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SIGNAL

Welcome to 1946. War World II is over, and the lessons learned are now competing for the attention of a world ready to move forward. But first, something needs to be done with the knowledge and the networks that developed during the war.

A group of communicators from government and industry have formed an association dedicated to maintaining, as a contribution to industrial preparedness, the splendid liaisons and cooperation that existed during the war. This was the beginning of the Armed Forces Communications and Electronics Association (AFCEA).

Step back in time to post-World War II and relearn through the pages of the association's publication, *SIGNALS,* some important lessons, many of which are relevant even 60 years later.

AFCEA International is proud to present the September 1946 issue of *SIGNALS* in modern digital format.

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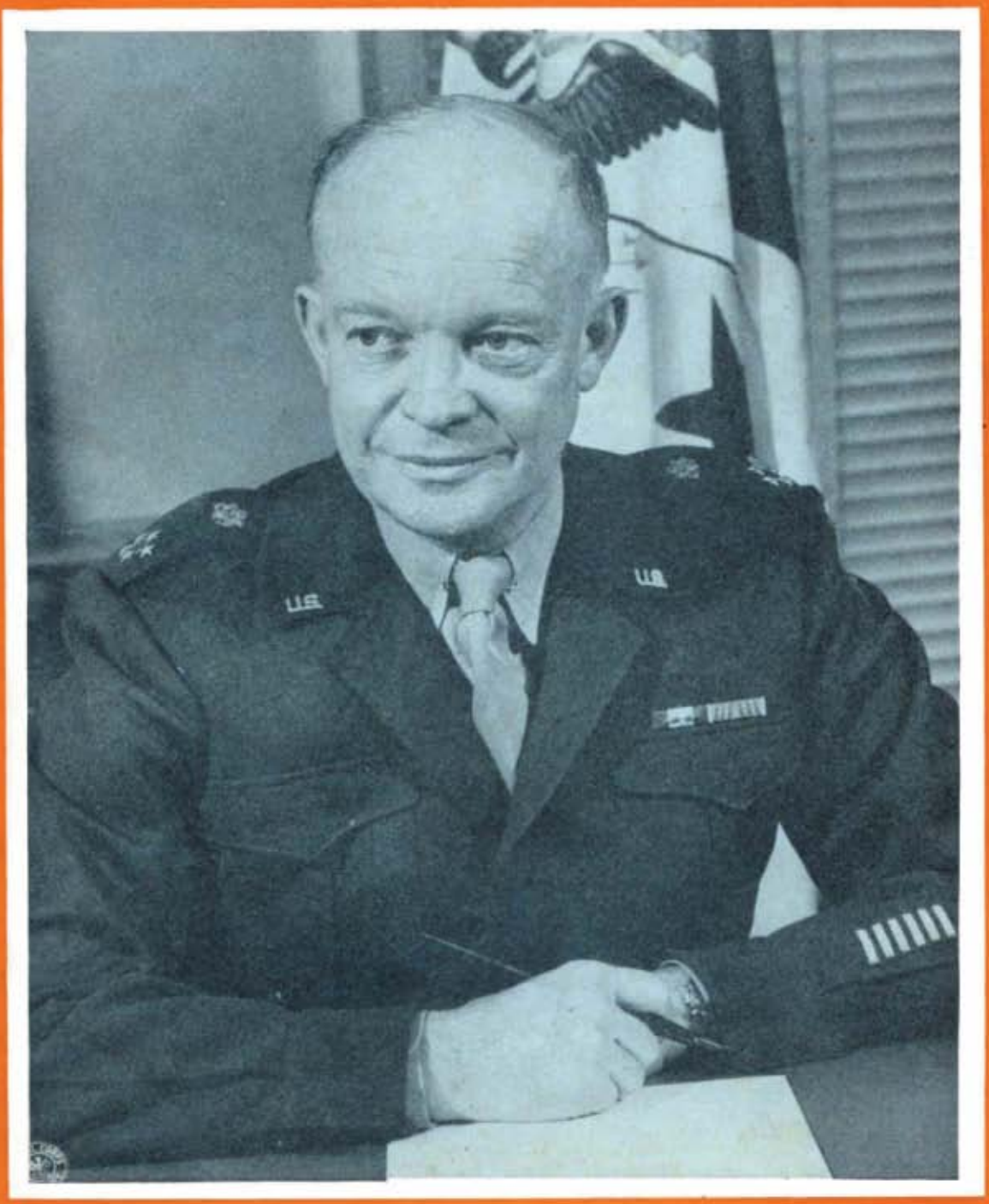
This historical publication does not include the interactive features, such as searches or links, that are found in *SIGNAL's* current digital editions.

SIGNALS



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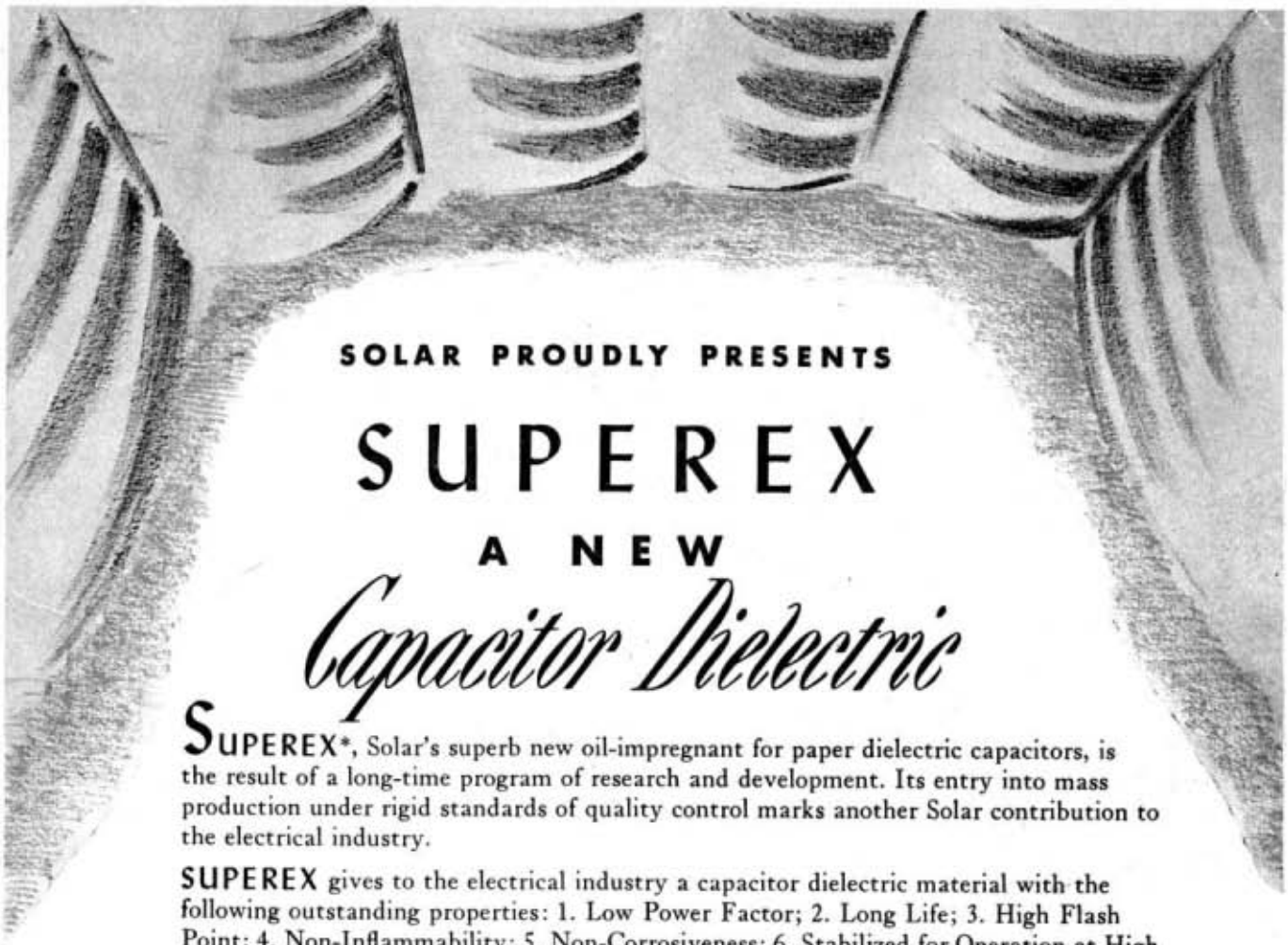

SOLAR PROUDLY PRESENTS

SUPEREX

A NEW *Capacitor Dielectric*

SUPEREX*, Solar's superb new oil-impregnant for paper dielectric capacitors, is the result of a long-time program of research and development. Its entry into mass production under rigid standards of quality control marks another Solar contribution to the electrical industry.

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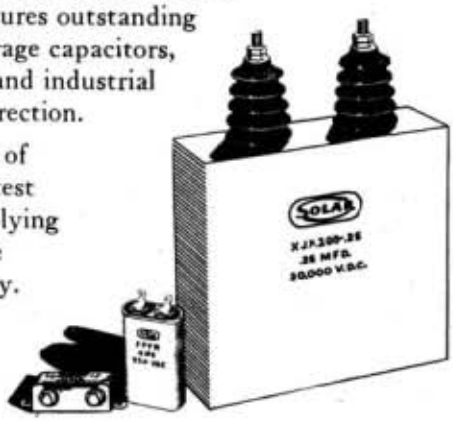

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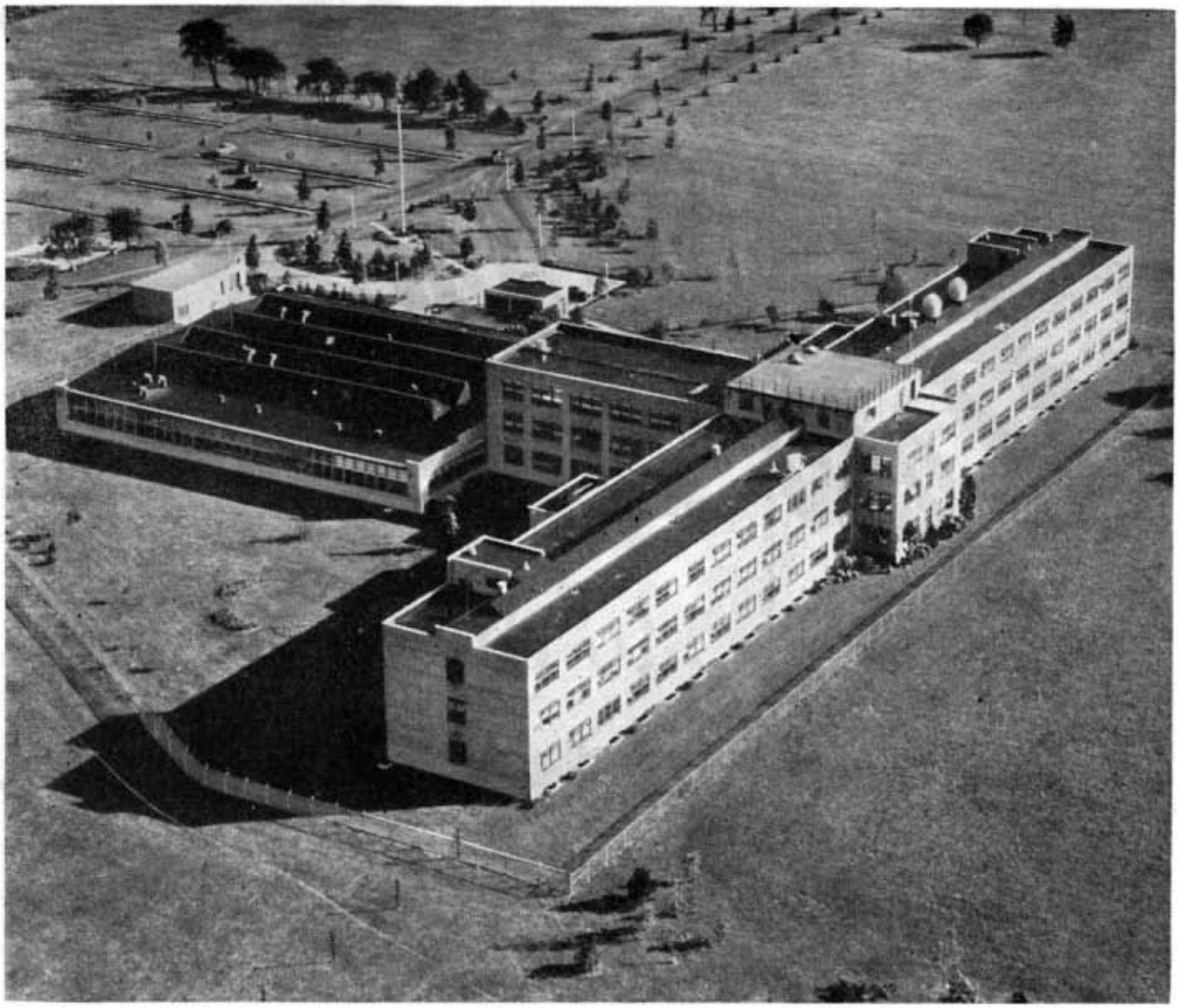

RCA Laboratories—Center of Radio and Electronic Research

RCA Laboratories at Princeton, N. J., are far more than one of the most modern and best-equipped laboratories ever built. It is a community of scientists, research men and technicians—each a top man in his field—each working with the other—contributing wherever and whenever his specialized knowledge will help.

It is a "university of ideas"—where visions are graduated as practical realities . . . where human wants are fulfilled through the creation of new products and processes, new services and markets.

It is a birthplace of scientific, industrial and social progress for the entire nation.

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For just as the RCA electron tube, television receiver, radio, or the Victrola, is stamped by the RCA trademark, so does the product itself bear a stamp of experience and research that gives RCA pre-eminence in the field of radio and electronics.

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PIONEERING

Scientists and research men who work in RCA Laboratories made many vital contributions in helping to win the war through application of radio, electronic, radar and television techniques. Their skills now are devoted to peacetime applications of these sciences.

At RCA Laboratories the electron microscope, radar, all-electronic television (featuring the projection system for the home) and many other new instruments of radio, including hundreds of new electron tubes, were developed to improve and to extend the services of radio around the world.

RCA **RADIO CORPORATION of AMERICA**

SIGNALS

Journal of the Army Signal Association—Dedicated to Military Preparedness

VOL. I SEPTEMBER, OCTOBER, 1946 NO. 1

CONTENTS

SIGNALS

Brig. Gen. S. H. Sherrill (Retired)
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Asst. Editor

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Application for entry as Second Class matter filed at the Post Office at Harrisburg, Pa., under the Act of March 3, 1879.

The Front Cover

This photograph of General of the Army Dwight D. Eisenhower is familiar to every American.

This Issue

Devoted chiefly to Signals, past, present, and future within the Army Ground Forces and for service purposes. Future issues will emphasize the importance of the Army Air Forces.

WAR DEPARTMENT
THE CHIEF OF STAFF
WASHINGTON, D. C.

29 July 1946

THE ARMY SIGNAL ASSOCIATION:

I wish to express my greetings to the Army Signal Association. The efficient and extensive communication system from Washington to the front lines which served our Armed Forces during the war played an important part in achieving final victory. This great communication system was possible only because of the magnificent efforts of the communications personnel of the Signal Corps, Air Force, Infantry, Artillery, and armored units, backed up by unified and cooperative efforts of the communication industry -- both operating and manufacturing. The photographic personnel -- both still and motion picture -- also backed up by the industry, made a great contribution to the training and operations of our troops.

It is important in the vital interests of national defense that the Army maintains its contacts and cooperation with communication and photographic personnel and with those great industries during peace. It is my sincere hope that the Army Signal Association will succeed in accomplishing this important mission.

Dwight D. Eisenhower

Chief of Staff

IT IS with great pride that we dedicate this, our first issue of SIGNALS, to CHIEF OF STAFF AND GENERAL OF THE ARMY

DWIGHT D. EISENHOWER

We of the Army Signal Association, the officers and men of the Signal Corps, and the civilian technicians and workers within the Corps, are honored by the recognition given us by our Chief of Staff. It is our purpose to assist General Eisenhower in his urgent task of maintaining the Army at maximum efficiency, to further the National Defense, and to more closely integrate the liaison between industry and the Armed Forces.

"Greetings

"I am very happy to learn of the birth of SIGNALS, the new service publication of the Army Signal Association, which takes its place in the family of service journals. It has a splendid opportunity for constructive service to the members of the Signal Corps of the Regular Army, National Guard and Organized Reserves. My best wishes for every success."

J. LAWTON COLLINS
Lieutenant General, G.S.C.
Chief of Public Information

* * *

"With recent developments in the art of war, development of greater speed in communications becomes of more vital importance while the requirements for maximum reliability and security are in no way reduced. The problems of military communications are many and difficult. To keep the arts of various types of military communications abreast of modern developments it is essential that knowledge of military problems and familiarity with military equipment be as widespread as practicable among interested citizens of the United States whose services may be called for to help the military services."

EARL E. STONE
Rear Admiral, U. S. Navy
Chief of Naval Communications

* * *

"As editor of the *Coast Artillery Journal*, and in behalf of the members of the Staff, I wish to welcome SIGNALS into the field of service journals. We are sure that in a very short time this same welcome will be extended you by the host of subscribers now anxiously awaiting your publication."

W. I. BRADY
Colonel, CAC
Editor, *Coast Artillery Journal*

* * *

"On behalf of The Society of American Military Engineers, I am glad to welcome to the ranks of those Associations which are dedicated to the National Defense, and which contribute so largely to better interservice relations, our new member, the Army Signal Association.

I am confident that through the activities of this Association the science of military technical matters will be advanced greatly."

J. FRANKLIN BELL
Colonel, U. S. A. (Ret.)
Executive Secretary,
The Society of American Military Engineers

* * *

"It is with genuine pleasure we acknowledge your announcement of the formation of the Army Signal Association.

Permit me, on behalf of the Army Transportation Association, to extend congratulations on your enterprise and our best wishes for the success of your undertaking. We welcome you to the group of service organizations.

The Signal Corps, with its enviable background of traditions and its history of achievements, fully justifies your action which merits the support of all who are interested in the field of communications."

WILLIAM H. CLOPTON
Colonel, U. S. A. (Ret.)
Secretary-Treasurer
The Army Transportation Association

"To Signals"

"The Quartermaster Association extends sincere congratulations to our newest Service organization, the Army Signal Association.

Our greetings to your official organ, SIGNALS. May it prosper and spread its influence for progress through the years to come."

R. H. JORDAN
Brig. Gen., U. S. A. (Ret.)
Secretary-Editor
The Quartermaster Association

* * *

"May I take this opportunity of congratulating the Association in its new endeavours. The *Armored Cavalry Journal* feels that your magazine will fill a long needed publication for those in the Signal Corps and welcomes you most heartily to the folds of service journals."

EDWIN M. SUMNER
Colonel, Cavalry
Editor, *Armored Cavalry Journal*

* * *

"The three underlying pillars of artillery success in battle are movement, firepower, and communications. For the Artilleryman, then, the founding of the Army Signal Association holds forth the assurance of even more efficient communication facilities and equipment than were available to us in the war just won. For this "selfish" reason—among many broader ones—the United States Field Artillery Association is highly pleased to join in welcoming the Army Signal Association into the family of Service Associations. All contribute to the good of our Army and Nation."

DEVERE ARMSTRON
Colonel, Field Artillery
Secretary-Editor and Treasurer,
The United States Field Artillery Association

* * *

"From the patriarchal viewpoint of the fifty-five years of publication *The Military Surgeon* welcomes the infant SIGNALS into the world of service journalism and wills for it a career of high usefulness and success. Infants are born with knowledge and wisdom in these progressive times and there is every confidence that this will be a precocious child from the first sound of its voice. More power to its newly expanded lungs."

JAMES M. PHALEN
Colonel, U. S. A., (Ret.)
Editor, *The Military Surgeon*

* * *

"The Editors of *Army Ordnance* send heartiest felicitations to SIGNALS. They wish for this newest member of the fraternity of military publications a long and useful life dedicated to the national defense of the United States.

"Ordnance and Communications have had close association throughout military history. The artillerist has been able to find and keep on the target with superior weapons with the aid of superior signal techniques. Now that the field of communications has broadened to the unforeseeable horizons of electronics, the interdependence of Ordnance with its rockets and guided missiles becomes all the greater."

L. A. CODD
Colonel, U. S. A., (Ret.)
Editor, *Army Ordnance*

Major General H. C. Ingles, Chief Signal Officer of the Army.

SIGNALS

VOL. I SEPTEMBER-OCTOBER, 1946 NO. I

The Military-Industry Communications Team of World War II

HARRY C. INGLES

Major General, U. S. Army, Chief Signal Officer

AS a rank-and-file member af the Army Signal Association, I want, first of all, to express an active interest in the organization and a determination to aid in the accomplishment of its aims.

I can say with assurance that these sentiments are fully shared by my associates in the Office of the Chief Signal Officer.

It has been made clear by the sponsors of the Association, that its primary objective is the safeguarding of our National Security as a first and essential step toward lasting peace. To this end an earnest endeavor will be made to cement the unity between civilian and military agencies which was one of the outstanding characteristics of our war effort.

In a recent speech on this subject, Gen. Dwight D. Eisenhower, Chief of Staff, said: "In order to stand securely in the world as the fearless but understanding champions of liberty we must draw on all civilian resources which can contribute to the country's defense.

"Cooperation between all the agencies of government, all the economic, industrial, scientific and social agencies of our nation is essential. Security is a national structure whose strength grows with the contribution of every individual."

The Army, as one of the major agencies charged with responsibility for National Security, recently adopted measures to extend such relationships. By the establishment of a General Staff Division for Research and Development, the War Department has taken an important step toward the continuing application of our scientific resources to the solution of military problems.

Creation of the Division will result in the Army's coordination with existing civilian organizations in the development of new military techniques. Great civilian advances are foreseen as a result of much of the Army-sponsored research. Recognizing the abilities of civilian research groups, the War Department will, from time to time, put before industrial and scientific experts broad problems which will be dealt with along lines which the civilian organizations have found to be most productive.

During the current fiscal year the Signal Corps is placing particular emphasis on its research and development program. Twenty-five million dollars, approximately one-fourth of our budget, will be expended for this purpose. That is the amount we requested of Congress and it was unhesitatingly granted by both Appropriation Committees which have consistently supported our endeavors to keep abreast of the latest scientific advances and to develop superior communications, radar, meteorological and other electronic equipment. While $25,000,000 is slightly less than the amount used in 1946 and is a reduction of more than 60 per cent under 1945 we feel that it will enable us to continue several research projects which were under way when the war ended, and to conduct further investigation into new discoveries which appeared during the prosecution of the war.

Our major expenditures in this field will be in the general multi-purpose radar field; continued research in wave propagation—in an effort to widen the usable portions of the already crowded radio spectrum — and improvements in the field and fixed plant applications, including short, medium and long-range ground radio communications equipment. The miniaturization program begun during the war will be continued in order to provide small, light-weight tactical field equipment.

It is our intention to maintain a small, active staff of inventive and experienced technical men to design and develop equipment in our labratories as a basic foundation for rapid expansion in case of emergency. By keeping in constant touch with scientific progress in the field of military communications ahd by designing the most modern pieces of equipment, we could go into production in three or four months, once the drawings have been made.

It does not seem to be generally known that we work in close cooperation with the Navy and the Army Air Forces. The several laboratories constantly exchange officers and data. Research and development programs are worked out through joint consultations. Approximately two-thirds of our development and research expenditures are made by contract with industrial and academic laboratories and most of our basic research is done by these groups.

Other proposed Signal Corps expenditures are based on carefully studied plans for furnishing adequate communication services for the Army in the United States, in occupied countries and at other points where United States troops are based and where these facilities are essential.

Procurement will be reduced to the minimum necessary to augment existing stocks and to provide for a limited amount of newly-designed equipment for extensive field tests.

It is regrettable but true that the Signal Corps has lost a high percentage of its highly-specialized operating personnel. The new men coming into the Army present the same training problem we encountered during the war. It is necessary to train 29 different classes of communications trades and communications

and photographic specialists and our enlisted school at Fort Monmouth is giving courses to about 8,000 men at a time. The capacity of that school during the war was about 9,000.

In the field of photographic service, the Signal Corps will continue to produce and distribute all motion and still pictures for War Department agencies. This will include the production of essential films for training all components of the post-war Army—National Guard, Organized Reserve, ROTC and Regular Army. Many subjects for training films covering scientific and technical advances brought out during the war are included in this program.

It is fitting that, in the first issue of the official Army Signal Association organ, some mention should be made of the increasing importance of Signal communications in modern warfare.

No single activity is as much a part of all military activity as communications and, in World War II, communications ranked with rifles and rations and ammunition and other indispensable combat factors.

Commanders in every theatre repeatedly emphasized the fact that success in battle depended on the effectiveness of communications personnel and equipment to insure prompt transmittal of orders and the immediate translation of those orders into coordinated action.

It was a long way from the War Department in Washington to a rifleman at the front or to an airplane soaring over distant lands. But they were linked by an unbroken chain of command which sprang from endless days of planning and training and from the courage and skill of thousands of communications troops in the Ground Forces, the Air Forces and the Signal Corps.

From the higher commands down through the Division, the Signal Corps provides the communications system. Within the divisional infantry and artillery units, the establishment and operation of communications is performed by officers and men of the Ground Forces.

In the Infantry, for instance, the regiment has a communications platoon, which serves the regimental headquarters, the battalions have their own communications platoons and each company has its communications personnel. In an Infantry regiment, often as many as 350 men are engaged in communications duties.

Communication within other units of an Infantry division is similar to that of an Infantry regiment and its components. The Division Artillery, like the Infantry regiment, has its Communication Officer and Communication Platoon. Radio communication is relatively more important than wire in Field Artillery units, and in the lower echelons it becomes the primary method. So synchronized were artillery communications over a wide front that, in many instances, 20 battalions of Field Artillery could be trained on the same target in a matter of minutes.

It was in the front lines that communications troops showed their mettle. Runners, linesmen, radio men, switchboard operators and message center clerks fought in the midst of their units, suffered many casualties and were awarded many decorations.

The supply and operation of communications equipment for the Armored Forces presented a number of problems. In the limited space of a highly-mobile armored vehicle, it was necessary that equipment be compact and capable of functioning when the vehicle was in motion. Apparatus had to be engineered to withstand violent road shock and the great variety of vehicles necessitated many different types of mounting. Antennas were required to fit the vehicle and special interphone equipment had to be designed. Radio sets were developed to permit ground-air communication and mechanical noise was virtually overcome by special headsets and microphones.

The Armored Forces use of signal equipment was not limited to items especially designed for them. The higher echelons employed all the wire, high powered radio, radio relay, teletype and similar systems used by other commands.

The extent to which such equipment served can be judged from the records of the 146th Armored Signal Company, which served with the Sixth Armored Division from Normandy through Brest and the Battle of the Bulge, all the way to Metteweida in Germany. During the period July, 1944 to May, 1945, the message center of this company handled 152,340 messages. Some 1,385 miles of telephone wire were laid during the period and 3,508 teletype messages were handled. Six CW radio nets transmitted a total of 3,414 messages, representing 117,594 groups.

The vast facilities of the Army Air Forces encircled the world and formed an air communications system unequaled by any other military power. Their communications personnel became skilled in such vital tasks as the guiding of aircraft to their targets, locating enemy planes and supplying aircraft with essential navigational aids.

With the employment of special devices, the Air Forces were able to see the enemy at night or through clouds and to identify bombing targets even in the worst weather conditions. More than 400,000 communications personnel were required for the operation, supply, maintenance, training, procurement and storage of this communications equipment. More than 20 pieces of communications and electronic equipment were installed in a single heavy bomber.

