

RADIO AGE

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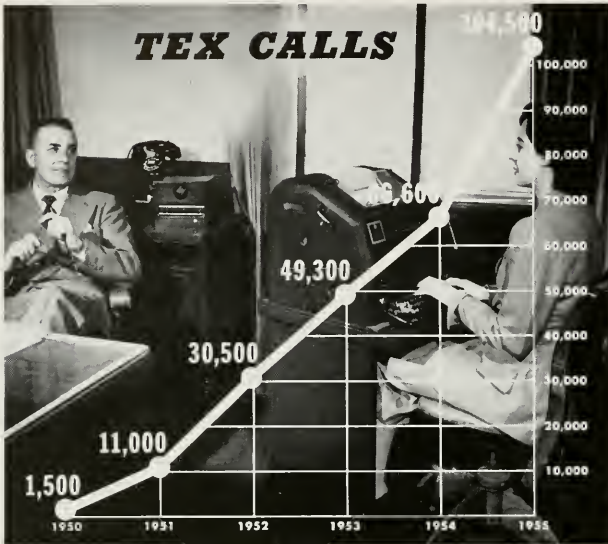


JULY 1956



RCA VICTOR COLOR TV

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unequaled experience
in providing
**OVERSEAS TELEPRINTER
 EXCHANGE SERVICE**

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 the result of RCA's...*

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- operating this service daily for 6 years
- building the initial overseas teleprinter circuit to the Netherlands into a network of 25 circuits terminating in Europe, Africa, the Caribbean, and the Pacific

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It is a well established service *whose growth, in 6 years, from a concept to a widely used communication service is unparalleled in the history of the communications industry.* This record growth attests to the *advantages and the dependability* of RCA's TEX service.

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BROADCASTING • TELEVISION

JULY 1956



COVER

RCA is now mass producing color TV sets like this at nationally advertised prices reaching as low as \$495.

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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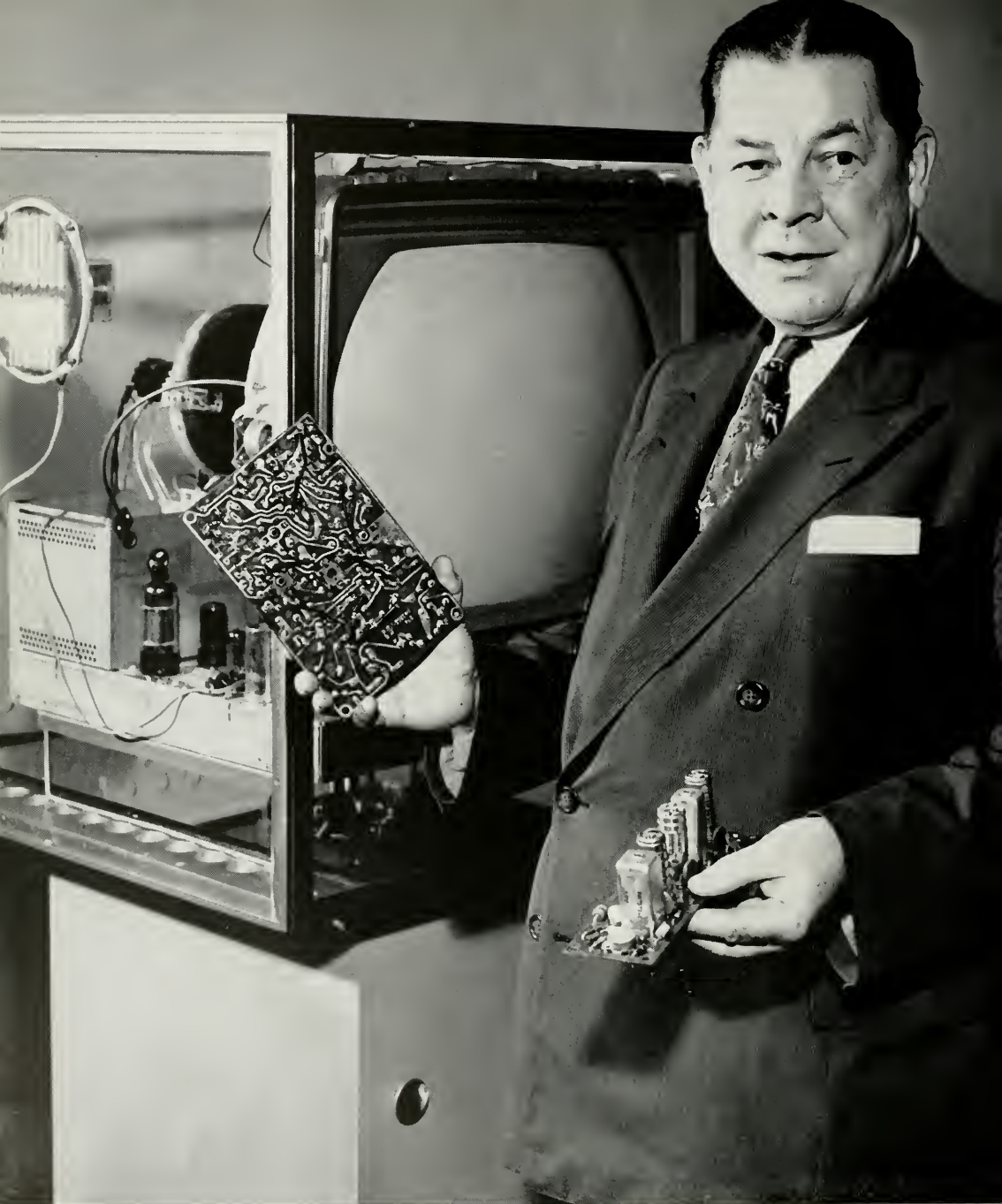
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RADIO CORPORATION OF AMERICA
RCA Building, New York 20, N. Y.

DAVID SARNOFF, *Chairman of the Board*
JOHN Q. CANNON, *Secretary*

FRANK M. FOLSOM, *President*
ERNEST B. GORIN, *Treasurer*



FOR MASS PRODUCTION—Two of the printed circuit boards used in the new RCA Victor color TV sets are displayed here by Robert A. Seidel, Executive Vice-President, RCA Consumer Products.

RCA Color TV Moves Ahead

RCA is now mass producing color television sets for introduction to the public this month at nationally advertised prices reaching for the first time as low as \$495 — \$200 below RCA Victor's previous levels.

The color sets highlight a complete new line of RCA Victor TV merchandise for 1956-57, including ten newly-designed color receivers and 25 newly-styled and technically advanced black-and-white models. The new line was announced on June 4 at a Miami meeting of RCA Victor television distributors and sales executives by Robert A. Seidel, Executive Vice-President, RCA Consumer Products, who said:

"Development by RCA engineers of a totally new color television chassis, which utilizes an array of technical advances adapted to the latest production techniques, makes possible the introduction of the \$495 color set. These receivers were conceived to create a volume business and to provide the public with budget-priced color sets featuring top-quality performance and stability. We are convinced that this new merchandise opens the door to the public's realization that color television, pioneered and developed by RCA, has arrived."

Tentative nationally-advertised prices of the new color sets range from the \$495 model up to \$850 — slightly higher in the far west and south — while the black-and-white receivers range from \$125 to \$500, according to Mr. Seidel's announcement.

Information Shared with Other Manufacturers

Announcement of the \$495 color set followed another important move by RCA to promote the growth of color television by making complete blueprints and detailed mass production "know-how" available for immediate use by other television manufacturers. This was disclosed by Frank M. Folsom, President of RCA, in mid-April at a symposium in Chicago for representatives of most of the nation's television receiver manufacturing companies. At the same time, a reduction in the manufacturer's price of the RCA large-screen color picture tube from \$100 to \$85 was announced.

On that occasion, Mr. Folsom recalled that RCA in 1947 had turned over to other manufacturers complete engineering and manufacturing information on the first table-model black-and-white television receiver, which "became the foundation upon which was built today's vast television market."

"Now we shall do the same thing with our big-screen color television receivers," he said. "We shall turn over

to you RCA's latest color receiver blueprints, our technical 'know-how', production details, and bills of materials. Our color TV manufacturing facilities are open to your inspection. In our opinion, this action will prove to be as important to color television as the first table-model was to black-and-white television."

Expanded color broadcast plans also were announced at the Chicago meeting by Robert W. Sarnoff, President of the National Broadcasting Company, who disclosed that NBC's Fall plans call for at least one major color program in prime evening viewing hours, every night of the week, in addition to the famed "Spectaculars."

"That means color every evening on a regular basis," said Mr. Sarnoff. "And it means that on the Saturday, Sunday, or Monday when a 'Spectacular' is scheduled, we can have as much as two and a half solid hours of attraction programming in color. With our new color recording equipment in operation, these programs will be available in color to West Coast markets as well as to the rest of the country."

"Vast Strides" in Color

The new \$495 color set announced in Miami is called the "Aldrich." It has a viewable picture of 254 square inches with a 21-inch color picture tube (over-all diameter). A table model set, it will be available in mahogany grained and limed oak grained finishes. It employs 23 tubes, including the picture tube, plus two crystals and four rectifiers.

Mr. Seidel said that the entire color receiver line will consist of three series — "Special," "Super," and "Deluxe." A similar series classification marks the new black-and-white line.

"Vast and far-reaching strides have been made during the past year by RCA in the design and production of color television chassis," Mr. Seidel said. "These chassis have undergone the most extensive of field tests and in-home checks and we are convinced that they will provide the industry with a 'backbone' receiver just as did the original RCA Victor 630-TS black-and-white chassis which became the industry's first mass-produced table model set in 1947."

C. P. Baxter, Vice-President and General Manager, RCA Victor Television Division, explained that the new merchandise will be called the "Spectacular" line and will be advertised and promoted as "TV Originals by RCA Victor, America's First Choice in Television."

All color and black-and-white receivers will make



Herolding the opening of the Chicago summer furniture market, Ned Corbett, Vice-President, RCA Victor Distributing Corporation, arrives by helicopter atop the Merchandise Mart with the first of the new color TV line.

extensive use of printed-circuit boards for manufacturing efficiency and highest possible performance quality. Mr. Baxter continued. Black-and-white and color models will utilize up to six printed-circuit boards in each chassis.

TV Features Listed

Among the features of the new color merchandise, Mr. Baxter said, are the following:

1. All ten color models are designed for improved ease of installation and service with necessary in-home adjustments accessible from the front of the cabinets.
2. In all new color sets, from 80 to 90 per cent of the circuitry is on printed-circuit boards, as compared with about 20 per cent in previous models — thereby adding to superior performance characteristics of the new sets.
3. Circuits have been added to all models to improve the reception of black-and-white pictures. When color programs are not being telecast, the color circuits are electronically "killed" for superior black-and-white reception. Dual "detectors" are used to accomplish the most effective handling of both sound and picture signals.
4. The Deluxe series employs circuits to improve performance in weak signal areas, in addition to "automatic chroma control" which maintains color values automatically when tuning from station to station and simplifies fine tuning control.
5. The receivers feature "Full Fidelity Color Per-

formance" which means to color television what high fidelity means to sound.

6. All sets utilize either "Balanced Fidelity" or 3-speaker "Panoramic Sound" systems.
7. All sets utilize newly-developed RCA circuitry and production techniques designed to provide the most efficient color reception in history along with ease of tuning and installation and maintenance.
8. "Color Quick" Tuning gives "Living Color" Picture — true-to-life tones on a big-as-life screen. Adjust two color knobs and the picture pops onto the screen — rich, accurate in color and detail. A child can tune it. Automatically switches from color to black-and-white and back.
9. All ten RCA Victor color models are available with UHF-VHF tuning at nominal extra cost.

