RADIO AGE

RESEARCH · MANUFACTURING · COMMUNICATIONS · BROADCASTING

RCA

OCTOBER

1942

Something in the Air...

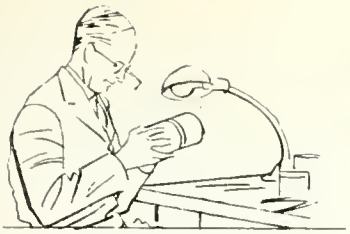
The greatest force that man has ever known for moving men's hearts and minds is in action daily behind the American scene—a household device that brings into tens of millions of living rooms the latest news of our fighting men on all fronts . . . the sublime gifts of inspiring music...the quick tonic of comedy and laughter . . . the welcome relaxation of popular song...blessings all to a nation occupied with the grimmest of tasks.

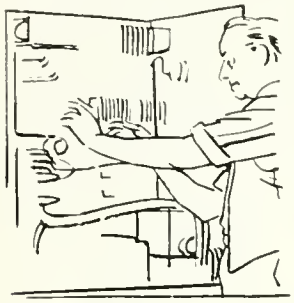
Today, as America's manpower and industrial might begin to make themselves felt on foreign fields, American radio is functioning smoothly, quietly, efficiently, to strengthen morale on the home front and solidify the national purpose for the great drive to victory.

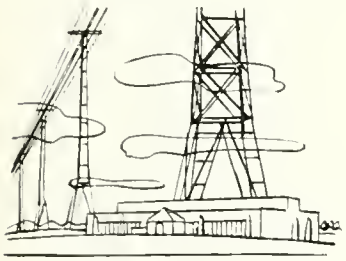
Fittingly, America's oldest network begins its 1942-43 season with the finest parade of programs in its history—many of them shortwaved to the fighting forces by advertisers glad to provide the boys in the field with these tangible links to home, many others fresh from successful summer tours of leading military camps across the country.

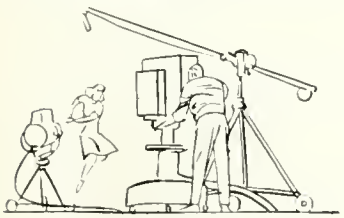
They'll be listened to this year more widely, more eagerly, more gratefully than ever.

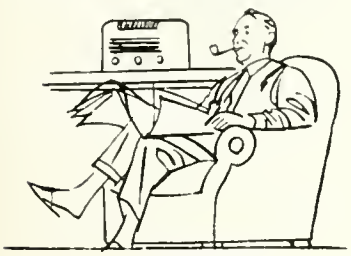
The Network Most People Listen to Most











COVER — Lieut. Gen. James G. Harbord and Maj. Gen. Dawson Olmstead inspect equipment in new RCA Laboratories following dedication ceremonies.

RADIO AGE

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Radio Age, published quarterly by the Department of Information of the Radio Corporation of America, RCA Building, New York, N. Y., for the RCA services: RCA Laboratories, RCA Manufacturing Company, Inc., R.C.A. Communications, Inc., Radiomarine Corporation of America, National Broadcasting Company, Inc., Blue Network Company, Inc., R.C.A. Institutes, Inc.

RCA LABORATORIES, THE NEW CENTER OF RADIO AND ELECTRONIC RESEARCH AND PIONEERING, AT PRINCETON, N. J.

Dedicate New RCA Laboratories

MOST MODERN CENTER OF RADIO AND ELECTRONIC RESEARCH IS PLEDGED TO WINNING THE WAR: HARBORD, OLMSTEAD, GRANUM, DODDS, AYDELOTTE, SARNOFF AND SCHAIRER SPEAK AT CEREMONY.

MARKED on the calendar of RCA history as a memorable date, September 27, 1942, is also an important day in the annals of scientific research and the progress of radio. RCA Laboratories at Princeton, N. J., on that day were dedicated. Open for only a few hours to 500 guests invited to inspect the most modern center of radio and electronic research, the gates were then closed for the duration to all other than war workers.

As the men of science entered to take up their work, they were told that they were as much members of the armed forces as if they were on the battlefield. Their assignments would be military secrets carefully guarded against leakage or intrusion.

When dusk fell over the New Jersey countryside on that September evening, RCA Laboratories stood as much a part of the nation's armament, as an arsenal or fort, dedicated to winning the war and to serve the cause of a victorious peace.

Prophetically, the dedication ceremonies were held in the large studio connected with the television laboratory, where friends of RCA, many of them distinguished in the fields of science and education, military and naval affairs, business and industry, gathered to bid the men of research success and happiness in their new "Electron House."

DR. HAROLD WILLIS DODDS (LEFT), COL. DAVID SARNOFF, MAJ. GEN. DAWSON OLMSTEAD, AND LIEUT. GEN. JAMES G. HARBORD AT DEDICATION CEREMONIES.

General Harbord Presided

Lieut. General James G. Harbord, (U. S. Army, retired), Chairman of the Board of the Radio Corporation of America, presided and introduced the speakers:

Major General Dawson Olmstead, Chief Signal Officer of the Army; Commander A. M. Granum, of the United States Navy; Dr. Harold Willis Dodds, President of Princeton University; Dr. Frank Aydelotte, Director of the Institute for Advanced Study, at Princeton; Colonel David Sarnoff, U. S. Army Signal Corps; and Otto S. Schairer, vice president in charge of RCA Laboratories.

Evaluating the tremendous importance of science in modern warfare, the speakers were high in their praise of the scientists; they praised the vital significance of radio in the global war, and spoke in most confident terms of victory and the great part that electronics and radio are destined to play in the post-war period.

"RCA Laboratories assembles under one roof kindred activities which have hitherto been performed by individuals widely separated by time and space," said General Harbord. "The Laboratories give our future scientific work the advantage of collective effort—the advantage in our attack on our problems of delivering a blow with a clenched fist instead of with open fingers.

"The Laboratories promise much for the future of the radio industry, now so closely tied in with our war effort. And when the lights are once more turned on in this darkened world, we shall take off from here for a brilliant future of which we can now dream but cannot measure."

Schairer Looked into the Future

Introducing Otto S. Schairer, General Harbord said, "I do feel that these Laboratories were a picture in Mr. Schairer's heart long before the first architect put pencil to the plan."

LUCY MONROE LEADS CROWD IN SINGING THE STAR SPANGLED BANNER. ON THE ROSTRUM ARE, LEFT TO RIGHT, DR. HAROLD WILLIS DODDS, COL. DAVID SARNOFF, MAJ. GEN. DAWSON OLMSTEAD (PARTLY OBSCURED BY FLAG), LIEUT. GEN. JAMES G. HARBORD, COMMANDER A. M. GRANUM, OTTO S. SCHAIRER, DR. FRANK AYDELOTTE, AND E. K. JETT.

In his dedicatory address, Mr. Schairer described the Laboratories as a monument to past research, but more than a memorial to past triumphs.

"These Laboratories are concrete recognition that research plays an essential role in modern industry; that it is a vital force for promoting the progress of science and the useful arts," said Mr. Schairer. "They are intended to be a further contribution to industrial advancement and to social betterment by an organization whose services to the public and whose origin and progress have been based upon scientific research and original development.

"Scientific research is diligent quest into the great Unknown. It is the key that unlocks the doors of nature and reveals its mysteries and secrets. It frees mankind from fetters and limitations seemingly imposed by natural forces and by environment. It extends the boundaries and horizons of human knowledge and experience. Research is a modern equivalent of geographical exploration whereby in former times new lands and additional natural resources were discovered and made available.

"Today, RCA Laboratories and its magnificent enrollment of men, buildings and equipment, stand enlisted in the cause of war. . . . But I can give you this prophecy: the scientific progress made here will play a most important part on all the battlefields—on land and sea, under the sea, and in the skies. When the war ends, and the ban of secrecy is lifted, the recital of accomplishments will thrill all of us and fill us with justifiable pride.

Hope for Civilization

"When the war ends—when victory is won—these men and these laboratories will stand dedicated in advance to serve the cause of a victorious peace. Therein lies the distinctive characteristic of our scientific endeavor. . . .

"The triumphs of science warrant our saying—amid all the horrors of war—there is still hope for civilization. To help make that hope come true is the purpose to which these new Laboratories are dedicated."

Major General Dawson Olmstead, Chief Signal Officer of the Army, was introduced by General Harbord as "a distinguished officer of what we young men like to call the Old Army."

Expressing confidence that it will be the continued achievements in the RCA and kindred laboratories "that will unquestionably propel us toward our goal —VICTORY," General Olmstead paid tribute to the foresight and ability of the men who brought RCA Laboratories into being.

"The Signal Corps plays a most important role in this highly mechanized war," said General Olmstead. "It provides for our rapidly expanding Army the most modern design for radio, telephone and telegraph communications

equipment. And the RCA may well be proud of its contribution to the war effort in assisting in making possible for us the finest military communication system of any Army in the world.

"It is well-known that there has never been a time in its history when the research and experiment in RCA Laboratories slackened, or when new products and services were not in the process of development. The result of the work done by the men of the RCA and the significant part in the hidden battle-front of research, is entirely worthy of America's finest pioneering tradition."

Recalling that the Radio Corporation of America, like the Signal Corps, has pioneered in communications, General Olmstead continued:

"When the Radio Corporation of America was formed in 1919, one of its main purposes was to establish a world-wide American radio telegraph system, that would give the United States pre-eminence and a degree of independence in radio communication. The present crisis proves the value of the company's developments in communications, broadcasting, research, engineering and manufacturing, and in rendering service of tremendous importance to our government and to those nations who are our Allies in this war. How this gradual growth and development has worked hand in hand and ear to ear with the Signal Corps of the Army of the United States is proven now by the outstanding performances demonstrated daily in our world communications.

Results of Patriotic Effort

"The problems of conversion which have been met by the RCA from peace to war have been many and varied, but your company has 'beaten the promise' in the production and delivery of war equipment," said General Olmstead. "As a result of this patriotic and efficient effort of the RCA men and women, the Army-Navy's highest award 'E,' which as you know means excellent, well-done, was awarded on September 8, to employees in the RCA Manufacturing plant at Harrison, New Jersey."

In tribute to the scientists and other personnel in RCA Laboratories, General Olmstead said that the Signal Corps knows that whatever communication services can do to help win the war, is being done, and will continue to be done enthusiastically and patriotically. He said that the Government and Signal Corps are instantly benefited by everything that the RCA organization knows and uses in radio communication.

"The war has accelerated, not retarded, the pioneering efforts of our scientists and engineers," continued General Olmstead. "In the past, American inventive genius has been devoted to peaceful pursuits—to the advancement of civilization. However, when pushed into wars, our creative minds continued to function originally in producing instruments of destruction that our enemies have been quick to copy. . . . Communications have rallied the nation. Supplementing the magnificent service of the American press in the coverage of war, radio and Signal Corps communications must be given high recognition for their timely news bulletins and for emergency messages furthering our war efforts.

"As far back as 1939, when only the murmurs of war had reached our shores, your company's management foresaw that RCA must be prepared for an important role in the nation's preparedness program in war production," said General Olmstead. "Conversion of RCA plants, machinery, materials and manpower to meet the government's requirements was planned far in advance of this country's entry into this war."

Reporting that when officers and men of the Navy come in from combat zones, they help those ashore to realize what radio and electronics mean in conflict with the enemy, Commander A. M. Granum of the Bureau of Ships, United States Navy, said:

"This enterprise is very close to the heart of the service. Radio and electronic equipment are vital to our operations at sea.

"We realize we are in competition with an enemy not only in the field of combat but in their scientific and engineering research. In that competition we need team work. . . . It is inspiring to see a laboratory of this sort set up where the best talent and genius of a great organization are brought together to work as one team."

At this point in the program, E. K. Jett, Chief Engineer of the Federal Communications Commission, was introduced. Extending congratulations, he described the Laboratories as a "great achievement."

Scientists Welcomed to Princeton

On behalf of Princeton University, President Harold Willis Dodds, welcomed RCA's men of science to the Princeton community, and expressed pleasure in looking forward to a cordial and profitable association between the University and the Laboratories.

Recalling the laying of the cornerstone of RCA Laboratories in mid-November of 1941, Dr. Frank Aydelotte, Director of the Institute for Advanced Study, at Princeton, observed, "it seems almost like a work of magic in that it has been built so quickly.

"I welcome the scientists who are coming here to this atmosphere and look forward to the contribution you will make to it," said Dr. Aydelotte, "I extend to you a very cordial invitation to visit the Institute for Advanced Study, to mingle with our professors and to ask them for any cooperation we can give you in the work you are doing."

Attending the ceremonies as an officer in active service, Colonel David Sarnoff remarked on the significance

(*Continued on page 20*)

OTTO S. SCHAIRER PLEDGES LABORATORIES TO WINNING OF THE WAR.

PART OF THE CROWD OF 60,000 AT THE RCAM WAR PRODUCTION RALLY.

60,000 at RCAM Rally

EFFORTS EFFECTIVE, NELSON TELLS WORKERS; TRACY, SARNOFF, SHANNON PARTICIPATE IN START OF NEW PRODUCTION DRIVE.

By J. M. Smith

Vice President in charge of Manufacturing, RCAM

WHEN the history of industrial morale activities of World War II is written, a prominent chapter must be reserved for the great rally held at Garden State Park near Camden, under the sponsorship of RCA Manufacturing Company's joint management - labor War Production Drive Committee to Beat the Promise.

