

# RADIO AGE

RESEARCH • MANUFACTURING • COMMUNICATIONS • BROADCASTING • TELEVISION



JULY 1957

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COLOR TV's 'CINDERELLA'

# Cancer Research Marches Ahead



Dr. Fritiof Sjöstrand, Karolinska Institute, Stockholm, examining tissue magnified 30,000 times.

## Aided by the RCA ELECTRON MICROSCOPE

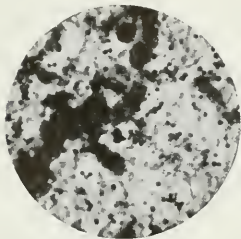
At the famous Karolinska Institute in Sweden, as in other leading medical centers, the RCA Electron Microscope is enabling researchers to investigate and compare the detailed structure of normal and of cancerous cells. This new information on tissue change and growth may yield fundamental knowledge on the nature of cancer.

It was the electron microscope, now capable of direct magnifications up to 50,000X and useful photographic enlargements up to 300,000X, that first enabled man to see a virus. Industrial users depend on this instrument for basic research and quality control.

RCA's new microscopes are compact, one-piece units

which assure operating ease and convenience with safety and reliability. Both the EMU-3 and EML-1 can be changed over from electron microscopes to diffraction cameras by the "push of a button" and specimens suitable for micrographing can often be used for making diffraction patterns. Like other famous RCA products, the RCA Electron Microscope derives its reputation for superiority from unmatched engineering skill and experience in electronics.

An important plus when you install an RCA Electron Microscope is the installation supervision by the RCA Service Company. And with it is available contract service to keep your instrument operating at its peak.



Small area of a tumor cell from a mammary gland carcinoma. Magnification 14,700X. (Courtesy Rockefeller Institute, New York, N.Y.)

Write on your company letterhead for free copy "The Electron Microscope at Work in Science and Industry," Dept. S-66, Building 15-1, Camden, N.J. In Canada: RCA VICTOR Company Limited, Montreal.

Tnk(s)



**RADIO CORPORATION  
of AMERICA**

CAMDEN, N. J.

# Radio Age

ARCH • MANUFACTURING • COMMUNICATIONS  
BROADCASTING • TELEVISION

JULY 1957



## COVER

A scene from the familiar fairy tale "Cinderella" as re-created by the world-renowned Royal Ballet of Great Britain in color TV on "Producers' Showcase."

## 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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## CONTENTS

	Page
Progress Report on Color Television . . . . .	3
Enter IRBM and ICBM . . . . .	5
Quiz Whiz Looks at Show Biz . . . . .	8
What's New in Consumer Goods? . . . . .	10
Record First Quarter for RCA . . . . .	13
Week-end Sailors and Their Fast-Growing Fleet . . . . .	14
Carnival of Color . . . . .	16
The Basic Need: Basic Research . . . . .	18
Radio Weatherman Asks: What's Wrong With Sunspots? . . . . .	20
Educational TV . . . . .	21
TV's Blue Pencil Man . . . . .	23
"Medico" — For Shipboard Emergencies . . . . .	26
Color TV Goes to Japan . . . . .	28
The Power of Suggestion . . . . .	30
News in Brief . . . . .	32



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

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

JOHN L. BURNS, *President*  
ERNEST B. GORIN, *Treasurer*



RCA Victor color television proves hit of Japan's International Trade Fair. (Story on page 28.)

# Progress Report on Color Television

*Mounting Sales Reflect Growing Public Interest;  
Other Companies Plan to Enter Field This Fall*

PUBLIC interest in color television is greater than ever and color sales are mounting steadily, according to John L. Burns, President of the Radio Corporation of America. He said several other manufacturers plan to get into color TV this fall.

Mr. Burns cited the success of the Milwaukee "Carnival of Color" promotion as an example of the growing public interest. During the 40-day "Carnival," color TV sales increased by almost 800 per cent.

"We feel," said Mr. Burns, "that the Milwaukee test demonstrates conclusively that public interest in color is higher than ever before, and that the public will buy color TV when the sets are properly exposed, demonstrated and promoted."

The RCA president made these statements recently during a visit to the West Coast. Discussing color TV's present and future, Mr. Burns said:

"One of the most significant advances in home entertainment within the last ten years has been the development of color television which RCA has pioneered and continues to promote enthusiastically. We believe that color television is ready for major advances. RCA's efforts in this field are backed up by all the creativity of the National Broadcasting Company's fine producers and talent.

"Perhaps the question I am most frequently asked by those who know of RCA's interest in color television is: 'How is it going?' We think it's going pretty well

for a new product. With each passing week, we see indications—and by indications I mean steadily mounting sales—that the public is interested in color television and wants it.

## *Milwaukee as a Proving Ground*

"This interest in color television was pointed up sharply during a test conducted during May in Milwaukee which was serving as a proving ground for a nationwide color TV promotion campaign. During Milwaukee's 40-day 'Carnival of Color,' TV sales increased by almost 800 per cent—from an average of 12 sets a week before the test to 106 sets a week. Home demonstrations resulted in sales in two out of three cases, as compared with an average for the home appliance field of about one out of three.

"Proper promotion of color television requires the support of not just one or two manufacturers but of all the industry's leaders. Until now, RCA has been the only company to promote color TV on a large scale. But beginning this fall, at least a half-dozen major manufacturers are planning to get into color. We find this a heartening development. We believe that vigorous competition will be a healthy thing for this new art and industry, just as it was for black-and-white television.

"Everyone—even color's harshest critic—believes that it will take over. The only question that exists in any-



RCA President John L. Burns (left) discusses color television and the world of electronics on KRON-TV, San Francisco, during recent visit to the West Coast. Interview was telecast in color.

one's mind is when. We use an S curve to chart the progress of new products. The base of the letter represents the period of incubation—the time when the introductory work is being done on a new product. Then, just as the letter goes up at an extremely sharp angle, so too does a product after it has caught on with the public. Following its initial fast climb, it has a tendency to level off and then climb gradually again to new levels. At the moment, we believe that color television is right at the elbow on the base of the S curve and at any time it can start its rapid rise.

"There already are plenty of good color television programs scheduled both on a local and national basis. This fall, NBC plans to convert practically all of its national nighttime attractions to color, with heavy concentration on the weekends when audience viewing is at its peak. We believe this concentration on the most-viewed and most-talked-about shows will stimulate even greater interest in color."

#### *Other Areas of Electronic Advance*

In addition to color television, Mr. Burns said, two other areas of electronics are on the threshold of major

advances. One is the field of commercial and industrial electronics, the other military electronics.

He stated that in the area of industrial and commercial electronics, RCA expects an increasing application of automation, atomic energy and telecommunications in industry, office work, agriculture, commerce and the home.

"Automation," Mr. Burns pointed out, "depends largely on electronic controls, thus offering opportunity for substantial growth. One aspect of automation that has captured the public imagination is the use of electronic data processing systems, including our own Bizmac.

"Telecommunications will be extended to many types of business and personal needs," he added.

Regarding military electronics, Mr. Burns said: "We expect an even greater stress to develop within the Armed Forces on electronic weapons, controls and communications. RCA is engaged in numerous projects in this area, and is making some of the latest applications in electronics in the guided missile weapons system, electronic controls for jet aircraft, fire control systems, and airborne communications and air traffic control."



(U. S. Air Force Photo)

# Enter IRBM and ICBM

*A missile was fired at the Air Force Missile Test Center's Cape Canaveral launching site today. Shortly after the launching, the missile exploded. There were no casualties. Valuable information was gained as a result of the test.*

This terse announcement by the Air Force on June 11 was widely interpreted as heralding a new era in warfare—the era of the awesome Intercontinental Ballistic Missile (ICBM). The test missile, though not specifically identified by the Air Force, was reported by the press to be the 5,000-mile, ocean-spanning Atlas on its first flight from the Missile Test Center in Florida. This “ultimate weapon” would bring American retaliatory striking power within a scant twenty minutes of Russia.

Intermediate Range Ballistic Missiles (IRBM), designed to cover some 1,500 miles, are also launched at the Test Center where the RCA Service Company handles the planning, engineering, installation, maintenance and operation of the electronic and optical instruments used to track the missiles.

The IRBM and the ICBM have brought requirements for new instrumentation, capable of tracking over greater distances and with greater accuracy. Monopulse radars that can follow a missile for hundreds of miles are being developed for the specialized tracking problems of high-altitude trajectories. New optical systems, combining radar and astronomical telescopes, are being introduced as ballistic missiles become more numerous.

The test range itself is being extended from its present 1,500 miles to 5,000 miles. Construction crews have begun work on Ascension Island, which up until World War II had been a mere dot in the ocean known only to the British and Rand-McNally. The air strip

With a whoosh of flame, Boeing's Bomarc long-range interceptor missile takes to the air in a flight test.

is now being reclaimed from the sooty terns—those birds who used to strafe our Army tractors during the war—and eventually Ascension will become the final tracking station on the range.

Plans call for tripling the present program capabilities over the next two years. The work-load now is about 250 tests a month. Only a small percentage, of course, are actual missile firings. The rest are simulated flights to check a missile's guidance system or some of its other features.

#### *Tracked by Many Devices*

The "birds" are fired out over the Atlantic Ocean, and tracked by camera, radar, telemetry and other means along a range of islands stretching southeastward across the Bahamas, the Dominican Republic and a corner of Puerto Rico.

Some idea of the importance of electronics in missile tracking may be gained from the fact that more than 100,000 electron tubes are used on the test range. They are a vital part of communications, timing, position-measuring and other equipment. To assure that all this electronic gear will function properly, it is necessary that the radio frequency bands be clear of outside interference.

"You can't take any chances on having a 'ham' radio operator in Daytona Beach cut in at a critical time," one engineer explained.