The 25 black-and-white models will be available in five different screen sizes ranging from the small, compact RCA Victor "Personal" with 36 square inches of viewable picture to models with 329 square inches of viewable picture.

Mr. Baxter said features of the black-and-white receivers include:

1. The industry's widest range of screen sizes, including receivers consumers can carry, roll or swivel, in addition to a wide selection of table models, lowboys, open-face and door consoles.
2. "High, sharp and easy" tuning is quick and accurate. You can tune standing up. Provides handsome, practical channel indicators designed for instant identification of channel numbers.

3. "Living Image" picture with the clearest, sharpest pictures yet attained in TV along with one-, two- and three-speaker models capable of producing superior sound.
4. Styling from sets smaller than some portable radios to long, luxurious lowboys and instruments ranging from provincial styling to ultra-modern, with new finishes and fine wood combinations.
5. Improved circuitry designed to provide top-quality reception, ease of maintenance and long-life reliability.
6. All 21-inch* and 24-inch* models feature a cascade tuner to bring in every station with finest clarity and detail (*picture tube measurement, outside diagonal).
7. New "Automatic Quality Guard," in many sets, boosts signal when weak, shades it down when too strong, kills interference jitters, gives correct brightness and contrast.

The success of RCA Victor's "Personal" television introduced this spring, was noted by Mr. Baxter, who pointed out that the forthcoming line will include two new family-size portable receivers, both with 108 square inches of viewable picture.

"During 1955, RCA Victor manufactured, and its distributors and dealers sold, more than a million black-and-white receivers. Our last line of television merchandise was the most successful ever marketed by any



For portability, RCA Victor has introduced the "Wayfarer," with 108 square inches of picture area.

company. We firmly feel that the 1956-57 merchandise, both black-and-white and color, will enable us to achieve new records in sales in addition to providing customers with unsurpassed values," concluded Mr. Baxter.

New RCA Color Service Contracts

Three types of consumer service contracts for RCA Victor compatible color television receivers were announced on June 11 by E. C. Cahill, President of the RCA Service Company, Inc.

—A \$39.95 contract providing for complete installation and unlimited maintenance and service for 90 days;

—A \$69.95 contract providing for installation and unlimited maintenance and service for 90 days, plus service thereafter at \$7.50 per call regardless of whether the set can be serviced at its location or must be removed for repairs—and provision of all tubes and parts for a full year;

—A \$99.50 contract providing one-year coverage with unlimited service and parts.

Besides the full range of service contracts, Mr. Cahill disclosed details of a newly developed remote control unit for color receivers. This will perform all control functions—channel change, adjustment of color hues, and sound—and will be available through local RCA Victor dealers. Nationally advertised list price of the unit, including installation, is \$89.95.



A star performer in black-and-white TV is the new RCA Victor "Enfield" swivel console receiver shown here.

RCA and the "Talos" Missile

LAND-BASED launching and guidance systems for "Talos," the new anti-aircraft guided missile, are being developed and produced by RCA under contracts with the Department of Defense, it was disclosed at the dedication in early May of enlarged RCA military electronics facilities at Moorestown, N. J.

The dedication ceremonies, attended by military and government representatives, RCA executives, and more than 1,500 employees at the Moorestown plant, provided the first public glimpse of several RCA developments of importance in the field of military electronics. Shown in demonstrations and displays were a portable electronic detector for "nerve" gas, an extremely sensitive television camera tube capable of viewing objects in almost total darkness to produce clearly defined TV pictures, and noise-cancelling microphones and headsets for aircraft intercommunications systems.

RCA's role in the "Talos" program was announced by Brig. General David Sarnoff, Chairman of the Board of RCA, who said that the corporation is building land-based systems for the U. S. Air Force and has responsibility for a portion of a shipboard system for the U. S. Navy. "Talos" is a surface-to-air guided missile developed by the Johns Hopkins Applied Physics Laboratory for the U. S. Navy Bureau of Ordnance. The dedication ceremonies at which the announcement came marked a major enlargement of the RCA Missile and Surface Radar Engineering Plant to house the "Talos" project, as well as development of RCA's abilities to design and produce complex electronic systems for the military services.

Plaque is Unveiled

The occasion was commemorated by meetings at the Moorestown plant of the Boards of Directors of RCA, the National Broadcasting Company, and RCA Communications, Inc. General Sarnoff presided at the meetings and later joined with Frank M. Folsom, RCA President, and other executives to welcome the government and military guests.

Highlighting the ceremonies was the unveiling of a plaque which officially dedicates the Moorestown RCA plant as a missile and radar systems center, with abilities for engineering and producing electronic systems for national defense. In the dedicatory remarks, General Sarnoff said:

"During the past decade, developments in electronics have revolutionized the ancient art of warfare. Foremost among these has been the development of the guided missile to a stage of perfection that makes it awesome in its capability for destruction.

"The German buzz-bombs that rained from the skies of Britain during World War II were as BB-gun pellets, compared with our modern guided missiles. The sobering fact is that our vast oceans and Arctic wastelands have been converted into highways for weapons that can destroy cities and their populations on a scale never before experienced by man.

"The Soviet leaders Bulganin and Khrushchev have openly boasted of their 'mighty guided missiles.' We in the United States have no rational alternative but to meet the menacing competition whereby world communism has perverted science and technology to its evil purposes. For the sake of our own security and the survival of our civilization, we dare not permit the Kremlin to gain even a temporary monopoly of such appalling weapons.

"The Radio Corporation of America has long been dedicated to the principle that our prime responsibility is to serve the nation by providing the armed forces with equipment vital to the success of their operations.

"In line with this principle, we recently concentrated the engineering and production of military equipment

Theodore A. Smith, Executive Vice-President, RCA Defense Electronic Products, and Lt. Col. Oliver R. Hertel, of the Army Chemical Center in Maryland, discuss details of the portable electronic nerve gas detector at the Moorestown demonstration.





Advancing in a simulated gas attack at Moorestown, a detachment of soldiers dons masks in response to a warning from the RCA-Chemical Corps nerve gas detector. The unit is shown on ground at right.

in an operating unit devoted exclusively to this mission. This is our Defense Electronic Products unit, and the organization here at Moorestown is a part of this unit."

In his announcement of the "Talos" project, General Sarnoff stated that "we have as a partner in this program the American Machine and Foundry Company." He declared that the project at the Moorestown plant "represents one of the most comprehensive electronic systems ever developed, and utilizes the latest techniques developed by RCA." He then added:

"This plant, and the people who give it meaning and significance, symbolize RCA's effort in the fulfillment of our foremost responsibility — to serve the nation. And so it is with a deep sense of pride in RCA's work in behalf of our national defense that I unveil this plaque, dedicating the RCA Moorestown Engineering Plant as a missile and surface radar development center."

Plant to be Enlarged

Additional details on the "Talos" project were provided by Theodore A. Smith, Executive Vice-President, RCA Defense Electronic Products, who said that RCA has been established "as prime weapon-system contractor for all phases of the land-based electronic guidance and launching system," while the American Machine and Foundry Company, in association with RCA, is producing the mechanical portions of the land-based system.

To provide the design, engineering, and manufacturing space for the project, RCA has completed "one phase of an enlargement program which more than doubles the engineering space and laboratory facilities" of the Moorestown plant, according to Mr. Smith. The original RCA Moorestown plant, dedicated in December, 1953,

comprised 145,000 square feet of total building space and employed about 600 people. With the new expansion, building space has been increased to 264,000 square feet, and employment to more than 1,500 persons.

"Nerve" Gas Detector

The demonstrations and displays accompanying the Moorestown dedication were highlighted by a dramatic test of the portable electronic detector for "nerve" gas, developed by the Army Chemical Corps and RCA. The first such detector accepted for military use, the unit can serve either as a field alarm for military personnel and installations, or as a gas-detection device for population and industrial centers. The demonstration was carried out by a special detachment of the Army Chemical Corps under the command of Lt. Col. Oliver R. Hertel, Chemical Corps, Engineering Command, Army Chemical Center, Maryland. In a briefing at the demonstration, Col. Hertel told the audience:

"Nerve gas is the most deadly gas developed during or immediately after World War II, and is more than 1,000 times more effective than gas previously in use. Odorless, tasteless, colorless, and invisible, nerve gas is so lethal and quick-acting that it will produce fatal spasms and convulsions within 45 seconds after contact or inhalation unless the proper antidote can be administered immediately.

"The gas attacks a chemical which operates between the nerves and the muscles, causing almost instantaneous destruction of the muscles and nerves. Early warning is vital to permit effective protective measures."

The RCA-Chemical Corps detector is a completely self-contained equipment for detecting the presence of



In a noise-filled room, reporters equipped with RCA noise-cancelling microphones and headsets test effectiveness of the equipment.

"nerve" gas, or G-agents, in the air. A highly classified development until several months ago, the unit has been accepted by the Chemical Corps as a field alarm. It weighs only 24 pounds, measuring 15 inches high, 17 inches wide, and 7 inches deep.

At the Moorestown demonstration, a soldier wearing protective clothing carried the detector into a cloud of harmless red smoke which had been discharged by grenades. As the smoke enveloped the detector, the unit immediately triggered a built-in audible alarm and a red warning light on its case. The soldier instantly signaled to a tactical team following to commence protective procedures. To dramatize the remote and broad warning potential of the detector, it simultaneously activated an audible warning over the plant's public address system as well as a large warning light which had been erected near the building.

The detector operates by sucking in air which is then filtered free from dust. Inside, a paper tape impregnated with a special colorless chemical solution is moved intermittently under the incoming air stream. Phototubes continuously scan the impregnated tape. G-agents in the air cause the tape to discolor, and the phototubes react instantly to this change, setting off the audible and visible alarms.

Television Pickup in Darkness

A second demonstration featured an RCA-developed wide-spaced image orthicon — described by Mr. Smith as basically a standard TV camera pickup tube with innovations increasing its sensitivity from five to ten times. Designed to provide television pictures with good resolution and clarity under low light conditions, the tube will televise objects in darkness equivalent to that of a cloudy, moonlit night. In the demonstration, a TV camera employing the tube was focused on a model seated in a lighted room. The camera was turned on and



In semi-darkness, the RCA wide-spaced image orthicon TV camera tube picks up and displays clearly the image of a human model.

the room lights switched off, rendering the model virtually invisible to observers in the room. The tube, however, permitted the camera to transmit a bright, clear image of the model to a television receiver in the room.

An even more advanced system, described but not demonstrated at the Moorestown display, is the "Cat Eye," an electronic light intensifier capable of viewing objects in the dark to produce sharp and clear television pictures. This intensifier was developed under Air Force contract at RCA's David Sarnoff Research Center, Princeton, N. J., by Drs. George A. Morton and John E. Ruedy. Research on the project also was conducted at the Air Force's Wright Air Development Center, Dayton, Ohio, by R. K. H. Gebel. Operating on principles similar to those of television, the "Cat Eye" senses and amplifies the ever-present photons unseen by the human eye. Photons are bundles of electromagnetic waves which, in sufficient numbers, appear to the eye as light.

Noise-Cancelling Microphones and Headsets

A third major demonstration provided a test of noise-cancelling microphones and headsets developed by RCA and now in production for the Air Force.

The demonstration was conducted in a room in which in-plane noise of 115 to 120 decibels was simulated, making conversation impossible. As soon as the observers had donned the RCA noise-cancelling microphones and headsets, they were able to carry on clear conversation without any interference from the racket in the room. The equipment used included hand-free microphones — a combination headset with an adjustable boom microphone which can be fixed directly in front of the lips. The noise-cancelling principles also have been adapted for hand-held and oxygen mask microphones.

