Suave, sarcastic.

WOMAN OF CROWD: Contract voices; pleading.

2ND WOMAN OF CROWD)
DIPLOMAT: British.

PRESIDENT: British; impressive voice.

2ND MAN ) Contrast with Woman and Man's voices.

2ND WOMAN)

ALONSO: An artist; gracious in tones.

CASTER )

2ND CASTER )

3RD CASTER ) Young poetic voices; contrast.

4TH CASTER )

5TH CASTER )

3RD MAN: Get contrast with 1st and 2nd man.

CROWD

SOUNDS

SLEIGH BELLS

CLICK OF RADIO BEING TURNED OFF

CALL OF ASSEMBLY ON BUGLE AND OTHER BUGLE SOUNDS

RAT-TAT-TAT OF SNARE DRUMS

METRONOME SOUNDS

CLICKETY-CLACK OF WHEELS ON RAILROAD

WIND SOUNDS

BOOMING OF CANNON

CROWD SOUNDS

CHORUS

MUSIC
CHRIST OF THE ANDES

1 - MUSIC: (HEROIC . . STIRRING . . FADE TO)
2 - VOICE
   Brave New World!
3 - MUSIC: (UP AND OUT)
4 - VOICE
   Open the book of Latin-America! Let the pages come alive with saints and sinners, beggars and kings, tyrants and rebels, scholars and adventures, blood and tears, laughter and comedy! The chronicle of countries from the Rio Grande to the Straits of Magellan . . twenty nations with a history and a culture to be admired, and a democratic ideal we share! We, the people of the United States have common hopes and common dreams with our southern neighbors! The __________ (GROUP, PLAYERS, ETC.) of the __________ (SCHOOL, ORGANIZATION) through the courtesy of the Office of Education and the Columbia Broadcasting System present "Christ of the Andes" . . a chapter of this mighty book of a brave new world . . . Latin America!
5 - MUSIC: (UP AND OUT)
6 - PAUSE:

VOICE

(VERY QUIETLY AND CONFIDENTIALLY, AS THOUGH TO THE LISTENING AUDIENCE) Do you hear us?

8 - 2ND VOICE

(IN THE SAME TONE) We have come to tell a story.

9 - VOICE

The story of the "Christ of the Andes".

10 - 2ND VOICE

We believe that all of you will want to hear it.

11 - VOICE

(TO HIS COMPANION) But there are some who cannot hear us.

12 - 2ND VOICE

Where?

13 - VOICE

(TO HIS COMPANION) Look... in that little home... that husband and wife cannot hear us...

14 - 2ND VOICE

I do not see them.

15 - VOICE

Look closer... that young couple in their white home, trimming their Christmas tree... let us try to reach them! You speak to them.

16 - 2ND VOICE

Very well. (TO THE YOUNG COUPLE) Young wife... young husband... listen to our story!
PAUSE:

(TO HIS COMPANION) They cannot hear me ... you speak to them.

17 -  VOICE

Young wife, standing by the window, listen to our story!

18 -  2ND VOICE

She cannot hear us ... nor can her husband ... his fingers are busy with a blue glass star ... 

19 -  VOICE

But we can hear them ...

20 -  2ND VOICE

(QUIETLY AND TO THE LISTENING AUDIENCE) Let us listen to what they are saying.

21 -  MUSIC: (IDENTIFIABLE THEME TO BE USED WITH EVERY HUSBAND AND - WIFE SCENE)

22 -  SOUND: SLEIGH BELLS VERY DISTANT

23 -  WIFE

Look ... look, John, it's snowing! And listen!

Sleigh bells!

24 -  HUSBAND

You and our child ... holiday time ... snow outside ... a fire in the grate ... what man can ask for more!

25 -  WIFE

(DULLY) Yes, John.
26 - HUSBAND
Why are you so quiet?

27 - WIFE
Come here ... take my hand ... 

28 - HUSBAND
You're trembling from the cold!

29 - WIFE
No ... no, darling ... I'm afraid.

30 - HUSBAND
Afraid? Of what?

31 - WIFE
By next Christmas our child and I may be alone ... everything will be as it is now ... the snow ... the sleigh bells ... this room will be warm ... but you will not be here.

