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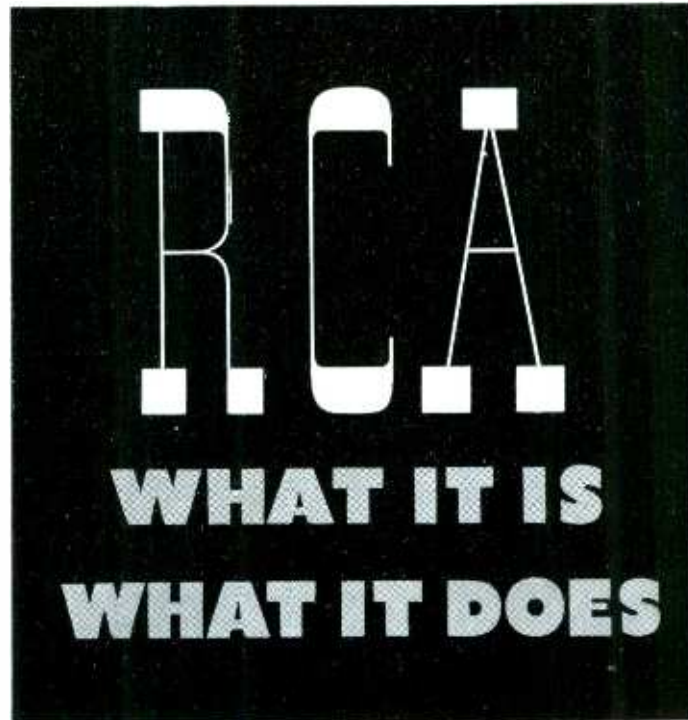
WHAT IT IS

WHAT IT DOES

QUESTIONS  
*and*  
ANSWERS

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ANSWERS TO QUESTIONS

THAT ARE OFTEN ASKED

(COMPLETE INDEX ON PAGE 42)

**RADIO CORPORATION OF AMERICA**

RCA BUILDING, 30 ROCKEFELLER PLAZA, NEW YORK, N. Y.



# FOREWORD

A new chapter in the history of radio began in 1919. The Armistice of 1918 ended the “wireless” era. Wireless became radio! Wartime developments of the vacuum tube, short waves and the radiophone were new keys to progress. Broadcasting became a new post-war industry with tremendous potentialities for service to the public and to the nation.

War had revealed to America that it should have a world-wide radio communication system that would make it independent of foreign countries in communicating with other nations, with its own outlying possessions, merchant marine, battle fleets and any American Expeditionary Force.

So that America would have this independence, ashore and afloat, in peace and in war, the Radio Corporation of America was formed in 1919 to serve the interests of the public and the government; to establish American preeminence in radio. The wireless stations, physical equipment, patent rights and the good will of the Marconi

R E S E A R C H • M A N U F A C T U R I N G

Wireless Telegraph Company of America were acquired as the nucleus of the new all-American radio organization — RCA. The growth of radio in the United States since that day is a story of radio progress throughout the world.

The United States went to war again in 1941. RCA's laboratory facilities, manufacturing machinery, radio stations and communication services were enlisted in the all-out effort to help win the war. Radio reached out as a great force for unity that linked free people everywhere, as well as the United Nations fighting for democracy and freedom on a world-wide front.

Since its formation, RCA through research and pioneering has helped to put the United States in the forefront of every great advance in radio. It has contributed largely to making this nation the communication center of the world. Maintaining modern and efficient services to the public, to trade and commerce, RCA has continually strengthened and extended the usefulness of radio to this country—on land, sea and in the air.



**C O M M U N I C A T I O N S • B R O A D C A S T I N G**



RCA Building, Radio City, New York, is a world-center of radio. It is the home of the Radio Corporation of America, National Broadcasting Company and Blue Network Company.

# RCA **WHAT IT IS** *and* **WHAT IT DOES**

## What is "RCA"?

The letters "RCA" are the initials of the Radio Corporation of America, the parent company of: RCA Manufacturing Company, Inc., National Broadcasting Company, Inc., Blue Network Company, Inc., R.C.A. Communications, Inc., Radiomarine Corporation of America, RCA Institutes, Inc., and RCA Laboratories.

## What led to the formation of RCA?

Prior to and during the first World War, the United States depended largely upon British cables and foreign-owned wireless stations for communication with many important parts of the world. Great Britain was the communication center of the world. The war revealed to Americans that radio offered a new and competitive system; a startling opportunity for dissemination of intelligence. Development of radio would give the United States preeminence in radio communication, independent of other countries.

To accomplish this, RCA was formed by the General Electric Company, as a result of suggestions by officials of the United States Navy. Arrangements were made to acquire the assets of the Marconi Wireless Telegraph Company of America. A charter was granted RCA under the corporation laws of the State of Delaware on October 17, 1919. The business and property of the American Marconi Company were acquired by RCA on November 21, 1919. On December 1, 1919, RCA began business as an all-American organization. Its charter provides that no person shall be eligible for election as a Director or officer of the Corporation who is not at the time of such election a citizen of the United States. The charter also specifies that the Corporation may by contract or otherwise permit such participation in the administration of its affairs by the Government of the United States as the Board of Directors deem advisable. A clause in the charter provides that not more than 20% of the RCA stock may be held by aliens.

The first Chairman of the Board of RCA was Owen D. Young; the first President, Edward J. Nally; David Sarnoff was Commercial Manager.



JAMES G. HARBORD

BOARD OF  
DIRECTORS  
*of*  
RCA



DAVID SARNOFF



CORNELIUS N. BLISS



GANO DUNN



EDWARD F. McGRADY



ARTHUR E. BRAUN



JOHN HAYS HAMMOND, JR.



CHARLES G. DAWES



EDWARD J. NALLY



DeWITT MILLHAUSER



EDWARD W. HARDEN



BERTRAM CUTLER



**What is the nature of RCA's business, as outlined in its original charter?**

1. To send and receive signals, messages and communications.
2. To create, install and operate a system of communication which may be international.
3. To improve and prosecute the art and business of electric communication.
4. To radiate, receive and utilize electromagnetic waves.
5. To create and manufacture consumer goods, and to hold patent rights in radio, electronics and other fields.



**What are the industrial activities of RCA?**

The Radio Corporation of America is the world's foremost radio organization. Through its various divisions and wholly-owned subsidiaries, it is engaged in every phase of radio: research and engineering, design and development, manufacturing, communications, broadcasting and technical training.



**Where are the executive offices of RCA?**

Headquarters of the Radio Corporation of America are in the RCA Building, 30 Rockefeller Plaza, New York City. This building is the tallest skyscraper in Rockefeller Center, popularly known as "Radio City."



**When did the RCA transoceanic service begin?**

In February, 1920, the stations which the government had taken over from the American Marconi Company during the war, were turned back to the new RCA and a new communication service was inaugurated to foreign lands. One of the principal stations was in New Brunswick, N. J. During that year service was established with England, France, Norway, Hawaii, Japan and Germany.



**How many people are employed by RCA and its subsidiaries?**

At the opening of 1942, RCA and associated companies had 30,461 employees, of whom 18,915 or 62% are men, and 11,546 or 38% are women. These employees classified according to length of employment are as follows:

<i>Years Employed</i>	<i>Totals</i>
Less than 5 years . . . . .	19,508
5 to 10 years . . . . .	6,150
10 to 20 years . . . . .	3,815
More than 20 years . . . . .	988
	<hr/>
	30,461



JAMES G. HARBORD  
*Chairman of the Board*

OFFICERS  
*of the*  
RADIO  
CORPORATION  
OF AMERICA



DAVID SARNOFF  
*President*



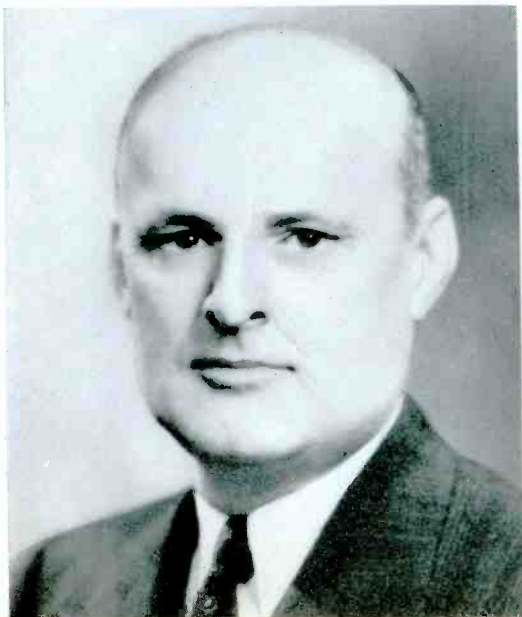
OTTO S. SCHAIRER  
*Vice-President in charge of RCA Laboratories*



EDWARD F. McGRADY  
*Vice-President in charge of Labor Relations*



GEORGE S. De SOUSA  
*Vice-President and Treasurer*



HENRY A. SULLIVAN  
*Controller*



LEWIS MacCONNACH  
*Secretary*

**What are RCA's wage and labor policies?**

The management recognizes that the loyal cooperation of employees is of basic importance to the success and progress of RCA. It is the company's policy to pay as high wages, under as favorable hours and working conditions in similar classes of work, as those prevailing in the areas in which the company's plants are located or operations are carried on. The most modern working conditions conducive to health, safety and comfort are maintained, together with a wide variety of educational, social and recreational facilities.

In instances where employees choose to bargain collectively, the employing company deals willingly and frankly with their authorized representatives. At present there are in force a number of contracts between the various companies and the unions, of which several are affiliated with A. F. of L., several with C.I.O., and one is independent.

Edward F. McGrady, who for four years had been Assistant Secretary of Labor, in 1937 became RCA's Vice President in charge of Labor Relations and a member of the Board of Directors.



**Who owns the Radio Corporation of America?**

Ownership of RCA is widely distributed among approximately 240,000 stockholders, in every state of the Union. No individual owner of record holds as much as one-half of 1% of the stock. Less than 6% of the stock is held by foreign stockholders.



**What is RCA's capital structure?**

There are three classes of RCA stock:	Shares Outstanding
\$3.50 Cumulative First Preferred . . . . .	900,824
"B" Preferred Cumulative \$5 Dividend . . . . .	12,791
Common . . . . .	13,881,016



**Do all RCA stocks pay dividends?**

Regular quarterly dividends have been paid on Preferred stocks, totaling \$3,219,453 per year. Annual dividends at the rate of 20 cents per share of Common stock have been paid each year for the past five years. Common dividends amount to \$2,771,027 per year. Total annual dividends paid to RCA stockholders amount to \$5,990,480.

In 1941, net earnings were more than 3.2 times dividend requirements on the First Preferred stock. During the five-year period, 1937 to 1941, inclusive, net earnings averaged more than 2.7 times these requirements. In the same five-year period, dividends on Common stock have totalled \$13,854,063, and the company's earned surplus has been increased by \$12,629,326.

**What was RCA's volume of business in 1941?**

The Consolidated Gross Income of RCA for the year 1941 (exclusive of foreign subsidiaries) was \$158,695,722.

**WHERE IT CAME FROM**

Manufacturing . . . . .	\$ 88,850,589
Broadcasting . . . . .	48,488,171
Communications . . . . .	14,014,747
All Other Sources . . . . .	7,342,215
<b>Totals . . . . .</b>	<b>\$158,695,722</b>

**WHERE IT WENT**

Cost of Raw Materials, Supplies, Sustaining Program Talent, Rent, Sales and Advertising; Payments to Associated Broadcasting Stations; Research, Administration, and Other Operating Expenses . . . . .	\$ 74,868,017
Wages and Salaries to Employees . . . . .	50,050,465
Depreciation and Interest . . . . .	3,793,674
Taxes . . . . .	19,790,850
Dividends to Stockholders . . . . .	5,990,480
Carried to Surplus . . . . .	4,202,236
<b>Totals . . . . .</b>	<b>\$158,695,722</b>

**What is RCA's record of earnings for the past 10 years?**

The earnings of RCA during the ten-year period from 1932 to 1941, inclusive, were as follows:

*(The figures shown for all years prior to 1941 include Foreign Subsidiaries)*

Year	Gross Income	Net Profit Before Federal Income Taxes	Federal Income Taxes	Net Profit After Federal Income Taxes	Earnings Per Share on Common Stock <i>(Based on present capitalization)</i>
1932	\$ 67,361,143	\$ 1,133,585*	—	\$ 1,133,585*	—
1933	62,333,496	582,094*	—	582,094*	—
1934	78,756,994	5,055,114	\$ 805,850	4,249,264	\$.074
1935	89,228,898	6,026,673	899,800	5,126,873	.137
1936	101,186,310	7,293,037	1,137,100	6,155,937	.212
1937	112,639,498	11,142,158	2,117,300	9,024,858	.418
1938	99,968,110	9,095,772	1,683,700	7,412,072	.302
1939	110,494,398	10,149,511	2,066,700	8,082,811	.350
1940	128,491,611	13,364,656	4,251,500	9,113,156	.425
1941	158,695,722	26,566,316	16,373,600	10,192,716	.502

\*Loss.

**What are the working capital and net worth of RCA?**

RCA's working capital (the excess of current assets over current liabilities) at December 31, 1941, amounted to \$37,714,839. RCA's net worth on the same date was \$76,017,802.

