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JANUARY 1955

LARGE-SCREEN COLOR TV

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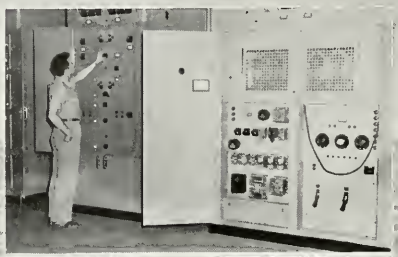
... the international businessman obtains "all 3" of these important overseas communication services



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MAKING TEX CONNECTIONS

RADIOPHOTO TRANSCEIVER

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RCA's DIRECT radiotelegraph circuits to 68 countries the world over carry more than 6,000,000 Radiograms a year. RCA's leadership in radio and electronics assures fast, accurate, reliable transmission.

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3. RADIOPHOTO SERVICE

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COVER

RCA's new 21-inch color TV set, which is in commercial production at RCA plant, Bloomington, Ind.

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NOTICE

When requesting a change in mailing address please include the code letters and numbers which appear with the stencilled address on the envelope.

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RADIO CORPORATION OF AMERICA
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DAVID SARNOFF, *Chairman of the Board* FRANK M. FOLSOM, *President*
JOHN Q. CANNON, *Secretary* ERNEST B. GORIN, *Treasurer*

General Sarnoff views development progress on RCA's electronic light amplifier.

Largest Volume of Business in RCA History With Sales Approximately $930 Million

In Year-end Statement, General Sarnoff Tells of Growing Magnitude of TV and Electronics—Seven Major Developments in 1954

THE RADIO CORPORATION OF AMERICA in 1954 did the largest volume of business in its 35-year history, Brig. General David Sarnoff, Chairman of the Board, announced in a year-end statement in which he told of the growing magnitude of television and electronics in the national economy and listed seven developments of major importance.

"Sales of products and services by RCA in 1954 amounted to approximately $930 million," said General Sarnoff. "Net profits before Federal income taxes were approximately $84 million and after taxes approximately $40 million. Total dividends to stockholders, declared during the year, amounted to $22,051,000. ($18,898,000 on Common Stock and $3,153,000 on Preferred Stock)."

Major Developments

He listed major developments in 1954 as follows:

1. ***Compatible Color Television:*** NBC's "Introductory Year" during which it broadcast many types of programs in color and featured "Spectacular" shows, dramatically revealed the potential scope of color TV.
2. ***Color TV Tube and New Set:*** The RCA 21-inch color tube and a new TV color receiver using this tube were placed on the market and production will be increased in 1955.
3. ***RCA's Magnetic TV Tape Recorder:*** Brought to commercial design stage. NBC will commence, early in 1955, field tests in both black-and-white and color television tape recording.
4. ***Electronic Light:*** This new development by RCA was advanced to a point where it promises important applications in many fields. It makes possible new forms of illumination and "cold light."
5. ***Electronic Light Amplifier:*** When further developed, this will have important applications in television, X-ray, radar and other fields. In television, for example, techniques used in the light amplifier will eventually make it possible to see a TV picture in black-and-white or in color on a thin and flat TV screen that can be framed and hung on the wall like a picture.
6. ***Transistors:*** Designs for commercial use were substantially advanced. Extended use of transistors in 1955 seems certain.
7. ***High Fidelity, or "Hi-Fi":*** Increased popular interest in record players and in records was stimulated by these new instruments. They will advance the growth of the phonograph industry in 1955.

"During 1954, basic progress was made in carrying all these developments forward," declared General Sarnoff. "New knowledge was gained through research and experimentation in these fields at RCA Laboratories. These efforts will have a profound effect on further progress during 1955."

Television

"Television in 1954—its eighth year as one of the country's fastest growing industries—established new records in retail sales of TV receivers and widened the scope of programming, especially in color," he said. "These accomplishments and advances in related fields once again mark the electronics industry as a leader in advancing the nation's economy and welfare.

"Sales by the electronics industry as a whole for 1954 are estimated at more than 10 billion dollars, and the volume for 1955 is expected to be about 10% higher."

Looking ahead, General Sarnoff said that industry production of television receivers in 1955 is currently estimated around 6,000,000 sets, which will lift the total number of TV sets in the United States to approximately 38,000,000 by the end of the year.

"Television is destined for new advances, both in

technical design and in programming," he asserted. "An outstanding development in 1954, the RCA 21-inch color tube, operating with the magnetic equalizer which maintains color purity to the very edges of the picture, is now in production. It is certain to stimulate production of color sets by others in the industry as well and will lift color TV 'off the ground' and into the market.

"At the opening of 1955 there are more than 420 television stations in operation in the United States, 140 of which are equipped to handle network color programs. More than 90 new TV stations began operation in this country during 1954. In Canada, 26 TV stations are expected to be on the air by early 1955.

"The NBC nation-wide television network now comprises 200 stations. Five of these are owned by the NBC, and the others are independently owned stations affiliated with our network.

"Television on an international scale is not too far away. It is bound to be achieved in television as it was in radio."

Magnetic TV Tape Recording

Magnetic tape recording for black-and-white and color television, demonstrated by RCA at the end of 1953, was developed further during 1954 and will make its debut during 1955 as a new tool for the broadcasting industry, he stated, adding: "An RCA television tape recording unit will soon be installed by the National Broadcasting Company for field-testing as a simple, rapid and economical means of storing complete TV programs for rebroadcast. Ultimately, television tape recorders for home use will be developed, making it possible for the TV set owner to accumulate a library of favorite television programs which can be seen whenever desired, in the same way as the library of phonograph records now makes it possible to hear the favorite record at will.

Electronic Light Amplifier

"The electronic light amplifier, which uses the principle of electronic light, under development in RCA Laboratories during 1954, will glow more brightly during 1955. Light amplification by this means has been achieved experimentally in ratios of more than 20 to 1; when that figure reaches 100 to 1, a practical amplifier of light will mark a significant step forward in the science of illumination and television.

"Practical applications for the electronic light amplifier are foreseen in a wide range of technical uses where increased brightness is desired, as in television, X-ray, fluoroscopy and radar. In television, this new form of light amplification will bring bigger and brighter pictures; it will revolutionize television as we know it today."

Transistors

Transistor research and development activities were intensified by RCA during the year, and important progress was made in achieving a new level of product uniformity and reliability, he said, continuing:

"It is anticipated that 1955 will witness greater utilization of transistors, printed circuitry, and other advanced engineering and production techinques to improve the efficiency and decrease the size and weight of commercial as well as military electronic equipment."

Radio

General Sarnoff said that it is estimated that more than 10,000,000 new radio sets, including auto radios, will be sold at retail during 1955, increasing the total of radios in the United States to more than 125,000,000.

He noted that during 1954 the competitive impact of television upon network radio became increasingly apparent, and declared: "The management of NBC early recognized the symptoms of economic dangers that threatened network radio and resolved to cope affirmatively with them. NBC has been leading the way in

Television's continued growth during 1954 was reflected in the widened scope of programming, and an increase in color.

developing the patterns of audience and advertiser service for the purpose of building a new base for successful and continuing network radio operation, which is an instrument of national service and national defence."

Phonographs and Records

Since the introduction of the 33⅓-rpm and 45-rpm records in 1948-49, the number of record players in use has greatly increased. Today, he said, there are more than 25 million turntables—many of them equipped to handle the three phonograph speeds—compared with only 16 million phonographs at the end of World War II.

"About 20 million record players of all types are expected to be produced and sold in the next five years," he said. "Renewed popularity of the phonograph is expected to continue to increase the number of machines in use and this, of course, will mean greater sales of records. One of the major engineering accomplishments in the record field during the year was RCA Victor's introduction of Gruve-Gard—a novel combination of raised rims and centers that protects the playing surfaces of long-playing discs.

"In the high fidelity instrument field, sales for the industry as a whole during 1954 increased about 50 per cent over 1953. Popular interest in Hi-Fi, especially in RCA's new 'Orthophonic' system, promises to add impetus to the sale of records. It is believed that the annual retail sales total of 225 million dollars in 1954 will rise to 300 million dollars for the industry as a whole in 1955."

Electronics and Atomics

Science and engineering, business and industry, at the opening of 1955, are confronted with new challenges that must be met quickly to keep pace with the rapidly changing world, General Sarnoff said.

"The electron and the atom, two of the most powerful forces in Nature, will give increased impetus to the industrial revolution already under way," he continued. "There are definite indications that electricity for commercial use will be generated from atomic energy, and that atomic power for the home will be a reality within the next decade.

"Electronics will lift burdens from the backs and remove toil from the hands of men; electronic eyes will see afar, and electronic brains will perform many routine tasks in the new age of automation which will highlight the scientific and industrial developments of 1955.

"The electron is the key to man's conquest of space. Guided missiles are equipped with electronic brains, while electronic devices on the ground guide them in flight and watch every move they make toward their target. Similarly, electronics and the modern airplane are inseparable. Electronics has led to the development of efficient aviation apparatus that is compact, light in weight and automatic. In the commercial aviation field, widespread acceptance is indicated for RCA's new weather-detection radar equipment, which will be available to airlines in commercial quantities by mid-1955."

World-Wide Communications

Noting that RCA has 86 radiotelegraph circuits linking the United States, its territories and possessions with 68 countries, General Sarnoff said a total of more than 6,600,000 messages have been processed during 1954. He reported that the trend toward direct customer-to-customer services (TEX, teleprinter, leased channels, and radio program transmissions) is accelerating, and RCA now operates radiophoto circuits to more than 30 foreign centers.

Progress Through Teamwork

General Sarnoff pointed out that one of the keys to achievement in modern mass production is the supplier, upon whom the manufacturer relies for materials, parts

Major engineering advances in the record field included introduction of Gruve-Gard records shown in production.

and components necessary to successfully develop a project or product, a service or system.

"Big and small business working together," he added, "complement each other's activities and give widespread employment in many fields, daily adding to the stature of industrial America. Of RCA's 7,500 suppliers located in almost every state of the Union the majority are classified by the Government as small businesses. It is such teamwork that leads to success, not only in the building of instruments for civilian use, but also in the nation-wide mobilization of men, materials and manufacturing facilities that is basic in production for national defense.

"Today, on land, sea and in the air, the electron and atom are strengthening the bulwarks of freedom and democracy. The new and promising developments of the Electronic-Atomic Age open the way for the creation of new businesses, new jobs, and higher standards of living. With the blessings of peace and the practice of good will, we can surely transform these promises into realities."

RCA's Electronic Light Amplifier

RCA's developmentol electronic light amplifier has multiplied by more than twenty times the brightness of a dim image projected agoinst it.

Successful electronic amplification of light in an image of television quality has been achieved with the RCA developmental light amplifier identified by Brig. General David Sarnoff as one of the major advances of 1954 in the field of electronics.

In tests at the David Sarnoff Research Center of RCA in Princeton, N. J., the developmental light amplifier has multiplied by twenty times the brightness of an extremely dim image projected against it, producing a bright and clearly defined monochrome picture. This increase in brightness is sufficient for practical use in brightening dim images in such applications as x-ray fluoroscopy and radar, and further development is expected to achieve a substantially greater amplification, as well as the ultimate ability to produce images in more than one color.