32 - HUSBAND
I'll always be wherever you and our child are.

33 - WIFE
Next year you may be lying in a field ... a bayonet in your throat.

34 - HUSBAND
(LAUGHING) Is that the holiday spirit ... to think of war ...

35 - WIFE
Turn on the radio ... music is what I need ... carols from the church ...
HUSBAND
Presto! ... you shall have music!

RADIO
Flashes of the latest news! (NOTE: INSERT ON DATE
OF PRODUCTION THE NAME OF THE LATEST TOWN OR CITY IN
THE SPANISH WAR TO FALL) BLANK CITY - As thousands
of refugees fled the Spanish border tonight, a battle
raged ...

WIFE
Change that!

RADIO
... on the eastern flank and twelve hundred men were
killed when ...

HUSBAND
I'll tune it out ...

PAUSE:

RADIO
(A HYMN IS TUNED IN ... IT IS "HELLIGE NACHT" ... 
BEAUTIFUL ... PEACEFUL ... SUNG IN ENGLISH)

WIFE
Ah ... lovely ... so lovely

RADIO
(SUDDENLY) We interrupt this program to bring you a
special news bulletin! -- -- -- (NOTE: FILL IN ON DATE
OF PRODUCTION LATEST CITY IN THE SINO-CHINESE WAR TO FALL
As was aflame, planes swept over the city dropping bombs and ...

46 -
WIFE

(CRYING OUT) Turn it off! Turn it off!

47 -
HUSBAND

I'll try this station ...

48 -
RADIO

(A VERY UNCTIOUS VOICE) Peace on earth, good-will to men!

49 -
WIFE

TURN IT OFF!

50 -
SOUND: THE CLICK OF THE RADIO TURNED OFF .. THEN

ABSOLUTE SILENCE.

Even the air is full of horror ...

51 -
MUSIC: (OUT)

52 -
2ND VOICE

(TO THE LISTENING AUDIENCE) Let them turn off the radio ... it does not matter.

53 -
VOICE

It does not matter. Pick up a newspaper.

54 -
2ND VOICE

The black print also tells of war.

55 -
VOICE

Sit in the comforting darkness of a movie theatre... let the camera throw upon the screen the memory of a bayonet charge ...
56 - 2ND VOICE
No one can hide from actuality ...

57 - VOICE
Listen. The wife is talking ...

58 - MUSIC: (IDENTIFYING THEME)

59 - WIFE
If there were something we could do to stop war.

60 - HUSBAND
Come, darling. Dress up and we'll go visiting neighbors.

61 - WIFE
This mood ... this mood ...

62 - HUSBAND
I'll laugh at you until your mood is over.

63 - MUSIC: (OUT)

64 - VOICE
Laughing at an unseen fear is no defense.

65 - 2ND VOICE
Young husband, your wife is right.

66 - VOICE
Your wife is right. This Christmas is no proof that
peace may last within your room ... her fears are
justified ...

67 - 2ND VOICE
But fear should lead to action.

68 - MUSIC: (UNDER)
HUSBAND

I will not discuss war with you, my darling. There are other topics ... or a book ... or put some silver trimming on the tree ...

70 - MUSIC: (OUT)

71 - VOICE

Let them spend their Christmas Eve adding more silver to the tree ... there will be hidden fears within her ... and he will know, but keep his knowledge cloaked in merriment ...

72 - 2ND VOICE

And all the time high on a peak of the Andes, the snow falls gently on the figure of a Christ.

73 - VOICE

The Christ of the Andes.

74 - 2ND VOICE

Our story.

75 - VOICE

Time slips through our fingers like dust. Let us hurry.

76 - 2ND VOICE

We begin our story.

77 - VOICE

But the young wife cannot hear us, and if she could, she would not remember when it happened. She was not born yet.
2ND VOICE
(TO THE LISTENING AUDIENCE) But the others...

VOICE
Yes, you others, ... listening ...

2ND VOICE
Do you remember 1900? Thirty-seven little years ago?

VOICE
1900---In Argentina ... In Chile ...

2ND VOICE
Two countries ... Once friends and neighbors ...

VOICE
Now the chill of war made the people of these nations shiver ...

2ND VOICE
Frightened.

VOICE
In Argentina and Chile.

