RADIO

Television, When and How

Post-war sets will benefit from advances in radio and radar. Expected to be a billion-dollar industry, with 83% of the people desiring receivers.

By ROBERT N. FARR

➤ TELEVISION may become a billion-dollar industry after the war. Surveys show that 83% of the people want television receivers in their homes.

A pent-up demand for between 20,000,000 and 25,000,000 radio sets will exist by the end of 1944, as compared with the industry's all-time high production of 13,000,000 units in 1941. Equipment producers are making plans now to offer a modern television set to the man who will need to replace his pre-war radio set.

It is still too early to foretell what post-war television will be like. Ten or 15 years of research work in the radio and electronics industry have been compressed into the 31 months since Pearl Harbor. Certainly it can be expected that many of the new inventions and developments in the field, such as radar, will be applied to television to make it better.

These improvements may be a long time in coming, so it is safe to assume that television immediately after the war will be very much like the television we had when the war started, with a few changes.

The manufacturing facilities for electronic devices made in war-time will be available for the production of television receivers and equipment. This means that the cost of equipment will be reduced. For example, the pre-war cathode-ray tube, the tube with a screen on which the television picture appears, cost $50 or $60; after the war the same tube will cost about $20.

Black and White

Pre-war television pictures had a disagreeable greenish cast, caused by the fluorescent screen of the cathode-ray tube. Wartime research has created a new fluorescent screen that overcomes the problem and gives a black-and-white picture almost as good as a newspaper halftone.

The flat cathode-ray tube, used in 1941, made it necessary for the viewer to stand directly in front of the screen in order to see the picture properly. A new rounded tube has been recently put into general use, throwing the picture on a curved surface. This rounded tube gives a clearer picture that may be viewed from any convenient angle.

There is actually only one major unsettled question concerning television. This is the matter of standards and frequencies. Upon the outcome of this question rests the kind of television we will have.

It all boils down to whether the 525-line screen (that is one with 525 lines in a 10-inch square) will be accepted as standard, or whether television will wait until the better 1000-line screen is perfected. Manufacturers who want to keep their product output as near to the war boom as possible want the 525-line screen, while broadcasters, who are interested in better reception and better pictures, want the 1000-line screen.

To get a better idea of what this means, imagine a sheet of paper 10 inches square, the size of the present television screen. The pictures are "painted" on the screen by streams of electrons, in varying shades of light and dark, in much the same way as a page is typed on a typewriter.

30 Pictures a Second

A new picture is painted 30 times a second, on 525 lines, each a fraction of an inch lower than the other. At the end of the 525th line, at the bottom of the screen, a new picture is started at the top of the screen.

By painting 30 new pictures each second, the viewer gets the same effect of motion as he would get by running 30 frames of movie film through a projector every second.

To get some idea of how fast the television pictures are painted, we can remember that the average typewritten page, single spaced, has 2,000 characters including letters and punctuation marks. One television picture has 260,000 characters, equal to 130 pages of typewriting.

The Bible contains 3,500,000 letters and punctuation marks. Television transmits that number of characters in half a second.

A 1,000-line screen for television has 585,000 characters, and is twice as clear and detailed as the 525-line screen.

In order to produce the 1,000-line picture, it will be necessary to alter completely the 525-line system, and use higher frequencies. This will mean that all receivers manufactured for 525-line television may become obsolete.

The question of standards and frequencies of post-war television is now being studied carefully by a committee of the Federal Communications Commission. Both the broadcasters and the manufacturers have agreed to abide by its decision. Upon the outcome of its investigation depends the kind of television we shall have after the war.

Cost Depends on Size

The cost of a television receiver depends largely upon the size of the screen, since the larger the screen the more tubes are required. The pre-war set with a 10-inch screen had 27 tubes for television reception only. After the war, it is expected that the sets will be equipped with 18- by 24-inch screens, large enough to be seen comfortably in the average living room.

The post-war receivers will cost from $125 for a table model, up to $500 or $600 for de luxe television-radio-phonograph combinations.

Today, there are nine television stations, operating in five major cities. In the areas they cover there are about 27,000,000 people. Plans are being made for a national television network, so that television programs may be available to an even greater audience. It is expected that this network, linking New York, Philadelphia, Washington and Charlotte, N. C.; Chicago, Terre Haute and St. Louis; Denver, San Francisco, Los Angeles and Phoenix will be in operation by 1950.

Television entertainment will include three types of programs. One is the studio presentation, that is, anything which is enacted in a studio with good lighting. Second is the outdoor event, picked up with remote television cameras. Such events as football games, rodeos, ice shows and boxing and wrestling matches will be presented. The third type of program is sound motion picture film. Many of the television programs being presented today use sound movies for their entertainment.