Among other major factors which proved essential to the sweeping success of the Air Forces were the instrument approach system for aircraft, air-sea rescue communications, strategic and tactical communications and the long-range navigation system for the use of aircraft flying great distances.

The Army Air Forces also operated—through the Army Airways Communications System—the world's largest transport facilities. Radio highways in the sky reached over the earth to guide planes on their courses and to maintain constant contact with them.

Many thousands of men, scattered in more than 1,000 detachments throughout the 48 States and in 55 foreign countries, were required to perform this unprecedented task. Point-to-point stations transmitted weather information with the speed of light. Hundreds of radio beams, homing beacons and other electronic navigational aids guided airplanes under all weather conditions.

It has been estimated that if all radio navigational aids operated by the Army Airways Communications System were placed equidistant around the equator, they

would constitute a continuous radio highway with a radio range or homing beacon every 80 miles. More than 300,000,000 words a month were transmitted by point-to-point stations and ground stations made more than 50,000 contacts with planes in flight each day. During many amphibious landings in the Southwest Pacific, AACS men moved in with assault troops.

In discussing briefly some of the significant Signal Corps contributions to the successful prosecution of the war, some worthwhile achievements will necessarily be omitted but they are nonetheless indelibly written in our official records.

It seems worthy of note that when the Army Communications Service attained its full development during the war, it handled approximately 50,000,000 words a day—more than a man could utter in nine months of continuous speaking at the rate of 125 words a minute, twenty-four hours a day. This unprecedented volume of traffic was automatically transmitted with complete security.

The Army Command and Administrative Networks was the medium through which every phase of the Army's war effort was coordinated. Its flexibility enabled commanders on every front to communicate with Washington and with each other speedily and securely. At its peak the system included 800,000 circuit miles of radio, telegraph, telephone and submarine cable.

When the Army Communications Service was organized in January, 1942, the War Department communications system consisted essentially of the War Department Signal Center—later to handle 9,000,000 words a day—a domestic radio system, a few radio and cable circuits to Alaska and a few overseas circuits to Panama, Hawaii, the Philippines, Puerto Rico, Bermuda and Iceland.

It was early evident that sufficient equipment could not be obtained and adequate personnel could not be trained in time to handle an unprecedented volume of traffic unless new techniques were expeditiously developed. Billions of words were to be transmitted and even a brief delay on the relaying of each message meant an incalculable waste of time and manpower.

MAJOR GENERAL HARRY C. INGLES, Chief Signal Officer of the Army and author of our feature article in this our first issue, was born in Pleasant Hill, Nebraska, on March 12, 1888. Following graduation from the United States Military Academy, West Point, New York on June 12, 1914, he was appointed a second lieutenant of Infantry, transferring to the Signal Corps on July 1, 1920. General Ingles has had unusually wide service and experience in the Army including Director of the Signal Officers' Training Camp during World War I; Signal Officer of Divisions, Corps, and Armies; command of Signal companies and Signal battalions; Director of the Army Signal School, Fort Monmouth; duty on the War Department General Staff; Chief of Staff, Caribbean Defense Command; Commanding, Panama Mobile Force; Deputy Commander, European Theater of Operations; and Chief Signal Officer of the Army. He holds a Bachelor of Science degree from the United States Military Academy and the honorary degrees of Doctor of Engineering from the University of Nebraska and the Brooklyn Polytechnic Institute. He is a graduate of the Army Signal School, a distinguished graduate of the Command and General Staff School, and a graduate of the Army War College.

Even as it struggled to meet current requirements the Signal Corps undertook the task of streamlining the entire system and bridging the gap between fixed, long-haul communication facilities and the tactical nets in the field. We called upon the operating commercial companies for help and their response was magnificent. Signal Corps engineers worked in close conjunction with engineers from industry to adapt or modify standard commercial types or to design new equipment which would serve military purposes.

By adapting certain existing commercial equipment, a multichannel radio system was developed which ultimately formed the backbone of fixed military communications between the War Department and the major overseas commands.

It was found that long direct radio circuits from Washington to some overseas points were not reliable because of magnetic disturbances in polar regions. A round-the-world belt-line of circuits, avoiding the polar regions, was built. Terminals at strategic points north and south of this belt-line tapped into it at the nearest major stations. In this manner 24-hour operation was assured.

The Signal Corps was responsible not only for the research, development, procurement, storage and issue of military fixed plant and tactical equipment, but it also engineered, procured, shipped, handled major maintenance on point-to-point communications equipment, navigational aids and meteorological apparatus for the Army Airways Communications System.

In line with the program of simplifications, packaged equipment was developed. Among the first such units was a complete radio range station for aircraft navigation, including transmitters, antennas, power units, and a prefabricated shelter with all wiring and accessories. While it represented a relatively large and complex facility it was packed for air transportation. It was received with enthusiasm in the field and other necessary items for an entire installation were assembled under one stock number. Two airdrome control stations also were prepared as packaged equipment.

Communications were provided for all of the Presidential Conferences, permitting delegates to remain in immediate contact with their advisors and representatives throughout the world. The most spectacular of these projects was in the Crimea, where a complete installation of more than 250 tons of equipment was made in nine days. The Signal Center at Yalta was connected by VHF radio link and by land-line with a communications ship at Sevastopol, 65 miles away. Aboard the ship, long-distance radioteletypewriter equipment provided a circuit to Algiers, and thence to Washington and other points throughout the world.

A traffic control system was established in England before the Normandy invasion and developed a plan by which it was possible to transmit approximately 500,000 words of press traffic a day without interfering with operational facilities. Control arrangements were made in the United States to pipe General Eisenhower's first communique and succeeding broadcasts to all major radio networks and the Canadian Broadcasting System. Scores of radiophotos of the actual landings were also transmitted.

Special equipment installed in both the presidential train and plane enabled President Roose-

velt and President Truman to keep in touch with Washington even on extended trips.

Among the major landline projects were the Alaska Military Highway Telephone-Telegraph Line, constructed in one year through 2,060 miles of rugged wilderness to provide a vitally needed link between the United States and Alaska, and the 1,750-mile telephone-telegraph line between Calcutta and Kunming.

The story of radar has been told time and again; its tactical achievements have been enthusiastically extolled. But the drama of radar lies not altogether in its battlefield performance or its future possibilities, but in the research and development program that made radar a decisive factor in the winning of the war.

The technique of radar did not just suddenly appear on the eve of World War II; it evolved during the 1920's and '30's—a product of years of research. Even as early as the first World War, Signal Corps scientists tried to improve on the sound locator as a means of detecting enemy aircraft. Military, naval, and civilian scientists continued this effort during the 1920's. In February, 1936 the Army's research in this field was centralized in the Signal Corps. Both radio and infra-red detection techniques were tried, and on December 14, 1936, the Signal Corps completed and tested the first American radar.

Once the effectiveness of that first set had been demonstrated, the expansion of the radar development program was given highest priority. Construction was begun in 1937 on a radar designed to provide electronic data for the automatic aiming of antiaircraft searchlights. This first standard Army radar proved its value and versatility in the course of its service test by the Coast Artillery in 1938. Due to the efforts of the civilian scientists working with NDRC this first equipment was soon replaced by more efficient micro-wave equipment.

This first American radar was developed as a defensive weapon. Its initial functions were to provide warning of approaching enemy planes and to supply electronic data on their range, altitude, and azimuth, to aid antiaircraft searchlights in focussing on the enemy. But radar soon proved so accurate that it was used in conjunction with gun directors to automatically aim and set the fuzes for antiaircraft fire.

The same radar which had been designed for defensive functions thus became a weapon of offense. And subsequent developments of radar were designed more and more for offensive purposes. Radar was used in conjunction with very high frequency radio communication to direct night-fighter planes to positions where they could intercept and down nocturnal enemy raiders.

The achievement of radar contact with the moon, which has probably attracted more attention than any other Signal Corps development, has already laid a foundation of technical knowledge for the defense of the United States against enemy long-range missiles. Extension of this new fund of technical knowledge is one of the present concerns of the Signal Corps.

Closely allied with the technological development of radar, but less spectacular and therefore less well known to the general public, is the new communication technique known as radio relay, which has revolutionized the problems of long-range tactical communications. This device offers the multiple advantages that, when necessary, it provides a radio substitute for wire communication; it vastly extends the range of tactical radio communications; and it affords large numbers of telephone, teletype, telegraph, or facsimile channels on a single broadcast wave. Radio-relay was one of the major communications developments of the war.

Recent compilations indicate that more than 4,000,000 miles of field wire—enough to girdle the earth 160 times—was produced by American manufacturers during World War II.

This all-purpose wire, which proved the nerve center of Army communications, was consumed in such quantities during the sweep through France and Germany that all available facilities of the wire and cable industry in the United States could barely keep pace with the demand. A peak production of 180,000 miles a month was reached at the time of Germany's surrender.

In addition to the vast quantities of field wire consumed during the war almost a million miles of assault wire were produced to meet the characteristics of modern warfare including fluid fronts and lightning advances which demanded immediate penetration and entrenchment.

Among the war accomplishments made possible by the liaison between Signal Corps and the industrial laboratories was the development of spiral-four cable, designed to permit transmission of a number of messages simultaneously with minimum attenuation and distortion, and to increase talking range. It was developed for use with carrier equipment and serves successfully at distances up to 150 miles with suitable repeater stations when used as aerial cable or laid on the ground and likewise up to 400 miles when it is buried underground. It is normally used as a transmission line connecting telephone and telegraph terminals and is capable of self-suspension over long spans. In emergencies, it has been used as submarine cable.

Industry produced, during the war, 832,000 one-quarter mile lengths of spiral-four which would equal two metallic circuits circling the globe more than eight times and would provide, with appropriate carrier equipment, some 33 voice channels around the world.

Editors Note: The Chief Signal Officer's article is based on personal inspections and visits to communications activities in every part of the world in which Signal Corps men were located during the war. No Chief Signal Officer in history has had a more distinguished and varied military record than General Ingles. In addition to the accomplishments listed in the brief biographical sketch elsewhere in SIGNALS, he has commanded the Mobile Force in Panama during the critical days of early 1942, was deputy commander of the ETO under Lt. Gen. Frank S. Andrews until that officer was killed in an airplane crash in Iceland, was an instructor for four years at the Command and General Staff School, served for four years on the War Department General Staff, holds the Distinguished Service Medal for his services in the Caribbean and was later awarded an Oak Leaf Cluster to that highest non combat award for his services as Chief Signal Officer. In 1945 he was made an honorary Doctor of Engineering at the University of Nebraska, where he was a student before entering West Point. He has also been awarded decorations for distinguished service by the British Empire, Venezuela, and Bolivia.

Weather has been a more powerful ally and a more dangerous foe in World War II than in any other previous war. Weather forecasters have fixed invasion schedules, started and stopped air attacks, and provided essential data for frontline artillerymen. In this last war, as never before, weather observation and long-range forecasting have been vital military operations. The research and development program which harnessed science for these meteorological tasks has been one of the most important technological achievements of the war.

Widespread adoption of substitutes or synthetics for such scarce materials as natural rubber, leather, mica and copper saved immense sums, while other important factors included new and modified designs, simplification, standardization, and revised manufacturing practices.

Emphasis was placed also on improvements in distribution, in packaging and handling equipment, in salvage and in proper use, maintenance and repair.

The fight against adverse climatic conditions of the tropics and frigid areas began early in the war when reports from the field—especially from the South Pacific—told that the functioning of essential radio and other equipment was often being seriously impaired or became inoperative through excessive humidity, fungus growth, insects or inevitably rough handling by landing nets or on the beaches.

The problem of developing protective measures at once became a major concern and, with the full cooperation of interested industries, an effective program was speedily evolved, which not only fulfilled the most pressing emergency requirements, but proved adequate in meeting subsequent demands. This program included immediate development of an insulating material that would resist deterioration, certain modifications in design and packaging, and the adoption of hermetically sealed components.

A military acticity of major importance was developed by the Army Pictorial Service, U. S. Signal Corps, during World War II. This was the production of educational films which saved countless days in the training of new troops. Training films by the hundreds were prepared demonstrating, for instance, how a rifle is assembled, how communications wire is spliced, how a tank is serviced. Many of these films were given new sound tracks in foreign languages to increase the practical value of arms shipped to non-English speaking allies. Many striking orientation films were produced to emphasize the underlying causes of the war and related subjects.

In addition to the training films, still or motion pictures were also produced for historical record, for information to assist commanders in reaching military decisions, for identification to aid in safeguarding military establishments, for photomail and V-Mail letters and for the reproduction of documents, maps and similar matter, both to preserve valuable information and to supply duplicates.

By the end of the war, 2,659 motion pictures had been produced and 302,000 prints had been distributed. In addition, 1,458 film strips had been released to the Army for orientation and training use.

None of the above accomplishments would have been possible had it not been for the expert and conscientious efforts of Signal and communications officers and enlisted men from the Reserve Corps, National Guard, and Army of the United States and the splendid assistance and cooperation of the communication, photographic, and motion picture industry.

In my opinion, the great mission of the Army Signal Association is to provide a vehicle for maintaining the contact with and interest of the many splendid officers, enlisted men and civilians who were responsible for the successful communications during the last war. Unless vigorous steps are taken and maintained to keep this contact and to preserve the liaison with and cooperation of industry, the potential strength of the United States will be seriously undermined.

Communications In the European Theater

The American Military Communications Network (in ETO) centered at Paris where the local military telephone system handled about 25,000 calls a day. A long-distance switchboard handled another 5,000 calls every twenty-four hours. This wire system was interconnected with 740 underground cable circuits, totaling 85,000 miles.

The British operated a parallel system in Northern France and Belgium, which was integrated with the American system through several switching centers.

The Signal Corps communications system expanded steadily. When Paris became the Headquarters of the Communications Zones, a signal center was opened there which was soon handling traffic second in volume only to that of the War Department. That center was installed in a former German blockhouse, with walls of reinforced concrete ten feet thick. It operated eighty-two teletype and thirteen radio circuits, and interchanged approximately one thousand messages each day with the War Department in Washington alone.

The traffic volume clearing through this center never reached its capacity, although frequently more than fifty thousand messages were handled weekly. About ninety-five per cent of this traffic was by wire or radioteletype; the rest was transmitted and received by high-speed or manual radio. An even greater volume of traffic was handled by the Signal Dispatch Service without passing through the Signal center.

Some idea of the amount of business transacted by this Signal center can be gained from the fact that traffic originating and terminating at Communications Zone Headquarters alone often exceeded 250,000 words per day. Com Z Signal Center also served as the major relay point for the whole theater, transmitting and receiving an average total of approximately 7,500 messages or 1,750,000 words every twenty-four hours. Between fifteen and twenty miles of teletype tape were used each day.—Lieutenant Colonel Randolph Leigh in *48 Million Tons to Eisenhower.*

EDITORIAL

In seems appropriate and fitting for us to announce in this first issue of SIGNALS, the editorial policy that will be our guide. As Editor, I consider it very definitely my duty to support editorially those policies which will, in my judgment, do most toward contributing toward national security and therefore toward the lasting good of our country and the American way of life.

Just across from our offices on Pennsylvania Avenue, stands the Archives Building, on the cornerstone of which is chiseled "What is Past is Prologue." Those few words express very clearly a motto for ASA. Although this first issue of SIGNALS is devoted chiefly to reports and articles on "what is past," future issues will contain articles on new developments in the communication field and authentic predictions by engineers and scientists on things to come and their relation to the problems of military communications and photography.

In our first monthly BULLETIN we pointed out that ASA is not controlled by the War Department or the Signal Corps. It was stated also that ASA may criticize any individual or activity which, in our opinion, is acting contrary to the best interests of our country, particularly in matters of preparedness. We wish to reflect both in SIGNALS and SIGNAL BULLETIN the sentiments of our members in these matters.

Our Aims

The high aims of our Association are set forth in this issue. These all add up to a never ending effort to insure that never again will America be so pitifully weak that it is a temptation for an aggressor nation to attack us as was done at Pearl Harbor. That temptation grew out of our weaknesses which resulted from our self-satisfaction, our smugness, and other attitudes of most Americans after World War I, all of which permitted the years to go by without any effort or interest in national security by any but a few realists who believed passionately in preparedness.

Freedom of Expression

We expect that many articles which will appear in SIGNALS will express points of view which will not be in agreement with ours. That is as it should be—the real strength and value of our publication will come from its use as a meeting ground for free expression of ideas in the changing present. Editorial opinions as well as those of the authors of the articles have no sanction of the fighting or service forces and do not necessarily represent the official views of the Government. We call attention to this fact at this time because we want it understood that our future editorial policy will emphasize deficiencies as well as accomplishments in winning World War II. There were marvelous achievements, great instances of superb leadership. There were many mistakes, some costly ones made in good faith, often through ignorance. There were unreasonable administrative actions, unwise decisions. We hope to help to find the reasons for these last and eliminate the probability of their happening again.

We must constantly school ourselves to look into the future rather than backward, not neglecting however the lessons that we must have learned from our participation in all our wars and of course most of all in World War II. We want for our magazine not only articles of technical or Signal Corps interest but also articles of broader perspective. On the editorial page we shall try to stress what we feel are the "big issues" of our mission.

New Blood

It seems to us that some action must be taken by the American people without very much more delay to insure the continued flow into the military professions of a portion of the more brilliant and promising young Americans. We have already learned from some of the best of those offered commissions in the Regular Army on July 1, 1946 that they have decided not to accept them. In fact, some 7% had quickly decided not to accept. This fact makes us wonder why, when more than 100,000 applied for the 9,000 vacancies.

There are a number of ways to make the military profession attractive. One is by making it financially appealing so that those who carry the responsibility of preparing and leading our young men in war may live with the knowledge that their families are adequately provided for. The inadequacy of pay for Federal employees in the higher brackets has been receiving nationwide attention. Budget Director Smith resigned because he could no longer carry on at the relatively low salary he had been getting; the members of Congress themselves have emphasized the need for a substantial increase in their own pay in order to attract the best to the halls of Congress and have accordingly increased their pay from $10,000 to $15,000 per annum. A bill to increase the pay of our ambassadors by $7,500 annually (over 40%) has been passed and signed while a bill has been passed raising the pay of Federal judges by $5,000 per year. And now there is a move on foot to lift the $10,000 ceiling on Federal employees. All this is to make it possible to persuade top flight people to accept Federal jobs. The recently provided increases to officers of the armed services, of $500 per year for a brigadier general for example, only something over 7% of his pay and allowances, are hardly worthy of the name especially since their pay had not previously been increased since about 1908 and the increase in living costs in July alone more than compensated for it. We nevertheless feel those nominated for permanent commission in the Army should not reject the commission because of the present unsatisfactory pay scales, as we believe Congress will adjust this when it again convenes.

The unbelievable success of our armies in World War II attests to the brilliance of our military leadership. These lines from West Point's Alma Mater express in an unforgettable way the reason why the professional soldier is happy in serving his country: "And when our work is done, may it be said well done." Many foreign powers have for many years rewarded their military leaders by retiring them at increased rank and pay. Since February of this year, commissioned officers of the Navy who are retired are placed on the retired list in the highest temporary grade held during the war. A recent press release announced the retirement of Lt. Gen. Holland Smith of the Marines in the grade of full general. A bill to reward officers of the Army in the same manner as is done for the Navy was blocked in the Senate just before Congress adjourned. At the same time legislation calculated to make continued service in the National Guard and Organized Reserves more attractive by offering retirement to certain of these officers was postponed. The American people and the Congress therefore, so far have made little effort to say it "was well done" and to show their appreciation for the victory by praising the professional soldier. If they would have an efficient officer corps, the American press (and the American people for whom they speak) would do well to emphasize more than it has been doing, the honor that attaches to service under the American flag in time of peace as well as in war. We cannot hope to have the best if the accomplishments of the professional officer and soldier are minimized and belittled. And we *must* have the best—as we have in the past—to prepare our armed forces for any future conflict in which young American lives are offered to defend their country. The armed services *must* continue to attract a fair share of the future "men of merit"—to borrow an expression used in a recent issue of LIFE magazine in referring to the Lees of Virginia who "had a tradition that Americans of education and culture owed a duty to their government."

Keeping Abreast of Technical Progress

Funds for designing and testing equipment to keep abreast of industry must be made generously available. Lack of funds before World War II kept back the development of radar which might well have been operating with trained personnel at Pearl Harbor, instead of being hastily manufactured and hurriedly installed there. We should not forget that many of the changes in War Department policy recommended by the Doolittle board for the improvement of the well being of the soldier will cost large sums of money. If funds are appropriated in the limited amounts that marked the 1920s and 1930s, we may have to sacrifice the continuance of some of these changes which are costly or have our development and production programs seriously curtailed. This latter we cannot let occur.

Military Training

We are 100 per cent in favor of universal military training. Until legislation is passed to provide for this, we are in a better position than ever before to have an Army of quality because of the recently authorized pay increase to enlisted personnel. This is not and will never be an adequate substitute for universal military training however. Meanwhile, military discipline needs especial emphasis in the post-war let-down period both at home and overseas. Good soldiers will applaud the Navy's order of a few weeks ago tightening up on compliance with uniform regulations and "ride thumbing" in Washington.

Unification

Unification of the services has not lately received as much attention as it did earlier in the year. The report and recommendations of the 12-man civilian investigation board, headed by Franklin D'Olier did focus attention on this important subject when it was handed to President Truman in July.

A step in the direction of unification was taken in the reorganization of Congress when the Military and Naval Affairs Committees in each house were merged into the Committee on Armed Services. If Representative Carl Vinson becomes Chairman of the new House committee, it is expected that the military establishment will benefit. He has demonstrated in his handling of the Naval Affairs Committee outstanding ability to bring to the floor legislation with the backing of his entire Committee and to obtain favorable and speedy action by the House. His leadership has been evident in the great success of the Navy's legislative programs, as compared with the difficulties in committee and on the House floor of many essential features of the Army programs. This action will probably result in some economies and the removal of some of the inequities in various personnel benefits in the several armed services.

Meanwhile, several of the Army associations including ASA have arranged to meet once a month to coordinate their activities and avoid duplication of effort and to insure united action when advisable, in the interest of military preparedness.

In addition to dedicating the first number of SIGNALS to the Army's great Chief of Staff, General of the Army Eisenhower, we have given to General Collins the place of honor in the list of those who have sent their greetings to ASA. We have done this because General Collins' job today is next in importance to that of the Chief of Staff, insofar as military preparedness is concerned. This is because it is his responsibility to influence public opinion and the Congress to give favorable consideration to problems of preparedness and to enact legislation and appropriate funds to enable the War Department to implement essential features of its preparedness program. Failure to accomplish this after World War I cost us untold waste in treasure and in suffering in World War II. No better selection to accomplish this most important of missions could have been made than this brilliant 50 year old Lieutenant General with a distinguished combat record in both the Pacific and European Theatres of operation.

THE ARMY SIGNAL ASSOCIATION

THE AIMS AND PURPOSES OF THE SOCIETY

● The Army Signal Association is a non-profit, patriotic, educational, and scientific organization with the following objectives:

● To preserve and foster the spirit of fellowship among former, present, and future personnel of the U. S. Army, commissioned, enlisted, and civilians.

● To maintain as a contribution to industrial preparedness the splendid liaison and cooperation that existed during the war between the Army and the operating and manufacturing industries, communications, electronic, motion picture, and photographic.

● To educate the public at large and keep its members informed of requirements in the field of military communications and photography.

● To promote mutual understanding and to effect cooperation with American scientists, inventors, engineers, and manufacturers in civil life and the Regular Army, National Guard, Reserve personnel, and affiliated units of the Army concerned with communications preparedness.

● To assist in developing and maintaining an efficient personnel; commissioned, enlisted, and civilian, for the supply, installation, maintenance, and operation of communications, electronic, motion picture, and photographic equipment in the field in an emergency.

Now that victory has come to our armed forces on land, sea, and in the air, the Association is devoting its entire strength and organization to preparedness. America must be kept strong to meet its national and international obligations. In the words of General Eisenhower, "Only the strong can cooperate; the weak cannot."

During the period following World War I, the American people lost interest in military preparedness, partly because, through wishful thinking, they had come to believe there could never be another war. Vigorous action is needed to prevent America from repeating the mistakes of the 1920s and 1930s. The lessons learned the hard way in World War I and again in World War II must be perpetuated so that future generations of Americans may be saved the costly errors and mistakes of those mobilizations if war again should come. We must be constantly alert to combat indifference, lack of interest, perhaps animosity toward anything involving military preparedness.

● The Association is devoted solely to military preparedness and National defense. It has no commercial interests, no political alliances, no religious affiliations. Its income is expended only in furthering the aims set forth above. Recognizing that individuals in every walk of life are interested in military preparedness *any* and *all* Americans are eligible to join, especially if they are interested in activities in any way connected with electronics, communications, still and motion pictures. Some local chapters have been founded. Others soon will be, both at home and overseas.

● The long-range program of the Association, as laid down by its Board of Directors is the initiation of and the support of projects connected with:

1. *Research:* Maintain a continuing program of equipment research, insofar as it applies to electronics and photography. All facilities both Government and private should be used for this research and development.

2. *Military signal communications—industry—science:* Strengthen in every conceivable way the relationship between these three factors of national security and between the Navy, the Air Forces, and the Army. Foster close cooperation with scientific research and educational institutions.

3. *Training:* Train annually Signal Corps and other communication officers, enlisted men and units of all components to insure their readiness if and when mobilization should come. Ways and means to be devised and made effective to encourage non-professional personnel to devote adequate time each year to carefully planned and supervised training. Signal Corps officers and enlisted men should be trained in industrial practices while key industrial personnel are trained in Signal Corps design, production and supply.

4. *ROTC:* Establish Signal Corps ROTC units at educational institutions and increase their number.

5. *Replacements:* Inaugurate an annual equiption and allied equipment.
our armed forces of the latest types of communicament replacement program to insure the supply to

6. *Keep our country strong:* Keep alive public interest in military, industrial, and scientific preparedness to assure America's supremacy afloat, ashore, and in the air.

BUILD-UP FOR BATTLE

Brig. Gen. McAuliffe, artillery commander, 101st Airborne Division, gives glider pilots last minute instructions on D plus 1.

—the story of Signal Communications in the ETO from Pearl Harbor to D-Day—

Like every other branch of the armed services, the Signal Corps has its record of outstanding accomplishments in the world's most recent struggle for freedom, its record of problems encountered and bold solutions brought forward to surmount them.

But the story of American military achievement in whatever field one may take, has in these past years grown far too big ever to be told on printed pages. The best that can be done is to set down in a few words something of the methods and equipment, the techniques and training, and the organization, work and bravery of the men and women who did the job.

Since the founding of the Signal Corps, a few years after the end of the Civil War, its growth has been marked by two main developments, both of them strikingly illustrated by the history of World War II.

. . . in a few packed paragraphs, the Chief Signal Officer of the European Theater, Brigadier General (formerly Major General) Francis H. Lanahan, Jr., gives a birds-eye view of another story that's too big for the history books—the story of Signal communications in the European Theater before the Invasion . . .

The first of these resulted from the breathtaking onrush of scientific discoveries and technical advances in the communications field between the two world wars. A radar set was a far cry from the observation balloon used in the middle of the nineteenth century. "Walkie-talkies" were easier to carry and use than wire and field telephones. Very high frequency radio communications could be installed faster than anyone could lay cable or wire. And there were many other ways, too, in which the possibilities of the new means for transmitting and receiving messages could be exploited in waging an all-out war.

With such incalculably valuable new tools to put at the service of the Army, the Signal Corps was brought into the operational picture on a larger scale in World War II than ever before. It carried the heavy burden of planning elaborate communications required for the execution of major tactical operations.

