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SIGNAL CORPS
TECHNICAL INFORMATION LETTER

NO. 13

WAR DEPARTMENT
HEADQUARTERS, SERVICES OF SUPPLY
OFFICE OF THE CHIEF SIGNAL OFFICER
WASHINGTON, D.C.

DECEMBER 1, 1942

WAR DEPARTMENT
Headquarters, Services of Supply
OFFICE OF THE CHIEF SIGNAL OFFICER
Special Activities Branch

Washington, D.C., December 1, 1942
(RESTRICTED)

SIGNAL CORPS TECHNICAL INFORMATION LETTER NO. 13 -

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THE SIGNAL CORPS TECHNICAL INFORMATION LETTER

1. The Signal Corps Technical Information Letter (SCTIL) is issued monthly in this form. Its purpose is to keep officers in charge of field activities informed of matters of interest, such as new developments in Signal Corps equipment, changes in methods, progress in procurement of major Signal Corps items of equipment, etc.

2. The letter is compiled largely from information regularly available in the Office of the Chief Signal Officer. However, all Signal Corps agencies are invited to submit items of general interest. Such items should reach the Special Activities Branch, Office of the Chief Signal Officer, not later than the 20th of each month for inclusion in the letter of the first of the succeeding month.

3. Distribution of the letter will be made to army, corps, and division signal officers; commanding officers of signal companies and battalions; service command and department signal officers; post, camp, depot and Procurement District signal officers; the signal officers of bases and task forces; the signal officers of the Armored Force; signal officers on the staffs of major headquarters of the Army Air Forces and Army Ground Forces.

4. Requisitions for new types of equipment will not be submitted on the basis of information contained in this Letter.

5. Restricted -- A document will be classified and marked "Restricted" when the information it contains is for official use only or of such nature that its disclosure should be limited for reasons of administrative privacy or should be denied the general public. The "Restricted" mark will be placed on a document only by authority of a commissioned officer.

I

RESEARCH AND DEVELOPMENT

Ground Signal Equipment

Latest Radio Direction Finder:

Procurement has been started on a new type of direction finder -- the SCR-291. An outstanding feature of the 291 is its ability to give instantaneous bearings on incoming signals and to minimize adverse polarization effects present in the sky wave. While this set is being procured for the use of the Air Corps, a related set -- the SCR-502 has reached the field test stage for the Signal Corps. While both sets are identical in principle, the 502 will cover a much greater frequency range and will allow remote indication. Both sets are highly mobile and may be completely installed and operating in less than one day's time. Particular attention has been paid to the possibilities of camouflaging the sets and their antennas and to making them air-transportable.

Face-Mounting Microphone:

The Signal Corps has been in need for sometime of a microphone capable of being satisfactorily used both in the open, without requiring use of the hands, and under gas masks and dust respirators. In completing the development of a face-mounting unit, designated as Microphone T-45-( ), it is felt that the above need has been fulfilled.

The Microphone T-45-( ) is a light-weight, carbon, differential type which is positioned directly over the lips by a spectacle type mounting. The microphone head is sufficiently small and the mounting is sufficiently flat to allow its use under a gas mask without breaking the gasproof seal. The differential characteristic of the microphone effectively and substantially reduces the amount of noise picked up when the microphone is used in high ambient noise levels. The microphone has excellent frequency response characteristics and a higher signal-to-noise ratio than any other microphone now in use by the Signal Corps.

Samples of the microphone are being field service tested. If service tests bear out the findings of the laboratory tests, then it is expected that it will be standardized in the near future to replace most of the carbon-type microphones now used in ground communication.

Other New Developments:

ENGINE GE-12-( ): Jackobsen type J-100, 2-cycle, light-weight gasoline engine specifically designed as a basic engine to be used in connection with a family of interchangeable generators of various voltage and current outputs not exceeding a total of 450 to 500 watts. The engine does not include a generator bell housing. Used with but not part of Generators GN-50-( ), GN-51-( ) and GN-52-( ).

CASE CS-112: A rugged plywood case with drawers and compartments for storing and transporting the components of Maintenance Equipment ME-22-( ), which is used for the maintenance and repair of 10 Telephone EE-8-A or Telephone EE-8-B.

RADIO SET SCR-300-( ): Infantry's latest front line battery portable. Provides for voice transmission and reception of FM (frequency modulated) signals on the 40 to 48 megacycle band up to a distance of approximately 3 miles. Essentially it is comprised of Radio Receiver and Transmitter BC-1000-( ) and one each collapsible Antenna AN-130-( ) and AN-131-( ). Operates on a Battery BA-70 (or BA-80) which is a combined "A" and "B" pack of approximately 30 hours service life.

SIGNAL LAMP EQUIPMENT SE-11: A portable equipment for visual code signaling over medium ranges. Consists of Signal Lamp M-227 with gun sights and gun stock for aiming like a rifle, spare bulbs, filter, trigger switch, pre-focused reflector and goggles. To enable operation from a remote position, a tripod, 15 ft. of wire, and a key are provided. The equipment operates from 1½-volt dry cells (Battery BA-30).

Signal Corps Radios with the Ground Forces:

The Armored Force 500-series sets have gone to work in earnest. Similarly, the Field Artillery has its 600-series sets hard at work.

Infantry, having fathered the SCR-536, a healthy midget, has not put it to work with excellent results; its new "baby", the SCR-300 has been given a job but is not yet at work. Cavalry has its SCR-511 at work, and its SCR-583 is now applying for the job of replacing the SCR-203. Coast Artillery has both its SCR-543 and SCR-593 in action.

Field Artillery has a while to wait yet for its new set, just conceived. This set, The SCR-619, is to be smaller and lighter than the SCR-609 and SCR-610.

II

REPORTS REQUIRED ON PERFORMANCE OF SIGNAL EQUIPMENT IN THE FIELD

In order that troops in the field may be assured the greatest practicable reliability in operation of their signal equipment, it is essential that the Office of the Chief Signal Officer be advised promptly and accurately of any deficiency arising in the use of such equipment. Hitherto, Unsatisfactory Reports rendered on the Army Air Force Form No. 54 or by letter with respect to possible deficiencies in the design and performance of Signal Equipment have been far too few, infrequent, inaccurate and lacking in the necessary detail to permit the formulation of complete and accurate data and the expeditious application of proper remedial action.

Factors which must be considered in the derivation of a proper solution to any difficulty experienced are the effects of temperature, temperature changes, humidity, altitude, storage, and transport, the frequency of similar difficulties, and the remedial action applied in the field. Although every attempt is made in the Laboratory to simulate these conditions during design and development of the equipment, it is recognized that actual service conditions rarely, if ever, may be duplicated. Furthermore, lengthy development tests tend to delay issue of the equipment for combat service. Certainly, therefore, the performance of the equipment must be followed closely throughout its useful life and the original Laboratory test data substantiated or supplemented by service records covering the transition from Laboratory to combat service and continuing throughout the life of the equipment.