The developmental light amplifier consists of a thin screen formed by two closely-spaced layers, one of photoconductive material sensitive to both ultraviolet and visible light, and the other of electroluminescent phosphor. Both layers are sandwiched between two transparent electrodes. The screen is a fraction of an inch thick, and it may be made in any size desired. The developmental unit is a square 12 inches on each side.

The light amplifier operates, in effect, by receiving light from the projected image on the photoconductive layer and recreating the image in far brighter form as light emitted by the electroluminescent layer.

This process is made possible by the fact that the photoconductive material will permit current to flow when it is subjected to light, while the electroluminescent material emits its own light when an electric current flows through it.

In the RCA light amplifier, current is provided by an alternating voltage applied across the two electrodes, and the image to be amplified is projected against the photosensitive layer. Where the illuminated areas of the image strike the layer, the current is permitted to flow through to the electroluminescent layer in a pattern corresponding to the image. And as the current passes through the electroluminescent material, light is emitted in the same pattern, re-creating the original image as a brighter picture.

The amplifier has been developed to its present stage by a team of RCA research scientists and technicians including Dr. D. W. Epstein, who heads the project, Dr. F. H. Nicoll, Benjamin Kazan, Dr. S. M. Thomsen, Simon Larach, C. J. Busanovich, and P. J. Messineo.

Folsom Sees Increased Sales in 1955

RCA President Reports Expansion in Use of Electronics in Industry, Rise in TV and Record Sales

New and improved products in virtually all lines of radio, TV and electronics — coupled with continued vigor in merchandising that proved so successful during the past year — should spark an outstanding sales volume in the next twelve months, Frank M. Folsom, President of the Radio Corporation of America, declared in a year-end statement.

"Volume should be particularly good in black-and-white television receivers, TV transmitting equipment, radio sets, 'Victrola' phonographs and records, also industrial TV," Mr. Folsom said. "Development of color television into its commercial phase in 1955 will move ahead. Advances in color TV demonstrated by RCA in 1954 and incorporated in production models of RCA Victor's 21-inch color sets will contribute importantly to the transition over the next few years to a nation-wide color television service, with a steadily increasing demand for color sets."

Discriminatory Tax Situation

"Radio and television, even color television, bear the highest rate of Federal manufacturers' excise tax. Last April 1st, Congress cut excise taxes on articles ranging from guns to household appliances, but the taxes on both radio and television were continued at discriminatory levels.

"Many millions of dollars have gone into developing color television, and it will cost industry many millions more to get color television to an enlarged American audience. Currently the tax on color television sets will produce only small revenue and, under the circumstances, I cannot help but feel that it is most unfair to penalize consumers. I think the Government would do well not to try to harvest the field at least until industry has completed sowing it."

Good Business In 1954

Mr. Folsom recalled that his estimate a year ago was that 1954 could be good for business. He added:

"This most certainly has proven true for the companies in the industry that heeded the changing trends and new challenges of the buyers' market.

"It has been a splendid year for RCA, with sales of products and services attaining an all-time high volume of approximately $930 million. The electronics industry as a whole continued its phenomenal growth, with sales of more than $10 billion, which is about 600 per cent greater than those eight years ago."

Greater TV Service

Television attained new heights of service in 1954 as more than 90 additional stations went into operation and consumer demand for receivers led to the seven-million-plus boom in set sales, he stated, declaring that for RCA Victor, unit production and sales of TV sets surpassed the top year of 1950.

Frank M. Folsom meets Lorraine Hatcher, 10-millionth visitor to RCA Exhibition Hall, with her father and mother, Dr. and Mrs. Samuel Hatcher, and their son John, of Morehead City, N. C.

"Opening of new television service areas and the trend to multiple TV sets in homes, will give added impetus to sales in the years ahead," he said. "In fact, estimated production of black-and-white and color receivers during the next five years is expected to exceed 33 million units, thus exceeding by more than a million units production during the past five years."

Major Trend

During the past year, a trend of major importance was discerned in the increasing use of new electronic products and services for industrial purposes, he declared, and continued:

"By year-end, sales to industry and government had reached a total of more than half those in communications and home entertainment. More electronic equipment was in use in a greater number of different fields than ever before. The accelerated 'electronizing' of such diverse areas as manufacturing, inventory control, military equipment, food protection, medicine, scientific research and home entertainment can be expected to continue impressively in 1955."

Increase In Record Sales

The phonograph record industry, continuing its impressive growth in 1954, showed a rise of nearly 20 per cent in record sales, and record sales in 1955 are expected to increase an additional 15 per cent, he stated.

He listed major merchandising achievements in the record field in 1954 as follows:

Growing impact of high fidelity in home entertainment and recorded music as a major factor in boosting industry sales.

Introduction of the "Listener's Digest," a record package designed to broaden the record market with condensations of the classics performed by world-famous artists and made available with a 45-rpm record player at a new low price.

Rapid growth of self-service and "island display" merchandising techniques for increasing record sales.

Acceptance of the "Mood Music" series which passed the one million mark in sales during the year.

Packaging of records with art reproductions suitable for framing which demonstrate the close affinity between great art and great music.

Marketing of the second volume of the Glenn Miller Limited Edition which sold an unprecedented 170,000 records and was more successful by 50 per cent than the first Glenn Miller volume.

Mr. Folsom said that 1955 is expected to produce a substantial upward trend in radio set sales, as compared with 1954, and reported that home air-conditioner sales, which showed an increase for the industry as a whole of 15 per cent in 1954, will continue to increase in 1955 as one of the fastest growing products in the appliance field. He also foresaw good business prospects for RCA Estate gas and electric ranges in the year ahead.

"Growth of the radio-television and electronics industry, at its present rapid rate, is highly significant," he said. "The record of progress shows that the increasing usage of electronic products and services represent a strong and stimulating factor in the growth possibilities of industries employing these modern scientific devices and technical advances. Because of this broadening horizon of usefulness, the sales outlook for electronics grows steadily brighter."

New RCA Engineering Laboratory in Waltham, Mass.

The Radio Corporation of America's new engineering laboratory for the development of electronic fire-control systems for military aircraft will be established during February in Waltham, Massachusetts, it has been announced by Theodore A. Smith, Vice President and General Manager of the RCA Engineering Products Division.

RCA has leased a portion of the Waltham Watch Company plant, 225 Crescent Street, to house the new operation, which will be managed by Dr. Robert C. Seamans, Jr., nationally known authority on airborne electronics, Mr. Smith said.

It is expected that by the end of 1955, approximately 100 scientists, engineering and supporting personnel will be engaged in the development of airborne fire-control systems at the new Waltham Laboratory, which will be equipped with the latest in research test equipment, and scientific computing devices.

Location of the new RCA development activity at Waltham reflects the growing importance of New England as a center for the engineering and development of electronic systems for a wide range of military and industrial applications, Mr. Smith pointed out.

Dr. Seamans, who received his doctorate in Instrumentation from the Massachusetts Institute of Technology in 1951, has been associate professor at M.I.T. since 1949, and for the past two years served also as Director of the M.I.T. Flight Control Laboratory. From 1941 to 1949, he was first instructor and then assistant professor of aeronautical engineering subjects at M.I.T.

RCA 21-Inch Color TV in Production

TWENTY-ONE-INCH color television sets for the home entered commercial production at the Bloomington, Ind., plant of the RCA Victor Television Division with the closing of color television's introductory year of 1954.

The start of commercial set production in the 21-inch size was announced on Dec. 6 by Henry G. Baker, Vice-President and General Manager of the division, shortly after the disclosure that RCA's 21-inch color TV picture tube had become commercially available to TV set manufacturers and had reached a mid-November production rate of 100 tubes a day at the Lancaster, Pa., plant of the RCA Tube Division.

Limited quantities of the new RCA Victor 21-inch color set were scheduled for shipment to distributors in late December, becoming available in dealer stores during January, Mr. Baker announced. The set, providing a viewing area of 255 square inches—about 25 per cent greater than that of any color set previously available—bears a suggested retail price of $895.

Describing the introduction of the 21-inch receiver as a significant step toward the ultimate establishment of a nation-wide color television service, Mr. Baker said that RCA Victor is planning only limited quantity production initially, with emphasis on quality rather than quantity. He emphasized that intensive work is still under way, with the objective of achieving further cost reduction.

"We are striving to produce our quality color receivers, at a price within the reach of the greatest number of consumers," he said. "While we have no doubt that this objective will be reached, it will take time and further simplification of production methods to achieve it. Because of these facts, we do not foresee large mass production of color receivers in 1955."

Pre-Production Models Tested

During November, a small quantity of pre-production models of the 21-inch color sets were placed in operation at distributors' establishments for demonstration purposes.

"The successful results of these demonstrations as well as our own field tests give us reason to be extremely enthusiastic about the progress we have made in commercial color receiver developments," Mr. Baker said. "We believe these developments will contribute importantly to the orderly transition over the next few years to a nation-wide color television service, with a steadily increasing demand for color receivers.

"The likelihood of this orderly transition will be enhanced by the experience gained as successive models are introduced and by creating an expanding consumer demand through the industry's continuing efforts to achieve lower production costs, resulting in lower prices to the consumer."

As a result of engineering improvements in the convergence and focusing circuits, making possible greater accuracy and increased stability, the control knobs for these functions on the new set have now been removed from the side of the cabinet and placed inside as an adjustment for service technicians only.

Two control knobs for black-and-white are in standard position on the front of the cabinet of the new set, with color controls located behind a decorative shield. Initially, the console will be available only in mahogany finish. The dimensions of the set are 42½ inches height, 27½ inches width, and 27⅝ inches depth.

Tube Price Reduced to $100

Announcement of a reduction in the price of the RCA 21-inch color television picture tube from $175 to $100 was made on January 11 by W. Walter Watts,

Skilled hands insert RCA 21-inch color picture tube in a receiver on the production line.

High voltage power supplies are assembled for use in new 21-inch RCA Victor color sets.

Executive Vice-President, Electronic Products, Radio Corporation of America.

"This 43 per cent reduction to television set manufacturers in the price of the RCA color tube is another major step initiated by RCA toward the establishment of a nation-wide color television service," Mr. Watts said. "This reduction is made possible by RCA manufacturing techniques recently achieved which permit substantial economies in the production of the tube. These accomplishments confirm the basic soundness of the round metal design developed by RCA color tube engineers.

"The picture tube is the heart of color television. RCA is confident that its present type 21-inch color tube is the best and most economical answer to the problem of moving color television 'off the ground' and into the market. This confidence is based on our experience in manufacturing thousands of these tubes, as well as our experience with these tubes in nation-wide field tests and in actual use in the homes of those who have purchased the RCA 21-inch color sets. Current demand for these sets exceeds the supply."

Mr. Watts said that the price reduction on the 21-inch color tube is further evidence of RCA's determination to move ahead in color television, steadily and constructively.

"RCA will continue to carry out its previously announced plans for manufacturing color tubes and color receivers for the home, as well as for broadcasting color programs," he emphasized. "It is RCA's hope that this substantial price reduction on color picture tubes will encourage competing manufacturers in the industry to go into production promptly in the field of color television."

The announcement regarding the RCA 21-inch round color tube, Mr. Watts said, follows a careful engineering and cost analysis of the 22-inch rectangular color picture tube, which has been reported as being near the production stage.

"RCA has also produced this type of color tube, and has conducted extensive tests of the 22-inch rectangular tube alongside the 21-inch round color tube," Mr. Watts said. "We have carefully evaluated the characteristics of both tubes operating under identical conditions. As a result, we see no advantages in the 22-inch rectangular tube. It does not produce better color, and it does not provide a larger picture than the RCA 21-inch round color tube. Furthermore, the 22-inch rectangular color tube is more costly to manufacture, and it may never be as economical to produce as the RCA 21-inch round color tube."

Mr. Watts added:

"Moreover, our 21-inch round color tube is now in actual production and already has passed through the initial stages involved in the manufacture of any new product, while the 22-inch rectangular color tube has yet to meet and solve the problems inherent in these early stages. In other words, the 21-inch round color tube is here today while the 22-inch rectangular tube is only a promise for the future."

New Communications Center

Employees of RCA Communications, Inc., in San Francisco, have recently moved into a newly-built, modern Pacific Coast Headquarters and Central Radio Office building on Market Street.

The four-story building, with its gleaming façade of gray-green ceramic tile blocks separating rows of aluminum framed windows, serves as the Pacific Gateway for RCA Communications, Inc. This office, with the support of branch facilities and the transmitting and receiving stations located north of San Francisco, handles the bulk of all telegraphic communications to and from points throughout the Pacific and Far Eastern areas.

Color TV Meets the People

Another "first" is achieved far color television as RCA Victor Color TV Caravan originates closed-circuit demonstratian at industrial convention in Chicaga.

COLOR TELEVISION is going out to meet the people, carried by an RCA Victor Color TV Caravan that already has given thousands of Americans their first taste of an exciting new era in mass communication and entertainment.

The Caravan, completely equipped to originate live color programs for closed-circuit transmission over 30 RCA Victor color sets carried by the unit, is following in color the precedent set by the RCA black-and-white mobile unit which toured the nation in 1947 and 1948 to introduce television itself to the grass-roots areas of America.

At the first stand of the Caravan at the Mid-South Fair in Memphis, Tenn., audiences totalling close to 400,000 men, women and children flocked to see color television during eight days from Sept. 25 to Oct. 3. In early November, the unit travelled to Chicago to participate in the two-day convention of the Graphic Arts Association of Illinois and the Lithographic Technical Foundation, marking the first use of closed-circuit color TV for an industrial convention.

During the convention, held at the Morrison Hotel, the Caravan telecast forum sessions by closed-circuit, as well as close-up views of award-winning lithographic color works in the 1954 Litho Awards Exhibit. An additional feature was a telecast talk by John S. Odell, of RCA, on color television from the viewpoint of the graphic arts industry.

At its first major public appearence, the Caravan proved the steller attraction of the Mid-South Fair, following a pattern which is expected to serve as a precedent for future appearances in other parts of the country. During the eight days of operation in Memphis, the unit presented closed-circuit programs to receivers located throughout the fair grounds, and open-circuit programs broadcast by station WMCT, co-sponsor of the Caravan's appearance with the Mid-South Fair Corporation.

Tent Serves as Theatre

A 150-by-150-foot tent served as a color TV theatre, at one end of which a stage was erected for studio use. Six RCA Victor 15-inch color TV receivers were in constant operation in the theatre tent, and the remainder of the sets were installed in other exhibit buildings and tents.

Working on a regular schedule from 2 to 9 p.m., the Caravan presented 20-minute programs on the hour. More than 100,000 fair-goers visited the theatre itself to witness the demonstration as viewed on the receivers and seen on the stage. Although 500 chairs were set up in the theatre, programs were frequently presented to standing-room-only audiences.

The event had been billed well in advance as the first mass demonstration of color TV in the area. It also was the first presentation in the region of colorcasts originating locally and transmitted by WMCT, which

More than 100,000 persons visited this tent theatre to witness color TV in action at the Mid-South Fair in Memphis, Tenn.

"Nerve center" of Color TV Caravon is this completely-equipped 32-foot truck which includes control room for colorcasts.

put 15-minute programs on the air daily from the Caravan at 6 p.m., picking up the signals as relayed by microwave to the station's transmitter. During the period, the station achieved another "first" with a colorcast of its Esso-sponsored news program, using forty-six color slides of national and local news events.

Seen Stimulating Public Interest

The program presented daily for the fair audience consisted of entertainment acts and live commercials arranged by WMCT. Summing up the appearance of the Caravan at the fair, Henry Slavick, general manager of stations WMC-WMCT, said that the demonstration had served to "create public enthusiasm for and acceptance of color TV service." He recalled that RCA's earlier black-and-white television mobile unit had staged a similar demonstration in Memphis in 1948, contributing substantially to the immediate establishment and success of TV service in Memphis.

"The demonstration we have just concluded, in cooperation with RCA, will without doubt do a similar job for color TV," he added.

The Caravan, a completely-equipped mobile unit housed in a 32-foot trailer truck, includes a complete control room and broadcast equipment. Two standard RCA color cameras are used. The unit is manned by 18 technicians and engineers, including local RCA Service Company technicians, and is supervised by Richard Hooper, Manager, RCA Shows and Exhibits.

RCA Victor Record Price Reduction:

More Music for More People

A MAJOR reduction in the price of RCA Victor classical and popular records so that more music will be available to more people at lower cost in 1955 was announced on December 28 by Frank M. Folsom, President of the Radio Corporation of America.

In announcing the new price plan which became effective January 3, Mr. Folsom said that it will reduce the price of many RCA Victor records more than 30 per cent to the lowest in the history of the industry. He said that the new plan was developed because of the firm belief that the record industry is on the threshold of its greatest period of expansion.

"It represents one of the most significant forward steps ever taken to bring recorded music to the general public at low prices," he said. "It also represents another first for the company that introduced the first disk-type record more than 50 years ago, pioneered in the development of recorded sound, electronized the Victrola-phonograph and linked it with radio, introduced the 45-rpm system, and has consistently recorded the world's finest artists."

The plan calls for a 33 per cent price reduction in 12-inch classical long-playing records, with both classical and popular 12-inch records dropping from a high of $5.95 to $3.98. All 10-inch long-playing records will be reduced from a top of $4.95 to $2.98, which represents as much as a 40 per cent cut.

Reductions will take place also in the classical 45-rpm extended play records, which will be reduced from $1.58 to $1.49. Both popular and classical music in the extended play albums will be priced the same.

"We are eliminating the price differential between types of music so that the new lower prices will apply to all types of music," Mr. Folsom said. "The low prices will be made possible partly because of the decreased production costs that will result from the increase in volume. We are anticipating these savings and passing them on to the consumer immediately."

The 78-rpm record will be raised in price from 89 to 98 cents, he pointed out, because of increased manufacturing and handling costs resulting from decreased production and demand. Steadily decreased interest in the 78 record is making it obsolete, and he explained that within a short time it will disappear from the market.

Emanuel Sacks (seated), Vice-President, RCA Victor Record Division, discusses advertisement announcing new price policy with (from left) key executives George Marek, Howard Letts, and L. W. Kanaga.

One of the aspects of the new plan which will prove helpful to both consumers and dealers, he pointed out, is a simplification and standardization of prices for the various speeds and sizes.

"Introduction of the 33⅓-rpm and 45-rpm records in 1948-49 greatly increased the number of record players in use," Mr. Folsom said. "Today there are more than 25 million turntables—many of them equipped to handle the three phonograph speeds—compared with only 16 million phonographs at the end of World War II. About 20 million record players of all types are expected to be produced and sold in the next five years.

"We are convinced that because of the increasing interest in high fidelity, the new non-breakable records,

the improved recording systems and techniques that are available, the lower priced and better-quality players now offered by all manufacturers of record equipment, and the number of great recording artists in all fields, more and more people will want to listen to more music in their homes.

"Never before has there been such a wealth of fine music available on records for the general public. We feel that in reducing the prices at this time, the whole record industry will prosper.

"It is expected that this plan will encourage dealers to modernize their stores so that modern shopping facilities will be available to the general public. For this reason, we have established a consulting service that will be able to work with dealers to make record shopping easier, pleasanter and faster.

"The entire program will be back by one of the most intensive advertising campaigns ever undertaken and will be spearheaded by three record lines—RCA Victor, RCA Bluebird and RCA Camden. These are priced to fit the pocketbook of the Individual. We shall feature extended-play records starting at 79 cents, and long-playing records at $1.98. We call this our 'good, better, best' program, and we hope to be able, through advertising, to keep the American public better informed about the repertoire that's available and the new low prices that are in effect."

The new suggested list prices for RCA Victor records:

All 12-inch long playing records $3.98 instead of $5.95, $4.85 and $4.19.

All 10-inch long playing records $2.98 instead of $4.95, $3.85, $3.15 and $2.99.

All double extended play 45-rpm records $2.98 instead of $3.85, $2.99, $2.98 and $2.94.

All 45-rpm singles 89 cents instead of $1.16, $1.00 and 89 cents.

All single extended play records $1.49 instead of $1.58 and $1.47.

General Walter Bedell Smith Elected a Director of RCA

ELECTION of General Walter Bedell Smith as a member of the Board of Directors of the Radio Corporation of America was announced December 3 by David Sarnoff, Chairman of the Board.

General Smith is Vice-Chairman of the Board of Directors of the American Machine & Foundry Company. He served as Under Secretary of State from February, 1953, to October, 1954.

During World War II, General Smith was successively Secretary of the Joint Chiefs of Staffs and United States Secretary of the Combined Chiefs of Staff in Washington, Chief of Staff of the European Theater of Operations, and Chief of Staff to General Dwight D. Eisenhower. On behalf of General Eisenhower, he negotiated and signed the instruments effecting the surrender of Italy and Germany.

General Smith was Ambassador to the Soviet Union from 1946 to 1949, when he assumed command of the United States First Army. In October, 1950, he was appointed Director of Central Intelligence, where he served until his appointment as Under Secretary of State. He retired from active service in the Army on January 31, 1953.

Beginning his military career as a private in 1910, he rose to the rank of General in 1951. He served in France during World War I, and was wounded in action. From 1925 to 1929, he was lent by the Army to serve as Executive Officer and Deputy Chief Coordinator, Bureau of the Budget, and as Executive Vice-Chairman of the Federal Liquidation Board.

For service in both World Wars, General Smith holds eight decorations from the United States, as well as decorations from numerous foreign countries. He has fourteen honorary degrees from American and foreign colleges and universities.

General Smith's headquarters are in New York.

Important to Industry:

Servicing of Electronic Equipment

SERVICING of electronic equipment now accounts for an important percentage of total sales for the electronics industry and, by 1957, is expected to reach an annual total of $2.7 billion, Charles M. Odorizzi, Executive Vice-President, Corporate Staff, Radio Corporation of America, told a meeting of the Cleveland Society of Security Analysts in Cleveland on November 23. In his talk, Mr. Odorizzi described the "amazing growth and healthful expansion of electronics" and emphasized the importance of installation and maintenance of equipment as a major contribution to total industry sales.