Perhaps never before had so huge a throng gathered to attend a production rally. By the time the program was under way, more than 60,000 war workers from the Camden-Philadelphia area, their families, friends, and neighbors overflowed every available foot of space.

The attractions were many: national figures, Soviet and American heroes, a horse race, a dive bomber demonstration, a war show presented by the Army and the U. S. Coast Guard, fireworks, and musical entertainment. But behind the "show" was a serious purpose — the launching by RCAM of the third phase of the Beat the Promise War Production Drive under the slogan of "The Second Front Depends on the Home Front! Beat the Promise!" The speakers stressed that it is the task of military leaders to determine when and where a second front is to be opened; but it is the task of RCA Victor's war workers, makers of vital radio and sound equipment for the armed forces, to make a second front possible — and successful — with production.

Donald Nelson, Chairman of the War Production Board, was the principal speaker. Introduced by Colonel David Sarnoff, Mr. Nelson spoke from a Blue Network studio in New York and addressed an estimated three and one-half million workers from coast-to-coast who are enrolled in War Production Drive Committees similar to those functioning at RCA Victor's plant.

Telling the war workers that their efforts have been effective, Mr. Nelson revealed that war production "has been driven up from Pearl Harbor by 350 per cent.

"This is a good record," he said, "but not good enough. In this game there is

COL. DAVID SARNOFF, INTRODUCING DONALD NELSON, PRAISED PRODUCTION RECORD.

no second prize. We are playing for keeps.

"The United States, which means each and every one of us, is engaged in a fight to the death against the Axis powers. There is no place for Americans in Japan's co-prosperity sphere. There is no place for Americans in Hitler's New Order. For us they mean economic, political, religious, and personal slavery."

Of particular importance to us was Mr. Nelson's discussion of the problems of material shortages.

"There are such shortages," he said, "and there will be more. We must face the facts.

"We have now arrived at what I think of as the balancing period. We have to go over our parts on hand to see what is lacking, what is surplus for the time being. To get balance we will cut down further on materials for civilian use, and, when we must, we will even cut materials for one war use to fill a more pressing and immediate war need. That has already happened in a few instances, and it will be made necessary again. It will mean some layoffs and lost time for workers who are intent on producing for victory.

"You won't like it. I will not like it either. But we'll do it when it is made necessary by the fortunes of war.

"Our material shortages are being attacked by increasing plant capacities, where that is feasible, by shutting down plants serving less essential civilian needs, by improved scheduling, by conservation, and by increasing the emphasis on the production of raw material."

Mr. Nelson paid tribute to the six RCA Victor workers who have won the highly prized certificates of individual production merit award by the WPB for outstanding suggestions which helped speed production. He singled out Benjamin Willett of the Camden plant for special mention.

Before introducing Mr. Nelson, Colonel Sarnoff, who is on active duty with the U. S. Signal Corps, delivered a powerful message to his huge visible and radio audiences.

"You have always got to remember that the stuff you turn out *today*, instead of tomorrow," said Mr. Sarnoff, "can mean the difference between life and death to some American boy on a ship, or in a plane, or on a field of battle.

"In the past most of you here tonight have helped to put the United States out in front of all other nations in radio and electricity. You did that in the days of peace, but our enemies say you cannot do it in time of war. They say that when it comes to war, we are slow and soft and inefficient. They say they can beat us because what we can do is going to be 'too little and too late.'

"That is a lie, and you know it, and this wonderful rally tonight proves it."

Mr. Nelson was followed by Daniel W. Tracy, Assistant Secretary of Labor. Driving home the importance of a good job well done, Mr. Tracy said:

"The smallest screw you drive, the soldered joint you make, the tiniest nut and lockwasher you put on a radio receiving set or transmitter may mean the difference between life and death to the crew of a U. S. bomber.

"No sacrifice is too great, no effort is too strenuous to defend and perpetuate the heritage of America."

The keynote of the entire rally was struck by Robert Shannon, president of RCAM. Addressing the vast audience, he pointed out that three out of every twenty male employees of the RCA organization are now in military uniforms and that it is our responsibility to those boys and their buddies in arms to get them the equipment they need to destroy the enemy.

"There has been a lot of public clamor for a 'second front,'" Mr. Shannon stated. "When, where and how a second front should come into being is not for civilians to say. That is the responsibility of our military leaders, in whom we have the utmost confidence. But we do know this:

"The second front depends on the home front. All of our fronts depend upon the home front. The final victory

(Continued on page 22)

SOVIET HEROES, NIKOLAI KRASAVCHENKO AND LIEUT. LIUDMILA PAVLICHENKO, CHAT WITH DR. V. K. ZWORYKIN AND COL. DAVID SARNOFF AT WAR RALLY.

NBC Reporters Cover the War

CONTROL ROOM ENGINEERS (FOREGROUND) PUT NBC NEWS COMMENTATORS ON THE AIR AT RADIO CITY.

By Clarence L. Menser

Vice President in Charge of Programs, National Broadcasting Company

WHEREVER MEN FIGHT in this vast global war—on land, on sea and in the air—there NBC reporters are on the job.

Never before in the history of man has a nation at war been so quickly informed of the cataclysmic fortunes of battle, thanks to the bravery, the daring and the intelligence of these NBC men.

These men have taken NBC listeners into the flame and fire of battle. They have ranged the world from Russia to Africa, from Iceland to Egypt, from Java to Norway to bring their listeners the story of the war as it unfolded from battle to battle.

NBC listeners still remember the first warnings of the war to come in the Pacific in the regular broadcasts from Dick Tennelly in Tokyo. It was NBC's Martin Agronsky who brought them realistic reports of complacency and unpreparedness in Singapore, who fled before the Japs to Java and then to Australia. Few NBC listeners can forget the eyewitness report of the bombing of Manila by Bert Silen, Don Bell and Ted Wallace. And what NBC listener did not thrill to John MacVane's thrilling report of his participation in the recent raid by the Commandos and Rangers on Dieppe?

These are only a few of the more recent feats of a staff of forty reporters who have made the transmission of war news simultaneously with its occurrence.

The work of these men is a far cry from even the recent late 1930's when short-wave reporting was comprised chiefly of occasional addresses by various of the world's statesmen. Since then, wherever the crimson tide of war has spread, there NBC reporters were on the job.

The National Broadcasting Company began assembling its world-wide staff of reporters in the disturbed days before Munich. There was as yet no war but war was in the air. The first NBC reporters brought to their American listeners the day-by-day political and diplomatic maneuverings which were to end in war. As far as censorship permitted, they reported to American listeners the ominous rantings of Hitler and Mussolini. Because of their

IN TIME OF WAR, THE COPY DESK IN THE NEWS ROOM, RADIO CITY, NEW YORK, IS A SCENE OF MUCH ACTIVITY. LATEST NEWS REPORTS FROM ALL OVER THE WORLD ARE RECEIVED HERE AND PREPARED FOR BROADCASTING.

work, American listeners were fully and realistically informed of the tragedy that impended.

As the war clouds gathered over Europe in 1939, NBC already had in operation bureaus in London, England, and Basle, Switzerland. From London, Fred Bate covered the British Isles. From Basle, Max Jordan covered continental Europe.

Jordan was directed to establish European-wide radio coverage for NBC as war became all but a foregone conclusion. There were in those days no tried and experienced radio reporters. Jordan began assembling a staff in the European capitols. He began from scratch. He taught his men how to talk into a microphone; when to talk; how to arrange broadcast facilities, and how to establish impregnable lines of communication. Meanwhile, he commuted by air between all the major cities of Europe, covering the news himself.

NBC's first major test was the Munich crisis in September of 1938. On the night of the signing of the Munich pact, September 29, 1938, Jordan scored one of his greatest NBC scoops. Over NBC facilities, he was the first to broadcast to America the full text of the now infamous Munich agreement. He was a full hour ahead of his rivals.

In the days following Munich, Bate and Jordan worked night and day to establish a competent and comprehensive news staff to cover the holocaust that was to follow. The NBC bureaus in London and Basle were considerably

RICHARD TENNELLY

MARTIN AGRONSKY

JOHN MCVANE

PAUL ARCHINARD

ROBERT MAGIDOFF

JIM WAHL

SIDNEY ALBRIGHT

HARRISON FORMAN

UPTON CLOSE

enlarged. New bureaus were opened in Moscow, Berlin, Paris, Rome, Ankara, Stockholm, Warsaw, Madrid and in the Balkans.

From these reporters, American listeners received an almost day-by-day report of Europe's march to war. NBC men flashed to the United States the first news of Hitler's march into Poland, September 1, 1939. Two days later, they flashed the news of the British and French declarations of war on Germany and Italy.

As the war burst into new fury with Hitler's conquest of Poland, NBC established schedules for European broadcasts. There were regular reports from London, Berlin, Paris and other cities.

NBC reporters brought their listeners a Christmas broadcast from a fortress deep within the Maginot line; also one from Hitler's Siegfried line. They gave their listeners the first sound of British airplanes taking off to meet Nazi airmen in battle.

Listeners to a broadcast by Paul Archinard, then in Paris, were startled by the sound of an air raid warning. Archinard's regular broadcast from Paris was suddenly halted when the siren shrieked its warning. Archinard and the technicians hurriedly left the studio but the microphone was still "live." American listeners to NBC heard the eerie wail of the Paris air raid sirens.

What is probably radio's biggest news scoop, the scuttling of the German pocket battleship, the Graf Spee, was another NBC feat.

No sooner had a British cruiser squadron driven the Graf Spee into Montevideo Harbor than NBC's Jimmy Bowen was on the job. Bowen set up his microphone on the Montevideo waterfront. He broadcast several eyewitness descriptions of the Graf Spee's arrival. Then he stood by to bring his listeners a report of what was to transpire as the hour for the Graf Spee's departure under International Law arrived.

Bowen had just finished a dramatic on-the-spot account from the harbor and signed off as NBC continued its regularly scheduled broadcasting from New York. But, by what is known as a "cue channel," an open radio telephone circuit, contact was maintained between the New York news room and Bowen's position overlooking Montevideo Harbor.

A few minutes passed and then Bowen screamed over the "cue channel":

"Give me the air again! The Graf Spee has blown up! It is being scuttled."

In a matter of seconds, Bowen was on the air again to give American listeners the dramatic story of the scuttling of the Graf Spee in the harbor.

NBC scored another major scoop in the Spring of 1940, but unfortunately it could not be broadcast. Through his own sources of information, Jordan learned that Hitler planned to invade Denmark and Norway. But he couldn't publicly reveal his information.

So, he dispatched a routine radiogram to NBC in New York, announc-

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PETER BRENNAN

BJORN BJORNSON

CHARLES LARIUS

RCA LOUDSPEAKERS EXPEDITE THE MOVEMENT OF RAILROAD TRAFFIC AS SHOWN IN THIS SCENE TAKEN FROM A CHICAGO FREIGHT YARD.

Sound Speeds the War Effort

MICROPHONE, LOUDSPEAKER BECOME NECESSARY TO EFFICIENT OPERATION OF FACTORIES, AIR FIELDS, NAVAL BASES, ORDNANCE PLANTS; ONE COMPANY AVERAGES 6,000 CALLS A DAY.

By George R. Ewald

Manager, Sound Products Division, RCA Manufacturing Company

THE RAPID TRANSITION to wartime activities throughout this country has brought about many startling changes. Evolution that would ordinarily occur slowly over a number of years now takes place almost over night. New ideas, new processes, new materials, and new man-to-man relationships are rapidly taking form in industrial operations. These changes create new needs and, as is usual in periods of flux, the inventive genius of man responds to the urgent necessities of the occasion.

One of the most interesting developments has occurred in the field of what has been somewhat loosely termed "Commercial Sound." Certainly, the word "Commercial" does not now properly classify the tremendously broad field into which amplified sound has made its entrance so effectively. Today the microphone, amplifier, and loudspeaker are vitally necessary adjuncts to the efficient operation of industrial plants of every description; military projects of all kinds; air fields; naval bases; ordnance plants; proving grounds; training schools; shipyards; railroad yards; amusement, educational, and recreational activities; and,

SOUND SYSTEM CONTROL DESK, WHERE SPECIFIC OR GENERAL CALLS ORIGINATE.

THIS ROOM IN A ROCHESTER FACTORY IS EQUIPPED WITH LOUDSPEAKERS FOR INSTANTANEOUS AND GENERAL COMMUNICATION WITH WORKERS.

in fact, in any inside or outside location where it becomes necessary to convey sound intelligibly to groups of people or over distances where unamplified sound will not serve the purpose.

Commercial Sound has served a fearful as well as a useful purpose. It is indeed doubtful if Hitler's hordes would now be over-running Europe, Asia, and Africa if he had not been able to exercise his almost hypnotic control over millions of people through the use of loudspeakers.

On the other side of the picture, however, the use of amplified sound has become a tremendously important factor in the expediting of production, the improvement of efficiency in organization operation; a most potent time-saver in locating key men in every nook and corner of our great factories; and has tremendously reduced loss of life and damage to property in emergencies. So, a microphone is now found at the elbow of every man who desires to accomplish things quickly and efficiently, and millions of loudspeakers are in use throughout the world, in every place where people gather either for business or pleasure.

