



SERVICE

AN RCA FAMILY PUBLICATION

Two Who Won . . .
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MARCH, 1960

RCA SERVICE COMPANY



SERVICE

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THE COVER

Programmer/Operator Carol Guthrie holds magnetic tape which contains all of the information in the pile of paperwork spread before her. The information can be instantly recalled by feeding the tape into the RCA 501 data processing system (background). Before the year's end, RCA will open another EDP Center in Washington, D. C., and is planning others in several major cities.



Of This and That

New Staff V.P. for Management Engineering . . .

Mr. Fred R. Raach, appointed Staff Vice President, Management Engineering, will be responsible for developing corporate policies and programs in the area of administrative procedures and controls, and will provide service to the divisions and subsidiaries of RCA in evaluating and improving existing business methods.

Nine Fellowships granted . . .

RCA has awarded Fellowships to nine university graduate students for advanced studies in engineering, physics, dramatic arts and journalism.

Valued at approximately \$3,500 each, the Fellowships are a part of RCA's program of providing financial assistance to more than eighty young men and women each year. Total cost of the program exceeds \$100,000 annually. Each Fellowship includes full tuition costs, \$2,100 toward the student's living expenses, and \$750 as an unrestricted gift to the university attended by the RCA Fellow.

Since their inauguration in 1947, RCA Fellowships have been awarded to more than 130 graduate students.

75% more engineers . . .

RCA Missile and Surface Radar V.P. and Gen'l Mgr. Harry R. Wege told a conference of engineers that a 75 per cent increase in the number of engineers will be required during the next ten years to meet the demands of American industry, with a trend developing toward merging engineering and science, particularly in projects involving whole systems.

World's most powerful tube . . .

An electron tube, developed by RCA, described as the world's most powerful, provides enough power to transmit a television picture halfway around the world, by using the technique of bouncing a signal off a metallic balloon or other object in outer space.

Two hundred graduates . . .

A class of 200 students was graduated in February from RCA Institutes, in ceremonies held in the Auditorium of the School of Education of New York University. The graduates, 30 per cent of whom are veterans, included students from Canada, the Philippines, Portugal, Ireland, Hong Kong, Thailand, Cuba, Greece, the Bahamas, and Trinidad and Jamaica.

Service and Training

The sweeping extension of electronics in the home, in business and industry, and in national defense has brought increasing demands for expert installation and maintenance, and has made electronic servicing one of the fastest-growing aspects of an expanding industry.

The RCA Service Company, established sixteen years ago to provide installation, servicing, and instruction in the use of electronic equipment in the field, is now one of the most versatile organizations of its kind. During 1959, the company continued its vigorous growth.

Already active in the fields of industrial electronic equipment, government service, and consumer products, the company in 1959 established a new division to provide programming, operation, installation and maintenance services for purchasers of RCA electronic data processing systems. It also inaugurated an extensive servicing program for United Press International teleprinters that carry the day's news to television and radio stations, as well as to newspapers throughout the world.

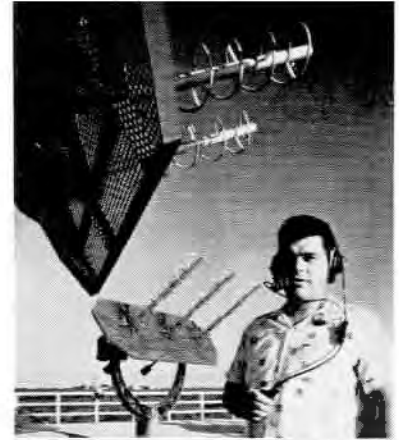
The Service Company's far-flung government servicing operation again continued its expansion, reflecting the growing technical assistance provided to the nation's military forces at home and abroad. An important aspect of this activity is the handling of electronic instrumentation at Cape Canaveral, Florida, and the down-range islands of the Atlantic Missile Range. There, RCA engineers and technicians are at work, planning, installing, maintaining and operating the electronic equipment used in tracking missiles and satellites. Other service specialists are on duty in the Far North, installing elaborate electronic gear for the Ballistic Missile Early Warning System. Further major service activities for the government include the installation and maintenance of launch control and checkout equipment at Atlas missile sites in California and Wyoming, and repair and calibration of electronic test equipment used by the U. S. Air Force in Europe.