"In 1946," Mr. Odorizzi said, "when television emerged from behind the curtain of war to begin its phenomenal growth, the industry's return for servicing home television and radio sets was less than $145 million, not including the cost of parts. Four years later, in 1950, comparable costs had increased to $710 million. In 1953, the total was $1.4 billion, and by the end of 1957, this part of the electronics industry will contribute nearly three billion annually to the national economy for home installation and maintenance. In other words, during the next four years, from January 1, 1954, to January 1, 1958, the industry's gross income from this service will have almost doubled.

"With these figures in hand, it is only natural that they should be compared with the overall volume of business produced by the electronics industry. Total annual sales of this industry grew from $1.6 billion in 1946 to $8.4 billion in 1953. Thus, in 1953, the consumer service was responsible for 16.4 per cent of electronic industry sales. This is almost as much as the total sales of all electronic products, to both consumers and the Government, in 1946.

"Service, therefore, has become an important facet of the nation's business structure. The consumer knows the value and economy of keeping the products of modern science and industry at peak efficiency. When properly organized, service pays its own way. It is a good investment that returns its outlay manifold in many forms.

"Some measure of the importance of service to electronics is shown by the fact that today nearly 100,000 service men are employed in the industry, most of whom are in radio and television service for the home. With the expected growth of the electronics industry, more than 125,000 technicians will be needed in 1957."

Against this background, Mr. Odorizzi described the development and scope of RCA's own service operations, saying:

"From the moment in the mid-twenties when the first piece of apparatus bearing the name RCA came off the assembly line, the company assumed a two-fold responsibility. The first was that this apparatus should work properly upon installation; the second was that it should serve a useful life. Out of this basic responsibility for satisfying the customer, the RCA Service Company was born.

Millions of Service Calls

"The millions of service calls made each year by RCA service representatives are an invaluable asset in another way. From the reports received after visits to homes, factories and military bases, RCA executives and engineers are enabled to keep their fingers on the pulse of customer preferences and demands, and, in that way, can make more accurate plans for future design and production of electronic products."

The demands for servicing government electronic installations at home and abroad to insure peak efficiency has brought about a major expansion in this branch of service activities, Mr. Odorizzi said. He continued:

"The RCA Government Service Division field engineers are under contract with all branches of the Armed Forces and are assigned to all locations where there are Army and Air Force bases. . . . Hundreds of RCA Government Service engineers are assigned to 26 foreign countries, including 13 which are in the Government's Mutual Defense Assistance Program. . . .

Emphasizing the need for advance planning in many aspects of the service program, Mr. Odorizzi said:

"Service facilities must sometimes be organized with a long-range view, administered with little chance of immediate returns. Color TV is an outstanding example of this situation. A full year before a color set reached the consumer market, RCA had trained a group of technical specialists to act as instructors to service men throughout the country. An elaborate series of lecture clinics was arranged in the principal television areas. Up to the present, 120,000 technicians, dealers and others, including the personnel of competitors, have attended these free symposia. In this way, by making available the experience and technical knowledge it has accumulated over the years, we believe that RCA has rendered an outstanding service to the television industry.

Where RCA Tests Itself

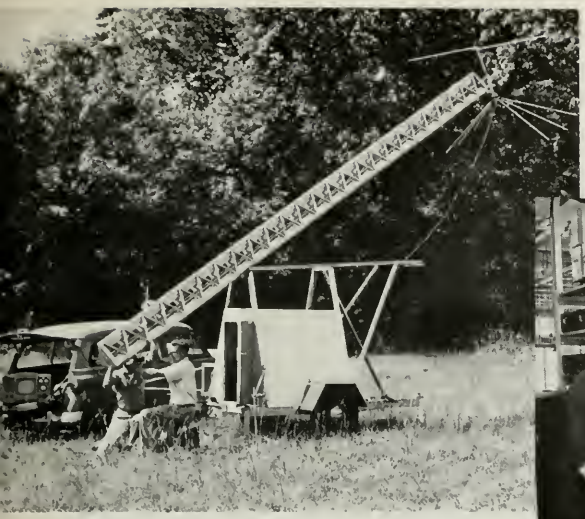
Browns Mills quality control laboratory is wonderland of electronic products for Judy McKenna, Camden, secretary.

A Visitor Tours Browns Mills, New Jersey, Testing Ground of Electronic Products

IN a modest brick building at Browns Mills, N. J., 30 miles due east of Camden, RCA keeps a close eye on its wide range of electronic products to ensure the high standard of performance on which the RCA reputation is based. This is the Field Quality Testing Laboratory, operated by the RCA Service Company. Within its walls, scores of the latest TV sets, record players, air conditioners and table radios are kept at work 24 hours a day to determine whether they meet the specific standards of RCA quality. From the roof of the building sprout antennas of every description and outside stands a station wagon rigged with mobile radio systems under test. Products for the tests arrive constantly from the various RCA manufacturing plants, and results of the rigorous inspection are passed back to the plants concerned after the tests have been run. The Browns Mills Laboratory not only tests the individual performance of new RCA products — it also runs them side by side with competitive makes to determine the margin of superiority over the products of other manufacturers.

Antennae of all types are given exhaustive tests to determine designs best suited for home use.

Judy discusses performance of RCA Victor TV sets with engineer supervising "life tests" of instruments.



Specially-designed antenna (left) is used to check "fringe area" reception of TV sets. Browns Mills operation is directed by RCA Service Company.

Globe-girdling "Strato-World" portables and table model clock radios (right) are checked for performance, life-span and overall dependability.

RCA consumer tape recorders (left) get "the works" at Browns Mills to insure quality merchandise and satisfied customers.

Judy cools off from her unofficial "inspection trip" before RCA room air conditioner. All products tested are picked at random from production lines.

Opportunities in the Electronic and Atomic Age

SCIENTIFIC research is the basis for virtually all of the material things we have today and for the better things we hope to enjoy tomorrow, General Sarnoff said in an address before the Bernard M. Baruch School of Business and Public Administration, City College of New York, on November 1, 1954. His topic was "Opportunities in the Electronic and Atomic Age."

"Your heritage is rich and inspiring," General Sarnoff told the students, "replete with exhilarating opportunities. It includes substantial improvements in man's lot, a quickened sense of social responsibility, and unprecedented opportunities for service on both the material and the spiritual levels.

"My generation has only reconnoitered on the frontiers; yours will push far beyond them—and you are fortunate in having both the electron and the atom young like yourselves.

"Whatever course you choose to follow, it will not be a chore but an adventure if you bring to it a sense of the glory of striving to succeed and to add something to the welfare and happiness of your community as well as to yourself. If you set your sights above mere personal security, you will avoid mediocrity.

"Pioneering and scientific research are the blood and the sinew of industry, providing the basis for versatility and vitality. They give America economic strength and increase our national security. They lead to new products and services, cultivate prosperity and improve the health of the nation.

"Science, through research, has a unique way of edging up to an existing industry or business to completely revolutionize routines and operations, to increase their safety and productivity and to provide a better return for labor on its effort and for capital on its investment.

"From the broad viewpoint, our whole pattern of life—our homes and clothing, the automobiles, planes and trains we travel in—are all products of scientific research. And our social, political and economic institutions—even the conflicts involving them—are affected by that research.

"You of this generation are fortunate in being on the threshold of electronics, and also of atomic energy, another vast field for opportunity and advancement.

"You are lucky to be young and to be living in a country so vibrant with opportunities. But your greatest advantage is the fact that you are Americans who are free to live, learn, work and advance, in an atmosphere where the dignity and rights of man are the foundations of our national structure. And they are foundations upon which a more stable world can be built.

"May I recall to you Mr. Baruch's wise admonition: 'To attain the stability we yearn for in this world, we must first find stability within ourselves.'"

George Y. Wheeler Elected RCA Vice-President

ELECTION of George Y. Wheeler, II, as a Staff Vice-President of the Radio Corporation of America with offices in Washington, D. C., has been announced by Brig. General David Sarnoff, Chairman of the Board of RCA. Mr. Wheeler, who has been serving on the staff of National Broadcasting Company in Washington, will handle general staff assignments related to the business of the Radio Corporation of America.

Joining NBC in 1937 as a page boy, Mr. Wheeler served from 1938 to 1944 in NBC's Program Department in Washington as an announcer, performer, writer, producer and program manager. He became a war correspondent for NBC in the European Theater of Operations during 1944. From 1945 to 1949, Mr. Wheeler was Assistant General Manager of NBC in Washington. He received his Bachelor of Arts degree from Princeton University in 1937. Between 1951 and 1954, he attended the Law School of National University in Washington.

Mr. Wheeler serves on the Board of Governors of the Metropolitan Club of Washington and is a member of The Chevy Chase Club, and Delta Theta Phi, law fraternity.

Built for Color from the Ground Up: NBC's New TV Studio in California

New west coast television headquarters is model of efficiency.

A MAMMOTH color television studio, built in Burbank, California at a cost of $3,600,000, will swing into action early in 1955 as West Coast headquarters for color programming of the National Broadcasting Company.

First studio ever to be built from the ground up specifically for colorcasting, it was designed by NBC engineers on the basis of years of NBC pioneering in the design and technical operation of color television studios. One of the world's largest studios, its floor space is 140 feet by 90 feet, with 42 feet of clearance from floor to ceiling.

The Burbank studio is equipped with the latest electronic developments of the Radio Corporation of America, and has the world's most elaborate television lighting system. It is a major step in the RCA-NBC master blueprint for extending leadership in color television.

The studio fits into a carefully conceived plan for the development of the NBC center at Burbank. It takes its place with two huge black-and-white studios and a service building, all of which were constructed on NBC's 40-acre tract in 1952.

Besides the color studio itself, the new construction includes a control building, a technical building and a rehearsal studio which can also be used for commercials and orchestral scoring. In addition, the service building, housing set-decoration shops and other facilities, has been extended to double its former size.

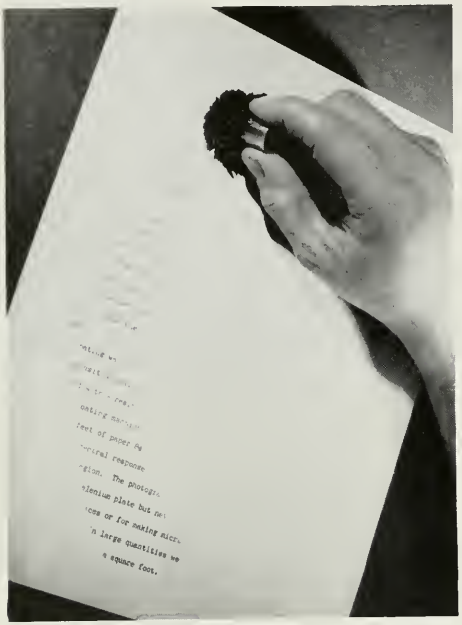
The color studio, one of the most spacious ever built, is the first NBC studio designed for both live and film colorcasting. Among many unique features is an audience pit which can be covered over to become part of the studio floor. The lighting system, with a capacity of one-million watts and with 2400 lighting controls and 1260 outlets, is the largest ever installed in a television studio. Equipment already on hand includes four RCA color cameras and a Houston Crane.