Originally when it was found possible to satisfactorily amplify sound and project it for some distance, the field of entertainment seemed to be the most natural development for the use of loudspeakers. As this use grew and developed, the possibilities for educational purposes became apparent, and it was not long before the schools and colleges throughout the country were equipping their auditoriums, laboratories, and individual classrooms with this most useful device. Slowly and gradually the amplifier found a place in various types of business establishments, although at the beginning it was curtailed in most places to the use of intercommunication equipment.

Rapid Expansion Develops

It has only been within the last 24 months that the real possibilities of the amplification of sound in great industrial establishments were realized. This development has proceeded with such tremendous impetus, however, that interesting and even spectacular incidents illustrating the value of sound equipment are developing daily, and the story surrounding the use of such equipment is worth telling.

Perhaps the best description of the varied use of sound equipment in industrial operations can be given by citing specific reports that are now available from many plants that are engaged in full wartime production. Many of the giant buildings that have recently been erected to house production of military equipment, cover great areas of ground with immense rooms unbroken by walls or partitions. Rapid man-to-man contact is difficult because of the tremendous distances and numbers of people involved. Buzzer or horn signaling in code, and the telephone and interdepartmental memo have been tried, but, due to the limitations of time and space, contact has been slow and much valuable supervisory time wasted trying to locate people wanted for quick answers.

Paging executives and key men has now become a fast and efficient process through the use of plant-wide sound systems, and it is interesting to note some of the comments that have been made regarding the actual efficiency in operation achieved in this way. A letter received from one of the big aircraft companies contains the following significant sentence:

> "To indicate the importance of these sound systems in our plants, it is interesting to note that our main plants make approximately 1,500 calls each per day, with the smaller departmental systems making approximately 250 calls each per day, making the total calls of all systems about 6,000 per day."

From another large Eastern industrial plant comes this statement:

> "We also find that our maintenance work is greatly expedited by our ability to reach the maintenance crews and give them orders immediately, no matter where they may be in the plant."

Through the proper installation and use of a sound system the load can be taken off the existing telephone lines. The necessity for new lines is thereby obviated, as well as additional switchboard personnel and telephone lines in-

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New Ideas Come Out of the Blue

"TEAM SPONSORSHIP" AND "PROGRAMMING ACROSS THE BOARD" ARE SUCCESSFUL INNOVATIONS MADE BY NETWORK; KOBAK GIVES REASONS BEHIND CHANGES THAT BREAK MANY ESTABLISHED TRADITIONS.

By Edgar Kobak

Executive Vice President of the Blue Network Company.

As RECENTLY as January of this year the radio term—"Team Sponsorship"—probably would have occasioned only mild curiosity among men whose business it is to sell time on the air. And the label—"Programming Across the Board"—would doubtless have caused a bit of annoyance to harried program directors, unless to some of them it might have vaguely suggested the fulfillment of a fond dream.

Today, these are not nebulous terms. They are accepted names for innovations in broadcast advertising wrought by the Blue Network since it became an independent organization in January, 1942. Newest of the national radio chains, the Blue crawled out of its swaddling clothes to challenge established tradition and keep its eyes open for anything new that might be worthwhile.

The new Blue is only nine months old. But in that time it has discarded many old theories about network management and originated new departures in selling time and improving its programs. These activities have attracted widespread attention throughout the broadcasting and advertising fields.

Some of these new ideas were brought about by sheer necessity. The Blue had to contend with shortages of equipment and personnel that would have discouraged many a new business venture. The important thing, however, is that the Blue management did not stop to bemoan its handicaps. Instead, it found alternates, which, in many cases, were better than the original.

"Team Sponsorship," for instance, is the sales innovation the Blue Network devised because it found itself born at a time when a great number of national advertisers had no product to offer the public. In a period of institutional advertising and of business decidedly not "as usual," conditions demanded a cooperative plan of radio sponsorship. The Blue's plan enabled manufacturers to keep the public aware of their activities by grouping together in the purchase of radio time.

"Across the Board Programming" is but one of the new ideas that have originated with the Blue Program Department, supervised by that veteran of radio, Phillips Carlin. The term means simply the scheduling of a particular type of program straight across the board, seven days a week. One reason for such programming is to accustom listeners to one kind of broadcast at a given time every day at one spot on the dial. Another reason is to lend variety to the airlanes, for the feature the Blue selects for such programming is always different from the type of entertainment offered at the same time by other networks.

The first important programming of this type was for the Ford Motor Company. The Earl Godwin news period, "Watch the World Go By," was carded seven nights weekly at 8 o'clock, so that Blue listeners could be assured of spot news broadcasts at that time every evening. Incidentally, this method of scheduling, it has been found, also tends to build a new audience in cases where another type of broadcast by other networks has enjoyed a long period of unchallenged popularity.

Still another example—"Lum and Abner." This program, which has recruited a tremendous listening audience, had developed a regular 8:15 p.m. listening habit. Now, "Lum and Abner" are on the air only on Monday, Tuesday, Wednesday and Thursday. So that the audience built for this type of program might not be lured away when "Lum and Abner" are off the air, Carlin provided a similar type of entertainment at the same hour on weekend nights. This supplementary show, "Gibbs and Finney, General Livery," has accomplished every purpose for which it was scheduled.

On the business side, the Blue Network has been a trail-blazer since the first day it operated. We have been able to sell advertisers on the idea of "keep 'em remembering" not only on the team-sponsorship plan, but by the intelligent use of one-spot feature broadcasts. The one-spot plan calls for the airing of important institutional events, such as the awarding of the Army and Navy "E" to manufacturers engaged in war production. Only recently the White Motor Company, RCA Manufacturing Co., the Independent Lock Company, and eleven other firms took advantage of this plan.

In illustrating how the Blue has overcome shortages of equipment, one might note the way we have surmounted the problem of operating without a newsroom of our own. The usual array of teletypes and short-wave facilities not being available to our new network, we made up for this loss by engaging top-ranking news commentators and placing them in key spots on

(Continued on page 25)

THE FAMOUS NBC SYMPHONY ORCHESTRA ON THE STAGE IN THE WORLD'S LARGEST BROADCASTING STUDIO, 8-H, RADIO CITY. RIGHT — ARTURO TOSCANINI.

TOSCANINI RETURNS TO NBC

Maestro Opens Symphony Season Over Network on November 1; He and Stokowski Each to Conduct 12 Concerts During Winter.

IF EVER THERE was a time when music was needed and sought after, planners of radio programs believe, that time is now. More people than ever before, it has been found, are finding through music temporary escape from harsh and drab realities in an uncertain world.

A Britain at war reports listening to more concert music in this third year of World War II than ever before in its history. This wartime trend reflects a swing in popular taste away from dance music to Bach, Beethoven, Mozart, Brahms, Wagner. The London Philharmonic, playing nightly to jam-packed audiences in provincial English music halls, finds response greatest in the most heavily blitzed towns.

Cheering news for an increasing army of music lovers in the U. S. is the announcement that there is to be no wartime blackout of the NBC Symphony Orchestra's popular broadcast concerts.

The 1942-43 NBC Symphony season will be formally launched over the NBC network Sunday, November 1, under the baton of Arturo Toscanini, who is slated for twelve concerts during the 24-week season. Leopold Stokowski is to lead the remaining dozen Winter programs.

NBC has frozen a new spot (Sundays, 5:00-6:00 p.m., EWT) for the series. Five preliminary concerts, with guest batoncers, began Sunday, September 27. A 125-station network will carry the concerts, and the short waves will flash them to Latin America.

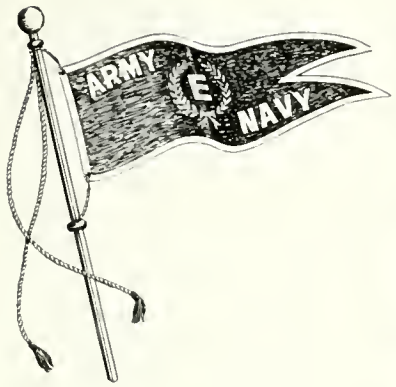
Toscanini will be at the helm November 1 and 8; Stokowski is to take over for five broadcasts starting November 15. Toscanini will return December 20 for an eight-week run, and then Stokowski on February 14 for seven programs. Toscanini is to lead the two final Winter concerts April 4 and 11.

The start of the new series marks the beginning of Toscanini's fifth full season with the orchestra. Stokowski's second. In 1941-42, the only period in which Toscanini was not billed as the organization's featured leader, the maestro took a sabbatical year from broadcasting and Stokowski directed in his stead. Toscanini did, however, lead the group that season in five special broadcasts under U. S. Treasury Department auspices and in the sensational Western hemisphere premiere of Shostakovich's Seventh Symphony.

Return of the unit to exclusive NBC facilities comes after a nine-month absence (save for the Shostakovich event) during which the orchestra was presented over the Blue Network.

ARMY-NAVY "E" IS WON BY RCAM PLANT

Radiotron Division at Harrison, N. J., Receives Award for "High Achievement in the Production of War Equipment": Emblems Are Presented to Employees by Army and Navy Officers as Work is Praised.



SPEAKERS AT ARMY-NAVY "E" PRESENTATION WERE, LEFT TO RIGHT, ROBERT SHANNON, LIEUT. COL. OSCAR C. MAIER, THOMAS F. JOYCE, LIEUT. J. DOUGLAS GESSFORD, MAYOR F. J. GASSERT, AND JOSEPH W. MAYER.

For "high achievement in the production of war equipment," the RCA Manufacturing Company's Radiotron Division at Harrison, N. J., was awarded the coveted Army-Navy "E" in ceremonies at Harrison on September 8. The Camden, N. J., plant of RCAM received the Navy "E" several months ago.

Lieut. Col. Oscar C. Maier, director of the general development laboratories of the Army Signal Corps, Fort Monmouth, N. J., presented the award at a mass meeting of several thousand RCAM employees in Roosevelt Park, Harrison. It was accepted by J. A. King, manager of the plant.

An "E" pin, emblematic of the award, was presented to Joseph Mayer, president of the plant's Employees' Council, by Lieut. J. Douglas Gessford, headquarters commandant, Third Naval District. All employees were to receive duplicates of the pin.

Thomas F. Joyce, vice president of RCAM, was master of ceremonies. Robert Shannon, president of RCAM, thanked the employees and urged the "continuance of your fine work until the war is won." Mayor Frederick J. Gassert of Harrison spoke.

The "E" burgee was raised by members of the plant's War Production Drive sub-committees.

LIEUT. COL. OSCAR C. MAIER PRESENTS AWARD.

STANLEY CRAWFORD

MRS. BONNIE LEE SMITH LEWIS

6 RCAM EMPLOYEES WIN HIGH NATIONA

JOSEPH FRANK ECKERT, JR.

EDWARD SPENCER HOFFMAN

ALBERT PETER RUGGIERI

'PB AWARDS

BENJAMIN WILLET

Certificates of Individual Production Merit Given 5 Men, Woman

OUT OF THE seventeen persons in the nation to receive Certificates of Individual Production Merit from the War Production Board, five men and a woman (the only one) are members of the RCA Family. In addition, another RCAM worker received Honorable Mention. No other company received as many citations.

The Certificates were awarded for suggestions that increase the quantity or quality of war equipment, or conserve critical materials. This system of awards was established to bring the ingenuity and "know-how" of American workmen at the point of the tool into further service in war production, and to honor production soldiers for outstanding service.

The only woman in the country to be honored with a Certificate is Mrs. Bonnie Lee Smith Lewis, employed at the Indianapolis plant. Her suggestion saved 2,925 man-hours.

Another Certificate winner is Edward S. Hoffman, now Private Hoffman, of the U. S. Army Air Corps. Other winners were Benjamin Willet, Stanley Crawford, and Joseph F. Eckert of the Camden plant. Honorable Mention went to Arthur Waggoner of the Indianapolis plant.

MRS. BONNIE LEE SMITH LEWIS

Mrs. Lewis, 21, a former employee of the RCA Manufacturing Co., Inc., plant in Indianapolis, suggested the use of a motor-driven wire brush wheel for removing burrs found on the moulded clamping nut of a sound-powered telephone. Previously, this operation was performed with a hand scraper, with considerable danger of spoilage. The company reported that Mrs. Lewis' suggestion saved 2,925 man-hours.

Suggestions Increased Quantity or Quality of War Equipment

STANLEY CRAWFORD

Mr. Crawford, 30, a material inspector in the RCA Manufacturing Co. plant at Camden, designed a new type of caliper for determining the wall thicknesses and relationship between a cored interior and the outside surface of castings. By the use of this caliper, 13 out of 16 castings previously rejected were salvaged, thus saving valuable semi-finished material. The caliper also detects shifted cores in rough castings, preventing valuable skilled man-hours being wasted on defective castings.

BENJAMIN WILLET

Mr. Willet, 23, an instructor in the crystal laboratory at the RCA Camden plant, designed a new jig utilizing a diamond-charged saw for slitting quartz crystals. The jig reduced breakage by 75 percent.

JOSEPH FRANK ECKERT, JR.

Mr. Eckert, 24, an X-ray operator at the RCA plant at Camden, suggested a new method to obtain a maximum number of radio quartz crystals from the extremely limited amount of raw material. His suggestion, highly technical, resulted in savings in saw setup time and X-ray measurement time and permitted each bar to be sampled without cutting intermediate wedge blanks. It has shown an increased production of 27 properly oriented crystals a day from the same amount of quartz used previously.

