

Future of Television Now Up to Public

Out of Laboratory And Into Homes Next Spring

By MARTIN CODEL

TELEVISION steps out of the laboratory into the homes of a few selected cities next spring, with the New York World Fair, starting in May, scheduled to herald its chief public debut. Whether the highly-developed visual art will become a new "billion dollar industry", as reported in the press, rests in the laps of the gods. It all depends on how the public will take to it.

The emergence of television from the research laboratories was signaled by the board of directors of the Radio Manufacturers Association Oct. 20 after it had heard the announcement of David Sarnoff, president of RCA, that RCA intended to manufacture and sell receiving sets to the public and transmitters to the broadcasters, as reported exclusively in BROADCASTING Oct. 15.

Following the RMA session addressed by Mr. Sarnoff, the RMA board stated:

"The technical developments and field tests on television have progressed to a point where, in the opinion of the RMA, the next step in the development of the art consists in rendering experimental television service to the public. This news service, which will be on an experimental and limited service basis, will be in addition to existing radio broadcast service and can

be accomplished only through the installation and operation of television transmitters and the sale of television receivers.

"Some members of the RMA, but not all, propose to make a beginning in those fields by the time of the New York World's Fair in May, 1939, and in those localities where television program service may become available."

Up to the Public

The enormity of the television problem as a whole was only sketchily touched upon by Mr. Sarnoff, who simply pointed out that RCA researchers and executives are convinced that "television in the home is now technically feasible" and who stressed the fact that the present step begins only a limited service and that the future of television depends on public reaction.

Under RCA patent licenses, any or all of its licensees may manufacture television apparatus and all but a few of its 50 receiving set licensees and its 13 tube licensees indicated they would enter the field. But like RCA itself, they intend to proceed warily, to go into television production only on a limited scale at first and to study closely the attitude of the public toward the programs offered. Chief "looking in" post is expected to be established at the New York Fair, although RCA and NBC, working in combination, already are offering "television tours" of Radio

City and have scrutinized the reaction of those who have seen their television offerings there.

Broadcasters will be offered a standard 1,000-watt transmitter, designed to operate on the ultrahigh frequency bands reserved by the FCC for experimental television, at a price of about \$60,000 completely installed. Full servicing facilities of RCA will be offered, including installation and training in operation. Except for the handful of broadcasters already in the field [see log on page 29] it is obvious that transmitters can be sold only to those broadcasters securing construction permits to operate in the visual broadcasting bands. Thus far only meager reports of broadcasters' intention to enter the visual field have been received, but it is confidently expected at least several dozen will be applicants for FCC visual licenses before long.

CBS Also Getting Ready

In addition to the visual broadcasts already available from the RCA-NBC experimental transmitters atop the Empire State Bldg. in New York and at Camden, N. J., the New York area definitely will be served, with tests beginning in January, by the new transmitter now being installed by CBS in the Chrysler Bldg. This was one of the first jobs sold by RCA and CBS is spending a reported \$650,000 on the installation and on program experiments.

Like RCA-NBC, the CBS trans-



PLANNING the new CBS television transmitter atop the Chrysler Bldg., New York, to be ready for regular operation next spring, are (left) Gilbert Seldes, CBS television program director, and Dr. Peter Goldmark, of the CBS television engineering department.

mitter will operate on the standards established last year by the RMA, the images consisting of 441 lines broadcast at the rate of 60 half-frames per second, or 30 frames interlaced. The cathode ray tube is the basis of both transmitters and receivers, with mechanical scanning definitely cast into the discard by a majority of the industry.

As television log on page 29 dis-

closes, there are now 19 authorizations in effect for television transmission on the several bands allocated by the FCC for that purpose. Of these, all but two are already in more or less regular operation. Some represent licenses issued to the same firm to operate in various bands, including authorizations for the operation both of fixed and portable stations. In reality, the only firms already actually in the television field, in addition to RCA-NBC and CBS, are Don Lee Broadcasting System, Los Angeles; First National Television Inc., Kansas City; General Television Corp., Boston; Kansas State College, Manhattan, Kan.; Philco Radio & Television Corp., Philadelphia; Purdue University; Radio Pictures Inc. (John V. L. Hogan), Long Island City, N. J.; University of Iowa.