The studio has some revolutionary new electronics and stage equipment. It is equipped with a Century Izenour lighting board, a complex arrangement of some 2400 controls which permits the pre-setting of lighting for 10 scenes, double the number that was possible with previous systems. The board, moreover, permits 10 changes of lighting within any one scene. The studio also has a large-screen color projector, newly developed by RCA, which allows the studio audience to watch the performance on a movie-size, 15-by-20 foot screen.

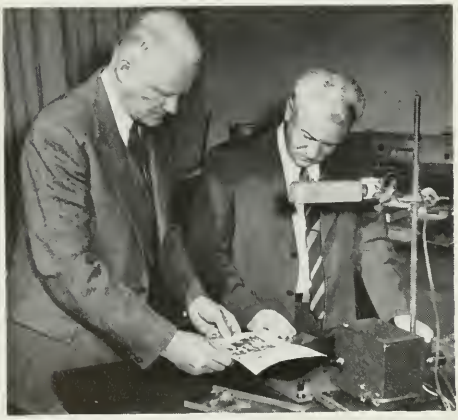
Adjoining the color studio is the two-story control building. On its first floor are dressing, make-up, quick-change rooms and other accommodations for the artists. The second floor is devoted entirely to technical facilities. Here are the control rooms for the director, for video, audio and lighting. Here, too, is space for technical equipment including the revolutionary new RCA pre-set switching system, which greatly simplifies the business of changing from one camera to another.

Electrofax

RCA's Low-Cost Photosensitive Paper and New Dry Photo Process



Magnetic "brush" applies pigmented resin powder to bring out image on sheet of photosensitive paper developed by RCA scientists for use in Electrofax process. Below, C. J. Young (left) and H. G. Greig, co-developers of Electrofax, inspect results.



A LOW-COST, coated paper that is so photosensitive that it can make contact prints at exposures of a fraction of a second has been developed by scientists of the Radio Corporation of America for use in a new, simplified dry photographic process known as Electrofax.

Although the Electrofax paper is as sensitive as standard photographic contact printing papers, it compares in cost with the low-sensitivity diazo papers in common use for reproduction of diagrams and plans. Created for use in the Electrofax process for obtaining rapid and permanent prints from photo negatives, microfilm enlargements or projected images, the new paper has proven its sensitivity in numerous tests, including experimental use in a camera. At exposures of one-half a second in outdoor light, it has produced positive prints in a few seconds, with no chemical processing.

The speed with which images can be photographed and printed with the new paper and the Electrofax technique has permitted experimental development of a mechanized system of continuous-strip reproduction that may be adapted to use with electronic computers or other devices which produce a flow of visual information. The Electrofax process, developed by C. J. Young and H. G. Greig with a team of RCA scientists at the David Sarnoff Research Center of RCA, in Princeton, N. J., also is regarded as a practical and inexpensive method of producing master copies of letters, diagrams, microfilm records and other documents.

Sensitivity Achieved by Special Coating

The sensitivity of the new paper has been achieved by applying a thin layer of special zinc oxide in a resin binder. Both materials are inexpensive and readily available. The coating may be applied to a wide range of papers, from those of low-cost wood pulp base to high strength bond, according to the requirements. When the paper has been coated, it remains insensitive to light, and hence may be handled without fear of inadvertent exposure, until the coating is given a negative electrostatic charge. The charge is applied in the dark by transfer of ions as a charged wire is moved across the coated surface. Once the charge has been placed on the layer, the paper is sensitized and must be shielded from light in the manner of ordinary photographic film. The uncharged coated paper, however, will keep indefinitely without deterioration.

In the Electrofax process, the charged paper is exposed by any of the conventional photographic procedures. The electrostatic charge is reduced in the areas exposed to light, depending upon the intensity of the light, leaving a latent electrostatic image on the coated surface.

How the Image is Developed

The latent image on the paper is developed by applying a pigmented resin powder carrying a positive electrostatic charge which causes the powder to stick to the negatively charged areas on the coated surface. To accomplish this, the RCA research team developed a magnetic "brush" consisting of a mass of iron filings mixed with the powder and picked up on the end of a perma-magnet. The iron particles take on negative charges, while the particles of powder become positive. When the "brush" is swept across the paper, the image is revealed immediately as the particles cling to the areas of lesser light intensity.

When the "brush" has been swept over the entire surface of the paper, the resulting powder image is fixed permanently by baking the sheet for a few seconds at a temperature which will cause the resin powder to melt and fuse to the coated surface, creating a durable, light-fast picture. If for any reason the image should be unsatisfactory, it may simply be brushed off before the baking process takes place, and the paper used again. After baking, the image is as rugged and permanent as any ink-printed image.

For mechanized operation of the Electrofax process, the RCA team has been experimenting with a large, continuous-strip device and a smaller unit capable of making single prints from projected images. A rudimentary, portable unit also has been developed with which the process is carried out by hand. Even with the hand unit, finished copies can be produced in a fraction of a minute, from exposure to development of the print.

A Record in the Slot Brings Music From the Slide-O-Matic

YOU CAN now put a record into a slot to get your music.

RCA Victor has added to its "Victrola"-phonograph line a "Victrola" 45 Slide-O-Matic attachment, a unique 45-rpm record player in which a record slides into a slot to reach a concealed turntable.

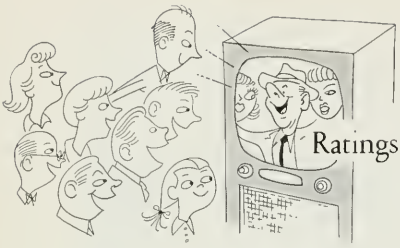
The new Slide-O-Matic is fully automatic. After the record is inserted in the slot, it automatically finds its place on the spindle. A "play bar" is flipped to start the tone arm and to position the needle automatically in the record's first groove. A downward flip of the "play bar" drops the record and stops the machine, in which an automatic shut-off also is incorporated.

All of the operating mechanism, including the tone arm, is concealed within the cabinet, and no lid is required. The record juts out sufficiently from the opening so that the listener does not have to put his hand into the machine. Because of these features, the Slide-O-Matic is expected to find wide acceptance for children and teen-agers.

The instrument weighs only six pounds and measures 4⅛ inches high, 7⅝ inches wide and 10⅞ inches deep.

The new 45-rpm attachment is ultra-modern in styling, with gold trim decorating the cabinet front. It is available in ebony finish, black and gray, red and white, and two-tone natural oak grain finish.

The new RCA Victor Slide-O-Matic makes record-playing easier than ever before for children.



Who's Watching?

Ratings Provide Answer for TV Broadcasters

By Hugh M. Beville, Jr.

Director of Research & Planning, National Broadcasting Company

"A RATING is a figure which tells you the size of your audience," Abe Burrows once said, "and which is completely inaccurate if it is too low."

That comment hits close to a major cause of the confusion surrounding television ratings. Too many people look on ratings as a kind of popularity contest and forget that their real purpose is to measure the size of the audience for the broadcaster and the advertiser.

The proper use of ratings is more crucial now than ever before in the history of television. The coming of the era of television as a national service, the launching of new concepts of programming, the growth of color television — all these have increased the need for audience measurement. Yet outside of a small group of experts, the ratings picture today is more confused than ever. To sort out the causes of the muddle requires some understanding of the background, the methods and the purposes of the various ratings systems.

As for background, we should recall that television began experimentally in a few scattered localities. Then, as it grew locally, advertisers began the search for some means of measurement, some way to find out what they were getting for their money. They turned to the rating services which had been operating in radio — to C. E. Hooper, Inc. — to The Pulse, Inc. — and to the American Research Bureau.

These local measurements were useful during the early days of television. They measured audiences within a city or within the narrow metropolitan area surrounding the city. Even when local markets were tied into networks they became not national networks but regional networks. At the outset of television and for a long time thereafter, these networks covered not a solid area but scattered islands, each grouped around a television station.

Television was temporarily frozen in this local mold when the Federal Communications Commission suspended the granting of licenses for new stations between September 1948 and June 1952. Today, of course, the freeze has been lifted and television has grown into a national medium. But some of the problems in the ratings field have risen because television started on this localized basis. Indeed, some of the rating services are still substantially local, not national, in character.

Others, however, have tried to keep pace with the growth of television. Today we at NBC use three major ratings systems which provide valuable, generally accurate information on audience measurement. These three are the A. C. Nielsen Company, The American Research Bureau and Trendex, Inc. But each of these three services uses different methods, measures different audiences and, therefore, produces different results. This seems simple enough, yet lack of understanding on this point has caused most of the confusion on television ratings. For this reason it is important to know something about the methods and measurements of the three services.

Nielsen Rating System

The Nielsen method uses as its basic tool the Audimeter, an automatic device which is attached to the television set to record the time and the station to which the set is tuned. The Nielsen Audimeters are

Nielsen Audimeters are placed in same 700 homes to automatically check program ratings.

Decoder machine speedily translates data from Audimeters to provide ratings of television shows.

distributed in some 700 homes which have been carefully selected to represent a cross-section of all television homes in the United States. Thus Nielsen can take the findings within this sample and project them to produce the size of audience in terms of millions of homes.

As an example, Nielsen reported a rating figure of 38.9 for the NBC Spectacular "Tonight At 8:30". This meant that 38.9 per cent of the potential television audience, or 10,795,000 homes, were tuned to the program. This is the figure which NBC and other networks and our clients and agencies use to determine audience size.

The Audimeter records its findings on film which is sent regularly to the Nielsen offices in Chicago for analysis. At the Nielsen "Fact Factory," as it is known, these minute-by-minute recordings are analyzed exhaustively to produce whatever data is needed.

Each Nielsen report covers two weeks, thus giving the figures greater stability and minimizing the unusual effects of weather, special broadcasts and statistical chance and other unpredictables which can affect sample measurements. Two reports are published every month, so that virtually every week of the year is measured by Nielsen.

American Research Bureau

The American Research Bureau uses another method, the diary sample. With this technique, sample households are given forms with a week's programming divided into 15-minute periods. Viewers are asked to check off the periods which they have tuned in to during the seven days.

The ARB diary is a national sample and, like the Nielsen survey, is projectable to produce percentages in the number of homes reached. ARB also measures viewers per set and thus can produce audience figures in millions of viewers. However, the ARB figures are on an average-quarter-hour basis rather than a total-homes-reached basis and they cover only the first week of each month. On the other hand, they include sustaining programs which generally are not covered by Nielsen.

Trendex

Trendex, the third service, uses the telephone coincidental survey method. Trendex researchers pick names from the telephone book and call the homes to ask what program their set is tuned to. This produces an average-minute rating, which is the percentage of homes viewing during an average minute of the program.

The Trendex ratings, however, are developed from a sample in only ten cities where at least three television stations are in operation. Nine of these ten cities are in the Eastern Time Zone and one, Chicago, is in the Central Time Zone. This survey, therefore, cannot be called a national measurement nor can it possibly measure audience size as do Nielsen and ARB studies. Trendex produces rating percentages which are primarily valuable as quick checks on program performance in this limited number of ten cities.