2ND VOICE
Listen to the war machines of Chile and the Argentine. Generals and their staff discuss a boundary problem... like animated puppets pulled by strings ... Both in Argentina and in Chile ... far across the Andes ... Like puppets of the devil god - war.

SOUND: FAINTLY. THE CALL OF ASSEMBLY ON A BUGLE ...

THROUGHOUT ...
SOUND: SYNCHRONOUS WITH THE BUGLE CALL ... THE
DISTANT RHYTHMIC RAT-TAT-TAT- OF SNARE DRUMS.

NOTE: (THE GENERAL AND HIS STAFF SPEAK LIKE PUPPETS
IN A SHARP, CLIPPED, ARTIFICIAL RHYTHM. BOTH THE
BUGLE AND DRUM INCREASE IN SPEED WITH THE SPEECHES).

GENERAL
Colonel, what is more important than a boundary?

COLONEL
A boundary, General, tells a nation how much gold she
owns!

MAJOR
How much land she owns!

CAPTAIN
Our interpretation of this boundary is correct.

MAJOR
Despite objections.

COLONEL
Objections on this boundary can be settle ... in our
way.

GENERAL
As your General I called you men together for that pur-
pose. There is talk of arbitration.

SOUND: LOUD, SHRILL LAUGHTER

MAJOR
Arbitration!
99 - COLONEL

Ha! Ha! Ha! Ha!

100 - GENERAL

Quiet! QUIET!

101 - MAJOR

Sorry, General.

102 - COLONEL

Sorry, General.

103 - GENERAL

This means war:

104 - SOUND: THE MEN TOGETHER EXCLAIM: "AH!............"

105 - GENERAL

Eighty thousand square miles of land. Our land. We will win by force. I want specific answers. How many trained reserves have we?

106 - COLONEL

Two-hundred thousand, General.

107 - GENERAL

Light cannon, Major?

108 - MAJOR

Up to the quota.

109 - GENERAL

Fine. Heavy artillery, Colonel?

110 - COLONEL

Ready for action.
Call the navy. Ask about the battleships.

We know. Two new ships. Gigantic. Invincible.

Then we're ready.

Yes, General.

Nothing is so important as a boundary. Capture eighty-thousand square miles of land or know the reason why!

Time for lunch, General ...

Food! I'm starved! ...

SOUND: BUGLE AND DRUM INCREASE SPEED BUT NOT VOLUME, UNTIL ITS RHYTHM SYNCHRONIZES WITH THE RHYTHM OF THE:

MUSIC: (UP AND OUT)

Eighty-thousand square miles between Chile and the Argentine.

Mountains with minerals hiddne in their bosom.

The Andes, gigantic backbone, cutting through Chile and
the Argentine. The question: Where does one nation
end and another begin?

123 - 2ND VOICE

How many miles of Andes belong to Chile? To Argentina?

124 - VOICE

So wars begin ... for land or gold or iron.

125 - 2ND VOICE

(TO HIS COMPANION) Wait! ... the wife is smiling ... does she hear us?

126 - VOICE

No. But listen to her.

127 - MUSIC: (UNDER)

128 - WIFE

John ... if the hopes of people of a nation flowed to-
gether in a common dream ... to end war ... could it
not be done? John ... could it not be done?

129 - HUSBAND

Er ... what? I dozed off. I was nodding. What?

130 - WIFE

Nothing, John. Go on and sleep ... the fire makes
one drowsy ...

131 - MUSIC: (OUT)

132 - VOICE

(TO THE YOUNG COUPLE) Yes, Sleep, John. Sleep. Sleep, brings forgetfulness.
Our story...

And so the Generals planned for war. In Argentina a president sat in his office and stared at an official document. His smug aide knows all the answers ... the President of Argentina stared at ... 

An ultimatum from Chile demanding:

Your Excellency, this ultimatum.

I agree with it.

Accept Chile's demands to arbitrate?

Why not?

Your Excellency - Argentina's pride!

The people of both nations do not want war.

The people's hands are always tied.

Their lips are not sealed.
We will have war.

No!

Within a few weeks, Your Excellency, in both Chile and Argentina, crowds will cheer the bands playing in the streets and flags will wave.

No!