Along with its radically increased employment went a corresponding increase in the size of the Signal Corps. Where it had needed thousands in the First World War, it needed tens and even hundreds of thousands in the Second. This time there were jobs to be done that had not even been dreamed of, back in 1917. The story of Signal communications in 1941-1945 is longer than the miles of wire and cable un-

rolled by the advancing Allies. It covers more than the distances spanned by signal couriers with boats and trucks, planes and motorcycles. This time it goes along, word by word, with messages flashed from transmitters to receivers, all over the world. It adds a long unwritten chapter for each headquarters, every embattled CP, each switchboard and signal center. Because wherever a teletype circuit was engineered, an open wire line strung across the fields, a message put into code, an enemy broadcast picked up, a word spoken on the telephone, there was work for Signal Corps personnel.

The story of Signal Corps operations in the European Theater goes back to the first days of 1942, when Pearl Harbor had shocked the American people into a reluctant admission that global warfare was unavoidable. At first it was just a matter of planning by a handful of men. But as the months passed it was a matter of hundreds and then thousands, manning a series of interwoven networks that covered all of England.

In these paragraphs I have not attempted to cite the names of those who worked through long and often danger-ridden hours to build up the communications needed for the invasion of Europe. The undertaking was too big for that. Through it all, the British were working hand-in-hand with the Americans. But even from our own forces there were far too many engaged in vital communications work to permit their being named in such an article as this. Merely to list the men whose efforts were the most valuable would require not merely paragraphs but pages.

The process of building up communications for D-Day went on for two and one-half years. How signal communications grew during those months can be compared with how a forest grows—there is the development of each single tree, and there is the overall growth of the whole forest. In trying to picture the build-up of communications for D-Day one must keep in sight both the trees and the forest.

The build-up of U. S. Army signal communications in Britain was, at the start, the story of the 827th Signal Service Company (Special). Early in 1942 the 827th Signal Service Company (Special), composed of 10 officers and 70 enlisted men, was activated. Organized hastily under War Department pressure and concentrated at Fort Monmouth, this detachment was rushed across the Atlantic only a few weeks after the first U. S. troops were sent to Northern Ireland. Leaving New York on 17 February, the unit arrived at London on the first day of March, 1942. It was the first permanently-assigned Signal organization in the ETO. Even before Pearl Harbor, however, Signal Corps officers had been in England on temporary duty, stationed at lonely outposts along the British coast, getting valuable experience in radar operation. But these members of the Electronics Training Group were there only as trainees even though they often performed an operations job in the radar "Battle of Britain."

The 827th had an important mission. An American Army Command, USAFBI (United States Army Forces in the British Isles), had just been established and two officers had been borrowed from NIBC, the Northern Ireland Base Command, to install a teleprinter circuit between Headquarters, USAFBI, in London, and Headquarters, NIBC, near Belfast. That circuit was the only U. S. military circuit in the ETO when the 827th reached London. To communicate with Washington, the Army had to use the Navy's direct Western Union circuit terminated at 20 Grosvenor Square.

The first job of the newly-arrived detachment was to set up basic signal communications for the Army Theater Headquarters establishment in London. There was no time lost building up communications for that head quarters, known first as HQ. USAFBI, and later as HQ. ETOUSA. Lacking U. S. Army equipment and supplies for the new installations, Signal Corps officers placed their demands on the General Post Office, which managed to find the needed equipment even when it meant taking it from its own installations. Beyond this, the Signal Corps furnished its offices with everything from envelopes to drawing sets by direct procurement from local firms, since there was no time and no shipping space to have such supplies brought over from the United States.

Communications equipment for the new headquarters was so scarce that, in its effort to meet requirements, the GPO drew on stocks of very old and long-unused equipments. Some of the telegraph tape perforators, reperforators and teleprinter machines were better suited for the quiet halls of a museum than for day-and-night service in a wartime signal center.

The 66th Armored Regiment march to their tanks and vehicles after being "briefed" for the invasion of Europe.

Anti-aircraft guns, with protective covers, awaiting movement to action in England.

The British had long since ceased manufacturing the newer items, in favor of more vital equipment to combat an enemy whose weapons of destruction were constantly darkening British skies and threatening British beaches.

As one looks back now on the whole period of hostilities in Europe, two major periods stand out—the long period of preparation for the invasion, and the months of combat that followed D-Day. Between March 1942 and 6 June 1944, Signal Corps activities in Europe were based mainly in the United Kingdom. The biggest single event between those two dates was the mounting of Operation TORCH, the invasion of North Africa, which took place in November, 1942. From a communications point of view, this invasion was a small dress-rehearsal for the great undertaking that was to follow. But the rehearsal had its lessons, and Signal officers were quick to profit from them as they prepared for operations on a greater scale.

In the months that preceded the mounting of TORCH, the Signal detachment in London took in its stride a series of problems of personnel, equipment, traffic-handling, and physical security. When the detachment arrived, space had already been set aside for a signal center at 20 Grosvenor Square. Within a few weeks the detachment had set up a signal center with cryptographic facilities and traffic procedures. From the first week, traffic boomed. Approximately 100 messages were handled in March. April found the Signal Center handling 1000 messages, with circuits reaching out to other U. S. headquarters in the United Kingdom and to various agencies of the War Office.

May brought added traffic and new problems. New headquarters were being set up, and as many as three or four hundred officers sometimes arrived, in one day, for duty in London. At least once a week, a new circuit was installed. To add to the pressure under which the Signal Center operated, the task of paraphrasing messages received in code was added to regular signal duties. It was reasonable to expect that Germans would tap the cable that was bringing these messages, many of them vital to our military operations, from New York to London. It was reasonable to believe that they would record the texts and try to get exact copies of the decoded messages from their agents in London. So every message was paraphrased.

The most difficult messages to paraphrase were shipping manifests. Of these at least 250, running as high as 5000 groups to a message, were received during May by the Signal Center at 20 Grosvenor Square, and paraphrased by Signal Corps officers who had to invent new ways of saying such things as, for example, "In the fourth deck we have guns and automobiles . . ." Not until fall could this paraphrasing be taken over by AG personnel.

In preparing for operations along the far-flung European and African front, vital new communications links were created to such strategic points as Iceland and Gibraltar. The radio link to Iceland, established early in the summer of 1942, was considered so important that it could be used only when the Chief of Staff had personally approved each message. Arrangements were made to have the existing commercial link from London to Gibraltar extended to Algiers, where commercial facilities were also in existence, as soon as the invasion of Northern Africa took place.

The climax to these earlier preparations came in November. Under the stress of D-Day traffic loads, the antiquated recording and printing equipment used at 20 Grosvenor Square to relay messages from a commercial terminal on the Embankment broke down, despite the labors of two mechanics, and copies of printed messages from Algiers had to be carried by officer courier from the office on the Embankment to the Grosvenor Square Signal Center. Despite this inconvenience, the Signal Center was able to carry the heavy burdens of signal traffic for the North African invasion.

Immediately after TORCH, the operations of the U. S. Army in the United Kingdom began to be geared to the long task of preparing for a larger operation—the invasion operation that eventually came to be known as OVERLORD. To set up the Signal Center at Algiers, some of the best-qualified men had been taken from the London Signal Center, placing a heavy handicap on operations until replacements arrived. But there was to be no respite, no leisurely period of resting on the laurels of the past months. Again it was time to push ahead. For the experience of furnishing communications for TORCH had showed that signal communications on a scale perhaps twenty-five times as great

would be needed for future operations in OVERLORD.

If Operation TORCH proved one thing clearly, it was that there was no time to lose in finding larger quarters for the ETOUSA Signal Center. Facilities at 20 Grosvenor Square were plainly inadequate to handle traffic for a theater headquarters engaged in supporting a major operation. There was another reason for setting up new signal installations elsewhere, too. For just across the street, having gone through the roof of a garage and buried itself in the ground, there was discovered, by sheer accident, a four-thousand-pound bomb—still unexploded. So the Signal Center moved to safer, larger quarters, in the second basement of the annex of a famous London department store.

Here, in rooms that had been used in peacetime as a bargain basement, and in war as an air-raid shelter, were installed the switchboards GPO circuits, teleprinters, and other equipment, from the signal center in Grosvenor Square. "Expansion" was the key word for signal center activities at this second location. Day after day, walls were knocked out to provide larger rooms, and eventually activities expanded into the first basement, as well. In January of 1943 the first teleprinter switchboard was moved in. A second followed in April. By August of 1943 these two switchboards were moved out and replaced by four larger ones. Teletype circuits in operation by midsummer were counted by the hundreds.

Only a few weeks after this second signal center had been started, newly-developing strategic considerations forced a search for a communications center that would be completely safe from V-bombs. So the Signal Corps went underground. Far below the level of London's busy streets, in a tunnel hollowed out of the earth below an Underground Station, ETOUSA built its third London Signal center. Equipped to accommodate an entire headquarters staff for 30 days without outside support, this installation was given a three-months signal operations' test in the spring of 1943. Although it was never necessary to use this signal center after the completion of the test, it stood ready in case of emergency, and it also served as a model for Supreme Headquarters, Allied Expeditionary Force, which later built a similar communications center in the remaining half of the same tunnel. After the ETOUSA installation had been fully tested, Signal Corps personnel moved back to their quarters in the basement of Selfridge's Annex.

Studying model of surrounding terrain at Headquarters, 5th Infantry Division, in France, during visit of Chief of Staff, U. S. Army. L. to R. are Lt. Gen. George S. Patton, Maj. Gen. Walton H. Walker, Maj. Gen. S. LeRoy Irwin and General Marshall.

From the first days of 1943 until D-Day the story of signal communications at ETOUSA Headquarters was the story of a traffic curve that never wavered in its upward trend. And in those last weeks before D-Day it reached its peak, running between 1,500,000 and 2,000,000 groups per day, and averaging perhaps 50 million groups per month. Only by such intensive use of communications could the logistical responsibilities of ETOUSA be fulfilled, the vast amounts of supplies forwarded, the depots constructed and filled, the men in uniform equipped for their historic mission.

So much for the record of a single communications installations. What was true of the ETOUSA Signal Center was true, in some measure, of every other U. S. headquarters throughout the United Kingdom. As D-Day approached there were more circuits, more installations of special equipment, more personnel—Signal Corps, WAC, and British civilian, at every key point in a network of communications that controlled the actions of a million and more men waiting in tense readiness to cross the English Channel.

Building up that network of communications was a task that required the finest cooperation and coordination on the part of the British and the Americans. Already the British had set up a vital network, the Defense Telecommunications Network or "DTN," covering the island, and this network was used extensively by the U. S. Forces to supplement their own network. Other important facilities already existing included civil and military wireless installations, the civil telephone and telegraph system operated by the General Post Office, and the Despatch Rider Letter Services, two extensive messenger services operated by the Service Ministries and by ETOUSA.

The initial plan for OVERLORD was issued on 15 July 1943. This plan and its later revisions set forth the framework of the requirements to be met by Signal plans. Within the terms of reference of COSSAC and SHAEF plans for tactical operations the Signal Division had the task of deciding just how far and in what ways to extend the existing British and ETOUSA Signal

facilities to meet the requirements of the invasion.

In August of 1943 a number of British and American Signal Officers were assigned to HQ. COSSAC (Chief of Staff to the Supreme Allied Commander) and given the task of organizing a Signal Division. An integrated staff of British and American officers, operating through a Plans and Operations Section, Telecommunications Section, and Administrative Section, was the outcome. In October an important Signal agency, the Combined Signal Board, representing Allied Naval, Army and Air Force commanders, was established. Later it proved invaluable in coordinating policies and reaching decisions on major problems of combined Signal planning. But to the Signal Division of SHAEF (the name given to COSSAC early in 1944) fell the task of preparing the overall Signal plans for the operation, providing Signal facilities for Supreme Headquarters and communications with headquarters of lower echelons, and giving technical advice to the Supreme Commander on all Signal questions.

The scope of this planning, and the steps taken to provide radio, wire, and messenger services for the invasion operation, will be described more fully in subsequent articles. In recalling this period before D-Day it must always be remembered that the invasion of Europe required planning of epic proportions. Along with the tactical planning carried on by SHAEF went the stupendous logistical planning done by ETOUSA and all the special planning of the different services, including the Signal Division.

The work done throughout the pre-invasion period by the Signal Division of SHAEF typifies the thorough and selfless way in which both British and Americans together, in every phase of the mounting of OVERLORD, devoted their best efforts to the great task confronting them. While the war was on, they worked in secret. Today the curtain of security can be pushed back far enough to show a series of brilliant pages in the annals of the United States Signal Corps.

Vest Pocket Switchboard

A telephone switchboard weighing only 2¼ pounds, which in an emergency can take the place of the Army's 60-pound instrument, is characterized by Signal Corps engineers as one of the most ingenious developments in military communications.

Based on a design by Kenneth Way, a civilian engineer at the Signal Corps Engineering Laboratories, Bradley Beach, N. J., the device saved the Government an estimated one million dollars.

Central feature of the revolutionary switchboard is the individual "switching unit," a transparent cube less than two inches wide, which is attached to the end of each telephone line. It has a two pronged plug, not unlike those used to plug in an ordinary electrical appliance on the bottom and a jack into which the prongs of a similar unit may be inserted on the top. These along with a minute gas filled neon light and a device for limiting the amount of electric current to flow through it, are all the unit consists of. These component parts are embedded in a transparent plastic case.

Seven of these units together with a standard Army field telephone are sufficient to handle the same traffic as a regular six line switchboard. For convenience of operation a plug holder and a special carrying case have been devised which, together with the seven units, weigh 2½ pounds. Since the seven plugs weigh only three-quarters of a pound and are so small they can be carried in the breast pocket of a battle jacket and since the holder and carrying case are matters of convenience instead of necessity, the Army literally has a vest pocket switchboard.

To set up a telephone central office one of the switching units is connected to the operator's field telephone and the remaining six are attached to the lines of his telephone "subscribers." When a subscriber rings for the operator the lamp in the unit at the end of his line flashes. The operator then plugs his own switching unit into the jack of the unit on the calling line and asks which party is desired. He then plugs these two connected units into the called line and rings with his field telephone. When the connection is complete the operator removes his own switching unit, leaving those of the communicating parties connected. At the end of the conversation one of the parties rings his phone and both lamps flash. The operator plugs in his switching unit again to determine whether any further service is desired and, if not, disconnects the units and awaits the next call.

Radiosondes, Balloon-Borne Radio Devices

Four midget storage batteries, about the size of a candy bar and weighing less than six ounces each, are now being used at many weather stations throughout the country to power a radio transmitter up to about 12 miles above the earth's surface. Developed by the Signal Corps Engineering Laboratories in conjunction with several industrial organizations, these lead-acid storage batteries supply enough electrical energy to operate radiosondes, balloon-borne radio devices employed to gather meteorological data in the upper air.

The radiosonde with which the batteries are used consists of a tiny radio transmitter and meteorologically sensitive instruments housed in a container about the size of a shoe box, which is borne aloft by a hydrogen-filled balloon. The transmitter automatically ticks off continuous radio signals. These are picked up by a receiving station on the ground and recorded to provided information on the humidity, temperature, and pressure of the various atmospheric zones through which the balloon ascends. By means of radio direction finding equipment at the receiving station the speed and course of the balloon can also be charted to determine the velocity and direction of winds at various altitudes.

The balloon rises until it bursts in the rarefied upper atmosphere, sometimes attaining a height of almost 15 miles. The radiosonde may then descend by parachute, continuing its transmission of data to provide a "retake" of atmospheric conditions in the zones through which it ascended.

SISTERS OF THE SWITCHBOARD

By Herbert E. Smith

A WAAF shows Pvt. Catherine B. Hazelton how to operate the switchboard as the WACs take over.

THE other night, after regular post meeting, a bunch of us old Legionnaires is down in the Post Dugout taking aboard a few beers when old Baldy Farrell sounds off.

"Huh! The ol' grey mare, she ain't what she used t' be! To think, comrades, that the time 'd ever come when we'd be seein' *women* sworn inter active membership in th' Legion!"

"Well, now, I dunno," drawls Swede Olsen. "Them two ex-Wacs we took in tonight upstairs, they're not only easy on the eyes but, the way I hear it, they did a keen job overseas with a base communications outfit."

Dusty Rhodes puts down his stein. "I string along with Baldy. Not that I don't like women. Hell, I married one, didn't I? But when it comes to lettin' 'em into our Legion posts . . ."

The Old Signalman grins reminiscently. "Me, I'm with Swede. I say, let the gals in with us. After all, we speak the same language. And if these Signal Corps Wacs are at all like the honeys we had in France and Germany back there in '18 and '19 . . ."

"Be yer waist measure, old timer," barks Baldy, at that. "You know there was no Women's Army Corps in Number One. Nurses, yes; and a few women with the Y and the Red Cross and the Jewish Welfare and the Salvation Army, maybe. But I never saw anything in skirts at any AEF boards—and I was young and single, then, with a eye for the lassies."

"Too bad," sighs The Old Signalman, "that you was an Ordnance man, then. Now if you'd been anywhere near the front, up with us Signals, you'd have seen these sisters of the switchboard I'm telling you about . . ."

* * *

Early in November of 1917 (began The Old Signalman), a tidal wave of excitement swept every telephone exchange in the United States. For Washington announced that a cable had just been received from General Pershing, urging the creation of a Woman's Telephone Operating Unit.

Inside twenty-four hours the War Department had 7,600 applications from eager young women telephone ops, begging for the chance to volunteer for overseas switchboard service. But there were two huge hurdles serving as tough eliminators in the sharp contest evoked by Pershing's call from France.

First, the C. G. desired the first contingent to be composed of no more than 100 girls: "Three chief operators, at $125 per month; nine supervising operators at $72 per month; 24 long distance operators at $60 per month; 54 operators at $60 per month; and ten substitute operators at $50 per month."

Second, to qualify, each of the girls were required to be able to speak French fluently.

There was a good reason for the bilingual stipulation. For the female operators were to serve, in the final analysis, as interpreters by telephone as well as operators. A mistake might mean irreparable loss; at St. Mihiel, for example, the Army had to handle an immense amount of telephone traffic with the French forces on its right and left, with French corps in the Army, with the French group of armies, and finally with our GHQ at Chaumont. Not until the later phases of the 1918 campaign, when the

They were experts at the teletype machines.

greater part of telephone service in the AEF came to be transacted between American offices, was this need for familiarity with the French tongue relaxed.

At the request of the U. S. Signal Corps, then, the Engineering Department of the American Telephone and Telegraph Company, with the assistance of all operating units in the nationwide system, undertook to secure the necessary operators and to turn them over to the Signal Corps properly trained, organized in groups and equipped to sail for overseas.

Seven training centers were established by American Tel. and Tel. They were located at New York City, Chicago, San Francisco, Philadelphia, Jersey City, Atlantic City, and Lancaster (Pa.).

The finalists were assembled at Camp Dix, N. J., and inoculated. And not one of the hundred girls fainted when given that grim looking "needle" which had caused so many husky men to topple over!

The unit sailed in three groups. The first, in charge of Chief Operator Grace D. Banker, a graduate of Barnard and a former instructress in the AT&T's operating department, shoved off from Hoboken on March 2, 1918; the second group sailed two weeks later and the final group in the latter part of April.

The first group of girls arrived in Paris March 24, about 9:30 P.M., and was put up at the Hotel Petrograd, at that time under American YWCA control. Tired and travel-dirty, the thirty-three American girls bathed and immediately turned in—only to be routed out of their bunks at 2 A.M., and rushed to a bombproof shelter under the combined shelling of the dreaded "Big Bertha" big gun of the Germans and an enemy air raid on the French metropolis.

The following day the girls were assigned to different offices; some to Chaumont, some to Tours and the remainder to AEF installations in Metropolitan Paris. It was not then contemplated to use women operators for switchboard duty at the front. That came later, when these dead game Yankee girls, eager and willing, overvolunteered to fill positions in the forward areas, and had their share in plugging away by candlelight in the subterranean depths of a field exchange.

The first board worked by the girls in Paris was a seven-position panel, with hardly any designation strips, and no directory. The French girls whom the American operators replaced had been on the board since it had been set up, knew all the numbers, and felt no need of a directory. Resentful of the coming of the American girls, all but two of these French ops quit, making the assignment extremely difficult for the newcomers. However, Sergeant Elbert Jennings of the 412th Telegraph Battalion, an old Southwestern Bell man from

Keeping the telephone lines open during heavy traffic.

Kansas City, Mo., stood behind the line of new girls and called out the numbers impromptu upon demand. In a short time the girls had a directory made up, a more efficient arrangement of the panel, and good Yankee system began to make itself evident.

In time, 233 American telephone girl operators served in France and with our Army of Occupation in Germany; hundreds of others were in training in the United States when the Armistice put an end to hostilities.

Colonel Parker Hitt, Chief Signal Officer of the First Army, AEF, was from the outset an ardent advocate of the use of women operators in France. In fact, it was he who had initiated the request by General Pershing as early as November 1917. Only a couple of days before preparations had begun to launch the attack on St. Mihiel which was to reduce that enemy salient, Col. Hitt wrote to the Chief Signal Officer AEF: ". . . In order to obtain maximum efficiency of the telephone central at advance army P. C., I desire to use women operators, to be taken from those especially qualified by their familiarity with front line work and code station operation . . ."

The call went out for volunteers. At the time there were 225 of our women operators overseas. *Every one of the 225 women immediately volunteered* for an assignment which they were told was "front line work, possibly highly dangerous."

The six girls finally selected and who served, helping to win that great turning point victory at St. Mihiel, were Chief Operator Banker and Operators Esther V. Fresnel, of Yonkers, N. Y.; Suzanne Prevot, New York City; Helen E. Hill, San Francisco, Calif.; Bertha M. Hunt, Berkeley, Calif.; and Marie Lange, San Francisco.

For 72 straight hours those plucky American girls stuck to their important board, working broken shifts, handling an average of 40,000 words a day over the eight trunk lines leading out of the Ligny board. Not until the battle had been won did any of those six heroines of the AEF go to bed and completely relax.

Theirs was of a piece of the gallant heroism and unfailing devotion to duty exhibited by every one of those little known members of the American Expeditionary Force—the splendid specimens of fine American womanhood who were the "Sisters of the Switchboard" in World War I.

* * *

"The defense rests," says The Old Signalman, then. "Me, I don't know much about what these modern women did, to help win World War II. But if they're at all like those fine girls I saw over there in France and Germany in '18 and '19, I'm all for them!"

We all nod in agreement, and Baldy Farrell high-signs the darky waiter. "Sir to you, Signals," he concedes. "This round's on me, comrades. Ordnance salutes Signal Corps, if that's a sample of your outfit's women in war!"

Radar Once More Proves Itself

With passenger service again becoming available in maritime transportation it is of interest to note that radar has been used on a commercial vessel with the highest success, according to a recent dispatch. Use of radar in the interests of both safety and time, as well as financial saving, rate number one priority for successful operation in water born transport.

Many of those who crossed the ocean in the early days of the recent war may remember that radar was first installed on naval vessels in convoy to troop and supply ships, and how later radar equipment came into general use on all ships and troop carriers.

In the latter part of July 1946, the Atlantic Mariner, one of the fast modern tankers of the Atlantic Refining Company, employed newly installed radar equipment in a voyage from Corpus Christi, Texas, to the company refineries in Philadelphia.

A description of the voyage points to the ability of radar to facilitate navigation by locating obstructions, buoys, and other vessels despite fog, foul weather and poor visibility. Officials of the Atlantic Refining Company stated that the equipment was directly responsible for the Atlantic Mariner's safe anchorage inside the Delaware breakwater in four days and nineteen hours. This is the fastest run in the history of the company's fleet for the voyage from Corpus Christi to the breakwater.

While it costs the company $2,400 a day to operate a tanker such as that used in the radar test run, every hour cut from her travel time means a saving of $100 in operating cost. This the company considers as merely supplementary to the safety factor created by the use of radar.

The installation used on the Atlantic Mariner was designed to have a range of 40 miles in all directions from the ship. The receiver, transmitter and viewer are all located in the wheel house of the ship, much the same as a master control room, or pilot's compartment.

This use of radar aboard a ship recalls an incident which took place on a troopship on a recent return voyage from Europe to the United States. For many hours the radar had been picking up an object on the sea many miles ahead of the vessel and the ship was steering a course toward it.

In the flat calm of a beautifully clear day the object was finally discernable to those on the bridge. However, the officers and enlisted men enjoying a bit of spring sunshine above decks were cognizant only of the fact that the ship was almost in the mid point of its Trans-Atlantic journey. Suddenly the loud clanging of a bell sounded off the port side of the ship. The men rushed to the rail and saw a typical coastal type bell buoy listlessly swaying to the motion of tiny mid-Atlantic swells.

Could we have heard the story of the wanderings of that former sentinel of navigation we would have unearthed another salty yarn to which the 1,100 souls aboard that ship could fully attest.

"Photo by Signal Corps"

ALL of us who served in the Army, and most civilians, as a result of the widespread activities of the Signal Corps Photographic Section, during and since the recent war, are familiar with the photo credit line, "'Photo by Signal Corps."

The multitudes of still pictures used in connection with our war effort, the training films seen by so many persons and the film strips used with other training aids by all arms and services, bore the familiar reference crediting their origin. Similarly official War Department motion pictures, now so familiar, contained introductory lines telling of their filming by the Signal Corps.

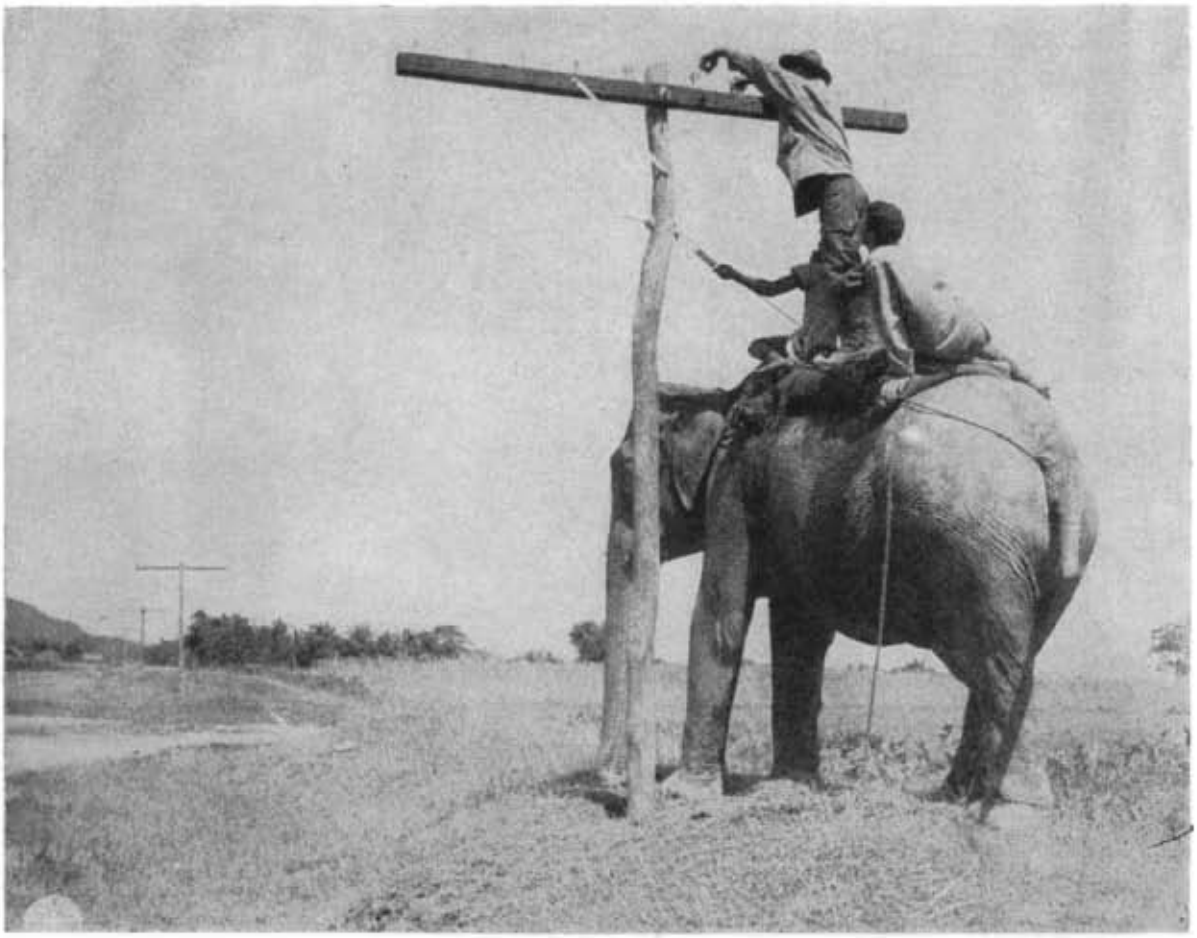
Photography has long been an important phase of the Signal Corps' activity, as it was in the Civil War period that official army photographs were taken and used, on a large scale, in the preparation of military reports.