Trendex ratings are more volatile than the figures of other ratings services. This results not only from the sample size and measurement technique but from the limited geographical coverage which accounts for about 21 per cent of the television sets in the country and from the effect of such local program competition, such as baseball in New York and Chicago.

Trendex, like ARB, surveys only in the first week of each month and thus reflects to a maximum degree radical fluctuations created by weather conditions, holidays, special events and unusual promotion or publicity efforts.

Difference in Measurements

So what causes all the confusion? It arises from the basic fact that the different services are using different methods to measure different things. There is undue emphasis on the quick rating for the simple reason that its immediacy makes it more interesting. It is only human that we talk and read most about the overnight rating which may come out the morning after a new show. The confusion arises later when more meaningful ratings, measuring the total audience, become available.

Then the wide discrepancies in the ratings create new interest and the confusion is compounded.

A case in point was the ratings muddle which followed NBC's "Satins and Spurs", the first of our color spectaculars. Here was the opening of a new era in programming and it was only natural that there should be wide interest in the overnight Trendex ratings which were widely printed in the radio and television trade press. Later the Nielsen and ARB reports came out for the same broadcast and wide differences in the figures raised questions regarding the accuracy of all ratings.

Trendex reported a rating of 17.5; then Nielsen reported 38.7; and finally, ARB reported between the two with a rating of 26.7. These, at first blush, were startling differences. Actually, however, there was little conflict between these ratings from a research point of view.

For example, the Trendex rating of 17.5 was based on a telephone survey in ten cities and represented the percentage of telephone homes viewing during the average minute of the program. For the purpose of comparison, we obtained a special rating from Nielsen, one which was reasonably comparable to the Trendex rating since it was based on nine cities that have three-network competition. The Nielsen nine-city rating on an average-minute basis was 21.5, so it was a little higher than the Trendex rating, but at least within shooting distance. The difference lay in the fact that the Trendex rating was based on telephone homes only within the city. The Nielsen nine-city rating, on the other hand, was based on the entire station area, including both telephone and non-telephone homes within the city and outside it in the rural areas and small towns.

Again we took the ARB rating of 26.7 and put it on a comparable footing to the Nielsen rating. The ARB figure was obtained on a basis of an average quarter hour. With a special tabulation, ARB made it a rating for the entire hour and a half. The ARB figure then became 34.0, which was reasonably close to the Nielsen rating of 38.7.

Thus the ratings from the three services can be compared only if they are put on a comparable basis and this can be done only with analyses which generally are not available to the public. This kind of detailed breakdown goes a long way toward explaining the differences in the rating figures. Minor discrepancies remain, but these can be attributed largely to differences in technique.

Ratings Generally Accurate

The blame for the confusion, therefore, lies less with the ratings services than with those who misinterpret their findings. The fact is that the television ratings are generally quite accurate. The major reason for this accuracy lies in the nature of the medium itself. When we are dealing with the printed word, determining readership is a tremendous problem. That problem is to find out how many people have read a magazine, say, over a period of days, weeks, or even months. In broadcasting, however, everyone who tunes in does so with a brief, specified period, whether five minutes, fifteen minutes, or what have you. This greatly simplifies the research problem. Instead of trying to trace readership over an indefinite period we need only determine the audience at a given time.

The problem in radio and television is not so much to find the means of measuring audience as to decide which of several methods to use. At NBC we rely most heavily on the Nielsen service. The objectivity of the Nielsen method, its wide coverage, its exhaustive analyses and its broad acceptance by advertisers and agencies, combine to make it the most valuable of the services. In addition, for such supplemental data as audience composition and for the purpose of cross-checking, we use both Trendex and ARB.

In the future we will continue to use the rating services as guides to the growth of television. We will use them not as the final word in distinguishing success from failure, but as a tool to temper and reinforce judgment. We will use them in the knowledge that, though their methods and measurements differ, each serves a useful function.

NBC's Hugh M. Beville, Jr., discusses Nielsen-assembled data with H. W. Shepard of NBC, and John K. Churchill of A. C. Nielsen Company.

Light, Power, and Progress

Sarnoff, at St. Louis Observance of Light's Diamond Jubilee, Foresees Electronic Light Emerging as Result of Television Research

ELECTRONIC light, a far-reaching revolution in lighting, appears likely to emerge as the result of television research, General Sarnoff, announced at a luncheon of the St. Louis Chamber of Commerce on October 19 in observance of Light's Diamond Jubilee.

Recalling that it was the intensive search for high-efficiency fluorescent materials for the television screen that led to the development of the fluorescent tube as the rival to incandescent light, he declared:

"We are now engaged in the development of a new form of light — electronic light. This new form seems destined to carry forward the great work sparked by Edison and is likely to loom ever larger in public consciousness as this development progresses. . . .

"In short, the sky is the limit in imagining the future of electronic light. The one certainty is that, like other major scientific innovations in the past, it will open roads to improvements on existing products and processes, and will give birth to entirely new instruments, appliances and services."

Atomics

On the subject of atomic energy, General Sarnoff said that no crystal ball is required to foresee that in the near future, power will mean nuclear energy. He continued:

"This use of atomic energy is not likely to affect the basic structure of the nation's public utilities. They will simply be converting from one fuel to another, and in the long run a cheaper one.

"But as the industrial and commercial development of atomic energy expands and more nuclear reactors are put in operation, we can expect the availability of large amounts of suitable low-cost waste products from these installations. And the radiations from these waste products may one day be converted directly into electricity.

"Naturally, much fundamental work and applied research remain to be done and years will elapse before this becomes a practical reality. However, when this goal is reached, we shall see atomic generators of electricity small enough to be installed for use in the home. This prospect offers a bright hope for mankind and it is based on more than a fantastic dream."

General Sarnoff said that when atomic batteries become available they will bring into the realm of practicality a long array of miniature devices, such as wrist-watch radios, or vest-pocket radio telephones, or electric shavers no bigger than a penknife.

Social Progress Must Keep Pace

"The fact that electronics and atomics are unfolding simultaneously," he declared, "is a portent of incalculable changes ahead. Never before have two such mighty forces been unleashed at the same time. Together, electronics are fated to dwarf even the industrial revolutions brought by steam and electricity."

In referring to the need for social progress to keep pace with scientific advances, General Sarnoff said: "Whether the splitting of the atom can be called 'progress' will depend, in the final analysis, on whether we can find the wisdom to direct the released power into channels of peaceable and constructive use. We can all ardently join President Eisenhower in the hope he expressed recently that 'the miraculous inventiveness of man shall not be dedicated to his death but to his life.' That and that alone is the test.

"Yet there is no excuse for despair. We know that electricity, too, can be savage if man so chooses. But we have learned to control its power and to use it beneficently.

"Man can do the same with nuclear power. The Adam can triumph over the Atom. Its potentials for the services of peace, for increasing prosperity rather than for mass terror and destruction, are unlimited.

"To keep pace with the rapid march of science, we must accelerate our steps socially. To do so intelligently and effectively, we need the LIGHT that illuminates our mind and the POWER that ignites the Divine spirit within us. The secret of PROGRESS is in man himself. This we need to think about, in humility, especially on an occasion such as this Diamond Jubilee of Light.

"On the wider road of human progress there is ample room for Science and Society to travel without colliding. This is the road we must pursue in our search for true happiness, stable prosperity, and lasting peace."

Reports Improved Service:

First Million-Watt TV Station

THE nation's first million-watt UHF television station, which went on the air December 31, 1954, as the world's most powerful broadcaster, is now delivering strong, clear pictures in numerous areas which heretofore had either no TV service or poor reception, it was reported on January 12 by Station WBRE-TV, Wilkes-Barre, Pa., and the Radio Corporation of America.

The improved service was made possible by a newly developed RCA super-power transmitter and a new super-power RCA UHF pylon antenna which enabled WBRE-TV to quadruple its effective radiated power from a previous 225,000 watts to the maximum of one million established by Federal Communications Commission regulations for UHF TV stations, according to A. R. Hopkins, Manager, Broadcast Equipment Marketing, RCA Engineering Products Division.

7½-Ton RCA Antenna

Despite adverse weather conditions, the RCA antenna, a 7½ ton final link in the million-watt installation, was mounted atop WBRE-TV's heavily-iced 330-foot antenna mast by evening of December 30, Louis G. Baltimore, President and founder of the Channel 28 station reported. At 3:15 A.M. the following morning, the station went on the air.

Initial spot checks showed the RCA million-watt equipment delivering stronger signals over greater distances than anticipated, Mr. Baltimore said. The increased power filled in certain "shadowed" areas in WBRE-TV's broadcast range and provided other areas with their first "snow-free" TV reception. Clear, steady pictures were reported as far away as York, Pa., some 110 miles from the station transmitter.

Signal Received 125 Miles Away

RCA reported that a special test receiver, set up near its Camden, N. J., plant, was also receiving the station clearly over a distance of approximately 125 miles. Prior to the million-watt installation, the test receiver was unable to tune the Channel 28 station.

As initial results at WBRE-TV indicate, Mr. Hopkins said, utilization of million-watt ERP — the effective radiated power emitted by a station's transmitting antenna — will enable TV stations so equipped to provide extended saturation coverage and offer vastly improved television service throughout so-called fringe and weak-signal areas. Heretofore, the most powerful TV stations were VHF types limited to a maximum of 316,000 watts of ERP.

First commercially available television equipment capable of one-million-watt ERP, the RCA installation is built around a 25-kilowatt transmitter and a pylon antenna with a gain of nearly 50, he said. Previously, the most powerful UHF TV transmitter was limited to 12½ kilowatts of power, and the maximum gain achieved by UHF antennas was 27.

Versatile Sound System Installed by RCA in Newark Cathedral

One of the most comprehensive sound systems ever designed has been installed by RCA in the Cathedral of the Sacred Heart, Newark, N. J., to provide public address, intercommunication, and radio and television broadcasting facilities.

The system, which required two years for planning and installation, includes a sound network for the congregation, including concealed outdoor loudspeakers for overflow crowds; a complete radio broadcasting system connected directly to Station WSOU at nearby Seton Hall University, and a separate RCA audio system for use in television broadcasting, as well as video and audio connections for mobile television equipment.

RCA to Honor TV Servicemen

A "National Television Servicemen's Week," saluting the thousands of service dealers and technicians who since 1946 have installed and maintained more than 30,000,000 home TV sets will be sponsored by RCA during the period of March 7 to 12.

The first recognition of its kind ever afforded electronics technicians, National TV Servicemen's Week has been registered with the U. S. Chamber of Commerce. It will be marked by a comprehensive RCA advertising and promotion campaign designed to focus maximum consumer and industry attention on more than 100,000 service men, most of whom are engaged in home radio and TV maintenance.

Left, W. Walter Watts, Executive Vice-President, RCA Electronic Products, officiates at official dedication of new Findlay, Ohio, plant, shown above.