The people of Chile will be told what monsters the Argentineans are. The people of the Argentine will read the stories of atrocities committed by the Chileans. And blood will flow like water from a faucet!

Never while I am President!

What can you do? The war machine is oiled ... the gear-teeth slip easily in the grooves ... noiselessly... not a hum ... the war machine is greased and polished!...

No! No! We will arbitrate!

Not so long as men's hearts leap at the sound of a drum!
153 - **PAUSE:**

154 - **VOICE**

**(TO THE LISTENING AUDIENCE)** This is a story of peace.

155 - **2ND VOICE**

This has a happy ending.

156 - **VOICE**

In Argentina and Chile women sat singing the same lullaby to their children. In Argentina and Chile the Presidents sleep restlessly . . .

157 - **2ND VOICE**

And Easter Sunday came.

158 - **VOICE**

There was a Bishop Benevente of Argentina. Let us never forget him.

159 - **2ND VOICE**

Generals and Colonels are forgotten, but not the words of that holy man.

160 - **VOICE**

**(TO THE COUPLE)** Young wife, let your husband sleep . . . try to hear us . . . to hear the words of the Bishop as he spoke from the pulpit that Easter Sunday in Buenos Aires . . .

161 - **2ND VOICE**

The words of Bishop Benevente.

162 - **MUSIC:** (UP AND UNDER)
Today we celebrate that morning when Mary Magdalen and the other Mary came to the sepulchre and found the stone had rolled away and that Jesus of Nazareth had risen and reached up into Heaven ... On such a day as this the words of the Prince of Peace should be engraved on the hearts of everyone. Man should turn to man as his brother, forgetting race and creed and color. Crush all thoughts of war! Let us stop it! Do not permit the fine young manhood of any nation to be wiped out! I cry peace! Christ is our Saviour and in his words lie the salvation of our civilization. Remember this day and make our deed worthy of Him who died so that we might be saved! Can not the day come when a statue of Christ the Redeemer be placed on a peak of the Andes where from its great height, the people of Argentina and Chile can see Him and remember His preaching and turn away from thoughts of war!

While, like a clashing theme, played against the symphony of peace, the puppets of the war machine ...

We need more guns, Colonel!
COLONEL

More guns, General.

GENERAL

The time is ripe! We need more men, Major.

MAJOR

More men!

POLITICIAN

Fellow constituents, it is sad that I am past the age when I can serve my country's cause. But I am sure that the young men of our nation will take up arms to assure the safety of our boundaries forever...

SHIP CAPTAIN

First mate, speed the boat! These munitions must reach Chile!

2ND CAPTAIN

First mate, speed the boat! These munitions must reach Argentina!

DEMAGOGUE

I'll speak to the people! I'll tell them they must be ready to protect their honor! I'll show them pictures! Write them music! Write them stories! But get the people aroused!

MUSIC: (UP AND OUT)

VOICE

But people listened to their Bishops.
2ND VOICE
Listened to their women!

VOICE
This happened in Argentina, in Chile! Women spoke! Women joined hands, stood side by side in war against war!

2ND VOICE
(TO HIS COMPANION) Wait! ... Look in the white home of the young couple ... the door is opening in the room ...

VOICE
Young wife, your child has awakened!

2ND VOICE
Husband, here is your child!

VOICE
Let us listen ...

MUSIC: (UNDER)

WIFE
Billy, to bed this instant!

CHILD
Is Santa Claus come yet? Is Daddy waiting for Santa Claus? ... Is ...

WIFE
Sh-h-h -- Daddy's sleeping ... it isn't time for Santa Claus.
CHILD

But I want to see Santa Claus...

WIFE

Soon all the nice things Santa Claus brought you will be under the tree.

CHILD

I want a train... I want lead soldiers... Will Santa Claus bring me lead soldiers...?

WIFE

Come, Billy... back to bed... come, take mother's hand... Come... I'll sing you to sleep.

MUSIC: (OUT)

VOICE

Lead soldiers.

2ND VOICE

Young mother, feeling a great fear in your heart as you tuck your child safely in bed! Young husband, sleeping so peacefully in your armchair! So did the young wives and husbands in Chile and Argentina until the day came when they spoke out against the fear that clutched them!

VOICE

One Bishop spoke. Then another. Then the women joined forces.
2ND VOICE

Women spoke in clubs. All over Argentina and Chile the women threw convention to the winds and spoke...

MUSIC: (UP AND UNDER)

WOMAN

The boundary line between our two countries? That is the question driving us to war! But war between these nations is impossible! Not so long ago Argentina and Chile fought for independence! Their soldiers fell to free us from Spain. From Argentina up to Chile came the great San Martin and side by side the two armies fought. And today we are being told that we should war against each other! No!

MAN

My dear Senora...

WOMAN

Senor?

MAN

Might I suggest that you return to your embroidery? (LAUGHTER) What concern is it of yours what we men choose to do!

WOMAN

What concern? We women have known the ecstasy and pain of bringing sons into the world! We fed them, watched them grow to manhood -- and we will not have them destroyed! You women, do you wish to see your men unable to work, unable to walk, unable to see!
WOMAN OF CROWD

No! No!

2ND WOMAN OF CROWD

What can we do?

WOMEN

(IN UNISON) What can we do?

WOMAN

What can we do! Petition our Congress! Let them know the feelings in our breast! Plead for arbitration! Arbitration is the answer! War is futile! Eighty-thousand square miles of land is not worth the stilling of any young man's heart! Remember the word -- arbitration!

WOMEN

(IN UNISON) Arbitration is the word! Remember! Remember!

WOMAN

Never forget it! And if you remember it strongly enough, this war will not come to pass!

MUSIC: (UP AND OUT)

VOICE

Young wife, if you could only hear us! You would understand our story.

2ND VOICE

The mothers of the world have a voice greater than that of cannon! That is our story.
VOICE
So the Bishops talked. The women pleaded. Petitions were sent.

2ND VOICE
Petitions grew and reached executives. And the well-greased war machine began to creak...

VOICE
It needed oiling...

SOUND: SAME BUGLE AND DRUM EFFECT AS BEFORE

NOTE
(SAME SPEECH EFFECT AS BEFORE)

GENERAL
Propaganda! Teach the people the glory of war!

MAJOR
Sorry, General. They won't listen.

COLONEL
People are stubborn.

CAPTAIN
Mules.

GENERAL
But we're losing out! They talk of arbitration.

COLONEL
Heresy!

GENERAL
Arbitration! Whoever won a patch of land through arbitration? Steel! Bullets!
COLONEL

We must get people. Make them angry! Faces white with national pride!

GENERAL

Blow the trumpets, bang the brasses! Quick -- no time to lose!

SOUND: SAME EFFECT OF BUGLE AND DRUM AS BEFORE LEADING TO

MUSIC: (UP AND OUT)

VOICE

Too late ... the people have beaten them. Arbitration will solve this question.

2ND VOICE

Time had passed since Bishop Benevente spoke on Easter Day ... 

VOICE

1900 ... 1901 ... 1902 ... 1903. The two nations sign a treaty agreeing to arbitration. The King of England, Edward the Seventh arbitrated the question ...

2ND VOICE

Hours the good king spent with his jurists, his geographers, dividing land to each ... and the two countries ... accept -- cheerfully -

VOICE

And the day came in June, 1903 ... when diplomats from Chile and from Argentina met in peace!
MUSIC: (UP AND UNDER)

DIPLOMAT

Sign here, Your Excellency...

PRESIDENT

Let me read these words ... they are words I do not want any man ever to forget ... (READS) "Both nations agree to submit to arbitration all questions of whatever nature which from whatever cause may arise between them in so far as they do not affect the provisions of the constitution of the one or the other country..." I have never signed my name to anything which brings me such happiness as this.

DIPLOMAT

Now read this and sign ...

PRESIDENT

(READING) "The Governments of Argentina and Chile desist from acquiring the vessels of war which they have in construction and from henceforth making new acquisitions. Both governments agree, moreover, to reduce their respective fleets..." Thank God that I am alive to see such a day ... here is my signature.

MUSIC: (UP AND OUT)

VOICE

Celebrate, people of Chile, people of Argentina! Sing! Be glad!
239 - SOUND: SNEAK UNDER THE SINGING OF MERRY CROWDS

240 - 2ND VOICE

Commemorate this day of disarmament. This is a lesson to the world!

241 - SOUND: SINGING UP AND OUT

242 - VOICE

And peace like gentle snow fell on the two nations... and people remembered those words of the Bishop on Easter Sunday...

243 - MUSIC: (SNEAK UNDER)

244 - BISHOP

Can not the day come when a statue of Christ the Redeemer be placed on a peak of the Andes where from its great height, the people of Argentina and Chile can see Him and remember his preaching and turn away from thoughts of war.

245 - MUSIC: (UP AND UNDER)

246 - SOUND: A MURMUR OF EXCITEMENT IN A CROWD

247 - MAN

Peace! peace! Let us show our gratitude!

248 - WOMAN

Let us cast a statue of Christ and place it on the boundary line! Christ the peacemaker!

249 - MAN

Who are you, Senora, who suggests this to us?
WOMAN

Senora de Costa.

2ND MAN

Senora de Costa, we need money to buy such a statue!

WOMAN

Money we women will raise!

MAN

Senora de Costa, who will carve the statue?

WOMAN

I will find the artist.

2ND MAN

Where will you place it!

WOMAN

High on the Andes.

MAN

I join you!

2ND MAN

And I!

2ND WOMAN

A Christ of the Andes!

WOMAN

Come ... we have work to do!

MUSIC: (UP AND OUT)

VOICE

Angela de Costa.
263 - 2ND VOICE
Woman of vision ...

264 - VOICE
She is going from friend to friend ... asking for money!

265 - 2ND VOICE
Speaking to sculptors!

266 - VOICE
It will take her a long while...

267 - 2ND VOICE
Leave her to her work.

268 - VOICE
See, now, in the white home, the young husband is awaken-
ing ... he looks for his wife ... he sees she has gone back to the bedroom with their child ... he smiles ... now he hurries to a drawer ... pulls out a box ... what pride of fatherhood!
There! ... Open the box, young husband!

269 - 2ND VOICE
No ... no ... you must not give your child such a gift!

270 - VOICE
Lead soldiers ...

271 - 2ND VOICE
We tell the story of peace ... of a Bishop speaking ... of women slaying the dragon of war ... of a King
arbitrating ... of treaties signed in the spirit of peace ... of Senora de Costa hurrying to build a memorial to peace ...

272 - VOICE
Shut the box of lead soldiers, young husband!

273 - 2ND VOICE
(TO HIS COMPANION) It is no use. He does not hear us.

274 - VOICE
But the others hear us...

275 - 2ND VOICE
Yes. (TO THE LISTENING AUDIENCE) All of you ... you hear us...

276 - VOICE
Return to 1903

277 - 2ND VOICE
Whose studio is that?

278 - VOICE
Senora de Costa stands beside a young man ...

279 - 2ND VOICE
Is he the sculptor?

280 - VOICE
Yes. Mateo Alonso

281 - 2ND VOICE
He will not be forgotten.
282 - VOICE
There is the statue finished, waiting to be cast in bronze.

283 - 2ND VOICE
Christ of the Andes, holding your Cross, your other hand uplifted in a blessing on the world!

284 - VOICE
... Senora de Costa is speaking ...

285 - MUSIC: (UP AND UNDER)

286 - WOMAN
It is beautiful, Alonso.

287 - ALONSO
Thank you, Senora ...

288 - WOMAN
Now the peoples of Argentina and Chile will remember His Words.

289 - ALONSO
My statue, Senora, is very gigantic ... but it is simple?

290 - WOMAN
Yes. We must quickly cast your statue ...

291 - ALONSO
Where will we find enough metal for such a gigantic statue?

292 - WOMAN
Leave that to me, my friend!
ALONSO
You know where to find so much metal?

WOMAN
The arsenal at Buenos Aires.

ALONSO
Munitions!

WOMAN
Yes! ... Metal which was to be used for death, we shall use to commemorate life!

ALONSO
Pour the liquid metal into my shape of Christ!

WOMAN
For all to see!

ALONSO
I feel very humble ... what artist has ever attained such purpose!

WOMAN
Come, Alonso... until the world can see your statue high on the Andes I shall not rest. Come, there is work to be done!

MUSIC: (UP ... UNDER)

VOICE
How hot it is in here.