Through cooperation of the still photographic library of the Signal Corps a number of official pictures of scientific, military and news interest, will be presented in the pictorial section of "SIGNALS" in each of the bi-monthly issues. It is hoped that in later issues some of the pictures illustrating feats in color photography may also be used.

In the ensuing pages we present the first selection of these pictures as a tribute to those who worked, many times under severest difficulties, to perpetuate in film events and exploits allied with the recently concluded global conflict.

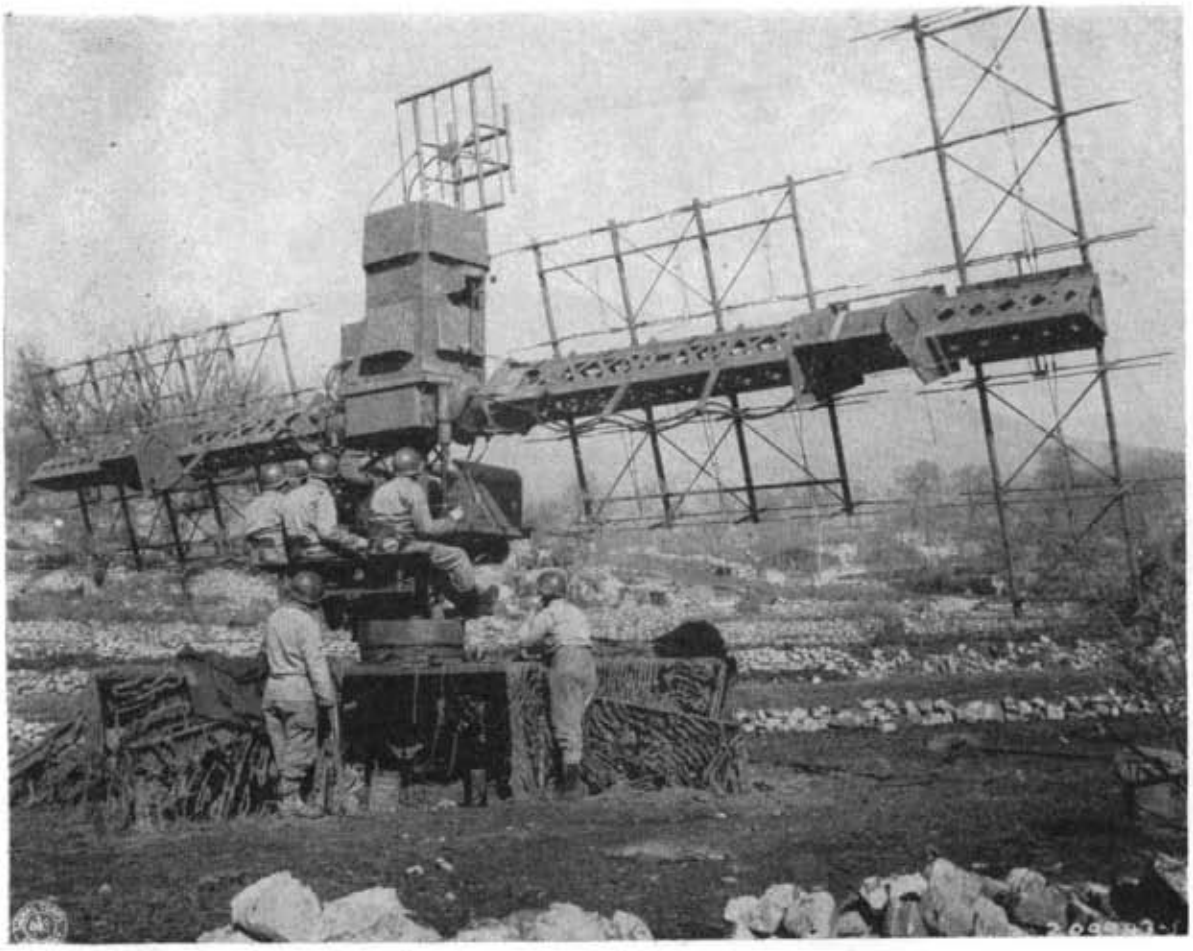
One of our vice presidents is decorated for bravery. Major General W. E. R. Covell, Commanding General of the SOS, IBT, presents the Soldier's Medal to Master Sergeant Fred Friendly, of Providence, R. I. Friendly received the award for heroism during the Bombay fire. Presentation was made at New Delhi, India, November 6, 1944.

American paratroopers, of the 503rd Parachute Infantry, are shown dropping on Kamiri Strip on Noemfoor Island.

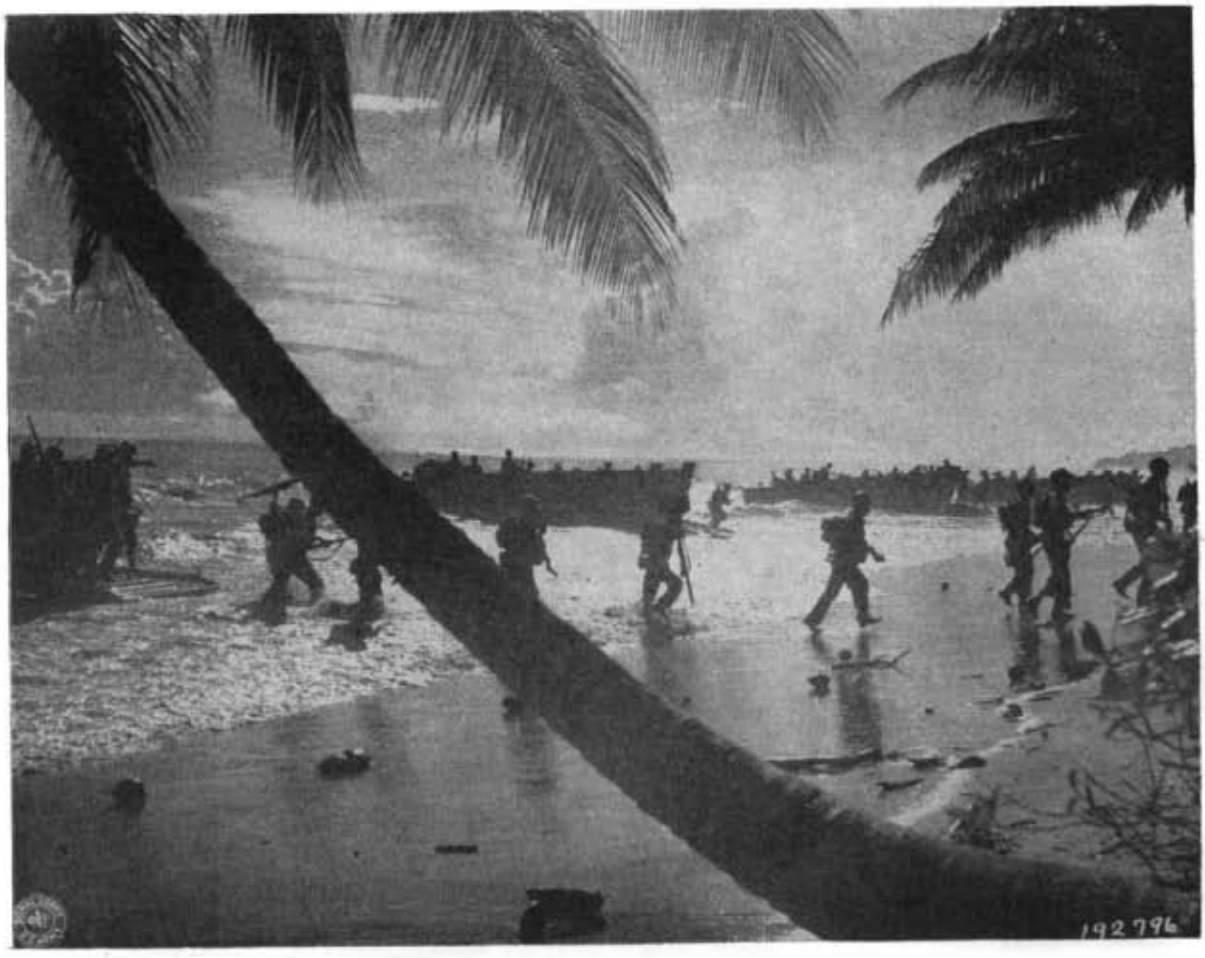


A member of a signal construction outfit repairs a line from the back of an elephant. Elephants were found to be especially useful at Assam, India, in repair of lines in swamplands.

Crowds of Parisians celebrating the entry of Allied troops into Paris, scatter for cover as a sniper fires into them from a building on the Place De La Concorde. Although the Germans surrendered the city, small bands of snipers still remained.



Radar in operation: Radio set SCR-268 with a five man crew is shown in operation on an Italian hillside. The three operators seated on the mount see indications of the airplane echo on cathode ray oscilliscopes. One operator tracks the aircraft in azimuth; another operator tracks in elevation and the third measures the range.



American troops of the Fortieth Division, rush ashore from a landing boat during amphibious training on Guadalcanal.

Born as was the United States of America, on the date July 4, the Philippine Republic shows its appreciation of this 1946 achievement with a traditional display of pyrotechnics. This shot was taken at Manila by a Signal Corps photographer covering events marking the birth of this newest republic.

An oxen wagon slowly rolls by as a modern plane comes in for a landing on a newly constructed runway, in China. This photo was taken at Luliang, China.

SURRENDER ON THE AIR

Courtesy "Military Review"—Photos by Signal Corps

An Official Signal Corps History of Message Traffic on the Japanese Capitulation

In the closing hours of the Japanese war, General Headquarters, United States Army Forces, Pacific, in Manila, became the main stage of a historic radio drama bringing to an end the blood bath that had drenched the world for six years.

Each of these messages was transmitted by the fastest possible means without regard to normal routine procedures. United States Army Signal Corps teamwork around the world had repaired in ten hours and forty minutes a communications link between the United States and Japan which had been broken for almost four years of warfare.

The Japanese government had accepted the surrender terms with a provision that the Emperor remain on the throne, the United Nations had conceded with a provision of their own, that he be subject to the orders of the Allied Supreme Commander, and the world waited. Meanwhile, the war was continuing. Bombs were falling, guns were firing, people were dying.

In the teletype conference room in the battered City Hall of Manila, several GHQ officers were gathered at a table, reading a routine message from the War Department at Washington. It was nearly 0900, Manila time, of the morning of 15 August 1945.

Suddenly, in the midst of the teletype conference, came the extraordinary order from the War Conference Room, Washington: "STAND BY FOR IMPORTANT MESSAGE."

Then came the message that affected destinies of millions of the world's population. The complete message read:

IN THE CLEAR

From: General Marshall
To: General MacArthur
Info: Nimitz Deane and Wedemeyer
NR: 1408

With reference to paragraph 2 of WARX 49182, you are hereby officially notified of Japanese capitulation. Your directive as Supreme Commander for the Allied Powers is effective with the receipt of this message.

Marshall

The telecon channel was not the customary one for messages to MacArthur. Evidently, an alert Signal Center Officer in Washington had found it open and shoved the message through on it. A few minutes later the same message came over the regular San Francisco-Manila channel after relay from Washington.

Receipt of an important message uncryptographed from the War Department broke a long precedent. But it was shortly followed by a request from station WAR for an officer qualified to accept a top secret urgent message in the usual cryptographed form. Then came the detailed instructions.

At approximately 1100 hours, the following message was transmitted to Japan:

IN THE CLEAR
OPNL PRIORITY

15 August 1945

From: Supreme Commander for the Allied Powers
To: The Japanese Emperor, the Japanese Imperial Government, the Japanese Imperial Headquarters
NR: Z-500

I have been designated as the Supreme Commander for the Allied Powers (the United States, the Republic of China, the United Kingdom and the Union of Soviet Socialist Republics) and empowered to arrange directly with the Japanese authorities for the cessation of hostilities at the earliest practicable date. It is desired that a radio station in the Tokyo area be officially designated for continuous use in handling radio communications between this headquarters and your headquarters. Your reply to this message should give the call signs, frequencies and station designation. It is desired that the radio communication with my headquarters in Manila be handled in English text. Pending designation by you of a station in the Tokyo area for use as above indicated, station JUM on frequency 13705 kilocycles will be used for this purpose and WTA will reply on 15965 day and 7090 night. Upon receipt of this message, acknowledge.

MacArthur

Naturally, there had been no radio intercourse with the Japanese since 1942. Efforts to establish contact with JUM, which had handled commercial traffic with the United States before the war, were made but this proved to be a large order. Meanwhile, the war was continuing.

The transmitters were immediatley tuned to JUM's receiving frequency, 15,965 kilocycles, and our receivers zeroed to its transmitting frequency, 13,705 kilocycles.

Then, our preamble was sent in English, in Kana and in Romaji, the two adaptations of the Japanese language to Morse code: "JUM FROM WTA (Manila). WE HAVE AN URGENT MESSAGE FOR YOU." JUM did not reply.

Efforts were made to contact other Tokyo stations, any Tokyo station. We could hear the Japanese broadcasting and receiving on many circuits. As fast as our receivers picked them up, our transmitter would adjust our frequencies to theirs and an effort was made to try to break in with our important message, but no Japanese station would acknowledge us.

Tokyo was talking to Geneva. We came in—

"TOKYO FROM MANILA. WE HAVE AN URGENT MESSAGE FOR YOU."—No reply. Tokyo was talking to Singapore—"TOKYO FROM MANILA. WE HAVE AN URGENT MESSAGF FOR YOU."

Tokyo was talking to Stock-

holm, Saigon, many other places. Always the Japs played deaf, although we knew our transmitters were blanketing their other receptions because we could hear them exchanging readability signals as a result of our interference.

We were getting nowhere, and the war was continuing. The Chief Signal Officer then arranged for a battleship in Manila Bay to broadcast a message to JUM on the international distress frequency, 500 cycles, requesting they contact WTA on 15,965 kilocycles. He also had the Army Airways Communications Service send the same message on our meteorological frequency, which the Japs were known to listen to assiduously.

At 1600, still without an acknowledgment, General MacArthur's message was sent to the office of the Chief Signal Officer, Washington, with a request that all possible facilities be employed in trying to have it acknowledged by Japan.

The first message had not been cleared when General MacArthur's second message was received at the Signal Center at 1403. Aimed at the immediate ending of hostilities, it was ever more important than the first. It read as follows:

IN THE CLEAR
URGENT

15 August 1945

From: Supreme Commander for the Allied Powers
To: The Japanese Emperor, the Japanese Imperial Government, the Japanese Imperial Headquarters
NR: Z-501

Pursuant to the acceptance of the terms of surrender of the Allied Powers by the Emperor of Japan, the Japanese government and the Japanese Imperial Headquarters, the Supreme Commander for the Allied Powers hereby directs the immediate cessation of hostilities by Japanese forces. The Supreme Commander for the Allied Powers is to be notified at once of the effective date and hour of such cessation of hostilities, whereupon Allied forces will be directed to cease hostilities.

The Supreme Commander of the Allied Powers further directs the Japanese Imperial Government to send to his headquarters at Manila, Philippine Islands, a competent representative empowered to receive in the name of the Emperor of Japan, the Japanese Imperial Government and the Japanese Imperial General Headquarters certain requirements for carrying into effect the terms of surrender. The above representative will present to the Supreme Commander for the Allied Powers upon his arrival a document authenticated by the Emperor of Japan, empowering him to receive the requirements of the Supreme Commander for the Allied Powers.

The representative will be accompanied by competent advisers representing the Japanese army, the Japanese navy and the Japanese air forces. The latter adviser will be thoroughly familiar with airdrome facilities in the Tokyo area.

Procedure for transport of the above party under safe conduct is prescribed as follows:

Party will travel in a Japanese airplane to an airdrome on the island of Ie Shima, from which point they will be transported to Manila, Philippine Islands, in a United States airplane. They will be returned to Japan in the same manner. Party will employ an unarmed airplane, type Zero model 22, L2, D3. Such airplane will be painted all white and will bear upon the sides of the fuselage and top and bottom of each wing green crosses easily recognizable at 500 yards. The airplane will be capable of inflight voice communications, in English, on a frequency of 6970 kilocycles. Airplane will proceed to an airdrome on the island of Ie Shima, identified by two white crosses prominently displayed in the center of the runway. The exact date and hour this airplane will depart from Sata Misake, on the southern tip of Kyushu, the route and altitude of flight and estimated time of arrival in Ie Shima, will be broadcast six hours in advance, in English, from Tokyo on a frequency of 16125 kilocycles. Acknowledgment by radio from this headquarters of the receipt of such broadcast is required prior to take-off of the airplane. Weather permitting, the airplane will depart from Sata Misake between the hours of 0800 and 1100 Tokyo time on the 17th day of August 1945. In communications regarding this flight, the code designation "Bataan" will be employed.

The airplane will approach Ie Shima on a course of 180 degrees and circle landing field at 1000 feet or below the cloud layer until joined by an escort of United States army P-38's which will lead it to a landing. Such escort may join the airplane prior to arrival at Ie Shima.

MacArthur

Tensely, tirelessly, operators kept trying to make Tokyo listen, not just in Manila, but all over the world.

In his efforts to stop the fighting, General MacArthur ordered the officer in charge of the Tokyo circuit to send his second message first.

Transmission of the second message to Washington for rebroadcast by all other available facilities crossed with Washington's report on their efforts with the first message.

The hours ticked on and the guns and bombs blasted on, and the blood of human beings pulsed into the earth in many places while man's most powerful agencies of communications the whole world over tried vainly to make one city respond.

Three times we had sent our message out blind (without receipt), but in Signal Corps procedure a blind message is little better than no message.

Sweat drenched the shirts of the men laboring in the radio operations room of the Signal Center in oven-hot Manila. They had been at the keys or with the earphones clamped on their heads for ten futile hours. A frantic undercurrent gripped everyone present. There was no drama of the obvious sort, but each man knew that lives were being blotted out for lack of an acknowledgment to the message they were trying to get through. Quietly, they talked about it, cursing.

Each time a Tokyo station came in on the receiver, someone phoned the transmitter station to adjust its frequency to that station, and the key began pounding its unheeded monotone.

Now it was Tokyo talking to Taihoku. Our transmitters were tuned to the proper frequency.

TOKYO FROM MANILA. WE HAVE AN URGENT MESSAGE FOR YOU.

In Romaji, in Kana, in——

But the Tokyo station acknowledged the Kana preamble.

Leaving the two Japanese planes which brought them to Ie Shima, the 16-man Japanese surrender arrangement delegation prepare to board an American C-54 transport for continuance of their flight to General MacArthur's headquarters in Manila.

With painful restraint, slowly, so that the Japanese operator would not miss it, our operator began sending MacArthur's second message.

The text was in English. When it was half transmitted, the Jap broke in with a flood of Japanese questions. Evidently, he had been trying to receive it in Japanese. Then he began sending us cryptographed Japanese traffic. It was incredible, but he apparently thought we were a Japanese station—in Manila!

We were forced to go back to monitoring JUM and the other Japanese circuits, while the war was continuing.

All around the world, powerful radio stations were doing the same thing, minute after minute, calling Tokyo, calling Tokyo, calling Tokyo. One of them was KER, commercial station in San Francisco.

In bland disregard of the electronic commotion, JUM was sending financial messages to Handelsbank, Stockholm.

Suddenly, the operator in the Signal Center held up his hand for attention and began to type: KER DE JUM ZOK GA 40/SWO ZHC? 2105JIT

The Japanese Station, using commercial radio procedure, was saying:

KER FROM JUM. OK. GO AHEAD. SEND 40 WORDS PER MINUTE, ONCE. HOW ARE (receiving) CONDITIONS? 2105 HOURS JAPANESE IMPERIAL TIME. KER replied but, tuned to JUM's transmitting frequency, we did not hear it. Then, from JUM:

KER DE JUM HR UNABLE START JUJ (evidently meaning "we are unable to start JUJ," another Japanese Station) PSE (please) REMAIN JUM TKS (thanks) AR (end of transmission) 2109 JIT (Japanese Imperial Time).

The next interception was:

KER DE JUM ZSF FIVE.

The Jap operator was boasting. He was telling KER, in commercial radio language, to send five words a minute faster.

After that came:

KER DE JUM HR NW XQ SF BT (here now service message to San Francisco, break.) WE WILL ZOA (start up) JNU3 (another Tokyo circuit, 13,475 kilocycles) IN FEW MINS (minutes) FOR YOU CMF STP (Confirm, Stop.) YR MSG BQ NR 76500 RVD OK BT (your message with text 76500 received OK. Break) TOK AR (Toyko. End of Transmission.) 2140JIT.

That meant that Tokyo had received a message from an American station. But, was this acknowledged message, number 76500, a MacArthur message? We called USF, San Francisco Army Station, on a voice circuit, and asked the Duty Officer to phone KER and learn whether 76500 was the all-important second message of General MacArthur, or either one of his messages. In three minutes, he phoned back across the Pacific—it was the first MacArthur message!

Over local phones the word went out—Tokyo had acknowledged!

JUM was very busy sending regular commercial messages to San Francisco, resuming its traffic suspended three and a half years ago, just as though there never had been a war! We tried in vain to break in.

Now JUM was receiving from Singapore.

The Singapore operator sends the "wait" signal, indicating a pause in his transmission. It is shortly after 2300. Our transmitter is tuned to JUM.

JUM FROM WTA (Manila). WE HAVE AN URGENT MESSAGE FOR YOU.

JUM sends a signal to Singapore to stand by. He has heard us!

He returns our call.

Then messages pour into the Signal Center from military radio installations all around the Manila area, alerting WTA to the fact that JUM is calling. Stations everywhere had been listening in on the greatest radio drama ever staged and they all wanted to make sure WTA didn't miss its cue.

From Manila went this service:

JUM DE WTA (Tokyo from Manila) HR URG MSG HW (Here is an urgent message. How about it?)

JUM serviced back a request that WTA transmit to JNP, Tokyo.

The service was repeated to JNP, and JNP replied:

GA (Go ahead).

MacArthur's second message followed. Receipt for it came at 2333 hours. It was followed by this message:

JNP de WTA. You will stand by and monitor WTA on 15965 Kc continuously. Continue to transmit on JNP until further notice in answer to our messages.

Establish monitoring on your transmitting frequency and advise this headquarters at once of any unauthorized or unofficial transmission.

MacArthur

Then WTA sent MacArthur's first message, and gained a receipt at 0025 of 16 August, although the radio channel, meanwhile, had been transferred to Station JNU3, on 13,475 kilocycles, evidently in the same room in Tokyo, because JNP had begun to fade at about 2330 hours.

A comic ante-climax came when JNU3, a commercial station, with a hint of apprehension over a possible loss of revenue, inquired:

ARE YOU GOING TO SEND PRIVATE MESSAGES?

When the American Signal Officers finally figured out that the Jap was worried about commercial traffic, they decided not to answer.

Then JNP, another Japanese station, came in to inquire:

DO YOU WANT AN ANSWER TO YOUR MESSAGE?

"Hell, yes!" roared the officer-in-charge when shown the query.

The operator smiled and turned to his key. JNP FROM WTA, he telegraphed—YES.

With the circuit established, an interchange of highly significant messages began which culminated in the surrender of Japan.

They are reproduced here in their proper order:

IN THE CLEAR
ROUTINE

16 August 1945

To: General of the Army MacArthur, Supreme Commander for the Allied Powers

From: The Japanese Government

NR: None

Communication dated August 16th from the Japanese government and Imperial Japanese Headquarters to General of the Army MacArthur Supreme Commander for the Allied Powers. We are in receipt of the message of the United States government transmitted to us through the Swiss government and of a message from General MacArthur received by the Tokyo radiograph office, and desire to make the following communication.

1. His Majesty the Emperor issued an imperial order at 1600 o'clock on August 16th to the entire armed forces to cease hostilities immediately.

2. It is presumed that the said imperial order will reach the front lines and produce full effect after the following lapse of time:

A. In Japan, proper, 48 hours.
B. In China, Manchuria, Korea, Southern regions except Bougainville, New Guinea, the Philippines 6 days.
C. In Bougainville 8 days.
D. In New Guinea and the Philippines, in case of various local headquarters 12 days but whether and when the order will be received by the 1st line it is difficult to foresee.

3. With a view to making the august wish of His Majesty regarding the termination of the war and the above mentioned imperial order thoroughly known to all concerned, members of the Imperial Family will be dispatched as personal representatives of His Majesty to the headquarters of the Kwantung army, expeditionary forces in China and forces southern regions respectively. The itinerary, type of aircraft, markings, etc., will be communicated later. It is accordingly requested that safe conduct for the above be granted.

4. As regards the request to dispatch a competent representative accompanied by service advisers to the headquarters of General MacArthur in Manila leaving Sata Misaki in Kyushu on August 17th, we feel greatly embarrassed as it is impossible for us to arrange for the flight of our representative on August 17th due to the scarcity of time allowed us. We will, however, proceed at once with necessary preparations and notify General MacArthur as to the date of the flight of such a representative which will take place as soon as possible.

5. It is proposed to make the communications with the Supreme Command of the Allied Powers in the following manner:

A. Sender and receiver on the Japanese side—the general headquarters or the government.
B. Radio stations on the Japanese side—Tokyo station call sign JNP frequency 13740 kilocycles.
C. Means of communications—radiograph.
D. Language—English.

6. We fail to understand the type of airplane described in the communication received from General MacArthur. We request, therefore, that the message be repeated bearing upon type fully and clearly.

Col. S. F. Mashbir, Japanese language expert of the American reception party, receives Lt. Gen. Kawabe Takashiro, Vice Chief of the Imperial Staff and head of the Japanese surrender delegation and a member of his staff, as they arrive at Nichols Field in Manila.

7. In order to make sure that we have received without fail all the communications sent by General MacArthur, we beg him to repeat once again through the route of communication specified under heading 5 of the present communication.

No Sig

Time of receipt: 162330I

IN THE CLEAR
ROUTINE

16 August 1945

From: The Japanese General Headquarters
To: Headquarters of General MacArthur
NR: 2

Regarding item 3 of our first radiogram:

Itinerary expected to leave Tokyo at 9 o'clock on August 17th "the party (3) for the south is due to leave on 18th" by way of the following route the itinerary is subject to some alterations owing to weather and other conditions

1. Bound for Manchuria (Tokyo-Yonago-Seoul)
2. Bound for China (Tokyo-Fukuoka-Shanghai-Nanking)
3. Bound for the south (Tokyo-Fukuoka-Shanghai ((staying one night))-Canton-Tourane-Saigon)

Type and markings of airplanes

1. Planes for Manchuria and China are low-winged monoplane twin-engined middle-sized transport of Mitsubishi MC20-2 type
2. Plane for the south is middle-winged monoplane twin-engined middle-sized bomber with the cigar shaped fuselage resembling that of B26
3. Markings are sun flag with red streamer of 4 meters length

Time of receipt: 17005O

IN THE CLEAR
URGENT

17 August 1945

From: Supreme Commander for the Allied Powers
To: Japanese General Headquarters
NR: Z-502

Your messages of August 16th numbers 1 and 2 have been received and are satisfactory. Every possible precaution will be taken to insure the safety of the planes bearing the Japanese representatives on their missions. My two messages will be repeated as requested. Notify this headquarters as soon as possible of the proposed date of flight of the Japanese representatives to Manila. Type of plane desired is Douglas DC-3 type transport understood to be your navy type Zero model 22, L2, D3 or your army type 100 transport plane K1 57. If necessary you are authorized to change the type of plane bearing your Manila representatives, giving description thereof.