New Plant for TV Set Components Dedicated by RCA in Findlay, Ohio

ONE OF THE NATION'S most modern plants was dedicated by RCA at Findlay, Ohio, on November 10 for the manufacture of electronic component parts used in television receivers. The new one-story plant, 50 miles southwest of Toledo, produces television deflection yokes, high-voltage transformers and ferrites. Operated by the RCA Tube Division, it already employs more than 600 persons.

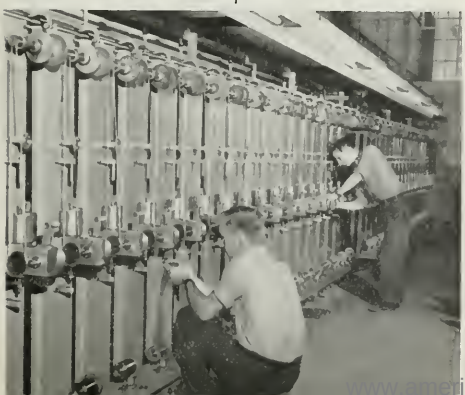
Selection of the Findlay plant site was made after months of planning. Its strategic location permits rapid shipment of electronic components to plants in Indianapolis and Bloomington, Ind., where RCA Victor television receivers are assembled.

The dedication ceremonies were attended by RCA executives, including W. Walter Watts, Executive Vice-President, RCA Electronic Products, who was the principal speaker, and Douglas Y. Smith, Vice-President and General Manager, RCA Tube Division, as well as Mayor Chester Smith and other officials and leaders of Findlay.

The components manufactured at the new plant are essential parts of the television receiver. The deflection yoke, mounted around the neck of the TV picture tube, controls the action of the electron beam that "paints" the picture on the tube face: high-voltage transformers are used to energize the deflection yoke and to step up the voltage needed to accelerate the electron beam: ferrite is a material obtained by firing a mixture of certain metallic oxides at extremely high temperatures, resulting in unusual magnetic properties for its use in both deflection yokes and transformers.

A battery of machines plus skilled technicians wind coils for deflection yokes used in TV sets.

Miles of copper wire are nylon coated by these automatic machines. Wire then is used in production of TV set components.



Via RCA Communications:

TEX Speeds Commerce Across the Seas

By D. E. Hempstead
Traffic Engineer
RCA Communications, Inc.

A TELEPRINTER operator in a New York brokerage house presses a key on her machine. . . . Less than a second later, it is connected directly with a teleprinter in the main New York office of RCA Communications, Inc. . . . The operator signals the call number of a teleprinter in her firm's branch office overseas — perhaps in Paris, or Amsterdam, or Leopoldville. . . . A moment later, the connection is made, and the message, typed on the printer in the New York brokerage office, begins to appear on the machine thousands of miles away. In a matter of a few minutes, the message has been delivered over the two-way circuit, leaving in both the home and branch offices a complete written record of the transaction.

This process has become daily routine for hundreds of businesses linked by private teleprinter tielines to RCA Communications and its overseas teleprinter service (TEX) via a medium that combines the advantages of both telephone and telegraph.

Both of these facilities — the private tieline and the TEX overseas link — have won widespread popularity with commercial firms as a rapid, relatively inexpensive and highly flexible means of business communication, and both have experienced rapid growth since their introduction a few years ago.

Private tieline facilities, operated by RCA in New York, Washington, and San Francisco and at several overseas locations where RCA maintains radio stations, have nearly trebled in response to demand since 1948. TEX, introduced in 1950, has grown to a traffic volume this year nearly six times greater than the total in 1951, and the rate of increase shows no signs of slackening.

New Automatic Tieline Terminal

The increase in demand has called for expansion and improvement of facilities and techniques, and RCA Communications has moved rapidly to keep its capacity for handling customer installations abreast of the growing list of calls for its services.

The latest addition to the system is an 800-line automatic tieline terminal at the main New York office,

Private teleprinter speeds movement of RCA's TEX service to customers.

center of the largest of the private tieline service facilities. The quarter-million-dollar terminal, which began operations in October, has cut to less than a second the time required to establish a direct connection between a customer's own teleprinter and an idle printer in the RCA main office. Previously, this operation passed through a manual switchboard resembling a telephone switchboard, with connections made by an operator.

As the tieline plant expanded, the manual operation became slower. The solution has been furnished by the new automatic switching equipment, which hunts out an idle printer in the main office automatically and effects the connection with no delay.

Installation of the new terminal has entailed a number of other major changes in the physical arrangements and operating procedures of the entire customer tieline section. One such change is the installation of newly-designed operating consoles, each containing four keyboard teleprinters, three transmitter distributors and a dial panel, all arranged in a semi-circular operating position so that one attendant may handle up to four customers at the same time whenever the need arises. Using this new equipment, the operator can dial a 3-digit call number and be connected instantly through the automatic terminal to any of RCA's tieline customers.

If the customer's line happens to be busy, the call is stored until the line becomes available, at which time it is automatically connected.

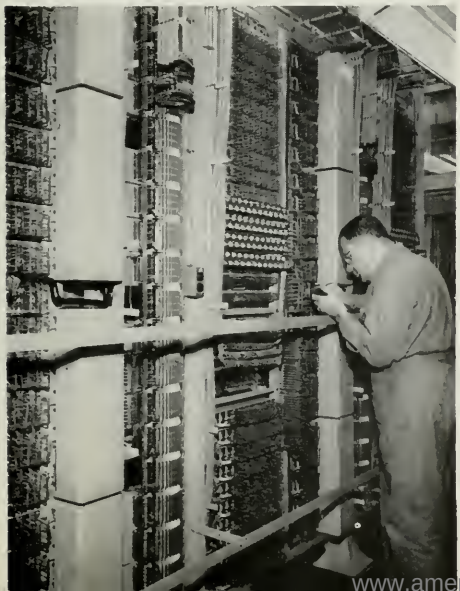
Expansion of TEX Service

Much of the expansion of the private tieline system has been brought on by increased demand for TEX service, which now offers teleprinter-to-teleprinter connections between the United States and 15 transatlantic countries, and two channels between San Francisco and Honolulu. In providing the transatlantic service, RCA in effect simply links its private tieline customers in New York and Washington via radio facilities with thousands of Western European subscribers to TELEX, the equivalent on the Continent of the TWX service operated in the United States by the American Telephone and Telegraph Company.

TELEX service has been international in scope for many years, linking the national teleprinter services of the various Western European countries. With TEX, RCA Communications has widened these facilities to an intercontinental link.

The first TEX service was opened between New York and the Netherlands in 1950. Before the end of its first year, the service was extended to RCA private tieline customers in Washington, D. C., and, through the facilities of the Netherlands TELEX system, to TELEX subscribers in Germany and Denmark.

Subsequently, direct TEX circuits were opened with Switzerland, France, Germany and Belgium, and through these countries further connections were made to Norway, Sweden, Luxembourg, Finland, Spain, Portugal, England, Hungary and the Belgian Congo. Plans are under way for further expansion of TEX service to the remaining countries in Europe that already have, or are planning to install, TELEX systems. RCA Communications also is prepared to cooperate with similar expansion in Latin America and the Far East, when and if countries in these areas develop internal TELEX networks.



From a modest beginning, TEX service has grown to be an important segment of the telegraph business of RCA, and its development has been accomplished through the use of a number of unique electronic devices that are still recent to the industry.

For example, all transatlantic TEX traffic flows over radio circuits protected by automatic error detection and correction equipment that was perfected jointly by RCA and engineers of the Netherlands Bureau of Posts and Telegraphs (PTT). Installed between the radio transmitters and receivers on the one hand, and the terminal operating equipment on the other, this apparatus, called ARQ, monitors and detect errors which might be caused by disturbed signalling conditions. When a distorted character is detected by the equipment at the receiving end of the circuit, a request is automatically flashed back to the sending station for a repetition of the mutilated character. This process is continued until the character is correctly received and printed. The correction process requires only a fraction of a second to complete its full cycle of operation — swiftly enough so that it is normally unnoticeable to TEX subscribers.

Closely associated with the ARQ equipment are multiple terminals that permit the super-imposition of TEX channels on established radio-telegraph frequencies. This has allowed the expansion of TEX facilities without the necessity of additional frequencies. Most of these multiplex terminals are of the electro-mechanical type at the present time, but they are being rapidly replaced by all-electronic equipment perfected by RCA.

The evolution of telegraph service during the past decades has placed great emphasis upon the elimination of as many unnecessary points of handling as possible, while providing ever faster communication over the remaining links.

The TEX-TELEX service now available to tieline customers makes it possible for them to have direct communication with their correspondents, to obtain immediate answer to questions, and to have a record of the exchange of information.

Further expansion of these services and automatic devices such as the new automatic switching equipment just installed by RCA Communications in New York seem to offer an unlimited field of development of faster communication between subscribers across the world.

Reliable electronic equipment is key to stable operation of RCA's TEX service.

Old Mexico Pioneers in Modern Communication

By

J. P. Toole, President

RCA Victor Mexicana, S.A. de C.V.
RCA Associate Company in Mexico

YOU CAN phone your dry cleaner in Mexico City and in a few minutes a radio equipped truck will be at your door to pick up your suit or la Señora's dress for the fiesta. If you are a building contractor and in critical need of concrete, you can telephone for it—and don't be surprised if the concrete is on the job almost as soon you hang up the receiver. Radio will have diverted a ready-mix truck from another job, temporarily halted by a traffic jam.

In Mexico, you can have freight picked up by radio controlled carriers. If you travel, your bus reservation will be radioed—not wired—ahead. And if you are a banker, you can transmit credit or other finance information to all your branches simultaneously by radio.

The dry cleaning establishment, Tintoreria Francesa, initiated radio service in Mexico City. Its drivers constantly amaze customers by their speed in responding to calls in a business historically hectic.

This is the country where the runners of Montezuma sped from the gulf to his mountain capital with his favorite food, fresh from the sea. This human chain of the fastest transport known to a horseless country performed amazing feats of endurance and speed.

Today in Mexico, transportation, building, banking and other fields are using radio instead of the runners of Montezuma or wire lines. And a notable amount of the equipment carries the RCA symbol.

Radio In Transportation

The 800 big freight vans of Lineas Unidas de Express Aguila are controlled by RCA radio for faster, more efficient hauling over Mexico's mountainous miles.

Autobuses de Oriente, a national bus line, gives its passengers dependable service—and keeps its fare-paying seats filled—through the use of RCA radio.

And, serving the building trades in Mexico City, the heavy-duty rolling stock of Pre-Concreto, S.A. is dispatched by RCA radio—for fifty per cent greater sales than before radio was used.

These three companies, using equipment purchased through RCA Victor Mexicana, S.A., associate RCA company in Mexico, exemplify current trends in transportation methods in Mexico.

Lineas Unidas de Express Aguila, carrying the products of Mexico over her highways, insists that strict schedules be maintained. This company found that ordinary methods of communication were not adequate to control the movements of the fleet of 800 vans.

At first, RCA shortwave radiotelephone stations were installed in Lineas Unidas headquarters in eight key cities as a test. Customers were pleased with the improved service. As company messages flowed over this preliminary network, coordinating the movements of trucks, dispatching, rerouting, settling claims, it became clear that radio was essential for the firm.