The ultimate commercial success of

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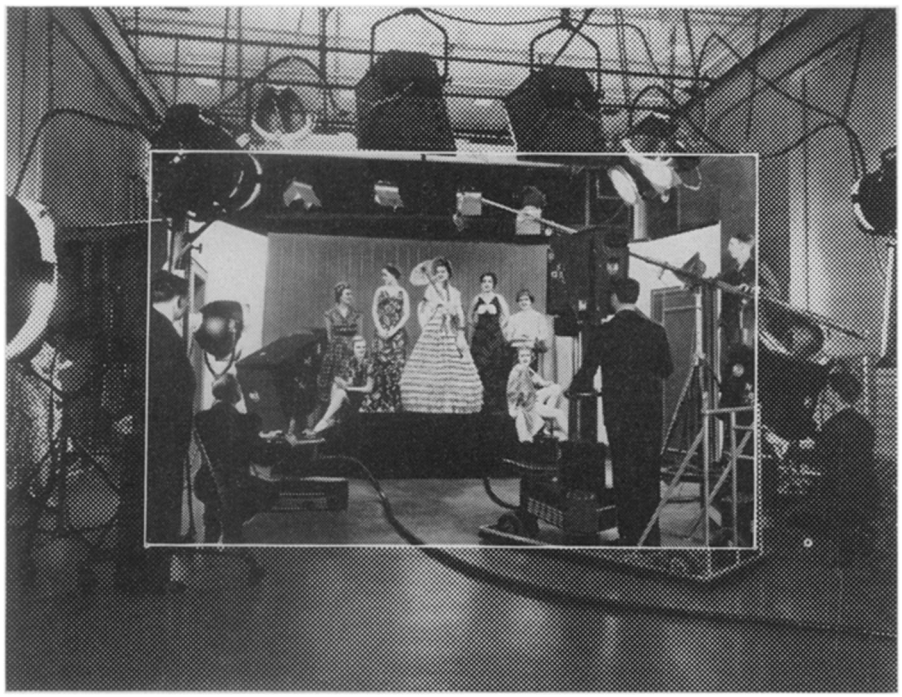

TELEVISION ENTERTAINMENT—This picture of a fashion show being picked up by portable television cameras gives you a preview of what postwar television may be like. The coarse screen of the border, known to engravers as 55-screen, corresponds roughly with the prewar image; the finer center part (85-screen) is what we may look forward to. Of course, the dots of the engraver's screen are replaced by tiny lines on the television screen.

television is assured because of its value as an advertising medium. Many products can be advertised over television more effectively than in any other way.

Commercial advertisers are already presenting educational and entertaining programs. A beauty cream sponsors facial care lessons of interest to women; a soft drink presents a hillbilly show; a plastics manufacturer uses television to give the public a glimpse of his postwar products; and a maker of ammunition presents wildlife forecast of interest to sportsmen.

Several universities are planning extension courses, using television to bring the classroom into the home. Government-operated television stations may make it possible for people to see and hear Congress in action. Medical students will be able to witness surgical operations being performed in hospitals hundreds of miles away.

Television is destined to provide knowledge to larger numbers of people, truer perception of the meaning of current events, more accurate appraisal of men in public life, and a broader understanding of our fellow human beings.

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MEDICINE

Measles Preventive Free

Within a month, health departments in all states will have the globulin ready for distribution. Present supply to last five years.

➤ WITHIN a month, health departments can have for free distribution to children everywhere in the nation the measles preventive obtained as a by-product from blood donated by the American people to the Red Cross for our fighting forces.

Health departments will get the preventive, called immune serum globulin, on application to the American Red Cross, Washington, D. C. The plan for its distribution has been set up, and ample supplies of the globulin are on hand, ready to be packaged and shipped.

No charge for the preventive can be made to the patient getting it, the Red Cross stipulates. Neither can the manufacturers or anyone concerned with its production or distribution make any profit. The globulin comes from blood that was given by the American people out of their own veins and the Red Cross wants this valuable by-product to be distributed equally to all the states, so that all American children can have its benefit.

The costs of processing and shipping will be paid by the health department or other suitable agency to whom the Red Cross gives a permit for purchasing the material. The price for a vial containing enough globulin for one adult or two small children will be $1.07 to $1.10.

The measles preventive is separated from blood by a process developed by Dr. Edwin J. Cohn of Harvard in studies made under contract between Harvard and the medical committee of the Office of Scientific Research and Development. (See *SNL*, May 27 and June 24)

The globulin may be used in either of two ways: A full dose may be given to prevent measles attacking a person who has been exposed to it; or a smaller dose may be given so that the patient will get a light attack of measles. This last method is the one that probably will be favored for children because, although the child may be a little sick for a day or two, he will be spared the suffering of a severe attack and will be able to develop his own immunity or resistance to further attacks.

The reason why blood donations to the Red Cross contain the measles preventive is because about 90% of the grown-ups who are giving the blood have had measles and developed immune globulin in their blood as a result.

The present supply, the Red Cross estimates, should last about five years. So long as any immune globulin is available from the blood donated for the armed forces, it will be available free to the public. After the war when the surplus has been used up, the manufacturers who now process it for the Army, Navy and Red Cross will probably continue to make it on a commercial basis. The price then will probably be about $2.80 per child's size dose, judging from the present price of a similar substance that has been available commercially.

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