EDWARD SPENCER HOFFMAN

Mr. Hoffman, 22, was a supervisor in the transformer department of the RCA plant at Camden, his interest in the production of transformers for Naval aviation being stimulated by his several applications to get into the air force. Without warning, a high-nickel steel used in the transformer became unavailable and there were no assurances that deliveries would be resumed. Hoffman, although not an engineer, constructed a small lot of transformers with silicon steel in place of the nickel steel. The transformer passed all tests. As a consequence, 3,000 pounds of nickel has been saved and production has flowed smoothly. Meanwhile, Hoffman tried to enlist again and now he's Private Hoffman, U. S. Air Corps.

ALBERT PETER RUGGIERI

Mr. Ruggieri, 23, a spot welder at the RCA Camden plant, suggested the use of a redesigned aluminum bracket in place of a more complicated bracket of stainless steel with a high Chromium content in production of radio equipment. Mr. Ruggieri's suggestion has saved 1,300 man-hours and has conserved a great amount of scarce chromium.

$10,303,600 IN BOND SALES

Blue Network's One-Night Campaign Results in Record Total; Sparkling Cast of Entertainers Draws Mountain of Pledges to Support the War.

AUGUST was supposed to be the month in which the radio industry conducted its big drive to sell Uncle Sam's war bonds. There had been sporadic appeals by networks and individual stations, but when the 29th of the month rolled around the collections had fallen far short of the goal. The situation called for a grand climax drive.

Before August had run its course, the Blue Network, youngest of the chains, had just such a campaign in mind. Without fanfare, its program managers and technicians started planning for a show that would push the industry over the top. Orson Welles was sounded out, and he agreed to act as master of ceremonies for the big bond night. Recruits included Jane Cowl, Carl Sandburg, Dinah Shore, Jack Pearl, Lanny Ross, and a fine surrounding cast.

The Blue Network's office group, with no prospect of glamour but an excellent opportunity to help their country, responded almost 100 per cent to an invitation to work all night on the 29th. Extra desks and telephones were heaped into the Blue offices, maintenance men dusted off three huge blackboards for keeping score of bond sales, and preparations were made for feeding the one-night bond army.

The broadcast was to begin at 9:30 p.m. on the 29th, and was to conclude seven hours later. Affiliate stations from coast-to-coast arranged to wire in their totals. A battalion of office workers virtually chained themselves to the telephones to receive individual orders. Blue officials confided that if they could raise six or seven million dollars Blue Bond Night would be a success.

The Blue team, with Orson Welles calling signals in jam-packed studio 8H, kicked off promptly at 9:30. Down in the network offices, more than 100 persons ran over their signals, like nervous gridders before a big game. At 9:45, 'phones began jangling. Western Union boys blocked for each other to get into the room with wired orders. Edgar Kobak, the Blue's executive vice president, stood perspiring at the big board with his tie unknotted, catching pieces of chalk tossed by a file clerk on the all-night trick. With the other hand, Kobak snagged a wet rag to wipe off the bond sales figures that became antiquated in less than five minutes.

This, some one remarked, was radio in a democracy—at work.

By midnight, the $6,000,000 goal had been passed. The blackboard, sectioned off for returns from "East," "Central," and "Pacific," was a gray smudge. But there were seven figures on the totals now, and that's all that mattered. Except eats. The workers were getting hungry, and when the coffee and sandwiches arrived they staged a local Commando raid. Phillips Carlin, Blue program chief, relieved Kobak at the board.

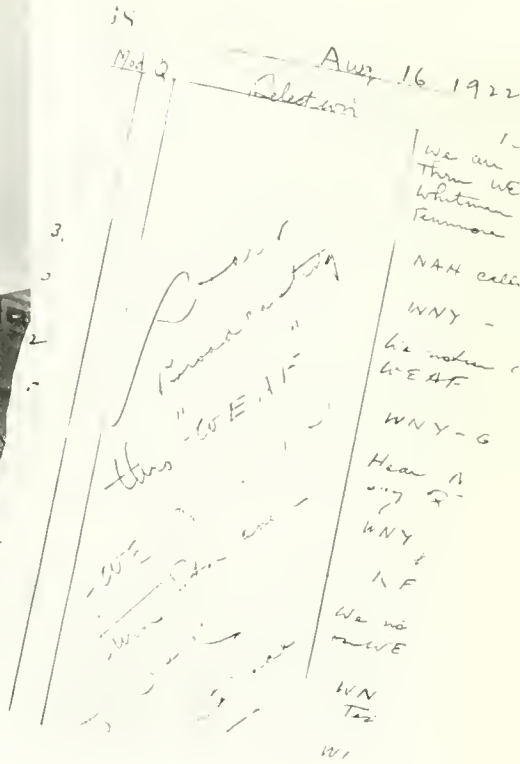
At 3 a.m., the total was $9,000,000 and only a few of the group managed to get away. The show in 8H had been over for hours, but big-name dance bands were blaring away nationally between bond appeals. The room was littered with empty coffee cups and sandwich wrappers. Tabulating machines clattered merrily and three newspapers called to ask how much had been pledged.

At 9 a.m. Sunday morning a Blue worker, who had checked out of bond headquarters at 5:00, straggled into his office, switched on the lights, and ordered up some breakfast. He was about to bite into a chunk of crisp, brown toast when a 'phone jangled across the room.

"I heard your broadcast. I want to buy a $50 bond," said the caller. That brought the total up to $10,303,600.

PHILLIPS CARLIN RELAXES AFTER CHALKING UP THE SCORE IN BLUE NETWORK'S "BOND NIGHT" CAMPAIGN, WHICH FAR SURPASSED GOAL.

MISS HELEN GRAVES WAS THE FIRST FEATURED SOLOIST ON STATION WEAF, IN 1922. HER ACCOMPANIST, MRS. MAY W. SWAYZE. RIGHT— EXCERPT FROM WEAF'S FIRST STATION LOG.



WEAF IN 20TH ANNIVERSARY

Key Station of NBC Has Been Trail-Blazer in Broadcasting; Solved Revenue Problem Early; New York Girl Wins "Miss WEAF" Contest.

WEAF, key station of the National Broadcasting Company since its formation in 1926, celebrated its twentieth anniversary in August with a series of special programs and a contest to select a talented girl born in the month of its own creation, August, 1922.

Winner of the contest was Miss Katherine Donaldson, of 32 West 10th Street, New York. Interested in a dramatic career, "Miss WEAF" will be given a promotional build-up to help further her ambitions.

Station WEAF started life Wednesday, August 16, 1922, on the twenty-fourth floor of the American Telephone and Telegraph Company building, 24 Walker Street, New York.

Broadcast through a transmitter at 463 West Street, WEAF's first program went on the air with no fanfare and little indication of the trail-blazing for which it was destined in the radio industry.

Talent was drawn from telephone company employees whose desk work for some time had been interrupted by "SOS" calls from the engineering department to lend themselves as figurative guinea pigs to experiments in voice and music transmission.

Since they worked on company time, artists, of course, were not paid for their microphone appearances in currency, but in courteously-worded cards of appreciation.

WEAF'S first log records merely: "Start broadcasting through 'WEAF' Western Electric Company, West Street," together with remarks required by the Government as to stations and signals picked up during the day.

Precocious WEAF was only 12 days old when it solved the problem of revenue that had plagued radio operators for years—by selling the first commercial sponsorship of a broadcast. In contrast to the commercials of today, averaging 50 seconds, this historic commercial, paid for by the Queensborough Corporation, ran for 10 minutes.

Since its early days, WEAF has been an outstanding member of the American broadcasting system, and has made many contributions to the service of radio in the fields of information, culture, entertainment.

KATHERINE DONALDSON, WINNER OF THE "MISS WEAF" CONTEST.

[illegible]

[illegible]

Dedicate New RCA Laboratories

Continued from page 51

that the foundations of RCA Laboratories were laid in time of peace—just three weeks before Pearl Harbor—and the superstructure had been raised in time of war. Similarly, he said that the modern sciences of radio and electronics have their roots in peaceful soil, yet today, these sciences, and all sciences, are enlisted in total war.

Colonel Sarnoff said that while the war's decision ultimately will be made on the battlefield, on the high seas and in the air, the fighting men who have the greatest resources of science, engineering and production at back of them will be the victors. This war, more than any before in history, he described as a contest between the brains, imagination and team work of the scientists of one group of nations pitted against those of another group. The United States has been fortunate, he said, in the [illegible] of its private enterprises and universities, which long prior to the war assembled research staffs and built research facilities aimed at the conquest over the forces of nature, over ignorance, poverty and disease.

"Our country is fortunate too that the officers and men in its Military and Naval establishments have a progressive attitude towards scientific research," said Colonel Sarnoff. "They realize its possibilities, not only as a [illegible] in war, but also in peace. [illegible] the scientists in the Laboratories of the Army and Navy and other Government Departments themselves have made scientific contributions from which our country has benefited in the past and will continue to benefit in the future."

[illegible]

ing forces, and in the ingenuity di[splayed] by industrial laboratories in de[veloping] ways of overcoming problem[s] such as the shortages of critical mat[e]rials.

"Of all the fertile fields which Amer[ican] men of science have cultivated fo[r] peace and now harvest for war, radi[o] is in the first rank of importance," con[tinued] Colonel Sarnoff. "Speed of com[munication]—on land, at sea and in th[e] air—is the essence of modern warfare. Aviation, which has so radically revolutionized military and naval strategy, is particularly dependent upon the countless services of radio."

Scientists Linked With Victory

Colonel Sarnoff said that it is particularly fortunate that during the period prior to America's entry into the war, the Radio Corporation of America built up its research organization, and that RCA scientists and engineers gained experience along lines that are now of vital military importance.

"In the last analysis," said Colonel Sarnoff, "a research laboratory consists not so much of buildings and facilities as it does of research men and research leadership. The staff of these laboratories is as fine a group of radio scientists as exists anywhere in the world. They have produced outstanding developments in new electronic devices, television, in ultra-short waves, in acoustics, and in many other branches of radio research. The skills which they developed before the war are now finding direct use in important military applications."

Felicitating Mr. Schairer and his associates upon completion of the Laboratories and the dedication to the cause of Victory, Colonel Sarnoff said that the [illegible] the United Nations will surely come. Then, he envisaged [illegible] science drawing upon [illegible] research to develop [illegible] and more useful products and services for peacetime purposes. "Out of the [illegible] of war," he said, "they will bring [illegible] to a new and better civilization."

With the singing of the Star Spangled Banner led by Miss Lucy Monroe, the dedication program concluded, and the guests were invited to inspect the

building and to meet its distinguished audience.

A tour of RCA Laboratories reveals their size, magnificence, efficiency and promise. It is not only a radio laboratory, but also many laboratories which reveal that modern radio is a science spreading into many fields—electronics, acoustics, chemistry, physics, mechanics and optics, from which grow many by-products and branches—cathode-ray tubes, fluorescent materials, lenses and photography.

The Laboratories building is a three-story structure with long corridors into which open 150 laboratory bays. To understand what is behind them, the inspection must begin in the basement—as shipshape a one as anyone ever entered. It is the nerve center. Into it, through underground arteries of conduits and pipes, are fed the electric power, gas and water supply. Alongside huge water tanks and air-conditioning apparatus are transformers and vault-enclosed power regulators, while the compressed air and steam is supplied from the heating plant. From two 300-foot wells, 600 gallons of water are pumped in a minute.

All the services of electricity, water and gas flow in conduits on the basement ceiling under the main corridor. Proudly, the research men point to 114 vertical shafts, which rise from basement to penthouse, with outlets on each floor. From these, wires and pipes carry the vital services to 420 workbenches each 6-feet long. These unique service shafts are described as a most important feature and development—an original contribution to laboratory construction. In the words of a scientist, they are "a copy of nothing."

Standing at the point where the "T" of the Laboratories structure is crossed, on each of the three floors one looks to the right and left down the 244-foot corridors, or wings. The total length of a corridor from end to end is 488 feet. That is the span across the top of the "T." The doors on both sides of these spacious hallways on all three decks open to the many laboratory bays, and to nine administrative research offices and workshops. On the main floor, the general office section is near the entrance. Executive offices are located in

THIS LARGE STUDIO IS PART OF THE TELEVISION LABORATORY

location on the third floor.

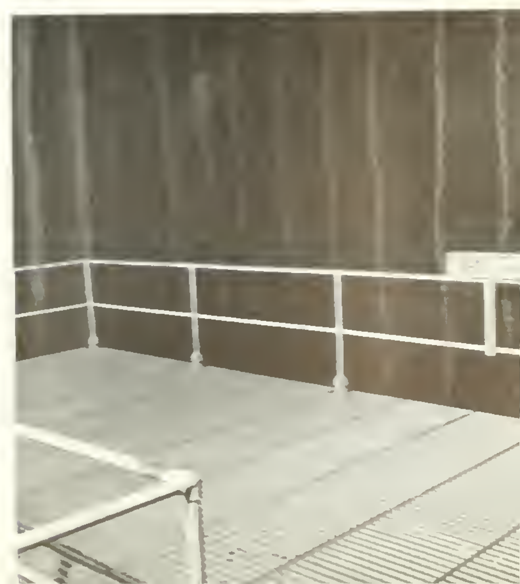
Entering any of the laboratory bays, the visiting scientist is impressed with the spaciousness and broad daylight exposure supplemented by modern indirect lighting which casts no shadows. The work benches are so designed and arranged as to be a joy to any worker. A wiring trough extends along the top of each bench, and the markings at the panel outlets indicate that almost any phase of electric current—AC or DC, and at various voltages, is at the fingertips of the experimenter. In addition, there are taps on the bench for air, gas and water, as well as hydrogen and oxygen in the bays where they are used. And, of course, there are convenient electric plugs for soldering irons and other electrically operated tools. Flexibility in construction is the keynote.