A Salute for "Distinguished Service"

THE Army's highest civilian medal — the Decoration For Exceptional Civilian Service — was awarded to Brig. General David Sarnoff, Chairman of the Board of RCA, at a ceremony May 23 in the office of Secretary of Defense Charles E. Wilson in Washington.

The Secretary praised General Sarnoff's service to the Army and to the country in the field of communications, and his efforts in spurring enlistments in the Military Reserve during his term as Chairman of the National Security Training Commission. The only previous recipient of the medal was K. T. Keller, former head of the Chrysler Corporation, who was honored for his work in the field of guided missiles.

Secretary of the Army Wilber M. Brucker read the following citation in honor of General Sarnoff:

"Throughout his eminent career as one of our nation's outstanding industrialists and leading citizens, he has been noteworthy for his personal contributions of time and effort to the military service in undertaking numerous responsibilities and assignments to assist the cause of national defense. He has been an esteemed advisor to the Army in the field of communications. Since his appointment by the President as Chairman of the National Security Training Commission, he has played a key role in marshalling public opinion and bringing about a better understanding of the Reserve Component program of the Army. His efforts in this vital field have been untiring and have inspired wide support for the Army effort. The Department of the Army commends him for his assistance and his long and distinguished service to national defense."

As Chairman of the National Security Training Commission, which supervises the welfare of Reservists, General Sarnoff has concentrated on stepping up recruiting for the new Six-Month Reserve Training Program. When this program was undertaken last fall, Defense Department officials hoped to recruit 100,000 volunteers in the first year. However, enlistments fell far below expectations for the program, which permits six months' training camp duty and 7½ years' home town Reserve service as an alternative to the two-year draft.

Early in 1956 General Sarnoff suggested to Defense Department officials and to a House Appropriations Subcommittee that the basic difficulty seemed to be a lack of public awareness of the new program. He proposed these steps:

1. *Development of a "Message"* — one that would describe to teenagers and their parents, briefly and clearly, the purposes and advantages of the Six-Month Training Program.



Secretary of Defense Charles E. Wilson congratulates Brig. General David Sarnoff in the presence of Secretary of the Army Wilber M. Brucker.

2. *Distribution of this "Message"* — particularly during a week-long nation-wide "saturation campaign" by radio, TV, press and other media.

President Eisenhower responded to the Sarnoff proposal by setting aside the week of April 22-28 as "Military Reserve Week." The "week" was sponsored by the National Security Committee, a non-partisan, non-profit organization made up of representatives of national veterans, civic and fraternal groups.

A "task force" was set up at NBC to prepare an extensive radio-TV promotion drive. The American Broadcasting Company and the Columbia Broadcasting System were requested to cooperate in the campaign and both did so cheerfully and effectively. NBC made its promotion material available to the other networks and to local stations.

Four basic approaches were used in the campaign: Endorsement of the Reserves by radio-TV stars like Perry Como, Ed Sullivan, Phil Silvers, George Gobel, John Daly, Dinah Shore and others; special programs pointing up the importance of the Reserves; spot announcements on the networks; and programs developed by local stations. More than 6,000 programs and announcements were presented by the networks and their affiliated local stations during Military Reserve Week, involving air time worth close to \$2,000,000.

The Defense Department reported a sharp upswing in Reserve enlistments during the "week," and the higher level was maintained after the campaign ended.



Robert W. Sarnoff, NBC President, tells members of the Senate Committee on Interstate and Foreign Commerce about NBC TV Network operations.

The Role of the TV Network

THE Senate Committee on Interstate and Foreign Commerce was told on June 14 by Robert W. Sarnoff, President of the National Broadcasting Company, that the television industry's "vital objective" of developing the maximum number of stations should not be obscured or diverted by attacks on network operations.

If such attacks should lead to restriction of network operations through additional government regulation, he warned, the "whole delicate balance of network advertising, affiliation relationships and service to the public could be upset."

"Moreover," Mr. Sarnoff added, "various types of regulations which have been proposed could not be effected without regulating advertisers. Such a step would raise the most serious problems not only for television, but for the American enterprise system."

The NBC President's 38-page statement included the first public report by any television network of its annual sales and income figures. These reveal that in its first eight years, from 1947 through 1954, the NBC Television Network incurred a cumulative loss of more than \$4,000,000. Only in 1955 did the network achieve a cumulative net profit—which amounted to \$2,315,000, or less than one-half of one per cent of cumulative net sales for the nine years of the network's operation.

"These facts show that any claim of exorbitant profits from this high risk business is not in accordance with the economic realities," he declared.

6,500 Programs Yearly

In giving the Committee a broad picture of the organization and operation of the NBC Television Net-

work, Mr. Sarnoff said it presents annually 6,500 different programs, serves 200 stations and does business with over 200 advertisers of all types and sizes. He also highlighted these factual points:

—NBC produces less than one-third of the programs in its schedule. "Rather than stifling independent production, networks have provided an important encouragement and stimulus for program development by outside producers," he explained.

—Between 80% and 90% of the total hours on the NBC network consists of live programs. "Only through a network system can live programs be broadcast on a national basis," he said.

—NBC's share of all national advertising revenue in 1955 was 2.7%; its share of all television advertising revenue was 21.7%. "No network comes near controlling a share of the market large enough to approach a monopoly position," he said.

—NBC has 37 UHF stations as network affiliates, accounting for over 40% of all UHF stations in commercial operation. "We feel that the best prospect for expanding television service is effective use of the 70 UHF channels as well as the 12 VHF channels . . . a multiplicity of stations . . . would permit maximum competition at both the station level and the network level."

—The NBC Program Extension Plan, designed to increase network revenue to smaller market stations, has resulted in a 113% increase of sponsored network programming on smaller market stations since last Fall.

—NBC's total projected capital costs for the next five years are \$80,000,000, including \$13,000,000 authorized in recent months for color television networking alone.

Mr. Sarnoff emphasized that the networks were the only organizations offering the public a comprehensive and carefully planned program service. Through their program innovations, he said, they have kept public interest in the medium "refreshed and renewed." It was this network service, he added, that provided the base for the growth of the entire industry, including the operation of hundreds of stations.

Says Networks Must Produce Shows

The NBC President stressed that in order to maintain and furnish a comprehensive program service to the public in addition to utilizing programs from a variety of outside sources, it was essential for networks to produce their own shows.

He added: "The claim has been made that we give special preference to programs in which we have a financial interest in order to get a profit from the sale of the programs as well as from the sale of time. I want to deny that charge categorically. Our primary concern is whether or not a program best meets the needs of our

planned program structure. This is the decisive element—not who owns the program, or whether or not we have a financial interest in it."

Mr. Sarnoff pointed out that the NBC Television Network is part of an intensely competitive television industry, which itself is part of an intensely competitive advertising industry.

"We welcome competition as a stimulus to enterprise in our business and in others," he said. "Although there is no restraint on competition in television, additional competition and additional service could be developed if there were more stations.

"This is the root of the problem in television, and its solution will also solve the problems which are under study by this Committee. We therefore urge that the Congress and the FCC focus on this central problem and take affirmative steps to bring about its solution."

Mr. Sarnoff concluded that a television system consisting of three actively competing networks, over 400 stations, and scores of program suppliers "makes meaningless any claim of monopoly."

Folsom Honored by Notre Dame

An honorary degree of Doctor of Laws was conferred on Frank M. Folsom, President of RCA, by the University of Notre Dame at commencement exercises on June 3, with a citation for "his great contributions to the astounding advance of public communications in modern society."

The degree was conferred by the Reverend Theodore M. Hesburgh, C.S.C., President of the University. Among those also honored with degrees were Admiral Arleigh A. Burke, Chief of Naval Operations, and Secretary of the Treasury George M. Humphrey.

The citation accompanying Mr. Folsom's award said:

"One of the first business executives to give his services to the American government prior to World War II, he has demonstrated at all times the very best kind of citizenship and social responsibility. Unselfishly helpful in the work of Catholic colleges and charities, he has received the high honor of the Church as well as those of the State. Adding to them, we now applaud him for his great contributions to the astounding advance of public communications in modern society, and, of natural importance to us, for his interest in the fullest development of science and engineering education at Notre Dame."



The Reverend Theodore M. Hesburgh, C.S.C., President of the University of Notre Dame, congratulates RCA President Frank M. Folsom after awarding him the honorary degree of Doctor of Laws at the university's commencement exercises on June 3.



A general view of the 37th Annual Meeting of RCA Stockholders.

A New RCA First-Quarter Record

RCA SALES and earnings in the first quarter of 1956 exceeded the all-time record for the period set last year by the Corporation, Brig. General David Sarnoff announced on May 1 at the 37th Annual Meeting of Stockholders in NBC's studio 8H at Radio City, New York.

General Sarnoff said that in the record-breaking 1956 first quarter, sales of RCA products and services amounted to \$274,848,000—an increase of \$18,543,000, or 7 percent, over the first three months of 1955.

Profits before taxes amounted to \$25,395,000, an increase of \$310,000 over the same quarter last year, while net profits after taxes amounted to \$12,727,000, increasing \$159,000 over the 1955 first quarter.

Earnings per common share for the first quarter of 1956 were 85 cents—as against 84 cents for the first quarter of last year.

The 1956 first-quarter sales and revenues from foreign business were higher than for any comparable period on record, and the RCA International Division, General Sarnoff said, continues to expand and diversify its distribution and manufacturing facilities around the world.

General Sarnoff, declaring that for more than twenty-five years RCA has been a major supplier of equipment for national defense, stated that unfilled Government orders on April 1, 1956, amounted to 265 million dollars. He said that deliveries of Government orders by RCA

this year are expected to be about the same as last year—229 million dollars.

RCA Surpasses Billion-Dollar Goal

"At our meeting last year," General Sarnoff reminded stockholders, "I said that our target for 1955 was one billion dollars. At the same time I mentioned that this year would mark my 50th anniversary of service with the Radio Corporation of America and its predecessor—and that the achievement of this billion-dollar goal would be the happiest birthday present I could receive and share with you at this meeting.

"The Annual Report mailed to you recently has given a detailed account of our 1955 operations, and therefore you already know that this birthday present was delivered on time and in the fullest measure. We not only reached that one billion goal—but exceeded it by 55 million dollars.

"There are only twenty-eight manufacturing companies in the United States whose annual business tops one billion dollars. Now, for the first time, RCA is in that category.

"Our volume of business increased 12 per cent and amounted to \$1,055,266,000. This was more than *four million dollars for each working day.*"

The Future

In discussing the prospects ahead, General Sarnoff declared:

"With so much of immediate importance crowding today—What about the future?"

"RCA is engaged in the fullest possible development of electronics as a science, art and industry. Presently, the science of electronics is in an extraordinary state of transition and expansion. Transistors are supplementing and, in some cases replacing, electron tubes. Color television is on its way to universal use. Tape recording is challenging film recording, and ultimately tape may become the preferred method of visual as well as sound recording. And this does not complete the area of transition. Within the next ten years we can expect to see electronics expand and become an even more important factor in the fields of business machines and other office devices, industrial equipment and home appliances.

"When we consider the fact that 80 per cent of RCA's business in 1955 was in products and services that did not exist commercially ten years ago, there is good reason to expect that at least 80 per cent of our business ten years hence will be in new products and services that do not exist commercially today.

"The present annual volume of the electronics industry is estimated to be 11 billion dollars. With the developments under way and the prospects ahead it seems to me reasonable to expect that this figure will double by the end of the next decade.

"By that time, RCA's annual volume of business will, I believe, also be double its present size. This would mean a gross business in excess of two billion dollars a year—with increased profits and increased dividends to stockholders.