Holding construction permits for new television stations only recently authorized by the FCC are Allen B. DuMont Laboratories, Upper Montclair, N. J., and Zenith Radio Corp., Chicago.

In addition to these, General Electric Co., Schenectady, recently was subject of an FCC examiner's report favoring the granting to it of four licenses to operate in three different television bands. It is expected the FCC will grant these in normal routine. Pending before the FCC also are applications from CBS, NBC, Don Lee and Farnsworth for authority to use bands in addition to those now designated in their television licenses.

Can Operate in Ultra Bands

The television broadcasting bands now designated by the FCC, whose rules and regulations still brand television as experimental and hence not to be used for commercial purposes, are 2,000-2,100 kc. (in which only the several university stations are operating); 42,000-56,000 kc.; 60,000-86,000 kc.; any 6,000 kc. band above 110,000 kc., excluding 400,000-401,000 kc.

It is planned that the new transmitters will be capable of operating on any or all of the high-frequency bands, starting from 42,000 kc. and ranging up to 400,000 kc. Thus far the highest frequency band authorized for use is the 204,000-210,000 kc. band allocated to Philco at Philadelphia.

Because high-frequency television transmission requires extremely high radiating points in order to gain the widest horizon, and because its radius for practical purposes thus far is limited to the horizon, television at the outset will be restricted to local communities. This probably means first that service will be provided only in the larger cities—and this condition will prevail until more local broadcasters secure transmitters. Thus television's chief "proving ground" at first will be New York, and possibly Philadelphia and Los Angeles, where developed transmission services are already available.

The coaxial cable will eventually permit the linking of local stations into networks, receiving service from key production points as in network broadcasting. However the only coaxial cable so far laid is that of the A. T. & T. linking New

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Television Opens Up

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York and Philadelphia. It is extremely costly and probably will not be extended until there are plenty of local visual stations.

New York is about two years behind London in introducing television publicly, but the American researchers and manufacturers have been following the London public visual broadcasts intently in order to gain ideas from British experience. There, though the service is part of the British Broadcasting Corp. and governmentally subsidized, the public has not reacted with any too great enthusiasm for the best estimates are that not more than 10,000 receiving sets have been marketed since the BBC began its twice daily schedule of one-hour visual broadcasts from Alexandra Palace.

The British system is practically the same as the American standard, RCA having been interchanging patents and ideas with the British almost from the beginning of experimentation there.

Receiving Sets a Problem

The design of receiving sets is still a big question mark. RCA officials say they do not yet know exactly what kind of sets will be marketed and what their price range will be. For the last three or four years experimental sets have been installed in the homes of RCA and NBC executives and engineers to enable them to follow the Empire State and Camden transmissions. As further knowledge was gained, these sets were simplified in design so that today the RCA engineers are confident they can produce various sizes of receivers that can be operated simply by any person. The test sets have included as many as 32 tubes in addition to the cathode ray tube on which the pictures are framed.

The cathode ray tubes have been tested in various sizes, including 6, 9, 12 and 15 inches in diameter. Pictures have been framed according to the size of the tube. It is deemed likely that RCA and its licensee manufacturers will produce sets with each of these size tubes, framing images from 3x4 to 10x12 inches. The price range probably will start at about \$150 and run up to more than \$1,000 for so-called "luxury models."

There is also a plan afoot to build television attachments to ordinary sound receivers, the attachments to receive the images while the sound receivers carry the synchronized voices and music. This may bring costs down somewhat. Eventually, there is no doubt that receiving sets will be combinations of sight and sound reproducers, with facsimile reproduction included in the same model.

Not all radio manufacturers are enthusiastic about the introduction of television, some fearing it will retard the market for ordinary sound receivers. It was learned that considerable dissension was voiced at the RMA meeting by some set makers but the majority agreed with Mr. Sarnoff that the time had come to test out public demand for television. Markets for receivers

naturally will be restricted to communities where transmitters are operating. How many transmitters will be licensed, and where, remains

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