MacArthur

Time of origin: 170341I

IN THE CLEAR

17 August 1945

From: The Japanese GHQ
To: The Allied Supreme Commander
NR: 3

At about noon August 16 a group of some 12 Allied transport approached extremely near the coast of Kochi Shikoku at that time the imperial order to cease hostilities had not yet been issued and our air units ventured to attack the Allied vessels apparently causing some damage.

At 4 PM the order was issued to cease hostilities as stated in our radiogram No. 1.

It takes some time for the said order to reach the front line and produce full effect.

It is earnestly requested that the Allied forces will refrain from approaching the home waters of Japan proper until the order will have been fully effectuated.

Time of receipt: 171019I

IN THE CLEAR

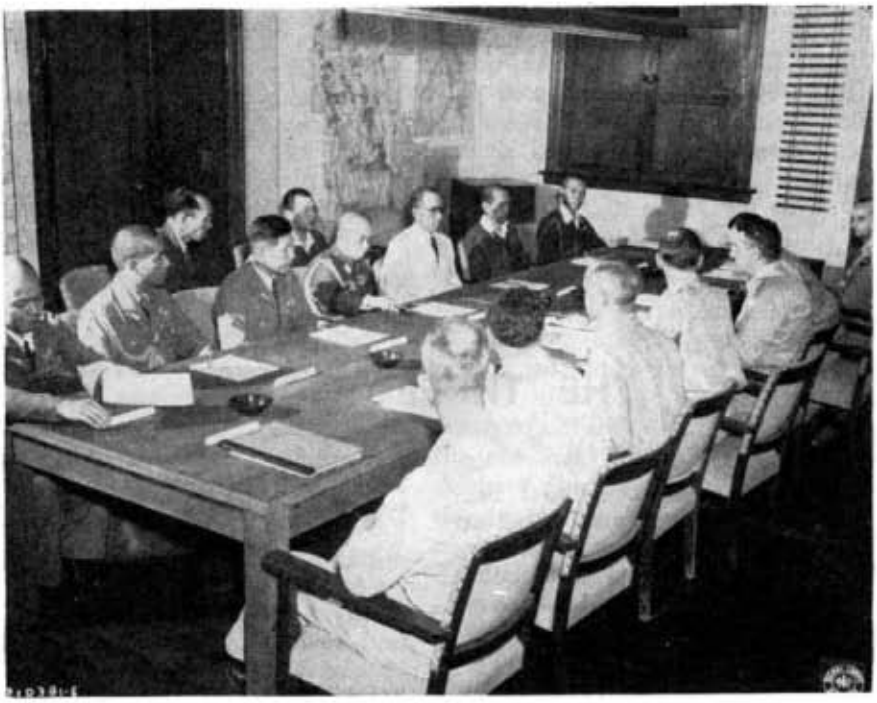
17 August 1945

From: The Japanese GHQ
To: The Supreme Allied Commander
NR: 4

1. It is stated in the message of the President of USA transmitted on August 16 through the Swiss government "send emissaries at once to the Supreme Commander for the Allied Powers, and fully empowered to make any arrangements directed by the Supreme Commander for the Allied Powers to enable him and his accompanying forces to arrive at the place designated by him to receive the formal surrender." According to this message the task of the "emissaries" is to be understood to make necessary arrangements for the reception by the Supreme Commander and his accompanying forces of the formal surrender.

2. However in the "urgent" message sent by the Supreme Commander to the Japanese emperor the Japanese government the Japanese General Headquarters which was received by the Tokyo radiograph office and to which reference was made in our

General Douglas MacArthur leaves the plane which brought him to the Atsugi Airdrome, Tokyo.



Scene in the conference room at General MacArthur's headquarters in Manila as Japanese delegates meet with United States representatives. With their backs to camera (l. to r.) the United States representatives: Brig. Gen. L. J. Whitlock, Maj. Gen. R. Marshall, Rear Adm. F. P. Sherman, Lieut. Gen. Richard K. Sutherland, Maj. Gen. S. J. Chamberlain, Maj. Gen. C. A. Willoughby and Brig. Gen. D. R. Hutchinson.

first radiogram it is stated that the Supreme Commander of the Allied Powers further directs the Japanese Imperial Government to send to his headquarters in Manila a competent representative empowered to receive in the name of the Emperor of Japan the Japanese Imperial Government and the Japanese Imperial General Headquarters certain requirements for carrying into effect the terms of surrender. According to this message it appears that the task of the Japanese representative is to receive "certain requirements for carrying into effect the terms of surrender."

3. We should like to clarify the following points because the forms and contents of the "full powers" to be issued will be different depending upon your answer.

A. Can we proceed according to the understanding stated in the said item 1 assuming that the Supreme Commander's message has the same meaning with the President's message in this respect?

B. If not please explain exactly what is meant by the "certain requirements for carrying into effect the terms of surrender." In any way we assume that the signing of surrender terms is not among the tasks of the Japanese representative in question.

Time of receipt: 171010I

IN THE CLEAR
URGENT

From: Supreme Commander for the Allied Powers
To: The Japanese General Headquarters
NR: Z-504

Reference your radiogram number 4 of August 16th. Your assumption that the signing of surrender terms is not among the tasks of the Japanese representative to Manila is correct. The directive from this headquarters is clear and explicit and is to be complied with without further delay.

MacArthur.

Time of origin: 171241I

IN THE CLEAR
URGENT

17 August 1945

From The Japanese GHQ
To: The Allied Supreme Commander
NR: 5

While on our side the imperial order has already been given to cease hostilities, the Soviet forces are still positively carrying on the offensive and their spearhead is reaching near a point west to Mukden early this morning. As the result, the Japanese forces in Manchukuo are meeting great difficulties in carrying out the imperial order. It is urgently requested that the Supreme Commander would take proper steps to bring about immediate cessation of the Soviet offensive.

Time of receipt: 171505I

IN THE CLEAR

17 August 1945

From: The Japanese Government
To: The Allied Supreme Commander
NR: 6

Please correct the sender of our radiogram number 4 from "Japanese GHQ" to the "Japanese government."

Time of receipt: 171527I

IN THE CLEAR

17 August 1945

From: The Japanese GHQ
To: The Supreme Allied Commander
NR: 7

Our representative to Manila selected. Due to necessary internal procedures he is scheduled to leave Tokyo on August 19. Further details will follow.

Time of receipt: 171640I

IN THE CLEAR
URGENT

17 August 1945

From: The Japanese General Headquarters
To: The Headquarters of General MacArthur
NR: 7

Re our radiogram number 2.

1. The parties for China and Manchuria left Tokyo today at 9:30 A.M.

2. The party for the south, reported in our previous message to leave on the 18th, left Tokyo also today at 9:30 A.M. in order to avoid possible delay due to bad weather.

3. The type and markings of the planes and their routes are as communicated before.

Time of receipt: 171705I

IN THE CLEAR

18 August 1945

From: The Japanese GHQ
To: The Supreme Commander for the Allied Forces
NR: 8

Regarding the advance notice of flight schedule of our representatives to Manila will broad-

cast at 2000 August 18, using however the frequency of 16145 kilocycles instead of that of 16124 which you designated by your first message of August 16.

Time of receipt: 181730I

IN THE CLEAR

18 August 1945

From: The Japanese GHQ
To: The Supreme Commander for the Allied Powers
NR: 9

Schedule of our planes movement regarding our representative flight to Manila, the party will employ two unarmed twin-engined single winged land attack planes of the type 1 (ITI Shiki Rikujo Kogekiki) with markings as designated by you. Weather permitting, the planes will leave Kisarazu airdrome on the 19th at 0700, pass over Sata Misaki on the southern tip of Kyushu at about 1100 and then proceed via Nakanoshima, Takarajima, Torijima and a point 35 nautical miles north of Ie Shima, reaching Ie Shima at about 1320 on the same day. During the flight over these points, they will take an altitude of 6000 to 9000 feet. In approaching Ie Shima, the planes will as you designated take the course of 180 degrees and circle landing field at an altitude of 1000 feet or below the cloud layer until joined by your escort.

Communication contact your planes call signs are JBACY and JBACZ and as you designated we desire to contact your airdrome by radio with the frequency of 8915 Kcs, besides carrying on in flight voice communication with the frequency of 6970 Kcs. Please notify us of the station designation, call sign and frequency of your station at Ie Shima.

Time of receipt: 181905I

IN THE CLEAR
URGENT

18 August 1945

From: The Supreme Commander for the Allied Powers
To: The Japanese Imperial General Headquarters
NR: Z-509

In reply to your message number 9 dated August 1945 aircraft control tower at Ie Shima is designated MOCA repeat MOCA and will guard 6970 kilocycles for voice communications. The air communications center will guard 8915 kilocycles with voice call PINBALL repeat PINBALL and RP 7 repeat RP 7 for voice or code transmissions. Desire your two airplanes use call signs Bataan 1 and Bataan 2 as designated in my radio of 15 August.

MacArthur

Time of origin: 182317I

URGENT

18 August 1945

From: The Japanese GHQ
To: The Supreme Commander for Allied Powers
NR: 10

The planes carrying the party of representatives have left Kisarazu airdrome on 0718 August 19.

Time of receipt: 191010I

THE THREE BEARS

(Modern Version)

General Ingles, the Chief Signal Officer, tells this story of an incident which occurred during his recent trip to Alaska, as being typical of some of the odd situations that often confront Signal Corps soldiers at the isolated radio telegraph and repeater stations on the Alaska Communication System: "On the afternoon of 1 July, Sergeant Thomas Ferrell, Operator in Charge, ACS Repeater Station, Cathedral Bluffs, was sitting at his desk in the quarters building filling out maintenance report forms when he heard a sniffing outside the door which he thought was the dog but when he saw the screen door cave in and a large black bear enter the room with another right behind him, he knew differently. Ferrell tried to scare the bears out but they were too determined so he fled through to the equipment room adjoining the quarters. The bears were, by this time, starting to tear things apart. Ferrell went to the outside door of the equipment room with intentions of going after the gun which was in the kitchen, a separate building close by. As he opened the door, there stood another bear just outside so he grabbed the fire extinguisher, went back to the quarters door, and sprayed the bears with the extinguisher. This frightened the bears and they ran into each other in their efforts to escape. One tried to go through the window but didn't make it and they both headed out through the basement door knocking over the washing machine and breaking the five gallon jugs of distilled water. The three bears headed back for the woods leaving behind broken chairs, windows, screens, overturned tables, beds, magazine racks, and a general mess. Blondie, the little dog mascot of the station, ran after the bears and up to 6:00 P.M., had not returned. It is feared that Blondie, the honey colored morale builder and the only member of the fair sex at the station, has met with disaster. So much for a day's work with the ACS."

PRESENTING "JIMMY"

By Captain Earl B. Braly, Signal Corps

"JIMMY," a veteran of almost a year's service at Fort Monmouth, N. J., still sports no stripes, bars, or other insignia of rank—in fact, he wears practically nothing at all—but it is acknowledged that he really outranks everyone on the post. He is the symbol of the warm friendship between the British Royal Corps of Signals and the United States Army Signal Corps.

Seven feet tall and weighing nine hundred pounds, Jimmy stands in the foyer of Russel all before a galaxy of flags of the United Nations. A plaque on the base of the statue proclaims that Jimmy was "presented to the officers of the Signal Corps, United States Army, by the officers, Royal Signals, as a token of their cooperation and comradeship in all theatres of operations, December 1941 to September 1945."

Not all of Jimmy's records have reached the personnel office yet, but the exploits of the character he represents in bronze are said to rival even those of the ubiquitous Kilroy. They date back at least as far as the mythology of the ancient Greeks, who called him Hermes, and the Romans, who named him Mercury.

According to the Greek version, Hermes was the son of Zeus and Maia. Born in the morning, by noon he had invented the lyre and learned to play on it. That evening, he stole fifty head of cattle which his half-brother, Apollo, was tending, and made them walk backwards into a cave so that they could not be traced. Then he lay down quietly in his cradle. The next day, when Apollo discovered his little brother's guilt, he took him before their father, who ordered the cattle to be returned. Hermes played such beautiful music, however, that his brother soon told him to keep the cattle. Hermes never reformed and he later stole such things as Venus' girdle, Neptune's trident, Vulcan's tongs, and Mars' sword.

Hermes was appointed the messenger of Zeus, and also became the god of sleep and dreams, the god of sports, the protector of heroes, the promoter of commerce, the patron of thieves, and the sacrificial herald of the gods. In addition to his other duties, he conducted the souls of the dead "that gibber like bats as they fare, down the dank ways, past the streams of Oceanus, past the gates of the sun and the land of dreams, to the mead of Asphodel in the dark realm of Hades, where dwell the souls and the phantoms of men outworn."

Hermes' tastes in clothes were strictly non-G.I. He wore a *Petasus,* or fatigue hat with wings, and a pair of winged sandals *(taleria)*. The *caduceus* he carried was a herald's staff garlanded with snakes. Trousers and tunics were not for him.

It is not surprising that the Royal Signals, with their motto, *Certa Cito,* "speed and accuracy," and their regimental march, "Begone Dull Care," should adopt the sprightly Hermes for their badge. Their famed despatch riders, as well as all of their various ingenious signalmen, are modern counterparts of this immortal messenger. He first came into the Corps when his statuette was carried on the staff of the drum major of the old Telegraph Battalion of the Royal Engineers. Perhaps he was named Jimmy as a friendly gesture and as a simple solution to the problem of whether to call him Hermes or Mercurius. Incidentally, the Royal Corps of Signals, which sprang from the Royal Engineers in 1920, is reminiscent of Hermes' sister, Pallas Athens, who came forth in full armor from the brow of Zeus.

Her Royal Highness, The Princess Royal, in uniform of Colonel-in-Chief of the Royal Corps of Signals, and Maj. Gen. F. H. Lanahan, Chief Signal Officer, USFET, stand before the statue of Mercury ("Jimmy") after presentation at Catterick Camp, Yorkshire.

Jimmy, the bronze, was liberated in Bologna during the Italian campaign by a Royal Signals unit. His next public appearance was at the Signal Training Center, Catterick Camp, Yorkshire, England, on September 26, 1945. On that occasion, no less a personage than Her Royal Highness, The Princess Royal, Colonel-in-Chief of the Royal Corps of Signals, presented Jimmy to Maj. Gen. F. H. Lanahan, Chief Signal Officer, United States Forces, European Theater, who accepted the gift on behalf of the U. S. Signal Corps.

Princess Mary, in presenting Jimmy, said: "The signal communication provided for the United States and British armies in the field in all theatres of operation has been of a very high order. This has required the closest cooperation between all ranks . . . The success attending that giant effort is sufficient proof of the relation between the two Corps. The officers of my Corps have asked me to make the presentation, as a mark of admiration and appreciation for their wholehearted cooperation, of this figure of Mercury, the badge of my

Corps. I hope it will help to keep fresh the many associations and friendships that have been formed during the last three years between the officers of the U. S. Signal Corps and the Royal Corps of Signals."

General Lanahan replied: "For the present and future members of the U. S. Army Signal Corps, I accept this gift with deep appreciation. I know that with it go the warm and sincere felicitations of the many officers and men who served with us. It will be a lasting reminder of the close teamwork which made possible tremendous accomplishments in the past conflict . . . It will be a symbol of hope continuing through the days of peace . . . May it be an inspiration to the political, economic, and business leaders to whom we pass the baton of responsibility now that hostilities have ceased."

The ceremony at Catterick included inspection of the 150th Officer Cadet Unit and a review of troops of the Signal Training Center. Afterwards the visitors were taken on a tour of Roman relics in the vicinity of the nearby town of Richmond, as guests of the mayor and his wife. Among the British officers attending the presentation were: Lt. Gen. Sir H. Colville B. Wemyss, Military Secretary; Maj. Gen. L. G. Phillips, Director of Signals, War Office; Maj. Gen. G. G. Rawson, Colonel Commandant of Royal Signals; Maj. Gen. R. F. H. Nalder, Chief Signal Officer, Allied Force Headquarters, Italy; Maj. Gen. Leslie B. Nicholls, Chief Signal Officer of the British Army of the Rhine; Maj. Gen. C. M. F. White, Chief Signal Officer, late 21st Army Group; Brigadier R. T. O. Cary, Commandant, Signal Training Center, Catterick Camp; Brigadier F. S. Straight, Commandant, No. 1 Signal Training Center; Col. T. B. Gravely, Commanding Officer, Headquarters School of Signals.

American representatives, besides General Lanahan, included: Brig. Gen. George I. Back, Chief Signal Officer, Mediterranean Theater, Col. John J. Downing, Col. Harrod G. Miller, Lt. Col. Ralph G. Edwards, Lt. Col. Richard M. Osgood, Major Lauren C. Bray, Major John S. Walter, Major Paul M. Hutchinson, Capt. Richard W. Dowell, Capt. Lattimer W. MacMillan, Lt. Richard D. A. Tarpley, and Lt. William H. Caffey.

Viewing Jimmy in the foyer of Russel Hall at Fort Monmouth are, left to right: Brigadier A. C. Sykes of the British Army Staff, Maj. Gen. H. C. Ingles, Chief Signal Officer, and Brig. Gen. S. H. Sherrill, Commanding General of the Eastern Signal Corps Training Center.

Less than two months later, Jimmy had crossed the Atlantic, and at Fort Monmouth his American hosts held a ceremony on November 14 which was a sequel to the one in England. In contrast to the crisp autumn weather in Yorkshire, it was a rainy day in New Jersey, so Jimmy was taken right into headquarters for the second presentation.

In his introductory remarks at the Monmouth ceremony, Brig. Gen. S. H. Sherrill, Commanding General of the Eastern Signal Corps Training Center, said: "During the darkest days of the war for the British, one of their rallying slogans was, 'There Will Always Be an England.' I feel that there will always be this friendly feeling between our army and the British army."

Brigadier A. C. Sykes of the British Army Staff in Washington made the presentation. "This places an unbreakable seal on the cooperation between our two countries," he declared. "It has been my ambition ever since I have been in America to say on a public occasion such as this . . . to all the members of the United States Signal Corps, how much we all realize and appreciate how much you have done for us . . . and I say that in the name of every member of our Corps wherever they may be throughout the four quarters of the world," Brigadier Sykes concluded. The statue was unveiled by Company Quartermaster Sergeant Cork, Foreman of Signals, British Army, and Master Sergeant Leeds of the U. S. Signal Corps.

Accepting the bronze, Maj. Gen. H. C. Ingles, Chief Signal Officer, said: "In discussing the statue and an appropriate place to put it here at the Eastern Signal Corps Training Center, General Sherrill and I decided that in the rotunda of this building would perhaps be the best loca-

tion that we could select because in future years the many officers who will pass through here going to the Signal School and the men going to the Enlisted Specialist Schools, will see this many times. We hope that in the future it will continually be a reminder of the brilliant cooperation that existed between the British Commonwealth Signals and our Signal Corps during the war so that the spirit of cooperation can be continued in peace."

As a memento of the occasion, General Sherrill presented Brigadier Sykes a special memorial card to be sent to Major General Phillips for presentation to the training center at Catterick. The card was inscribed: "To the officers of the Royal Signals in appreciation of your gift of the statue of Mercury, symbolizing the good fellowship, cooperation and comradeship extended the United States Army Signal Corps while achieving the ultimate of our mutual aims, victory in World War II." Sound motion pictures entitled "Jimmie" were made of the ceremonies at Catterick and Fort Monmouth.

Luncheon at the officer's club and a tour of the Squier Signal Laboratory concluded the visit to Fort Monmouth. Among the sixteen British and Dominion officers attending were: Brigadier Sykes, Col. H. N. Crawford, Lt. Col. A. G. David, Major R. A. Sykes, Major W. C. Hawkins, Major C. Stead, Capt. B. Skelly, and Capt. F. Vine, of the British army, and Col. Roy Kendall, Lt. Col. Basil F. A. Brown, Major Leonard W. Cumpston, and Capt. Ian Lloyd, of the Australian army. Lt. Col. Fred E. Raney and Major J. Lowe represented the Canadian army.

U. S. Signal Corps officers included: Maj. Gen. J. O. Mauborgne, retired, former Chief Signal Officer; General Ingles; General Sherrill; Brig. Gen. C. H. Arnold, Chief of the Procurement and Distribution Service, Office of the Chief Signal Officer; Col. Jay D. B. Lattin, Signal Officer of the Second Service Command; Col. Hugh Mitchell, Commandant, Eastern Signal Corps Schools; Col. Leon E. Ryder, Post Commander; Col. Victor A. Conrad, Commanding Officer, Signal Corps Engineering Laboratories; Col. Donald H. Nelson, Commanding Officer, Eastern Signal Corps Unit Training Center.

In July, 1946, a further acknowledgment was made by the U. S. Signal Corps when a large bronze plaque was presented to the Princess Royal at a reception held in the American Embassy in London. The inscription on the tablet reads: "Presented to the officers, Royal Signals, by the officers of the Signal Corps United States Army, in recognition of the splendid spirit of cooperation and amity between the two services." The tablet hangs in the headquarters mess at Catterick, where British officers have said it is considered a beautiful addition to the splendid appointments there.

General Ingles sent the following telegram to General Lanahan: "Please express my keen regret that I am unable to attend today's ceremony to renew the fellowship between the British Royal Signals and the Signal Corps of the United States Army. The occasion is a memorable one in the annals of both services. It is a striking climax to those anxious days of struggle in which friendship meant deeds rather than words. The plaque which is being presented today symbolizes the singleness of purpose which actuated us. It is a testimonial to the mutual trust which was manifested during the war on every front and which has been carried over into these days when a peaceful world is our supreme objective. With the fervent hope that the bonds of friendship forged in battle will continue unsevered, I salute the Royal Signals as gallant soldiers and staunch comrades."

Thus Jimmy, the nimble pagan messenger who is equally welcome in heaven, earth, and the nether-world, has used his powers of charm and good will to help in binding Anglo-American signalmen together in war and peace.

L. to R.: General Lanahan, Theater Chief Signal Officer, the Princess Royal, Ambassador Harriman, and General McNarney, Theater Commander, conversing after the presentation of bronze plaque, that was awarded to the Royal Corps of Signals, in London, by U. S. Army Signal Corps for its close liaison and cooperation.

Heads Communications Panel

Brig. Gen. Frank E. Stoner, Assistant Chief Signal Officer, has been loaned by the Army to serve as chairman of a panel of communications experts who will establish communications practices and policies for the dissemination of information from the United Nations General Assembly. The loan was made at the request of Mr. Benjamin A. Cohen, United Nations Assistant Secretary General in charge of information.

General Stoner is credited with responsibility for building the world's largest communications system, the wartime world-wide War Department networks, which handled more than 50,000,000 words per day at the height of the war. —*A. & N. Register.*

Presentation at the Embassy

(Editor's note) Advised of the plan to run the story "Jimmy" in the opening issue of "Signals" Brigadier General Francis H. Lanahan, Jr., Chief Signal Officer in the European Theater of Operations, has furnished the following account of the presentation of the Signal Corps' bronze plaque to the Royal Corps of Signals, at London, July 17, 1946, at the official residence of the American Ambassador, Mr. W. Averill Harriman.

A BRONZE plaque commemorating the splendid spirit of cooperation and amity between the United States Signal Corps and the Royal Corps of Signals was presented on behalf of the Signal Corps to their brother officers and men of the Royal Signals. The presentation was made by General Joseph T. McNarney, Commanding General, USFET. On behalf of the officers and men of the Royal Corps of Signals, the plaque was accepted by Her Royal Highness, Princess Mary, Colonel-in-Chief of the Royal Corps of Signals.

In presenting the plaque, General McNarney made the following remarks:

"Modern Armies live and speak only because the miracle of communications provides the voice. The plane overhead, the vehicle on the ground, surface craft and submarine are able to do their work only when the vital communications system provides the means to direct and control them, but it is not the mysterious machines themselves to which I offer tribute, it is to the men—signal men — British and American — who throughout the battle in Europe unceasingly labored to make the system a living and vital thing. It is to these men behind the machines that we owe so much.

"As far back as '41 American Army Signalmen were present in Great Britain as special observers. They were the advance agents who laid the groundwork of that close cooperation between the Royal Corps of Signals and the United States Army Signal Corps which was clearly evident as they jointly prepared for the inevitable attack across the channel.

"In a large measure the final success of our armies may be attributed to their dependable communications service which carried the instructions, information, reports, and millions of words by various media to all parts of our

The plaque which was presented in the American Embassy in London.

armies. The association between the two Signal Corps grew stronger as their common duties and common efforts under the stress and strain of battle brought them to intimate association. Many individual members of the two corps formed warm and lasting friendships. For the most part, these old friends have now gone their separate ways to other work beyond these shores, but they have not forgotten you, and it is their sincere wish that through the years you will not forget them. Representing them I have been asked to take part in this ceremony of commemoration. It is my pleasure and privilege to present this plaque to the Royal Corps of Signals in behalf of the officers and men of the United States Signal Corps. It is a small recognition, we know, for the great generosity and warm friendliness shown to us from all sides. It carries with it a measure of gratitude and good will, the product of long and successful association. It is our wish that throughout the years to come it will serve as a constant reminder of work well done together, and a happy omen that working together we may find a greater measure of success in building a happier and a prosperous world."

In accepting the plague Her Royal Highness emphasized team work which had existed between the two services in the many theaters of war and stated that the plaque would be hung in an honored place in the Royal Signal Corps School at Camp Catterick, England, where it would be a lasting reminder to the present and future members of that Corps of the very friendly and helpful association with their sister services across the Atlantic.

During the introductory remarks by Brigadier General F. H. Lanahan, Jr., Theater Chief Signal Officer, welcoming the officers of the Royal Corps of Signals and their ladies, and introducing General McNarney, the following message from Major General H. C. Ingles, Chief Signal Officer of the Army, was read to the assembled guests.

"Please express my keen regret that I am unable to attend today's ceremonies to renew the fellowship between the British Royal Signals and the Signal Corps of the United States Army. The occasion is a memorable one in the annals of both services. It is a striking commemoration to those anxious days of struggle in which friendship meant deeds rather than words.

"The plaque which is being presented today symbolizes the singleness of purpose which has actuated us. It is a testimonial to the mutual trust which was manifested during the war on every front and which has been carried over into these days when a peaceful world is our supreme objective.

"With the fervent hope that the bonds of friendship forged in battle will continue unsevered, I salute the Royal Signals as gallant soldiers and staunch comrades."

Decline in Power

From a total military strength of 27,000 officers and 328,000 enlisted men in July, 1944, the worldwide Signal Corps troops strength has dropped to 4,000 officers and 35,000 enlisted men in July of this year. This includes Signal Corps personnel with the Air and Ground Forces.

Letters to the Editor

"We welcome your letter of June 17th telling us of the Army Signal Association, and I am sure that your bi-monthly publication will keep all of us at Oak in much closer contact with the work the Signal Corps is doing, and at the same time will recall memories of the years in which we have worked so closely with so many men in the Signal Corps.

"With this letter goes our check for annual dues, and also our very best wishes to you and the Army Signal Association."

OAK MANUFACTURING COMPANY,
R. A. O'Reilly,
Executive Vice-President.