"In the natural course of events there may be ups and downs. But the prosperity of a soundly built organization does not rest on the record made in any one year. It is the record and reputation established over the years that count.

"The history and growth of the RCA attest to the basic soundness of its policies and justify us in looking to the future with confidence."

Television

The leadership which RCA achieved through the development and production of television sets, both black-and-white and color, is now history, General Sarnoff said, and he added:

"We have borne the major scientific, manufacturing and financial burdens of pioneering and developing both black-and-white and compatible color television and of establishing them as a service to the public.

"Having blazed the trail in color television, we are now entering a new era of great expansion and sales opportunity for RCA as well as our competitors.

"In accordance with RCA's long standing policy of keeping others in the industry informed of technical progress, RCA held a color TV symposium in Chicago two weeks ago for its licensees. We are turning over to competing manufacturers, RCA's latest color receiver blueprints, technical 'know-how,' production details and bills of materials. A reduction in the price of the RCA color picture tube to manufacturers—from \$100 to \$85—was also announced at that meeting. All this should stimulate other manufacturers to make and sell color sets. As production increases, prices to the public will decrease. This is the normal pattern of mass production."

Color TV Programming

NBC has launched a 12 million dollar plan to facilitate color programming, said General Sarnoff, continuing:

"Two weeks ago, our station WNBQ in Chicago, became the world's first all-color TV station. All live programs originating at WNBQ are now in color. This project is an integral part of the RCA-NBC move to break through the black-and-white curtain and speed the advance of color TV as a regular service to the public.

"Plans are being developed for converting the other NBC-owned stations for broadcasting programs in color."

A box lunch was served to the stockholders.



Celebrating National Unity Day

Brig. General David Sarnoff has been named honorary chairman of The American Museum of Immigration's Greater New York Committee. On June 28, the AMI sponsored National Unity Day ceremonies at the Statue of Liberty, at which General Sarnoff spoke. Following is the text of his remarks.

NO American can stand here at the feet of the Goddess of Liberty without feeling a surge of patriotic emotion. The Beautiful Lady, as she has often been called, sums up so much of our nation's history and destiny!

More than any other physical object on earth, this Statue has become for all mankind a symbol of freedom and promise, justice and compassion. These are the American ideals. And today, when a fateful contest is under way between liberty and slavery, they are more important and more binding than ever before.

The Statue's "lamp beside the golden door" makes bright the land we love and the values we cherish. But its rays are not for us alone. They reach into remote places the world over, to help disperse the darkness of despotism.

Her voice speaks to the "huddled masses yearning to be free" — to "the homeless, the tempest-tossed" — as eloquently as on the day those deathless words were first inscribed by Emma Lazarus.

Whether his ancestors came to these shores on the Mayflower or on a squalid steerage boat, an American cannot be immune to an upwelling of pride and gratitude as he looks upon the Statue of Liberty. Quite naturally these sentiments are more poignant for those who, like myself, are themselves immigrants or the first offspring of immigrants.

I was nine years old when my parents had the good sense to bring me to the United States. This meant that I was young enough to absorb America and to be absorbed by it. At the same time, I was old enough to retain memories of the primitive world from which I had come. I was old enough, also, to know the difficulties of the newcomer's adjustment to a completely new way of life and thought.

Let me say a few words about that adjustment, which millions of new Americans — your forebears — have had to make. It is a bewildering experience to be transported, by a mere ocean journey, from the Middle Ages to the Twentieth Century; from a fixed and frozen background to this infinitely dynamic America; from the past, one might say, straight into the future.



Earth from 48 states and 34 other free nations is sprinkled by General Sarnoff during tree-planting ceremony at foot of the Statue of Liberty on National Unity Day, June 28. In background are representatives of some of the 37 nationality groups participating.

The great change, however much desired, is beset by problems and tensions and heartbreaks which few who have not been through it can feel. It is a remarkable fact, however, and one that redounds to the credit of our America, that this major adjustment, in time, creates in the overwhelming majority of immigrants and their offspring not only contentment but a deep love for the adopted land.

It is also a significant fact that in the measure that immigrants — and especially their sons and daughters — achieve a sense of "belonging" in America, they develop a sentimental interest in the regions from which their families migrated. They rediscover elements of beauty and strength in the cultures of their foreign ancestors.

Most important, they realize at last that their immigrant forebears not only *took* something *from* America, but *gave* something *to* America. They recognize the truth that the newcomers made a unique contribution

(Continued on page 30)

NBC at the Political Conventions

THE NATIONAL BROADCASTING COMPANY is mobilizing its full resources to give the Republican and Democratic conventions the most complete, most mobile news coverage in the history of television and radio.

NBC News will cover each of the conventions with a staff of nearly 400, with a communications system including three mobile units and more than 40 cameras, and with a number of new electronic devices developed by RCA for maximum portability and mobility. Among the new devices being introduced at the conventions are:

— "Transceivers," pocket-size two-way radios no larger than a lady's formal handbag, which will be used by NBC newsmen for live reports of news as it breaks on the convention floor.

— One-man portable television cameras, which can be held in the hand like a flare pistol and aimed at areas, whether inside or outside the convention hall, that are impossible to reach with standard studio equipment.

— "Porto-Vision," which involves the use of an ultra-portable television receiver and will enable political figures to see one another as they converse before the TV cameras, even though they may be some distance apart.

NBC coverage will be focused in "Convention Centrals," large, specially-designed control rooms which will coordinate the entire news operation. These communication centers will be constructed in Chicago's International Amphitheatre, where the Democratic Convention will open August 13, and the Cow Palace in San Francisco, site of the Republican convention beginning August 20.

Nerve Centers

The "Convention Centrals" will act as nerve centers, with television, radio, telephone and teletype lines reaching out to the sources of news — the caucus rooms, the convention floor, the platform, the candidate's headquarters, hotel lobbies, committee rooms, airports, railroad stations and to many points around the country as well. The special telephone system alone will be as extensive as those in most small cities.

Inside the convention halls, roving teams of NBC reporters equipped with their tiny transceivers will report crucial decisions as they are made. Each of the top two dozen delegations will have an NBC reporter assigned to it on a constant basis, so that NBC editors will be instantly informed of any policy changes. Working with the reporters on the convention floor will be the cameramen equipped with portable cameras for close-ups of political personalities in action.

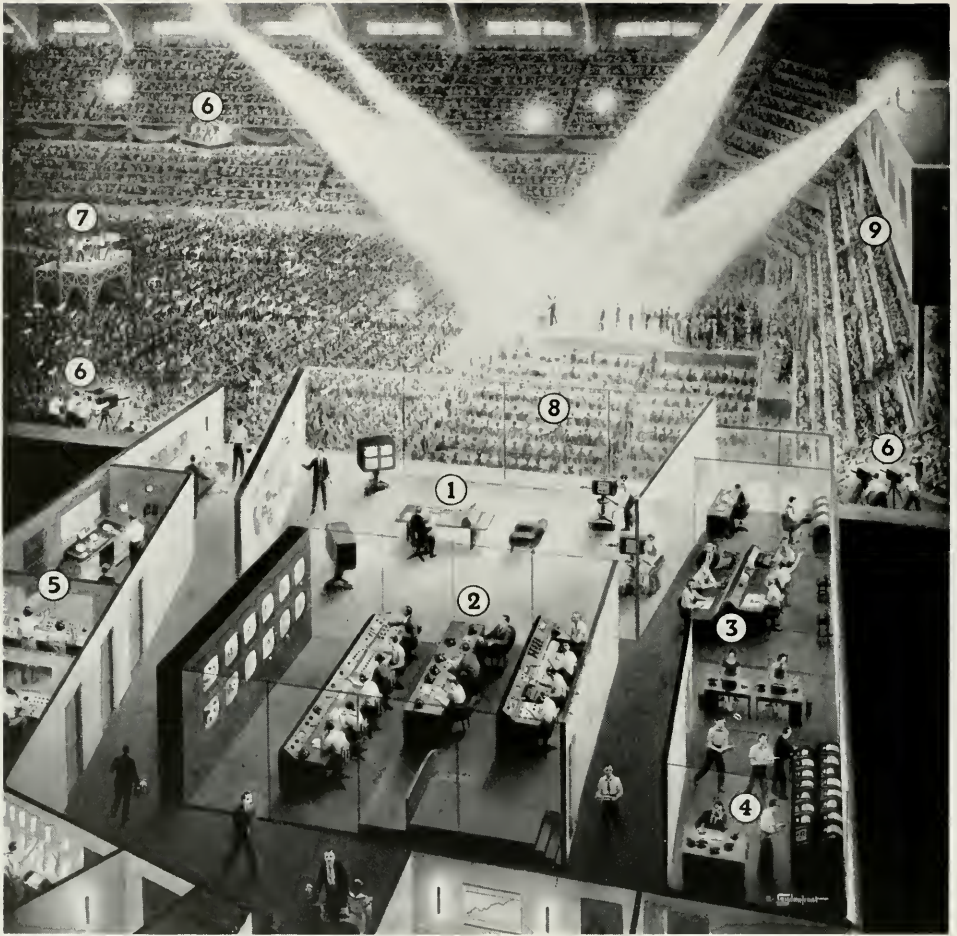
Outside the convention hall, news breaks will be covered by other reporter teams operating with radio cars, helicopters, television mobile units and film units equipped with high-speed developing equipment. Using the "Porto-Vision" system, these teams will be able to visit a candidate's headquarters, for example, and show the candidate talking face to face with the head of a delegation who may be speaking before the television cameras in the convention hall several miles away.

Nationwide Coverage

The coverage will go even beyond the convention cities to get the opinions of political experts around the nation. In a new feature called "Cross-Country Caucus," NBC News will swing away from the convention hall to visit newspaper editors and editorial writers all over the United States to get their views on an issue or situation. If interest centers on the Pennsylvania delegation, for example, "Cross-Country Caucus" will take viewers to editorial offices in Pittsburgh, perhaps, or Philadelphia for an authoritative review.



NBC commentator Chet Huntley demonstrates what the well-equipped TV reporter will wear at the conventions. He carries portable TV camera and back-pack transmitter, two-way transceiver for radio communication (in his pocket) and light portable TV set.



NBC CONVENTION CENTRAL—This drawing by A. Leydenfrost shows how NBC will organize the complex communications to cover both the Democratic and Republican national conventions next month. (1)—TV-One, the main television studio where news commentaries will be given; (2) Master control room; (3) Central news desk; (4) Newspaperer room; (5) Radio studios; (6) Side arena TV cameras; (7) Central TV camera platform; (8) Press gallery; (9) Radio booths. In the center of the drawing, bathed in spotlights, is the speakers' platform. Radio and television coverage of the conventions will form the most complete and most mobile news operation in the history of the NBC network.



Against a convention backdrop, Pauline Frederick demonstrates the two-way radio transeiver to be used by NBC reporters for on-the-spot news.

The news, whether it's from the convention floor or from half way across the country, will be channeled into Convention Central. There it will be evaluated, edited and sent on to NBC commentators — including John Cameron Swayze, Bill Henry, Morgan Beatty, Chet Huntley, David Brinkley, Ray Scherer and Dave Garro-way. When on camera, the commentators will be within push-button visual and vocal contact with all key news points.

In addition to its own commentators and reporters, NBC News will have the services of Dr. George Gallup, founder and director of the American Institute of Public Opinion. Dr. Gallup will interpret opinion surveys in the light of developments at the convention. His institute has covered the last ten national elections. Its average error on the division of the popular vote has been 3.8 percentage points.