The Chief Signal Officer is establishing a new mechanism for collecting and analyzing Unsatisfactory Reports from the field. Surveys of Signal repair and maintenance establishments are now in progress from which by compilation of records of repairs and replacements much valuable information will be obtained. These surveys, however, must be supplemented by reports from the Using Arms. A revised form of Unsatisfactory Report is being prepared with the intention of facilitating the forwarding of the desired information on any item of Signal equipment.

It is imperative that the Chief Signal Officer be advised promptly and in detail of any constructional, design, or operational defects in Signal equipment so that proper corrective measures may be applied to ensuing production, and where applicable made known to the using arms for application in the field without delay. Until the new Unsatisfactory Report forms are made available, greater use should be made of existing channels for reporting this information.

REPORT THE INFORMATION FREQUENTLY AND IN DETAIL. USE THE NEW UNSATISFACTORY REPORT FORMS WHEN THEY BECOME AVAILABLE. (SPSGD)

III

Procedures Coordination

USE OF THE SPIRAL FOUR CABLE

Providing wire communication between army and corps, corps and division, and between certain air force units, is one of the principal problems now confronting Signal Corps tactical units. The distances involved may be so large as to make present Field Wire W-110-B inadequate, and as units move rapidly in modern warfare, it is frequently impossible to install open wire circuits.

Considerable progress has been made in the development of facilities to provide the increased range of transmission required:

a. A new Field Wire, W-143, which is intended to have a talking range of between 40 and 50 miles without either loading coils or repeaters, is being developed.

b. Special methods of rapid open wire construction are now being developed by the Bell Telephone Laboratories, the Signal Corps Laboratory, and the Signal Corps Board.

c. Cable WC-548 (Spiral Four), which has been developed and is being manufactured, is described in this article.

What it Consists of.

Spiral Four Cable has been standardized in ¼-mile loaded sections as Cable Assembly CC-358. The Cable Assembly includes the loading coils and connectors and will be issued on the following basis:

Cable Assemblies CC-358) ¼-mile long	ea 400)	AAF:	Per Co Hv Cons Avn
	)	AGF:	Per Co Cons

A number of cable stubs and short sections are also supplied.

This cable is used in conjunction with the Telephone Carrier Terminal Equipment CF-1-A, which is a portable unit weighing about 475 pounds and standing about 5½ feet high. Intermediate Carrier Repeaters CF-3-A are also used at approximately 25 mile intervals to compensate for line losses. The repeater is approximately 5 feet high and weighs about 225 pounds. With the use of this equipment, it is possible to obtain 4 voice channels over one Spiral Four Cable. Circuits up to 150 miles are practical.

CABLE STUB CC-356. Cable Stub CC-356 was designed for the purpose of terminating Cable Assemblies CC-358 at a switchboard or on a terminal frame. It consists of a twelve foot length of Cable WC-548 terminated at one end with a molded connector containing a six millihenry loading coil as described above. The other end is cut back to expose the two pairs of conductors and is served to prevent wear and fraying.

Installation of the Cable Assembly

As Spiral Four Cable is now being manufactured and will be issued to certain Signal Corps units in the near future, it is considered desirable to make available the information at hand in the Office of the Chief Signal Officer relative to methods of installing, maintaining, and recovering this cable. However, the Signal Corps Board, in collaboration with certain tactical Signal Corps units and the Bell Telephone Laboratories, is now engaged in developing methods of handling Spiral Four Cable and it is, therefore, quite likely that the procedure indicated below will be somewhat modified in the near future.

TEAM ORGANIZATION AND EQUIPMENT. The following subdivision of personnel, with the duties of each, and equipment is suggested for the composition of a single team:

Each team should be provided with a $1\frac{1}{2}$ or $2\frac{1}{2}$-ton vehicle equipped with a Reel Unit RL-26, or RL-31, and a $\frac{1}{4}$ or $\frac{1}{2}$-ton vehicle. Four groundmen, assigned to the larger vehicle, should function as a crew for laying cable and making connections. Two linemen and two groundmen, assigned to the smaller vehicle, should follow the cable laying truck and make all overhead and underground crossings.

The cable laying team should function in the following manner: One member of the team should be responsible for guiding the cable off the reel, straight to the rear, so that the cable will not ride over the flange of the reel. Two members of the team should ride on the vehicle and control the unreeling of the cable. One man should be supplied with a whistle, or telephone head and chest set, for signalling the driver. The fourth member of the team should be responsible for placing the cable as far off the road as fence lines, trees, poles, etc. permit. In connection with this last requirement, the Boom Equipment IG-60 may be used to good advantage providing snatch blocks are used. The instructions for improvising this Boom Equipment are given in War Department Training Circular No. 73, dated October 22, 1942.

PROCEDURE IN LAYING CABLE. The following procedure

If the Spiral Four Cable is used without the carrier terminal and repeater equipment, it is possible to obtain two talking circuits for a distance of about 40 miles. The normal use of this cable is intended to be with carrier terminal and repeater equipment, for use between army and corps, and between certain air force units in the Ground-Air Support Command.

PHYSICAL CHARACTERISTICS. Spiral Four Cable provides two balanced self-transposed physical circuits with a waterproof covering. It is issued in uncut ¼-mile lengths. It consists of four insulated copper strand conductors, wound spirally about a central nonconductive core. A metalized paper electrostatic shield is served over the conductor assembly. This is covered by a steel wire mesh, consisting of 16 strands of bare steel wire, which provides a minimum breaking strength of 500 pounds. The outermost covering of the present cable consists of a tough rubber cover of sufficient thickness, so as to make the overall diameter of the cable approximately ½". Each ¼-mile length is carried on a Reel DR-15 which is the same size as the Reel DR-5 with an Adapter FT-315 to accommodate the connectors for the cable.

ELECTRICAL CHARACTERISTICS. The prescribed electrical qualities of the cable provide for a conductor to conductor insulation resistance of 1000 meg ohms per 1000 feet, and a conductor to ground insulation resistance of 5000 meg ohms per 1000 feet. The capacitance between conductors does not exceed .08 microfarads per 1000 feet. The direct current resistance provides for a maximum of eight ohms per 1000 foot loop, and the attenuation does not exceed .75 db. per mile at one kilocycle. The cable is very stable and is adapted for transmission of telephone carrier frequency currents up to about 16,000 cycles.

CABLE ASSEMBLY CC-358. The Cable Assembly CC-358 consists of a nominal ¼-mile length of Spiral Four Cable WC-548 terminated at each end by a molded universal type connector. The two pairs of the cable are wired to the connector terminals in such a manner that each pair connects to female terminals at one end and to male terminals of the connector at the other end. Incorporated within each connector is a six millihenry loading coil which is inserted in series with each cable pair at its female terminal end. Each pair is therefore loaded every ¼-mile. The connectors are coupled by aligning the pins and sockets and forcing the connectors together. After a certain compression has been reached, the connectors are twisted and locked in position, by means of bosses which are seated in corresponding slots. The compression of the water seal provides the slight spring action necessary to keep the connectors locked.

is recommended for cable placing operations:

(1) All cable assemblies to be installed should be tested before starting to insure the continuity of each reel. Reels of cable, which do not show a continuous circuit on both pairs when tested, should not be used until the cable has been serviced.

(2) At least ten feet of slack should be left at each connector before proceeding with the truck. One member of the team should hold the cable at a point six feet from the connector until at least 200 feet is laid. This will prevent any strain on the junction of the cable and connector.

(3) There must be no jerking, or unnecessary strong pulling, of the cable as it is paid off the reel. A light steady pull must be maintained on the cable so that it pays out smoothly and does not back up on the drum.

(4) On completion of each cable length, the circuits should be tested and identified before starting the next section.

(5) The reel must be slowed down when it tends to spin and pay out cable too rapidly for the speed of the truck. Its rotation must be aided at times to lessen the pull on the cable. When slowing the speed of rotation of the reel, the brake on either the Reel Unit RL-26 or RL-31, should not be applied suddenly, especially near the end of a section. This is to prevent undue tension on the cable and keep the inside connector from sliding forward and hitting the frame of the reel.

(6) At frequent intervals along the cable length, slack should be left so that the cable will not be under tension when placed off the road.

(7) When nearing the end of a section of cable, make sure that the connector is not forcibly withdrawn from the reel. It is advisable to stop the truck and withdraw the the last few turns by hand. This will also tend to allow more slack at each connector, which is very desirable.

(8) If employment of an excess length of the cable assembly is unavoidable, do not cut the assembly. Unreel the excess and leave it coiled.

AERIAL CONSTRUCTION. When this cable is to be supported overhead, the following provisions apply:

(1) Spans should not exceed 150 feet

(2) Minimum sag for given spans is as follows:

Span in feet	Sag in feet
50	1.5
100	4.0
150	7.0

(3) A connection of molded terminals should never be allowed to occur in a span; a coil, including the connection, should be tied to the support at the rear end of the span.

(4) At points where aerial construction begins and ground construction ends, sufficient slack should be left so that there will not be any tension on the cable. The cable should be tied at the base of the support and halfway between the base and the aerial dead end.

METHODS OF FASTENING CABLE TO SUPPORTS. There are three types of ties used in fastening cable to the supports. The first is a commercially manufactured grip consisting of a split, woven, leather covered, wire mesh which has eyelets on two opposite sides so arranged that when interlocked, a cylindrical mesh sleeve is formed. The second method of aerial support is the Anchor clip. This clip is slipped onto the cable about 12 inches from the point of support, and pinched securely with lineman's pliers. One end of an eight foot length of twisted field wire, or double marlin, is then inserted through the hole of the clip and pulled halfway through. These wires are then laced around the cable toward the insulator by crossing both wires, first underneath, then on top of the cable and so on until there are three crosses on top and four underneath. The same operation is completed from the opposite end, and both pieces of wire are then attached to the insulator, drive hook, etc. The third method is the standard marlin tie. The latter tie is only to be used when the first two ties are not available.

Drive hooks will be used to hold the tie to the support when they are available. Otherwise the field wire, or marlin, will be tied to the support using two complete wraps and a square knot.

GROUND CONSTRUCTION. a. Burying. Plans and developments are under way to provide a suitable cable plow for burying Spiral Four Cable for permanent installation. When the cable is to be installed so that it can be recovered, it should only be buried at road crossings and other places where it would

quite likely be damaged if allowed to remain above the surface. A six inch ditch dug by hand is usually adequate and the cable should be tied to stakes at each side of the road because of possible damage to the rubber insulation.

b. Tying. Cable should be tied with a marlin tie to trees, fence posts, poles, or stakes at any point where it is considered that there is a chance for the cable to get out into the roadway, or even on the shoulder of the road. Cable should be tied at both sides of any culvert through which it passes and on both sides of any railroad under which it passes. At any place where there is danger of abrasion to the rubber jacket of the cable, friction tape should be applied.

c. Tagging. If there is any possibility of two such cable lines being laid side by side, each cable should be tagged with appropriate circuit numbers at both sides of any buried length, overhead construction, or at any entrance to a repeater, terminal frame, or switchboard.

Recovery of Cable.

Recovering cable is quite similar to recovering field wire but greater care must be taken. All aerial construction must be taken down, cable removed from culverts and from under railroads, buried cable dug out, and all ties removed before the cable assemblies are picked up.

The same caution must be observed in separating the molded terminals as is observed in making the connection.

The molded terminal on the inside end of the cable is replaced in the slotted adapter on the reel, as it was originally, so as to permit access for testing purposes.

There should be no unnecessary pull on the cable as it is guided on the reel. Care must be taken in winding the cable on the reel, to prevent tangling and to wind it evenly so that it will not over fill the reel.

The vehicle used to recover the cable line is driven forward as the cable is guided around to the rear of the truck and onto the reel. The vehicle must be stopped immediately if the cable tangles on the reel, or catches objects along the roadside.

Testing.

The detection of faults may be made with consistent accuracy with the testing equipment available in those organization

responsible for the construction and maintenance of lines consisting of Cable Assemblies CC-358.

TESTING EQUIPMENT. The following Test Sets are available:

(1) EE-65 or EE-65A and Cabinet BE-70
(2) I-49
(3) I-51

RECOMMENDED TESTING PROCEDURE. When a fault occurs, the faulty section is determined as being between two test points such as two repeater points or between a terminal and a repeater, by the attendants at the test points. The type of fault is then determined by the use of the voltmeter in the test set at hand (This will be a Test Set EE-65, EE-65A or Cabinet BE-70).

In determining the location in specific types of faults proceed as follows:

(1) Opens. - The approximate location of the open may be determined by comparing the capacity kick in the faulty wire with the capacity kick in a known length of circuit as shown on the voltmeter.

(2) Shorts, Crosses and Grounds. - A very close approximation may be made as to the location of shorts, crosses and grounds as follows:

(a) Measure the loop resistance to the fault, using Test Set I-49 (Wheatstone Bridge), and compare the result with the loop resistance of a known length of circuit.

(b) Set the Test Set I-49 for Varley loop measurements and determine (D) where D = distance from the far end to the fault, by referring to the instructions accompanying Test Set I-49 for circuit connections.

(c) The results of the Varley Loop method are most accurate when the fault is nearer the far end of the section. If the result found in (b) above indicates that the fault is in the near end of the section, the distance (D) should be determined by means of the Murray Loop.

(d) The particular cable assembly which is faulty may be located by sending a maintenance crew to the approximate location, as determined from (D), and having this crew open connectors and check with the tester until the faulty assembly is found.

After the faulty length has been located, it should be removed and replaced with a length which is known to be good. The faulty length should be identified by the use of a tag showing the date, nature of fault and the cause and location, if known.

After a close approximation of the location of a fault within a length has been determined at the depot or other base by means of the above tests, the exact location may be found by the use of Test Set I-51 (cableman's tone test set) or the tone test equipment (including Western Electric Test Set 1020-C and Western Electric Amplifier 108-A) of Tool Set TE-56.

Repair

TEMPORARY FIELD SPLICE. When the point of separation is evident and when a replacement length is not available, communication may be restored by making a field splice. However, as this is a time consuming operation, its use is discouraged. The faulty length of cable assembly thus repaired may be replaced at some later time, and the temporary splice then replaced with a permanent vulcanized splice.

The following method is suggested for making a temporary field splice:

(1) The faulty section of cable is cut out of the length. The rubber jacket must then be stripped away for a length of 8 inches on both ends to be spliced together, exposing the steel braid. The braid is then snipped off 1 inch from the end of the jacket, exposing the wrapped conductors.

(2) Conductors thus exposed should be cut and staggered so that no two conductor splices will occur opposite each other. The conductors are then skinned for a distance of 5/8".

(3) If copper sleeves are available for splicing the conductors, the Nicopress sleeve No. 3-040-B should be used. The sleeve should be crimped on the conductor with the cutting edge of a lineman's pliers, three nicks on each side. Care should be exercised not to apply excessive pressure on the sleeve and thus damage the conductor. If these sleeves are not available, the ends are twisted together in a twisted joint. Each conductor splice thus formed must be taped with rubber tape.

(4) The 1 inch section of braid should be ballooned back and three or four layers of rubber tape applied to the section of the cable underneath the exposed braid. When the splice

is taped, a bedding will be formed for the steel braid ends, preventing them from cutting into the conductor insulation.

(5) Before the spliced cable is taped, the cable jacket on both sides of the splice should be tapered toward the splice and roughened with sandpaper. If rubber cement is available, it should be applied to the tapered jacket and the taped conductors. Starting at the center of the splice, three layers of insulating rubber tape are applied to the splice. The rubber tape should extend about an inch over the rubber jacket of the cable, on both sides of the splice. Two layers of friction tape are applied in the same manner, extending about an inch beyond the rubber tape, at each end of the splice.

(6) To keep the splice from pulling apart cable grips as previously described can be used in the manner given below:

(a) The grips are applied to the cable, one on each side of the splice. The looped ends of each grip are securely tied together with several turns of field wire or marlin. Sufficient slack should be left in the spliced portion between the grips so that, when tension is applied to the splice, it will be taken up by the grips and not by the conductors. About six inches of slack is sufficient.

(b) Alternately, the Anchor Clip and field wire, or marlin tie, as previously described, may be used.

IV

Signal Security

SAFEGUARDING THE CIPHERS

In order to impress upon all concerned the critical importance of utmost care in the use of codes and ciphers, issuance was begun during October of a series of pointed messages on the subject for wide distribution among Army communications personnel. These messages are compiled from the lessons of military history.

The content of the first of these messages is reproduced below. On the following page the second message is included in its original format.

You are giving aid to the enemy:

If you do this:

"On September 19, 1914, an intercepted Russian wireless message was deciphered by the Austrian Intelligence Service for the first time. From this time until the end of the war (for Russia), messages sent in cipher by the Russian radio stations in the field were regularly intercepted and successfully deciphered by the experts of the Austrian Intelligence Service. The contents of these messages were known to the Austrian and German High Commands within a few hours after transmission." -- (Gen. Max Ronge, from his "Krieg Und Industrie Spionage").

Because:

Whenever the Russians changed from one system to a new one (or even from one key to another), they invariably cryptographed identical plaintext messages in both systems (or in both keys). This is not merely foolish, -- IT'S SUICIDE. Moral: NEVER cryptograph a message in a system or key other than that in which it has been previously transmitted.

WAR DEPARTMENT
OFFICE OF THE CHIEF SIGNAL OFFICER
WASHINGTON

THERE IS EVEN

A RIGHT WAY AND A WRONG WAY

TO SAY

MERRY CHRISTMAS

HERE IS THE STORY

"I ALSO RECALL WITH GRATITUDE THE GERMAN WIRELESS CHIEF IN CONSTANTINOPLE, WHO, RETURNING FROM LEAVE IN GERMANY, HAD A DINNER TO CELEBRATE IT. AFTER THE FEAST, WHICH MUST HAVE BEEN A GOOD ONE, THE PARTY REPAIRED TO THE BIG WIRELESS STATION AND SENT IDENTICALLY THE SAME (CHRISTMAS) MESSAGE OF GOOD CHEER TO ALL ENEMY STATIONS ROUND IN SIX DIFFERENT CIPHERS. BEFORE THIS HAPPENED FIVE OF THE CIPHERS WERE UNDECIPHERABLE BY US, BUT WE KNEW THE SIXTH. AFTER THE 'BEANO' WE KNEW THE LOT." FROM "WAR, WIRELESS, AND WANGLES" BY E. W. B. GILL.

HERE'S THE MORAL

NEVER CRYPTOGRAPH A MESSAGE IN A SYSTEM OR KEY OTHER THAN THAT IN WHICH IT HAS BEEN PREVIOUSLY TRANSMITTED.

DON'T GIVE GIFTS TO THE ENEMY

DISSEMINATION OF THIS INFORMATION TO ALL PERSONNEL OF YOUR COMMAND IS DESIRED.

SSBR OCSIGO 10-31-42

V

Training Films

"PVT. PIGEON"

TF 11-621: Care and Release of Pigeons in the Field
Running time: 10 minutes.

"Some day," says the opening commentary to this new training film, "you may have to rely on a pigeon to carry a message." Such occasions, it is pointed out, may occur either when other communications fail, or when the use of radio is undesirable because it would disclose the position of our troops to the enemy.

The film shows pigeons from a portable loft PG 46 being taken up to a forward message center in a carrying basket (PF 49 or PG 60), together with a two-day supply of food. The film emphasizes that, when transported in those containers by truck, the pigeons should be kept clear of carbon monoxide gas, to which they are highly sensitive.

The standard message form is shown, together with the procedure for rolling up the message and placing in the capsule on the pigeon's leg while the bird is still in its crate. Special procedures are demonstrated for releasing pigeons at night or from moving tanks.

Film Bulletin No. 32

A section of this film bulletin is devoted to pigeon communication. Scenes taken at Fort Monmouth demonstrate the utility of pigeons with reconnaissance units. "A reconnaissance action," the commentary points out, "is useful only when reported."

Other portions of this Film Bulletin show the training of stevedores on a mock-up "freighter," the toughening-up training of parachutists, and a demonstration of chemical warfare to Latin-American officers at the Edgewood Arsenal.

COMMUNICATIONS IN NEW CALEDONIA

Film Bulletin No. 34: "Our Troops Abroad -- New Caledonia."

This film bulletin opens with a map of the Southwest Pacific, focusing attention on New Caledonia, the Free French possession which has served as an American base for the reinforcement of Guadalcanal. The pictures were made in New Cale-

donia shortly after U. S. Army troops arrived on that island with the consent of the French officials. It shows practice maneuvers by motorized troops equipped with 37-mm guns and machine-guns. Signal communications are emphasized at the opening of the action. A sequence shows the command for initiation of action arrive on a portable radio, the message being handed to the commanding officer, and his orders relayed by phone and then carried to smaller troop units by motorcycle messenger.

VI

Pictorial:

PHOTOGRAPHIC BATTALION CONSTITUTED

The 846th Signal Service Photographic Battalion was constituted and activated on September 11, 1942, at the Signal Corps Photographic Center, Long Island City, New York, with Captain Lester A. Shull assigned as Commanding Officer of the Battalion.

This Battalion is composed of five companies as follows:

UNIT	STATION	FUNCTION
Battalion Hdqrs and Hdqrs Company	Signal Corps Photographic Center, Long Island City, N. Y.	Battalion Administration
Company A	Signal Corps Photographic Center, Long Island City, N. Y.	Training Film Production
Company B	Signal Corps Photographic Laboratory, Army War College, Washington, D. C.	Laboratory Company
Company C	Training Film Production Laboratory, Wright Field, Ohio	Training Film Production
Company D	Signal Corps Photographic Center, Long Island City, N. Y.	Student Company

The activation of this Battalion will facilitate the production of Signal Corps Training Films by furnishing an organization of qualified photographic enlisted men.

VII

Operations:

WAR PLANS

1. The 94th Infantry Division (94th Signal Company) was scheduled to be transferred from Fort Custer, Michigan, to Camp Phillips, Salina, Kansas, on or about November 15, 1942. This is a PERMANENT change of station.

2. The 59th Signal Battalion and the 282d Signal Pigeon Company were ordered into the active military service of the United States at Camp Crowder, Missouri, on October 28, 1942. The 59th Signal Battalion was organized at an authorized strength of 33 Officers, 1 Warrant Officer, and 898 enlisted men. The 282d Signal Pigeon Company was organized at an authorized strength of 11 Officers and 168 enlisted men. Both of these units were organized by the Commanding General, Second Army.

3. The Women's Army Auxiliary Corps Training Center, Fort Des Moines, Iowa, is redesignated the First Women's Army Auxiliary Corps Training Center, Fort Des Moines, Iowa.

4. Instructions have been issued to transfer the 38th Infantry Division (38th Signal Company) from Camp Shelby, Mississippi, to Carrabelle, Florida, for temporary change of station.

5. The Eastman Kodak Company, Rochester, New York, has accepted the affiliation of the Signal Photomail Company. The personnel to be affiliated will be utilized in the activation of the following inactive portions of the Signal Photomail Company:

1 - Type A Platoon
7 - Type B Platoon
1 - Type C Platoon
5 - Official Mail Sections

The affiliated personnel were ordered into active military service of the United States on or prior to November 30, 1942.

6. The Commanding General, Seventh Service Command, will issue instructions to move the 77th Women's Army Auxiliary Corps Post Headquarters Company and a casual detachment, consisting of 5 United States Army Officers and 285 enlisted men, from Fort Des Moines, Iowa, to the Second Women's Army Auxiliary Corps Training Center at Daytona Beach, Florida. This is a PERMANENT change of station. Upon arrival at destination, the 77th Women's Army Auxiliary Corps Post Headquarters is assigned to the Second Women's Army Auxiliary Corps Training Center. The casual detachment has been

allotted to the Second Women's Army Auxiliary Corps Training Center as station complement and is placed under the command of the Commanding General, Fourth Service Command.

7. Orders are issuing to transfer the 45th Infantry Division (45th Signal Company) from Fort Devens, Massachusetts, to Pine Camp, N. Y., for temporary change of station.

8. The 5th Armored Division will be returned from temporary station in the Desert Training Center to its permanent station at Camp Cooke, California, about November 15, 1942.

9. The Signal Section, Headquarters, Third Army, and the Signal Section, Headquarters, Southern Defense Command will move from the Smith-Young Tower, San Antonio, Texas, to the Quadrangle, Fort Sam Houston, Texas, about December 1, 1942. This is a PERMANENT change of station.

10. By War Department orders, certain units have been designated as cadre sources for new non-divisional units to be activated in accordance with the schedule as outlined in the 1942 Troop Unit Basis for October, November and December.

Due to the present shortage in personnel, activations of the majority of units in the original schedule have been postponed from one to three months or longer. Units originally scheduled for activation during the remainder of 1942 will be delayed until some future undetermined date, and parent units will accordingly not be called upon to furnish cadres until such dates are definitely determined.

It is contemplated designating additional non-divisional parent units well in advance of the tentative activation dates of the new units in order to permit sufficient time for proper training.

11. The establishment of a post photographic laboratory at Camp Butner, North Carolina, is authorized. This laboratory is to operate as a sublaboratory of the Fourth Service Command Photographic Laboratory.

If the photographic personnel is not available, steps will be initiated by the Commanding General, Fourth Service Command, to requisition Signal Corps photographers or to request an allotment of civilians.

12. The following Signal Corps units are scheduled for activation in December:

129th Signal Radio Intelligence Company
119th Signal Radio Intelligence Company
33d Signal Construction Battalion

13. Tentative table of organization for a Signal Security Regiment to provide radio intelligence functions for defense commands has been prepared and submitted to the Eastern Defense Command for concurrence and forwarded to Headquarters, Services of Supply for final approval.

14. Change No. 2, dated October 19, 1942, to Table of Basic Allowances No. 11, Signal Corps, dated August 1, 1942, has been published and will be distributed by The Adjutant General. Change No. 1, dated September 25, 1942, to Table of Basic Allowances No. 11, applies to the printed copy of T/BA-11 only, not to the mimeographed copy.

15. At this time it is not contemplated that any more equipment lists or changes thereto will be published by the Chief Signal Officer, since tables of equipment will be prepared by the Commanding General, Army Air Forces, Commanding General, Army Ground Forces, and Commanding General, Services of Supply, for units under their commands. These tables of equipment will replace the present tables of basic allowances for requisitioning purposes.

16. The following Signal Corps tables have been published and are being distributed:

11-85 Armored Signal Battalion
11-86 Headquarters and Headquarters Company, Armored Signal Battalion
11-87 Radio Company, Armored Signal Battalion
11-88 Wire Operation Company, Armored Signal Battalion
11-89 Construction Company, Armored Signal Battalion

VIII

MILITARY PERSONNEL

Policies Governing Use of WAAC's with Signal Corps Units:

In order to maintain liaison with WAAC Headquarters to the end that urgently needed enlisted men may be replaced as soon as possible by WAAC personnel, Captain K. E. BeLieu, Auxiliary Corps Section, has represented Military Personnel Branch at several conferences at Women's Army Auxiliary Corps Headquarters at which policies governing the use of WAACs in Signal Corps units have been discussed in detail. The following is a resume of general factors which at the present time apparently govern the potential use, requisitioning, selection, training and operation of WAACs in the Signal Corps functions.

Requisitions are submitted to the Women's Army Auxiliary Corps by Military Personnel Branch based on figures acquired from Commanding Generals and Commanding Officers of Theaters of Operation, Service Commands, etc. According to a previous survey, it has been estimated that WAACs can successfully replace enlisted men in the following general classifications covering Signal Corps duties: clerks, code clerks, message center personnel, telephone switchboard operators, radio operators, radio repairmen, teletypewriter operators, photographic personnel, chauffers and mechanics.

Selection and Training. It is understood that WAAC Headquarters will select personnel to fill the requisitions submitted by Military Personnel Branch and also make recommendations to Military Training Branch, Office of the Chief Signal Officer, that proper training programs be set up for a certain number of WAAC specialists. These specialists would then be earmarked for Signal Corps duty, selected and trained by the Signal Corps, according to Signal Corps standards, and assigned to Signal Corps units.

Operation and Control. At present, this contemplated placement of WAAC personnel on Signal Corps duty is based on the WAAC Table of Organization for a Post Headquarters Company, which includes a communication platoon of 73 Auxiliaries. In accordance with the opinion expressed at WAAC Headquarters, it is contemplated that these specialists will be under the control of the Signal Corps officer concerned for operations and training, and under the WAAC Company Commander for administration and supply.

Because the prime purpose for the use of WAAC personnel is to release for combat duty as many enlisted men as possible,

and since reports received in Military Personnel Branch from various unit and area commanders have disclosed a wide variety of views on the subject, a request for a directive to be issued from Services of Supply was initiated by Military Personnel Branch in order to create a definite policy which will call for the replacement by WAACs of all Signal Corps enlisted men fit for combat duty who are now holding Signal Corps positions in the above listed classifications. It is believed that adoption of this proposal will not only provide a uniform procedure for replacing as many enlisted men as possible, but will provide a known factor in computing the needs of WAACs in each command. With a positive knowledge of the definite numerical need of WAACs it will become feasible for the Office of the Chief Signal Officer to set up a progressive, long-term training program based on organization priorities which, when set in motion, will automatically fill the replacement needs of the Signal Corps.

Signal Service Companies:

Military Personnel Branch has sent a memorandum to the Director of Military Personnel Division, Services of Supply, recommending that existing instructions with reference to the inactivation of service companies be revoked. Signal Service Companies were originally authorized in 1918 and represented, among other considerations, an effort to reduce to a minimum the administrative complexities incident to a variable number of large and small signal detachments in each of the Service Commands, the overseas departments, the Alaska Communication System, and Fort Monmouth, New Jersey. As a result, these Service Companies, constituted as a holding unit for all of these small detachments, have reduced to a great extent the rendition of rosters and returns, allied papers, and administrative problems and difficulties concerned. It was also pointed out in the memorandum that an equally important factor in the retention of these units is that they are not governed by Tables of Organization. Their authorized strength may for that reason be increased or decreased at will to meet changing conditions. These service companies possess, therefore, an inherent quality of flexibility which has functioned through the years with such marked success that they were later adopted by the Chief of Ordnance after conference with the Chief Signal Officer. It is believed that the continued existence of the Signal Service Companies, more particularly now than ever, is vital, and it was strongly recommended by Military Personnel Branch that the existing instructions relative to their inactivation be revoked.

Quotas of Direct Enlistments in the Signal Corps:

A study was prepared for the Commanding General, Services of Supply, by Military Personnel Branch, Office of the Chief

Signal Officer, in which a comparison was made of the actual direct Signal Corps enlistments through October 21, 1942, with the quota originally assigned. Analysis of the study revealed that the direct enlistment program is falling behind what it should be. Therefore, recommendation was made by Military Personnel Branch, Office of the Chief Signal Officer, that Headquarters, Services of Supply prepare and forward a directive to the Commanding General of each Service Command pointing out these facts. It was further recommended that such a directive also stress the need for appropriate action by the Service Commands to meet the quotas for direct enlistments originally set for this program and that a report be made to the Chief Signal Officer as to why the quotas have not previously been met.

Officer Personnel Record File:

Flexoline equipment has recently been installed in the Record Section, Military Personnel Branch. This equipment is used in connection with posting changes in officer assignments. This new equipment has demonstrated that the posting of changes can be maintained in a much more efficient manner than the procedure used previously. In order to improve officer personnel records in the Records Section, additional flexoline equipment has been installed in the form of rotating banks of panels in which are inserted narrow strips typed with the individual officers name. This record is in alphabetical sequence and carries in addition to the officer's name, his grade, serial number, present assignment, and station. In the few days that this new equipment has been in use, it has already demonstrated its superiority to the formerly used 3 x 5 card system, because of its compactness and the ease and rapidity with which any name can be found. Several people can make reference to the file at the same time without interfering with each other. It is anticipated that this new equipment will be of great value in checking records involving officer assignments and a definite improvement in the present Signal Corps personnel records.

Casualties:

The officer listed below is the only signal officer casualty reported since October 15, 1942:

2d Lieutenant Paul Leonard Patti - Died June 15, 1942, while on active duty at sea. Cause: drowning due to enemy combat.

IX

SIGNAL CORPS PROMOTIONS

The following promotions have occurred among Signal Corps personnel during the period from October 16, 1942, to November 12, 1942, inclusive:

Lt. Col. to Col. (Perm):

Haskell, James B.
Milliken, Charles M.

Lt. Col. to Col. (Temp):

Bayer, William Livingston
Browning, Hardy Pate
Cleaves, Haskell Hadley
Collins, Samuel Pickens
Green, James Wilson, Jr.
Morris, George Willis
Neal, Paul LeRue
Richon, George Lucien
Talbot, William Milstead

Major (Temp) to Lt. Col. (Temp):

Adams, Norman Ilsley, Jr.
Bache, William Hyatt
Baer, Charles Michael
Bannister, Martin Woodford
Baum, Edwin Kenneth
Brandt, Mulford Myers
Brock, Clever Bruce
Buchanan, Graham Clay
Cain, Benjamin Butler
Caldwell, Virgil Eugene
Carlgren, Richard Ellison
Corwin, Steven Stanley
Floyd, Henry Chambers
Gallagher, Harold Thomas
Garner, Gervais Justin
Gayle, James DeJarnette
Guikler, John Alfred
Hill, Boyd Bradford
Hill, George Everett, Jr.(Retired)
Kenny, Eugene Anthony
McClanahan, William Monroe
McElroy, Robert Joseph
Meader, Glenn Stephens
Mixson, Howard Wray

Major (Temp) to Lt. Col. (Temp):

Morley, Aubrey Robert
Ranger, Richard Howland
Reynolds, Horace LaFayette
Rusk, Ralph Hayes
Saari, Leonard Victor
Sackton, Frank Joseph
Sampson, Ross Thatcher
Shute, Donald Merrill
Strider, Harry Edwin
Thornton, Emos Barton
Uhrhane, Francis Frederick
Zitzman, Kenneth Frederick

Capt. (Temp) to Major (Temp):

Abramovich, Melvin Norman
Berryman, John Hademan
Bestic, John Brereton
Bissell, George Eben
Brown, Carolus Adams
Brueckmann, Frederick William
Bunton, George Robert
Carter, William Robert
Challenner, Ansel Peaslee
Clancy, Clyde Donald
Collins, Charles Henry
Comstock, Emerson Frederick
Corson, Frederick Ramey
Crich, Walter Henry
Dana, Sumner Wolcott
Davis, William G.
Dexter, Walter Geo.
Dickinson, Donald Cary
Drayton, Douglas Cameron
Erickson, Clarence Palmer
Folstead, Charles Ford
Fogercison, Paul Alfred
Ford, Max Dale
Garnett, George Tinsley
Goodwin, Edwin Alonzo
Grant, Arthur Burgin

Capt. (Temp) to Major (Temp):

Graves, Donald Clifford
Groves, Willice E.
Hagan, Ralph Glenn
Halliday, Robert Jay
Hays, Charles Scott
Hodge, Thomas D.
Jefferson, Wayne Otto
Jennings, Clarence Melvin
Johnson, Bernard Grover
Johnson, Henry Clyde
Keisler, Lloyd Alton
Kelly, Burnis Mayo
Kelsey, John Eugene
King, Marion Elmer
Kingston, Clarence Richard
Kirk, James Donald
Kirkhart, Kenneth
Leidenheimer, John Lawrence
Lind, Charles Wm.
Littell, Elmer Louis
Minks, Floyd Atwood
Morse, Elwood Kingman
Parr, Viron Pompton
Peters, Merrill Knight
Quan, Thomas Joseph
Ragle, Alfred Leon
Reeves, Leroy Warren
Riley, Albert S.
Robinson, Harry Walton
Sampson, George Paul
Scandrett, William
Silvasy, Stephen
Sims, Preston Wolbert
Socurt, William John
Starnes, William Gayle
Stobart, Edward Alexander
Stryker, Harry Rogers
Tamaniah, Leo
Uhr, Tom Lloyd
Urban, John Godfrey
Waldorf, Wallace Astor
Walker, Raymond Arthur
Wanja, Lawrence Frank
Wilson, Herbert Lee
Wingfield, Robert Rhodes
Work, Wm. Worthington

1st Lt. (Temp) to Capt. (Temp):

Abramowitz, Reuben
Africano, John Arnold
Alexander, Emmett Cox
Alexander, Randall Gordon
Allbright, Richard Thompson
Allen, Robert Frank
Ames, Everett Keith
Anderson, Geo. Christian
Arnold, Horace Levering
Banning, William Calvin
Beard, Charles Irvin
Bennett, Joe A.
Betts, Harry Hamilton
Blackmon, Roy Frank
Braddock, Alfred Russell
Braden, Clyde Earl
Brady, Robert James
Brentano, August
Buck, Wesley Carlough
Burglund, Wilfred Paul
Burns, Harold Robert
Byrnes, Francis Clair
Caldwell, Winfield Scott, Jr.
Calkins, Wesley Emil
Carswell, Philip John
Castle, Jack Cecil
Chandler, Urey Elgin
Chrisley, Wm. Henry
Cletworthy, Charles Baker, Jr.
Coile, Russell Cleven
Coleman, William Emerson
Condon, Jack George
Cuphaver, Carl Anton
Daehler, Leo Ernest
Daniel, Vincent Eldridge
Dansby, Robert Elliotte
Dean, William Henry
DeCastro, Earl Victor
Diehl, Forrest Vinyard
Dillow, Joseph Clinton
Dobey, James Nixon
Dodd, Ivan Francis
Dougherty, Frank Lynn
Doyle, William Francis
Dunn, George William
Ebersol, Elmer Tryon, Jr.

1st Lt. (Temp) to Capt. (Temp):

Ellenberger, Wm. Joseph
Ellis, Cleffie Lee
Fechter, Wm. James, Jr.
Fite, Hiram Edwin
Galvin, Daniel Thomas
Gardner, Felix
Gibbs, Asa Ben
Gornto, Millson Bateman
Gould, Charles Daniel
Graham, John Franklin
Graham, Riley Alexander
Gravin, Irving Henry
Gunn, James Ellwood
Haley, Thomas Irving
Halpin, Eugene Pierce
Hanson, John Castleton
Harrison, Samuel Edward
Healey, Warren Mansfield
Heffner, Edward William
Heron, William Edgar, Jr.
Herrelko, Frank Edward
Hirte, Ralph Leopold
Hoeppner, Benjamin Chas.
House, Cathey B., Jr.
Houston, William Stamps
Huey, Sam Lee
Hutchins, Charles Morris
Hutchinson, Scott Arthur
Ingrigg, Earl Edward
Johnson, Kenneth Theodore
Jolly, Harry Vernon
Jones, Charles Byron
Jones, Lyle Merritt
Johnston, Frederick Milan
Jorgensen, J. Reed
Joslin, Will Dan
Karr, Edmund Powell
Keith, Minot
Kinney, Harold Albert
Kline, Earl Gage
Kolman, Albert Julius
Lamberton, James Robert
Lanham Clyde Buford
Lauterbach, Wallace Michael
Lewis, Chester Burton
Lundy, Walter Dean
Lyons, Roger L.
Mackensen, Harold Theodore

1st Lt. (Temp) to Capt. (Temp):

Maersch, John Marnet
Martin, Stuart Thompson, Jr.
Massey, Joe Thomas
Mathews, Frank Henry
McAdoo, Donald
McDowell, Jouett Shearer
McGowan, Hugh Francis
McKenna, James Joseph
Merrill, Roger Lee
Miller, Charles Judson, Jr.
Monderer, Bernard A.
Moore, Frederick Roger
Nalle, David Hurt
Newbury, Kenneth Howe
Newell, John David
Nicholson, Lynn Holley
Nolan, Vincent Bernard
Olin, Stanley Carlyle
Olsen, Einar Richard
Palmer, Charles Beall
Peckham, Malcolm Addison
Pellow, Vernon Edward
Perkins, Walter Edward
Peters, Jack Bernard
Pettit, Dorn LeRoy
Prehn, Lawrence Dale
Proper, Anthony F.
Ragland, Warren Elston
Reed, James Rufus
Ritter, Frederick Otto
Rohling, Arthur Henry
Rosen, Earle King
Rousselot, Harold Anthony
Schauers, Charles Julius
Schierstedt, Willard E.
Scott, Raymond Stanley
Shick, Dale Howard
Shively, Harmon Gunsling
Simons, Robert Lee
Staley, Carroll Hallowell
Starnes, Gilbert Dorman
Stevens, Harold Arthur
Stevenson, Roger Henderson
Stokely, Paul Warner
Stricklen, Simon Albert
Sullivan, Chas. Wayne
Summerfield, Lawrence David
Taylor, Claude Edwin

1st Lt. (Temp) to Capt. (Temp):

Tett, Harlan Frank
Travis, Harrison Guinther
Trimble, Walter Edison
Triplett, Paul
Upham, John Sherman
Ursprung, Allen John
Vance, Wilbur Hoadly, Jr.
Van Doren, Franklin Henry
Wallace, Crisby Duval
Wetzel, John Hubert
White, Raymond Edwin
Wilkes, John Frederick
Williams, Myron Lawrence
Wright, Frank Harlow
Wright, John William
Zahn, George Aloysius

2nd Lt. (Temp) to 1st Lt. (Temp):

Adler, Simpson Beral
Aerni, Francis Joseph
Agnoli, William Caesar
Allan, Robert William
Anderson, John Englebert, Jr.
Anderson, Lyman Oakley
Andrew, Alexander Robert
Angyn, Lewis, Jr.
Armstrong, John William
Arthur, Glen
Ashwood, Samuel McQuilkin
Bale, Alton George, Jr.
Barnhart, Peter Douglas
Barr, Harry Kyle, Jr.
Bartholomew, Edgar Dodson
Beeson, Charles Frederick
Behn, Forrest Edwin, Jr.
Bentson, Mark Stanley
Berger, Leonard
Berry, Milton Morgan
Beyenka, Frank Thomas
Blair, Lloyd Clark
Boice, Austin Demarest
Bolton, Robert
Booth, James Norman
Bost, William Lewis
Boysen, Bigelow
Brindley, Joseph Warren
Brown, John Clark

2nd Lt. (Temp) to 1st Lt(Temp):

Bullock, John Burns
Bunnell, Robert Melvin
Bush, Roger Roland
Byram, Donald Frederick
Cadorette, Arthur Joseph
Cannon, Willis Aloysius
Chappelle, Walter Frank, Jr.
Chisholm, Douglas Vincent
Clark, Howard B.
Clark, Irving Grant
Clemens, Richard Paul
Close, Myron James
Coates, George Harry, Jr.
Colby, Ralph Lincoln, Jr.
Cooke, John Richard
Cornish, Eugene Samuel
Couser, Walter John, Jr.
Cox, Joseph Edmund, Jr.
Cunahan, William Edward
Daniel, Emile Wright, Jr.
Darms, John L., Jr.
Davidson, William James
Dean, Clyde Robinson, Jr.
Desmond, John Thomas
Dewey, William, Jr.
Diamond, Albert
Dibblee, Harold Joseph
Drake, Norman K.
Duncan, Carl O.
Dustin, Richard Herbert
Eckhardt, Douglas Lohr
Engell, Frederick Jacob
Frazier, Wm. Burleigh
French, Andrew Van Sice, Jr.
French, Lorne
Fullwood, Edward Fenton
Gavitt, William Seward
Gayer, John Harrison
Gibson, Radford Burris
Gilliland, Robert Witherspoon
Gotfredson, George William
Gow, David E.
Grandey, Loren Frederick
Grant, Arthur Robert
Gregory, Joseph Eldridge
Gunkel, Carl Joseph
Gust, George Arthur
Hackett, Robert Edwin

2nd Lt. (Temp) to 1st Lt. (Temp):

Hagood, John Truman
Halpin, Zachariah
Harder, Russell A.
Harrell, Gus Willard
Hartwell, Stephen
Harvey, Stephen A.
Hawickhorst, Frederick Harry
Hosch, Frank Charles, Jr.
Hiers, Claude Waterman
Hill, Edward Caldwell
Hill, Frank
Hohs, Robert Lee
Hoover, Charles Alfred, Jr.
Hord, J. T.
Hornby, Wallace Richard
Hotchkiss, Jack Plummer
Hudson, Robert Hartfield
Itule, George John
Jackson, Errit Tolbert
Jacobs, Bernard N.
James, Wm. Bruno
Jeffers, James Spann
Jenkins, Edward Nevell
Johnson, Lewis Somervell
Johnson, Ray Arthur, Jr.
Johnson, Samuel Herman
Johnson, Walter Thomas
Johnston, Alexander Thompson
Johnston, Robert Bradt
Jones, Joseph W.
Jones, Randall Philip
Kennedy, Green I.
Kinsey, George W.
Kirkpatrick, William Benjamin
Kisseberth, Irving Maurice
Klein, Robert Brinsley
Kling, John David
Kundra, Paul Robert
Langbehn, Harold Eugene
LaPointe, Frank Albert
Larremore, Gene Floyd
Lawson, Ralph Pierce, Jr.
Leeds, Kent Herbert
Leopold, Paul F.
Lysek, Stanley Walter
Maki, George John
Martin, Rupert Elmer
McKenna, Charles Michael

2nd Lt. (Temp) to 1st Lt. (Temp):

McNish, David Kelley, Jr.
Menown, Donald Eugene
Mills, Richard Gordon
Mitchell, Cheney Compton
Mrakava, Michael Joseph
Niland, Jack Newell
Nonas, Adolph Elliott
Oliver, George Chamberlain
Olson, Orving Charles
Owen, Edward Kellerman
Pado, Ernest W.
Parent, Robert John
Perry, Lewis Frederick
Pickup, Michael
Pierce, Curtis Lee
Porter, Jim S.
Raymond, John Donald
Reardon, John
Reed, Earle Duncan
Richardson, James Patrick
Rising, George R.
Risney, Cecil John
Roby, Frank Helmuth
Roseman, Isidore Solomon
Ross, Donald Eugene
Roth, Theodore
Rowe, Stanford Huntington
Runck, Reno F., Jr.
Sanford, Richard White
Sause, Oliver Lawrence, Jr.
Schacht, Edward Laurence
Schlosser, Joseph Duncan
Schoen, Arnold Frederick, Jr.
Schupp, Robert G.
Selover, Victor Russell
Singer, Henry
Slagle, Marion Aldon
Smith, Lawrence Price
Smith, Thomas Baremore
Snider, Ross Franklin
Srebnik, Raymond
Starr, Philip Comfort
Szymkiewicz, