

A.T.I.'S PLAN FOR NATIONAL TELEVISION EXPANSION

In the following paragraphs we introduce the Plan for National Television Expansion as it has been formulated by the American Television Institute. The Plan demands mass knowledge and ability to a greater degree than has been involved in any previously launched industry. As an Associate, or District Representative, you are to become a vital factor in this new service.

We can not cover the details of this Plan in any brief manner. It is too comprehensive...too all-embracing... just as is any similarly well engineered and worthy project. Therefore, the following several pages have been given over to the subject of the Plan itself and how it effects you.

The technical nature of television with its associated arts of electricity, radio, electronics, and cinematography comprise the greater portion of a television engineering training. There are certain elements in television systems which are inherently easy to understand so that one may get an economic picture of the commercial possibilities in this art before undertaking the technical study. Let us, therefore, look into the present and probable future from the technician's viewpoint before indulging in the engineering subjects:

In your home at the present time, you have a radio receiver; you are able to adjust the dial knob and receive programs from any station on the continent. You can permit your imagination to form a moving picture screen on the top of this radio receiver upon which appears the performance at the broadcasting station so that you are enabled to see and hear the performers at the same time. Such an instrument would represent the ideal type of television equipment we think about today. We would like our "Television Cameraman" at the broadcasting station to take us on a visual tour of all the interesting things we would like to see and hear about, such as a tour of the world, the news events of the day, sports, and the theatre, and perhaps, a review of merchandise offered for sale.

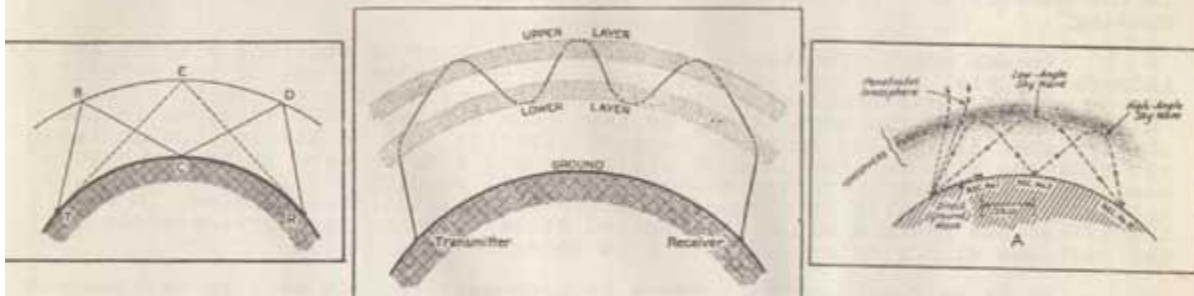
A well known New York store advertises, "Save 6% and shop at Macy's". Mail order concerns advertise, "Save selling costs, and order through the mail". —Tomorrow a great television merchant may advertise, "Select your goods over television and eliminate selling costs, warehouse handling, and catalogues; save 50%."

It is further probable that better entertainment will be available at home on your television screen than you will find outside, and this will lead people to enlarge their homes, entertain at home, and in general return to a more healthy form of living than is indulged in by present day society. At the present time, these possibilities are well within our grasp, but there are a few limitations:—

If we use a regular radio station to "carry" the television picture across space to your receiver, the technique used in both stations and your receiving set involves circuits which electrically vibrate too slowly to produce a well defined image. Therefore, a faster vibrating type of electrical circuit in the transmitting station using a very short wave length is used to permit the transmission and reception of a high fidelity television image. It is not generally understood that radio waves, heat waves, and light waves are

all fundamentally alike being only different in wave length and vibrating frequency like the base notes and treble notes on a piano.

We know that if we step behind a stone wall, the light from a distant source will be screened off from us by the stone, but if the wall were of glass, then the light would pass through it. The stone is said to be "opaque" to the light waves; while the glass is "transparent". Stone is "transparent" to radio waves; while metal is "opaque". Light will pass through a copper screen, but radio waves will not. Both light and radio waves travel in straight lines, but radio waves can be detected beyond the horizon from the transmitting tower. This is due to the fact that the Earth's atmosphere will bend radio waves like water or glass will bend light waves. When the radio waves strike the upper atmosphere, they are deflected back toward Earth at a distant point. (Figures A)



Figures A.

Since the outer atmosphere is turbulent and differs in height in the day and the night due to the action of the Sun's rays — long distance reception occurs only at certain hours and has the property of fading in and out as the received signal sweeps back and forth over our antenna.

It was found that television pictures transmitted over radio waves that are deflected back from the outer atmosphere look like images coming through a pool of water, that is like a fish looks at the bottom of a pond in which the water has a slight tremor. The radio waves which travel directly from the transmitting tower out to the horizon and are not reflected from the upper atmosphere transmit perfectly clear images with out any quivering effects. Therefore, it was found best to use radio wave lengths which are not deflected back to Earth by the outer atmosphere, but rather those short wave lengths which bend out into space. Consequently, wave lengths of five meters or less are used in modern television practice.

There are other reasons for the use of these short wave lengths such as the elimination of the ghost images that come at night on the longer wave lengths, but the foregoing shows sufficient evidence of why shortwaves are used in preference to long ones even though they are limited in range to the horizon. A television tower is resultantly placed as high as possible above the Earth so that the straight radio rays (like light rays from a beacon) will travel as far as possible and give a large service range for the station. The usual station covers a practical radius ranging from twenty to fifty miles depending upon the height of the antenna above the ground. These short wave antennae are short metal rods only a few feet in length and may be enclosed in a reflector for directional purposes like a Mazda lamp in a searchlight. They are not the dramatic towers strung with wires like the old wireless stations.

All of us know that a radio performance is relayed from the studio by telephone wire or over a short wave radio system. Thus, in modern broadcasting practice, the radio studio is usually located within a building in the heart of a city convenient for performers, musicians, etc., while the radio transmitting station is located on clear ground far out in the open country (preferably upon a tall hill or mountain) and connected with the studio by a program originating in New York or Hollywood. We know that each one of the stations is connected with the New York or Hollywood studio by telephone wire. A person in Hollywood may be right next door to the studio originating the

radio program and yet receive the signals which go all the way to Chicago via telephone wire to be broadcast from a Chicago radio station which is tuned in by his radio receiver back in Hollywood next door to the studio. When a program is originated in England like the Coronation ceremonies or the King's abdication, a radio relay system is used, because telephone wires are not connected across the Atlantic.

Television signals may likewise be transmitted over a special type of telephone cable or a television radio relay station in order to connect a television studio with a television broadcasting station or one television station with another in chain fashion. We can readily see that the shorter range of the television station will require many stations and many relays, but due to the fact that the signals do not return to the Earth, we are not limited in the country to a few stations and wave lengths like we are in sound broadcasting.

We can erect practically an unlimited number of stations without one interfering with the other as long as we put one out of sight of the other one or beyond their combined horizons. If we consider the geography of the United States and the population, we find room for over 2000 stations in the country when allocating only one to each district. It is likely that at least two stations will be used in most districts and four or five in highly populated areas. Between each two stations we shall require a relay station since the relay station will be cheaper than the special telephone cables. In Fig. 1 the artist has drawn a map of the United States showing the service areas of the stations with circles. (Figure 1 is shown on Page 39.)

It is self-evident that there is much construction work to be done and many men will be required for the various phases of television service. A look at the prospective types of employment and the possible demands for engineers and technicians is impressive.

If we start with the studio, we may refer to Figure 2. Here, we see the reception room and the control tower in a television studio. The operators are located in the glass enclosed section that is suspended from the ceiling so that they can see directly into each one of the performing studios immediately surrounding the control room.

In Figure 3, we see a close up of the suspended television control room where the operators monitor the performance.

In Figure 4., we see a general view of a section of the television studios. We can observe part of a modern living room set; while next to it, there is a restaurant set. The various television cameras and floodlights are shown. One of them is on a rail so that it can slide easily from studio to studio for long views; while others are arranged for close ups. These sets will be permanently fixed in the large television studios of the country. Any background desired may be projected by magic lantern or motion picture machine on a translucent screen (like frosted glass etc.) at the rear of each set. For example, we may refer to Figure 5, where we observe a picture of the deck of a ship and the flood lights and television camera necessary for picking up an act from this setting. On the background, it will be convenient to project the image of moving water and perhaps a distant sailboat. This can be done with a motion picture projector focused on a translucent background screen and picked up by the television camera to give an effect that is as real as though the original background were actually present. Practice like this is prevalent in motion picture studios today.

In another room, there are many films set in television motion picture projectors ready for instant use. One film will be labeled "locomotive pulling out of a station" and will represent a typical view of a modern train pulling out of the depot together with all the sound effects. Another film may be labeled "train pulling into Grand Central station in New York" — still another may be labeled "Plane taking off from an airport" while another will represent an automobile touring through the country.

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OATH OF SECRECY

As we put our National Television Expansion Plan into operation, we shall be obliged to discuss with you many intimate commercial details and give you the same kind of confidential information that any corporation gives to its agents and employees in commercial practice. Therefore, if you want to work with us in the immediate furtherment of our television plans, it is requested that you sign this Oath of Secrecy on this page.

I, the undersigned, _____ of the State of _____, the address of _____ and the township of _____ do hereby solemnly swear that I will keep secret the confidential commercial information given to me from time to time by the American Television Institute in carrying out a pioneering television program; and that I shall also keep secret any information I acquire in pursuance of the business I do in behalf of this program unless I obtain written permission from the American Television Institute to reveal this information.

Your signature here.

CONFIDENTIAL INFORMATION

Re: A.T.I. National Expansion Plan of Station Construction and Operation.

DATE _____

Mr. U. A. Sanabria, Chief of Staff
American Television Institute, Inc.
433 East Erie Street, Chicago, Illinois.

Dear Mr. Sanabria:

I have read thoroughly the context of articles in the Plan Issue of "The Collaborator" entitled: This Month's Editorial and Personal Message; The Status of Television; Principles of A.T.I.'s National Expansion Plan; Personal Observations of Eastern Television. I understand the Plan and I understand the vital part I am to take in its accomplishment.

Therefore: I do endorse your Expansion Plan completely, and agree with your method in its entirety.

You have my promise of moral support. I will do anything and everything I can to help you, my brother Associates in A.T.I., and myself. I understand my responsibilities fully in regard to interesting investors in Television in my district. I will co-operate with you and A.T.I. exclusively.

Sincerely yours,

Name _____

Address _____

City _____

(over)

This space to be used for pertinent information

1. Approximate population in 25-mile radius of transmitter, _____
2. Have you a logical building or high hill for erection of transmitter _____
3. Height of transmitter (not antenna) above surrounding ground. _____
4. Can you sell this idea to investors, _____
5. What promotional experience have you had? (Answer as briefly as possible).

6. Are you now fully able to construct a transmitter, _____

7. If not, how far are you in the training, _____

8. Check the line of Television work you would prefer in this plan:

	Transmitting	_____
Receiver installation and service		_____
Sales promotion		_____

9. Do you know several local business men who might be interested in financing part or all of the station? _____

10. Detail your intended first steps toward getting your station started.

11. Are you desirous of becoming one of our regular District Representatives to embrace this plan and also other work we assign to you on a commission basis in your spare time?

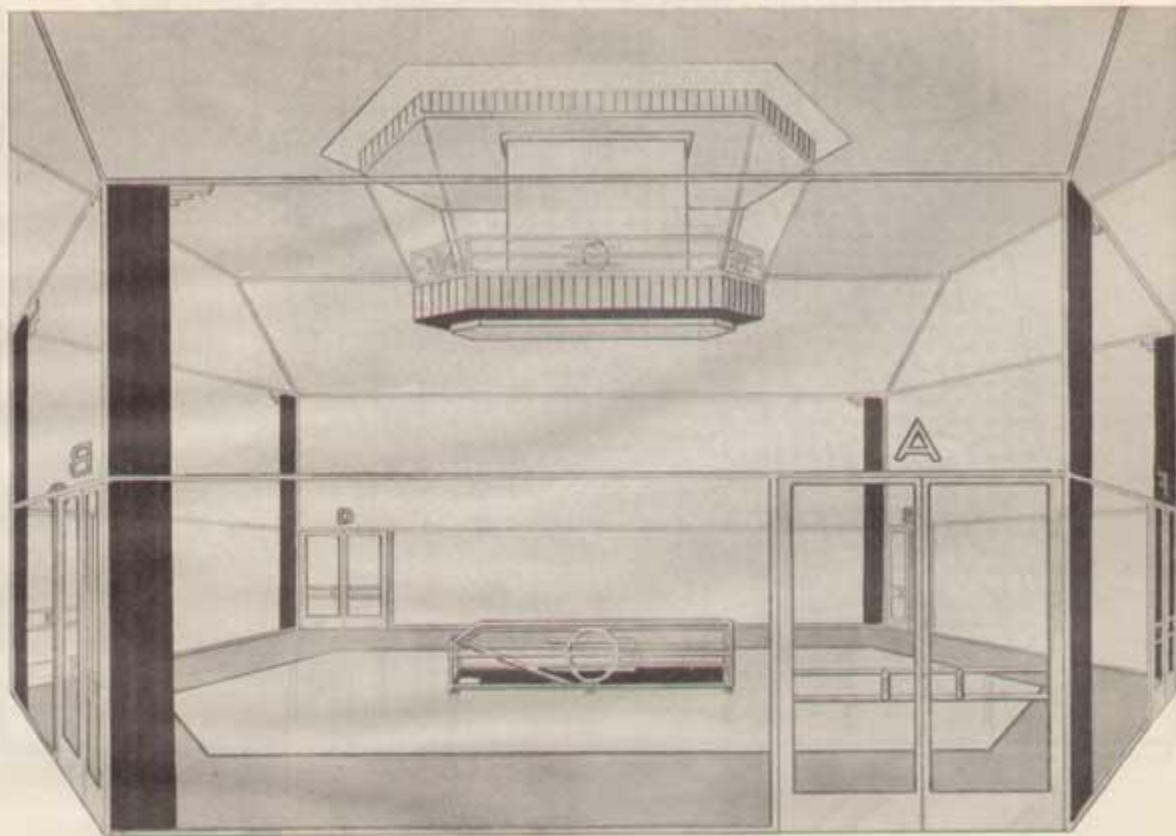


FIG. 2.--A Television Station as described herein. Visitors would enter the Reception Hall, or Visitor's Gallery by means of the stairway in the center. Glass observation windows would permit a view of the activities in each studio. Immediately above the stairway may be seen the Central Control Room, allowing an unobstructed view of all studios, a prime requisite for efficiency on the part of the Television Control Operator. This would also be true of the Radio-Operator as well, because Television will almost demand the elimination of the present day hand signalling practice of announcers.



FIG. 1.--Map of the U.S., depicting the possible service areas of over two thousand Television Stations and an equal number of Relay Stations. More complete details about this subject are to be found in the accompanying article, "A.T.I.'s Plan for National Television Expansion".

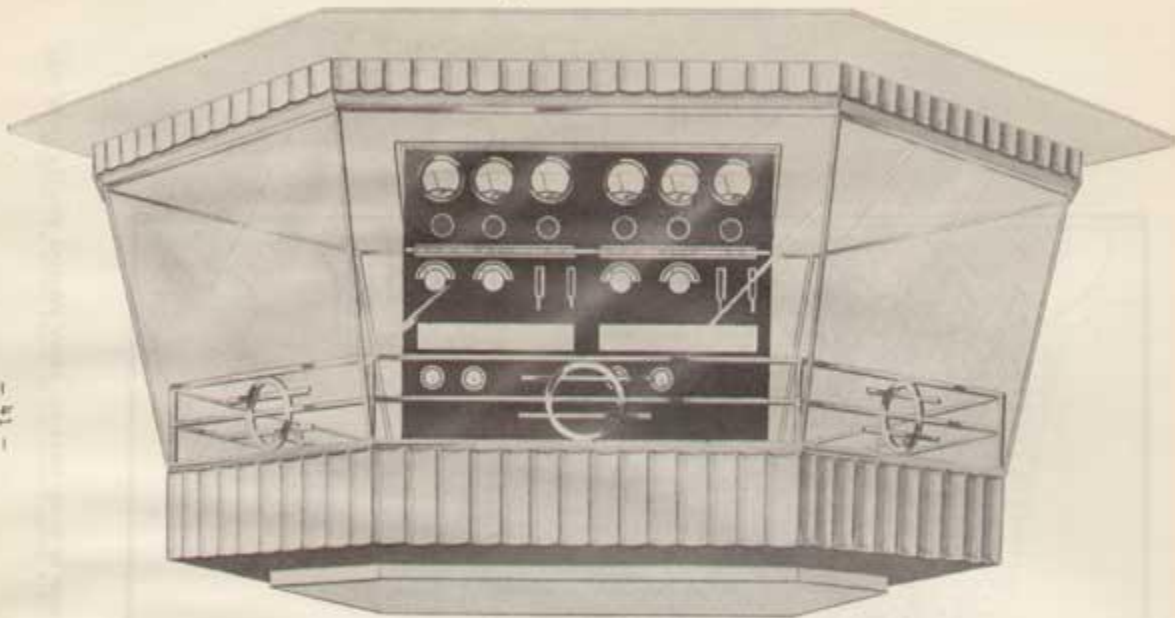


FIG. 3.--Close-up of suspended Television Control Room. It is also known as a "Gondola" type room, due to its resemblance to a dirigible "gondola" cabin. Here the Control Operators monitor the Television programs as related in the accompanying article.

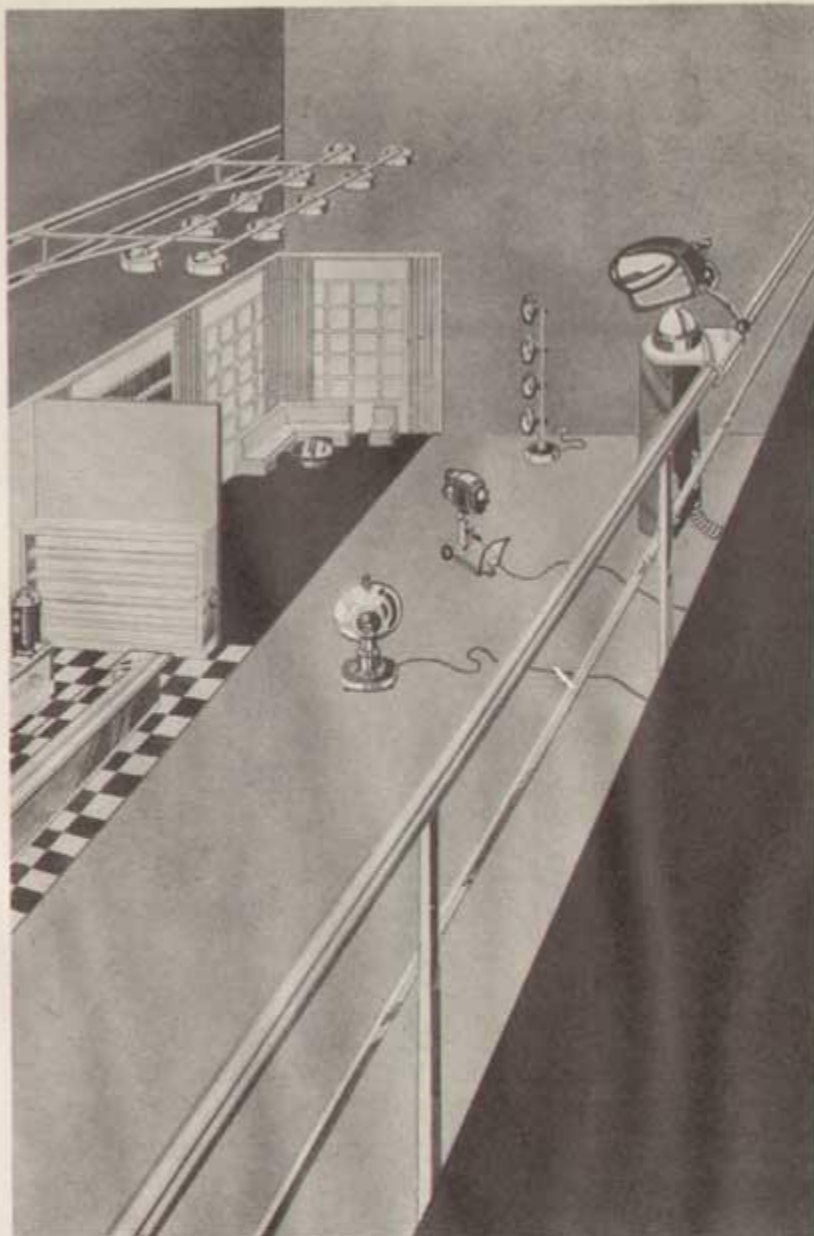


FIG. 4.--Interior of Television Studios, showing the manner of "scene" construction in relation to the technical equipment. Scenes, or sets, are designed after the manner of the motion picture practice; that is, they are readily dismantled and easily handled. Previous to a program of "May You Live Forever" type, all sets would be erected. As the scenes changed, actors would be moved to the proper sets with a minimum of lost time. Observe that this particular studio layout calls for a sliding bank of overhanging lights, which would shift from scene to scene along with the camera or cameras. This view is from another type of visitor's gallery. Directly in the foreground, and separated from the gallery by sound-proofing glass, is a cat-walk. Here the various technical directors, lighting men, etc., would be afforded their best view, while the space below and directly before the actors is the uncrowded space for such technicians as Cameramen, Sound men, stage directors, and others.

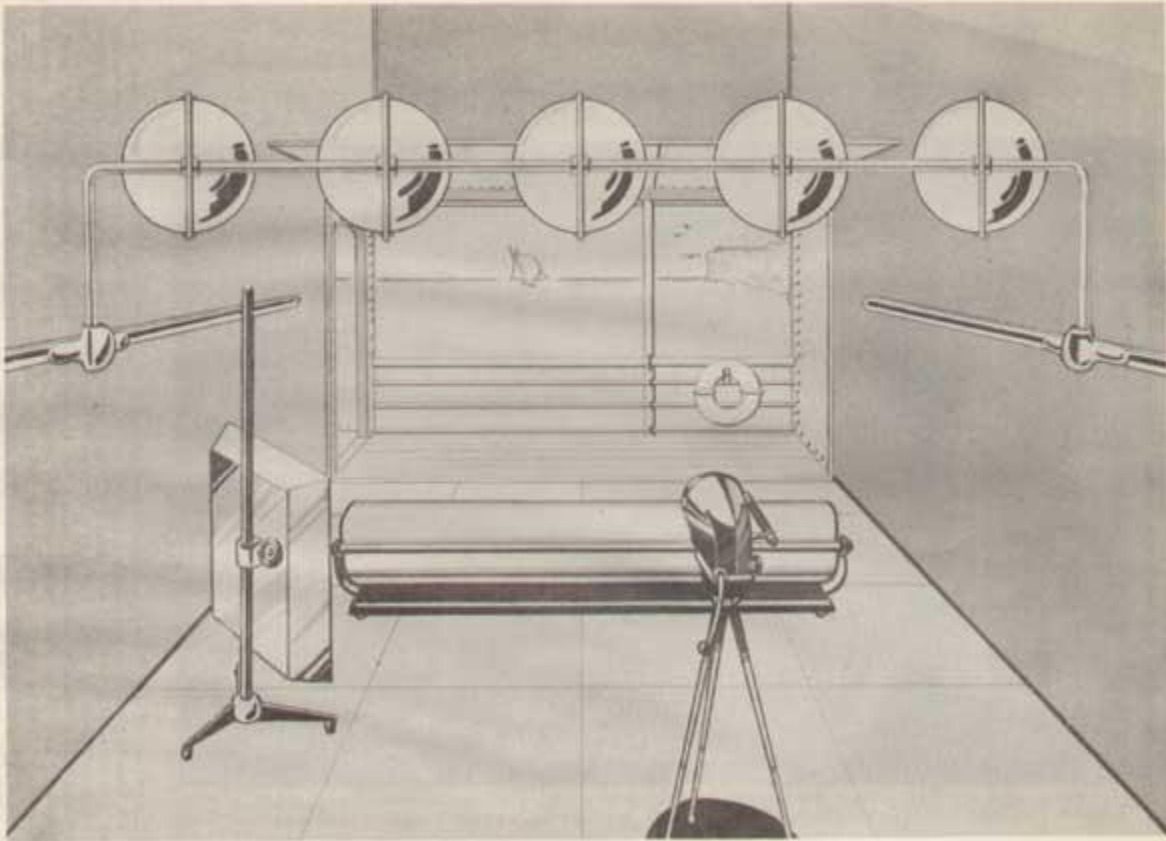


FIG. 5.--A typical Television Studio set, showing the manner of backing up the set construction with a motion picture or magic lantern projection. This would be accomplished by projecting the desired scene from the rear, upon a translucent panel such as frosted glass.