In the non-military field, many direct services were provided in 1959 to industrial and business users of electronic systems, and to the millions of consumers owning RCA Victor home instruments and RCA Whirlpool appliances. Training and instruction in color television and other areas of servicing were offered for thousands of independent service men across the nation.

Augmenting this extensive training program was the expanded activity of RCA Institutes, one of the nation's oldest and largest technical schools. Celebrating its fiftieth year in the training of engineers and technicians for the electronics industry, the Institutes expanded its teaching facilities with the opening of a new school at Los Angeles. Two courses—Television and General Electronics, and Radio and Television Servicing—will be offered in Los Angeles beginning March 1. A college-level course in Advanced Electronics Technology is scheduled in the Fall.

To keep pace with the broad advance in electronic technology, RCA Institutes in 1959 added to its comprehensive home-study curriculum courses in "Electronics for Automation," covering digital techniques, recording and read-out devices, telemetry, automatic control systems, computers, and data processing. The courses teach principles, adjustment and troubleshooting of these systems.

(Reprinted from the 1959 Annual Report to Stockholders)



Skilled technicians of the RCA Service Company install, maintain and operate electronic equipment, ranging from the instrumentation at the Atlantic Missile Range (top) to the TV set in the home or the RCA 501 electronic data processing system. Future technicians for industry are trained at RCA Institutes (bottom) where this student learns computer technology.



The Army's Missile Measurement Ship, "American Mariner," has participated in 19 missile shots on the Atlantic Missile Range.

ARMY MISSILE MEASUREMENT SHIP RE-EQUIPPED FOR NEW MISSION

The U. S. Army Ship American Mariner sailed from Baltimore in February on a new and year-long mission, re-equipped for the task of tracking, measuring and analyzing the performance in flight of ballistic missiles on the Atlantic Range.

Among the additions and improvements to her facilities are Navy (ARCAS) rockets and launchers. The rockets will be fired to altitudes of up to 200,000 feet. They will carry metal-coated balloons for calibrating the ship's precision tracking radars, and furnishing meteorological data from altitudes above the range of lighter-than-air balloons.

The ARCAS (All-Purpose Rocket for the Collection of Atmospheric Soundings) is a low-cost weather rocket furnished by the Office of Naval Research.

Sixty RCA scientists, engineers, and technicians—most of them from RCA Service Company—man the facilities for tracking, instrumentation, data recording, and navigation.

The ship is at sea for periods of up to 45 days, and the current series of missions on which it is embarked will last about one year.

Data obtained on the ship's missions are flown to RCA's Data Reduction Center at Croydon, Pennsylvania, for analysis and distribution to 76 government agencies and scientific institutions.

Heart of the Down-range Anti-missile Measurement Program (DAMP), the Mariner was placed in operation in the South Atlantic last spring. RCA modified the ship, designing and installing electronic equipment including tracking, navigation, and communication equipment.

Radar installations on board are two RCA AN/FPQ-4 monopulse precision radars and four RCA-designed slave pedestals for mounting additional instruments.

Precision computing equipment compensates for the ship's roll, thus making possible accurate radar measurements at sea. Timing, stabilization, designation, and data-recording equipments are included in the overall system.

The Army Ordnance ship, a "floating laboratory" of electronic equipment, has already participated in many missile firings by collecting precise data for both offensive and defensive purposes. Sponsored by the Advanced Research Projects Agency (ARPA), the "DAMP" mission has been described as an outstanding example of inter-service-industry cooperation.

Service Company Congratulates:

the 1959 recipient of the RCA David Sarnoff Outstanding Achievement Award in Engineering

Duane C. Brown, a Data Reduction Analyst with the RCA Service Company at the Atlantic Missile Range, Patrick Air Force Base, Florida, has been named the recipient of the David Sarnoff Achievement Award for his basic contributions to mathematical techniques important to missile research and development.

The award is one of two, presented annually by RCA to honor outstanding achievement by a scientist and an engineer. Each award carries a gold medal and a citation. Mr. Brown's award, to be presented formally at a later date, will bear the citation: "for his development of original and effective solutions to complex problems of missile and rocket trajectories at the Atlantic Missile Range."