NBC began planning the convention coverage four years ago at the close of the 1952 conventions. The preparations have been carried out under the direction of Davidson Taylor, NBC Vice President in charge of Public Affairs; William R. McAndrew, Director of NBC News; and Barry Wood, Director of NBC Special Events. The new, more mobile approach to the conventions — known at NBC as the "man-in-the-aisle" plan — was developed by Mr. McAndrew in conjunction with Joseph O. Meyers, Manager of NBC News, and Reuben Frank, staff producer assigned to coverage of the convention.

Schedule Problems

Planning the coverage was complicated by the fact that only a weekend intervenes between the close of the Democratic convention and the opening of the Republi-

can meeting. This tight schedule poses a difficult logistics problem — the transfer of the entire NBC convention personnel and equipment from Chicago to San Francisco in a single day. The operation is further complicated by the possibility that the Democratic convention may extend into the second week — after the Republican convention has opened. If this should happen, NBC will rush standby staffs into action in both cities to maintain complete and simultaneous coverage.

The transport of personnel and equipment from Chicago to San Francisco will be carried out entirely by air. The massive transfer has been planned with all the precision of an Air Force operation. All members of the staff — commentators, reporters, technicians — have been briefed on the overall operation and each has been assigned a specific job and a place on one of the special planes.

In addition to the special convention programming, NBC's full roster of news programs are geared to give a complete picture of the election-year activities. On these programs, including NBC-TV's "Today," "Home," and the "News Caravan," and NBC Radio's "News of the World," "Monitor," "World News Roundup," and "Weekday," audiences will become acquainted with all the personalities and issues.

RCA Film: "The Story of Television"

THE STORY OF TELEVISION, a half-hour documentary film on the development of television from its earliest days down to the present, has just been produced by RCA and is now ready for public distribution.

Going back to the mid-20s, when the iconoscope and the kinescope were first developed, the film dramatically portrays the tremendous scientific and engineering effort involved in perfecting a workable television system. History is made when television is shown publicly for the first time by RCA at the New York World's Fair in 1939. Halted by war, television surges forward in peacetime to become a vast new entertainment, information and art form.

The film is climaxed by the advent of a new medium — compatible color television. In a series of brilliant scenes, the film demonstrates color's versatility and its potentialities as a new instrument for linking areas and peoples of the world in new bonds of understanding.

THE STORY OF TELEVISION is available for 16mm showing to groups and organizations. Requests to borrow a print should be addressed to RCA, Department of Information, Rockefeller Center, New York City.

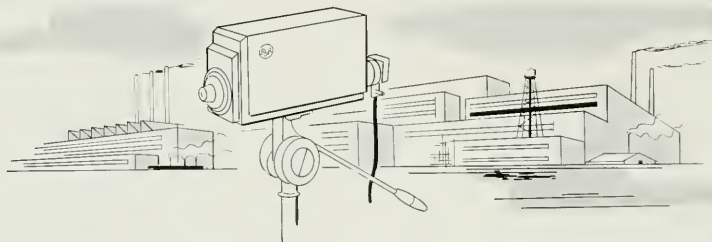


RCA Industrial TV watches wind-tunnel model tests . . .



peers into a steel mill reheating furnace . . .

More Jobs for Industrial TV



WITH each passing month, industrial closed-circuit television systems contrive to find new applications in which they save no end of time, trouble, or possible physical danger to human observers. In recent weeks, RCA industrial TV equipment has turned up in the following functions:

— Observing the performance of aircraft models in a supersonic wind tunnel at the Lewis Flight Propulsion Laboratory, Cleveland, Ohio.

— Watching processing operations inside huge reheating furnaces at the Weirton Steel Company, Weirton, W. Va.

— Peering around corners for remote observation of processing operations in alloy plate steel production at the Lukens Steel Company, Coatesville, Pa.

— Looking through a microscope to provide remote, close-up observation of thin scraper blades used in lithography coating presses at the Cincinnati Machine Shop of the American Can Company.

The Lewis Flight Propulsion Laboratory is one of three research facilities operated by the National Advisory Committee for Aeronautics, the independent government agency which conducts advanced research on aviation equipment and flight techniques. Three RCA industrial TV systems and four 24-inch monitors have been installed at the Cleveland laboratory to provide safe and more efficient observation of happenings in the wind tunnel and for engineers conducting research on aircraft engines and propulsion systems.

TV in a Tunnel

The three TV cameras are stationed at strategic points in the tunnel and connected by closed-circuit to the monitors in the wind-tunnel control room about 250 feet away. The tunnel, test apparatus, and equipment under test are operated from the control room, and the TV system has been installed so that any monitor can be switched for connection to any of the three camera chains.



observes steel plates on a conveyor . . .

Says Dr. Edward R. Sharp, Director of the laboratory: "The 10-by-10 foot tunnel at the Lewis Flight Propulsion Laboratory is a new facility. It was designed with closed-circuit TV in mind as the medium for remote observation. Without television, we would be forced to observe the tests by other means, such as periscopes, motion picture film, or even direct vision — each of which lacks one or more of the advantages of scope, flexibility, immediacy, or safety represented by closed-circuit television."

Watching the Furnace

By providing observation of action inside reheating furnaces and along a roller table for steel slabs, RCA closed-circuit equipment at the Weirton Steel Company has provided human operators with a third "eye" in two separate steel-processing operations and has eliminated a problem of cold edges in slabs when they overhang the hearth, according to Ralph A. Teare, Manager, RCA Industrial Products.

Three cameras have been positioned at the side of reheating furnaces in Weirton's hot mill, and connected by closed-circuit to a monitor in the furnaces' remote-control booth 150 feet away and around a corner from the cameras. A fourth camera has been mounted to scan a 350-foot roller table approaching the finishing mills. This camera enables operators in the control booths of both the roughing train and the approach table to "see" and make certain that the steel slabs are properly positioned in transit between the two operations.

All of the cameras have been specially adapted to their hot surroundings. Each of the furnace cameras is encased in a special metal box with a conditioned air system which maintains the camera's temperature at



goes through a microscope at thin scraper blades.

an efficient working level. A special casing also protects the camera used to scan the roller table.

The Lukens Steel Company installation, incorporating nine separate RCA industrial TV cameras, makes possible one-man operation of a huge furnace line and enables a single operator to control a complete plate-finishing shearing operation. According to L. M. Curtiss, General Works Manager for Lukens, the furnace operation at the company's ultra-modern Navy alloy plate building is a push-button operation controlled by a single operator in a control booth. Continuous observation of all areas of the furnace line is essential for maximum safety in loading the huge alloy plates on the conveyor and carrying them through heating, quenching, cooling and discharging operations. With the help of six TV cameras feeding directly into monitors in the control booth, the operator in the booth is able to see what transpires even at various "blind spots" on the line, some over 600 feet away and around corners.

Reducing Fatigue and Error

The effect of the RCA closed-circuit installation at the American Can Company in Cincinnati has been to increase quality and production by 100 percent and to reduce fatigue and possible error, according to F. J. Connelly, Manager of the Canco plant. Peering at thin scraper blades through a microscope, the system projects the images, magnified 288 times, on a 21-inch TV receiver located a few feet away. Previously, according to Mr. Connelly, inspectors had to inspect the blades by squinting through a 30-power microscope — "a tedious operation which induces fatigue and error."

"The remote TV inspection system enables our inspectors to check twice as many blades in the same given time, with appreciably greater accuracy and with a negligible minimum of fatigue," he said.

A Hit Record in the Making



Above, singer Jaye P. Morgan begins a recording session for RCA Victor in New York's Webster Hall with Hugo Winterhalter conducting the orchestra. Below, she listens pensively in the control room as the first "take" is played back via tape recording.



Back for a second try, Jaye P. decorates the microphone with her festive flower. Below is proof that the product is right on the second round. A few days later, Jaye's newest record, "Johnny Casanova," was on its way to RCA Victor record dealers across the nation.



Tour Plans for NBC Opera

PREPARATIONS for the first tour of the newly-formed NBC Opera Company next fall were speeded during May and June with announcement of the forty-six city itinerary and a visit to a number of the cities by officials of RCA and NBC on a 12-day good-will and inspection tour.

The NBC Opera Company is a direct outgrowth of the highly successful NBC Television Opera Theatre, which for seven years has presented the finest operas in English to a nationwide television audience numbering in the millions for each performance. Announcing the formation of the new touring company last December, Brig. General David Sarnoff said:

"The NBC Television Opera Theatre has also stimulated a demand for opera performances in English in the theatres and concert halls of the nation. This it is that has encouraged us to go forward with the . . . formation of the NBC Opera Company to meet the steadily growing public demand."

The June tour by RCA and NBC officials in preparation for the autumn schedule included twenty-four of the cities at which performances are to be given. At each, enthusiastic cooperation was extended by local concert committees, civic officials, the press, radio and television stations, and RCA distributors, who are giving substantial help in promoting the local performances.

The touring group included Alfred R. Stern, Vice-President of the NBC Theatrical Division of the Kagan Corporation; Chandler Cowles, general manager, NBC Opera Company; Tom Skelton, production stage manager, NBC Opera Company; Bill D. Ross, representing the RCA Department of Information; Leonard Meyers, director of press and promotion, NBC Opera Company; Robert Aaron, representing NBC Station Relations; and Schuyler Chapin, representing Judson, O'Neill and Judd, concert managers for the NBC Opera Company.

Two Operas to be Performed

The repertoire for the NBC Opera Company's first tour includes Puccini's "Madam Butterfly" and Mozart's "The Marriage of Figaro," both to be sung in English. Among the stars of the 96-member company are Frances Bible, mezzo-soprano; Adelaide Bishop, soprano; Walter Cassel, baritone; Phyllis Curtin, soprano; Edith Evans, mezzo-soprano; Ralph Herbert, baritone; Elaine Malbin, soprano, and Emile Renan, bass-baritone.

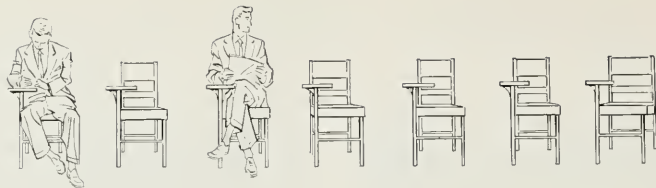
The tour itinerary includes these cities and dates:

Philadelphia, Oct. 15; Norfolk, Va., Oct. 16; Richmond, Va., Oct. 17 and 18; Charlotte, Va., Oct. 19,

Columbia, S.C., Oct. 20; Savannah, Ga., Oct. 21 (matinee); Macon, Ga., Oct. 22; Atlanta, Ga., Oct. 23; Chattanooga, Tenn., Oct. 24; Little Rock, Ark., Oct. 26; Jackson, Miss., Oct. 27; New Orleans, La., Oct. 28 (matinee and evening); Baton Rouge, La., Oct. 29; Lake Charles, La., Oct. 30; Beaumont, Tex., Oct. 31; Austin, Tex., Nov. 1; Fort Worth, Tex., Nov. 2 and 3; Oklahoma City, Okla., Nov. 4 (matinee); Pittsburgh, Kan., Nov. 5; Columbia, Mo., Nov. 6; Waterloo, Iowa, Nov. 7; Des Moines, Iowa, Nov. 8; Kansas City, Kan., Nov. 9; Omaha, Neb., Nov. 10; Sioux City, Iowa, Nov. 11; Davenport, Iowa, Nov. 13; Rockford, Ill., Nov. 14; Springfield, Ill., Nov. 15; St. Louis, Mo., Nov. 16; Evansville, Ind., Nov. 17; Milwaukee, Wis., Nov. 19; Ft. Wayne, Ind., Nov. 20; Charleston, W.Va., Nov. 22; Cleveland, Ohio, Nov. 23 and 24; Cincinnati, Ohio, Nov. 25 (matinee); Bloomington, Ind., Nov. 26; Huntington, W.Va., Nov. 27; Columbus, Ohio, Nov. 28; Kalamazoo, Mich., Nov. 29; Grand Rapids, Mich., Nov. 30; South Bend, Ind., Dec. 1 (matinee and evening); Rochester, N.Y., Dec. 3; Troy, N.Y., Dec. 4; Hartford, Conn., Dec. 5 (matinee and evening); Philadelphia, Dec. 7; and Newark, N.J., Dec. 8.

Ready to take off on the good-will tour for the NBC Opera Company are, left to right, Alfred R. Stern, Schuyler Chapin, Bill Ross, Chandler Cowles, Tom Skelton, Leonard Meyers, and Robert Aaron (on steps).





Meeting the Shortage of Engineers

How is the United States to cope with the critical and growing shortage of new scientists and engineers needed to carry on the technological development vital to the nation's economy and security? In the widening discussion of this basic problem, leading RCA spokesmen have contributed a series of pertinent suggestions in talks before a variety of public groups during the past three months.

In testimony before the Subcommittee on Research and Development of the Joint Congressional Committee on Atomic Energy on April 25, Brig. General David Sarnoff recommended a three-point program that would affect both colleges and high schools throughout the nation. He proposed:

1. That atomic reactors be built on selected college campuses to "signalize the importance of the scientist, the physicist, the engineer, and the man of technology," and "stimulate the interest of students in matters scientific."
2. That a nation-wide poll be conducted among high school seniors and college freshmen to determine why so few young Americans are taking up scientific careers.
3. That industry and government cooperate in establishing a "National Education Reserve" made up of qualified teachers drawn from industry and from the ranks of the retired, to ease the shortage of science and mathematics instructors. This proposal was made originally by General Sarnoff last January before the National Security Industrial Association and has aroused widespread interest.

General Sarnoff told the Congressional group that these proposals were "not presented as cure-alls, but simply as measures that could go a long way toward ameliorating the present critical situation."

Regarding the first suggestion, he said: "The presence of a reactor would provide a living laboratory to heighten the realism of instruction. It would enable the student to get a glimpse of his own role in the nuclear

future. Under the guidance of competent teachers, it would stir him to visions of applying this force for constructive purposes. The impact on the student, in short, would be at once inspirational and practical."

As to the poll of students, General Sarnoff pointed out that in spite of opportunities for employment in the technical fields, too few young Americans are entering scientific careers.

"Why?" he asked. "Many guesses have been made. But it is vitally necessary that concrete knowledge replace guesswork on this score. Why should not these young Americans themselves be questioned on this subject? It seems to me that a survey or poll of students in the senior year of high school and the freshman year of college—the critical years of career decisions—might well provide information helpful in drawing more qualified people into engineering and related fields."

Jolliffe Suggests Recruiting of Women

The quest for concrete information on the scope and causes of the technical manpower shortage is one of the first tasks of the National Committee on the Development of Scientists and Engineers, established recently by President Eisenhower with a membership of leading educators, scientists, public officials, industrialists, and labor leaders. At a dinner honoring the Committee on June 21 in Newark, N. J., Dr. C. B. Jolliffe, Vice President and Technical Director of RCA, endorsed the Sarnoff proposals and proposed a further measure—the greater use of women in engineering and the physical sciences.

Noting that in Russia about 20 percent of all engineers are women, compared with less than one percent in the United States, Dr. Jolliffe said:

"I have long felt that not enough consideration has been given in this country to ways of getting more women into the electronics field. I think that it is important that we do this, particularly now when we are engaged in a life-or-death struggle for technological

supremacy. It seems to me that women would be especially useful as laboratory technicians and could make a real contribution to electronic progress.

"Not only could our women make a contribution as technicians, but also as engineers and scientists. . . . For years, engineering and the sciences have been a monopoly of masculinity. These fields were just not fashionable for girls. To change the pattern we have to go back to the high schools and stimulate the interest of girls in the basic subjects like mathematics and physics and the other sciences, and convince them that there are careers in science which are available to women."

Wolff Urges Emphasis on High-Priority Research

Dr. Irving Wolff, Vice-President, Research, of RCA, offered further considerations on the encouragement of scientists and engineers in a talk at the Conference on Industrial Research at the Harriman, N. Y., campus of Columbia University on June 14.

Pointing to estimates that the nation's requirements for technical manpower are likely to be fulfilled to only 70 percent of requirements during the next five years, Dr. Wolff said:

"Under such circumstances, one can wonder whether the research program we have set for ourselves is realistic, and also whether we are making the best use of our trained manpower. Are we actually impeding research by having more funds available than can be used? Are we emphasizing lower priority projects at the expense of those of paramount importance by spreading our engineering manpower too thin?

"In general, in our type of economy the availability of funds would not be controllable except by indirect economic pressure. However, we have now a number of very important research areas in the application of electronics where the major share of the expenditure is under the control of some of the Defense agencies, and where the shortage of technical personnel is particularly acute.

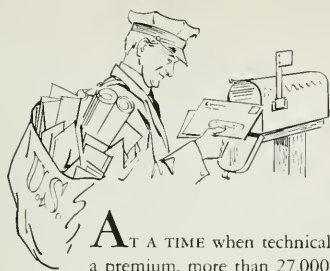
"To do the things necessary to determine the amount of funds which can be most effectively spent is not easy. Good statistics on present and future manpower availability are needed. Priorities of projects on a long-term basis must be determined, and finally, since control can be exercised over only a part of our research expenditures, care must be exercised to be certain that the manpower is not siphoned off into other areas. In spite of the difficulties, I believe that the benefits obtainable justify a very earnest study in our Defense Department with the objective of making certain that the highest priority projects are adequately manned."



Typifying the young men needed in ever greater numbers in science and engineering are these scientists testing semiconductor materials at RCA's David Sarnoff Research Center in Princeton, N. J.

Dr. Wolff emphasized also the need for relieving present trained personnel of non-technical responsibilities and routine chores through the greater use of trained Technical Assistants whose training can be accomplished in "two to three years maximum" as against four to eight years for an engineer or scientist. He underlined also the necessity of making careers in science and engineering attractive "to those boys who have strong financial or social motivations."

Describing research as a "chain reaction" in which discoveries generate new discoveries, Dr. Wolff warned that "unless we succeed in training the young people who may generate these ideas and practice these skills tomorrow, the chain reaction will be brought to a halt."



Training Technicians by Mail

By George F. Maedel, *President RCA Institutes, Inc.*

AT A TIME when technically trained manpower is at a premium, more than 27,000 men in the United States and abroad are becoming competent radio and television technicians in their spare time at home, thanks to a home study program launched just over five years ago by RCA Institutes.

Drawing on years of teaching experience as one of the oldest radio-electronic training schools in America, RCA Institutes in 1951 entered the field of instruction by correspondence in a move to help meet the urgent need for technicians in the rapidly-expanding television industry. Such technicians, properly trained, were—and still are—urgently needed to free men with professional training for more advanced engineering and service functions not only in television, but in all areas of electronics.

From the start, the Institutes' home study program was based on the same high caliber of training given in resident courses at the New York school. As the television art developed, new information was added to the initial course in television servicing. With the advent of color television, a new course was developed and initiated in early 1954 to provide home instruction in the operation and servicing of color equipment.

Basic Course Developed

As the television courses flourished, with enrollment increasing each month, the Home Study Department of RCA Institutes turned to a still more basic operation—the preparation of a comprehensive, elementary course for students with no previous knowledge of electricity and electronics. Spurred by the knowledge that industry's need for well-trained technicians far exceeded the supply and would continue to do so well into the future, members of the Department aimed at achieving a course with the broadest base, so that the greatest possible number of students might complete it successfully as preparation for more advanced and more specialized study.

It was known that a major stumbling block for students enrolled in technical courses was the type of language used. Not only were technical terms a source of difficulty, but the general vocabulary normally associated with technical writing was found to be just as baffling to students without previous training. Therefore, a first requirement was a level of style and vocabulary

which would be understandable even to students with no more than a grammar school education.

Preparation of the course took about two years of work and experimentation. Throughout this period, each writer and editor, backed by experienced members of the Institutes' faculty, worked patiently to achieve lesson material that could be read and studied with profit by a student with a general vocabulary of no more than five or six thousand words. Each technical term was accompanied by a simple definition the first time it was used. The text was supplemented by an unusually large number of carefully prepared illustrations. Mathematics was kept to a minimum, being introduced only where it contributed to the student's better understanding of the principles under discussion.

The result of the preparations was a uniquely effective basic course in the fundamentals of radio, with an introduction to television, completion of which would qualify a previously untrained student as a radio technician. Introduced in October of 1955, this basic course now is being taken at home by more than 4,000 students.

From Basic Theory to Color TV

With inauguration of the new course, RCA Institutes now offers thorough-going, step-by-step training at home in radio-television electronics theory and practice all the way from elementary electricity to color television, in three integrated courses.

Course 1, the basic radio-TV electronics course, con-



sists of forty lessons which discuss fundamental theory, provide for experiments that verify the theory or teach a necessary skill, and teach practices and techniques employed by successful radio and TV technicians. In addition to the written lessons, the student receives a total of fifteen kits of parts which he uses in the experiment lessons, and from which he builds a multimeter, a signal generator, and a radio receiver. The only requirement for enrollment in this first course is completion of grade school.

Course II covers television servicing, carrying forward from the basic knowledge of Course I into the special techniques of television. Enrollments in this course now total over 9,000, and the entrance requirements are either a present position in the radio-TV field, or successful completion of Course I or its equivalent. An optional feature of this course is a television receiver kit for students who want to supplement their instruction by actually building a TV set.

Course III deals with color television. Inaugurated in March, 1954, this course so far has had a total enrollment of nearly 14,000. Entrance requirements are present employment in the television industry, or completion of Course II. Comprising nine lessons in its original form, this course was recently expanded to eleven lessons and made available to TV technicians by the RCA Tube Division in cooperation with RCA Institutes.

Personal Attention is a Feature

Short of the face-to-face contact with the teacher in the classroom, the student of an Institutes home study course is given as much personal attention as possible—to the extent that he desires it. The large teaching staff not only grades the examinations and assignments included in each lesson, but encourages students to write and ask questions whenever they encounter points which may not be absolutely clear to them.

For students completing the various courses, RCA Institutes provides a placement service which operates without charge to advise and assist the home study graduates in obtaining suitable jobs in their communities. While no school can guarantee any student a job, the Institutes placement service is able to provide the professional counsellors' knowledge of avenues and openings, and to furnish the student with transcripts of his academic records and letters of introduction.

Like so many RCA activities, the Institutes provides through these home study programs as well as its resident instruction a service to the electronics industry at large, by providing the finest instruction for men who are in or will enter the electronics industry, and by producing technicians with a solid grounding in theory and practice.



With the Institutes home study course in TV servicing, the student may acquire kit to build a set of his own.

217 Graduated by RCA Institutes

Two hundred seventeen graduates, including honor students from New York and California, were awarded diplomas from RCA Institutes on May 18 at commencement exercises held in New York. Among the graduates were 123 veterans of the Armed Forces and students from Bermuda, Cuba, Puerto Rico, Portugal, France, China, Thailand, Italy, Greece and Egypt. The diplomas marked completion of courses in radio and television broadcasting, radio and television servicing, advanced technology, and radiotelegraph operating.

The graduates were addressed by Arthur F. Van Dyck, Staff Assistant to the Vice-President and Technical Director of RCA, and special awards were made by George F. Maedel, President of RCA Institutes, to five students who completed their courses with highest honors.