Capitalizing on the growing prestige, Lineas Unidas ordered RCA-equipped stations for 16 additional cities, and customer and network are growing.

Service For The Traveler

In the field of public transportation, Autobuses de Oriente is a leading carrier. Its luxury buses cover much of Mexico, crossing mountain ranges, touching the great volcanos, linking historic cities.

RCA two-way rodio system speeds delivery of concrete to construction jobs in Mexico.

Radio handles many jobs for Autobuses. If a reservation is cancelled, the information is flashed by radio to the next station on the route, and the vacant seat made available to the public.

A fiesta, bullfight or horse race means holiday crowds, and additional buses are dispatched by radio where needed.

Highway repairs mean detours, and buses are rerouted by radio.

Another Field Served Is Construction

Right in the middle of Mexico's dynamic building growth is, Pre-Concreto, S.A. From this company's plant on the outskirts of Mexico City, heavy-duty trucks make delivery of ready-mixed concrete to construction jobs of all kinds. Delivery must be prompt because there are production and construction schedules to be maintained, and concrete is tricky to handle.

Pre-Concreto trucks deliver fresh concrete where it is needed, when it is needed. Radio helps to do this job. At the present time, each of the firm's 10 vehicles—9 trucks and a station wagon—is equipped with an RCA mobile unit. An RCA transmitter-receiver is installed in a central control station, housed at Pre-Concreto's plant.

Construction often goes on in areas remote from good communications, but Pre-Concreto's trucks are never out of touch with the factory.

Builders appreciate this kind of service. It helps them maintain schedules, with no costly delays. In construction work, with its expensive equipment and sizable payrolls, delay can be ruinous. Pre-Concreto officials report that they are handling 50 per cent more orders than before radio was adopted.

Twenty-one RCA-equipped two-way radia stations handle dispatching assignments to 800 truck-trailers of Mexican company.

Radio-dispatched trailer trucks, using RCA two-way systems, provide efficient service for Mexican customers.

Banking is another field in which Mexico is doing pioneering work in radio communication. The economy of Mexico represents ample opportunities for a banking institution to be of service. Banco Nacional del Mexico has a shortwave network which provides instant contact between the bank's headquarters in Mexico City and its branches all over the country.

Communications of national and international negotiations, at the policy-making level, emanate from the Bank's central station in Mexico City, while regional transactions are transmitted between the sub-stations and the branches.

These are new chapters in Mexico's communication story. The Fire and Police Departments in the capital and elsewhere in Mexico have long used radio, as has the military establishment. The fight against hoof and mouth disease gave spectacular evidence of the ability of radio to help cover great areas where time was the enemy as well as the disease.

At RCA Victor Mexicana, we have the advantages of our own modern facilities where we can modify equipment to suit the special needs and laws of Mexico. This is an example of RCA operations abroad, coordinating with the research and experience of RCA in the U.S.A.

Together with our distributor, Corporacion Nacional Distribuidora, which handles our consumer products, RCA Victor Mexicana, S.A., RCA's associate company in Mexico, welcomes these opportunities of today and those of the future to be of service to the Republic.

RCA news in brief

Drive-Ins

From Massachusetts to Wisconsin, drive-in movie viewers will be seeing bright pictures on the screen with the help of RCA. Under a contract signed recently with the Phil Smith Management Corp., of Boston, one of the nation's largest chains of outdoor theaters, RCA Wide-Arc screen lamps are being installed in 14 drive-in theaters located in eight states. The RCA lamp, for wide-screen, 3-D and drive-in use, is designed to provide the brilliance needed to light oversize, wide-film outdoor theater screens.

Long Jump

One of the longest single microwave radio hops ever placed in service — a span of 81.5 miles — forms part of a new 230-mile microwave radio relay system just completed by RCA's Engineering Products Division for the Colorado Interstate Gas Company at Colorado Springs. The system links the company's headquarters with its pipeline compressor stations and gas-producing fields in Kansas and Oklahoma. The unique 81.5-mile stretch without intermediate relay points lies between repeater stations located atop Cheyenne Mountain and at Todd Point, both in Colorado.

Safety First

The RCA Service Company has received the National Safety Council's highest award—the "Award of Honor"—in recognition of an outstanding safety record during the past twelve months. The presentation was made in October by Walter L. Matthews, of the Council, to Edward C. Cahill, President of the RCA Service Company. The award covered activities of some 5,000 employees at more than 150 business locations in the United States and overseas.

Welcome to Prescott

Visitors approaching Prescott, Ontario, home of the television manufacturing plant of RCA Victor Company, Ltd., are now greeted by new signs in the design of an open book and labelled "Welcome to Historic Prescott, Home of RCA Victor Radio & Television Plant." The company designed the signs in cooperation with the Prescott Chamber of Commerce and installed them at its own expense on land donated by the town.

Nomenclature

The specialized language of microwave and mobile radio communications has received formal recognition in what is believed to be the first published compilation of its words and definitions, published by RCA's Engineering Products Division. The glossary, compiled for the industry, adds up to 39 pages of definitions ranging from "Absorption Cofficient" to "Zero-Bias" and includes a list of technical and non-technical organizations of interest to communications engineers as well as abbreviations of most widely used technical terms. Along with its text are sketches, diagrams and charts that help to define the esoteric terms which describe the theory, nature and operation of radio communications equipment. The glossary is available on request from Dept. P-368, Engineering Products Division, RCA, Camden, N. J.

Eye for Parking

Something new in parking cars has turned up in Oakland, Calif., where the Downtown Merchants Parking Association has found still another use for RCA's versatile TV Eye. The DMPA lot has been equipped with a TV Eye camera mounted on a light standard high above the lot, providing a picture of the parked cars on a standard 21-inch TV receiver located in the lot attendant's booth. With two remote control switches near the receiver, the attendant can scan the lot and locate the handiest vacant parking space for each customer as he drives up to the booth for his entrance ticket. Housed in a weatherproof casing for outdoor protection, the camera has superseded an earlier manual observation system and cut down operating expenses of the lot by an estimated $3500 per year.

What means most to an Engineer?

PROFESSIONAL RECOGNITION

GOOD SALARY

UNEXCELLED FACILITIES

SUBURBAN LIVING

RCA offers all These...and more!

RCA offers career opportunities for qualified ELECTRICAL and MECHANICAL ENGINEERS . . . PHYSICISTS . . . METALLURGISTS . . . PHYSICAL CHEMISTS . . . CERAMISTS . . . GLASS TECHNOLOGISTS.

Positions now open in Systems, Analysis, Development, Design and Application Engineering. Your choice of long range work in commercial or military fields.

At RCA you'll work in an atmosphere conducive to creative work — laboratory facilities unsurpassed in the electronics industry . . . constant association with leading scientists and engineers.

Delightful suburban living easily available. Modern retirement program . . . liberal tuition refund plan for advanced study at recognized universities . . . modern company paid benefits for you and your family.

Individual accomplishments readily recognized. Ample opportunity for increased income and professional advancement.

Join the team at RCA and grow with the world leader in electronics.

Personal interviews arranged in your city.

Please send a complete resume of your education and experience to:

MR. JOHN R. WELD
Employment Manager, Dept. A-6A
Radio Corporation of America
30 Rockefeller Plaza, New York 20, N.Y.

SYSTEMS—ANALYSIS—DEVELOPMENT—DESIGN—APPLICATION ENGINEERING
in the following fields:

AVIATION ELECTRONICS (FIRE CONTROL, PRECISION NAVIGATION, COMMUNICATIONS)—Radar—Analog Computers—Digital Computers—Servo-Mechanisms—Shock & Vibration—Circuitry—Heat Transfer—Remote Controls—Sub-Miniaturization—Automatic Flight—Transistorization—Automation

RADAR—Circuitry—Antenna Design—Servo Systems—Information Display Systems—Gear Trains — Stable Elements — Intricate Mechanisms

COMPUTERS—Digital and Analog—Systems Planning—Storage Technique—Circuitry—Servo-Mechanisms—Assembly Design—High Speed Intricate Mechanisms

COMMUNICATIONS — Microwave — Aviation — Mobile—Specialized Military Systems

MISSILE GUIDANCE—Systems Planning and Design—Radar and Fire Control—Servo-Mechanisms—Vibration and Shock Problems—Telemetering

COMPONENT PARTS (COLOR & MONOCHROME TV)—HV Transformers—Coils—Deflection Yokes

SEMI-CONDUCTORS—Transistors—Diodes

ELECTRON TUBE DEVELOPMENT — Receiving — Transmitting—Cathode-Ray—Phototubes and Magnetrons—Power Tubes—Camera Tubes

ELECTRONIC EQUIPMENT FIELD ENGINEERS — Specialists for domestic and overseas assignment on military electronic Communications Navigational Aids, and Guided Missiles.

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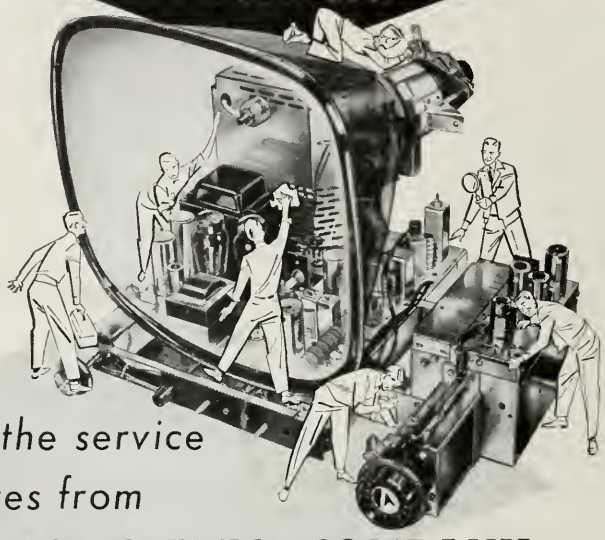

. . . gets the service it deserves from

RCA SERVICE COMPANY

The best service for RCA Victor Television comes from the people who know this fine television best. It comes, in fact, from RCA people themselves . . . from the expert technicians of the RCA Service Company.

RCA's own technicians are trained by the engineers who design RCA Victor Television. Thus, RCA Service technicians know all there is to know about America's finest television. What's more, they service RCA Victor Television *alone*—no other make. And when a set needs replacement parts, they use only genuine RCA parts.

RCA Victor Television owners can enjoy RCA Factory Service in either of two convenient ways. An RCA Factory Service Contract protects the performance of their set the year 'round. A variety of contracts makes this coverage available at the price level each set owner prefers. Of course, this same fast, expert RCA Factory Service may be had on a strictly pay-as-you-go basis.

Back of every job done by an RCA Factory Service technician stands the vast engineering skill of the entire Radio Corporation of America. RCA's facilities and resources are entered in the field of Television service for one compelling reason. In short, because RCA feels that America's finest television *deserves* America's finest service. That's RCA Factory Service . . . another reason why every year, more people buy RCA Victor than any other television!

RCA SERVICE COMPANY, Inc.
A Radio Corporation of America Subsidiary — Camden, N.J.