A leading authority in the field of photogrammetry, Duane Brown joined RCA in 1955 after having served as a mathematician at the Ballistic Research Laboratory, Aberdeen, Maryland. At the age of 30, he has gained international recognition through his work with ballistic cameras and data reduction techniques. At the Atlantic Missile Range, he has developed mathematical techniques for the precise determination of positions on the earth's surface, and has been responsible for advances in methods used for evaluating missile guidance systems.

the recipient of a David Sarnoff Fellowship for post graduate study in the field of Mathematics

Irwin J. Fredman, a BMEWS Service employe, River-
ton, will pursue a Doctorate in Mathematics at the University of Pennsylvania, as a recipient of a David Sarnoff Fellowship for the year 1960-61.

In his position as Section Leader, Operations Analysis, he is responsible for various phases of operations research with emphasis on computer applications, also providing staff services in mathematics for the group. He has been associated with the work since his employment in September, 1958.

Mr. Fredman received his BA in Math from Temple University in 1955 and his MA degree from the same university in 1959.

Under the Fellowship awarded to him, he will work for his PHD with full tuition fees paid, plus an allowance



Duane C. Brown



Irwin J. Fredman

for books and a stipend toward support. In addition, a gift will be made by RCA to the University of Pennsylvania, which he will attend.

Mr. Fredman is one of ten outstanding employes receiving David Sarnoff Fellowships for the 1960-61 academic year. Established in honor of RCA's Chairman of the Board, the yearly awards include six in the field of Science, three in Business Administration, and one in Dramatic Arts.

Recipients are selected by the RCA Education Committee on the basis of academic aptitude, promise of professional achievement and character. Preference is given to Science and Engineering applicants who have indicated their ability to proceed on a doctoral program.

Have YOU seen this Poster?

RCA's Spring Purchase Plan for employees on Color TV is available only to RCA employees with three or more months of service, who did not participate in last Fall's special Color TV Purchase Plan. Limit, one set per employee. Offer ends April 15, 1960. For further details, write Cherry Hill Family Store.

Announcing ...

RCA FAMILY "LIVING COLOR" TV SPRING PURCHASE PLAN

ENJOY COLOR TV
FOR AS LITTLE AS
\$2.75
A WEEK!



RCA VICTOR Anniversary Series 210-CK-85

- ★ *No down payment!*
- ★ *Up to 3 years to pay!*
- ★ *No interest or carrying charges!*
- ★ *Payments deducted from regular paycheck!*
- ★ *Saves you up to \$60 more*
- ★ *Special LOW, LOW RCA Family prices!*

UHF slightly higher. State and local taxes extra.

BRAND NEW COLOR TV MODEL

- Straight from the production line to you!
- Especially manufactured for RCA Family!
- All performance-proved "Living Color" TV features
- The finest Color TV picture ever!
- Excellent black-and-white picture too!
- Latest Mark Series Chassis
- Easy "Color-Quick" Tuning
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Extended range Duo-Cone Speaker
- RCA Security Sealed Circuits
- Plus many more advanced and perfected features

SEE THE WONDERFUL DIFFERENCE COLOR TV MAKES

Enjoy all the exciting "specials" all the regular shows such as Steve Allen, Dinah Shore, Perry Como, Sunday Showcase, Ford Startime, motor sporting events, and many many other delightful colorcasts. Take advantage of this exceptional offer now!

Offer ends April 15, 1960

Available only to RCA and NBC employees with 3 or more months of service who did not participate in last Fall's special "Fifth Anniversary" Color TV Purchase Plan. Limit, one set per employee.

RCA VICTOR

For further details and order form contact your Family Store Representative, on telephone extension

Form HCE370

10-15-60

Printed in U.S.A.

New Dual-Purpose Radars Selected for British Missile Warning Site

British Site is Third in Early Warning Net
Protecting North American Continent and British Isles

RCA, prime contractor to the United States Air Force on the BMEWS program, has announced that giant new dual-purpose tracking radars of the most advanced type will be installed at the third site of the Ballistic Missile Early Warning System, at Fytingsdale Moor, Yorkshire, England.

RCA Service Company, as sub-contractor, is responsible for the construction of the huge systems at all three bases.

Designation of the third site was announced jointly by the United States and British governments, culminating technical negotiations between the Royal Air Force, the U. S. Air Force and RCA.

The two other sites, already well under construction, are at Thule, Greenland, 600 miles north of the Arctic Circle, and at Clear, Alaska, north of Mt. McKinley.

Radar detection of possible ICBM attack

BMEWS is an Air Force project to establish high-power radar stations at bases strategically located to detect and track hostile ICBM's approaching from the Eurasian land mass.

Through unique sub-systems of electronic processing equipment, the radar information received is automatically interpreted and communicated instantaneously to North American Air Defense Command (NORAD) headquarters at Colorado Springs.

Since missiles would be detected minutes after launching by this system, the early warning aspects of BMEWS afford the brief but all-important time for NORAD, Strategic Air Command (SAC) and the civil defense agencies to set the wheels of warning, defense and retaliation in motion.

An interesting feature of the BMEWS system is that it will automatically compare the trajectory of a suspected missile with that of known satellites, meteor trails and other atmospheric phenomena to assure accurate identification.

Prototype at Moorestown Plant

The newly developed tracking radars, designed by RCA, can perform two functions—first, detect an enemy ballistic missile more than 2,000 miles away and, second, once the target has been detected, "lock on" to the missile to calculate its speed, direction and impact point.

This information can be flashed within seconds to both U. S. and British military centers for immediate relay to defense agencies and retaliatory forces.

A prototype of the BMEWS tracking radars designed for the British site has been constructed at the RCA Missile and Surface Radar Division facilities, Moorestown, N. J., and is undergoing tests prior to actual emplacement in Britain. Protected by a huge spherical radome,

it is visible from the New Jersey Turnpike, just north of Camden.

Most flexible in existence

As a combination scanner and tracker, the RCA tracking radar AN/FPS-49 is one of the most flexible radars in existence.

In its scanning mode it can be assigned to scan over various sectors at different elevation angles. Upon detection of a target, the beam "locks on" and tracks the target to determine whether or not it is an ICBM and, if so, to obtain information on its trajectory. Through the use of electronic computers an accurate prediction of both the launching point and the point of impact is produced.

The BMEWS tracking radar antenna is enclosed in an enormous radome to protect the equipment from adverse weather conditions.

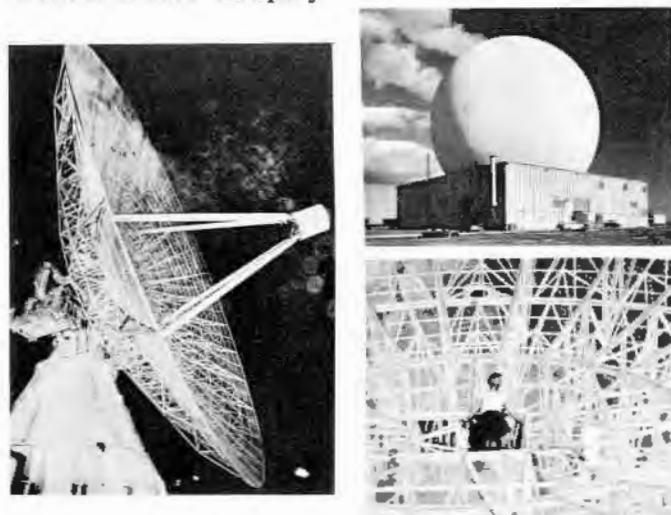
With a diameter of 140 feet, the radome is constructed of non-metallic materials to permit unobstructed passage of the radar beam and its reflected signals. It is capable of withstanding gale-force winds.

The antenna and its pedestal weigh almost 400,000 pounds, with the Servo-driven rotating section accounting for more than half of the total weight. The antenna revolves on ball bearings measuring 3½ inches in diameter, the size of baseballs.

Sub-contractors

Major sub-contractors to RCA in the BMEWS project are General Electric Company, Sylvania Electronic Products, Inc., and Goodyear Aircraft Corp.

Associated prime contract responsibilities for the system's rearward communications are being fulfilled by the Western Electric Company.



Views of the BMEWS Radome at Moorestown Missile and Surface Radar Division.

Service Company Personalities

W. F. GIVEN, Manager, BMEWS Service Project, is responsible for the overall direction of the installation, check-out, test and operations, and maintenance of the System in Thule, Greenland—in Clear, Alaska—and in the recently announced British site at Fylingsdale Moor, Yorkshire, England.

He joined Service Company in January, 1959, as Manager of the BMEWS Service Project engineering activity. In May of the same year, he was placed in charge of the entire project, at the time of Government Services' organization realignment.

Mr. Given started his career as a Radar Design and Development Engineer with the Philco Corporation (1946-1950), advancing with that company over thirteen years through various assignments to Section Manager, Communications Engineering.

As a Radar Officer with the U. S. Army (1943-1946), he took advanced study in electronics and mathematics at Harvard University, and in radar at the Massachusetts Institute of Technology.



William F. Given



Gerald W. Pfister

H. REESE, JR., Manager of Atomic Energy Services, is responsible for all Service Company atomic energy programs including the installation of experimental fusion equipment, reactor simulator design and construction, health physics training and operation, accelerator and reactor installation services, radiation services, and radiation instrument maintenance and calibration.

Prior to his Service Company association (1958) he was, for six years, Assistant Manager at Curtiss-Wright's Nuclear Power Department which included work in the fields of radiation effects, thermoelectric devices, and applications of radioisotopes.

As a development engineer at the Oak Ridge National Laboratory (1949-52) he designed and developed special instrumentation for high voltage accelerators and for the Aircraft Reactor Experiment. At Minneapolis-Honeywell (1946-49) he was project engineer in charge of the development of a vibrating electrometer.

The author of several published papers, Mr. Reese also lectures on Reactor Physics—recently at Chulalongkorn University, Bangkok, and Osaka University, Japan.



Harry Reese, Jr.



Sigmund Schotz

G. W. PFISTER, the recently appointed Vice President of Commercial Services, heads all of the activities of the Company's Consumer Products, Technical Products, and Electronic Data Processing operating departments, as well as the supporting Quality and Advertising and Sales Promotion groups.

He came to Service Company from Montgomery Ward & Company, Chicago, in 1950.

From his original position as Manager of Service Company's Procedures and Forms Control, he progressed to Manager of Budgets and Procedures (1951), and Manager of Consumer Products Field Operations (1952).

Named Treasurer and Controller in 1953, he continued as such until his appointment to the Vice Presidency of the Consumer Products Service Department in 1957.

With little time to pursue personal hobbies, Mr. Pfister admits to a yen for sailing, fishing, and hunting. He's a member of the Square Circle Sportsmen's Club, and of the Seaview Country Club.

S. SCHOTZ, Assistant to Service Company's President, has a myriad of diversified responsibilities referring to the administration and coordination of general company business.

Hailing from Zloczow, Poland (and a graduate in law from the University of Lwow), Mr. Schotz came to the United States in 1937.

He then attended courses in industrial engineering and accounting at the University of Pennsylvania, which led to some years of experience as Purchasing Agent for a Philadelphia toolmaker, and as Time Study Engineer with the Budd Company.

He transferred to RCA-Camden in 1944 as a Cost Analyst, later Group Supervisor, in what was then Engineering Products. He worked as a Cost Analyst in Record Division and, as Cost Analyst, came to Service Company in 1949. Made Government Regulations Coordinator in 1951, he assisted Law V.P. D. R. Creato for one year; was then assigned to his present position.

An accomplished pianist, he ends every impromptu concert with "My Love Belongs to You,"—his wife's composition.

News of the Month in Pictures . . . Government Services' Photographs



V.B.K. Nicolaisen (center), Royal Greenland Trade Department, on a BMEWS-Riverton visit, is greeted by W. F. Given (right) and J. M. Vinicombe.



RCA Engineers at MAAG-Japan conference (l. to r.): Messrs. Mullins, Mann, Schnell, Staracher, Brown, Weese, Harding, Johansen, Far East Manager S. J. Antosy, Messrs. Talley, Tipton, Lawrence, Ferguson, Fisher.



(Official Air Force Photo)

RCAS Tech R. W. Anderson (left) at Webb AFB explains the Weapons Rocket Control System to A/2c W. R. Herman.



P. P. Melroy, former Navy Services Manager, is now European Manager headquartering in Wiesbaden, Germany.



Torben Petersen serves Site Operations Manager G. Denton Clark at Thule Christmas party. Mr. Clark is now Operations Manager at Clear, Alaska.



H. J. Mills, N. E. Region Marketing Manager, headquarters at Rome, N. Y.

— A Page from the Family Album —



Northfield, Ill.—I & S Tech J. E. Touve (YNT 3, USNR) shown on active duty in Key West, Fla.



Atlanta—Phenomenal appliance tech E. F. Harris, with RCA less than a year, sells 8 appliance contracts in a day.



MTP, Florida—Retiree H. B. Lyons, after 34 RCA-years, plans a built-in hi-fi for his new Debarry, Pa., home.



Springfield Gardens, N. Y.—J. McCarthy (right) gets 1st prize in NY/NJ Service Managers' Contest, from Training Administrator L. Black.



Cherry Hill—Programmer H. F. West (second from left) receiving congrats and 3-figure suggestion award from (l. to r.) E. H. Griffiths, J. L. Kleppinger, R. L. Olmstead.



Cleveland—Radiomarine Field Mgr. N. S. Walker (right) gives Century Club pin to L. B. Pszenitzki for his suggestion on tuning transmitters.



Atlanta—Sales Manager "Jockey Sid Ward" and his "sure-a-nuff" horse at the start of Consumer Products Contract Derby, with ticket-happy Sales Techs.

More Memorabilia – circa 1926

This is the “pioneer” RCA Eastern District Service Station at 326 Broadway in New York City.

Note the battery-operated super-heterodyne model “Radiola Grand” and, at far right, the original RCA Radiola loudspeaker. At far end, the technicians are working on speaker test and repair. At left, the early version of today’s modern adjustable lamp fixtures.

In the machine shop, pictured below, parts were either repaired or made, since no replacement parts were available. This is the Tube and Transmitter Testing Section for Radiomarine repair. Tube Test Rack at left.



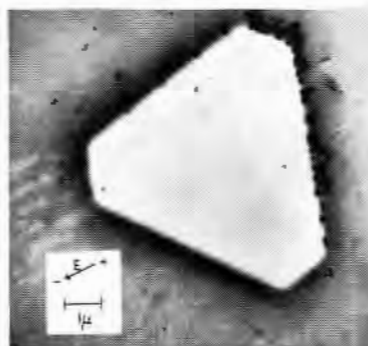


RCA Electron Microscope helps Eastman Kodak keep the promise of "saving all the fun in pictures!"

The quality of even the best snapshots or professional photographs can only be as good as the cameras and films they're made with, and the chemicals in which they are developed. That's why at the Kodak Research Laboratories, one of the important uses of the RCA Electron Microscope is research in connection with photographic theory. This includes investigations into the characteristics of photographic emulsions and studies of the nature of the photographic image. It's all part of the painstaking effort that assures continuing progress in picture-taking, and in the many other applications of photography.

This application of the RCA Electron Microscope by the Eastman Kodak Company is typical of the advanced research in which over 1000 of these instruments are now being used throughout the world. The EMU-3 is recognized by scientists as the "work-horse" of the laboratory because it provides extremely high electron image magnifications of up to 200,000X as well as unsurpassed ease of operation, reliability and dependable performance. Of particular value to chemical and metallurgical researchers is a new Diffraction Chamber which permits EMU microscopes to do transmission and reflection electron diffraction.

Also of importance in research and development work are the world's most versatile x-ray diffraction and spectroscopy instruments now offered by RCA. Installation supervision and contract service are available through the RCA Service Company.



In the above electron micrograph, the light hexagonal area is the imprint left in the gelatin when a large silver halide crystal from an experimental photographic emulsion was dissolved. Development centers are shown to be all along one edge of the grain.



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CAMDEN, N.J.