"I wish to extend my thanks that an offer of membership in your organization was sent to me. Your idea is splendid and the objectives of the organization are those which I believe many of we veterans support wholeheartedly. It is most important that this nation never again fall into the dilapidated state which we have found ourselves before previous wars. I sincerely believe that this organization is one more step toward insuring that this will not happen again.

"Many congratulations on this splendid organization and may it meet with the best success in attaining its objectives.

Sincerely,
Lewis B. McClellan,"
A student.

Yokohama, Japan

"Life here is becoming quite settled, and much like on an army post in the U. S. Slowly, troops are getting housed in permanent quarters, mostly Quonset Huts, and the same holds true for officers.

"The church services are well attended every Sunday, and I even see a few Japs there. General Weible always is there. The Chaplain is quite a marvelous person —Colonel MacKensie. He has 29 years service in the Army. The Chapel is one built by the people in the old international settlement.

"I was driving a jeep one night this week and suddenly realized I was getting a flat tire. I started to look around for a good place to put the spare on, when I saw a Jap fire station. There was space, so I drove in and motioned to one of the firemen that I had a flat and just wanted a nice place to fix it. He barked one command into an adjoining room and out flew five Japs—one got a jack from the fire truck, one a lug wrench and they all flew in on that job and I was rolling again in less than five minutes. That is just an example of how these people treat us.

Sincerely,
Signal Corps Officer in Japan.

"I have been fortunate in being able to travel a good deal by train, motor, and plane, so I have seen the entire Japanese archipelago wilth the exception of the northernmost island which is held by the Russkies. It has been interesting and educational but I still don't like Japs. As we use their facilities entirely, I have a lot to do with them and they are past masters at the art of double talk.

"And believe me, this whole country was worked over thoroughly by our Air Force and Navy. I have seen only two cities of any size, Kyoto on Honshu and Sapporo on Hokkaido, that escaped with no damage. Kyoto was spared because it is the cultural center of Japan. Sapporo, I guess, was spared because it was too hard to reach. The rest of the large cities are shambles and I have wandered through all of them. To make matters worse, during the war the Army and Navy confiscated and stripped all buildings of radiators, boilers, electrical fixtures, etc. to build up their stocks of metals. And there has been no maintenance on roads, utilities nor communication systems for over five years, so you can well imagine the condition things are in over here.

"We are sort of off the beaten path up here and consequently I get very little Signal Corps news. Maybe we don't get it in Japan.

Another Signal Corps man in Japan.

"At the start of this year Sixth Army was inactivated here in Kyoto, Japan, and it became the task of I Corps to move its headquarters from Osaka to Kyoto, and take over the then existing Army communications facilities here. The move was made rather smoothly, and it was my assigned job to come up to Kyoto with the advance Signal echelon, and make the conversion from the Army Signal set-up to the one that we would need under I Corps. Frankly, it turned out to be quite a job, and believe it or not, the communications that we now have in I Corps Hq. is every bit as extensive, if not more so, than that under Sixth Army Hq. here in Kyoto. I found the supervising of the cut-over and modification of the signal installations very interesting, and I learned a lot at the same time. At present, we have not only a manual Telephone Switchboard system, but a Japanese Dial system as well. In addition, we have wire and radio teletype, carrier, VHF, and voice and CW radio circuits in full operation, as well as a few experimental projects, such as facsimile, under way now.

"The scenery here is really beautiful, and the climate is very similar to that of North Carolina, but a little more humid, I would say. Kyoto is quite a shrine city, and is the location of the Imperial University, and was, many years ago the Imperial Capital of Japan itself. In fact, the original Imperial Palace Grounds still stand much the same as they did at that time. All in all, it is a good place to be stationed, as long as one has to be in Japan, I think.

"I started to work on finding a new area, and a basic structure that would afford the men and officers a warm, dry, fire-proof place to live and work, and I finally found it in the design of a large Modern Arts Museum Building in the uptown section of Kyoto. You can imagine the fight I had to get that building and the area around it away from the Japs, but we finally did it. It really is a beautiful building, in a nice location, and has good area drainage as well as nice landscaping around it. Naturally, I had to have the Corps Engineer Section approve and build Administrative buildings, supply buildings, mess halls, motor pool, etc., but the basic structure to house the enlisted men was already there, and it will have central heating, adequate lighting and ventilation, as well as all interior toilet and latrine facilities. I still can't understand why such a set-up was not procured for the men in this outfit long ago, when the unit first came to Kyoto. It would have been much easier to obtain from the Japs then than it was from the month of March till the present time.

"I imagine that most of the AUS officers that we knew at Drew Field have been released from the Service by this time. About the only one that I have run across over here in Japan that I knew very well back in Florida was Lt. Col. Schwede (Exec. Officer of the 4th Training Regt. at Drew) and I believe he has since returned home. His job here was that of Signal Officer of Fifth Fighter Command.

PAUL C. DAY

Editor's Note: We have a long letter from B. I. "Fritz" Noble, giving news of former members of Signal Section 12th Army Group which we will send to anyone asking for it.

"I believe the formation of this organization is a definite step forward for the Signal Corps. Although I was Field Artillery all my military service I was closely in touch with signal communications in the military service. This important service should never again be caught napping. The time to prepare is in time of peace. Although individual training is always important; Research and Development now assumes a more important role than ever and must be stressed in all programs and budget requirements. Without the most modern and field tested equipment training of individuals and units is almost wasted effort. I would like to see this Association GO ALL OUT for a strong Research and Development Program. Such a program was announced soon after V-J and V-E days, but was soon side tracked in the competition for funds. Research and Development should be kept on its own feet and should in no way be made subordinate to Personnel and Training which has recently been the trend and which is also a reversion to pre-war business as usual policy."

OUR NATIONAL OFFICERS

DAVID SARNOFF
President
NEW YORK. He served as Brigadier General and won the Legion of Merit for his services in Europe.

WILLIAM J. HALLIGAN
1st Vice-President
ILLINOIS. He served his country in a civilian capacity in the production field during the war.

DARRYL F. ZANUCK
2nd Vice-President
CALIFORNIA. He served as Colonel and won the Legion of Merit for his services in North Africa.

FRANK W. WOZENCRAFT
TEXAS: Legal Counsel. Served as Colonel in Signal Corps during the war and was awarded Order of the British Empire.

ASSOCIATION AFFAIRS

BACKGROUND AND HISTORY OF THE NEW YORK CHAPTER

The First To Be Accepted In The Army Signal Association

The following synopsis of the origin and brief history of the American Signal Corps Association and its New York Post, now the New York Chapter, Army Signal Association, will prove of interest to those now interested in the organization of the new ARMY SIGNAL ASSOCIATION. If we are to profit by past experiences, it is essential that we review former accomplishments and mistakes. It is often said that history repeats itself. We should endeavor, therefore, to establish the ARMY SIGNAL ASSOCIATION on firm foundations that will encompass all the fine qualities of the American Signal Corps Association, formed after World War I, and the U. S. Veterans Signal Corps Association, the latter organization dating back to the Civil War.

It was the desire, after World War I, to further develop a bond of personal interest and understanding between members of the Signal Service of the Army-Regular Army, National Guard and Organized Reserves—and the members of allied industries, that led to the formation of the American Signal Corps Association early in 1925 under the sponsorship of Major General C. McK. Saltzman, Chief Signal Officer of the Army at that time. The Chicago Signal Post was the first charter post which, in April 1924, adopted and submitted to the Chief Signal Officer the original Constitution and By-Laws for the American Signal Corps Association. After some changes, they were formally adopted in May 1925 and Signal Posts were organized throughout the country. Brig. General J. J. Carty,* A.T. & T. Co., Vice President, who had rendered distinguished services to the Signal Corps during World War I, was the President. Other original officers of the Association were Major H. H. Frost,* 1st Vice President; Major R. F. Conlisk,* 2nd Vice President and Lt. Col. H. S. Sheppard,* Secretary-Treasurer.

The first annual Convention of the American Signal Corps Association was held in Washington, D. C. on May 27, 1927 under the auspices of the Washington Post. At this meeting, General J. J. Carty, the National President, outlined two main objectives for the Association. First, to build-up membership so as to include all Signal Corps officers, including Regular, National Guard and Reserve Corps, and representatives from industries allied to the Signal Corps; Second, that of publishing regularly the journal of the American Signal Corps Association named "Military Signal Communication." General Carty personally underwrote the expense of the first issue of this Journal which was printed and issued under the date of May, 1927.

This appeared to mark the high point of the National Headquarters of the American Signal Corps Association as there is no record of subsequent issues of the "Military Signal Communication" magazine nor further national conventions.

Colonel George P. Dixon, who was largely responsible for the re-activation of the New York Post, has been its President during the entire period. At first, meetings were held infrequently because it was felt that it was better to have a few good meetings per year than to meet at more frequent intervals. Later, about 1932, regular monthly meeting were held at which military subjects were discussed. Signal Reserve Officers who attended were given two hours inactive duty training credits. These meetings continued until the end of 1941 when most of the members were away on active duty. During the 1930-1941 period, the New York Post held many important functions in connection with their meetings. Some of the more important meetings were:

March 17, 1932—Dinner at Hotel Lafayette for the Chief Signal Officer, Major General Irving J. Carr.

Jan. 18, 1933—Dinner and entertainment at Western Union Bldg. and demonstration by Signal Corps Laboratories, Fort Monmouth, N. J.

March 21, 1935—Dinner at Hotel Brevoort for the Chief Signal Officer, Major General James B. Allison.

Jan. 20, 1938—Dinner at Officers Club, Governors Island, N. Y. for the Chief Signal Officer, Major General J. O. Mauborgne.

May, 1940—Demonstration of FM (frequency modulation) broadcasting by Major Edwin H. Armstrong and his engineers.

Oct. 25, 1941—Dinner at Officers Club, Governors Island, N. Y. in connection with the Veterans Wireless Operators Association, to Major General J. O. Mauborgne, (Retired). This was the last dinner-meeting of the American Signal Corps Association before World War II.

During World War II, a number of the members of the New York Post including Colonel George P. Dixon, the President, Lt. Col. J. J. Berhalter, the Secretary, and Lt. Col. Harry C. Cuthbertson, the Treasurer (now deceased) were on duty in England. As a result, the first meeting of the London Section of the New York Post, American Signal Corps Acsociation, was held on

* Editor's Note: Carty Avenue at Fort Monmouth was named for General Carty about 1933.

Major Frost as Colonel Frost, c/s 13th Armored Division, rendered distinguished combat service in ETO in World War II and was seriously wounded. He is now on WDGS.

Major Conlisk, as Colonel Conlisk was on active duty in Washington in the OCSigO during 1940-1942 and later served as Signal Officer in England and the Normandy Base Section in France.

October 20, 1942 at the No. 3 Grosvenor Club, Grosvenor Square, LONDON. Approximately 100 Signal Corps officers and their guests attended including the following Guests of Honor:

Major General L. G. Phillips, Signal Officer in Chief, G. H. Q. Home Forces.

Major General C. W. Fladgate, Director of Signals, War Office.

Brig. Gen. (now Major Gen.) W. S. Rumbough, Chief Signal Officer, ETOUSA.

Brig. Gen. J. V. Matejka, Ass't. Chief Signal Officer, ETOUSA.

The huge success of the first meeting lead to the second meeting which was held on Thanksgiving Day (the first Thanksgiving Day in England of the ETOUSA Hq.) on November 26, 1942 at Hq. S.O.S. in Cheltenham or better known as A.P.O. 871 in those days. Colonel Dixon presided at this meeting as at the first one held in London and in addition, he also was able to procure the turkeys for the traditional Thanksgiving Day meal. About 125 attended this affair and Lt. Col. Cuthbertson showed the first motion pictures of the invasion of North Africa.

The third and last dinner-meeting to be held in the E.T.O. was an overflowing affair at the Dorchester Hotel in London on Saturday night, May 29, 1943. Lieut. General Jacob L. Devers was the Guest of Honor. (He was the Theatre Commander at that time) and about 300 Signal and communication officers attended and participated in the steak dinner which was arranged by Colonel Dixon and Col. Berhalter of the New York Post. The subsequent press of increasing military duties prevented further general meetings in England. Informal gatherings were held in Paris and other European cities during the latter part of 1944 and 1945.

DAVID TALLEY
LT. COL. SIG. RES.
Secretary-Treasurer

June 25, 1946

The present officers will serve only until the first election. Notice of this meeting and election will be mailed to each member or chapter not less than thirty days before the date of the meeting. The first election will be held thirty days after the membership totals 5,000.

Several field installations of the Signal Corps have sent in many membership applications. Among these are Holabird Depot, Sacramento Depot, Utah Depot, Panama Department Signal Office.

Members of our staff:

Our office manager is Miss Bonnie Crenshaw, while Mrs. Wilda Bruner, formerly employed at Signal Corps Engineering Laboratory at Fort Monmouth as secretary and control clerk is in charge of the service department.

Mr. Chandler Robinson, a former 1st Lieuenant and heavy bomber pilot is in charge of accounting and Mr. James Hobbs, late Technical Sergeant with the Coast Artillery Journal handles circulation. Many of our members in industry will remember General Sherrill, our Executive Secretary, when he was a Captain in charge of procurement planning in the New York district at Governors Island and the Brooklyn Base in 1927-1930.

Our 1st Vice-President, William J. Halligan of Chicago is in charge of the formation of local chapters. If you have any special ideas write him at the Hallicrafters Company, 2611 Indiana Avenue, Chicago 16, Illinois.

Get busy and form a local chapter in your area. A petition signed by only fifteen members is the first requirement. Forms for the petition can be had by writing National Headquarters.

"I just noticed your sign . . . could you use the services of a retired army officer?"

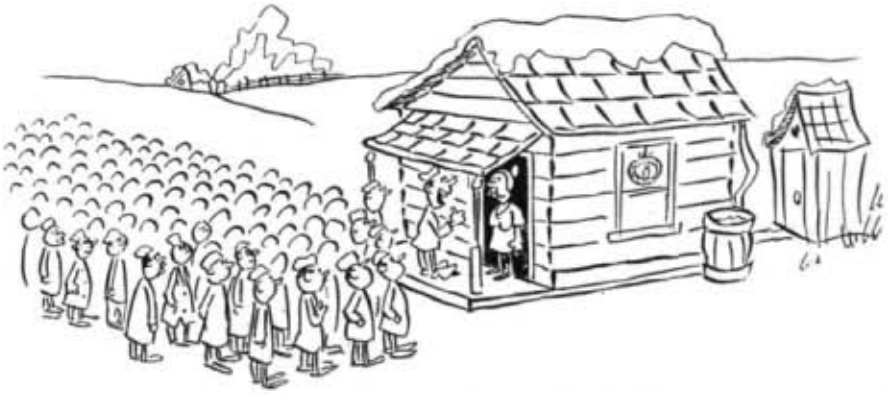
One of our biggest days was July 10 when applications from 155 officers and men of the 304th Signal Operating Battalion stationed in the Pacific reached the office.

Most Signal Corps Officers who went through OCS will remember Captain James J. Coyne, whose application reached us the other day from APO 503 in the Pacific.

Recently, the Executive Secretaries of all the Army Associations met in Washington to discuss ways and means of improving "inter-service relations." It was agreed that a monthly meeting should hereafter be held at which methods by which the associations, through concerted action in some cases, can best advance the interests of National defense and can improve one another by discussing mutual problems and solutions of problems. Our members may be called upon occasionally for special studies, reports, and advice in their special fields when certain data is needed or which may be of value to the other associations or components of the armed forces. The Army Associations now active, all with National Headquarters in Washington are: Air Force, Cavalry, Chaplain, Chemical Warfare, Coast Artillery, Engineers, Field Artillery, Infantry, Medical, Ordnance, Transportation, and Quartermaster.

Just how charged with interest in the ASA are those in the general area of the Army Signal School, is amply shown in recent notes received from Technical Sergeant C. William Evans, of "The Message" who describes the first meeting held there to organize the Fort Monmouth Chapter of the ASA.

The first meeting was held in the Post Gymnasium with the Commanding General, Brig. Gen. Jerry V. Matejka in attendance. In a brief and enthusiastic address to the group General Matejka told of the importance of the ASA as a means of welding together the thoughts and interests of civilians and those engaged in communications production industries with the problems of the military communications field. General Matejka briefly mentioned efforts toward organi-



"I hope you don't mind, Ma. I brought a few of the signal boys home for some of your good ol' cookin'!"

zation carried on after the first World War and expressed the belief that the ASA might be strengthened by a determination to have those who served with, or worked as civilians in the recent war effort of the Signal Corps, holding the places of key control in the Association so that it might not tend too much toward military influences.

Attention was directed to the fact that the Fort Monmouth Chapter should stand well to the fore among the local groups, sharing a place of prominence alongside the chapters which will represent such important communications areas as New York and Chicago; these latter sections being recognized industrial localities engaged in worldwide communications material production.

Captain P. G. Coates, of the Signal Corps Publications Agency, struck a keynote point when he called attention to the fact that the ASA with its circulation of material dedicated to the interests of the communications field would become a unified voice, speaking a "unified language" on technical subjects. It also might become a melting pot source for many useful technical angles, springing from ordinary "shop talk" and "shop ideas" from various persons concerned with signal field work.

A picture of the progress of the ASA from the angle of the national headquarters in Washington, was briefly presented by First Lieutenant Earl B. Braly, Assistant Public Relations Officer of Fort Monmouth.

Mr. John J. Slattery, of the Signal Corps Engineering Laboratories, presented the plans for nominations. Those named to committees, representative of all the major activities, are, from the Squier Signal Laboratory, Mr. Cedric Flagg, Mr. W. L. Seibert, Dr. Virgil Payne and Mr. Milton Smith. From the Coles Signal Laboratory, Mr. J. Hessel and Mr. James Wyly and from SCEL Headquarters, Mr. A. D. Emurian. From Fort Monmouth those selected include Mr. Charles Devore, of Signal Corps Publications Agency, Miss Robye Knoll of the Signal Corps Board, and Miss D. M. Lively of Post Headquarters.

As a beginning of plans to have persons with information of timely interest present at the meetings of the group Dr. H. Zahl, of SCEL Headquarters told of his experiences at Bikini Atoll during the atom bomb tests and Mr. A. Brown, of the Squier Signal Laboratory told of the work of the Signal Corps at White Sands in New Mexico.

A fine group of memberships, far more than from any other area has already reached national headquarters, with a promise of many more to come.

The following named firms, corporations, companies or associations have joined ASA as group members. These industrial concerns which contributed so much to the great victory so recently won have given assurance through their membership in ASA that they will continue their great interest in the future welfare of our nation. It is essential to military preparedness, and especially military communications that the Army continue its close association with the manufacturers and businessmen who have contributed so much to the technical advances of the Signal Corps during the war years—and before. We need a group of patriotic men and organizations through whom we can learn about new commercial and industrial procedures and developments and from whom we can seek advice on procurement, manufacturing, operating and research problems. We present these companies to our members and extend an invitation to other patriotic concerns to join them in their determination to profit by the lessons of World War II. Companies are listed in the order their applications for membership were received at National Headquarters.

Bendix Radio Corporation
Chesapeake & Potomac Telephone Co.
Radio Corporation of America
Automatic Electric Sales
Automatic Electric Company
Inter-Mountain Telephone Co.
American Telephone & Telegraph Co.
The Hallicrafters Co.
The Lincoln Telephone & Telegraph Co.
Southern Bell Telephone & Telegraph Co.
Ohio Bell Telephone Co.
Cincinnati Bell Telephone Co.
Western Union Telegraph Co.
Bell Telephone Company of Penna.
The Diamond State Telephone Co.
Southwestern Bell Telephone Co.
International Telephone & Telegraph Co.
New Jersey Bell Telephone Co.
New York Telephone Co.
Northwestern Bell Telephone Co.
Mountain States Telephone & Telegraph Co.
Wisconsin Telephone Co.
Carolina Telephone & Telegraph Co.
New England Telephone & Telegraph Co.
Pacific Telephone & Telegraph Co.
Michigan Bell Telephone Co.
Mutual Telephone Co.
United Telephone Co.
Indiana Bell Telephone Co.
General Cable Corp.
Warner Brothers Pictures
Hearst Metrotone News
Westinghouse Electric Corp.
Telephone Services Inc.
Motion Picture Association
American Lava Corp.
L. H. Terpening Co.
American Condenser Co.
Panoramic Radio Corp.
The Rauland Corp.
Allen B. DuMont Laboratories, Inc.
Espey Manufacturing Co., Inc.
Solar Manufacturing Corp.
Emerson Radio & Phonograph Corp.
Johnson Steel & Wire Co., Inc.
Electronic Laboratories, Inc.
Eastman Kodak Co.
Copperweld Steel Co.
Anaconda Wire and Cable Co.
Leland Electric Co.
Sparks-Withington Co.
Southern New England Telephone Co.
Leich Electric Co.
Sangamo Electric Co.
Amperex Electronic Corp.
Kollsman Instrument Co.
Sperry Gyroscope Co.
The Okonite Co.

(Please turn to page 48)

DEVELOPMENTS IN INDUSTRY

By ROLAND C. DAVIES, Publisher and Editor of
Telecommunications Reports

The acceleration of research, invention and development in the urgent necessities of war, guided by the Signal Corps in cooperation with industry, has been most significantly demonstrated in the planning and experimentation of the American communications services and the radio-electronics manufacturing companies. There has been a vertiable multitude of new developments and services launched by the American communications operating and manufacturing industries during the year since Victory over Japan—virtually all born or brought into full fruition during the war to meet the fast-moving and changing requirements of the combat forces.

The Army Signal Corps leadership during the war greatly contributed to this tremendously speeded-up development of the "new things" in communications and electronics through its insistence and continual stream of requirements for the combat forces —fortunately the War Department and Signal Corps aims today call for concentration on research and development by leading industrial and university laboratories for national defense preparedness.

The war-stimulated developments include mobile FM radiotelephone service for the cities and major towns and the main highway arteries; micro-wave radio relay systems; railroad radio both by inductive and space-radio methods; radar, loran and shoran for marine and aviation navigation safety; airborne television; short-distance toll and rural radiotelephony; facsimile; and, as a heritage of the world's largest and speediest radiocommunications system—built up by the Signal Corps during the war in the global belt-line Army Communications Service system—, the Tangier circuits of the American radiotelegraph companies to avoid magnetic pole and sunspot interference.

The production of home radio receiving sets for standard (AM), FM and television broadcasting continues after the war as before 1941 the big element in radio manufacturing and sales. The other fields of radio equipment and services, as listed in the above paragraph, together with industrial electronic aids in manufacturing which were stimulated by the demands of war production, are bulking as important and lucrative factors in U. S. radio manufacturing. It is noteworthy to comment that the new fields of radio service required little, if any, reconversion from war production methods in retooling and assembly programs.

Following is a summary of the new communications and radio services as noted in recent issues of *Telecommunications Reports*, weekly news service covering the communications and radio-electronic fields:

MOBILE URBAN AND HIGHWAY FM RADIOTELEPHONE —The Bell Telephone System and larger Independent telephone companies have inaugurated urban mobile radiotelephone service in every city of any size throughout the nation with St. Louis as the first metropolis to have this service launched on a commercial basis in June. The highway mobile radiotelephone service was inaugurated in mid-July on three important inter-city highways totaling more than 1400 miles in length and construction of stations has been under way on highways between New York and Boston and Chicago and St. Louis. For the Los Angeles and San Diego highway system the A. T. & T. plans to establish transmitter and receiving stations on Mt. Wilson, site of the Southern California television station center, and Mt. Woodson to cover the entire 125-mile highway.

NIGHT MANEUVERS
"A couple Signal Corps men just cut in to ask 'What are we doing tonight, babe?'"

On the highways the radiotelephone systems will serve properly equipped passenger buses, freight trucks, automobiles, and railroad trains and ships.

Besides the telephone companies, an aggregation of the leading inter-city passenger bus companies has formed an organization, the National Bus Communications Inc., to coordinate and operate the radiotelephone facilities in this field. This organization has been given the sanction of the Federal Communications Commission in the determination of frequency assignments and with the view by the FCC that the regulatory body felt an industry-operated service would be more economical to bus companies than service furnished by telephone companies.

Many scores of taxicab and motor vehicle companies, ranging from the major cities to comparatively small towns, have also entered the field of radiotelephone communications. Their purchases of equipment have ranged from $1,000 for small taxicab companies up to $150,000 or $200,000 for large companies. And this service is only in the experimental stages.

In this field, a number of radio manufacturing companies which played stellar roles during the war in the furnishing of mobile radio equipment for the Army under Signal Corps contracts are supplying the apparatus for

peace-time use. These are Galvin Manufacturing Co., Link Radio, Inc., General Electric, Farnsworth Television & Radio, Radio Corporation of America, Bendix, Wilcox Electric, Communications Co., Inc., Mobile Communications Co. and others.

MICRO-WAVE RADIO RELAY—The American Telephone and Telegraph Co. and Bell System are engaging in an extensive testing of micro-wave relay for telephone, telegraphic communications. Western Union is constructing a most comprehensive radio-beam network, aided by RCA, which is aimed eventually to replace wire lines on trunk routes. RCA Communications through the RCA relay links also is observing this method of relaying communications, while Federal Telephone and Radio Corp. and its research affiliate, Federal Telecommunications Laboratories, both subsidiaries of the International Telephone and Telegraph Corporation, have their own experimental networks in this field as does General Electric and Globe Wireless. Raytheon is projecting a radio relay system which will parallel all the major airplane routes of the country. One of the most interesting developments is the "Stratovision" method of Westinghouse—the use of airplanes, flying over a fixed route, to relay FM and television over much greater areas than UHF relay stations on the ground.

RAILROAD RADIO—The war inventions in radio brought forcefully home to the railroads the potentialities of this method of communications for safety purposes, greater efficiency in train dispatching and contact with train crews and passengers. In this field several companies which were many-time "E" winners during the war are in the vanguard, such as Bendix Radio, Farnsworth, Aireon, Union Switch & Signal, Western Electric and General Electric. Likewise, this field of radio is just getting started in its experimental stages and promises a fertile spot for future equipment production.

RADAR, LORAN AND SHORAN—Peacetime application of these most valuable war electronic weapons is just commencing and later issues of SIGNALS will depict specific results of the adaptation by American manufacturers of radar and its affiliated services to aviation and marine navigation as well as in other radio fields. A number of companies are in the forefront of the peacetime field—Western Electric and its research affiliate, Bell Telephone Laboratories which contributed so much to the wartime improvements; General Electric, Radio Corporation of America and its affiliate, Radiomarine Corporation of America, Raytheon, I. T. & T., Bendix. *Airborne television* is another most interesting "war baby" and RCA has participated in some recent noteworthy Army and Navy ground-air television demonstrations.

FACSIMILE—This is considered the "sleeper" of the postwar new radio services—but this method of transmission of intelligence gained tremendous impetus and improvement through the war requirements and uses. It looms as the possible method for large metropolitan newspapers to transmit their editions to distant cities for simultaneous publication and many leading papers have started tests in the United States and Europe. General Electric and Finch Telecommunications are among the leaders in this sphere, while Western Union as well as RCA Communications, Mackay Radio, Press Wireless and Tropical Radio Telegraph are engaging in programs to change the postwar telegram from a word count to a page message count through facsimile.

Spread the News

Notices of the formation of this Association, and applications for membership, were mailed to all former members of the Signal Corps from available mailing lists. However, we know definitely that the lists were not complete.

Therefore, please send the Editor the name and address of any eligible person who has not been notified so they may be contacted.