It is the job of the Interference Control Unit to detect, analyze and locate any electromagnetic radiation developing in the channels assigned for missile operation. This requires a close watch and a cool head, and the engineers and technicians handling the assignment take their work seriously. But in between missile firings, they have found a highly practical application for their specialty. By monitoring the ignition radiation of the coffee truck, they are able to get a head-start on their fellow workers and beat them to the front door of the building for first coffee service every day!

#### *Tracking Long-Range Missiles*

RCA's job at the Missile Test Center has two main aspects. The first is recording the "raw" flight test data. The second is processing this data into a form readily usable by the missile contractor's engineers.

From the moment a missile leaves the launching pad, electronic and optical devices record its speed, flight path, altitude, rate of climb, fuel consumption and other key factors. The missile's take-off is recorded by as many as seventy-five special cameras, some of them no further than twelve feet from the launching point. These close-up cameras, of course, are operated by remote



(U. S. Air Force Photo)

**Fixed motion-picture camera equipped with telescopic lens records missile flight at Patrick Air Force Base.**

control. With telescopic lenses and super-sensitive film, they can follow the missile to an altitude of about twenty miles and pinpoint its position with startling accuracy. Every once in a while there is a "camera casualty"—the violence of the launching is so great that it demolishes the equipment.

Huge radars at the launching site begin tracking the missile. Then as it moves down-range each station, in turn, takes over the job. Never is a missile out of range of one or more radars during its flight.

Inside the missile, a small radio transmitter sends back information about the flight to telemetry stations where tape recorders make a permanent record. On a single missile flight, telemetry has furnished more than 400 separate pieces of information on details like air speed, engine RPM, gyroposition and so on.

The radar and other information on the missile's flight is funneled into the main Operations Room at the launching point. Radar data can be read instantly on large automatic plotting boards. The information flowing into the Operations Room keeps the Safety Officer posted on where the missile is and how it is behaving at all times. If it should veer off its precisely planned course and become dangerous, the Safety Officer can press a red "Destruct" button that will end the flight immediately. This Command Destruct System, as it is called, is a precaution against a missile's suddenly taking a right turn and landing in the swimming pool of the swank Americana Hotel in Miami Beach.





(U. S. Air Force Photo)

The Northrop Snark missile is ground-launched against ground targets and has a range exceeding 5,000 miles.

Massive tower at Air Force Missile Test Center in Florida where one giant "bird" is being prepared for flight.

(U. S. Army Photo)



Once a missile test is completed, the recorded data from down-range stations as well as from the launching area are rushed to the Technical Laboratory. There, some 50,000 feet of photographic film and more than 100,000 feet of magnetic and punched tape, together with meteorological observations, are assigned to appropriate groups for processing.

#### *Flight Test Report*

The end product of the testing procedure is a Flight Test Report of fifty to 100 pages, telling how well the missile's guidance system, engine and other equipment functioned. RCA submits the report to the Air Force which turns it over to the missile contractor. Development engineers then analyze the report and decide what changes to make in the missile's design before the next test firing.

The presence of the Missile Test Range has brought about some amusing changes in the living pattern of residents of the area. One old fishing captain became annoyed at having to get his boat out of the way every time there was a missile firing. So one day, with considerably more daring than discretion, he offered to make a deal with Air Force authorities.

"Listen," he said, "you just tell me where your target area is and I'll go there and wait. That's the safest place I know during a missile test!"

# Quiz Whiz Looks at Show Biz

By Charles Van Doren

*Charles Van Doren, one of the top money-winners on NBC's "Twenty-One" program, recently became a consultant to the network on public affairs and educational programming. In the following article, the Columbia professor comments on the similarities and differences between show business and teaching.*

**T**HIS particular teacher, looking at show business, finds that he has two things to say. That isn't the way to start an article, of course; don't say what you're going to say, just go ahead and say it. But the two things are almost diametrically opposite to one another, so some warning is necessary.

The first thing I wanted to say is that teaching is show business, too.

I've never been so scared in my life as I was the first time I walked into an English class at Columbia College. It was in the fall of 1955. I was almost sick when I got out of bed, I couldn't eat breakfast, I was miserable all the way uptown in the subway, and I almost fainted when I entered the classroom. And it wasn't even a class *in* anything—all I had to do was get the students to write their names on slips of paper and then dismiss them until the next meeting. I felt queasy for several weeks, and then it stopped. I don't know why; I suppose I just got used to it. There were bad classes after that; hours when I felt I didn't really know well enough what I was talking about, or when I felt I had made a fool of myself (probably the students were not nearly as aware of this as I); but I was never afraid again, in the same degree, of simply going into a room and standing up in front of an audience.

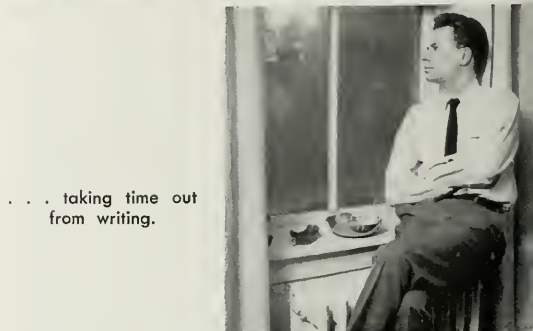
Because that's what a group of students is—an audience. And in some ways a particularly exacting one. Students pay, for example, about \$2.50, at Columbia, for the average classroom hour. They express their disapproval in terribly obvious ways—by yawning, or going



Author Van Doren in his library . . .



. . . relaxing with pleasant tune .



. . . taking time out from writing.

to sleep and falling out of their chairs, or stamping their feet and growling. All these things have happened to me; I have also been applauded for a good "performance."

Some say the student audience is a captive one. But all audiences are captured by some pressure or other—be it publicity, curiosity, boredom, or the Dean's Office. The teacher, you will say, has a "subject matter" to impart, and this makes his task easier. But every actor has a "part." Just as the teacher must spend a long period of intensive study learning his subject, so the actor must put in hard, intensive work to learn *his* part, after which he can go on playing it, like the teacher his subject, for as long as he can remember it. There are many other respects in which teaching is a kind of show business, too. About the biggest *difference*, I guess, is in the pay scale. That's because the show business personality's audience, at any given moment, is liable to be bigger than the teacher's. If it isn't, he gets a lot *less* pay.

That's the first thing to be said. I want people to admire teachers, and understand them, and value them. Perhaps this is one way to bring that about—by pointing

out that teachers and people in show business have a lot more in common than they realize.

But then there is the other thing I wanted to say. I have met a number of great teachers. They were men who were famous scholars as well; men with fine minds who had dedicated those minds to delving deeper, or journeying farther, than other men had done before them. It was exciting to meet them. I won't forget their faces—and their words. Yet I was not "thrilled" to meet them. That word is overused, of course. But it means something even if it is overused. It refers to that peculiar physico-psychic sensation which we experience when we meet "famous" people. In one night, a month or so ago, I met Jimmy Durante and Danny Kaye. Fifteen Nobel Prize winners wouldn't have weighed in the balance with those two. It was one of the great "thrills" of my life.

### *The Big Difference — Glamor*

If those two fine gentlemen will forgive me, I would like, for the moment, to wonder why. The great teachers had spent their lives making people think. These two had spent their lives making people laugh. I would be guilty of an untruth if I didn't admit that I think making people think is more important than making people laugh, important as laughter is. But I was "thrilled" by Kaye and Durante. I suppose the difference is that they had glamor. Teachers never have glamor.

I define glamor as "very much wanted-ness." Teachers are never very much wanted, at least not by very many. Show business people are. That's the point of show business, of the business part of it, at least—to make personalities wanted very much indeed by very many indeed. Of course sometimes nobody is sure why it happens that one person is wanted so much by so many when somebody else simply isn't. Now Kaye and Durante are professionals. They are the best there are in their kinds of show business. But on top of that, people, everywhere, want both of them. They have glamor, and hence it was a tremendous thrill to meet them. It would be again.

And now, in a way, I live in both worlds. I have had a little touch of this glamor myself. People have told me that they were "thrilled" to meet me. The sad thing is, though, that I don't feel thrilled about myself! I'm still thrilled at meeting Durante and Kaye, but I'm old hat to me. I haven't changed inside. And so I want to continue living in both worlds—the outside world and the world of show business. I want to keep being in audiences. I want to go on being able to be thrilled. I will quit show business—insofar as I am in it—the moment I stop.

Mr. and Mrs. Mark Van Doren enjoying a chat with son, Charles at their apartment in Greenwich Village.



# What's New in Consumer Goods?

A "LEAN, clean and mirror-sharp" line of revolutionary-styled RCA Victor television receivers and the most complete line of RCA Victor New Orthophonic High Fidelity "Victrolas" ever marketed are being unveiled to the public this month.

Previewed for the press and RCA Victor distributors in New York, Chicago and San Francisco, the new lines attracted much attention and drew many favorable comments.

Highlights of the new TV line are "some of the most important styling and engineering innovations in television history," according to Charles P. Baxter, Vice-President and General Manager, RCA Victor Television Division.

Reduced cabinet depths, picture tubes completely cabinet-encased, a streamlined series of modern, tapered portables, the first commercially acceptable corner cabinet set, table models with swivel bases and a wide choice of modern finishes are top styling features of the twenty-nine new black-and-white TV models.

New performance features include improved tuners, 110-degree aluminized picture tubes in all 17-inch, 21-inch and 24-inch sets, "one touch" on-off controls, motor tuning and remote tuning.

All of the nine new high fidelity "Victrolas" are equipped with stereo-jacks for the addition of stereophonic sound systems at any time.

"The future of high fidelity lies within the realm of stereophonic sound," said James M. Toney, Vice-President and General Manager, RCA Victor Radio and "Victrola" Division, "and for this reason we have equipped our entire line of four-speed high fidelity phonographs for easy adaptation to stereophonic sound, and are making available additional stereophonic systems to complement the line."

Another highlight of the radio and "Victrola" line is the entrance of RCA Victor into the growing imported radio market. Two new AM-FM shortwave instruments—a table model and a console—manufactured in West Germany to the company's specifications, will be marketed under the new RCA International label, Mr. Toney revealed.

The new line of RCA Victor black-and-white TV receivers, to be advertised as "lean, clean and mirror-sharp," will include five basic portable models and 24 basic table and console models. Tentative nationally-advertised prices

range from \$129.95 to \$395. In addition, one new color set—the console model Lockhaven—is being introduced and priced at \$695. A new series of higher-priced color television receivers will be added to the current color TV line in September.

The new high fidelity line will be priced from \$129.95 to \$2,000. The RCA International table model radio is advertised at \$229.95, and the console at \$369.95. In late summer, three new Recorder-"Victrola" stereotape players will be shown to the public. Prices will be announced later, Mr. Toney said.

## *Television Highlights*

The trend toward lighter weights and smaller cabinets is especially evident in the new large-screen portable with a 21-inch (overall diagonal) picture tube. Known as the Hathaway, the portable is five inches less deep and 26 pounds lighter than previous table models using the same size tube. It is nationally-advertised at \$229.95.

The Nassau, using the new 14-inch, shorter 90-degree picture tube, is the price leader in the portable TV line.



New RCA International high fidelity AM-FM short-wave radio manufactured in Europe to RCA specifications.

It is advertised at \$129.95. A deluxe version, the Gladwin, is nationally advertised at \$149.95.

Two new portable models using the 17-inch (overall diagonal) 110-degree aluminized picture tubes are being offered. They are the Graduate at \$169.95 and the Socialite at \$189.95.

Highlighting the console models are the Malvern and Norman "Custom Corner" receivers, described as the first commercially-acceptable corner cabinets ever offered. The smaller corner set size is made possible by the combination of the 21-inch, 110-degree tube with its short front-to-back dimension, and the small new "Signal Strong" chassis. The Malvern is nationally-advertised at \$289.95, while the Norman, a deluxe provincial version, is advertised at \$379.50.

#### *Motor Tuning and Remote Control*

Several models will be equipped with motor tuning and remote control for VHF operation. Touching one side of the motor tuning switch (a butterfly-type rocker bar) energizes the motor tuning and automatically rotates the station selector. The same operation—plus volume control—is possible through a remote control tuning unit that fits the hand and is connected to the receiver by 25 feet of small, flexible cable.

The motor tuning sets include the Clement table model priced at \$229.95 and the Dietrich mahogany grain console advertised at \$329.95.

All models with 21 and 24-inch picture tubes feature "one touch" on-off controls which permit turning the set



The Malvern is one of the two new RCA Victor television sets designed especially for room corners.



Mark XI, RCA Victor's new portable four-speed Hi-Fi "Victrola" featuring outstanding three-speaker system.



The Mark I, leader of RCA Victor's 1958 line of New Orthophonic High Fidelity, is a three-cabinet model.

on or off without disturbing pre-set volume. An in-out motion replaces the usual rotary motion.

### *Radio and "Victrola" Highlights*

The "Mark" series is regarded as the most popular line of high fidelity instruments manufactured in the history of the company, and the new models offer the finest tonal quality yet achieved by RCA sound engineers. Every set offers perfectly balanced and matched components.

Top of the line is the Mark I, a combination high fidelity phonograph and AM-FM radio console which includes a built-in stereo tape player in combination with a tape recorder. Its eight speakers are housed in two matching speaker cabinets. Nationally-advertised at \$2,000, the three-cabinet Mark I is available in three modern and traditional finishes.

In the Mark VI at \$189.95 and the Mark VII at \$159.95, the company is now represented in price ranges in which it has not previously marketed high fidelity models. In addition, Mark IVD is the first combination AM-FM radio-New Orthophonic high fidelity combination to sell as low as \$299.95. The Mark IVD features four speakers, responds through a range of 45 to 20,000 cycles and has a maximum output of 16 watts.

The Mark XI, lowest priced of the multi-speed "Marks," is a portable model in a brown simulated leather carrying case. It too is complete with provisions for stereophonic sound and is advertised at \$129.95.



**New TV receivers combine large-size picture and smaller, lighter cabinets for convenient portability.**

The Mark IX offers all of the features of the Mark XI and is a table model with brass legs for conversion into a consolette. It is nationally advertised at \$139.95 in mahogany and \$149.95 in light rift oak or black mink.

In the radio line is the RCA International table model AM-FM shortwave set which is styled along continental lines and features five speakers, seven push-button controls, and vernier "Roto-Speed" station selector for pinpointing stations. In addition the set has separate bass and treble controls plus plug-in jacks for a phono attachment, a tape recorder or an extra speaker. It comes in walnut or blond elmwood finishes and is advertised at \$229.95.

The imported console model features, in addition, an RCA Victor four-speed automatic "Victrola" and is nationally advertised at \$369.95. It is also available in walnut and blond elmwood finishes. Both are equipped with AM antenna rotator knobs which turn built-in AM ferrite rod antennae for strong signal reception.

The Mark VI is one of nine New Orthophonic High Fidelity "Victrolas" introduced this month by RCA.



# RECORD FIRST QUARTER FOR RCA

**S**ALES and earnings of the Radio Corporation of America in the first quarter of 1957 set an all-time record for the period, Brig. General David Sarnoff, Chairman of the Board, announced on May 7 at the 38th Annual Meeting of RCA Stockholders held in Studio 8H of NBC at Radio City, New York.

General Sarnoff said that in the record-breaking 1957 first quarter, sales of RCA products and services amounted to \$295,773,000—an increase of \$20,925,000, or 8 per cent, over the first three months of 1956.

Profits before taxes amounted to \$25,541,000, an increase of \$146,000 over the same quarter last year.

Net profits after taxes amounted to \$12,810,000, an increase of \$83,000 over the same quarter of 1956.

Earnings per common share for the first quarter of 1957 were 87 cents—as against 85 cents for the first quarter of 1956.

## *Cure for TV Industry: Color*

Discussing television, General Sarnoff declared:

"As you know, television is one of the main branches of our business. Black-and-white TV has passed its first decade with outstanding success as a great new service and profitable venture. Competition in this field is most keen and vigorous. While the volume of units sold continues to be high, profit margins on sales of black-and-white sets now are low, and in some instances non-existent. However, there is nothing wrong with the television industry today that cannot be cured by *Color*.

"To the great services offered by black-and-white television, color adds a new and thrilling dimension. Nothing can stop the continued progress of Color Television. In our view, it offers the best prospects for improving earnings in the television industry and we believe that in time others in the industry will share this view."



General Sarnoff meets the corporation's youngest shareholders from Fox Meadow School, Scarsdale, N. Y.

Recalling that the National Broadcasting Company—a wholly owned subsidiary of RCA—observed in 1956 its Thirtieth Anniversary as the nation's first network, General Sarnoff said that "it did so auspiciously by achieving an all-time record for the year in gross income and net profits."

Calling attention to the progress of RCA during the past ten years, he said:

"You will observe that in the short period of a single decade—1946-1956—we more than quadrupled the volume of our annual business—\$236,981,000 in 1946, and \$1,128,000,000 in 1956. RCA is now one of the few industrial organizations in the United States whose business exceeds one billion dollars a year.

"Dividends to common stockholders were increased from twenty cents a share in 1946 to one dollar and fifty cents a share in 1956. Total dividends declared on the common stock increased from \$2,771,000 in 1946 to \$20,812,000 in 1956. Total dividends on the preferred and common stocks were \$5,924,000 in 1946, and \$24,000,000 in 1956—an increase of 300 per cent.

"The number of persons directly employed by the RCA rose from 39,000 at the end of 1946 to 80,000 at the end of 1956—an increase of 105 per cent.

"Looking to the future, I believe there is good reason to hope that during the next ten years RCA will equal or surpass the great progress it has made during the past decade."



# Week-End Sailors

## *and their fast-growing fleet*

IT'S "anchors aweigh" for America's week-end sailors who are turning out this summer in greater force than ever to challenge the waves in everything from putt-putts to plush yachts. Barbers and bartenders, teachers and merchants, clerks and salesmen—people from all walks of life—now belong to the fast-growing boating fraternity, once considered the exclusive domain of the Morgans and the Vanderbilts. These Sunday skippers have one thing in common—the enjoyment and relaxation they find in cruising or sailing.

Boating fever has swept the country to such an extent that there are now some 6,000,000 pleasure craft in use—about one for every twenty-eight persons in the United States, and more than double the number in use just ten years ago. It is estimated that close to 30,000,000 people used the waterways last year for more than just an occasional day afloat. This year, tens of thousands of families will be spending their vacations aboard small boats, cruisers and even luxury yachts. Some will be sailing on lakes, rivers and bays while others will venture out on the deeper ocean waters.

As more and more people have taken to the water, there have been increased demands for the higher standards of safety and convenience that electronics can provide.

Until recent years, marine equipment was designed primarily for large commercial ships. It was bulky and expensive. Then RCA engineers pioneered in adapting

electronic gear to the needs of the small-boat owner. They put the emphasis on compact design, smart styling, and simplified operating controls. Today a wide range of electronic equipment is making pleasure craft navigation easier and safer.

### *Portable Direction Finder*

For the outboard cruiser and sailboat, where space is at a premium, there is the lightweight, portable radio direction finder. Roughly the size of an ordinary portable radio, the direction finder does not quite produce a magic voice saying, "At the sound of the chimes, Sandy Hook will be just over your right shoulder." But it does something almost as good. It enables the amateur sailor to find his way no matter what the weather.

In fair weather, the skipper can spot his beacons by eye and steer a course by instinct or compass. But in fog or darkness, he finds himself in trouble. With a radio direction finder, however, he can take his bearings on radio beacons, broadcast stations and signals from radio-telephone-equipped boats and shore stations.

Carleton Mitchell carried an RCA portable direction finder on his 38-foot yawl *Finisterre* in winning the 1956 Newport-to-Bermuda yachting classic, the race yachtsmen call "the thrash to the onion patch." Smallest boat ever to win this blue ribbon of deep water racing on the Atlantic, the broad-beamed, gray-hulled *Finisterre* triumphed after 635 miles of hard, squall-ridden sailing.



Because of overcast, navigation was difficult during the entire course, and *Finisterre* navigated the final seventy-five miles by Bermuda radio. "RCA's Golden Guide radio direction finder was invaluable during the race," said Skipper Mitchell.

For the small and medium sized inboard cruisers—from 21 to 50 feet—there are radio direction finders, radiotelephones, and possibly, if the boat is used much for fishing, a depth sounder.

#### *World's Largest Party Line*

The radiotelephone has often been hailed as the most important single item of safety equipment for the pleasure boat. More than 55,000 boats are now hooked into this largest party line in the world. The radiotelephone provides a simple and convenient means of keeping in touch with home and office, and of notifying the Coast Guard or nearby boats in case of emergency. Through it, a skipper can also pick up information on weather conditions, and can find out where the fish are biting.

These small boat radiotelephones, though relatively inexpensive, are sturdy and powerful instruments. It was a small RCA radiotelephone which served as Captain Kurt Carlsen's sole link with rescue boats, and with the rest of the world, as he kept his lonely vigil aboard the sinking freighter *Flying Enterprise* off the coast of Ireland in January, 1952.

When the freighter was listing at 60 degrees with its power gone and its radio room under water, Carlsen

With this depth sounder, the skipper is warned of underwater hazards and can locate good fishing spots.

remembered the radiotelephone he had bought for his father-in-law's pleasure boat. He rigged it up to a six-volt storage battery and began talking with the ships standing by—the U. S. destroyers *John Weeks* and *Willard Keith*, and finally the salvage tug *Turmoil*. He told how things were going with him and how he proposed to have the tow made. It was through this radiotelephone that the whole world followed the epic of one man's struggle against the sea.

The big yachts—50 feet and over—are likely to carry as many as a half-dozen electronic aids. In addition to a radio direction finder, a large model radiotelephone and depth sounder, they are often outfitted with an inter-com system for shipboard communication, with loran for position finding, and with radar.

The value of radar on pleasure boats was pointed up by an experience of Walter Carey of Detroit during a trip to the Bahamas. Carey, who built his 63-foot yacht right in his own backyard and equipped it with electronic gear, tells the story this way:

"Once, southeast of Nassau, some of the amateur navigators in the family got us effectively lost during the night. It was only the radar picture, showing us the outline of the different islands that helped us to determine our correct position."

The deck lounges of some of the larger yachts are equipped with all the electronic comforts of home—color and black-and-white television sets, hi-fi radio-phonographs, and tape recorders.

Safety features aboard this luxury yacht include radar, RCA direction finder and radiotelephone.





# Carnival

**S**ALES of RCA Victor color television sets jumped almost 800 per cent during the 40-day Milwaukee "Carnival of Color," sponsored by the Radio Corporation of America during April and May. Advertising, promotion and merchandising techniques employed during the Milwaukee campaign will be extended during the coming months to every major market in the country.

"The results demonstrate conclusively that the public is ready to buy color now in large volume," said Martin F. Bennett, RCA Vice President, Merchandising.

Sales of color TV sets zoomed from an average of twelve a week before the "Carnival of Color" to 106 a week. Other highlights of the promotion:

Fully 70 per cent of the sales were for the more

expensive models, rather than the lowest priced set at \$495.

Home demonstrations resulted in sales in two out of three cases, as compared with an average for the home appliance field of about one out of three.

More than 85 per cent of the sixty-seven television dealers in Milwaukee cooperated wholeheartedly in the campaign, along with the Taylor Electric Co., RCA distributor in the area.

"The Milwaukee test," said Mr. Bennett, "was an overwhelming success, surpassing even our most optimistic hopes. We have every confidence that when the merchandising techniques proven in Milwaukee are extended to other market areas during the summer



Mid-day color TV show is center of attraction for Juneau High School students at special "science" assembly.



Marquee of Hotel Pfister is typical of the warm welcome given to the RCA campaign in friendly Milwaukee.

# of Color

and fall months, we can look for a sharp upsurge of color TV sales nationally."

During the Milwaukee campaign, intensive use was made of a wide range of advertising, promotion and merchandising techniques including displays in the newspapers and on radio and television, tie-ins with local industries, sales training programs, telephone and door-to-door solicitations, home demonstrations, and special appearances by television personalities like Vaughn Monroe and Helen O'Connell. Local television stations averaged 7½ hours of colorcasting a day during the month of May—more than had ever been presented anywhere over a comparable period. Highlights and sidelights of "Carnival of Color" are pictured here.

**BIG COLOR IS HERE!**  
 See it today at your  
**RCA VICTOR dealer** during **MILWAUKEE'S COLOR TV CARNIVAL**  
 FOR A FREE HOME DEMONSTRATION... CALL YOUR NEIGHBORHOOD RCA VICTOR DEALER



Because she wanted more visitors, this 100-year-old blind woman purchased a color set during the "Carnival."



Winners in color TV sales tip contest receive check from the well-known orchestra leader, Vaughn Monroe.



RCA Victor dealer Franecki, and others, went all-out in their promotion of Milwaukee's "Carnival of Color."



# The Basic Need: BASIC RESEARCH

SINCE pure science is the foundation of engineering and technology, it cannot be underrated or neglected without ultimately weakening our entire scientific edifice, Brig. General David Sarnoff, Chairman of the Board of RCA, declared at Dropsie College of Hebrew and Cognate Learning in Philadelphia.

During the Founder's Day exercises on May 22, an honorary degree of Doctor of Laws was conferred upon General Sarnoff.

He asserted that in America especially, because of "our strong pragmatic bent," efforts in science have been heavily focused on applied research, on engineering and immediate usefulness, and not enough attention has been devoted to pure or basic research.

### *Practice vs. Theory*

"In consequence," he pointed out, "there have been serious lapses in the fundamental knowledge from which technical accomplishments flow.

"To put the matter at its simplest, practice has tended to get priority over theory. Exploration and discovery have usually been judged less by what they added to the treasure-house of knowledge and understanding than by what they added to industry and everyday life. The scientist devoted to basic inquiries into the unknown has been given relatively little credit and, certainly, not enough cash.

"Today there is a growing realization of the dangers of this neglect, but it is still not easy, either in industry or government, to justify increased appropriations for pure research. One still meets the question, 'Of what value is a program of abstract science without a definite and useful goal?' More and more of the men responsible for research are beginning to acknowledge the fallacy

of that question. It is becoming increasingly clear to them that the pursuit of knowledge as an end in itself, the passionate urge to vanquish some segment of ignorance, is justified, in the long run, even in terms of utility.

"Some years ago, for instance, few in aviation saw much point to basic studies of the upper atmosphere, far beyond the ceilings of the highest flying airplanes at that time. But soon enough the development of aircraft capable of climbing to vastly higher altitudes made what had been pure research vitally pertinent and practical. In radio, to cite another example, we are constantly having to use frequencies before we know their characteristics and behavior as electro-magnetic waves in space.

"The gulf between fundamental and applied knowledge in many fields is growing too wide to be ignored. The scientific community has spoken out vigorously on this score in the past year. Because pure science is the foundation of engineering and technology, it cannot be underrated or neglected without ultimately weakening our entire scientific edifice."

### *At University of Rhode Island*

On June 10, General Sarnoff addressed the graduating class of the University of Rhode Island where he also received an honorary degree of Doctor of Laws.

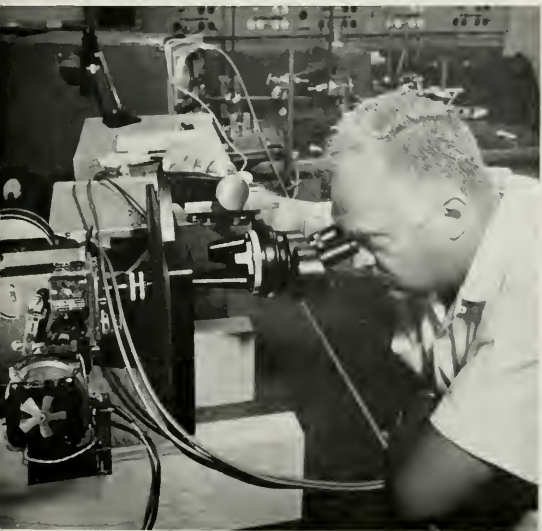
He told the graduates that deficits in specialized manpower—physicists, chemists, engineers, executives and the like—grow sharper continually. These categories, General Sarnoff pointed out, are all in applied science, technology and administration.

"But," he continued, "the need, though not so apparent to the naked eye, is no less urgent in areas



President Abraham A. Neuman of The Dropsie College (left) and David Sarnoff at Founder's Day exercises.

The study of new materials is an important basic research activity conducted at the RCA Laboratories.



of abstract knowledge, theoretical research and creative imagination. These, after all, are the seedbeds of progress. Unless they flourish, our technological civilization will not flourish. In short, just as we must have more physicists and engineers, so we must have more educators and philosophers.

#### *Not Only Man-Power But Mind-Power*

"In the atomic-electronic age, man's hunger for freedom and social justice, for beauty and inner spiritual grace, is as keen as ever. Robot brains and technology cannot satisfy that divine hunger which must seek its sustenance in the larders of religion, art and culture.

"As a nation, we require not only more 'man-power' but more 'mind-power.' Machines are no substitute for minds. A calculating machine can carry out certain functions with phenomenal speed and accuracy, but the most fabulous 'electronic brain' is no substitute for thinking.

"Even more important, no matter how we may perfect machines, they cannot provide the factors that count most in human society—character, integrity, moral perceptions and spiritual vitality."

General Sarnoff said he is not among those who are scared by the advent of automation.

"I have no doubt that ultimately it will operate to enrich human existence," he asserted. "Far from causing unemployment, automation will, in the long run, provide more and better jobs. It will raise standards of living to greater heights and give more people larger margins of leisure. It will stimulate new demands for products and services throughout the world by hundreds of millions of people now stuck in the swamps of poverty and drudgery.

"Having said that much, however, I must add that I am also conscious of the pitfalls and the problems of adjustment involved in our rapidly changing environment. The towering problems posed by the processes of change-over are at the heart of the challenge of our time."

#### *The Key Word: Transition*

General Sarnoff told the graduates:

"The key word in the world of practical affairs you are about to enter is *transition*. It is the word that sums up the major tensions and dangers you will have to deal with. Intelligent adjustment and reasonable accommodation during the in-between period of transition from the present to the future, is the fundamental task awaiting young people preparing to take over the conduct of our complex society. Each of you is destined in some measure to help ease the growing pains of the world of tomorrow: a tomorrow hastened by the tremendously accelerated rate of change."

# Radio Weatherman Asks:

## *What's Wrong with Sunspots?*

**B**ACK in the 17th century, the famous Italian astronomer Galileo was jailed for insisting that sunspots existed. While modern man no longer imprisons scientists for their beliefs, he would probably look slightly askance at anyone who insisted that most sunspots—long believed detrimental to radio reception—actually *improve* long-distance radio communication.

Yet, John H. Nelson, Propagation Analyst for RCA Communications, Inc., says that contrary to popular belief, all sunspots are not bad for radio, and most sunspots do improve radio communication.

To substantiate his statements, Mr. Nelson displays records that cover the last ten years, during which he has been studying radio weather from a skyscraper observatory in lower Manhattan.

The records show that although the average monthly sunspot count has been rising continually during the past three years, conditions on world-wide radio circuits have been well above normal for the entire period. Moreover, radio weather has steadily improved as the sunspot count climbed.

As a result of his long experience as RCA's radio weatherman, Mr. Nelson is able to recognize and classify sunspots as either good or bad. Good sunspots improve radio communication by stabilizing and strengthening the ionosphere—the layer of rarified gas that envelopes the earth some 200 miles up. The condition of the ionosphere, from which radio rays are reflected back to earth, is the basic factor in determining radio weather.

Fortunately for international radio communication, there is an over-supply of good sunspots—more than enough to offset the effects of the occasional bad ones. This being the case, radio conditions usually improve as the number of sunspots increases.

When seen through a telescope, sunspots appear to be just holes in the sun's flaming atmosphere. No one knows what causes them, but Mr. Nelson has a theory that may explain their existence.

His theory is that as the planets in our solar system circle the sun, the collective action of their gravitational

fields exerts a varying effect on the sun's atmosphere—an effect which may produce sunspots.

From years of sunspots observation Mr. Nelson has learned which arrangement of the planets produces the greatest effect on the sun. And since the planets travel in set orbits at measured speeds, their positions can be plotted mathematically years in advance. Thus, Mr. Nelson is able to forecast radio weather that will occur two or three years from now.

When, in February, 1956, a great rash of spots appeared on the sun's surface, Mr. Nelson was able to anticipate their appearance by charting the positions of the planets. When the breakout occurred on schedule, with the actual improvement of signaling conditions on RCA's world-wide radio circuits, it not only confirmed the fact that a sudden upsurge of sunspot activity can be beneficial to radio communications, but added new proof of Mr. Nelson's planetary position theory as well.

### *90 Per Cent Accurate*

Mr. Nelson is seeking to discover why and how his theory works. He knows that it enables him to predict radio-weather with an accuracy of better than 90%. Since Nelson has been involved in forecasting radio-weather, he has occasionally predicted disturbed conditions which never materialized. In only a few instances, have there been disturbances which he did not predict. His long-range forecast for the coming year, incidentally, shows no instance of really bad radio weather.

Mr. Nelson works as a team with Anthony W. Gray, RCA's Coordinator of Radio Facilities. Using advance predictions supplied him by Mr. Nelson, Mr. Gray and his staff are able to shuffle radio frequencies, change routes and alter methods of transmission in order to keep RCA's overseas circuits operative—regardless of radio weather conditions.

Mr. Gray points out that a prediction of disturbed conditions now seldom results in a traffic stoppage. This is due, he explains, to the fact that his staff has developed so many methods of offsetting the effects of occasional bad radio weather.



## Educational TV. . .

### Little Red Schoolhouse Was Never Like This

A NEW era in education in which an outstanding teacher will lecture to students throughout the country simultaneously by closed-circuit television, and earn a salary in the six-figure realm of the highest paid businessman or entertainer, was envisioned recently by John L. Burns, President of the Radio Corporation of America.

Speaking at commencement exercises at Northeastern University, where he received an honorary Doctor of Business Administration degree, Mr. Burns said classroom TV could prove a valuable weapon in the battle against the twin shortages of faculties and facilities, and provide top-notch instruction by "drawing upon the greatest teachers in the country."

Already, the National Broadcasting Company is pioneering in another field of educational television. It has just completed the first series of live programming ever produced expressly for the country's twenty-odd

non-commercial educational television stations on a nationwide basis. These educational TV stations broadcast to the general public. They have a potential audience of some 43,000,000, which is larger than the regularly enrolled school population of the United States.

#### *Advantages of Classroom TV*

In closed-circuit television, a program originating in one classroom or laboratory is piped into others throughout a city or an entire state. This form of TV, said Mr. Burns, offers many advantages in education. He cited the following:

"1. It would provide the highest quality of instruction by making it possible to draw upon the greatest teachers in America, men and women now largely confined to their own schools.

"2. It would enable us to tap the vast reservoir of

RCA closed-circuit educational TV in classroom at Stephens College, Columbia, Mo.



talent in business, the professions, government, research and the arts. It would permit special lectures by such eminent authorities as Charles Kettering on research, Dr. Karl Menninger on psychiatry, Chief Justice Earl Warren on law, Dr. Paul Dudley White on medicine, and Sir Winston Churchill on history. Through television, these and others could share their knowledge with students all over the United States, and ultimately with those all over the world.

"3. It would enable educational institutions to compete with the higher salaries now paid in other fields of endeavor. With the many elementary and secondary schools and colleges, that could participate in the program, sharing the overall cost, a teacher's salary could be in the six-figure realm of the highest paid businessman or entertainer.

"4. It would make possible the use of live and prepared demonstrations that are now out of the question. The student could literally enter an atomic reactor, or visit the bottom of the sea, or fly in a jet plane.

"5. It would ease the pressure on our overcrowded school buildings by making the fullest use of public and other auditoriums.

"6. It would greatly reduce the cost of education per student.

"7. It would raise the general level and standards of education. We could look forward with confidence to the day when there would be no more Class "B" school systems anywhere in our country."

On NBC the Vice President of the United States

spent half an hour talking about his job. The Speaker of the House, a U. S. Senator and an Associate Justice of the Supreme Court spoke about theirs. Stage and film stars read from landmarks in the nation's literature. Leading mathematicians, geographers and writers discoursed on their specialties. Singing actors performed scenes from operatic masterworks.

#### *Wide Variety of Subjects*

These were among the participants in the first cycle of NBC Educational Television Project programs, produced in cooperation with the Educational Television and Radio Center, at Ann Arbor, Mich. From March to June NBC offered weekly programs devoted to American literature, world geography, mathematics, American government, and music. This fall, there will be a second 13-week cycle.

During the first cycle, NBC sent out five programs live from New York to the educational TV stations over its regular network facilities, from 6:30 to 7 p.m., EDT, Monday through Friday. In addition to these ETV stations—for which the programs were primarily designed—they have found an additional outlet. Thirteen NBC-affiliated stations are telecasting (by kinescope recording)—or are about to telecast—some or all of the programs.

The 65-telecast series ranged in subject matter from automatic computers to Wagnerian opera, treating along the way such themes as puzzles, paradoxes, infinity, probability, calculus, bureaucracy, the budget, the great American novel, and Africa today.



The world is at his fingertips as Professor Albert E. Burke of Yale University lectures via NBC educational television.



James R. Newman, editor of the best selling "World of Mathematics," discussed various aspects of his specialty.



Actor Henry Hull (left), Dr. Albert D. Van Nostrand and author Erskine Caldwell on "The American Scene."



# TV's Blue Pencil Man



Stockton Helffrich, NBC's Director of Continuity Acceptance, answers viewers' mail.

By Martin L. Gross

ELVIS PRESLEY'S original uninhibited rockin' and rollin' on the Milton Berle TV show brought in a torrent of telegrams and letters from outraged parents. All of them ended up on the desk of 45-year-old Stockton Helffrich, NBC's Director of Continuity Acceptance — and the man who decides what you can and cannot see and hear on NBC television programs.

Soon afterward, Steve Allen requested Elvis for a guest appearance on his Sunday night show. The touchy question was put to censor Helffrich. His answer: "O.K." Presley could go on, but only if the camera pickups of his "pelvic gyrations" were cut down.

The new toned-down Presley, like so much on television today, is the product of this well-mannered, former page boy's ideas on "good taste." Helffrich's

taming of Presley is only one of the many behind-the-screen tussles between the expert blue-penciler and top TV performers — all part of his job of keeping "vulgarity" out of the nation's living rooms.

Helffrich and a staff of 35, many working in key cities across the country, carefully scrutinize every script, commercial, old Hollywood film and even Shakespearean classic and popular song for material that might jam the NBC switchboard with complaints.

One of his biggest problems has been the female bosom. More than any other man, Helffrich deserves credit (or censure) for covering up the lavish spreads that were synonymous with early TV.

For this he has been called a "kill-joy bluenose." In his own defense, he quotes the letter from a mother that spurred him to action. "I'm no prude," the woman wrote.

Reprinted from *Coronet*, June 1957  
Copyright by *Esquire*, Inc. 1957

"I have a grown daughter who wears strapless gowns. But some of those I see on television are almost *topless!*"

Helfrich immediately "suggested" that all female performers bring along an extra gown — just in case. When this failed to do the trick he achieved his purpose by having directors mercilessly *flatten* the offending protrusion with powerful overhead lighting. "The girls much prefer flattering sidelighting," he points out.

The censor carefully studies his weekly flood of complaints ("already totalling more than in the 35 years of radio") to gauge what the public wants in its living rooms. A typical day's mail, for example, included the following pet peeves: A mother complained that the lower case lettering on the *perry como show* was fouling up her son's education. A viewer protested the showing of Richard III because the villain was malformed. A worried mother pleaded that for the sake of her son all "schmos" on television programs didn't have to be named "Melvin." (A sympathetic directive on "Melvins" was immediately sent out to all network producers and directors.)

Helfrich worries a lot about the children. His office has files on tens of thousands of films and cartoons with notations on the cuts necessary for an audience of youngsters. The old beloved chaps-and-thunder Western with dozens of corpses littering the mesa, for instance, is now a TV taboo.

"We cut lynchings and excessive violence from the old Western films and try to discourage it in new ones," he says. "Instead of all that killing, we prefer wingings and nippings in the arm or leg. There is no reason for bad grammar; and the good guy and bad guy could just as well shoot it out in front of the town post office as in the local bar."

#### *Violence and Sex*

Five films of "Fabian of Scotland Yard" were cut off completely because the combination of violence and sexy negligees was allegedly unfit for the child audience in early evening. When the time slot was moved later, four were released for adult audiences. The fifth is still under wraps. It contains, according to Helfrich, too good an explanation of a so-called perfect crime.

Helfrich has a number of TV sacred cows. Old Glory can't be used in commercials. The children's untouchable is Santa Claus, whose believability cannot be punctured, especially around Yuletide. Not long ago the censor deleted an entire skit of a famous comedian (comedians are his biggest problem children) because

it involved a lecherous old Santa Claus who only climbed down the chimneys of fair young damsels.

Stockton Helfrich is not bashful about cutting. Once, over the howls of the producers, he took a 90-second sequence of a Caesarean operation out of "Medic" as "pointless realism." But he much prefers to find ways to keep things in. "I'd rather say: 'This is how you can do it,' than 'You can't do this.'"

#### *A Ticklish Question*

When NBC produced Richard Strauss' "Salome," Helfrich was faced with one of the most ticklish questions of his career: What about the historic strip tease of the seven veils? He went into a characteristic huddle and finally came up with an answer that was calculated not to offend the varied television audience.

"Dress her in a flesh-colored leotard," he told the producers. "Have the camera pan on her neck. Then, once everybody knows she's wearing something under the veils, you can go to town."

He had kept his impeccable "good taste," but there is no way of knowing how many cherished illusions about the famous Biblical strip he destroyed throughout America.

In addition to his perhaps controversial handling of sex, Helfrich has the serious job of making TV conform to modern sociological morals. Old "Our Gang" comedies, for instance, have been edited to delete racial prejudice; and he has worked hard to keep national and religious stereotypes off the screen. No one mentions the fact, he bemoans, that most hoodlums on whodunits now have names of varied or untraceable origin as part of his efforts to destroy the myth of Italian gangsterism.

Commercial copy administrator and commercial editors confirming code compliance in a clocking session.



Helffrich's pet uplift project is mental health. With blue pencil and scissors he tries to keep old, dangerous clichés about mental illness off our screens.

A basic TV rule, as legislated by Helffrich, is: Robert Montgomery can say it, but Sid Caesar can't. This means that a cuss word used flippantly on a comedy show is bad taste, while in the proper context it can heighten good drama.

#### *A Case in Point*

On one occasion, Montgomery came to Helffrich with a problem. The word "damn" had never been allowed on television, but Montgomery was about to put on Scott Fitzgerald's play *The Great Gatsby*, a study of Long Island society. At the climax of the drama a character says to Gatsby: "Jay, you're better than the whole damn lot of them!"

Helffrich pondered and pondered and finally gave Montgomery his now momentous "O.K." "Damn" has since been allowed on television a few dozen times; and "hell," another former taboo, about as many.

The censor's perennially persistent critics are the special interests. "It seems that nothing can go on television that doesn't annoy some industry, product or profession," he says.

#### *Cigar Makers, Florists and Dentists*

Cigar manufacturers squawked some months ago when the victim in a play was asphyxiated with cigar smoke. The warehouse people wanted to know why the respectable warehouse had become a TV rendezvous for killers. Alarmed florists frantically complained about a line in another show wherein a new widow sent out cards: "Please omit flowers."

Some special interests, however, do get through Helffrich's tactful exterior. Dentists complained that a patient yelling "ouch" in a dentist's chair on TV keeps thousands from seeking needed care. So now Helffrich has passed the word along that all is to be smiles in the dentist's chair.

In the matter of commercials, Helffrich would just as soon do without toilet tissues and athlete's-foot cures. All athlete's-foot commercials are carefully edited and scheduled for showing at other than mealtimes. And TV can sell toilet tissue only if the camera avoids the actual toilet.

Little escapes the tasteful censor's eye. His office has rewritten numerous pop and rock 'n' roll tunes to make them palatable for TV. Greats like Cole Porter, a master of the sexy sentimental lyric, are treated more gingerly, but even two of Porter's tunes have had the "good taste" treatment.

#### *Programming for Mature Audience*

Some critics maintain this good taste is a bit overdone, but the censor (he winces but doesn't disown the word) feels he operates with a modern attitude toward the job. "I personally think the TV audience is a mature one and getting more so all the time," he says. "They will accept broader programming than ever before."

As examples, he cites the showing of Sinclair Lewis' *Dodsworth* on the "Producers' Showcase" in the face of anticipated protests. The story shows divorce as one solution to marital difficulties. He is also proud of the passage of films of Osa and Martin Johnson despite the nakedness of the African natives.

The censor has long since learned that, no matter what he does, he'll never please everybody. The lesson was brought home graphically recently when he opened his morning's mail to find a pair of letters commenting on a Perry Como show. "It had a variety of wholesome entertainment," said one. The other complained that it wasn't fit fare for children because "it was a slinky night-club-type thing."

Stockton Helffrich, Director of Continuity Acceptance and guardian of good taste, threw up his hands: "See what I mean?"

Carl Watson, Manager of Continuity Acceptance, discusses a code interpretation problem with staff editors.



# “MEDICO”

## *For Shipboard Emergencies*

**F**IVE days out of New York in a raging sea, an 18-year-old seaman topples from a catwalk aboard a Swedish tanker. When mates reach his side, the lad's right arm is bent grotesquely beneath his body.

The skipper wastes no time.

“Contact MEDICO — quickly,” he tells his radio operator.

Within seconds the signal “XXX MEDICO, FLASH, MEDICO” is crackling through the air.

At Chatham, Mass., an operator in the RCA Communications building picks up the urgent message and rapidly jots down the information. A few more seconds elapse while the operator relays the message to the nearest marine hospital. There, the message is flashed to doctors on duty, and a hurried medical conference is held in a hospital corridor.

Within five minutes after the original appeal from the tanker, a message prescribing medical treatment is on its way to the radio shack of the vessel.

The young seaman has his broken arm effectively set and is resting quietly under sedation slightly more than 45 minutes after plunging to the steel deck of his ship — thanks to MEDICO.

MEDICO, an emergency medical service, is provided free to ships of all nations by the Radiomarine Department of RCA Communications, Inc.

First conceived in 1921 by Captain Robert Huntington, principal of the Merchant Marine School at New York's Seaman Church Institute, MEDICO has since saved countless lives on the high seas. In 1922 RCA placed its various coastal stations at MEDICO'S disposal. They have served since with never a question of a fee.

Wherever and whenever an emergency arises at sea, the signal “XXX MEDICO” instantly galvanizes many people into action. Only the top priority distress signal of SOS can delay a MEDICO flash. All other calls are immediately broken off, clearing the airways for MEDICO. There are no specific figures on lives saved, disasters averted and epidemics prevented by MEDICO, but its value can best be estimated by the 1200 calls per year handled at RCA's eleven coastal stations.

So quickly and efficiently are the calls processed — from ship to RCA to medical help to RCA back to ship again — that many times proper treatment is being applied to a patient in the middle of the Atlantic Ocean in less time than it would take the family doctor to reach your home.

Thanks to MEDICO'S expert guidance, ship captains have effectively treated everything from minor ailments to a fractured skull. Aided by a thorough first aid course, a well-stocked medical kit and the invaluable medical handbook, “Ship Sanitation and First Aid,” the modern skipper fears no medical emergency — including childbirth.

A South American ship, 300 miles south of Cape Hatteras, recently radioed an urgent message.

Injured seaman being transferred to ship with doctor aboard, thanks to fast action through MEDICO service.



(U. S. Coast Guard Photo)

"PATIENT SHE YOUNG BEAUTIFUL WOMAN. BABY COMING TOO SOON. PATIENT SHE FEEL AWFUL."

MEDICO doctors held a quick huddle and flashed a fundamental and concise course in obstetrics back to the ship, closing with "GOD BE WITH YOU."

Then the tension set in.

RCA Communications operators, MEDICO doctors and many other ships and stations which overheard the call figuratively paced the floor and chain-smoked cigarettes while waiting word from the "delivery room" — a cabin aboard the South American ship.

Hours later came this message:

"BOY HE EIGHT POUNDS. MOTHER SHE FEELS VERY VERY WONDERFUL."

Everyone connected with the case felt like passing over cigars.

Hundreds of MEDICO cases contain almost as much drama and excitement as a Hollywood cliff-hanger. As one oldtime sea captain put it:

"Even when you know the case isn't a matter of life and death, the suspense gets you. First you wonder whether MEDICO'S diagnosis is right. Then you worry hour after hour, hoping that the treatment the doctors advised will take effect. Yet, in the end, it turns out that MEDICO is right — every time."

MEDICO'S far-reaching arm of mercy is not limited to medical information alone. A few years ago, newspapers carried the story of an accident at sea.

Radio operator at RCA's Chatham, Mass. station monitors a ship-to-shore frequency.



"Scalded horribly by live steam while fixing a valve aboard the freighter *Triberg*, 95 miles off New York, David Semple, 29, was transferred from an amphibious patrol plane to a Coast Guard helicopter at Floyd Bennett Field in Brooklyn. The plane answered a distress call."

### Radio Operator Plays Key Role

It took only a few seconds for an RCA Communications operator to set in motion the events which resulted in bold, black headlines across the nation.

Operator Arch MacLean teletyped a message to the United States Marine Hospital at Staten Island. Medical advice was flashed back to the ship. Air-Sea Rescue was notified, and a Coast Guard patrol plane ordered to the scene of the mishap.

Within fifteen minutes of the time the accident was reported, the Coast Guard amphibian reached the *Triberg* and returned to the field with Semple. The injured man was quickly transferred to a waiting helicopter and flown to the hospital. Despite burns covering one-third of his body, he recovered.

Because of the importance of every MEDICO call, radio operators are ever alert to handle any emergency whether from a freighter thousands of miles away in the China Sea or a fishing schooner a few hundred yards off shore. To the dedicated men who go to sea each year there is nothing more gratifying than to know that, through MEDICO, competent medical aid is only a few minutes away, available in any emergency.



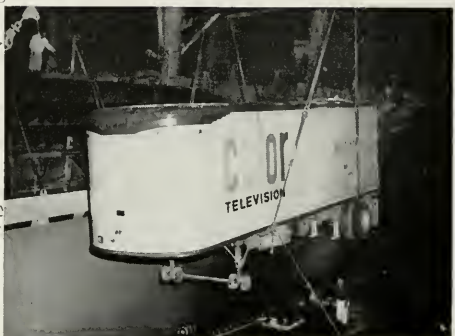
(U. S. Coast Guard Photo)

After rescue at sea, patient is brought to ambulance by Coast Guard helicopter at Staten Island, N. Y.

# Color TV

goes to

# JAPAN



**H**is Imperial Majesty, the Emperor of Japan, swept into Tokyo's International Trade Fair surrounded by a protective cordon of major-domos and aides-de-camp. The Emperor and his wife had exactly ninety minutes to view the entire sprawling fair at Tokyo's Harumi Pier.

Some forty-five minutes later, the Emperor and Empress had progressed no farther than the very first exhibit inside the United States Pavilion — the Radio Corporation of America's color television studio.

While frantic assistants respectfully bowed before him to remind him of the tight schedule, Emperor Hirohito sat immobile, watching with fascination the miracle of color television. When finally he was torn loose from the display, the Emperor's comment was, "Marvelous!"

That succinct summing-up accurately reflects the reaction of some 900,000 milling Japanese fair-goers who thronged the RCA color TV exhibit during its recent 15-day run in Tokyo. This was the first showing of RCA compatible color TV outside the United States, according to Richard H. Hooper, Manager, RCA Shows and Exhibits, who was in charge of the RCA display.

So popular was the color display that the Tokyo police several times had to ask RCA officials to hold up telecasting while harassed officers fought to control the mobs outside. Total fair attendance hit the 1,200,000 mark, so that color television attracted something like

RCA's mobile color trailer is unloaded at Yokohama after crossing the Pacific aboard the *President Adams*.

75 percent of the entire crowd. The newspaper, Sunday Mainichi, reported that the display was so popular "the Trade Fair office has complained that other exhibits are not obtaining a fair share of attention."

### *Fifty Tons of Equipment*

Several months ago, Department of Commerce officials asked if RCA would show color to the Japanese. The Corporation responded by shipping fifty tons of color television equipment to Japan this spring.

Along with the equipment, which included two 34-foot semi-trailers loaded with full color TV mobile gear, complete studio facilities, two camera chains, lighting and testing apparatus, the Corporation flew a ten-man crew to Tokyo, under the leadership of Mr. Hooper. H. L. Ewing was Show Manager. Joseph G. Mullen, of Mr. Hooper's staff, was in charge of production and served as program director for the six hours of color TV beamed daily via closed circuit to ten RCA Victor color television receivers in a semi-darkened viewing area.

The demonstration group of engineers and technicians from the RCA Service Co., Inc., under the direction of Frank N. Helgeson, included Robert C. Gold, Morgan D. Harrison, John W. Fox, E. W. Sattler, Paul



USA Pavilion, housing RCA's color TV exhibit, dominated the International Trade Fair grounds at Tokyo, Japan.

Scully, George Closs and J. B. Marchetti. RCA's International Division cooperated closely on the entire project.

The RCA crew arrived in Tokyo about the middle of April and arranged for shipment of the equipment from Yokohama, where it had been unloaded from the freighter *President Adams* after a Pacific crossing.

Japan's three TV networks volunteered to supply talent free. In return for this courtesy, RCA threw open its color TV facilities at the fair to engineers and technicians from the networks. Members of the crew held impromptu "school sessions" for interested Japanese engineers after the fair closed each day.

While the programming leaned heavily toward

Tokyo policemen hold back milling crowds waiting to get inside and look at the RCA color television display.



Kabuki drama and dances, which tell a story of Japanese culture in song and dance, and Noh plays of ancient Japanese drama, Mr. Mullen also arranged many American-type shows such as fashion promenades, cooking shows, magicians, puppets and a rough-house kiddie show called "Rumpus Room."

At times the RCA exhibit became so congested that people had to be moved out at the end of one show so a waiting audience could get in to see the next performance.

Typical of the press comments was one from Television-Radio Shimbun:

"The color television exhibit is not only the best show at the American pavilion, but also the greatest of the fair. This is RCA's Million-Dollar Color Television Caravan and the equipment is as fabulous as its name implies."

#### *Japan Seen Next Country With Color TV*

What was learned by participation in the International Trade Fair?

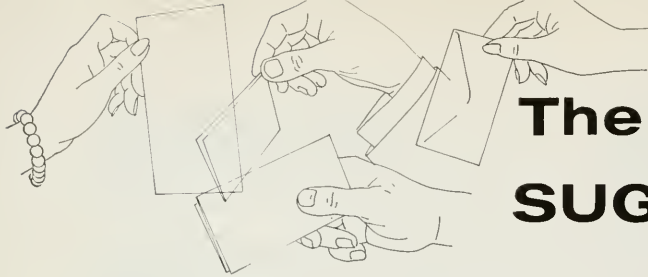
"Japan will be the next country with commercial color television," predicts Meade Brunet, Vice President, RCA.

"This demonstration," he said, "is a major step in the ultimate establishment of a globe-spanning color television service.

"Already," said Mr. Brunet, "Japan has purchased several color TV units for handling film and is engaged in color telecasting on an experimental basis. The Japanese people are ready and waiting for color television, and it will be only a matter of time before other countries around the world start color telecasting."

RCA technician George Closs explains operation of the color TV camera to a group of Japanese engineers.





# The Power of SUGGESTION

**E**VER watch an auto body-and-fender man use a rubber hammer and shaping mold behind a mashed fender to reshape its contours? Then you can appreciate the application of that restoration technique by Miss Eva Weidman to damaged color picture tube aperture masks.

A fourteen-year RCA employe with some eighteen successfully adopted suggestions to her credit, it pained Miss Weidman to see a major scrap problem grow out of RCA's manufacturing processes. Because the aperture or shadow mask must provide precise color separation for the electron beams as they pass through approximately 300,000 minute holes to the glass phosphor dot screen, dented masks are useless in picture tube assembly. So Miss Weidman suggested using a rubber hammer and mask-shaped supporting form. Result? Successfully repaired aperture masks and a \$1,792 suggestion award for the RCA Lancaster plant production inspector.

Employes don't need years of service to spot suggestion opportunities. Paul Goldin was still a specialized trainee engineer with four months' employment at Camden when he let management in on an idea for using a different material in sleeveings on military aircraft communications equipment. That suggestion earned him

\$722. Since then, he has submitted two additional ideas which have been adopted.

The year 1956 saw 25 per cent more suggestions filter through suggestion administrators' hands, accounting for a record RCA saving in operations of more than \$800,000. And for their tangible tips on how to operate more efficiently, RCA employes were awarded nearly \$100,000.

Some employes even team up, as welding machine attendants John Horniack and Robert Mercer and machinist Vincent Liguori did. The Woodbridge plant trio will split an estimated first year's savings of \$2,100 for their suggestion of a special jig to carbend plate halves together on certain tube types which eliminates welding.

## *No Laughing Matter*

For years, cartoonists have had fun with suggestion boxes. They like to picture them as receptacles filled with notes like this: "If the manager is smart, he'll pay a little attention to a certain brunette who works at the stocking counter and wears a big bow in her hair." But as far as business is concerned, suggestion boxes are no laughing matter. They have become — especially since World War II — an established factor in employe-management relations. Today there are an estimated 10,000 suggestion systems in operation.

"The suggestion system," says J. J. Brant, RCA's Director of Personnel, "provides our employes with an awareness of and an interest in everyday operating problems. Therefore, it is fundamental to sound employe relations. Through its use, the employe contributes to improving methods of operation, and in turn receives direct personal recognition and a financial reward for his ideas."

Here is how the system works at RCA:

An employe conceives of a way to improve a product or method of operation. If he is eligible (higher management levels are excluded from monetary rewards), the suggester obtains a form, sets down his idea with any simple drawing necessary, signs his name and organi-

Mrs. Mary Jane Arnold, Lancaster plant screening operator, RCA's top award winning suggester for 1956.





zation, and drops the suggestion in the box. The suggestion supervisor periodically makes the rounds gathering up the forms.

The suggestion is read and, if it is not an idea obviously impractical or already submitted, it is routed either to the organization it would affect or to a suggestion staff investigator for follow up. Incidentally, the suggester's name is confidential as the suggestion carries only a number, and he's assured of an impartial evaluation and investigation.

The suggestion now has to be "typed." That is, it may involve tangible savings, such as the use of alternate materials. It may be intangible, such as one improving working conditions. Or it may be classified as a supplemental savings, an idea adding to or improving an earlier and successfully adopted suggestion. Tangible suggestion



Zara Harris, general assembler in Canonsburg plant, won \$118 for recommending method of coil wrapping.

savings are then computed on actual material quantities ordered or scheduled for a one-year period after the idea is put into effect.

Suggestion supervisors have determined roughly that of the suggestions of all types received each year, about 25 per cent are adopted. Awards range from \$5 to \$7,500. When indicated savings are over \$5,000 a year, a \$500 award is made when the suggestion goes into effect. Then, a year later, the actual savings are computed and the suggester gets the difference between his \$500 initial award and 10 per cent of the total net savings.

How do employes get their ideas? Take the case of Mrs. Mary Jane Arnold, RCA's top suggester for 1956 from the Lancaster, Pennsylvania plant.

Mrs. Arnold, a screening operator on color picture



For her 18 suggestions, Lancaster plant color mask assembly inspector Eva Weidman has received \$2,351.

tubes, noticed the problem involved in drying the wet phosphor screen of the tube. The plant used a low-pressure air drying method, but despite rigid precautions, dust and tiny bits of copper would get blown onto the drying phosphor.

Recognizing that the drying process was essentially one faced in the furniture finishing industry, Mrs. Arnold became intrigued to the point of studying production methods. Her answer, simple but sure, was the substitution of infra-red lamp drying for the air method. Mrs. Arnold's suggestion brought her \$4,911, reduced the scrap parade, and assured RCA's customers a better quality color tube.



For his ideas on salvaging anode and cathode plungers, Harrison plant's Bernard Wozniak received \$500.

# RCA news in brief



## Mayflower II . . .

During the fifty-three-day Atlantic crossing of the Mayflower II, RCA Communications' marine station WCC at Chatham, Mass., maintained daily radiotelegraph contact with the vessel. Installation of a radio transmitter and receiver were among the few departures from the original ship's furnishings. Near the mid-Atlantic, a live voice-broadcast on progress of the Mayflower II was picked up by the Program Transmission Service of RCA Communications, Inc. This exclusive report was subsequently rebroadcast on NBC's "Monitor" show.



## Batty Translation . . .

Bob Considine reported on an NBC-TV show recently about an incident in which his writings were translated into Japanese. His story concerned the final game of last year's World Series when the New York Yankees exploded for nine runs. "I wrote a one-word lead," Bob recalled. "It said 'Murder — exclamation point.' The story was radioed

to Tokyo and the boys in the composing room of the paper, Yomiuri Shimbun, couldn't find any Japanese character that quite expressed what I was trying to say. So the next day my story of the final game started out with a grouping of Japanese characters which translated into: 'Kill all the people.'"



## No More Absenteeism . . .

Desk absenteeism, the bane of business efficiency, has been largely eliminated at the Kurth Malting Co., Milwaukee, since the installation of an RCA "Auto Dial" intercommunication system in the twelve buildings of the firm. This plant-wide system uses fifty-eight "Auto Dial" phones and paging units. It enables chemical, processing, and production people to get timely reports on processing factors, without delay, and without leaving their desks.



## "Teller Vision" . . .

Banking by "Teller Vision" — a system developed by RCA for TV trans-

mission of signatures and account information from centralized book-keeping departments to remote drive-in windows — is speeding depositor service at several more banks. Bankers find that the favorable reaction of depositors to the speed, convenience, and accuracy made possible with RCA "Teller Vision" at both inside and drive-in banking windows more than justifies the cost of installation.

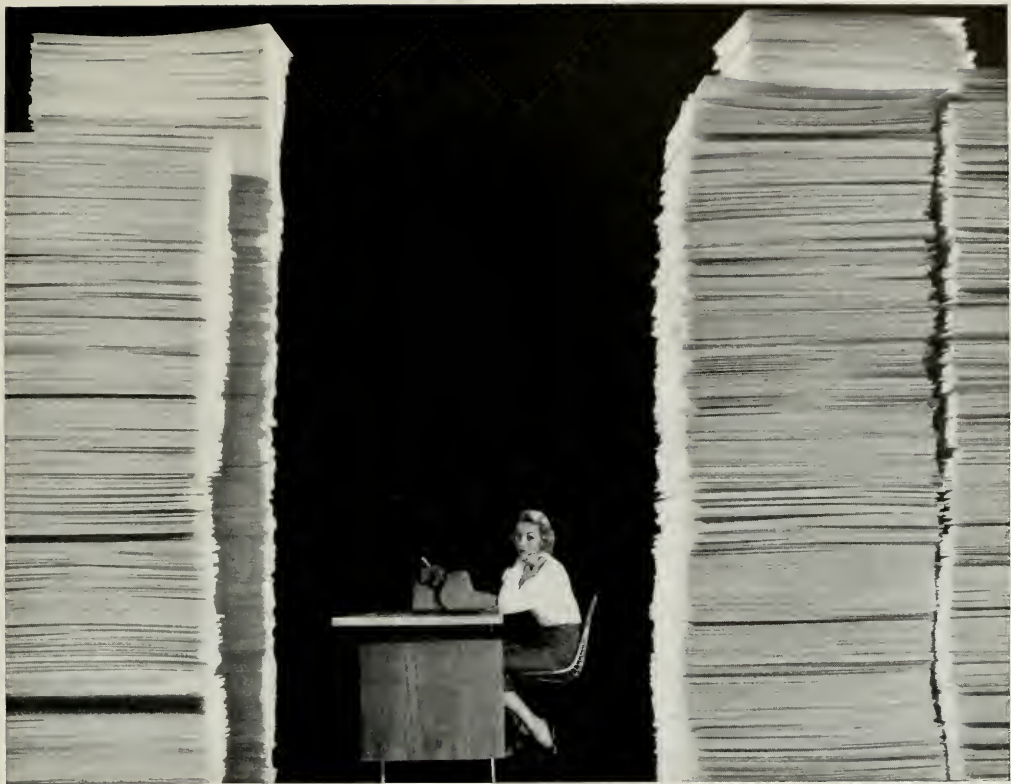


## Thru the "Heat Barrier" . . .

New materials and techniques promise to push back the "heat barrier" that now limits the performance of transistors and related electronic devices. Dr. Dietrich Jenny of RCA's David Sarnoff Research Center says experimental use of new compound semiconductors in place of germanium or silicon has led to the development of laboratory types of transistors and diodes that may operate at temperatures as high as 850 degrees Fahrenheit. This is nearly 300 degrees hotter than the maximum for present types.

## Electric Wrist Watch . . .

An electric wrist watch that recharges its own battery has been invented by Loren F. Jones, manager of RCA's business machine marketing department at Camden, N. J. His newly patented watch is run by an electric motor, powered by a tiny storage battery. The wearer's random wrist movements wind a small spring. The spring, when released from time to time, sends surges of current through the battery. According to the inventor, the battery ought to last for a number of years.



WORLD'S LARGEST ELECTRONIC BRAIN

## **RCA BIZMAC reduces weeks of paper work to seconds—cuts costs by millions!**

**In almost the twinkling of an eye**, electronics handles calculations that would take any person days of work.

The newest — and largest — electronic “brain” (more accurately, electronic data processing system) is Bizmac, developed by RCA.

Bizmac is quickly becoming one of the most powerful allies of business and industry. It “reads,” sorts, catalogs, analyzes, calculates, forecasts—reduces months of paper work to seconds—cuts costs by millions!

For insurance companies, Bizmac can digest

mountains of statistics daily and put its finger on any one of millions of facts with push-button speed.

It can help department stores keep split-second inventory control, can greatly simplify warehousing, storage and product-supply problems for big chain-store operations.

And for the U. S. Army, it keeps track of literally *billions* of ordnance parts all over the world.

The leadership in electronic research that made Bizmac possible is inherent in all RCA products and services—to help make life fuller, easier, safer through “Electronics for Living.”

TMK (c) ®



**RADIO CORPORATION OF AMERICA**  
ELECTRONICS FOR LIVING

*What does it do between*

**HERE and ...**



**THERE?**

*For the  
first time  
the behavior  
pattern  
of a free space  
Moving Target  
can be directly  
calibrated  
and immediately  
evaluated!*

The proof of any guided missile is its performance. Not only is it necessary to provide accurate trajectory data in order to determine its effectiveness, but this must be made immediately available.

To meet both requirements is the purpose of the AN/FPS-16 instrumentation radar. This is the first radar developed specifically for Range Instrumentation. It has demonstrated its

ability to track with accuracy in darkness, through clouds—under any atmospheric conditions—over extended ranges, and to yield data that can be reduced almost instantaneously to final form. This unit can also be assigned to plot performance of missile, satellite, drone and other free space moving targets.

In the past, this data has depended upon

optical devices, triangulation systems with long base lines and precision limitations, modified radar equipment and data reduction methods often requiring months for computation. The immediate availability of data evaluation provided by the AN/FPS-16, now being built by RCA under cognizance of the Navy Bureau of Aeronautics for all services, is a great forward step in Range Instrumentation.



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*Defense Electronic Products*

**RADIO CORPORATION of AMERICA**

*Camden, N. J.*