The many Laboratory bays indicate a great variety of services. The Television Laboratory is described as "the last word in facilities for television research." Other laboratory bays are devoted to research in chemistry, especially fluorescent materials; acoustics, radio facsimile, centimeter-wave transmission and reception, receiving tubes, cathode-ray tubes, transmitter tubes, under-water sound, and various activities associated with the future of radio and electronics.

CORRIDORS ON EACH FLOOR OF THE LABORATORIES BUILDING ARE 488 FEET LONG

The Model Shop is considered to be the most modern of its kind and most splendidly equipped in the world. For example, the Meter Room has complete calibrating equipment and 3,000 different meters available for covering voltage, current, temperature and speed. The Technical Library of the Laboratories is catalogued as "complete in the communication field." The Laboratories has an ultra-modern kitchen which adjoins a cafeteria with a capacity to serve from 150 to 200 persons at a time.

In the words of Colonel Sarnoff: "Our admiration for these Laboratories is based upon more than their obviously fine qualities of architecture and construction. We are moved by the deep respect in which we hold the virtues of scientific accuracy and intellectual integrity. These are virtues possessed to a high degree by the men who will work within these walls."



THIS FREE-FIELD SOUND CHAMBER ELIMINATES ALL ECHOES

60,000 at RCAM Rally

(Continued from page 7)

in this war can only be achieved by a unity of purpose; unity of determination; unity of sacrifice on the home front. We shall not fail those who are not here tonight."

In these words, the new Beat the Promise production drive was inaugurated. In planning the campaign, the BTP Advisory Committee, headed by Thomas F. Joyce, Vice President, retained the essential elements of the previous tried and proven Beat the Promise drive. The objective is to make a Second Front possible by getting out more production. Workers are being urged to:

1. Meet and beat production schedules to make a second front possible—and successful.
2. Conserve vital materials, tools, machinery, and time.
3. Be on time every day, to make every minute count.
4. Suggest ideas that will speed production or conserve materials.

Competition between individuals, departments, and plants, will again be the keystone of the drive. Individual and department efforts will be recognized through new merit pin awards and the plant with the best over-all performance each month will receive the President's flag.

The first active step in this new production drive was taken on September 15, when employees received a pledge for their signatures. This solemn pledge, made to the fighting forces of the United Nations, called for the signer to contribute his blood, his money, his sweat and his courage for our ultimate victory.

In Camden, the first elements of the drive began to appear two weeks in advance. On the sidewalks around the factory buildings there appeared the date "Sept. 13?" Posters with this date appeared on the bulletin boards and billboards. Provocative newspaper ads began to appear. Day by day, letters were added to a sign atop the public library adjacent to the plant which finally spelled out "The Second Front Depends on the Home Front! Beat the Promise." Provocative sound system announcements referring to the September 13 date were made throughout the plant.

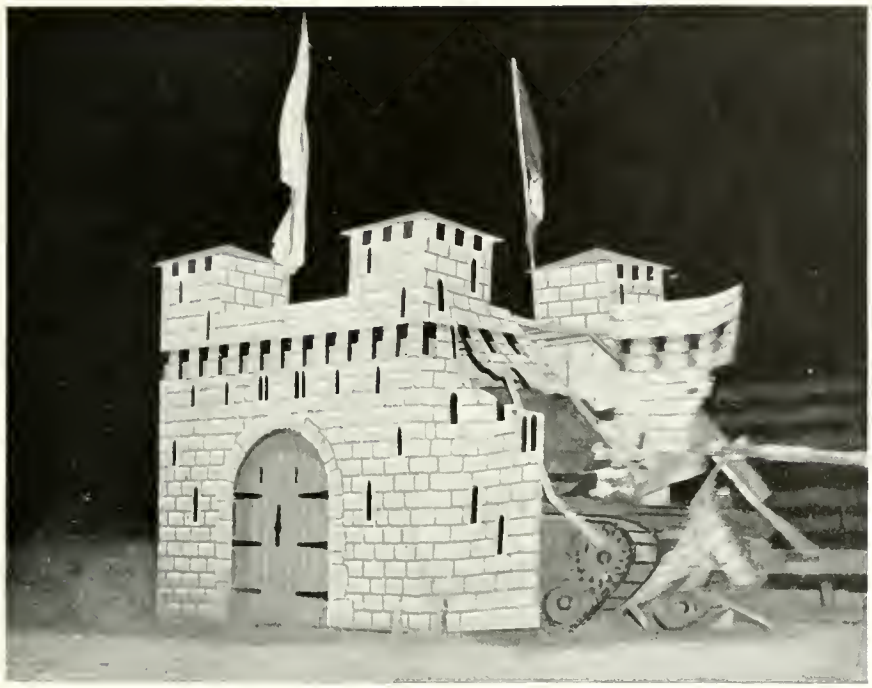
Soon, posters along the highways announced that a war show was to be presented and that tickets for it could be obtained from RCA Victor workers. Handbills describing the show were distributed. The demand for tickets became so great that all the available supply was exhausted long before September 13.

Some highlights of the inaugural program were: the personal appearance of Coxswain John Cullen, U. S. Coast Guard hero who was instrumental in trapping the eight Nazi saboteurs; Lucy Monroe, who led the crowd in a song fest; Alexander Kipnis, famous Russian-American basso and Victor recording artist; and the three Soviet heroes now in this country—Liudmila Pavlichenko, Red Army lieutenant credited with killing 309 Nazi soldiers; Nikolai Krasavchenko, Soviet youth leader, and Vladimir Pchelintsev, crack sniper who killed 152 Nazi soldiers with 154 bullets.

Units of the U. S. Coast Guard and the 385th Infantry of the 76th Division made important contributions to the war show. The feature of the Coast Guard portion of the program, and one that proved unusually popular, was a demonstration of the Coast Guard Dog Patrol.

The troops, under the command of Lieut. Colonel Don N. Holmes, presented a full hour's program of ma-

U. S. COAST GUARDSMEN, WITH HIGHLY TRAINED MEMBERS OF THE DOG PATROL, PARADE BEFOBE RALLY CROWD.



ARMY TANK IS SENT CRASHING THROUGH DUMMY CASTLE-FORTRESS AS PART OF THE SPECTACULAR WAR SHOW THAT THRILLED CROWD.

neuvers and drills, climaxed by an "assault and capture" of an "enemy" position.

An impressive spectacle was the sounding of retreat in which the Army and Coast Guard troops and massed bands participated. As bombs burst in mid-air, and the flag was lowered, Miss Monroe sang "The Star Spangled Banner."

Earlier in the program, the immense crowd thrilled to a dive bomber exhibition staged by the Vultee Aircraft Corporation, and enjoyed immensely the first running of the Victory Stakes in which four horses, ridden by jockeys representing Uncle Sam, Mussolini, Hitler, and Hirohito, competed. Uncle Sam nosed out Hitler at the finish line while Mussolini lagged far in the rear. George Hicks, Blue Network announcer, who acted as master of ceremonies for the rally, gave a post-by-post description of this race.

Out of this rally must surely arise new inspiration for the war workers upon whom our armed forces depend. The fighting speeches must surely be lodged in their minds, the picture of the dive bomber, the smell of gunpowder and the sight of our fighting men must have made a lasting impression. These are things, we believe, that spur men on; these things and the knowledge that they are able personally to make an important contribution toward winning the war.

"RED NETWORK" OUT AS NBC DESIGNATION

It Becomes Unnecessary Following Divorce From Blue: Origin Recalled

NBC, EFFECTIVE September 1, dropped the designation "Red Network," as formerly applied to its affiliated stations. Since the recent separation of the "Red" and the "Blue" Networks (as the National Broadcasting Company and the Blue Network Company) the phrase has become unnecessary.

It was in the horse-and-buggy days of radio communication (circa 1926) that the term "Red Network" came into being. Engineers of the American Telephone and Telegraph Company were responsible for its coinage, and not the National Broadcasting Company. In order to simplify matters the engineers used colored pencil markings to show circuit routings on their maps. Red was used for the NBC-WEAF network, and blue for the NBC-WJZ hookup. Not until some years later did NBC decide to make these two terms more widely known among the public, and such a campaign was started on the air and in advertising and promotion matter.

The publicizing of the term soon brought irate letters from less enlightened listeners. They began to accuse NBC of a lack of patriotism and base designs on the American way of life. Previously these listeners had accused NBC of making the radio waves play strange melodies on their bed-springs, and felling blackbirds while in flight.

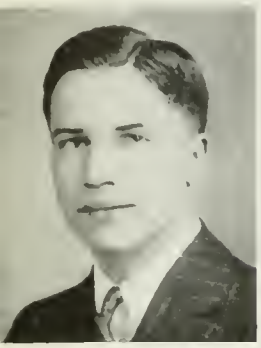
Wrote one friendly correspondent who did not view the matter with alarm: "The minds of some people are very easily swayed and I know for a positive fact that your slogan has been grossly misinterpreted. We all know that NBC has been and always will be one hundred per cent American. . . ."

To another letter writer in search of an explanation for the "colors," NBC, with the correct amount of whimsy, wrote as follows:

> "The red, white and blue crops up everywhere these days; this patriotic set of colors has entered into every phase of our conscious—and yes, unconscious existence. For proof of the first, just look about you; for proof of the second, we offer the First Aid Manual published by the American Red Cross and listing red, white and blue unconsciousness.
>
> "The Red is now known as the National Broadcasting Company; the Blue functions as a separate and distinct company, and the White is non-existent, save for its use in the past as a designation for certain international facilities. No, Mr.—, we can't be red, white and blue, unless it be red with embarrassment over this 'unpatriotic' situation, white with terror lest too many listeners discover it, and blue to know that we've disappointed you in any way whatsoever.
>
> "With none but the kindest thoughts toward another network, we hope that when you're blue you'll dial to NBC; we strive to remember that despite the headlines, life still has its laughlines!"

ROBERT ST. JOHN

DAVID M. ANDERSON



GRANT PASS

JOHN VANDERCOOK

NBC Reporters Cover the War

(Continued from page 10)

ing that he was going to Denmark to look for a story. No dullards, the New York news staff at once interpreted Jordan's cable as the tip-off of the forthcoming invasion. NBC reporters were quickly dispatched to the danger spots. The invasion came within a few days, just as Jordan had predicted. And our reporters were on the job in Norway and Sweden.

When Hitler smashed into Holland, Belgium and France, NBC's reporters covered the invasion from all fronts. They brought American listeners one of the last broadcasts out of Holland. They continued broadcasting from Paris until the Nazi troops took over. Helen Hiett left the French capitol literally only a few yards ahead of the advancing Nazis.

With the fall of France, NBC expanded its news staff throughout the Balkans. Martin Agronsky, the doughty Rutgers University graduate, who did his first broadcast for NBC in 1939 from Geneva, was sent to Belgrade and then to Ankara. Reporters were stationed in Bucharest, Budapest and Athens to cover the Balkan war.

At Ankara, Agronsky made radio broadcasting history. There, in virtually the last remaining neutral capital in eastern Europe, Agronsky found himself in a strangely advantageous position to gather news of all the belligerents. He could attend functions where Axis and Allied diplomats still rubbed shoulders. Agronsky's broadcasts were packed with so many daily scoops that they became "must" listening for American newspapermen and diplomats.

As exciting a reportorial life as Agronsky had at Ankara, it was dull compared to what he was later to encounter in Hong Kong, Singapore, Java and Manila. Agronsky was never a man to pull a punch. He may have angered some but he was later proved correct in his assertions that easy-going life in Singapore was not enough to stop the Japs. One of his broadcasts reporting that American warships in the Far East were using ammunition that had deteriorated through age aroused Congressional repercussions but resulted in an official acknowledgment of the accuracy of his statements.

When Hitler struck at Russia, NBC already was on the job. Robert Magidoff was in Moscow to bring American listeners the official Soviet reports of the progress of the war. When Moscow was threatened in the winter of 1941, Magidoff went to Kuibyshev with the official Russian government entourage. NBC in New York had meanwhile perfected arrangements through RCA Communications to bring Magidoff's voice to the United States either across the Atlantic or Pacific, by whichever route atmospheric conditions were better.

Magidoff is in the NBC tradition—he's no arm chair reporter. He has visited the Russian fighting fronts and seen for himself what goes on. He has brought American listeners the first reports of the prowess of American arms in the hands of Russian fighters. He is frequently quoted by Red Star and other official Soviet publications, a tribute to his accurate reporting.

Incidentally, it was Magidoff who initiated the negotiations by which NBC obtained the Western Hemisphere rights for the first performance of Dmitri Shostakovich's Seventh Symphony by Maestro Arturo Toscanini and the NBC Symphony Orchestra.