ASSOCIATION AFFAIRS

(Continued from page 45)

Ballantine Laboratories, Inc.
Operadio Manufacturing Co.
Holtzer-Cabot of First International Corp.
International Detrola Corp.
Kellogg Switchboard & Supply Co.
Weston Electrical Instrument Corp.
The Magnavox Co.
Corning Glass Works
Ray-O-Vac Co.
Hoffman Radio Corp.
David Bogen Co., Inc.
General Electric Co.
General Instrument Corp.
Marathon Battery Co.
Raytheon Manufacturing Co.
Breeze Corporations, Inc.
Times Telephoto Equipment, Inc.
Thomas A. Edison, Inc.
Illinois Bell Telephone Co.
Western Electric Co.
Stromberg-Carlson Co.
General Precision Equipment Corp.
Great American Industries, Inc.
Eitel-McCullough, Inc.
National Union Radio Corp.
Automatic Manufacturing Co.
Graflex, Inc.
Chicago Telephone Supply Co.
Sylvania Electric Products, Inc.
Wallace & Tiernan Products
Radio Receptor Co.
Press Wireless, Inc.
United Transformer Corp.
Link Radio Corp.
Standard Piezo Co.
Oak Manufacturing Co.
Association of Motion Picture Producers
Gray Manufacturing Co.
Radiart Corp.
Hammarlund Mfg. Co., Inc.
American Phenolic Corp.
Hewlett-Packard Corp.
Gilfillan Brothers, Inc.
Admiral Corporation
The Plastic Wire & Cable Corp.
Colonial Radio Corp.
The Astatic Corp.
Philco Corp.
Audio Devices, Inc.
Globe Wireless Ltd.
Bright Star Battery Co.
L. C. Smith & Corona Typewriters, Inc.
North American Philips Co., Inc.
Indiana Steel & Wire Co.
Teletype Corp.
Arnold Engineering Co.

"After drill, what do you say we take a march in the moonlight?"

SIGNAL CORPS NEWS

Authoritative Information From the Chief Signal Officer

EXTENSION COURSE OF SIGNAL CORPS SCHOOL RESUMED

Seven subcourses in the Extension Course of the Signal Corps School have been prepared for use by prospective students as of July 1, 1946. Extension courses, which were discontinued in 1942, are designed to provide progressive nonresident military instruction for personnel of all components of the Army of the United States. The subcourses used before the War have all been carefully analyzed; some have been revised and others are being amplified and brought up to date. In addition, new subcourses are being prepared to reflect the latest tactics and techniques in signal communication and related functions of the Signal Corps.

General and special service schools and certain other military agencies may establish extension courses. In general, each extension course consists of six series of subcourses arranged to parallel as nearly as practicable the resident instruction given at the corresponding service school, each series composed of as many subcourses as are required to cover the subject matter appropriate for the student. For example, subcourses in the 10- series cover basic military subjects, those in the 20- series are designed for reserve 2nd Lieutenants who wish to qualify for promotion, those in the 30- series are for reserve 1st Lieutenants, etc. Present WD policy permits the use, by individuals seeking reserve commissions, of 10- series subcourses for the purpose of securing general information, but contemplates the granting of a reserve commission only after other prerequisites, which will be announced from time to time, have been met.

Each subcourse consists of at least three and not more than nine lessons and an examination or review lesson. Subcourses common to two or more agencies are prepared by the school of the agency or branch having primary interest in the subcourse.

A new policy regarding administration of the Army Extension Course program has been announced in AR 350-3000, 30 March 1946. This regulation provides centralized administration by each general and special service school of its own extension course instead of decentralized administration by the headquarters of a military area or geographical subdivision. The responsibility for administration covers the preparation, publication, distribution, review and revision of subcourses to assure conformance to WD doctrine, the grading of students' solutions, the establishment and maintenance of all required records, and necessary action to keep the extension course current.

Complete details regarding the methods of enrollment for extension course work, as well as full information about other phases of the Army Extension Course program, are given in AR 350-3000, copies of which can be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., for five cents per copy. Briefly, application to enroll in the Extension Course of the Signal Corps School may be submitted by Regular Army, National Guard and Organized Reserve Corps personnel through the unit commander or the individual's immediate commander. Reserve personnel not assigned to an ORC unit will forward applications through the headquarters of the military area or district in which they live. If information is not available regarding the location of military area or district headquarters, applications may be submitted to the headquarters of the Army area in which the applicant resides for forwarding to the appropriate service school.

An over-all plan for the Extension Course of the Signal Corps School has been prepared to indicate the general pattern of the instruction to be provided. The 10- series is composed entirely of so-called "common subcourses" (those used by two or more branches) which cover basic military subjects. The 20- series includes both common subcourses and subcourses peculiar to the Signal Corps, certain of which must be completed in order to qualify for promotion while others are electives for students who wish to acquire additional technical information. In the 30- and 40- series, partial specialization is planned to permit a student to take required subcourses in a chosen specialty — Wire, Radio, Supply, Signal Center, or Radar—and to take additional electives as he desires. The number of subcourses planned for the 50- and 60- series may be increased if and when additional subcourses to be prepared by the Command and Staff College or other high level service school are announced.

Subcourses presently planned cover modern tactics and techniques of signal communication, characteristics and utilization of tactical and fixed plant wire and radio equipment, signal center procedures and operations, signal supply and maintenance responsibilities and functions, characteristics and utilization of radar, photographic functions and operations, logistics of signal communication systems, training and utilization of personnel, and related topics of significance to the Signal Corps. The titles of some planned subcourses may be modified to reflect the opinions of interested agencies but it is expected that the scope of the subject matter will remain substantially as now planned.

The Extension Course Department of the Signal Corps School has been established at Fort Monmouth to carry out the responsibilities of the Signal Corps with respect to the Army Extension Course program and is engaged to capacity in the revision and preparation of subcourses. In addition to the seven subcourses which have been completed, sev-

eral others are being printed and more will be completed as rapidly as available personnel and facilities permit. Since not all subcourses are needed concurrently the preparation project will continue for at least a year.

The total number of subcourses presently planned in each series of the Extension Course of the Signal Corps School is shown below. The total number listed for certain series should not cause alarm since some are electives which are not required for qualification for promotion.

Series	Common Subcrses to be used by all Tech & Adm Svs	Addl Subcrses Planned by Sig C	*Total Planned Subcourses
10-	12	0	12
20-	6	14	20
30-	4	20	24
40-	5	14	19
50-	0	12	12
60-	0	7	7

* As of 30 June 46.

Editors Note: An article explaining the Army's new school system will appear in the November-December issue of "Signals."

Welcome To The Signal Corps

Very best wishes for long and distinguished careers to the following West Point 1946 graduates who have chosen the Signal Corps as their branch of service.

Alford E. Allen
Gilbert C. Anthony
John S. Baumgartner
James J. Dorney
Basil B. Elmer, Jr.
Gerald S. Epstein
Harold C. Friend
Alexander Gerardo
Faison P. Gibson
John H. Grady
William W. Hall, Jr.
William T. Lincoln
Charles R. Myer
Bernard J. Pankowski
William F. Pence
Alexander D. Perwich
Murray Putzer
Charles L. Robinson
William F. Scharre, Jr.
Herbert A. Schulke, Jr.
Amos B. Shattuck, IV
Harold J. Stirling
John McR Wozencraft
William B. Taglund
Alfred H. Victor, Jr.
Marvin S. Weinstein

Congratulations to the following officers who have been recently commissioned in the Regular Army Signal Corps. The highest temporary rank held is shown in parenthesis. (List shows only those who had signed the oath of office as of 15 August).

1st Lt. (Maj.) Donald L. Adams
1st Lt. (Capt.) Charles R. Albright
1st Lt. (Maj.) Ollie J. Allen
Capt. (Capt.) Robert H. Ammerman
Maj. (Col.) Alfred H. Anderson
1st Lt. (Lt. Col.) Nicholas C. Angel
1st Lt. (Lt. Col.) Robert C. Angster
Capt. (Maj.) Herbert R. Archibald
Capt. (Lt. Col.) Herrick F. Bearce
Capt. (Maj.) Joseph G. Bent, Jr.
1st Lt. (Lt. Col.) Kenneth E. BeLieu
1st Lt. (Maj.) Lawrence W. Bengel
Capt. (Maj.) Shirley G. Blencoe
Capt. (Lt. Col.) Merle C. Bowsky
1st Lt. (1st Lt.) Robert L. Brigham
1st Lt. (1st Lt.) Percy D. Brown, Jr.
1st Lt. (Capt.) Lee B. Brownfield
1st Lt. (Capt.) Albert F. Burgess, Jr.
1st Lt. (Maj.) James L. Burke
1st Lt. (Capt.) Charles E. Burner
2nd Lt. (1st Lt.) Edwin R. Campbell
Capt. (Maj.) Bruce W. Caron
Capt. (Maj.) Aurthur P. Carter
Capt. (Col.) Steven S. Cerwin
1st Lt. (Col.) Carmon L. Clay
1st Lt. (Maj.) Rafael Cleveland
1st Lt. (Maj.) Lloyd D. Colvin
Maj. (Maj.) Russell B. Cooper
1st Lt. (1st Lt.) Gerald M. Cravens
1st Lt. (Maj.) Emile W. Daniel, Jr.
1st Lt. (Capt.) George H. Darwin
1st Lt. (Capt.) Eugene B. Datres
1st Lt. (Maj.) John W. Dell
Capt. (Capt.) Adam E. Dogan
1st Lt. (Maj.) Edward J. Dougherty
Maj. (Lt. Col.) James Dreyfus
Capt. (Maj.) Kenneth S. DuMond
Capt. (Lt. Col.) Clarence R. Dunlap
1st Lt. (1st Lt.) Roy C. Durbon
Maj. (Lt. Col.) Edwin O. Earl
Capt. (Col.) Fred J. Elser
Major (Col.) Houston V. Evans
Capt. (Col.) William B. Feindel, Jr.
Capt. (Maj.) Merwin B. Forbes
Capt. (Capt.) James E. Foster
1st Lt. (1st Lt.) Wallace J. Fry
Capt. (Lt. Col.) James H. Fulton
Maj. (Col.) Harold T. Gallagher
1st Lt. (Maj.) Asa B. Gibbs
1st. Lt. (Lt. Col.) Turner W. Gilman
Capt. (Maj.) Bob H. Glover
Capt. (Maj.) Mandel N. Goldstein
1st Lt. (Maj.) John M. Goodman
1st Lt. (Maj.) John H. Green
1st Lt. (Capt.) William R. Greer
Capt. (Lt. Col.) Willice E. Groves
1st Lt. (Capt.) Daniel W. Hancock
Maj. (Col.) Murray D. Harris
Capt. (Col.) Carl H. Hatch
1st Lt. (Maj.) James W. Heatwole
1st Lt. (Lt. Col.) Henry J. Heuer
Capt. (Lt. Col.) Russell H. Horton
1st Lt. (Capt.) Burwell B. Jackson
Capt. (Lt. Col.) Wayne O. Jefferson
2nd Lt. (2nd Lt.) Alvin C. Jensen
1st Lt. (Maj.) John M. Johannes
Capt. (Lt. Col.) Joseph W. Johnston
1st Lt. (Lt. Col.) Will D. Joslin
Capt. (Capt.) Lester W. Kale
1st Lt. (Maj.) Ernest S. King
1st Lt. (Capt.) Russell C. Krueger
Capt. (Col.) Marcellus R. Kunitz
Capt. (Lt. Col.) Orville Laird
Maj. (Maj.) Paul O. Langguth
Capt. (Col.) John L. Leidenheimer
1st Lt. (Lt. Col.) Gerald P. Lerner
Capt. (Col.) Elmer L. Littell
Capt. (Lt. Col.) Wayne P. Litz
Capt. (Lt. Col.) Roland H. Mapes
1st Lt. (Capt.) Harry H. Marts
Maj. (Lt. Col.) Robert H. McAteer
2nd Lt. (Capt.) Daniel W. McElwee
Capt. (Maj.) James B. McNally
1st Lt. (Maj.) John K. McWilliams
Maj. (Col.) Glenn S. Meader
Capt. (Maj.) Earl F. Mitchell
Maj. (Col.) Marlin S. Moody
1st Lt. (Capt.) Clayton H. Moore, Jr.
Capt. (Lt. Col.) Lowrey R. Moore
Capt. (Col.) George F. Moynahan, Jr.
1st Lt. (Maj.) Perry A. Munro
1st Lt. (Capt.) William C. Neubauer
1st Lt. (Maj.) Charles A. Newlin
1st Lt. (Capt.) Frederick K. Nichols
Capt. (Lt. Col.) Arvo N. Niemi
1st Lt. (Col.) John A. Ord
Capt. (Maj.) Dulaney L. O'Roark
Maj. (Lt. Col.) Harold F. Osborne
1st Lt. (Capt.) Leonard J. Otten, Jr.
1st Lt. (Lt. Col.) Gilbert M. Payne
2nd Lt. (1st Lt.) James G. Pelland
1st Lt. (Lt. Col.) Joseph J. Peot
1st Lt. (1st Lt.) H. T. Plunkett, Jr.
Capt. (Col.) Benjamin H. Pochyla
1st Lt. (Maj.) Howard E. Porter
Capt. (Lt. Col.) Clifford A. Poutre
1st Lt. (Lt. Col.) Herman L. Purkhiser
Capt. (Lt. Col.) Quentin S. Quigley
1st Lt. (Capt.) Robert H. Ramsay
1st Lt. (Maj.) Charles J. Rahaeuser
1st Lt. (Capt.) Thomas L. Redd, Jr.
1st Lt. (Capt.) Donald R. Redden
1st Lt. (Col.) Thomas W. Riley, Jr.
Capt. (Lt. Col.) Herbert L. Scofield
Maj. (Col.) Manual Serra, Jr.
1st Lt. (Capt.) Hunter L. Sharp
Capt. (Lt. Col.) Kenneth C. Shrader
1st Lt. (Capt.) Dale H. Shick
1st Lt. (Maj.) Eugene E. Skinner
1st Lt. (Maj.) Aley L. Smith
1st Lt. (Capt.) Harold A. Smith
Capt. (Col.) Charles A. Stanley
Capt. (Lt. Col.) Irwin C. Stoll
Capt. (Lt. Col.) William M. Thames, Jr.
1st Lt. (Lt. Col.) Joseph A. Thornton
1st Lt. (Maj.) Willard D. Tiffany
1st Lt. (Lt. Col.) Robert B. Tomlinson
2nd Lt. (1st Lt.) Charles E. Tychsen
1st Lt. (Capt.) George Van Laethem
1st Lt. (Lt. Col.) Robert T. Walker
1st Lt. (Capt.) John E. Walsh
1st Lt. (Capt.) Wilfred C. Washcoe
2nd Lt. (1st Lt.) Wayne H. Wernimont
Capt. (Maj.) Frank T. West
1st Lt. (Lt. Col.) Hoyt E. White
2nd Lt. (1st Lt.) Kenneth G. Whitehead
1st Lt. (Lt. Col.) Harold C. Williams
Capt. (Lt. Col.) Myron L. Williams
1st Lt. (1st Lt.) James B. Williamson
Capt. (Lt. Col.) Jack E. Willis
1st Lt. (Maj.) John L. Wilson, Jr.
Capt. (Maj.) John T. Yule

NATIONAL GUARD, ORGANIZED RESERVES AND R.O.T.C. NEWS

National Guard—Organized Reserve

National Guard units of the Pennsylvania National Guard in early stages of organization include the Wing Headquarters and Headquarters Squadron and the 103rd A A F Communications Squadron, in Harrisburg; 103rd Signal Light Construction Co., Headquarters of the 152nd Aircraft Control and Warning Group, the 112th Aircraft Control and Warning Squadron, 103rd Radar Calibration Detachment.

Officers and men who served at Drew Field will be interested to learn that Col. Henry Chamberlain has returned from the Pacific where he took an AW Bn and is commanding the 102nd Infantry Regiment, Connecticut National Guard.

Thos who served at Fort Monmouth with Lt. Col. C. H. Kenworthy can look him up at Harrisburg where he is again active in Pennsylvania National Guard and Reserve circles. He has been of great assistance to us in laying the ground work for the publication of SIGNALS.

Another step in the organization of the postwar Army of the United States was taken last summer when activation of units of the Organized Reserve Corps began. The Organized Reserve Corps will continue to provide the units and personnel required to supplement the Regular Army and the National Guard in the event of an emergency.

Present War Department planning contemplates that reserve units will be organized under three classes:

1. "War-strength" units with a full complement of officers and enlisted men, supplied with essential equipment required for training and initial mobilization.
2. Units with a full complement of officers and a cadre of key enlisted personnel and essential training equipment.
3. Units with an assigned complement of officers only.

Initial activation will normally be in the third class, with progressive development through the second, into the first class. The final program calls for a large number of units under each of the above categories.

The fully organized units in the first class will form that portion of the Army of the United States designed to provide a balanced force when considered in conjunction with the Regular Army and the National Guard. These will be formed largely as "affiliated" units, and will be sponsored by business enterprises and organizations, and those civic organizations whose normal activities are closely allied with a military requirement.

Of the more than 225,000 officers of World War II who have already accepted commissions in the Organized Reserve Corps, approximately 6,750 are Signal Corps officers. Procurement will be continued from ex-officers of World War II, graduates of accredited Senior ROTC units, graduates of officer candidate and aviation cadet training schools, flight officers who served creditably during the war, and specialists, including doctors, ministers, lawyers, and such technical experts as may be required.

Approximately 300,000 men have already enlisted in the Enlisted Reserve Corps, which is part of the Organized Reserve Corps, and it is expected that this figure will be materially increased before demobilization is complete.

"No man in my outfit can wear pajamas like that and get away with it!"

ROTC News

Upon reactivation of the advanced ROTC course in October, 1945, the Signal Corps was authorized to establish Units at 28 institutions. The advanced Signal enrollment at these institutions at the end of the school year 1945-1946 is given below:

Institution	*No. Adv. Sig. Stus.*
University of Maine	4
Massachusetts Institute of Technology	—
Norwich University	—
Rutgers University	4
Cornell University	—
New York University	—
Carnegie Institute of Technology	—
Pennsylvania State College	—
University of Kentucky	10
Ohio State College	4
West Virginia University	—
Georgia Tech	1
North Carolina College of Agriculture & Engineering	8

Clemson Agricultural College.—
University of Arkansas 2
Oklahoma Agricultural and Mechanical College 5
Agricultural and Mechanical College of Texas 6
Texas Techonological College..—
University of Illinois .....—
Michigan State College of Agriculture and Applied Science, East Lansing, Mich. .....—
University of Michigan, Ann Arbor, Mich. 3
University of Wisconsin .....—
Iowa State College of Agriculture and Mechanic Arts, Ames, Iowa .....—
University of Minnesota .....—
University of California 3
University of Washington 1
State College of Washington ..—
University of Maryland .....—

Total 51

The ROTC program now in effect is known as the "Interim Program," which will continue until 1947. "A Guide for the Conduct of the Post War ROTC Program" has been published by WD Circular 224, 26 July, 1946. A portion of the post war program will be placed in effect at the beginning of the 1946 fall academic term. However, due to changes in the curriculum and the necessity for legislative action, the post war ROTC program is not likely to be fully effected until the fall of 1947 at the earliest.

The Chief Signal Officer has approved the following policy in regard to Academic requirements for admission to Signal ROTC Units: "Applicants may be selected from Electrical Engineers, Electronics Engineers, Physics Majors, and Mechanical Engineers." In the past, only Electrical Engineers could enroll in Signal ROTC Units and the field was correspondingly restricted.

Roll of Honor

DISTINGUISHED SERVICE MEDAL

Maj. Gen. George L. Van Deusen

MEDAL FOR MERIT

Mr. Sosthenes Behn
Mr. Walter S. Gifford
Mr. John E. Keto
Mr. Ira G. Marchant
Mr. David Sarnoff

LEGION OF MERIT

Col. Samuel P. Collins, now stationed in Japan, for outstanding services while assistant commandant of the Signal Security Agency.
Col. Walter J. Mearls for outstanding services in several important staff positions in the Army Service Forces during the war.
Col. Joshua A. Stansell for his outstanding services during the defense of the Philippines.
Brig. Gen. Edgar L. Clewell
Brig. Gen. Stephen H. Sherrill

OAK LEAF CLUSTER

Col. Albert F. Cassevant
Col. Maurice P. Chadwick
Col. Emanuel Cohen
Col. William J. Daw
Col. Marcellus Duffy
Col. Frank E. Eldredge
Col. Sol P. Fink
Col. William C. Henry
Col. Perry C. Maynard
Col. Hugh Mitchell
Col. Frank J. Schaal
Col. Rolland E. Stafford
Col. Harry E. Storms
Col. Allen G. Swede
Col. Robert G. Swift
Col. James H. Van Horn
Col. Harry L. Vitzthum
Col. David E. Washburn
Col. James T. Watson, Jr.
Lt. Col. John P. Cruickshank
Lt. Col. Frederick S. Dellenbaugh
Lt. Col. John H. DeWitt
Lt. Col. Alexander Fisher
Lt. Col. Dewitt Greer
Lt. Col. Stanton A. Hayes
Lt. Col. Joseph J. Healy
Lt. Col. James I. Heinz
Lt. Col. John Hessel
Lt. Col. Raymond B. Jewett
Lt. Col. John W. Johnson
Lt. Col. Richard R. Kilgore
Lt. Col. Marion E. King
Lt. Col. Anatole M. Litvak
Lt. Col. William S. Marks, Jr.
Lt. Col. George L. Martin
Lt. Col. James W. McRae
Lt. Col. Howard N. Moore
Lt. Col. Michael V. O'Shea
Lt. Col. Harry W. Parmer
Lt. Col. Salvatore E. Petrillo
Lt. Col. Charles W. Richards, Jr.
Lt. Col. John F. Rider
Lt. Col. George L. Schnable
Lt. Col. Morton Silverberg
Lt. Col. John J. Slattery
Lt. Col. Burr M. Synder
Lt. Col. William S. Sparks
Lt. Col. William H. Wood
Lt. Col. Harold A. Zahl
Maj. Eugene M. Apted
Maj. Virgil M. Clark
Maj. Wilbur W. Engel
Maj. William W. C. Hornbeck
Maj. John M. Huston
Maj. John H. Irwin
Maj. Robert G. Kreer
Maj. Edward A. Manetta
Maj. Ralph W. Nelson
Maj. George F. Rogers
Maj. Harold W. Sibert
Maj. Henry A. Stevens
Maj. Thomas F. Strawn
Maj. Allyn C. Swinnerton
Maj. Anthony D. Veiller
Capt. Hugh P. Bacon
Capt. John E. Donnelly
Capt. Emil Kolish
Capt. William H. Lichtenberger
Capt. Francis M. Mead
Capt. Oliver D. Perkins
Capt. Charles H. Vollum
1st Lt. Allan L. Baiardi
1st Lt. Charles G. McMullen
WO Horace Caldwell
WO Frank G. Stoner
WOJG Theodore M. Knight
M/Sgt. Arthur R. Bell
M/Sgt. Forrest G. Berryman
M/Sgt. Gregory J. Dole
M/Sgt. Jack G. Edwards
M/Sgt. Robert E. Isler
M/Sgt. Francis J. Kelly
M/Sgt. Robert V. Mrozek
M/Sgt. Milo A. Potas
M/Sgt. Thomas A. Riviere
T/Sgt. Peter G. Sulzer
S/Sgt. Edward L. Stafford

BRONZE STAR MEDAL

Maj. John R. Nickel
Captain Roy W. Bucy
Pfc. Paul A. Schlappi

SOLDIER'S MEDAL

T/Sgt. Seth Weiss
Pfc. Milton Weiss

ARMY COMMENDATION RIBBON

Capt. Paul G. Haas, USN (Ret.) for work done in connection with the Signal Corps in standardization of equipment at the Army-Navy Electronics and Electrical Standards Agency in Red Bank.

WAR DEPARTMENT CERTIFICATE OF APPRECIATION

Mr. Lloyd B. Wilson, chairman of the Board of the Chesapeake and Potomac Telephone Companies, for developing communications reqquirements in the Washington, D. C., area and "for the outstanding accomplishment of installing, operating and maintaining" the telephone switchboard at the Pentagon.

Listed below are ASA members who have received awards for their services as civilian employees of the Signal Corps:

EXCEPTIONAL CIVILIAN SERVICE AWARDS

James W. Haddock
Richard S. Lawton
Samuel Silverman
Roy C. Stanton

MERITORIOUS CIVILIAN SERVICE AWARDS

Dana C. Beatty
Carlton E. Bessey
Lillian M. Bishop
Thomas M. Child
Willard R. Clark
Austin W. Day
Barney A. Diebold
Rocco DiMuro
Sidney Ehrlich
Raoul A. Faralla
Jean Irwin
Edmund P. Koenig
Charles F. Krueger
Rober Lader
Joseph F. McLarney
Raymond M. Morris
Charles D. Murphy
S. I. Neiman
Thomas F. O'Rourke
Joseph G. O'Shea
George Shechtman
Max Skobel
Sidney Weinrib

SIGNALS IN AGF

Colonel Reichelderfer
Signal Officer AGF

This being the first issue of the Army Signal Association magazine, it is deemed appropriate to acquaint our readers with the various signal organizations and officers of Army Ground Forces.

Ground Signal Officer, Colonel H. Reichelderfer, Washington, D. C., Signal Officer, First Army, Colonel G. A. Williams, Governors Island, N. Y., Signal Officer, Second Army, Colonel J. J. Miller, Baltimore, Md., Signal Officer, Fourth Army, Colonel G. F. Wooley, Ft. Sam Houston, Tex., Signal Officer, III Corps, Colonel E. M. Link, Camp Polk, La., Signal Officer, Fifth Army, Colonel F. E. Kidwell, Chicago, Ill., Signal Officer, Sixth Army, Colonel R. P. Lyman, Presidio of San Francisco, Calif., Signal Officer, Seventh Army, Colonel T. H. Maddocks, Atlanta, Ga., Signal Officer, V. Corps, Colonel S. Cerwin, Ft. Jackson, S. C.

Space limitations preclude listing all the names of Signal personnel assigned to the above organizations, however, subsequent issues of this magazine will carry more complete lists by organization, together with items of interest.

Present plans call for the participation of Signal personnel from Army Ground Forces units with Task Force "Williwaw," at Adak, Alaska, Task Force "Frigid," at Fairbanks, Alaska, and Task Force "Frost," at Camp McCoy, Wisconsin. Their mission is to obtain additional information on the performance of signal equipment under winter conditions and to determine signal equipment requirements to permit ground force troops to function efficiently under Arctic, cold-wet, and heavy winter conditions. Organization of these "Task Forces" is already under way with the first test to be conducted in October and continuing through April, 1947.

Fall amphibious maneuvers will be conducted on the California coast under Navy and Sixth Army supervision. Signal units participating in these maneuvers will be the 2d Division Signal Company, the 286th Joint Assault Signal Company, the 287th Signal Company Special (Engineer Brigade), and the 15th Amphibious Flagship Detachment.

Enlisted Men's School

The largest signal school in the world—Fort Monmouth's Enlisted Men's School—now has a total of 6,400 students undergoing technical training for service in the postwar Army. The faculty of the Enlisted Men's School numbers 660 instructors, many of whom are reenlisted veterans of foreign service—at least three were former prisoners of war of the Japanese.

The Enlisted Men's School is a part of the Signal Corps School, which was officially reinstituted at Fort Monmouth, N. J., when the principal activities of Signal Corps training moved from Camp Crowder, Mo., in March, 1946.

Courses, many of which can be found in no civilian institution and in few armies, are offered at the Enlisted Men's School. In addition to the 17 regular courses offered, a few special courses are given for other branches of the service. The school is divided into four divisions—common, radio, wire, and radar. Almost all the students pass through the common division, which offers a general course in preparation for the specialized schools of radio, wire, and radar.

—*A. & N. Register.*

Signal Corps Awards

Col. Benjamin H. Pochyla has been awarded the Legion of Merit for outstanding services in the southwest Pacific, Japan, and Korea. The award was presented by Brig. Gen. Frank E. Stoner, Assistant Chief Signal Officer, at a recent ceremony in the Pentagon.