On May 29, RCA Institutes awarded scholarships valued at \$1,958 each to three high school seniors from New York and New Jersey for an advanced course in radio and television technology at the Institutes. The awards were made on the basis of competitive examinations taken by contestants representing public and private high schools. The course, accredited by the Engineering Council for Professional Development, prepares students for entrance into several branches of radio-electronics, including television.

New Link for



This new terminal equipment links RCA TEX with Bell System TWX network throughout the U. S.

RCA Communications' international TEX service passed another milestone in April when its facilities were made available to the 38,000 customers of the Bell System TWX network throughout the United States. By giving intercontinental range to their office teletypewriters, TEX service now enables these businessmen to talk-in-writing with their correspondents in Frankfurt, Germany, as easily as they might contact an associate in Frankfort, Kentucky.

Since its inception in 1950 with a single radioteletype circuit linking New York and the Netherlands, TEX service has mushroomed at a rate unparalleled in the history of the overseas communications industry. Today, TEX circuits reach 27 countries in Europe, Africa, and the Caribbean and Pacific areas. Six of these

countries joined the growing network during the past six months alone.

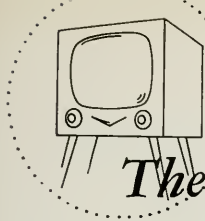
RCA is now handling TEX calls at a rate of 575 per day—many over distances of more than 19,000 miles.

By combining the speed and conversational advantages of a telephone call with the best features of the telegram, TEX service permits subscribers to engage in two-way, written communication. American businessmen, recognizing these advantages as being essential to the conduct of their activities in competitive foreign markets, have repeatedly pressed for the extension of TEX service to new areas.

Long range plans are even now being implemented by RCA Communications, Inc. for the further extension of overseas teletypewriter exchange service.

A new communications pattern—TEX links the U. S. and 27 countries.





The Public Appraises the Serviceman

TELEVISION service technicians have a high rating with the nation's 36,000,000 TV set owners on the all-important counts of promptness, quality, prices, and courtesy, according to a nation-wide poll conducted recently by Elmo Roper, market research expert, for the RCA Service Company, Inc., and the Consumer Products divisions of RCA.

Results of the poll were announced by E. C. Cahill, President of the RCA Service Company, who described it as the most extensive ever carried out to determine authentic public feeling toward TV service technicians. Undertaken and carried out on a scientific and impartial nationwide sampling basis, this survey is the eighth annual study of its kind conducted by the Roper organization for RCA. Mr. Cahill reported this way on the results:

"The survey revealed that 91 percent of the set owners interviewed were pleased with the quality of the serviceman's work, the same percentage reported that the serviceman was pleasant and courteous, 83 percent were satisfied with the price, and 89 percent thought their call for service was answered promptly. Eighty-three percent said they would call the same service firm again.

"These findings are a fine vote of confidence on the part of the public in the skill and integrity of the more than 100,000 highly-trained technicians who install and maintain TV receivers in America's homes."

Highlights of the Survey

The survey highlighted the following points:

1. Of the television-owning families interviewed, including different income brackets in widely separated parts of the country, "overwhelming majorities" were thoroughly satisfied with all aspects of service received. Few set owners had any complaints with the repair service they received.

2. In replying to the question, "Do you plan to use the same service company in the future, or not?" 83 percent said yes, only 9 percent said no, and 8 percent were undecided.

3. Of all persons interviewed who had made calls for service during the past year, 53 percent reported "same day" service, 18 percent received service the next day, and 9 percent during the next two days.



Typical of the service technicians given a high rating by the public is this representative of the RCA Service Company, Inc., on a home call.

4. While the median cost of service calls increased in the past 15 months, reflecting the increased age of the average TV set, 83 percent of the persons interviewed reported satisfaction with the prices charged, while 13 percent said the prices were "not very good."

5. In regard to the quality of service, 91 percent indicated their approval. Service was termed "very good" by 75 percent, "fairly good" by 16 percent, while only 5 percent indicated dissatisfaction.

Further evidence of interest in keeping the customer satisfied came from another quarter in RCA a short time prior to the announcement of the Roper survey results, when Frank M. Folsom, President of RCA, announced that a special "President's Cup" will be awarded to the RCA Victor Television distributor who compiles the best record during the four months to August 13 in maintaining customer satisfaction.

The "President's Cup" has been awarded for the past five years to the four top Factory Service Branches of the RCA Service Company, Inc., compiling the best records of maximum efficiency and customer satisfaction. This is the first time a similar competition has been conducted for RCA Victor distributors.

Stereophonic Sound for the Home



RCA Victor's new consolette Stereophonic player includes two amplifiers and speaker systems.



STEREOPHONIC high-fidelity sound, confined until recently to the motion picture theater and professional use, is now entering the American home to provide perhaps the most faithful reproduction of music yet achieved outside of the concert hall.

Pioneered originally by RCA for the sound motion picture industry, Stereophonic sound is just what its name implies — a system of recording and reproducing sound with the added dimension of physical perspective which the human ear experiences in the concert hall itself. It is achieved through the use of two microphones placed some distance apart in the recording studio or hall, and recording simultaneously onto separate tracks of a single magnetic tape. The sound reproduction system employs a dual-track tape player, and two separate amplifiers and speaker systems to accommodate the two sound tracks. When the speakers are placed at an appropriate distance from one another in the average room, the output of the system recreates for the listener the perspective of the live sound as it reached the two microphones in the recording process.

A major forward step in bringing Stereophonic high-fidelity sound to the average home listener is now being made by RCA with the planned introduction later this year of a unit priced under \$300 — less than half the price of similar equipment now on the market. The announcement of the new equipment by James M. Toney, Vice-President and General Manager, RCA Victor Radio and "Victrola" Division, was accompanied by word from the RCA Victor Record Division that Stereophonic tape recordings of outstanding musical works are now being made available to the public at the rate of two each month.

Two New Units Announced

News of the new Stereophonic player came from Mr. Toney in his announcement of the 1956-57 line of RCA Victor New Orthophonic High Fidelity "Victrola" phonographs at a meeting of RCA Victor distributors and sales executives at Miami on June 5. Two models will be made available, he said — a portable unit nationally advertised at \$295, and a consolette nationally advertised at \$350. Both will be complete Stereophonic high fidelity sound systems with two amplifiers, two speaker systems, a Stereo-tape player, and 30 feet of cable. In addition to these units, the Stereo-tape transport system may also be attached to three of RCA Victor's New Orthophonic high fidelity instruments. A similar Stereo-tape unit that will permit its adaptation to other RCA Victor high fidelity players is nearing completion, according to Mr. Toney.

The new portable Stereo-tape player unit is to consist of two matching luggage-type cases in two-tone brown and tan simulated leather. One case contains a tape player, accommodating either dual or single-track tapes at 7.5 inches per second; a pair of 2.5 watt amplifiers, and a Panoramic Sound System of two $3\frac{1}{2}$ -inch and one $6\frac{1}{2}$ -inch speakers. The second case contains an identical speaker system and storage space for tapes.

The consolette unit is to include the same equipment in consolette cabinets similar to the Mark VI New Orthophonic High Fidelity "Victrola" phonograph.

Aiding Schools Through TV

THE National Broadcasting Company has expanded its program information service to reach the nation's school children and alert them to the network's cultural and informational programming.

In this expanded service, NBC provides schools not only with its long-established Program Information Bulletin, but with scripts, study guides, commentaries and RCA Victor long-playing records—all designed to encourage students to tune in to fine programming and to benefit from it.

NBC's full publicity and exploitation facilities are brought to bear on these activities, since the objective is not only larger audiences for the network's current programs, but the building of a more mature and appreciative audience for cultural programming of the future.

Before the telecast of Sir Laurence Olivier's "Richard III," for example, NBC sent the following material to schools around the nation: a bulletin with background information on the play, the cast, costumes, settings and the lively debate about Richard III's place in history; a commentary by dramatic critic Walter Kerr discussing the difficulties in presenting the drama; and an RCA Victor long-playing record made from the film's original

A scene from the NBC telecast of "Richard III," featured in NBC's extensive service to schools around the nation.



soundtrack, with a specially-recorded introduction by Sir Cedric Hardwicke.

NBC has distributed similar material for such programs as "Peter Pan," starring Mary Martin; "Cyrano de Bergerac," starring Jose Ferrer; "The Taming of the Shrew," starring Maurice Evans; "Nightmare in Red," the documentary on Russian Communism; "Sleeping Beauty," performed by the Sadler's Wells Ballet Company; and the "Festival of Music," featuring many of the world's foremost opera and concert artists.

Plan Draws Praise from Educators

Teachers and school officials have put the NBC information to effective use and they have been lavish in their praise of it. Study guides, commentaries and other written material serve as a basis for classroom discussion of the program. Long-playing records are played over school radio stations or other communications systems.

The "Richard III" recording was played three times over WBEZ, the Chicago radio station operated by the Board of Education. The RCA-Victor original-cast "Peter Pan" recording was played eight times on the school radio station in Miami, Fla. An official of the Detroit Public Schools thanked NBC for the study material on "Sleeping Beauty," including the RCA-Victor recording of the Sadler's Wells production, and added:

"I also made a survey with our school audiences after the program. I was astonished to discover that third and fourth graders were thrilled with the performance, and as they told me, they did not need words to explain the story. The dancers did it!"

A continuing phase of the service to schools is the NBC Program Information Bulletin, which calls attention to, and provides background for, upcoming programs of special educational interest. The bulletin, which has been published by NBC for nearly two decades, now has a distribution of about 27,000 copies. Its readership, however, is estimated in the hundreds of thousands, since it is circulated largely among schools, libraries and civic organizations.

Recently an official of The Florida State University wrote NBC asking to receive the bulletin and added:

"It is written with an integrity that compliments both writer and reader. . . . My congratulations on the very high, cultural and informational-type programs you so faithfully pioneer."

National Unity Day

(Continued from page 14)

to American civilization precisely because of their particular origins.

Though they arrived here penniless, the generations of immigrants did not come empty-handed. They brought with them great gifts—the brains and the brawn that are cemented into America's highways and railways, skyscrapers and farmhouses, mines and factories from shore to shore. They brought with them the hungers for human freedom, individual dignity and self-improvement that are at the heart of the American Dream.

When Israel Zing'vil coined the phrase "the melting pot," it was quickly accepted as the image of American humanity. But it is not an altogether accurate, or indeed desirable, image.

"Melting pot" implies that the human ingredients are pressure-cooked into a single and uniform compound, in which all trace of the original components is lost. Yet we know, as a matter of common experience, that this is not the case. And we know, too, that regard for the land and race from which an American has sprung, is not incompatible with complete love of and devotion to America.

It is not inconsistent that good Americans like the DuPonts still have a soft spot for things French, or that good Americans like the Skouras brothers have a special concern for helping the people of Greece, or that a good American and great restaurateur in San Francisco named George Mardikian, helped to find homes for thousands of displaced Armenians after the last war.

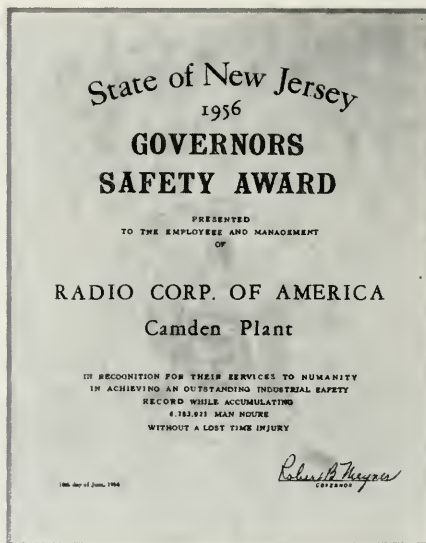
Americans of Irish descent could throw their hearts into the cause of Irish freedom yet remain good Americans. Today, Americans of Polish extraction do not impair their Americanism when they seek the liberation of Poland from the Communist yoke. American Jews are no less American because they work for the survival of the new state of Israel.

For it is the unique glory of our country that it neither demands nor imposes an artificial uniformity. Our strength lies in unity, which is a quite different concept. On the whole we not only tolerate but take pride in differences. America is less an amalgam than an integrated mosaic. Yet again and again, in time of danger or crisis, we have demonstrated a unity that has amazed the world. Enemies who counted on divisive influences because of our history of mass immigration have always been disappointed.

The temptation in proving that the immigrant has served America well is to cite celebrated names and

spectacular careers. But I prefer to cite humble names by the million:

Recently I paused before a war memorial in a small town in Westchester County. I glanced down the list of its sons who died in two world wars. The names in the roster were Anglo-Saxon and Latin, Slavic and Jewish, Scandinavian and Oriental. Yet all were true Americans! The same amazing unity and allegiance are revealed on the Rolls of Honor in every city, town and hamlet of our beloved America. Each of these memorials is a portrait in miniature of this nation of immigrants, welded by common loyalty to high ideals to make and preserve a mighty country.



The Governors Safety Award of the State of New Jersey for 1956 was presented to RCA's Camden, N. J., plant by Governor Robert B. Meyner in ceremonies at Camden on June 18, marking the first time that the award has been conferred upon a plant with more than 1,000 employees.

The award, the highest honor conferred by New Jersey for industrial safety, was accepted by Theodore A. Smith, Executive Vice-President, RCA Defense Electronic Products, on behalf of the more than 12,000 RCA employees at Camden. The award cited the RCA Camden plant for "services to humanity in achieving an outstanding industrial safety record while accumulating 6,783,921 man hours without a lost time injury."

Quotes from RCA



E. C. Anderson, Executive Vice-President, RCA Public Relations, to the Joint Electron Tube Engineering Council, Atlantic City, N. J., May 11, 1955.

An Electronic Foundation:

"New designs for computers — smaller, faster, and more versatile — are appearing with greater frequency than new models of automobiles. When the armed forces raise the curtain on some of their experiments we shall learn of fantastic new developments in military electronics. Millions of color television receivers will soon supplement our 40 million black-and-white sets. . . . Automation is moving into the production stage. In time, we may see it taking over entire industries, integrating the manufacturing and marketing process from raw material to consumer. . . . And much of this, let me remind you, will center on one single element — the tube."



Robert W. Sarnoff, President, National Broadcasting Company, at 10th anniversary dinner of "Meet the Press," Washington, D. C., April 28, 1956.

Freedom of Choice:

"The greatest advantage of the American system of broadcasting is that the public can choose what it wishes to hear and see on the air. This privilege of selection — a priceless one — is being exercised with increasing frequency by the American public. It is resulting in better programming because as the public becomes more dis-

criminating in its selection of programs, the broadcaster becomes progressively more responsive in offering quality programs. Surely, it is reasonable to expect the public to devote to the selection of a 'free' program at least the same attention that it gives in selecting a theatre production, a movie, or a magazine or newspaper for which it pays. This is the path to better television, and the public seems to be following it in increasing measure."



Dr. C. B. Jolliffe, Vice-President and Technical Director, RCA, to University of West Virginia alumni, Washington, D.C., May 17, 1956.

A Problem of Conservation:

"It is being made very clear to us that technological skills are resources which require the same careful treatment as our forests and our soil. We are discovering that we have been exploiting these talents as a quick cash crop without worrying too much about next year. As our young scientists and engineers have emerged from college, we have hustled the vast majority of them into industrial and government laboratories to work on the technical problems of today. Too few have been induced to return to our schools as teachers who can inspire and instruct the young people who must provide similar talent on an even greater scale tomorrow. The schools themselves — and in particular the high schools — have suffered from our lack of attention. It is high time we started a new conservation program."



Vincent dePoul Goubeau, Vice-President, Materials, RCA, to the Camden Rotary Club, Camden, N. J., June 26, 1956.

Growth in Electronics:

"A measure of importance and growth is the number of people an industry employs. Right now, there are more than one and a half million workers directly employed, and over three million indirectly employed in companies that serve the electronics industry. In ten years we believe that electronics will employ more than six million workers — directly and indirectly. . . . By the end of 1964, the value of electronics will be about triple its 1950 value, while the gross national product will not have quite doubled."



R. H. Coffin, Vice-President, Advertising and Sales Promotion, RCA, at preview of RCA's 1956-57 consumer product lines, Hotel New Yorker, June 18, 1956.

Extended Advertising:

"We believe we have two winning slogans for the 1956-57 campaign in 'First Choice in Television' for the TV line and 'New Sensations in Sound' for the High-Fidelity 'Victrola' merchandise. These themes will be driven home in all of our copy and commercials. . . . In July, August and September we expect to have 300,000,000 impressions from newspapers and magazines alone."

RCA news in brief



Earthbound . . .

RCA's "weather eye" airborne weather radar system, which enables pilots to spot storms and cloud formations up to 150 miles ahead, was anchored to the ground last month to serve a highly appropriate function—as an exhibit at the U. S. Weather Bureau Show in Washington. The show, featuring the latest weather detection equipment and techniques of the weather bureau and industry, attracted some 100,000 visitors at its location in the Chamber of Commerce Building. The RCA equipment was mounted for the purpose in the nose and cockpit of a simulated plane, showing how the antenna picks up storm formations and displays them on the radarscope in the cockpit. The "weather eye" system has been purchased on a fleet basis by five American and four foreign commercial airlines, and has been installed in many types of private aircraft.



Recording First . . .

The first recordings of Russian cellist Mstislav Rostropovich ever to

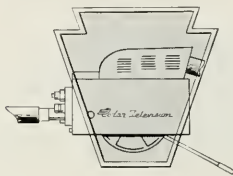
be made outside the Soviet Union were released in May by RCA Victor records following the artist's American debut at Carnegie Hall in New York. Recorded on tape in London for RCA Victor by Gramophone, the New Orthophonic High Fidelity disk includes the Saint-Saëns Concerto No. 1 in A Minor and the Miskovsky Concerto in C, played by Rostropovich with the Philharmonia Orchestra conducted by Sir Malcolm Sargent. Unlike the case with his compatriots, violinist David Oistrakh and pianist Emil Gilels, the 29-year-old cellist's appearance in this country was not preceded by a large importation of his recordings.



Shakespeare for Schools . . .

NBC Television Films passes on the word that nearly 2,000,000 high school and college students have been able to see "Macbeth" and "King Richard II" on kinescope recordings (film made directly from TV pickup) in their classrooms during the last two years, thanks to television. The two plays were presented "live" over NBC television during 1954 with actor-producer Maurice Evans in the title roles. Subsequently, the performances were made available free of charge to the nation's schools on 16-mm kinescope recordings by Hallmark Cards, sponsor of Mr. Evans' television series. "King Richard II" has been in circulation

exactly two years, and "Macbeth" slightly less than one year, according to Hallmark, and during that time they have been shown a total of 6,535 times in 3,561 high schools and colleges.



Keystone . . .

An RCA color TV studio camera has been added by station WJAC-TV, Johnstown, Pa., which thereby becomes the first station in Pennsylvania equipped to originate its own "live" color programs, according to a joint announcement by RCA and Alvin D. Schrott, General Manager, WJAC, Inc. The independent Johnstown station, on channel 6, already has initiated local colorcasting with its new facilities, and Mr Schrott says that present plans will call for about three hours of original color programs each week, with an increase by next winter to about 100 hours per month of network and local colorcasting.

How to Service Color TV . . .

The RCA Service Company has come up with a new handy reference book for the serviceman working with color TV. The 92-page illustrated book, bearing the logical title "Servicing Color Television Receivers," is designed principally for reference use by dealer and independent servicemen who have attended the many color TV clinics and workshops sponsored throughout the country by the RCA Victor Television Division and its authorized distributors. Copies are given free to each serviceman attending a workshop or clinic, and additional copies may be purchased at \$1 per copy from the Commercial Service Section, RCA Service Company, Inc., Camden, N. J.

YOU CAN SELECT AT RCA!

...NEW OPPORTUNITIES ...17 + LOCATIONS

... ONE BEST FOR YOU AND YOUR FAMILY

FIELDS OF ENGINEERING ACTIVITY		M A N A G E R S	TYPE OF DEGREE AND YEARS OF EXPERIENCE PREFERRED															
			Electrical Engineers			Mechanical Engineers			Physical Science			Chemistry Ceramics Glass Technology Metallurgy						
			0-2	2-3	4-15	0-2	2-3	4-15	1-2	2-3	4-15	1-2	2-3	4-15				
• SYSTEMS (Integration of theory, equipments and environment to create and optimize major electronic concepts.)	AVIATION ELECTRONICS • CONTROLS			W	W	M				W	W							
	DIGITAL DATA HANDLING DEVICES	M	C	M	M	C	C	C	C	C	C							
	MISSILE ELECTRONICS • RADAR	M	W	M	M	W	W	M	M	W	W	M	W					
	INERTIAL NAVIGATION COMMUNICATIONS	W			W			W				W						
• DESIGN • DEVELOPMENT KINESCOPIES (B & W and COLOR), OSCILLOSCOPES —Electron Optics—Instrumental Analysis—Solid States (Phosphors, High Temperature Phenomena, Photosensitive Materials and Glass to Metal Sealing) RECEIVING TUBES —Tube Design—Test and Application Engineering—Chemical and Physical Development—Methods and Process Engineering—Advanced Development SEMI-CONDUCTORS —Transistors—Semi-Conductor Devices—Materials MICROWAVE TUBES —Tube Development and Manufacture (Traveling Wave—Backward Wave—Magnetron) GAS, POWER AND PHOTO TUBES —Photosensitive Devices—Glass to Metal Sealing—UHF and VHF—Power AVIATION ELECTRONICS —Radar—Computers—Servo Mechanisms—Shock and Vibration—Circuitry—Remote Control—Heat Transfer—Sub-Miniaturization—Automatic Flight—Automation—Transistorization COMPUTERS —Systems—Advanced Development—Circuitry—Assembly Design—Mechanisms—Programming RADAR —Circuitry—Antenna Design—Servo Systems—Gear Trains—Intricate Mechanisms—Fire Control—Information Handling—Displays COMMUNICATIONS —Specialized Military Systems—Microwave—Aviation—Audio—Propagation Studies MISSILE ELECTRONICS —Systems Planning and Design—Radar—Fire Control—Shock Problems—Servo Mechanisms COMPONENTS —Transformers—Coils—TV Deflection Yokes (Color or Monochrome)—Resistors—Ferrites (Material and Parts)			L	L	L	L	L	L	L	L	L	L	L	L	L	L		
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• SYSTEMS APPLICATION (Evaluation and Planning—Design and Development—Modification—Specification) MISSILE TEST INSTRUMENTATION (Data Acquisition and Processing)—Radar—Telemetry—Timing—Communications—Optics—Computers RADAR —Airborne—Surface—Shipboard—Sonar—Fire Control COMMUNICATIONS —Radio—HF—VHF—UHF—Microwave—Telephone—Teletype—Telegraph Terminal Equipment—Wave Propagation																		
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									C									

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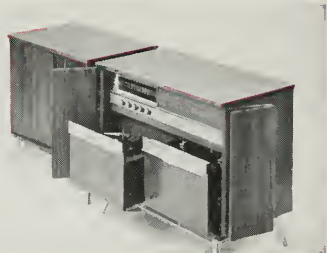
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