As Hitler drove deeper into Russia and negotiations between the United States and Japan neared the breaking point, NBC eyes were turned to the Pacific. Late last fall, reporters were hurriedly dispatched to outposts in Java and Batavia to supplement the staffs in Chungking, Tokyo, Manila, Honolulu and Hong Kong.

Reporters Mobilized

Then came December 7.

Within seconds, NBC reporters at home and abroad, wherever stationed, were mobilized to report the latest developments, to analyze world reaction, and to report from the battlefronts.

Within an hour of the Jap attack on Pearl Harbor, we were receiving direct reports from Bert Silen and Don Bell in Manila and Jim Wahl and others at Honolulu. NBC men were rushed from Chicago, Denver and Hollywood to San Francisco to establish a fully-manned operating point for Pacific Seas operations. In the early morning of December 8, Army and Navy headquarters at Washington were manned by NBC reporters. A special 24-hour telephone circuit was established at Washington so that Army and Navy information could be got to the microphones within a matter of seconds after release.

On December 8, Silen made eight broadcasts from Manila, setting a pace which was followed until that hapless city fell to the Japs.

On December 9, Silen and Bell wrote another glorious chapter in the history of NBC broadcasting with their eyewitness description of the bombing of Manila. American listeners heard the crack of bombs and the rattle of anti-aircraft fire as Silen and Bell, assisted by Wallace, stayed on the spot to describe what their eyes saw.

These men stuck to the last, spurning chances for evacuation. Bell was reported bayoneted to death by the Japs by the late Melville Jacoby of Life magazine, himself a former NBC reporter. Silen is a prisoner of the Japs in Manila. And Wallace was last heard from retreating to the hills beyond the city with American troops.

A letter which Silen wrote to NBC in New York last November tells the story of this NBC man's devotion to his duty better than anything anyone else could write.

"Arrangements completed," he assured NBC. "I can broadcast at any time, even during actual bombing, unless main power supply is destroyed. Will use special bomb-proof broadcast site. Have made arrangements for anti-aircraft guns to protect our position."

On that fateful day of December 7, NBC reporters all over the world reported to America. Wahl and Loren Thurston were heard from Honolulu. Then followed Sidney Albright from Batavia, John Young from Singapore, Harrison Forman from Hong Kong and Ed Mackay from Shanghai. Mel Jacoby spoke from Chungking. Dick Tennelly in Tokyo had already been interned. He has since arrived in this country. But Mackay is still interned in Shanghai at last reports.

Scoop on Dieppe

NBC's newest scoop was the raid on Dieppe. Five days before the raid Robert St. John in London notified the NBC news room in New York not to expect any reports from MacVane until further notification. The reason was apparent when the radiogram came that MacVane had arrived at an unidentified British port and was ready to report on Dieppe. The report of the Dieppe foray by MacVane was heard on NBC and repeated on the Blue Network. MacVane was the only American radio reporter to accompany the Commandos and Rangers.

NBC reporters have done a magnificent job but there's a bigger one ahead. That job is to report the remaining days of the war without bias, without prejudice, without fear and without favor.

And when the war is finished, there's the peace to be won.

Niles Trammell, President of the National Broadcasting Company, has already envisaged the possibilities of reporting the peace by radio. Mr. Trammell believes NBC microphones should be at hand to report the negotiations from day to day to the American people. In such a way, he believes, lies assurance for a free peace, written by free people, for a free world.

The radio of the future will be even more world-wide in scope. Our coverage of the news internationally will be intensified and only the limits of the globe will bound the peregrinations of our reporters.

New Ideas Come out of the Blue

(Continued from page 13)

our schedule. Raymond Gram Swing, the distinguished news analyst, was added to our group of newsmen, and with such noteworthy commentators as Dorothy Thompson, Walter Winchell, Drew Pearson and Earl Godwin we are in a position to offer our listeners the best in this type of informative broadcast.

At the time of our separation from NBC, 116 stations were affiliated with the Blue Network. Since then, 18 new stations have joined the Blue and 5 have been lost to other networks. We haven't many 50,000 watters, but those we have are located in the places where they are really needed and where they fully justify their cost. The Blue gives a primary coverage of 17 out of 50 leading markets, and serves a total of more than 21,000,000 radio families across the nation, approximately 71 per cent of the radio homes in America.

Since the first of the year, the Blue has added 23 advertisers to its list of sponsors, more than any other network. Outstanding in interest to the advertising business, in addition to the Blue's signing of the first seven-day-a-week sponsored program on record, was the largest time sale in point of hours-per-week to any individual sponsor.

NBC Program Ratings Climb

CROSSLEY RATINGS for NBC programs, in the first seven months of this year, show a material increase over the corresponding 1941 period. Total ratings of all NBC programs are 6.8 per cent better than last year, while the average NBC program rating has gone up from 13.7 to 14.9, a gain of 8.8 per cent.

Blue Gets Legion Award

THE BLUE NETWORK on September 21 received the American Legion Auxiliary's seventh consecutive Radio Award as the network which has made "the greatest overall contribution to our war effort."

The award, an engraved plaque, was presented to E. R. Borroff, vice president in charge of the BLUE's Central Division, by Mrs. Eben P. Keen, chairman of the Auxiliary's National Radio Committee, at the Municipal Auditorium in Kansas City.

Each of the four national networks competed for the award by submitting the names of radio series, consisting of four or more programs, which would tend to "awaken the complacent, inspire confidence and increase production for the war effort."

RCAC in Bermuda Circuit

DIRECT RADIO TELEGRAPH service between the United States and Bermuda, one of the key Atlantic outposts of the nation's armed forces, was inaugurated August 10 by RCA Communications, Inc.

The new radio message circuit linking New York and Hamilton is operated at this end by RCA Communications and in Bermuda by Cable and Wireless, Ltd., which also is RCA Communications' correspondent in Great Britain and in a number of other foreign lands.

Operation of the circuit greatly facilitates the handling of message traffic between the two points. In the past, telegraph service with Bermuda was operated by wire and cable via Canada.

(Continued from page 12)

volved for intra-office and plant use.

A plant manager speaks in the following terse but effective words:

> "The primary function of our sound system is paging. This averages 1,000 calls per day. It is estimated that five minutes time is saved on each call, or a total of approximately eighty man-hours per day."

Hundreds of similar quotations could be produced, emphasizing the increased efficiency in operation that comes with procedure control by means of industrial loudspeaker equipment. What could be more convincing than this excerpt quoted from a letter received from a superintendent of a big steel mill:

> "The RCA sound equipment in our mill has been in operation approximately 1½ years. I feel that since this installation has been made, 95% of the mistakes formerly made, due to errors in signaling from the heaters to the rollers, have been eliminated."

The modern industrial plant today is subject to many stoppages of work due to emergencies of various kinds. Fortunately, air raid warnings so far have been entirely a matter of test procedure. Undoubtedly these tests will save lives if hostile airplanes finally should be able to break through our defenses. The quick control of thousands of people, and the proper instructions for the guidance of these people, can only be made possible through the use of sound equipment. There are also other emergencies due to fires, explosions, power breaks, and other unusual happenings. Centralized sound equipment provides the best and safest answer to the proper control and handling of such emergencies. It has proved its worth many times in actual installations.

Military projects of every kind are now using sound equipment for many purposes. In camp, where trained buglers are not always available, the stirring strains of reveille are played over the loudspeaker from a record made for that purpose. Field maneuvers can be directed over wide areas through the use of mobile equipment, and in a number of large camps the entire camp has been sectionalized and covered with sound equipment so that the camp commander can address the entire personnel of the camp, or the various unit commanders can handle their separate sections individually.

Sound equipment is indispensable at the large air fields, and an interesting development of this use is the ability to instantly control with one emergency switch the entire system for such purposes as direction of personnel in the case of crash landings, or other emergencies of a similar nature.

The amplification of recorded music and the distribution of this music throughout large industrial plants has attracted much attention recently. It is estimated that about 3,000 factories in the United States are now using music for this purpose, and much interesting data has been compiled as a result of this use. Many magazine articles have appeared on this subject.

Schedules have been worked out showing the type of music and the proper times during the day at which these programs should be heard. At many plants during the lunch hour, news commentators and other current programs are reproduced over the sound system, and quick-step marches are often played as the workers assemble in the morning or leave at the end of the daily shift.

A number of broadcasting stations are now reproducing musical programs for the benefit of workers on the night shifts. Apparently the day is fast approaching when national advertisers will seize the opportunity now afforded through the reproduction of programs of this sort to thousands of industrial workers throughout the nation.

Safety talks and messages can be broadcast regularly to all employees, and large insurance companies are now devoting a great deal of study and attention to the possibilities afforded in this way of emphasizing safety precautions and improved health habits.

Cordial cooperation between management and labor is a tremendously important factor in the speeding up of war activities, and the Government has given its stamp of approval to cam-

STRATEGIC CONTROL POINTS, SUCH AS THIS POWER ROOM, ARE BEING EQUIPPED WITH TWO-WAY SOUND SYSTEMS TO HEIGHTEN EFFICIENCY, SAVE TIME.

paigns based on building morale and the improvement of employer-employee relationship. These campaigns are largely based on mass meetings of employees and the broadcasting of speeches, songs, talks by men in the armed services, and top Government officials. Obviously, such programs are impossible without the use of plant-wide sound systems, and the personnel directors in the large companies are quick to seize upon this method of stepping up morale.

Campaigns designed to stimulate productive activities are efficiently carried on through the use of sound systems, and even though plants are thousands of miles apart, officials can participate and be simultaneously heard in all plants. The quotation below, which was contained in a letter received from the superintendent of one of the big U. S. ordnance plants, summarizes the value of sound equipment as effectively as can be imagined. He says:

> "With this installation it was possible for us in the average time of 120 seconds to reach the many officials, contractors, foremen and other individuals who were moving about the 2½ square miles of territory comprising this project. It was also possible for us to give the instructions to all the thousands of employes at work on this project at one time while work was in progress. On one occasion we assembled 8,000 workmen on 20 minutes notice who could have been reached by no other method. Our ability to contact individuals or groups of people has materially speeded construction and has saved thousands of dollars through increased efficiency."

The progress and development in the use of sound systems which has proved of such great importance in this period of wartime activities, is certainly only the forerunner of even greater and more widespread development in the years to come. There are vast fields of activity that have hardly been touched up to the present time.

Sound equipment has been installed in a few railroad yards and the actual use in these yards has already demonstrated the possibilities of time and labor saving in every type of railroad operation. Here, certainly, is a tremendous field to be developed, and one that will pay large dividends.

Already sound installation is playing an important part in the great inland waterways of this country. On both lake and river, tug boats and tow boats are working day and night moving great accumulations of freight by water. Many times the pilot or navigator is hampered by poor visibility and great distances between his location and the various barges or other bottoms he is handling. The lookout at the microphone stationed at the bow or stern of his fleet helps materially in the safe and efficient passage of these cumbersome craft through the water.

Looking into the Future

Shipyards cover vast outdoor areas, and here the problem of communication is particularly difficult. Practically every large shipyard in this country is now wired for sound, and the flexibility of this equipment permits it to be used in the remotest corners and even on board the ships under construction.

Complete intercommunication between all important desks in the large offices and warehouses not only facilitates the dispatch of all ordinary business, but actually is a great money saver in decreasing the number of telephone units in use, and relieving the ever present load on switchboard facilities. It also frees the telephone lines for trunk line use, which is by far the most important service the telephone renders.

Looking into the future, it seems safe to predict that the up-to-date architect will provide all future buildings, whether they be for business or residential purposes, with completely integrated sound systems. Outlets for sound will be provided just as outlets for electricity are arranged, and it will be comparatively simple and inexpensive to connect speakers to these centralized systems as the occasion requires. The housewife in the modern home will save countless steps and time, as she can sit in her bedroom or living room and talk to salesmen at the front door, or converse with the maid in the nursery or the cook in the kitchen. In the more elaborate homes, she, of course, can direct her instructions to the servants' quarters or to the chauffeur in the garage. Speakers in each room will be switched on and off as desired, for the reproduction of radio or recorded programs from a centralized control station. These speakers, of course, can be recessed behind attractive grills in the original construction of the house, and thus prevent any unsightly accumulation of individual baffles and wires.

Amplified sound is destined to play such an important part in our daily lives in the future that probably twenty years from now it will seem impossible to believe that we could have gotten along without it. It will have its recognized place in the home, office, and factory, just as electric lights, running water, heat, and refrigeration now do.

In many ways that cannot be told now, sound equipment has enlisted for the duration. This same equipment that is now helping to win the war will emerge in the post-war era in the form of finer and more adaptable equipment, its value and usefulness better understood.

Blue Programs Aid War

DURING THE TEN MONTHS between October 1, 1941, and July 31, 1942, the BLUE Network devoted 511 hours and 54 minutes to the war effort. The time used for this purpose steadily increased during the 10-month period. For example, government departments, including the Treasury, used 10 hours and 55 minutes in October, while in July the total was 28 hours and 45 minutes. Sustaining programs tuned to the national effort occupied 15 hours and 30 minutes in October and 24 hours and 15 minutes in July. Time was also used by outside organizations and in sponsored programs and miscellaneous announcements. The largest amount of time, 167 hours and 22 minutes, was devoted on BLUE sustaining programs.

The monthly report for July reveals that 105 hours and 14 minutes were devoted to the war effort on Station WJZ and the BLUE. Total network time, including 72 hours and 55 minutes sustaining, and six hours and two minutes sponsored, was 78 hours and 57 minutes, and total local time was 26 hours and 57 minutes.

FISHBEIN HEADS GROUP TO ANALYZE PROGRAMS

Viets and Overholser Also On Committee Named by NBC to Determine Morale Qualities.

A NEW AND SCIENTIFIC approach to the morale qualities of network broadcasting was announced September 30 by Niles Trammell, president of the National Broadcasting Company, with the formation of an advisory committee headed by Dr. Morris Fishbein, editor of the *Journal of the American Medical Association* and *Hygeia*, the health magazine, and a leader of the medical and public health world.

Associated with Dr. Fishbein will be Dr. Henry R. Viets, noted Boston neurologist, who lectures at the Harvard Medical School and is Neurologist to the Massachusetts General Hospital, Boston. The third member of the committee is Dr. Winfred Overholser, famous psychiatrist, who is Professor of Psychiatry, George Washington University School of Medicine in Washington, D. C., Superintendent of Saint Elizabeth's Hospital, in the same city, and member of several distinguished medical societies.

The committee will work under the supervision of Dr. James Rowland Angell, Public Service Counselor of the National Broadcasting Company, President Emeritus of Yale University and noted educator.

In announcing the formation of the committee, Trammell stated:

"The National Broadcasting Company believes that radio broadcasting is one of our most important tools in the winning of the war and that its informational and morale stimulating values are of profound importance at this time. We expect this committee of scientists to study and analyze all NBC programs, particularly in relation to the national welfare and the war effort and to make recommendations to the company for the betterment of our broadcasting efforts. These distinguished doctors, we feel, will bring to us a constructive approach, particularly in the fields of public health and morale."

Commenting on his appointment as chairman of the NBC consulting committee, Dr. Fishbein said:

"Millions of people take their leadership and inspiration from the addresses, entertainment and drama which come to them by radio. Scientific study focused on these programs should help toward intensification of those factors most beneficial for the public of a nation at war. Radio is essentially the medium from which the family as a group obtains a stimulus to better living and hygienic thinking. The consultant group will advise regarding aspects of various programs definitely related to these considerations. Its contribution represents a logical extension of the education program already so well established by NBC and widely recognized under the leadership of President Angell."

In referring to the committee, Dr. Angell said:

"The obligations of radio to the nation — and especially in these troubled times — make it imperative that we should conscript all available intelligence to assist in the execution of its task. The distinguished experts who have accepted appointment to this committee are peculiarly fitted to render assistance of high value."

25,000 SERVICE MEN TAKE FREE NBC TOURS

Number Includes Several Thousand Seamen of United Nations Merchant Marine

NEARLY 25,000 members of the armed services of the United States and her allies, as well as several thousand seamen of the United Nations merchant marine, have been the guests of the National Broadcasting Company since Pearl Harbor.

NBC was the first large entertainment producer to remember that the seamen who man the transports carrying supplies to our war fronts were as fully entitled to the courtesies of NBC as the soldiers, sailors and marines. Arrangements were made through the Merchant Seamen's Club for free distribution of tickets for tours of Radio City and for broadcasts, and the merchant seamen eagerly snapped them up.

The long Labor Day weekend, the first such prolonged holiday since the United States entry into World War II, found hundreds of service men crowding NBC for the guided tours and broadcasts. Word has spread throughout the services and the merchant fleets that there is open house at NBC for men in the services.

Many of the soldiers, sailors and marines receive tickets for the tour and broadcasts through the New York City Defense Recreation Center, 99 Park Avenue, which is given a daily supply of tickets. Others simply walk into Radio City where their uniforms have been an open sesame for tours and broadcasts.

The visitors have included the group of British Commandos and Naval and Flying heroes that visited the United States in behalf of War Bond sales, as well as hundreds of commissioned officers who have toured NBC. Among the latter were Maj. Gen. Lewis B. Hershey, head of Selective Service, and Maj. Gen. Sandeford Jarman, second in command of the First Army and head of all Anti-Aircraft Defenses, Eastern Theatre of Operations.

American service men seem to enjoy broadcasts with comedy touches while those of our Allies favor musical productions. This is particularly true of the Norwegians, Danes and British and the merchant seamen.

In addition to supplying tickets daily to the New York City Defense Recreation Committee and the Merchant Seamen's Club, the National Broadcasting Company also allots tickets to the Masonic Service Men's Club and Sloane House, largest Y.M.C.A. in the world.

RCAM Saves Rubber

A SEMI-PLASTIC MATERIAL, made from alcohol and especially tailored after months of research, has been put into service to release large quantities of rubber on the intricate machines used in making RCA radio tubes. RCA engineers, working with engineers of the Resistoflex Corporation, developed the new material, which now has longevity and other distinct advantages over the rubber formerly used.

RCA Laboratories Develop, Install First Electronic Clock

A novel electronic clock is installed in the new RCA Laboratories in Princeton, N. J. This ultra-modern timepiece equipped with more than 170 electronic tubes counts the 60-cycle pulsations of electric current, and indicates that count in terms of seconds, minutes and hours by means of lights. It has no moving parts, no motors, wheels, main spring or hands. Scientists say the electronic principles involved may form the basis of the household clock of the future. Blinking lights "tick off" the seconds on the line shown from 1 to 60, while other lights denote the minutes and hours. Pictured here with the clock is Dr. V. K. Zworykin, Associate Director of RCA Laboratories, who with his staff developed it.

RCAI TRAINING NAVY, MARINE CORPS MEN

Graduates of School Already On Duty With Fleet; Total Institutes' Enrollment 2,100.

With graduates already on duty as rated radio men with the United States Fleet, the RCA Institutes' Navy School reports a current enrollment of more than 800 enlisted personnel of the Navy and Marine Corps in its student body. Present schedules call for the acceptance of 240 additional enlisted men for training each month.

A new record registration occurred with the opening of the regular fall term of RCA Institutes at Varick Street, New York, on September 8. More than 700 new students were enrolled, raising the total number in attendance to more than 1,300. Institutes officials called attention to the significant fact that registrations include a substantial number of women.

Analysing the greatly increased interest in the technical courses offered by the Institutes, the management breaks down the enrollment as follows:

Young men who expect to enter the armed forces and who wish to prepare themselves for technical assignments; young men who feel that radio training may help them attain commission rank; men who have had no particular trade, and now feel that there is a good chance to get a start in the radio industry; men who are not eligible for military service for physical or other reasons, but who wish to do their part in the war effort by working at radio; and both men and women who feel that a knowledge of radio code and radio mechanics will help them render important civilian defense service.

LATIN AMERICANS GET RCAM NEWS PROGRAMS

Series Presents Associated Press Service on Big Stations in Southern Hemisphere.

A NEW SERIES of radio programs featuring Associated Press news was started October 1 in five important Latin American cities under the sponsorship of the RCA Manufacturing Company. The programs are being broadcast over Radio Nacional, Rio de Janeiro; Radio El Mundo, Buenos Aires; Radio Nacional de Agricultura, Santiago, Chile; XEQ, Mexico City, and CMQ-COCQ, Havana, Cuba.

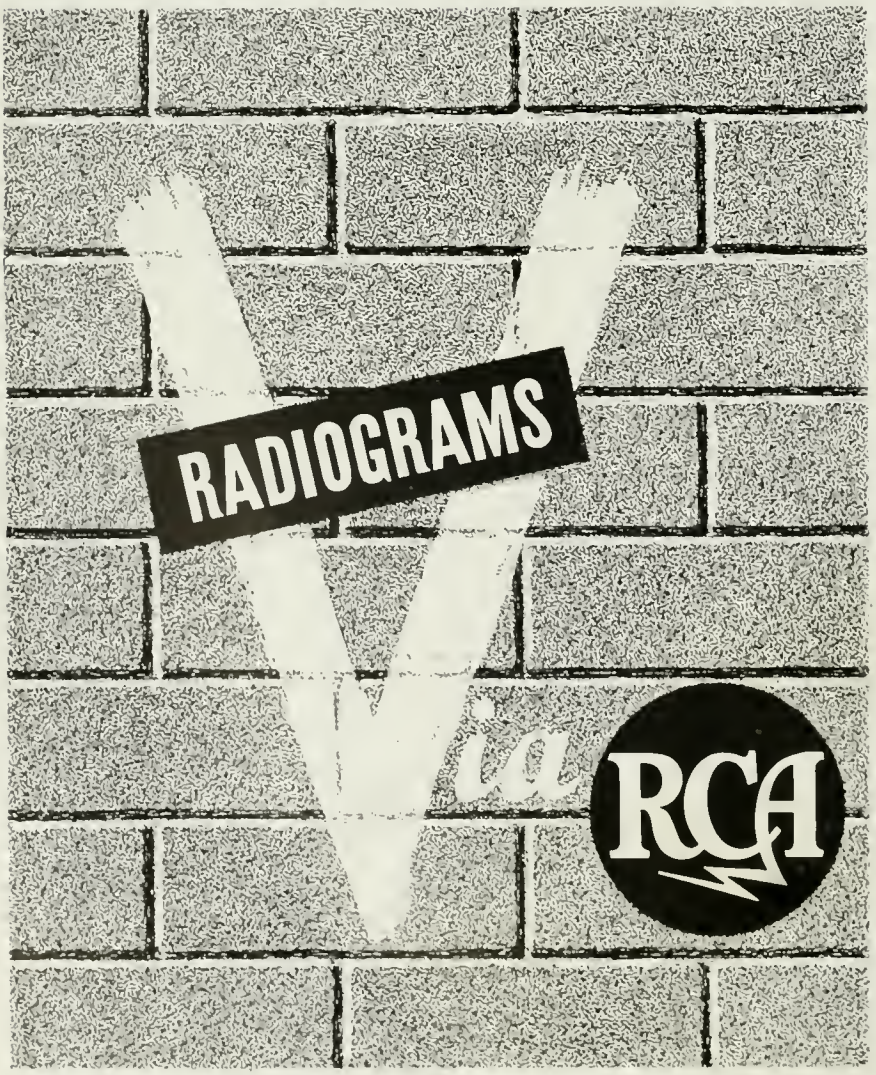
The latest news of the world, as well as national and local news received through the facilities of the Associated Press, RCA Victor officials say, contribute toward establishing the programs among the most outstanding presentations on each station.

The news is broadcast under the title of "Your RCA Foreign Correspondent" and features the slogan: "Today in war, tomorrow in peace, remember RCA Victor."

According to J. D. Cook, Vice President in charge of the RCAM International Division, the programs, in addition to making high-grade, unbiased news available, are intended to explain the RCA story to the public during a period of acute scarcity and shortages.

"There is nothing to sell," said Mr. Cook, "and these programs will explain why. The aim is to retain the good will of the Latin American public which has been built up for the past forty years."

The programs are adapted to the needs and conditions of each individual country through the local offices of both RCA Victor and the Associated Press.



RCAM in Big Ad Drive

ONE OF THE LARGEST institutional advertising campaigns ever undertaken by the RCA Manufacturing Company opens this month with a series of 4-color, double-page ads in a sizeable list of the nation's leading mass circulation magazines. The campaign will run for one year, supported by spot-announcements on local radio stations from coast to coast, according to D. J. Finn, RCAM's Advertising Manager. Initial ads in the Saturday Evening Post, Collier's, Life, Time, Newsweek, and Farm Journal will show how RCAM's "Beat the Promise" campaign has proved a spark plug in war production.

Sound Movies Aid War

RCA THEATRE and film recording equipments are playing important roles in the war, according to Edward C. Cahill, RCA Manufacturing Company's Motion Picture Division Manager. Sound motion pictures long ago won recognition by both civil and military authorities as a desirable recreational activity in maintaining morale and providing relaxation. Their use extends also into the fields of group education and training, Mr. Cahill said.

War Programs Increase

BROADCAST TIME DEVOTED by NBC to programs intended to further the war effort continues to increase, according to figures released by NBC's Program Analysis department. During the period from July 16 to 31 inclusive, NBC broadcast 86 such commercial and sustaining shows for a total time of 29 hours and 49 minutes. This compares with 23 hours and 35 minutes allotted to the same objective in the first half of July.

"CC"/ "MCC"/ "WCC"

By George Clark

Some old rusted coils of twisted wire, broken pieces of concrete, and a concrete slab that juts out over the eroded bank toward the ocean at South Wellfleet, Cape Cod, are all that remain of the first wireless station to be erected in the United States. Actually, in a sense, these relics are a monument to the audacity of Guglielmo Marconi, who dared to think that he might span the Atlantic with radio signals.

For the benefit of "old-timers," in whose memory the station is established forever, it should be recalled that at first, in the early 1900's, it was called "CC," changed to "MCC" in 1910, when all Marconi stations were given the prefix "M," and to "WCC" later on when international regulations required American stations to use the prefix "W" or "K."

In 1901, Marconi had two powerful radio transmitting and receiving stations erected, one at Poldhu, England, and the other at South Wellfleet. He also set up receiving equipment in Newfoundland, where, in the same year, he received the historic first signal (the letter "S") from across the ocean. A storm wrecked the first station at South Wellfleet, and it had to be rebuilt. It was formally opened on January 19, 1903. After years of service, it was dismantled by a force from the First Naval District in 1919.

MCC was especially noted for its dispatches of press every evening, the news of the day being prepared at the AP office in New York, wired to MCC, and thence "broadcast" by wireless. As the news came in on the Cape Cod wire it was punched on tape for automatic transmission, and then run through the reproducer at 10 p.m. at very slow speed. To any old-time operator or amateur who ever listened to that low-pitch, yet rich-sounding spark, the memory will never depart. But none of them will equal the thrill of the old lady on shipboard, who was privileged to listen in to the signal and who was told all about the modus operandi of the tape transmission. She said that she could understand all that very clearly, but what she could not see was how the paper tape could reach from shore to ship without getting wet!

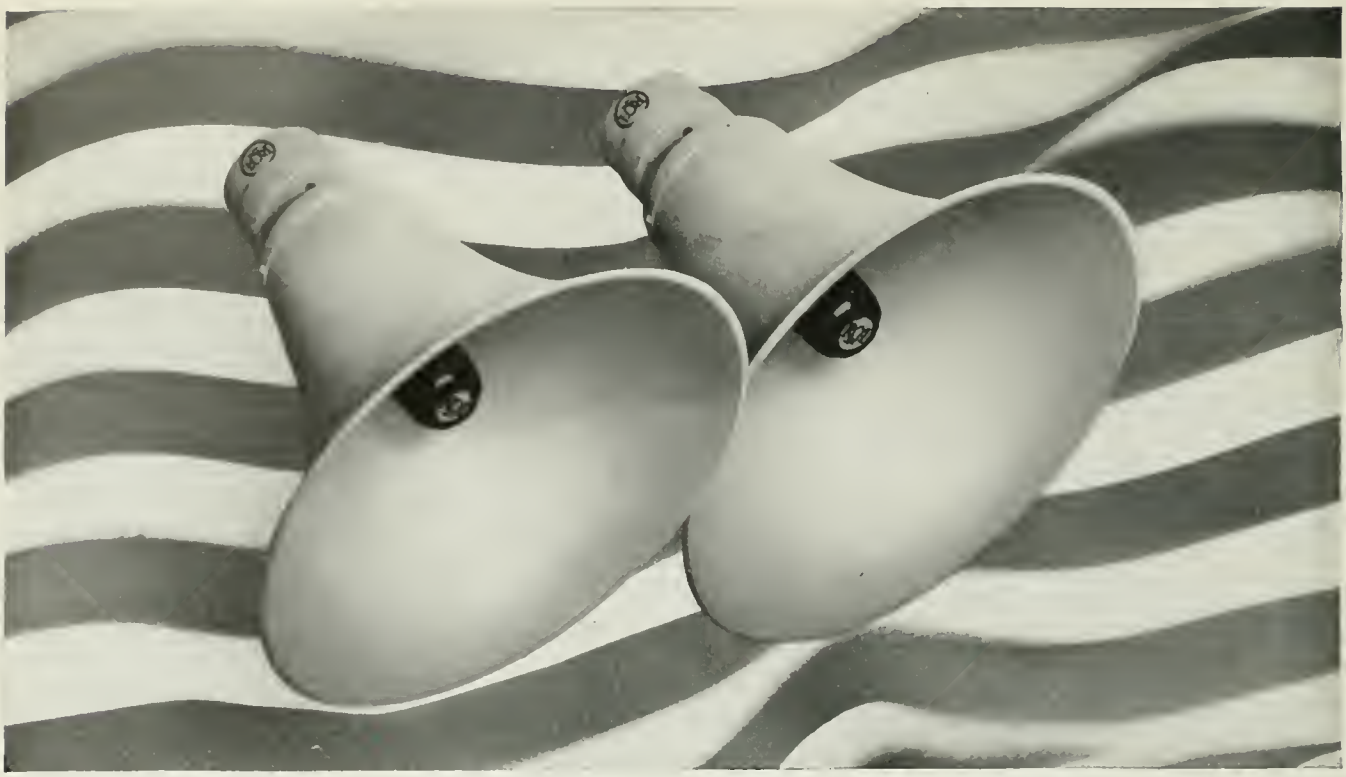
Could she have seen the actual transmission she would have been even more enthused. At the relay in the transmitter room streams of fire a foot long were thrown off by the powerful air blowers. The spark could be heard through the air for several miles, and the light cast by it could be seen even as far as fifteen miles.

Cape Cod was a station for stern men. It was one of the outposts of civilization. So heavy were the blasts of sand blown up by the wind that it often brought blood to the operators' faces. The station was quite a distance from "civilization," and the men had to amuse themselves by the methods of the day. Eminent among these was the phonograph; anyone using profane language was fined in "records," and anyone going to Boston on leave had to bring back six records as "expiation." Nor was it without its dangers. The chef was struck by lightning in the kitchen, though not fatally, on one occasion, and his life thereafter was made miserable by the engineers who offered to give him a shock of 50,000 volts any time he wanted it.

SOUTH WELLFLEET STATION IN 1904

RELIC OF SAME STATION IN 1942.

How RCA Victor's "Beat the Promise" Campaign Helps War Production



SOUND...TO KEEP FREEDOM RINGING

TODAY, American industry has a new ally in sound—the sound of RCA Industrial Communications Systems.

Sound can reach men and women while they work. It stimulates their production, boosts their morale and spurs them on to greater effort.

In most RCA Victor plants, for example, war bulletins are broadcast. Music tides workers over "fatigue periods". Even the voices of former employees now in the service are broadcast to their friends at work in the plant.

An RCA Industrial Communications System has played a large part in RCA Victor's "Beat the Promise" Campaign ...a drive undertaken months before Pearl Harbor, by RCA Victor workers, to increase production of vital military radio equipment.

We have not used sound alone. Posters like those below—contests, suggestion-awards, rallies and printed messages—all played their part. Yet sound has played such an important part that hundreds of other companies have now installed RCA Industrial Communications Systems as essential producing tools!

This use of RCA Industrial Communications Systems—like the other elements of our "Beat the Promise" Campaign—grew out of a spirit we expressed in a statement published in September, 1941: "With RCA Victor, National Defense comes first. By comparison, we hold nothing else important."

RCA Victor invites from all firms now engaged in war production, inquiries concerning this system or any other part of the "Beat the Promise" Campaign. Address Dept. BTP-XA.

. . .

Lucy Monroe, RCA Victor's Director of Patriotic Music, is conducting song fests at various industrial plants. RCA Victor will make her available to all firms in war production as her schedule permits.

BUY U. S. WAR BONDS EVERY PAYDAY

RCA VICTOR

RCA Manufacturing Company, Inc., Camden, New Jersey

A Service of the Radio Corporation of America

No. 1S5588

No. 1S5442

No. 1S4591

Three of the many full-color production-stimulants prepared by employees of RCA Victor as part of the "Beat the Promise" Campaign—and available, at cost, to other manufacturers of military equipment. As this advertisement went to press, 90 companies had adopted, in whole or part, the "Beat the Promise" material. Posters shown measure approximately 20" x 27". The central piece is a display 42" long—the tug-of-war figures slide forward or backward to indicate the current status of production.

Are you prospecting for "Pay Air"?

"Pay air" is the broadcaster's equivalent for the miner's "pay dirt." It means air that assays rich enough in listeners to make a radio program pay dividends to its sponsor.

You'll find most of the "pay air" over the 561 coast-to-coast counties that do 80% of the nation's retail buying. And it is no coincidence at all that the Blue Network delivers 86% coverage of those 561 counties.

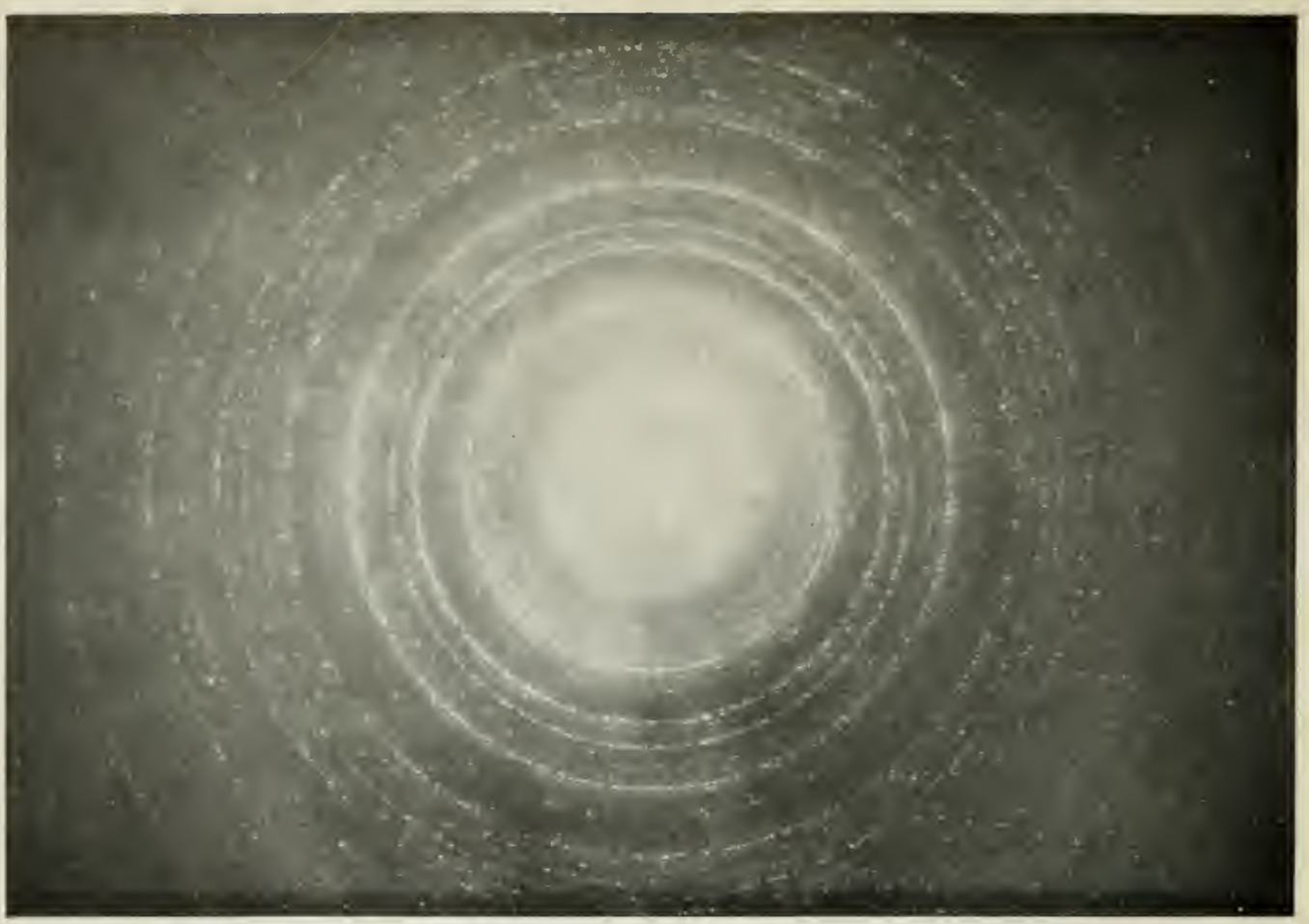
Such concentration is one reason why the BLUE delivers your advertising message at the *lowest cost per family* of *any* medium . . . entering the home.

There are other reasons as well. They have to do with the BLUE's policy of competitive showmanship . . . and its radically new methods of audience promotion.

Your BLUE representative can give you the full story in a very few minutes. Why not call him in? The efficiency factors that have brought more new sponsors to the BLUE in '42 than to any other network may apply as well to *your* wartime advertising problem.

The Blue Network Company, A Radio Corporation of America Service

the blue network



A NEW ELECTRONIC SUN!

The famous RCA Electron Microscope has a new attachment—a diffraction camera, so that man's eye can see the enormously magnified structure of an infinitesimal object and actually determine its atomic design.

The *atoms* are not seen but the new adapter *finds out where they are*. The revealing picture looks like the midnight sun. But in reality this is not a picture of anything. It is the spirit of the crystal structure—an assembly of complex clues from which the mathematical detective can determine how the atoms take their orderly arrangements in various substances.

Scientists call the picture a diffraction pattern—a pattern from electrons, which found their way through the crystal lattice—that invisible, exquisite arrangement of atoms which nature fashions from humble table salt to the lordly diamond. It is a set of concentric circles, some diffuse, others sharp. From the dimensions of the circles and the intensities, the arrangement of the atoms in the material is determined, so that the crystal structure can be identified and analyzed.

Thus, RCA Laboratories open new and unseen worlds for exploration as the Electron Microscope coupled with the new diffraction camera sees deeply into electronic and submicroscopic realms.

BUY U. S. WAR BONDS EVERY PAYDAY!

RCA LABORATORIES

PIONEER IN RADIO, ELECTRONICS, TELEVISION

A Service of the Radio Corporation of America • RCA Building, New York, N. Y.

Other Services of RCA: RCA Manufacturing Company, Inc. • National Broadcasting Company, Inc.
R. C. A. Communications, Inc. • Blue Network Company, Inc. • Radiomarine Corporation of America • RCA Institutes, Inc.