Peter L. Schauble, a vice-president of the Bell Telephone Company of Pennsylvania and for a period during the war a special assistant to the Chief Signal Officer, is retiring from the company after 33 years' service. For his notable contributions to the Signal Corps Mr. Schauble received the Chief Signal Officer's Certificate of Appreciation.

The Legion of Merit has been awarded also to Capt. Ralph J. McCartney and Lieut. Carl D. Mead for outstanding services during the war with the Army Communications Service, Office of the Chief Signal Officer.

—*A. & N. Register.*

Vote!

The Army has the privilege and the obligation of helping to choose public servants—Presidents, Congressmen, Governors, and local officials. The intelligence, honesty and efficiency of these servants are a matter of importance to the Army, as they are to the American people as a whole. The Army is ready to help its eligible voters in every way; but the decision to vote must come from the individual.

If such a decision seems to involve some inconvenience, the individual should recall that hundreds of thousands of influential ballots were cast in the foxholes of Europe and the Pacific by tired, dirty, but purposeful young American citizen-soldiers, who let no inconvenience stop them from participating in their country's government.—*Army Information Digest*, Sept. 1946.

Information Division Established

An Information Division for the Signal Corps, combining the Public Relations Branch and the Information and Education Branch and adding a Legislative and Liaison Branch, was recently formed at Fort Monmouth, N. J.

Maj. Clarence N. Chamberlain has been designated Chief of Information, with 1st Lieut. Earl B. Braly as assistant and Lieut. Walter Lishke as information and education officer.

SIGNALS IN AAF

Air Communications Officer, AAF
Brigadier General Ankenbrandt

Air Communications Officers' Course at the Air University

An 18 week course for Air Communications Officers opened at the Special Staff School of the Air University, Gunter Field, Alabama, on 3 September, 1946. This course, for officers of one to four years service, will be presented twice yearly with the second course set to open in February, 1947. Due to the shortage of communications officers, the usually strict entrance requirements are being waived for the school year 1946-47, with a view towards securing at least 50 per cent rated pilots for the entering classes. Thus, by cross-training rated personnel, it is hoped to make a dent in the existing critical shortage of trained AAF communications officers. It is contemplated that an Advanced Air Communications Course for officers of over four years service will be inaugurated in the near future. The mission of the Air Communications Officers Course is to train officers for communication duties on Squadron and Group level. It will cover all aspects of AAF communications.

An unique feature of communications instruction at the Air University, Maxwell Field, Alabama, is the pooling of all communications instructors in one group, rather than spreading them throughout the various schools. This central group is responsible for all communications instruction throughout the Air University, including the Air Tactical School, Air Staff and Command School, and the Air War College. In this manner continuity of instruction is maintained and duplication avoided, with maximum use being made of the available trained instructors. Major General Muir S. Fairchild is the Commanding General of the Air University and Colonel Walter B. Larew is the Senior Communication Instructor, heading a staff of approximately 30 combat experienced communication veterans.

ACS Increases Proficiency of Control Tower Operators

The training facilities of the Air Communications Service Overseas Screening, Processing and Replacement Center at Langley Field, Virginia, include one of the very few airport control tower mock-ups used for the training of control tower operators. On this mock-up simulated airport operation is carried on, and tower operators direct the movement of aircraft within a traffic control pattern. Another mock-up demonstrates the operation of the radio range, and how this facility is used in the instrument approach and let down of aircraft into the traffic control pattern.

Air Communications Service Continuation Training

All new personnel assigned to the Air Communications Service are routed through a screening and processing organization known as the 78th AAF Base Unit (Overseas Screening, Processing and Replacement Center), at Langley Field, Virginia. While in process of being readied for assignment, all personnel are examined for proficiency in their respective specialty and if below normal standards, are given refresher or continuation training. Refresher or continuation training during the month of July 1946 was given to 1700 students before they were assigned to the field for duty in technical specialties, or 80% of the total personnel processed by the OSP&RC during the same month.

New Communications Courses at Scott Field

A number of communications courses have been added recently at the Scott Field Technical Training School. Major John R. DeLapp, Supervisor of the Department of Communications Officers, will direct a Telephone and Telegraph Officers' Course and a Signal Equipment Maintenance and Repair Course for officers. New enlisted courses will produce cable splicers, installer-repairmen, T & T, and linemen, under the supervision of Capt. Henry Spillner, Jr. Capt. Stephen J. Bonner is supervising an enlisted course in instrument landing equipment. A 15-week course for radio repairmen (single channel teletype) has also been established.

Reorganization of Scott Field Technical School

A newly established policy of the Air Training Command has brought reorganization changes in the technical school at Scott Field, Bellville, Illinois. The base has been reorganized into two units under the Commanding Officer, Col. Neal Creighton; the Technical School under Assistant Commandant, Col. Ralph E. Holmes, and all other activities under Executive Officer, Col. William Baily. The position of School Executive has been established and is held by Col. Virgil L. Zoller. Major Marvin B. Morton, Supervisor of Training, heads the operating departments of the technical school. The 10 departments comprise more than 25 courses of instruction for officers and enlisted men, including Airborne Radio Maintenance, Teletype Operation and Maintenance, Air Traffic Control, Ground Radio Operation, Ground Radio Maintenance, Cryptography, Communications Officer Courses, Sferics, and Fixed Wire Installation and Maintenance. In addition, there are two units supporting the training function, a Training, Research and Development Unit and a Training Aids Section.

Notes From Fort Monmouth

The Signal Corps At New Mexico

Research toward a defense against rockets and guided missiles is part of the Signal Corps' job down in New Mexico. There, at White Sands, the official proving grounds of the Ordnance Department, German V-2 rockets are being assembled and fired for test purposes, and the Signal Corps in cooperation with Ordnance, Navy and other Services, is pursuing its own line of study. These studies cover many related fields and it is believed that the Signal Corps' contribution to the guided missile problem will be of great importance and will become more so as the investigation continues. The work can be divided into various phases, each important in itself, and each part of the study as a whole.

There is first the "Warning and Detection" phase wherein the Signal Corps supplies personnel experienced in plotting and radar detection methods to track the rockets in flight and to attempt to determine their position at any given moment while in flight. The Signal Corps has designed and installed beacons within the V-2. These beacons operate in conjunction with a specially modified SCR-584 and with other radar equipment. Modified SCR-270s are used by the Army Air Forces, the SCR-270 as is well known, was developed by the Signal Corps Engineering Laboratories for early warning use during the war. The anti-aircraft people use SCR-584s as mentioned. The Signal Corps is responsible for the overall coordination of the "warning phase" in which Ordnance, Anti-Aircraft, Army Air Forces and Signal Corps are engaged.

At White Sands the Signal Corps has the sole responsibility for communications of all kind relative to the "warning and detection" phase. It maintains and operates a communication network via radio-relay AN/TRC-4 equipment, plus land lines (field wire and cable) so that a central point can be established for the receipt of all vital data and information while the investigation is in progress, and so as to provide plotting data to determine points of rocket impact in advance. Communication is maintained and field stations established at various points within the proving grounds such as Oro Grande, Hueca, Biggs Field, Tex. (near El Paso), White Sands, and at Alamogordo, the Headquarters of Major Herbert N. Ostrom, Signal Corps White Sands Project Officer.

With various other Services and private institutions engaged in the studies, and most of them using radio, radar or other forms of h.f. communication, frequency allocation became a necessity, and this also is a Signal Corps responsibility.

Still another phase of the White Sands study is meteorological, and here the Signal Corps' job is planning to design and install meteorological instruments capable of being carried into the ionosphere by rockets and then released so that the qualitative information they record about the upper air can be brought back to earth and studied at leisure (telemetering). The importance of such ionospheric data cannot be over emphasized, the field is new, most of the information gathered is without precedent and its implications for future air travel, long range weather forecasting, and "space ship" development are vital to the country's future welfare.

To permit the rapid transmission of reports of technical data between the White Sands Project location and its parent headquarters at Signal Corps Engineering Laboratories, Bradley Beach, N. J., a development model of a portable radio teletype is being used. This development promises greater flexibility of communication, both to military and commercial users. It employs a basic Army radio, the famous SCR-300, which has been modified to handle radio teletype traffic. This permits any commander in the field to have available at all times radio teletype facilities to any unit or headquarters within a radius of up to 3,000 miles. This portable radio teletype unit was developed by the Signal Corps Engineering Laboratories during the closing months of the war to answer a long felt need in the communications field. Having undergone successful field trials similar to the above application, early production and incorporation into tactical use by the Army is now planned. This equipment is mobile and may be placed in operation within four hours upon arrival at location.

At present the Signal Corps operating staff comprises a permanent group of 75 engineers and technical personnel, both military and civilian. From time to time experts from the various Laboratories visit the area helping to plan procedure and the analysis of results.

Former officers, enlisted men and civilians at Fort Monmouth who worked on the study in September and October 1945 and the resulting recommendation to consolidate certain Signal Corps activities in the Monmouth area under a single commander, the commanding general Fort Monmouth, will be interested to know that that "merger" went into effect this spring, modified by the inclusion of *all* local Signal Corps activities: i.e. the post of Fort Monmouth itself, Signal Corps Board, the Publications Agency, the Patent Agency, Signal Corps Engineering Laboratories, the Standards Agency, as well as the

training activities, all under the commanding general of Fort Monmouth, now Brig. Gen. Jerry V. Matejka. Research and development activities as well as certain other technical matters are still under the immediate direction of the OCSigO. Thus, the command set up is substantially as it was in pre-war days.

Memberships Mushroom At Monmouth

Excitement mounted with each mail delivery received at National Headquarters the first weeks in August, for our good friends at Monmouth had set their energies and enthusiasm in ASA to work. Each day would bring batches of new members' applications. On August 8th they spontaneously petitioned an application for charter, 197 members having signed the request. The formal application for charter was approved on August 22d, granting them number 2 place among ASA chapters. The officers elected are: William L. Seibert, president; Charles DeVore, 1st vice-president; Dorothy M. Lively, 2d vice-president; Dr. Virgil F. Payne, secretary; Cedric Flagg, treasurer; Ruby M. Knoll, assistant treasurer. Behind this splendid response, we know that certain individuals have done a good job in helping us get the Association firmly established. Mr. J. J. Slattery, Mr. William L. Seibert and General Jerry Matejka in particular have done outstanding work and we cordially thank them for their efforts. Fort Monmouth has set a fine example and we are eagerly anticipating the working-out of present tentative plans for many more chapters.

AA Chief

Brig. Gen. W. O. Reeder has been named Acting Assistant Chief Signal Officer during the absence of Brig. Gen. Frank E. Stoner, who is on temporary duty in connection with activities of the Office of the U. S. Joint Chiefs of Staff.

During the war Gen. Reeder, a graduate of the U. S. Military Academy, served as commandant of the Eastern Signal Corps Schools and as theater signal officer in the CBI Theater. Before receiving his present assignment he was associated with the Foreign Liquidation Commission at Calcutta, India.

Other recent assignments in the office include that of Col. Floyd T. Gillespie as Chief, Military Training Branch; Lieut. Col. Kenneth E. BeLieu as Assistant Director, Plans and Operations Division; Lieut. Col. Clinton W. James as Chief, Communications Liaison Branch, and Capt. Russell P. Jones as Chief, Radar and Countermeasures Branch.

We pause here, as we read this, to think for a moment of those officers and enlisted personnel of the Signal Corps and of communications detachments of the Army, the Air Forces, the Navy and Marines who gave their lives or suffered permanent physical impairment in their country's service during World War II and all of America's earlier wars.

Until a better way is found to prevent wars, we must be strong militarily so that their sacrifices may not have been in vain.

THEATER SIGNAL SCHOOL AT AUSBACH

From a Letter by Lt. Col. Reuben Abramowitz

24 August 1946

Dear General Sherrill,

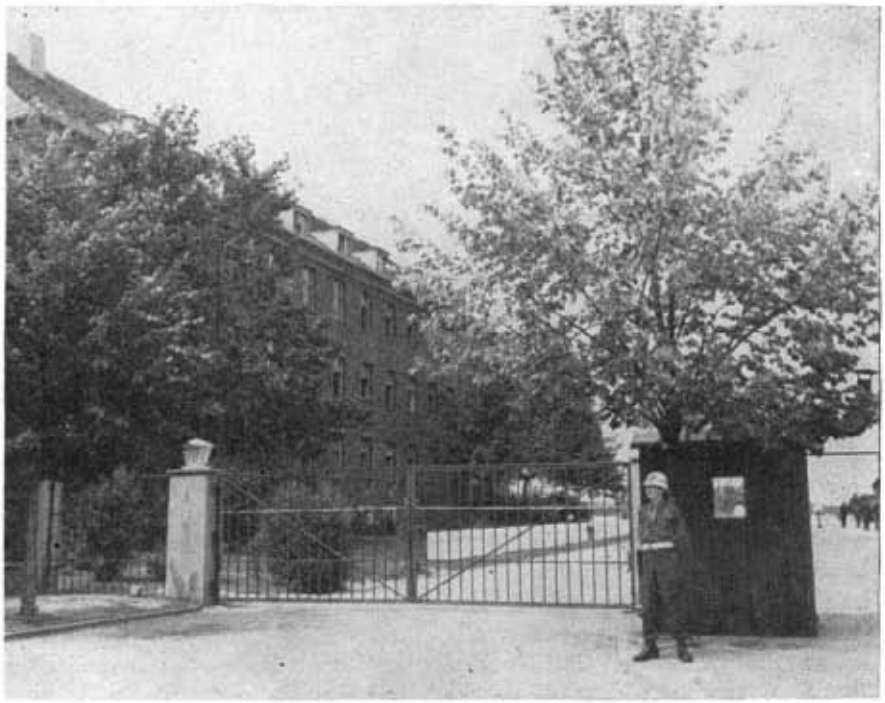
Thank you for your very cordial letter. Many things have happened since last we exchanged notes, so I have plenty of news for you.

To begin with, back in November of last year I was minding my business as head of the Paris Signal Center when a telegram came from General Lanahan instructing me to set up a Signal School for the entire European theater at Neuen Dettelsau, Bavaria. They gave me a month's time and a pat on the back.

At the time, Neuen Dettelsau was the best location available, but it was well off the beaten track. I traveled as far as I could by train, but then had to explore for the place in regular Daniel Boone style. After several miles of wandering on foot and attempting to fathom the speeches and gesticulations of native would-be guides, I finally wound up in an abandoned German ammunition dump (with 150,000 tons of intact bombs) and was informed that *this* was Neuen Dettelsau . . . future home of the Theater Signal Corps School.

That first month was killing. My hastily-assembled staff and I tackled the big job of construction and organization, stuck to it continuously without any letup. A few officers and enlisted men of the old Comm Z School were on hand to lend their valuable experience to the project. Still we were considerably hampered by the fact that Neuen Dettelsau was a comparative wilderness with little to offer except trees in the way of building materials. In fact logs actually were used to make tables after the supply of usable bomb boxes ran out. Throughout we depended heavily on the steady labor of Bavarians; without whom we could never have opened on schedule.

When our month was up we were ready to go. Classes began promptly, for the students had arrived while we were still doing our spadework. The fundamental signal courses were represented . . . Radio Operator, Radio Repair, Cable Splicer, etc., but we were not as yet equipped for the more highly technical subjects. They had to be introduced gradually. Besides, the physical setup of Neuen Dettelsau discouraged expansion; our buildings were so widely scattered that it was almost impossible to maintain adequate control over what we had.

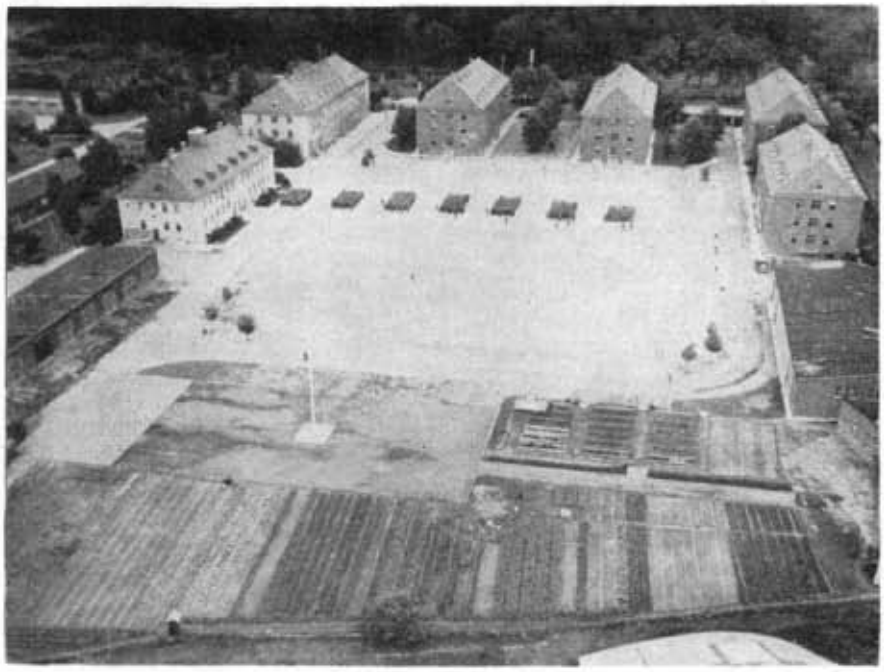


ENTRANCE TO THEATER SIGNAL SCHOOL

For six months we held the line at Neuen Dettelsau, turning out a steady stream of communications specialists. This in spite of the fact that my staff was in a constant state of flux. It seemed that nearly everyone who came to work with me had one foot on the boat. Still we managed so well that eventually I was summoned to Frankfurt to talk over plans for training members of the Constabulary troops at TSCS. That was a sizeable step forward.

Five months of consistent development and improvement had left us more or less settled at Neuen Dettelsau. But in February of this year TSCS had a serious bomb scare; and after demolition experts had detonated the trouble-making bomb, those 150,000 tons of explosives began to look so dangerous that soon I was off on another Daniel Boone expedition. This time my territory was Gneisenau Kaserne, an old fortress overlooking the town of Ansbach. It had several large stone buildings in various states of repair plus dozens of garages (far more than we needed for our handful of vehicles). Besides an absence of bombs, the features that made this place superior to Neuen Dettelsau were its compactness and fair accessibility. In the long run these advantages would be sufficient to warrant tearing down Neuen Dettelsau and starting the grind of organization all over again at Gneisenau.

Well, everyone pitched in once more. The buildings at Ansbach



Theater Signal Corps School from the air.

were full of junk and needed all kinds of attention. Heating plants had to be installed, windows and doors replaced, concrete walls made for buildings that lacked them. Extreme cold made working more difficult. Beginning in March, Major Kolman and Captain Ranson did a superb job of implementing our plans for Gneisenau while full scale operations continued at Neuen Dettelsau. In three weeks the garages had become classrooms and the barracks were ready to quarter students. The month of April brought a strange phenomenon . . . a new class beginning at Ansbach on the same day that the old class graduated at Neuen Dettelsau. Soon a few unfinished courses were moved to the new location without interruption. But other curricula in various stages of completion could not be moved, so we had to run both schools simultaneously for over two months, graduating each course at Neuen Dettelsau and reopening it at once in Ansbach. It wasn't till 5 July that Neuen Detelsau called it a day. That was our chance to dig in and concentrate all our energies on the new compound.

It has been *rough*, this business of making the school achieve the standards we want. My tiny staff of officers has been constantly overworked. Though we put in a six-day week, everyone has to spend a considerable amount of spare time keeping abreast of his duties. Much of the responsibility is borne by certain capable noncoms who are actually doing the work of officers. The diligence and cooperation of all the men has been inspiring. This is the more gratifying insofar as the peacetime Army is likely to be riddled with "goofing off" and "good deals." We still have a long way to go and plenty of work to do; but I believe that even now our school has attained a degree of efficiency and discipline comparable with the very best.

So far over eight hundred trained specialists have been produced, for the Radio and Wire Divisions offer a well-rounded program of signal training. To enumerate some of the courses: Installer-Repairman (Tp and Tg), Cable Splicer, Central Office Technician, Automatic Telephone System Maintenanceman, Powerman, Repeaterman, Radio Repairman, Radio Operator (Low or High Speed Manual), and Teletypewriter Repairman. This partial list will be augmented by several courses now in process of activation: Message Center Chief, Teletypewriter Operator, Tape Relay, and the Communication Officers' Course. The latter is an eight-week program of thirty-eight phases, designed to give an overall picture of Signal Corps organization and communication operations to officers of various Arms and Services who require such background.

In every subject we endeavor to make the instruction concrete by the use of as many illustrative or mechanical training aids as possible. Our Training Aids Department, staffed almost exclusively by civilian craftsmen, is continually turning out ingeniously helpful devices. USFET G-3 inspectors have repeatedly praised the fine work of these men as well as the originality and competence of their Army supervisors.

Make no mistake about it, we demand superior performances of our personnel. Curfew is strictly observed, delinquents are promptly arraigned, punishment is swift and impartial. Both cadre and students take part in close-order drill and parades twice weekly, stand regular inspections, and perform calisthenics daily at reveille. Any student whose class average is below passing must not only attend night school, but may not leave the Post on pass. Weekend passes are granted only to those with a 90 average or better.

As for the off-duty problem, there are plenty of good recreational facilities to keep the soldier out of mischief. Right here on the Post we have a well-stocked Snack Bar, a large athletic field, a gymnasium with full equipment, a day-room in every barracks, a library, a good supply of musical instruments, hobby kits, etc. Our chaplain helps keep the men busy by supervising the staff of our Post newspaper and directing select voices in the choir or not-so-select voices at his frequent community sings. German classes are conducted three times a week. The summer softball league ended just recently and the school hardball team has been barnstorming about the vicinity filling engagements with other units. A full off-duty sports program is planned for this fall: Two touch-football leagues, a volleyball tournament, boxing shows, weightlifting, and badminton. Hobby materials are being assem-

Editor's Note: Colonel Abramowitz enlisted in the Coast Artillery, Regular Army in 1916, transferring to the Signal Corps in 1919. He has served continuously since then, in all grades, the greater part of the time as instructor at the Enlisted Men's school at Fort Monmouth. He was commissioned a 2nd lieutenant in 1942.

bled for amateur craftsmen and local talent will soon be recruited to form a band and orchestra. A couple of "wildcat" instrumental groups are already operating. The town of Ansbach offers the usual entertainment spots . . . a fine Red Cross building with a country club branch, our TSCS cadre club, an enlisted men's rec hall, and movie houses. USO shows play in Ansbach frequently.

One of the features of our recreation program is the weekend tour. On Friday night of each week one of the officers conducts forty picked students (with school average of 90 or better) and ten of the cadre on a trip to some resort town or large city for a weekend of relaxation and fun.

All in all, there is plenty of activity here and the place gives good evidence of the energy already expended. We are inspected frequently and have profited greatly by the suggestions and constructive criticism of high-ranking military men. In fact, a standing invitation is extended to all Army officials to be our guests at TSCS. One of our most unusual inspections was carried out at midnight by General Sarnoff, who seemed impressed with what he saw, even under lights. In my office are displayed letters of commendation from General McNarney, Commander of all U. S. forces in the European Theater; General Lanahan, Theater Chief Signal Officer, and General Harmon, Commanding General of the Constabulary Troops. These commendations are a tribute to the magnificent efforts of all my associates, notably Major Kolman, my Assistant Commandant, and Captain Ranson, head of TSCS Radio Division, both of whom have been with me from the beginning.

The school may not be perfect, but we are doing our level best to make it so. And we have had success enough to permit my saying that I am proud to be Commandant of this institution. They passed me the ball and told me to carry it: but the credit for whatever I have personally accomplished goes to my many years of training in the Regular Army. I am not far from retirement and am glad to have rounded out my Army career with the honor of establishing and organizing the Theater Signal Corps School.

Applications for membership in the Signal Association are enclosed for the officers of my entire staff. We are wholeheartedly behind this new organization and believe it will do a great deal for the Signal Corps.

Sincerely and cordially yours,

REUBEN ABRAMOWITZ,
Lt. Col., Sig. C, Commandant.

The code room at TSCS.

Brigadier General S. H. Sherrill, Commander at Fort Monmouth presents Legion of Merit to Major Abramowitz just before his departure for Europe in 1944.

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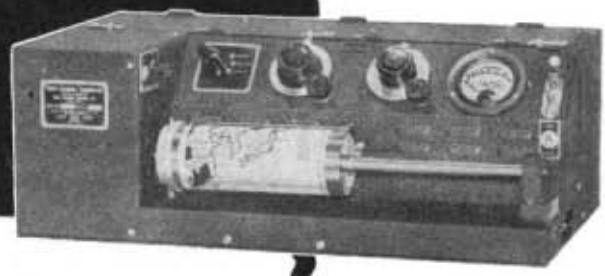

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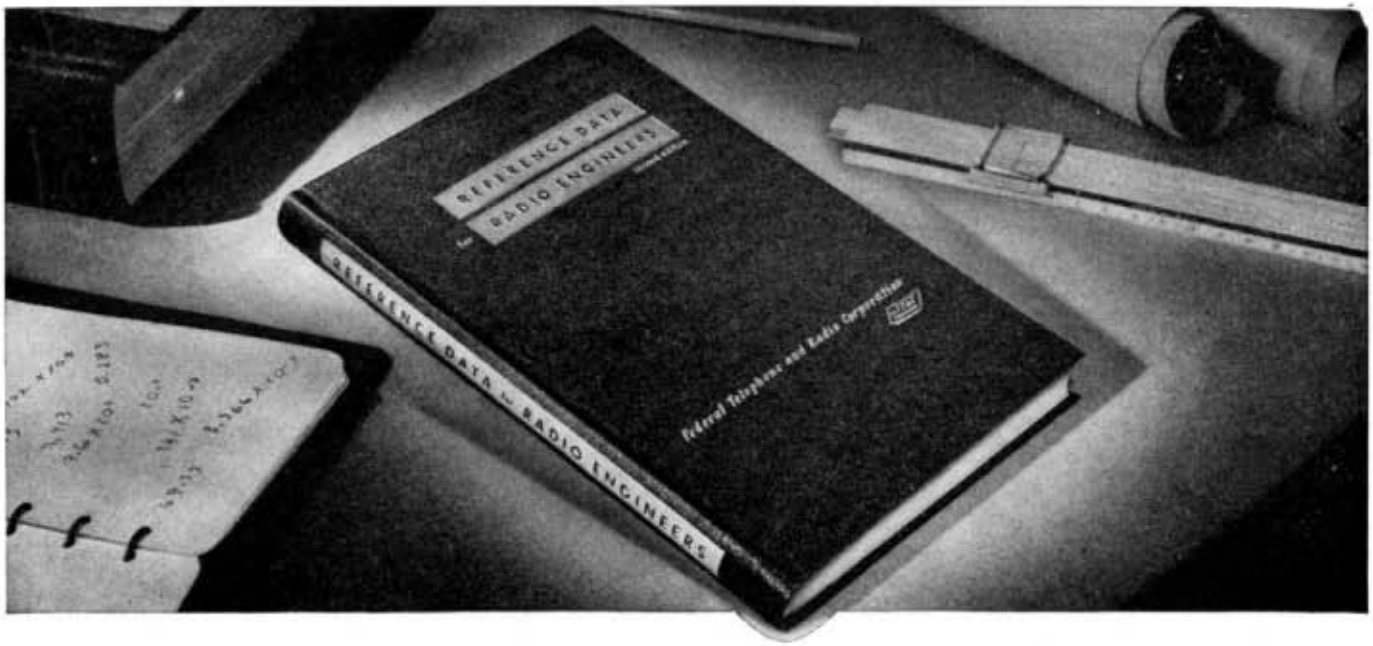

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