2ND VOICE
This is the casting room. Listen to the men at work.
CASTER

This was a cannon to be used in a war. Throw it in!
Throw it in!

2ND CASTER

This was a howitzer ready for war. Molt it and form
it into His foot!

3RD CASTER

This was a gun designed to destroy. Destroy it forever
here in this fire! Molt it and pour it into this mould!

4TH CASTER

Into the foot! Into the Cross!

5TH CASTER

We are the molders, the shapers! We are the people
who die on the field! We are humanity! Lift up these
cannons! Into the fire! Gone with a sizz and a flame!
Molt them and form them into His robes! Into His
crown of thorns! Out of the chaos comes order and life,
out of these cannons comes Christ of the Andes!

MUSIC: (UP AND OUT)

VOICE

The statue is cast.

2ND VOICE

Ready for placement.

VOICE

High on a pass on the Andean border!
How shall they bring this gigantic memorial up from the city, over the plains, up the sides of the Andes, to rest on the boundary where snow eternally lies?

First by rails ... from Buenos Aires to Mendoza...

(CROWD IN UNISON) Faster ... faster ... faster ...

Then by rope up the mountains ...

Careful!

Careful!

The rope is breaking!

Hold it!

A burro is slipping!

A burro has fallen!
Man

But the statue is safe!

2nd Man

(Calling) Men—the statue is safe!

Men

(In unison) Climb ... higher ... higher ... higher!

Sound: Sneak in wind

Voice

Five thousand feet ... eight thousand feet ... the snow grows thicker ... the wind is piercing ... higher ... higher.

Sound: Wind up and into

Music: (Serene...)

Alonso

Senora de Costa!

Woman

Alonso!

Alonso

Soon the ceremonies will start. Before they do, look at the statue well and tell me I have not failed.

Woman

It is sublime, Alonso.

Alonso

The sun breaks through a cloud! It falls on the Cross!

Sound: Music in the distance

The band is coming.
336 - SOUND: BOOMING OF CANNON...
Listen to the cannon! They speak their own requiem.
They are cannon of peace!

339 - SOUND: BOOMING OF CANNON ... SILENCE ...

340 - SOUND: THE MUMBLE OF THE CROWD GROWS ...

341 - 
ALONSO
Ceremonies are beginning ... thank Thee, oh, God!

342 - 
WOMAN
Thank Thee, oh, God for this hour ...

343 - SOUND: THE CROWD IS SILENT

344 - 
BISHOP
People of Argentina and Chile ... Let us sing the
national anthems of our countries ...

345 - MUSIC: (THE CHORUS SINGS THE ARGENTINA NATIONAL ANTHEM
THEN IS FADED INTO CONCLUSION OF CHILEAN ANTHEM)

346 - 
ALONSO
Senora, the Bishop speaks!

347 - 
BISHOP
When future generations rise to these heights, carried
in the arms of steam, they shall not find, as at
Thermopylae, written in blood on the naked stones that
testament of the heroic Spartans: Here we gave our
lives to defend the laws of the fatherland. Rather,
they shall arrive at this summit and in the metal of
this glorious moment they shall see in letters of fire
a sublime legend: Sooner shall these mountains crumble
into dust than Argentinesans and Chileans break the peace sworn to at the feet of Christ the Redeemer...

MUSIC: (UP AND OUT)

VOICE

(TO THE LISTENING AUDIENCE) There is our story.

2ND VOICE

The Christ of the Andes.

VOICE

Remember it well ... tell it to others ... all of you ... listening.

2ND VOICE

(EACH OF YOU ... LISTENING ...) Do you know this young wife singing to her child? Do you know this young husband bright with his pride of fatherhood? They can not hear us! Perhaps you know them.

VOICE

Tell them of the Christ of the Andes!...

2ND VOICE

Tell her what women can do when fear for their loved ones is strong.

VOICE

Tell him to close the box of lead soldiers ... 

2ND VOICE

Christ of the Andes cast from the cannon ...

VOICE

Peace ... peace ...
358 - 2ND VOICE

Our story ... is finished.

359 - MUSIC: (UP AND OUT)

(GIVE FINAL ANNOUNCEMENT FOR CLOSING YOUR PROGRAM)
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