The total assets of RCA, as shown by its consolidated balance sheet on December 31, 1941, were \$134,479,284, divided as follows:

Current Assets	
Cash and Government Securities . . . . .	\$28,424,444
Notes and Accounts Receivable (less reserves) . . . . .	19,771,238
Inventories (Less Reserves) . . . . .	29,382,450
Total Current Assets . . . . .	77,578,132
Investments in and Advances to subsidiary and other companies* . . . . .	
	12,931,291
Emergency Plant Facilities, under contract with U.S. Government . . . . .	
	2,398,111
Plant and Equipment (less reserves) . . . . .	30,401,533
Patents (less reserve) and Goodwill . . . . .	9,343,497
Other Assets . . . . .	1,826,720
Total Assets . . . . .	\$134,479,284

**The total liabilities were:**

Current Liabilities	
Accounts Payable and Accruals . . . . .	\$17,060,126
Provision for Federal Income Taxes . . . . .	19,227,285
Dividends Payable . . . . .	3,575,882
Total Current Liabilities . . . . .	\$39,863,293
Notes and Contract Payable . . . . .	15,400,000
Reserve for Contingencies . . . . .	3,198,189
Total Liabilities . . . . .	\$58,461,482

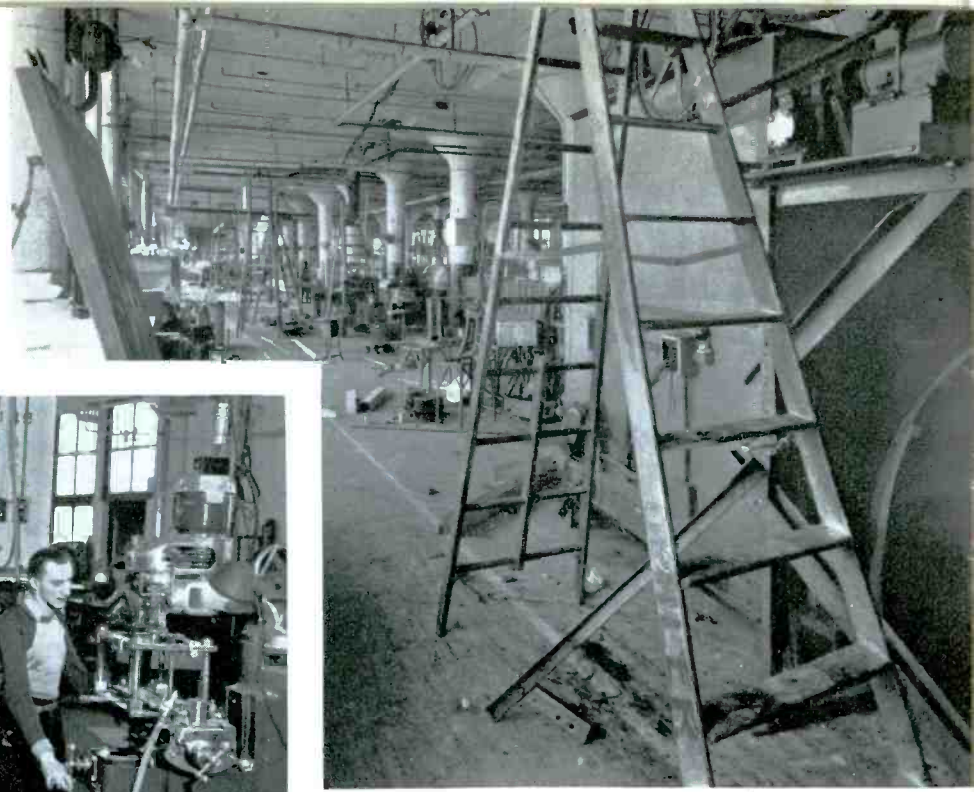
**Net Worth consisted of**

General Reserve . . . . .	\$ 5,441,301
Capital Stock, at a stated value of . . . . .	42,612,526
Earned Surplus . . . . .	27,963,975
Total Net Worth . . . . .	76,017,802
Total Liabilities and Capital . . . . .	\$134,479,284

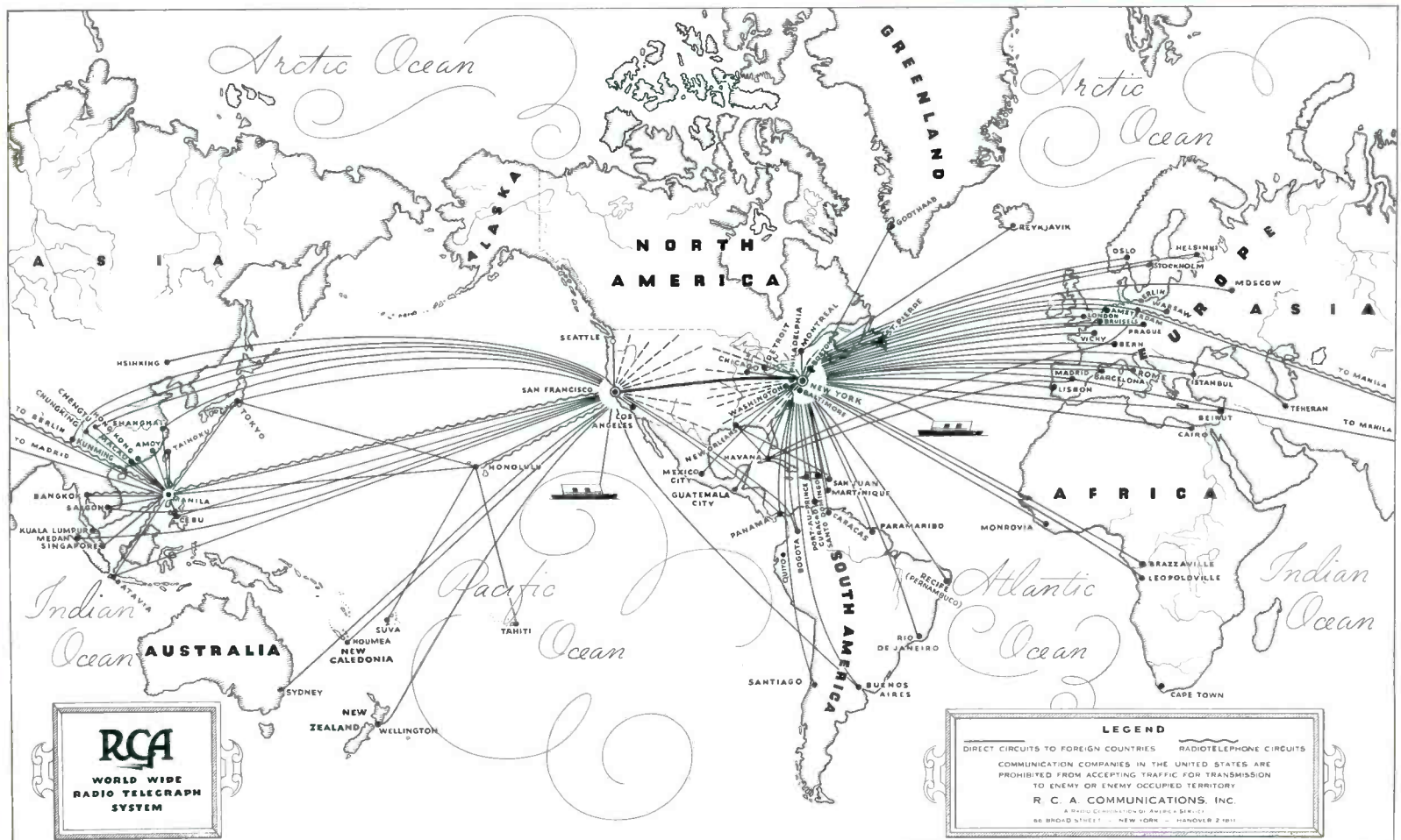
\*This includes investments in foreign subsidiaries, at an amount representing approximately 6.4% of RCA's total net assets. More than nine-tenths of the net assets of these foreign investments are located in Canada and Latin America.

NOTE: The Assets, Liabilities and Capital, as tabulated on this page, are merely a summary in simplified form of the Consolidated Balance Sheet of RCA on December 31, 1941. For complete facts and figures, please refer to the Annual Report of Radio Corporation of America for the year 1941.

RCA's change-over from civilian-radio to war production necessitated ripping out of machinery and replacement by new installations.



The job of wartime conversion completed, men and machines operate to "Beat the Promise" in RCA's production and delivery of apparatus to the armed services.



RCA radiotelegraph circuits help to make the United States the communication center of the world.

**What is RCA's role  
in the war?**

Radio is a powerful arm of modern warfare. RCA personnel, facilities and services are concentrated to the utmost to make the radio arm of the United States strong and efficient to help in every way possible to win the war.

Plants of RCA Manufacturing Company are "arsenals" of radio apparatus essential for successful conduct of the war by the military and naval forces of the United States and its allies. Geared for all-out wartime production, RCA is a bulwark of the nation's radio communication lines. The slogan all along the production lines is "Beat the Promise for Victory!"—that means production and delivery of equipment ahead of schedules. Work hours have been increased; speed of production accelerated.

Radiotelegraph circuits normally are operated by R.C.A. Communications, Inc., to fifty-one countries, providing the United States with an international web of communication. In wartime these circuits assure continued contact with outposts near and far regardless of enemy activity or control over intervening seas or territories.

In RCA Laboratories research and development are being expanded. Research fortifies the nation's radio communication. Under the impetus and demands of war, achievements of scientists are multiplied. In order that their inventions may help to open numerous sources of supply to Government and public, the inventions of RCA are made available to competing manufacturers by means of licenses.

In this war, which strikes directly at civilian populations, radio broadcasting, undeveloped in the first World War, now is a powerful factor. It is a voice of civilian defense. The National Broadcasting Company and the Blue Network Company—services of RCA—are keeping the people informed. The international short-wave beams of NBC are giant spearheads of truth that run-down rumors from abroad; that penetrate those areas of the world where facts are blacked out.

In wartime, ships go to sea as silent "phantoms" lest the enemy detect their whereabouts. Therefore, to every vessel radio is of double importance in wartime. The Radiomarine Corporation of America is helping to equip the Liberty Fleet with radio installations unsurpassed in efficiency. Through its specially designed marine apparatus, RCA is safeguarding life and property at sea; radio is an invisible guard of the convoy.

To operate the mighty radio communication system of this nation calls for manpower as well as kilowatts. RCA Institutes, the oldest radio training school of its kind in the United States, has war-radio as its No. 1 course in the New York and Chicago classrooms.



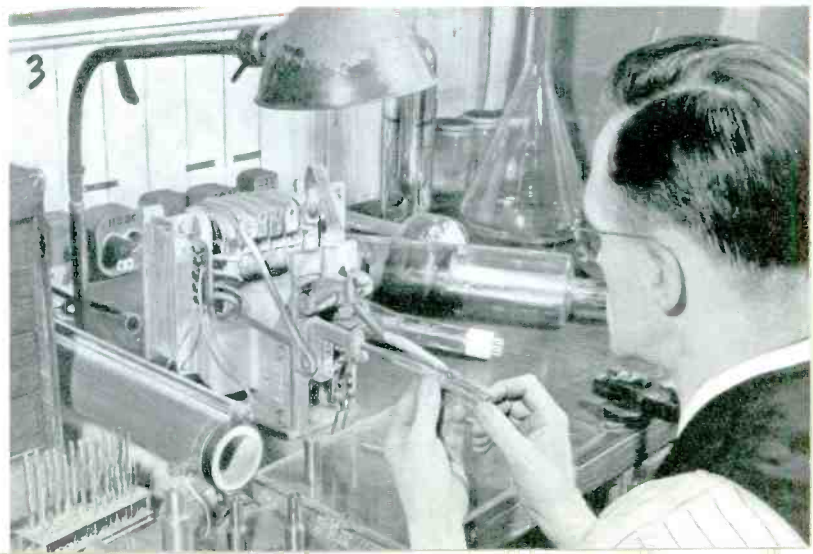
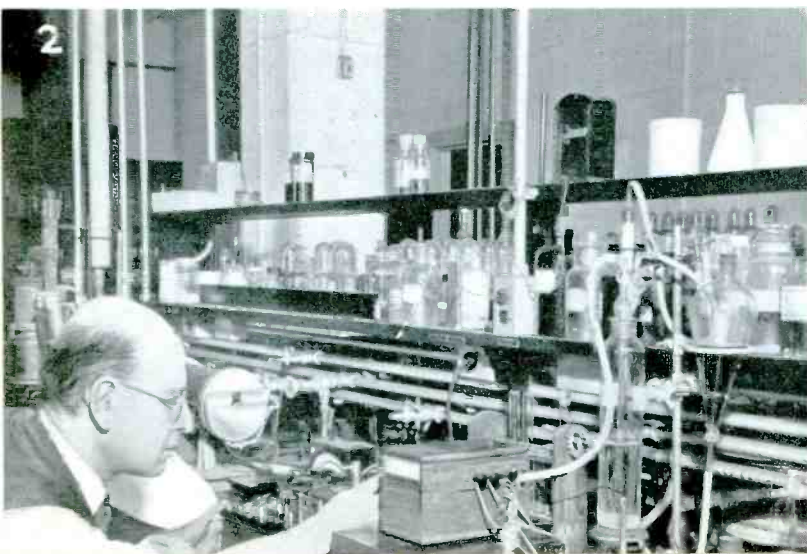
Construction of the new RCA Laboratories has been speeded to aid in radio and electronic research linked with the war program.



(1) The first RCA Laboratory, in 1919, was located in a tent at Riverhead, L. I., which became the site of RCA's "Radio Central" for world-wide communication.

(2) The chemical section of RCA Laboratories plays an important part in the development of electron tubes.

(3) Building an electron gun is a meticulous job for it is a delicate, yet powerful element in the "eye" of the television camera and receiver.





# RESEARCH **AND ENGINEERING**

**What is the policy of RCA toward scientific research?**

Since its formation, the Radio Corporation of America always has conducted progressive research. It recognizes research as the guarantee of continued progress. Research in radio is basic insurance for the future, for it assures steady growth and increased efficiency as well as successful competition. RCA research activities are centralized in new RCA Laboratories, designed to be the foremost center of radio and electronic research in the world.

•

**What is the purpose of RCA Laboratories?**

The primary aim of RCA Laboratories is to increase the usefulness of radio and electronics to the nation, to the public and to industry. The further objective is to discover the needs for, and to create new products, services and markets. Scientific investigations continuously conducted by RCA are directed toward constant improvement in methods and devices for every branch of radio and its production processes.

Scientists and engineers in the Laboratories have discovered keys of science that have unlocked the gateways of ethereal communication from international short-wave radio to television. It is through long years of tireless work in the laboratory, and in field tests conducted on a globe-girdling scale, that the utility of radio has been extended as a service to the American people. The horizons of these services are ever-widening. It is research that keeps the sphere of radio spinning in its orbit of technical progress.

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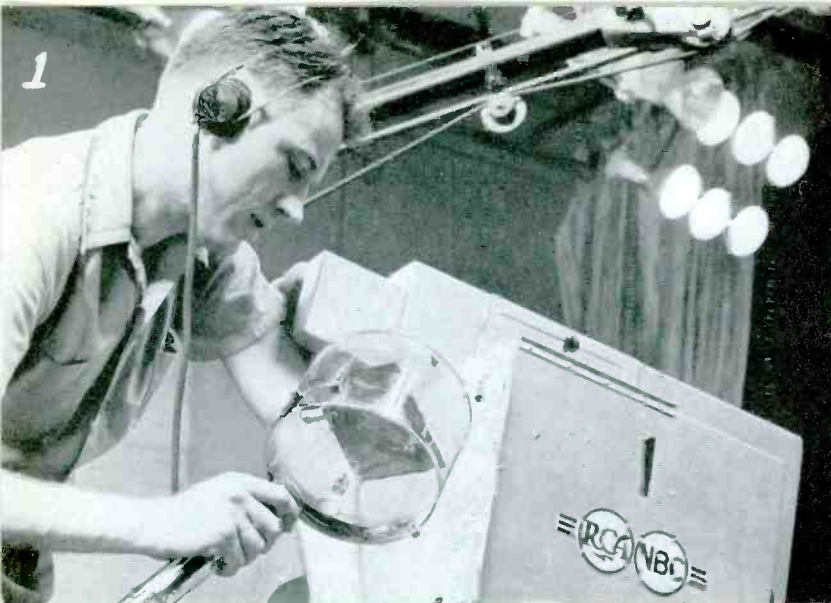
**Is RCA research confined to radio?**

Since modern radio is so closely allied with many branches of science such as electronics and optics, the practical application of inventions in radio leads naturally into related fields including acoustics and the general applications of sound. RCA research, therefore, continually is spreading. For example, as a result of research in television, RCA has developed extremely important "by-products." Investigations directed to the advance of radio are extending deeply into the fields of chemistry, physics and metallurgy, encompassing such studies as luminescent and fluorescent materials, glass, lenses and specialized work in plastics.

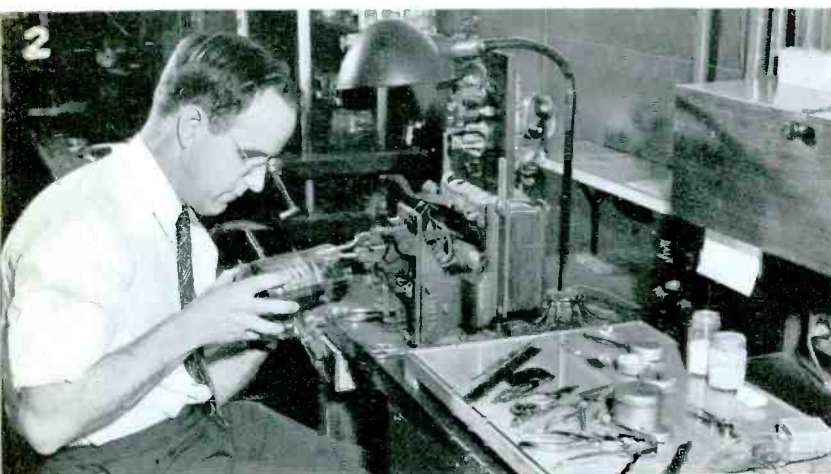
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**Does RCA make its inventions and patents available to other manufacturers?**

RCA has more than 150 patent licensees, competitive manufacturers in radio and other fields. Under the company's license policy numerous sources of supply are open to the Government and to the public. To assist its licensees, RCA Laboratories maintains an Industrial Service Section through which licensees are kept informed of new technical developments and are advised how best to apply them.



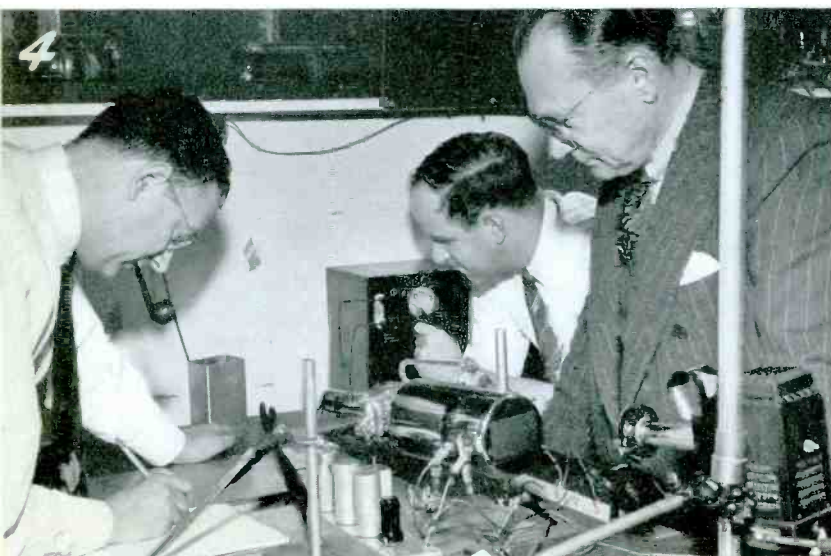
(1) The electronic eye of television, known as the iconoscope, is a development of RCA Laboratories.



(2) Electron tubes are continually under study in RCA Laboratories as keys to development of new products.



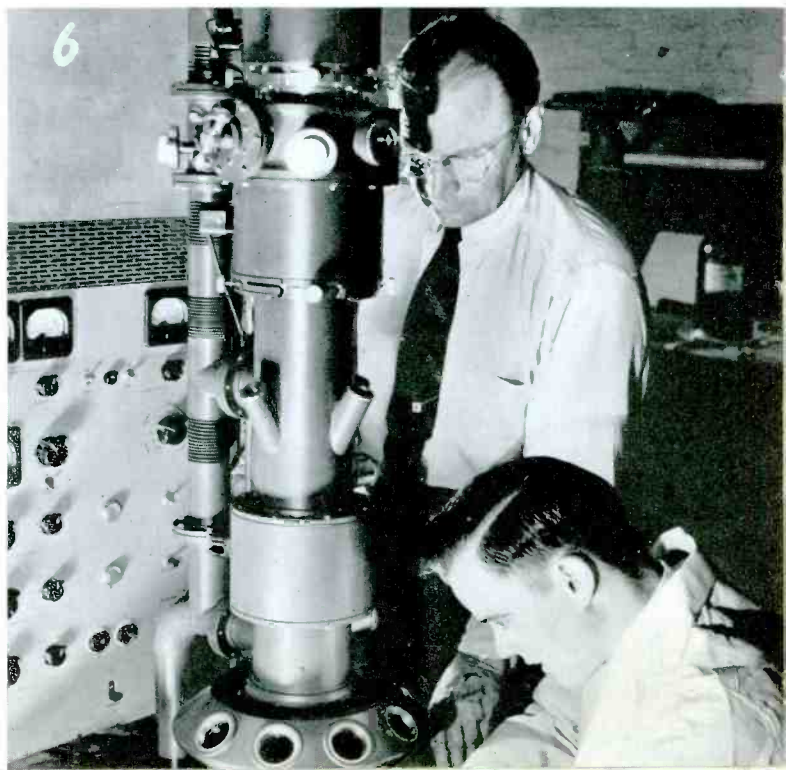
(3) David Sornoff explains the RCA Alert Receiver to Mayor LaGuardia, and shows how it operates as an instrument of civilian defense. It rings an alarm to summon listeners to their radios.



(4) Scientists in RCA Laboratories develop new vacuum tubes to harness electrons and open the way for future radio services.

(5) Radio facsimile receiver-printer developed in RCA Laboratories for reproducing a newspaper by radio in home or office, or shipboard or in a plane.

(6) The RCA Electron microscope, which can magnify up to 100,000 times, has opened the unseen, sub-microscopic world for exploration by the human eye.



**What are some of the outstanding developments of RCA research?**

RCA's pioneering work has made many of the foremost contributions to world-wide radio communications. High on the list of developments is the electronic system of high definition television, which makes radiovision all-electronic by dispensing with moving mechanical parts such as motors and revolving disks. Pursuing original investigations in ultra-high frequencies, new applications have been made in this spectrum of tiny waves, including uses in television and in automatic radio-relay stations. Sound being the backbone of radio, widespread research has been conducted with fruitful results in acoustics; also in recording and reproduction of sound, in domestic and international broadcasting, as well as in the motion picture and phonograph fields. Research in television, which led into the realm of electron optics, has brought numerous revolutionary developments, including the RCA electron microscope. Many types of vacuum tubes have been created for myriad uses in radio and industry. The electron multiplier tube, designed to convert a feeble light impulse into electricity and multiply its strength, is one of the most fascinating devices now in the hands of the scientist.

Research over the past twenty years equipped the United States with efficient radio for modern warfare and for aviation. Explorations in radio have pointed the way to useful developments applicable to other fields; for example, efforts in television research to find a way of eliminating reflections from glass, led to RCA's chemical process for making reflectionless glass, and the Magicote process that greatly increases the efficiency of lenses.

The RCA radiophoto system brings pictures in a few minutes over long distances, and when war created the need, RCA opened new circuits for reception of photographs from Russia and Australia when no other means of quick delivery were available to match radio's speed. Research made that possible. Facsimile transmission and reception multiplexed with sound is another RCA development. High-speed automatic sending and receiving machines, including automatic printers, now operate on the communication channels.



**What is the RCA electron microscope?**

As perfected in RCA Laboratories, the electron microscope is an epochal development in scientific instruments. Using electrons—infinitesimal bits of electricity—instead of rays of light, and magnetic or electrostatic fields instead of glass lenses, it enables the human eye to see deeply into the sub-microscopic world. Magnifications up to 100,000 diameters are obtainable. This instrument made it possible for the first time to photograph the tiny influenza virus and many other infinitesimal organisms, revealing their shape as well as size. The electron microscope used by science and industry, in laboratories, universities and hospitals is finding ever-increasing service. It is an instrument in the all-out war effort.

# PIONEERING

## What are some of the RCA "FIRSTS" in the Radio Field?

World-wide communication inaugurated by RCA in 1920 was greatly extended in 1921 with the opening of "Radio Central" on Long Island, featuring the 200-kilowatt Alexanderson alternators.

Dempsey-Carpentier fight on July 2, 1921, broadcast by RCA from Boyle's Thirty Acres in Jersey City, as the first world's heavyweight championship on the air.

High-speed transmitters and automatic receivers installed on ocean liners in 1923 to handle increased radio traffic.

Short waves applied in 1924 to RCA transatlantic communication featuring vacuum tubes rated at 20 kilowatts.

First radiophoto transmitted by RCA across the Atlantic was of Charles Evans Hughes, sent on July 6, 1924, from New York to London, where it was radioed back across the sea and recorded in New York.

Pictures of President Coolidge, Prince of Wales and others sent by RCA radio facsimile from London to New York on November 30, 1924.

First rebroadcast from London heard on February 14, 1925, through RCA's stations WJZ, New York, and WRC, Washington.

Broadcasting transmitters of RCA participated in 24 station hook-up handling Coolidge inaugural in 1925, first event of its kind on the air.

Initial international broadcast program transmitted from Chelmsford, England, picked up at Belfast, Maine, and relayed by short wave to New York, for rebroadcast by RCA's station WJZ, March 1925.

Radio facsimile messages, maps and pictures sent by RCA radiophoto system on May 7, 1925, from New York to Honolulu.

Picturegram of a check sent from London to New York by RCA radiophoto on April 20, 1926, was honored and cashed in New York.

Radio receiving sets and tubes designed for complete alternating current operation, introduced by RCA for home use in 1927.

World series broadcast for the first time by WJZ in October 1926.

National Broadcasting Company organized as a service of RCA on September 9, 1926, to conduct nationwide network broadcasting.

The Radiomarine Corporation of America—a service of RCA—was organized on December 31, 1927 to operate in the marine communication field.

R.C.A. Communications, Inc., organized January 3, 1929, to conduct RCA's international radio-telegraph service; many new circuits having been opened since organization of the Radio Corporation of America in 1919.

RCA communication circuits efficiently and expeditiously handled greatly increased volume of transatlantic traffic as earthquake on November 18, 1929, snapped 10 cables on bed of the North Atlantic.

Television on a 6x8 foot screen shown by RCA on January 16, 1930, at RKO Proctors 58th Street Theatre, New York; pictures transmitted from station W2XBS, 411 Fifth Avenue.

New noiseless system of recording introduced to the motion picture industry by RCA in 1931; also a low-cost sound-picture producer for alternating current operation.

Empire State Building selected in June, 1931, as site for RCA-NBC television station for experimental field tests.

Self-contained, portable ultra-high frequency knapsack transmitter built by RCA in 1932 for use in broadcasts of outdoor events and for military scouts in the field.

Electron multiplier tube developed by RCA Laboratories demonstrated in 1935, multiplies amplification hundreds of thousands of times within a single tube.

Automatic SOS alarm for use on vessels not having a radio operator on constant watch, introduced by RCA in 1935.

First ultra-high frequency automatic relay circuit opened by RCA in 1936, between New York and Philadelphia, transmits simultaneously facsimile and multiple radiotelegraph messages.

Television outdoors demonstrated by RCA on April 24, 1936, at Camden, N. J.

Electron projection "gun" demonstrated on May 12, 1937, by RCA engineers at I.R.E. Convention, projected television pictures on screen 8 by 10 feet.

Testing the range of ultra-short wave television signals, RCA experiment in plane 20,000 feet over Washington, D. C., picked up pictures from NBC studios in Radio City, on October 17, 1939.

First full-size symphony orchestra organized exclusively for broadcasting introduced by NBC under Arturo Toscanini, conductor, in 1937.

Mobile television station of RCA-NBC appeared on streets of New York for first time, December, 1937.

RCA announced on October 20, 1938, at Radio Manufacturers Association meeting, that television sets would be offered to the public in April 1939 as a feature of the New York World's Fair.

Opening ceremonies on April 30, 1939, of New York World's Fair televised by RCA-NBC, including President Roosevelt as first Chief Executive to be seen on television.

Columbia-Princeton baseball game of May 17, 1939, televised by RCA-NBC as "a first from the diamond."

Improved television "eye" called the "Orthicon" introduced by RCA on June 7, 1939, to give greater clarity and depth to television pictures.

First college football game, Fordham-Waynesburg, televised by RCA-NBC on September 30, 1939.

Portable television equipment demonstrated to FCC by RCA on December 1, 1939, dispensed with motor truck mobile stations.

Dr. V. K. Zworykin of RCA Laboratories, in December 1939, at the annual meeting of the American Association for the Advancement of Science, announced that he was working on the development of an electron microscope; in April 1940 he announced the completion of the instrument which has attained magnifications up to 100,000 diameters, thus opening the sub-microscopic world for exploration.

Color television demonstrated to Federal Communications Commission by RCA on February 6, 1940, at Camden, N. J.

Television on 4½ by 6-foot screen demonstrated by RCA at stockholders meeting on May 7, 1940.

Election returns on November 5, 1940, telecast for the first time as RCA-NBC showed teletypes of press associations reporting the news, as well as commentators at the microphones.

Television progress demonstrated to FCC on January 24, 1941, included: home-television receiver with 13½ by 18" translucent screen; television pictures 15 by 20 feet at New Yorker Theatre screen; pictures relayed by radio from Camp Upton, L. I., to New York; also facsimile multiplexed with frequency modulation sound broadcast.

Large-screen television featuring Overlin-Soose prize fight on May 9, 1941, at Madison Square Garden, demonstrated by RCA at New Yorker Theatre; also on following days, baseball games from Ebbets Field, Brooklyn.

Radiophotos, the first ever received in New York from Moscow, picked up by RCA on July 8, 1941, were printed the next morning in newspapers throughout the country.

RCA Alert Receiver turned on and off by a special signal from broadcast transmitter, rings bell, lights electric lamp or blows siren to summon listeners, demonstrated on July 28, 1941, for use in civilian defense.

Ground broken on August 8, 1941, for new RCA Laboratories at Princeton, N. J., to be the foremost center of radio and electronic research in the world; cornerstone laid on November 15, 1941.

RCA electron microscope at the University of Pennsylvania magnified the influenza virus 65,000 times, making possible the first photograph ever taken of the virus, as announced on November 22, 1941.

# BROADCASTING

**How did the idea of broadcasting as a public service originate?**

In 1916, David Sarnoff, then Assistant Traffic Manager of the Marconi Wireless Telegraph Company of America, proposed a "radio music box," in a memorandum to E. J. Nally, General Manager. Said Mr. Sarnoff: "I have in mind a plan of development which would make radio a household utility in the same sense as a piano or phonograph. The idea is to bring music into the house by wireless. . . . For example, a radio telephone transmitter having a range of say 25 to 50 miles can be installed at a fixed point where instrumental or vocal music or both are produced. . . . The receiver can be designed in the form of a simple 'radio music box' and arranged for several different wave lengths, which should be changeable with the throwing of a single switch or pressing of a single button. . . . The same principle can be extended to numerous other fields—as for example—receiving lectures at home which can be made perfectly audible; also events of national importance can be simultaneously announced and received. Baseball scores can be transmitted in the air by the use of one set installed at the Polo Grounds. The same would be true of other cities. This proposition would be especially interesting to farmers and others living in outlying districts removed from cities. By the purchase of a 'radio music box' they could enjoy concerts, lectures, music, recitals, etc. which may be going on in the nearest city within their radius. . . . Should this plan materialize, it would seem reasonable to expect sales of 1,000,000 'radio music boxes' within a period of three years."

The World War delayed demonstration of the practical value of the idea, but on November 2, 1920, when the Westinghouse station, KDKA, Pittsburgh, broadcast the Harding-Cox election returns, the "radio music box" became front-page news; and again in 1921, when RCA station WJY broadcast the Dempsey-Carpentier championship fight at Jersey City.

**When did RCA enter the broadcasting field?**

RCA's station WDY, at Roselle Park, New Jersey, licensed September 19, 1921, went on the air December 14, 1921, as a pioneer broadcaster in the New York area.

**How long has the National Broadcasting Company been on the air?**

In September 1926, the National Broadcasting Company was organized as a service of RCA. At that time statistics indicated 5,000,000 homes were equipped with radio, and to serve them the aim of the NBC was "to provide the best programs available for broadcasting."

To accomplish this NBC had two stations in New York. WJZ, originally operated by the Westinghouse Electric & Manufacturing Company at Newark, N. J., had been acquired by RCA in 1923 when the station was moved to New York City atop Aeolian Hall on 42nd Street. Station WEAJ, New York, was purchased by RCA in 1926 from the American Telephone and Telegraph Company.

**Did NBC always operate two networks?**

After NBC formed the Red network in 1926, with WEAF, New York, as the key station, it became apparent that a single network service was not enough to satisfy the demands of the radio audience for diversified programs of national interest and importance. Station owners, particularly in cities where their competitors had made program service arrangements with the Red network, pressed for network affiliations. To accommodate this demand and the public interest, less than two months after the first NBC network service began, a second network—the Blue—with WJZ, New York, as the key station, was formed.

NBC for 15 years operated these two networks. The Blue network was organized as a separate company on January 9, 1942, becoming a wholly-owned subsidiary of RCA.

•

**Where are the NBC and Blue Network Studios located?**

Main offices and studios of the National Broadcasting Company and the Blue Network Company are located in the RCA Building, New York City. They also have offices and studios in Chicago, Illinois; Hollywood, California; and Washington, D. C.

•

**How many stations are affiliated with the NBC network?**

137 stations are affiliated with NBC. Six stations are owned by NBC. They are: WEAF, New York; WRC, Washington; WTAM, Cleveland; WMAQ, Chicago; KOA, Denver; KPO, San Francisco.

•

**How many stations are on the Blue Network?**

127 stations are affiliated with the Blue Network Company. It owns three stations: WJZ, New York; WENR, Chicago; KGO, San Francisco.

•

**What percentage of NBC and Blue Network program hours are sponsored?**

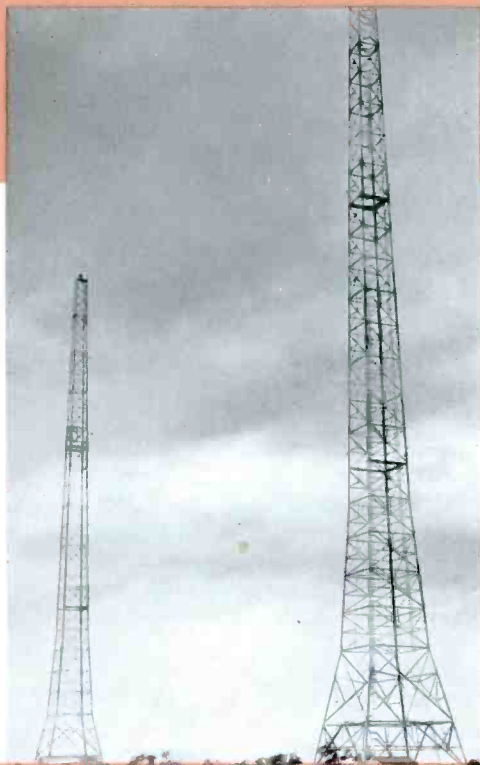
Approximately 30%; the remaining 70% are presented at the expense of the Companies themselves. For example, several of the outstanding sustaining programs—those which are not commercially sponsored—are the Farm and Home Hour, America's Town Meeting of the Air, the NBC Symphony Orchestra, Music Appreciation Concerts directed by Walter Damrosch, the University of Chicago Roundtable, the National Radio Forum, various religious and educational programs as well as numerous patriotic broadcasts.



While the great liner S.S. Lafayette (Normandie) burned, NBC rushed its portable pack broadcast transmitter to the scene, for a description by announcer Graham McNamee.



Millions of guests have passed through this entrance to NBC's studios at Radio City to watch the broadcast entertainers in action at the microphones.



From these lofty towers on Long Island, WEF's programs are broadcast.



Niles Trammell, President of the National Broadcasting Company.

The master control board of NBC is a central point where stations scattered across the country are linked with Radio City to form a nationwide network.







The international division of NBC is staffed by linguists and those who handle thousands of letters received from all parts of the world.



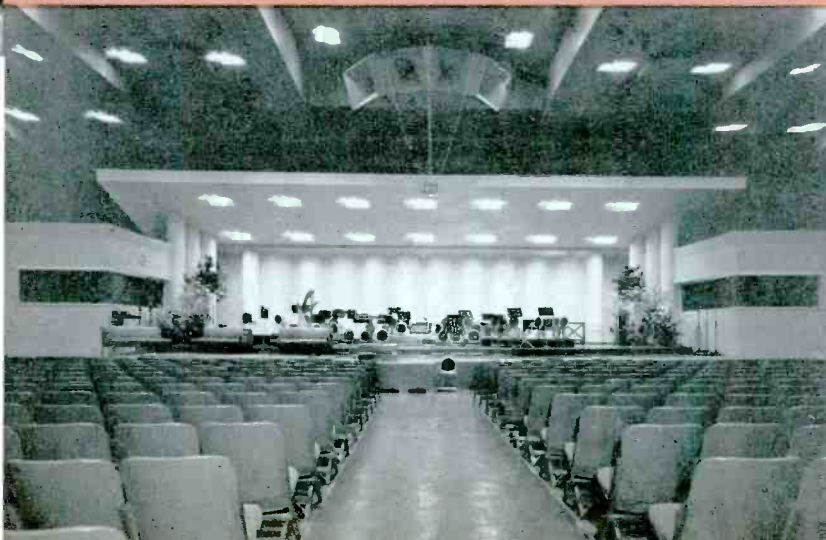
From the NBC news room, the announcer calls in the radio correspondents overseas to comment on the day's events.



Mark Woods, President of the Blue Network Company, Inc.



British refugee children in a two-way chat with their parents in England, get a thrill of a life-time at Radio City.



The new stage, band-stand and seating arrangement of NBC's studio 8-H, largest in the world, at Radio City.

**Does NBC broadcast by short-wave to foreign countries?**

The NBC, through its International Division, broadcasts programs in ten languages by short wave to all parts of the world, 20 hours a day, through its 50,000-watt transmitters WRCA-WNBI, Bound Brook, N. J. The broadcasts of these stations are supplemented by arrangements with the equally powerful WBOS, Boston, to carry NBC short-wave programs.

•

**Are short-wave broadcasts heard everywhere?**

This depends on the aerial and the frequency (wavelength) used for transmission. Broadcasts from non-directional aerials can be heard over widely scattered areas. However, in short-wave broadcasting on an international scale, the modern practice is to use a highly directional aerial which concentrates and multiplies the signal output in a pre-determined direction, in much the same way that a searchlight casts its beam. Certain frequencies are excellent for day-time transmission but totally ineffective at night. Other frequencies are best adapted to the twilight periods, and still others are satisfactory only at night.

•

**What languages does NBC use in international short-wave broadcasting?**

During the daytime NBC, fitting its schedules to the various time zones of the world, transmits to Europe in English, French, Spanish, Greek, German, Italian, Portuguese, Swedish, Danish and Turkish. After 5 P.M., EWT. NBC transfers its aerial to Latin America and broadcasts in Spanish, Portuguese and English.

The international announcers are carefully chosen by exacting voice tests and for their ability to translate English into foreign languages.

•

**Are there any radio networks in Latin America?**

Yes, several countries such as Cuba, Mexico, Chile, Argentina, Uruguay, Venezuela, Colombia and Brazil have local networks that operate along the same lines as networks in the United States. To enable Pan-American stations to rebroadcast NBC short-wave programs, arrangements have been made with more than 100 stations south of the Rio Grande to pick up the programs beamed to all of Latin America.

•

**Does the NBC International Division accept commercial programs?**

Yes, NBC has been operating commercially on short waves for more than two years. A number of American companies sponsor regular short-wave programs from New York. In addition, since the war began, many sponsors also send their standard broadcast programs on short waves as entertainment for America's armed forces abroad.

# BROADCASTING

**Do listeners in Europe hear NBC's short-wave programs?**

Letters from many parts of the world, including the conquered countries, express appreciation for NBC short-wave broadcasts and for the accurate news and truth which they carry. They applaud the fact that freedom rides these short-wave radio beams from the United States.

**What is the NBC Advisory Council?**

The NBC Advisory Council, composed of distinguished persons representing a diversity of public interests, first met in February 1927 to help NBC formulate policies and create standards which would give the American listening public, without charge, "the best programs available for broadcasting in the United States."

Membership of the Council now includes:

**Dr. James Rowland Angell**  
*President Emeritus of Yale University  
and now Educational Counselor to NBC*

**John W. Davis**  
*Attorney and former U. S. Ambassador  
to the Court of St. James's*

**Mrs. August Belmont**  
*Prominent in social and  
philanthropic work*

**Dr. Francis D. Farrell**  
*President, Kansas State College*

**Henry Sloane Coffin**  
*President, Union Theological  
Seminary*

**William Green**  
*President, American Federation  
of Labor*

**Ada Comstock**  
*President, Radcliffe College*

**Major General James G. Harbord**  
*Chairman of the Board, Radio Corpor-  
ation of America, and Director, NBC*

**Dr. Karl T. Compton**  
*President, Massachusetts Institute  
of Technology*

**David Sarnoff**  
*President, RCA, and Chairman  
of the Board, NBC*

**Dr. Walter Damrosch**  
*Music Counsel of NBC*

**Alfred E. Smith**  
*Former Governor of New York*

**Owen D. Young**  
*Chairman of the NBC Advisory Coun-  
cil and former Chairman of the Board,  
Radio Corporation of America*

**Do NBC and the Blue Network conduct auditions to find new talent, and if so, how does one arrange for an audition?**

Yes; NBC and the Blue Network Company will give an audition to any person who believes he has talent that will qualify him for broadcasting. They conduct several thousand auditions a year, on an average of 50 a week in the dramatic field alone. Applications should be made to the Auditions Department.



The NBC Symphony Orchestra with Dr. Leopold Stokowski on the conductor's stand.



War has made news parallel in importance to entertainment on the air.

Choral singers lift their voices on high through the NBC microphone.

One of NBC's newest studios as viewed from the stage.



**If one has an idea for a radio script or program, how may it be presented for consideration?**

NBC and the Blue Network Company welcome new ideas for radio programs, as well as criticism. All program ideas must be submitted in writing on forms which may be obtained from the Program Department. They will not be accepted orally. Program ideas are handled by the Play-Reading Committee of the Script Division.

•

**How can tickets be obtained for admission to broadcast programs?**

By writing at least two weeks in advance to the Guest Relations Division of NBC or the Blue Network. Cards of admission, if available, will be supplied.

•

**Where do NBC and the Blue Network get their news bulletins?**

From the leading press associations. The Associated Press, United Press and International News Service have teletype machines in the News Divisions of both NBC and the Blue Network, and make their latest news available for broadcast bulletin service.

•

**Are all NBC and Blue Network overseas commentators American citizens?**

Yes; all NBC and Blue Network correspondents in foreign countries are American citizens.

•

**Did NBC have a coast-to-coast network when it started?**

No; there was no coast-to-coast network until January 1, 1927, when the first transcontinental hook-up was arranged by NBC to broadcast a football game in the Bowl of Roses at Pasadena, Cal.

•

**What was the first international broadcast?**

In March 1924, station WJZ, New York, rebroadcast a program sent on a long wave (1,600 meters) from Chelmsford, England, to Belfast, Maine, for relay by short waves to WJZ. In March 1925, WJZ, New York, and WRC, Washington, rebroadcast the sound of Big Ben atop the House of Parliament for the first time in America.

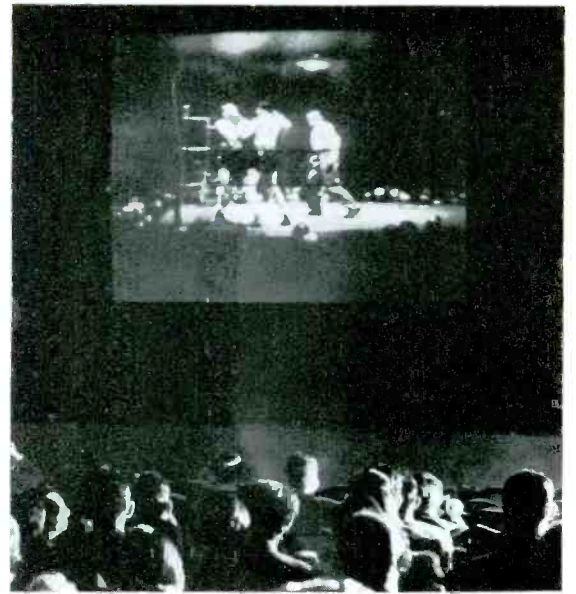
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**Is NBC active in "FM" broadcasting?**

Yes; at the present time NBC is furnishing its network programs to five FM transmitters operated experimentally by associated network stations, as well as to its own FM station, W2XWG, New York.



Air-raid wardens in New York watching a lecture demonstration through an RCA television receiver.



Theatre television developed by RCA and demonstrated in the New Yorker Theatre featured a bout at Madison Square Garden.

Under the eye of the NBC television camera, how to fight incendiary bombs is demonstrated to air-raid wardens.



1,250 feet above the sidewalks of New York, NBC television programs take wing from this modernistic antenna atop the Empire State Bldg.



Mobile television vans of RCA-NBC make it possible to televize football, baseball and other outdoor events.



# TELEVISION

**When did RCA start work on television?**

All of RCA's activities in research and communications naturally led to television, and in 1925 definite steps were under way in the laboratory to test the possibilities of both mechanical and electronic television as a service to the public. The Iconoscope, which is the "eye" of the television camera, was invented by Dr. V. K. Zworykin, Associate Director of RCA Laboratories. The Kinescope, which serves as the "screen" of home-television sets, also was developed by Dr. Zworykin, who publicly demonstrated the electronic system of television based upon these developments in November 1929.

**Does RCA operate television as a service to the public?**

Yes; WNBT, New York's pioneer television station, with studios in the RCA Building at Radio City, is owned and operated by NBC—a service of RCA. The transmitter and aerial are atop the Empire State Building. Extensive television field tests were instituted by NBC from the Empire State Building transmitter on June 29, 1936. Since that date NBC, in cooperation with RCA engineers, has demonstrated various steps in the development of television apparatus, programs as a service to the public, and television in color.

On June 16, 1941, applications were filed by NBC with the FCC for licenses to operate commercial television stations in New York, Philadelphia and Washington. Commercial operation of television was authorized by the FCC to begin July 1, 1941, at which time WNBT went on the air as the pioneer commercial television station. Since the United States entered the war, the station has devoted much of its time to air-raid warden instructions, through the NBC's cooperation with the New York Police Department.

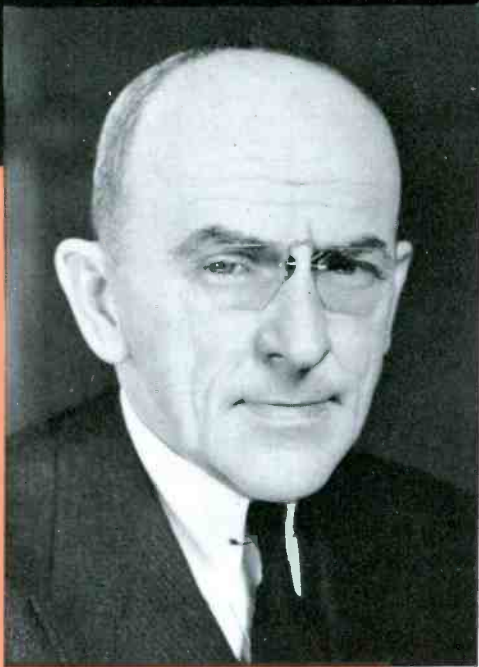
**Why are ultra short-waves used for television?**

Because only the ultra short-wave spectrum makes available the wide path needed for transmission of pictures in motion. It has the added advantages of minimum fading and freedom from static.

**What is the difference between radio facsimile and television?**

Facsimile is the process of transmitting still pictures or printed matter by radio and recording the subject on paper at the receiving end. The radiophotos published in newspapers are sent by a facsimile process, which is extremely rapid, though not instantaneous.

Television is transmission and instantaneous reception of both sound and sight. The images may be moving persons or scenes, which are reproduced in motion on a lighted screen. Motion pictures also can be transmitted by television.



In wartime, RCA manufacturing plants work night and day in production of radio equipment for America's armed forces on land, sea and in the air.

← George K. Throckmorton, Chairman of the Executive Committee, RCA Manufacturing Co.

Robert Shannon, President, RCA Manufacturing Company. →



Symbolic of their efforts to "Beat the Promise", in war-time production, workers in the RCA Manufacturing plant rally to form the "B".



From this biscuit compound of black "dough", in less than a minute after the operator presses a button, a new Victor record will be made at the RCA plant.





# MANUFACTURING

## **When was the RCA Manufacturing Company organized?**

When RCA was formed its primary activity was in transoceanic and marine communications. Agreements were made whereby the General Electric Company and Westinghouse Electric & Mfg. Co. would manufacture the radio products and RCA would sell them. So rapid were the developments and changes in the newly created art and industry that by 1929 it became necessary for RCA so to organize its business that it could combine manufacture with sales under unified management. RCA at that time had no manufacturing rights or manufacturing facilities. Coupled with this fact, it became evident that radio and the phonograph were by nature complementary in the home entertainment field, with a common future.

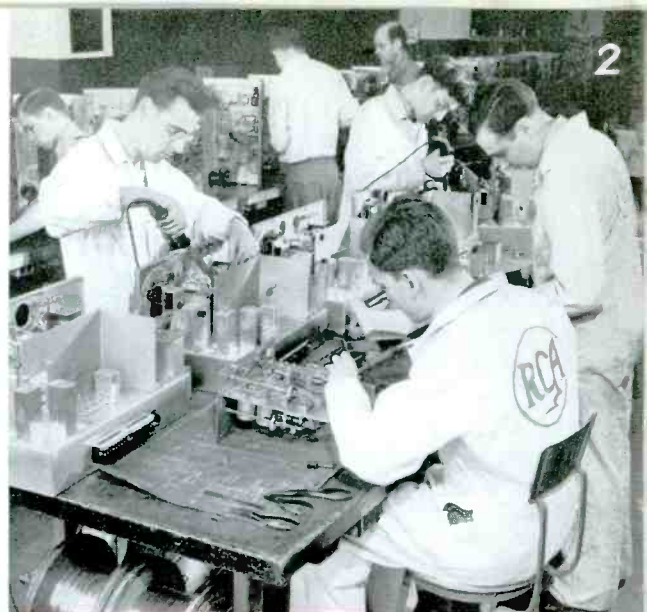
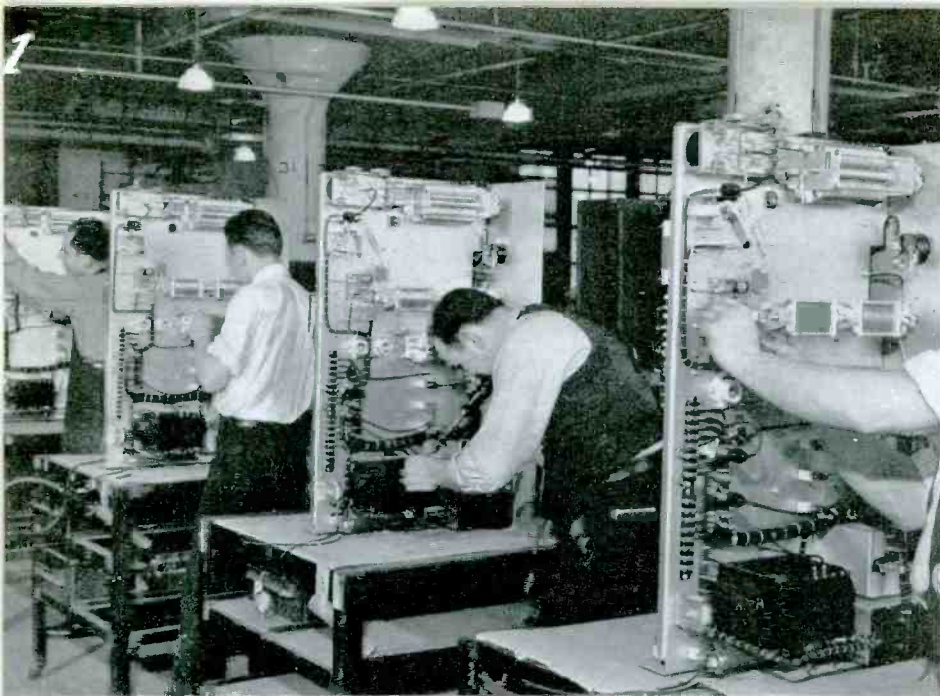
Therefore, to obtain manufacturing facilities as well as an established phonograph and record business, RCA in 1929 acquired the Victor Talking Machine Company. Arrangements were made near the end of 1932 whereby RCA acquired manufacturing rights and radio manufacturing facilities from the General Electric and Westinghouse Companies. RCA's manufacturing activities may therefore be said to date from 1933, although it was not until the latter part of 1934 that the various units engaged in the manufacture and sale of RCA products were brought together under unified management in the RCA Manufacturing Company, a newly formed, wholly-owned subsidiary of RCA.

## **What are the products of the RCA Manufacturing Company?**

War shifted manufacturing in RCA plants from a commercial to a wartime basis. Production of apparatus for the armed services has the right of way. Many of the principal products of normal times, as listed below, have been discontinued or sharply restricted because of the war.

Apparatus and technical services for the United States Government  
RCA Victor and RCA Radiola Receivers  
RCA Victrolas (radio-phonographs)  
Radio and Electronic Tubes  
Broadcasting Transmitters and Studio Equipment including microphones, control panels, etc.  
Television Receivers, Transmitters and Studio Equipment  
Equipment for Radio Communication and Facsimile Systems  
Aircraft and Airport Radio Equipment

Police Radio Systems  
Aviation Radio Systems  
Radio Laboratory and Test Equipment  
Victor and Bluebird Records  
Photophone Sound Equipment for Motion Picture Studios and Theatres  
Sound Systems for Educational and Industrial Uses  
16 mm. Motion Picture Projectors for School and Home  
Equipment for Amateur Stations  
Electron Microscopes



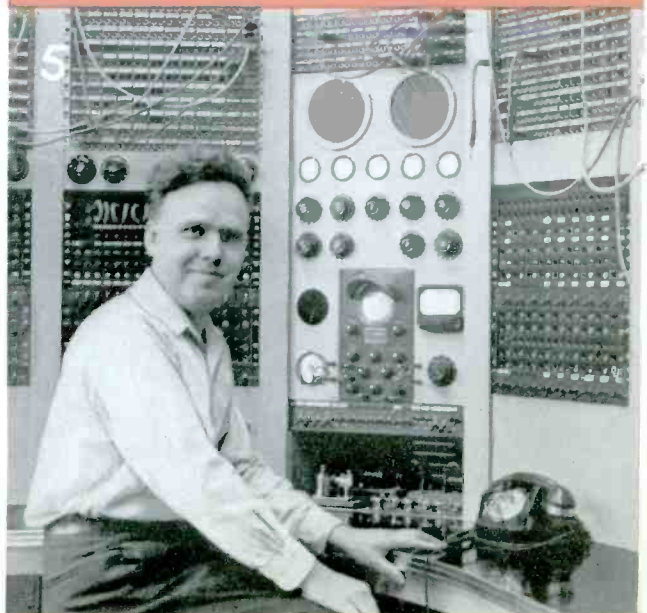
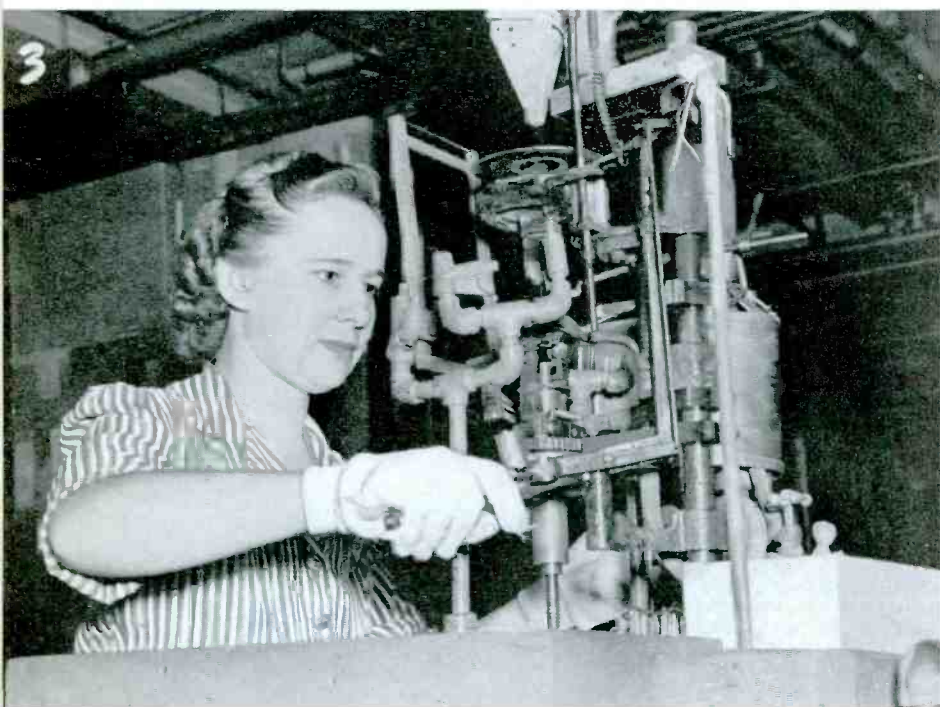
(1) Radio transmitters on the RCA assembly line.

(2) Following the blueprints, RCA technicians build marine radio sets designed to withstand the rigors of the sea.

(3) Through skilled hands and machinery, thousands of RCA tubes daily find their way into production for wartime service in radio and industrial fields.

(4) Delicate, precision radio-tube assembly in the RCA Manufacturing plant is done to the tune of music; note the overhead loudspeakers.

(5) Through this unique radio switchboard, at Rocky Point, L. I., as many as 12 different long-distance radiotelegraph transmitters can be controlled over a single pair of wires from RCA's operating terminal in New York.



**Where are RCA manufacturing plants located?**

RCA Manufacturing Company, Inc., has six plants. Two are located in New Jersey, two in Indiana, one in Pennsylvania, and one in California.

The company owns foreign subsidiary manufacturing companies with plants located in Montreal, Canada; Mexico City, Mexico; Buenos Aires, Argentina; Rio de Janeiro, Brazil; and Santiago, Chile.

•

**Has the war curtailed the manufacture of home-radio sets?**

The RCA Manufacturing Company, following the outbreak of the war in Europe in September 1939, planned and instituted a program of conversion of plant, machinery and man-power from a commercial to a war production basis.

The War Production Board, on March 7, 1942, ordered that the manufacture of radio sets and phonographs for civilian use be discontinued after April 22, so that the fifty-five manufacturers in the industry could devote their plants to war production; chiefly, radio apparatus for the Army and Navy.

•

**Does RCA make phonograph records?**

Since 1901, the RCA Manufacturing Company and its predecessor in the phonograph field — the Victor Talking Machine Company — have been recognized as leaders in the technical development and commercial expansion of sound recording and reproduction for the home. Victor developed the phonograph as a musical instrument and introduced it into millions of homes. RCA Victor, drawing on the new-found knowledge of radio research, modernized the instrument and the art of electrical recording to a high state of perfection.

The company has contributed immeasurably to the public's acceptance of recordings by its long established policy of presenting the works of distinguished artists and musical groups, from Caruso to Toscanini and the NBC Symphony Orchestra. Another important factor has been the presentation of popular music on Blue Bird Records.

•

**Where can I buy an RCA radio?**

In normal times, RCA radios, tubes and phonograph records are sold by retail merchants in every important city and town in the country.

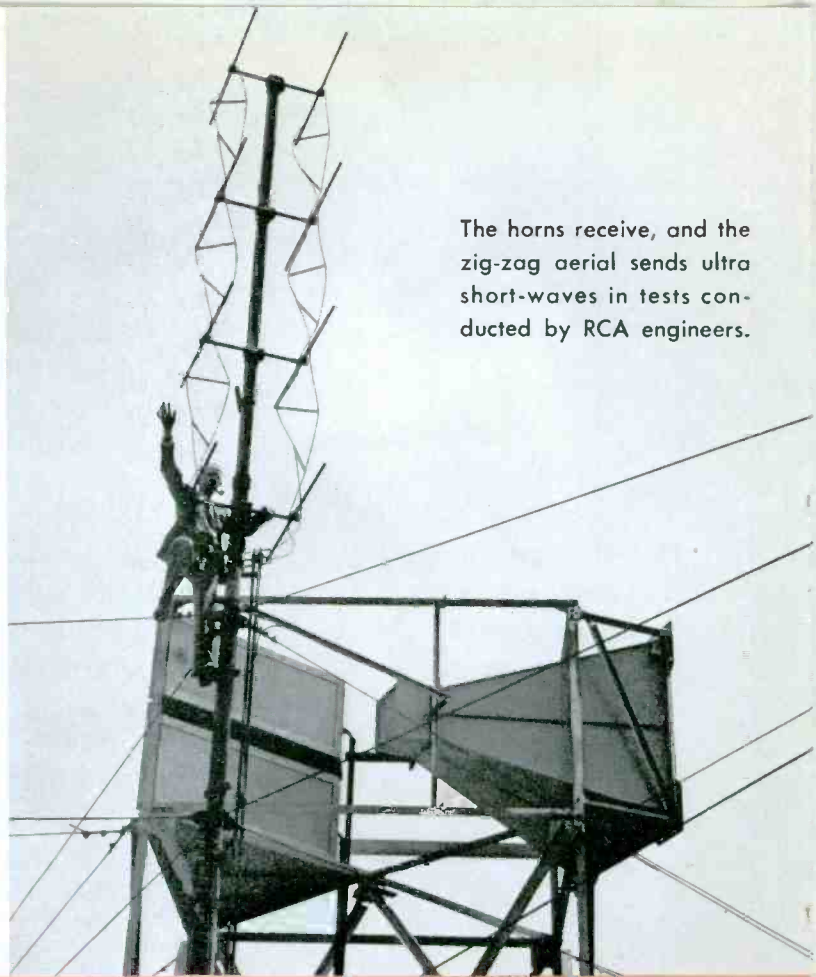
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**What is RCA Photophone?**

RCA Photophone is a perfected method of recording and reproducing sound on film. Today, Photophone equipment is used in theatres throughout the world. RCA Laboratories has pioneered in development of many technical improvements in motion-picture sound. Among the most recent of these is "Fantasound," featured in the production of Walt Disney's "Fantasia," and "Panoramic" sound used in theatre television.



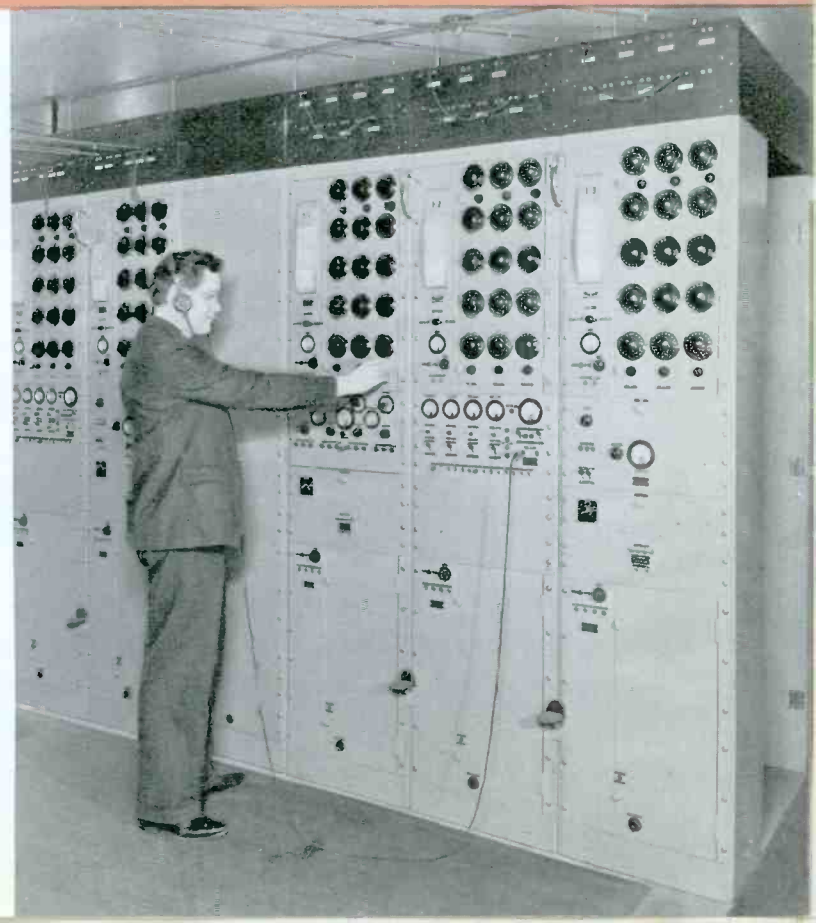
William A. Winterbottom  
Vice-President and General Manager  
of R.C.A. Communications, Inc.



The horns receive, and the zig-zag aerial sends ultra short-waves in tests conducted by RCA engineers.

Along RCA's radio runway to South America automatic sending machines and tape receivers handle the traffic at high speed.

Diversity short-wave receivers, an RCA development installed at "Radio Central's" receiving outpost at Riverhead, Long Island, are a great boon to international reception.



# COMMUNICATIONS

**What is R.C.A. Communications, Inc.?**

Following its organization in 1919, the Radio Corporation of America promptly undertook the task of establishing an all-American, world-wide radiotelegraph system. RCA's international communication service, therefore, was one of its first activities. By 1929 the system had become so extensive that on January 3, R.C.A. Communications, Inc., became a separate company instead of a department of RCA. It is, however, wholly-owned by the Radio Corporation of America and is engaged primarily in international and inter-city message (Radiogram) communication as a service to the public.

•

**What is the extent of RCAC radiotelegraph service?**

Direct radiotelegraph circuits with 51 countries normally are operated by RCAC. While the war has caused temporary suspension of communication on several of the circuits, it also has resulted in important extensions. Through the available circuits Radiograms may be delivered directly or forwarded by relay to practically any place in the world.

•

**Where are RCAC's main transmitting and receiving stations?**

RCAC's main "Radio Central" is located on Long Island, with the receiving station at Riverhead and the transmitters at Rocky Point. Supplementary transmitting stations are located at New Brunswick, and Tuckerton, N. J., and Marion, Mass. All are directly linked with New York and are operated by remote control from the company's headquarters at 64 Broad Street. Messages received at Riverhead are relayed automatically to the message center in New York.

The main office of RCAC on the Pacific Coast is in San Francisco. The transmitting and receiving stations are located respectively at Bolinas and Point Reyes, Cal.

•

**Can radiotelegraph messages be sent to cities within the United States?**

Yes, RCAC maintains a domestic radiotelegraph service linking 12 important cities: New York, Boston, Baltimore, Camden, Chicago, Detroit, Los Angeles, New Orleans, Philadelphia, San Francisco, Seattle and Washington, D. C.

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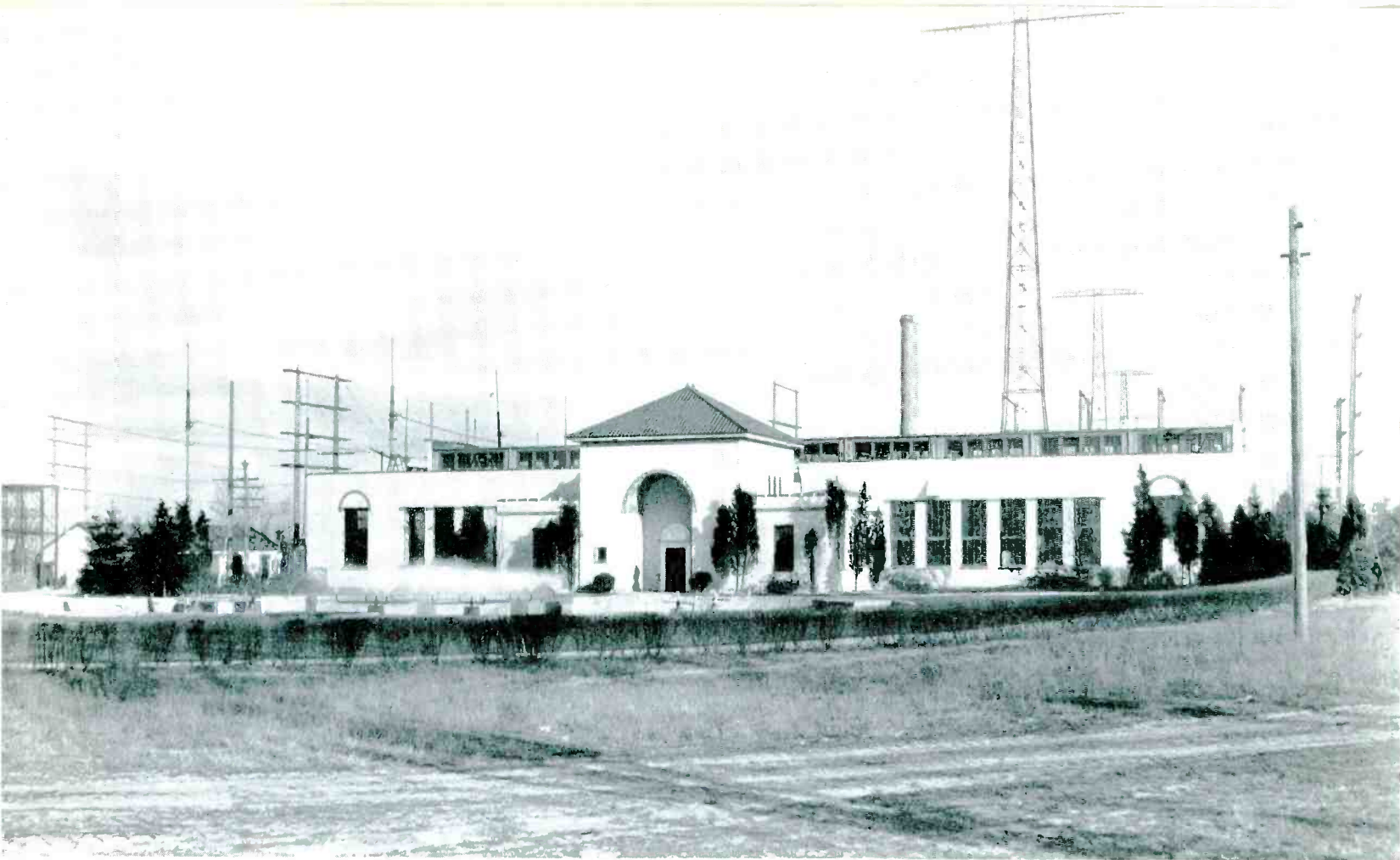
**How does one send a Radiogram?**

Radiograms to foreign lands or to domestic cities served by RCA may be filed at RCAC offices in 12 cities in the United States. (See above question.) Radiograms may also be filed at or telephoned to any Western Union office, and in such cases the messages should be marked "Via RCA," for which routing there is no extra charge.

•

**Does the war impose restrictions on the use of RCAC services?**

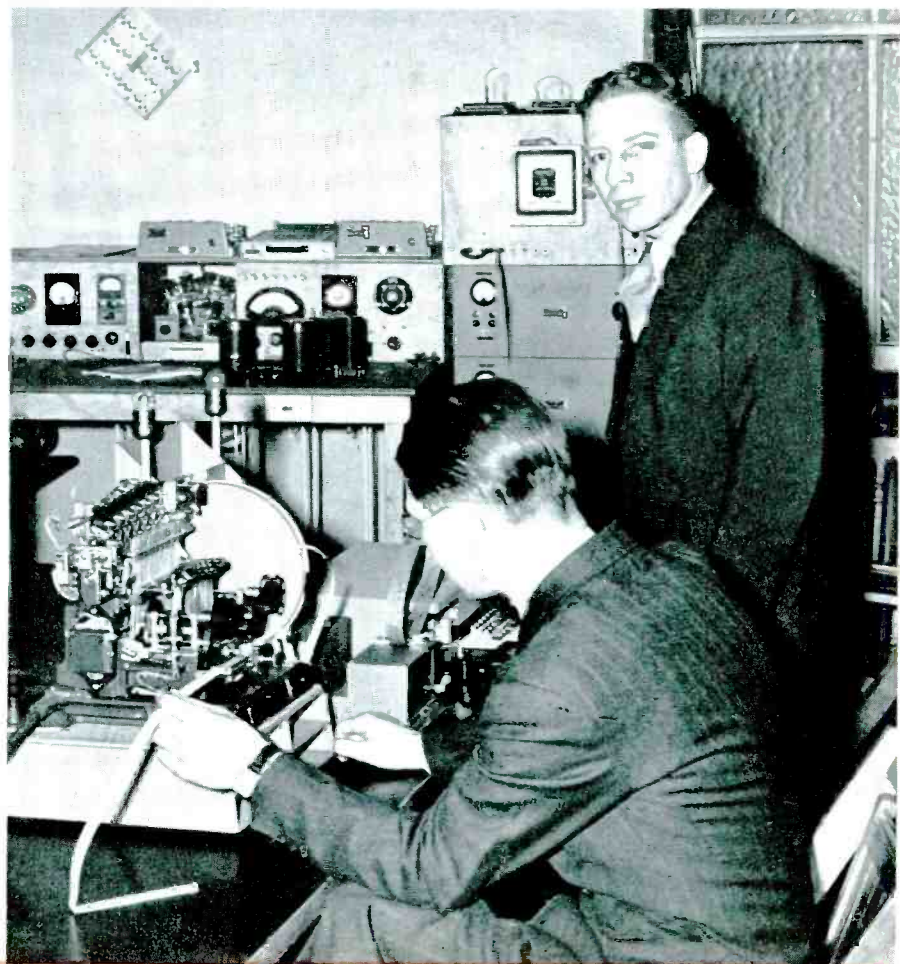
Yes; in common with the services of other telegraph companies, all transmissions now are subject to censorship. The censor requires the full name and address of the sender. Radiophotos, as well as broadcast program transmissions to and from foreign countries, are also subject to this censorship.



RCA's "Radio Central" at Rocky Point, Long Island, is a hub of international radio.



These radiophotos coming in on RCA's New York receiving cylinder have traveled 4,615 miles across the Great Circle route, through the air from Moscow.



The error-proof radio printer developed by RCA Laboratories for use on the high-speed communication circuits.

**What is the advantage in sending messages "via RCA" to the domestic cities it serves?**

A 15-word Radiogram costs only the same as a 10-word telegram by wire. The 15-word message provides 50% more opportunity to transmit complete specifications, detailed quotations and other information, which are commonly important elements of urgent telegraph communication.

**Are RCAC Radiograms "broadcast" so that they are heard by people for whom they are not intended?**

Radiograms are not broadcast in the sense that they can be picked up by the general public. Directive aerials project the transmitted energy toward the desired receiving terminal in the form of a concentrated beam, somewhat analogous to the beam of a searchlight. High-speed automatic transmitters are used and the messages can be recorded only by special receiving apparatus. Simultaneous transmission of two or more messages on a single radio channel—known as multiplexing—results in effective "scrambling" of the message, which can be detected or "unscrambled" only by special synchronized equipment. Most multiplex channels are equipped with high-speed automatic printers of a special type which eliminate circuit errors.

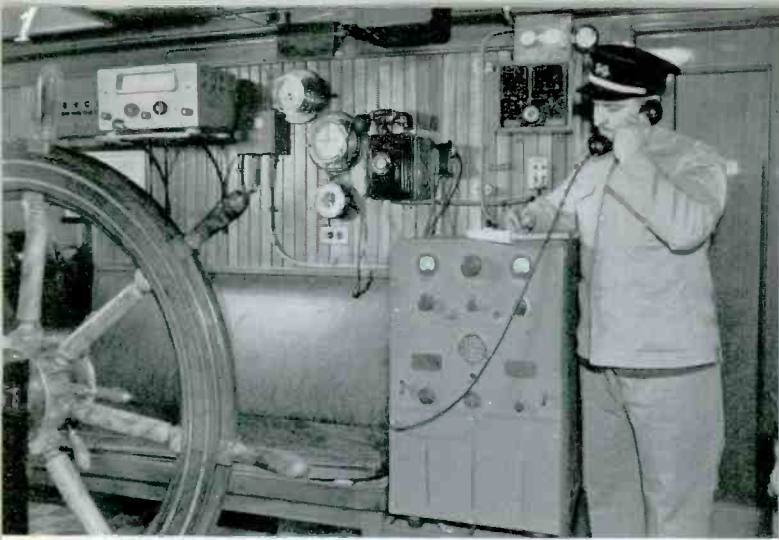
**Are Radiograms sent by voice or in radio code?**

Radiograms are sent either by means of radiotelegraph code or by automatic printer. It is the modern practice to use automatic sending machines which operate at speeds up to 200 words a minute, even on direct circuits thousands of miles long. At the receiving station the message is taken down on automatic equipment.

**Is RCAC's service confined to radio-telegraph messages?**

No; two additional services are operated by RCAC: Program transmission service is maintained to pick up foreign programs for the major American broadcasting networks, as well as to transmit American programs to foreign countries. Through the program transmission service facilities of RCAC a large number of the war commentaries from abroad are delivered on order to the competing American networks for regular broadcast programs. For example, during the Pan-American conference held at Rio de Janeiro in January 1942, RCAC handled 36 programs for the National Broadcasting Company and 28 for the Columbia Broadcasting System. So dependable is this service in modern radio that such operations now are considered a normal routine.

RCAC also operates a radiophoto service between New York, London, Moscow, Australia and Buenos Aires and, until the outbreak of the war, with Berlin and Tokio. Extension of this service is planned to Honolulu, so that photographs and printed documents may be transmitted to and from that outpost.



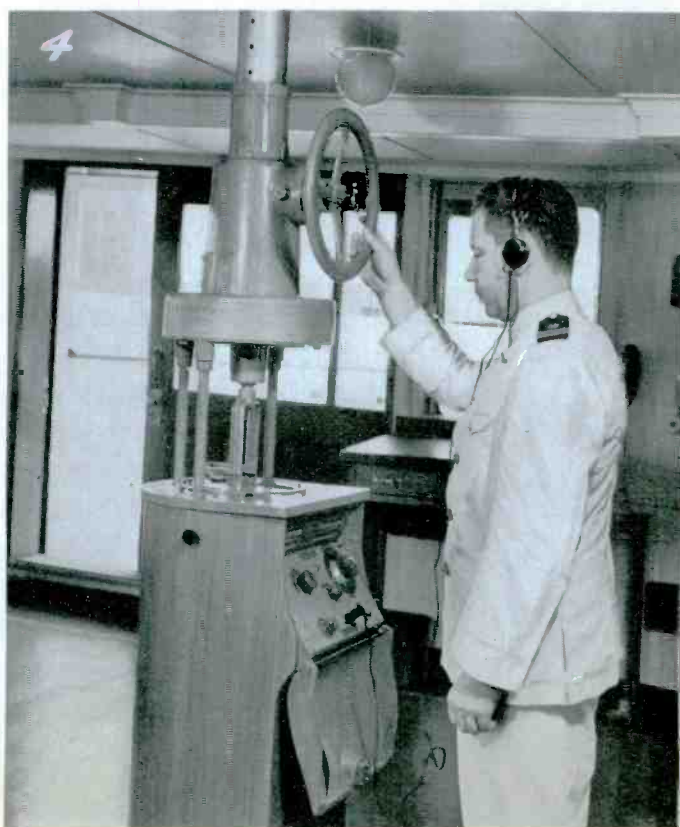
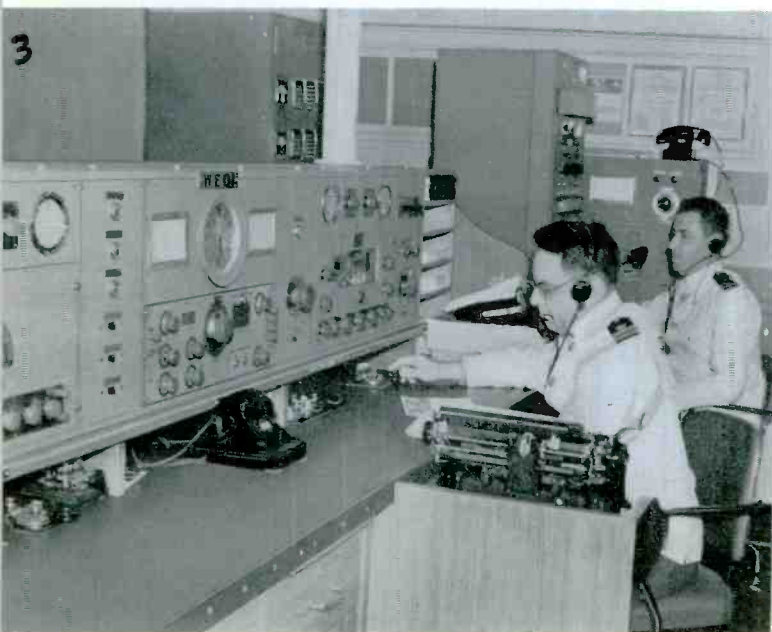
Charles J. Pannill, President  
Radiomarine Corporation of America

(1) Pilot boats in New York harbor find the RCA radio-telephone sets useful in the wheelhouse.

(2) Through this compact cabin receiver the seafaring man or passenger in peacetime can make a telephone call to cities far away.

(3) Marine radio installations built by RCA have been made compact and streamlined for efficient radiotelegraphic or voice communication over long distances.

(4) The RCA direction finder or radio compass enables ships to take bearings on beacon stations no matter how thick the weather.





# MARINE RADIO

**What is the Radiomarine Corporation of America?**

Radiomarine is the service of RCA engaged in marine radio communication, with shore stations on the Atlantic, Pacific and Gulf coasts, and on the Great Lakes. It installs and operates both radiotelephone and radiotelegraph equipment on 1400 American ships. Radiomarine engineers have contributed much to the design, manufacture and installation of radio instruments for marine service. The company produces radiotelephone and telegraph apparatus for vessels of all types. It builds marine radio direction finders, automatic radio SOS alarms and compact emergency radiotelegraph and telephone apparatus for lifeboats. Special equipment is made for the Government services and U.S. Maritime Commission.

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**When was Radiomarine Corporation of America organized?**

RCA has been engaged in marine radio communication since its formation. As the business expanded, the Radiomarine Corporation of America was formed on December 31, 1927, as a wholly-owned subsidiary of RCA entirely devoted to marine radio activities.

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**Does Radiomarine operate branch offices outside of New York City?**

Yes; Radiomarine has 16 branch offices in principal ports of the United States, on the Atlantic, Gulf and Pacific coasts, the Mississippi and the Great Lakes.

Radiomarine installs and services marine radio equipment on vessels on both coasts, the Great Lakes, the Gulf and the Mississippi for both radiotelegraph and radiotelephone communication.

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**Where may Radiograms be filed for ships at sea?**

Radiograms to ships on every sea may be filed, subject in wartime to U. S. Navy restrictions, at any R.C.A. Communications or Western Union Office.

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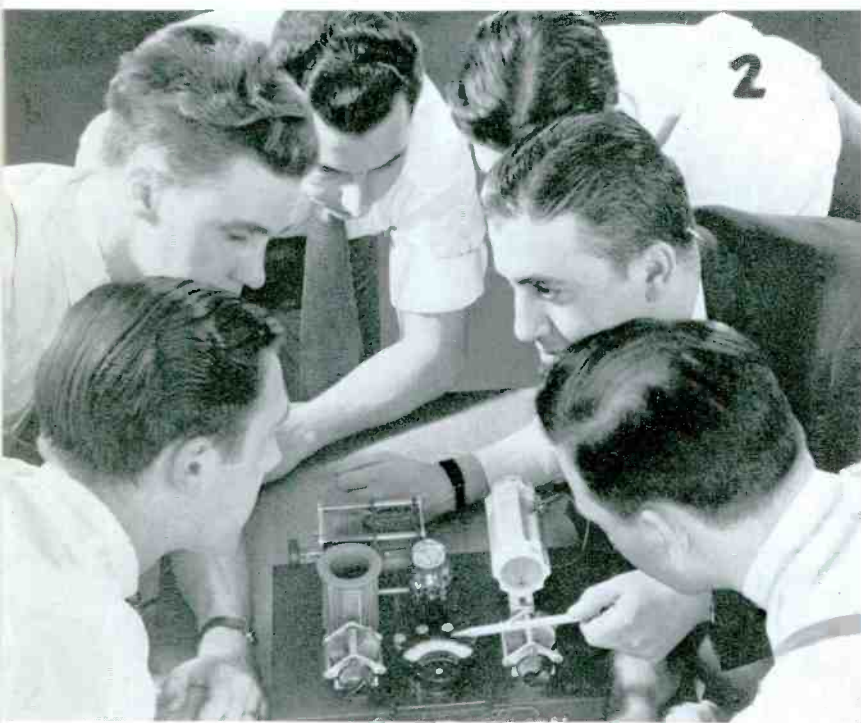
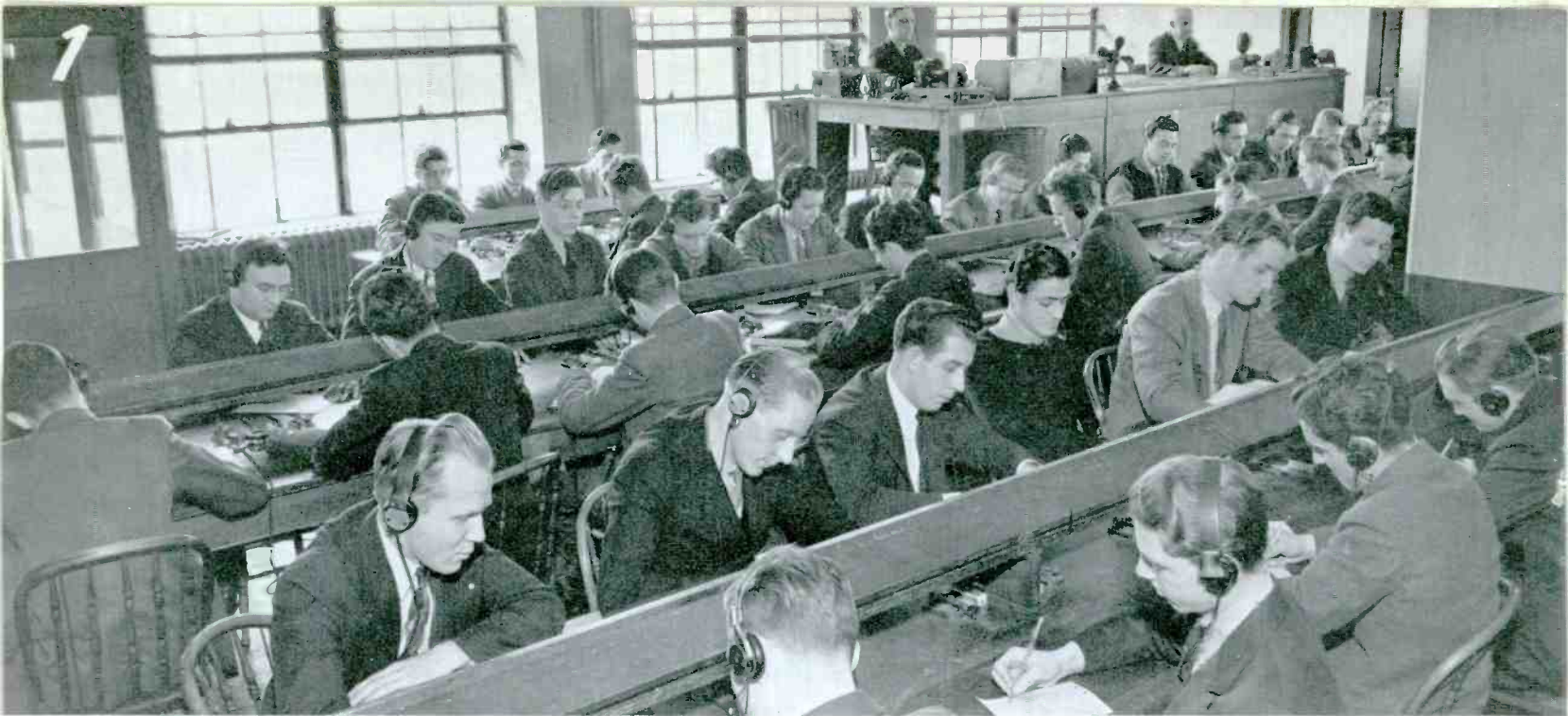
**How much does it cost to send a Radiogram to a ship?**

The usual charge from any of the coastal states is 21 cents a word including address and signature. From inland states the charge is slightly higher.

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**Does Radiomarine maintain services other than marine message traffic?**

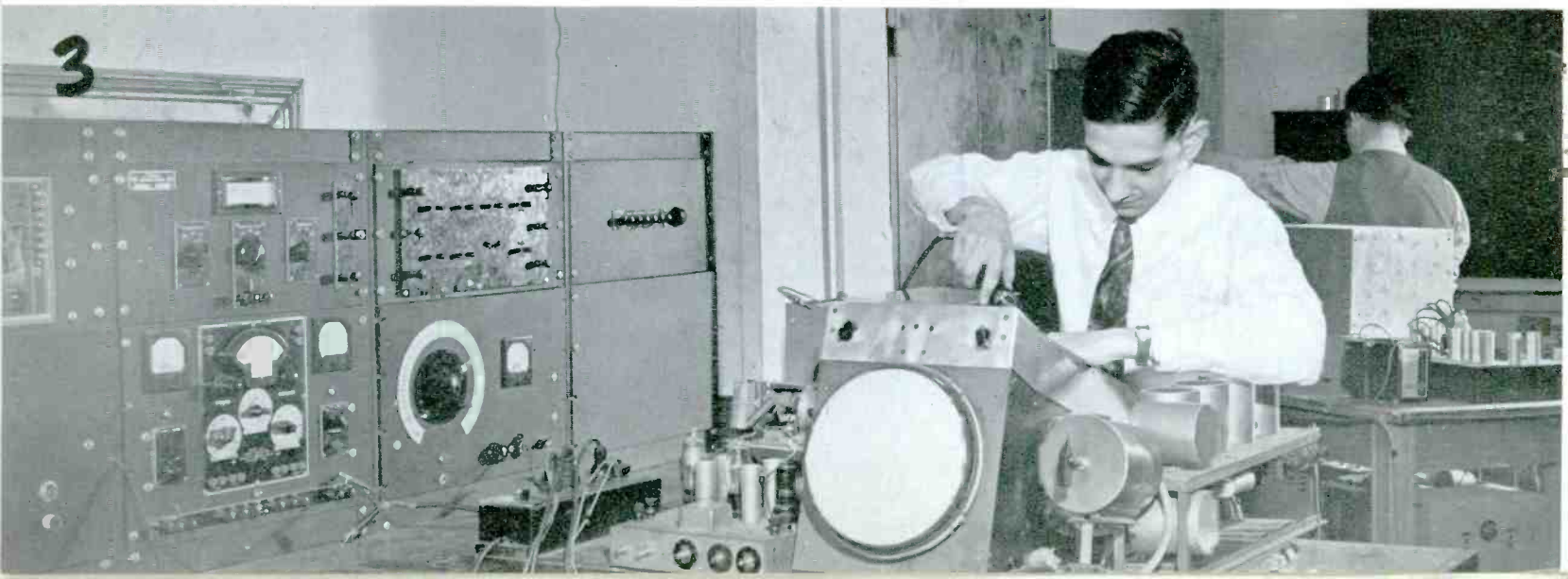
In normal times, Radiomarine gathers weather reports from ships in all parts of the Atlantic for the Government for preparation of weather maps. Also, press bulletins are transmitted at regular intervals to vessels subscribing to the service. The Company also transmits free radio medical advice for the benefit of sick and injured on vessels which do not have a doctor in the ship's complement. These services have, of course, been curtailed by the war.



(1) Students of radio learning the wireless code at RCA Institutes.

(2) Instructors at RCA Institutes give individual attention to the students in explaining how radio sets are put together and how they work.

(3) In the classroom of RCA Institutes, students learn the principles of the cathode ray tube — used in television, as well as the rudiments of standard radio tubes.



# TECHNICAL TRAINING

**What is RCA Institutes, Inc.?**

RCA Institutes is a technical school devoted exclusively to instruction in radio and electrical communications and associated electronic arts. It is the oldest radio training school of its kind in the United States. Two branches are maintained—one in New York at the Institutes' headquarters, 75 Varick Street, and the other in Chicago at Merchandise Mart. At both schools completely equipped laboratory facilities are maintained.

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**Is the year at RCA Institutes divided according to "college terms"?**

The schools are in session for fifty weeks each year, closing only for the two weeks preceding Labor Day. New terms start approximately the first of March, June, September and December.

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**Does RCA Institutes operate day or evening classes?**

Both day and evening classes are conducted; day courses vary from 6 months to 2 years depending upon the subjects. Evening courses are from 1 to 5 years. No home study courses are offered.

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**How much does it cost to take a course at RCA Institutes?**

The cost of tuition varies with the length of the course. Tuition fees are paid weekly in most cases. Complete information concerning the school tuition fees and expenses and a detailed survey of the instruction are contained in the illustrated catalogue, which will be gladly mailed on request.

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**Does RCAI have a course in television?**

Yes; television instruction is included in both the General Course and the Radio and Television Service Course.

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**What are the qualifications for a student to enter RCA Institutes?**

Grammar school education is sufficient for the vocational courses, such as radio operating, radio and television servicing and aviation communication. For the General Course, a high school background is desirable. Candidates wishing to take the General Course, but who lack a high school education, may qualify by taking the Institutes' Preparatory Course, which includes high school algebra, geometry and physics.

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**What is the "RCA Review"?**

RCA Review is a quarterly technical journal on radio progress published by RCA Institutes Technical Press, 75 Varick Street, New York. The Board of Editors is composed of leading engineers in RCA Laboratories and other RCA services.

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## FOR ADDITIONAL INFORMATION

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*Should further information be desired on the following subjects,  
please write to:*

<b>RADIO MANUFACTURING</b> . . . . .	RCA Manufacturing Company, Inc. Camden, N. J.
<b>BROADCASTING</b> . . . . .	National Broadcasting Company, Inc. or Blue Network Company, Inc. 30 Rockefeller Plaza New York, N. Y.
<b>RADIOTELEGRAPH</b> . . . . .	R.C.A. Communications, Inc. 66 Broad Street New York, N. Y.
<b>MARINE RADIO</b> . . . . .	Radiomarine Corporation of America 75 Varick Street New York, N. Y.
<b>TECHNICAL TRAINING</b> . . . . .	R.C.A. Institutes, Inc. 75 Varick Street New York, N. Y.
<b>GENERAL INFORMATION ON RCA AND VARIOUS ACTIVITIES OF RADIO</b> . . . . .	Department of Information Radio Corporation of America 30 Rockefeller Plaza New York, N. Y.





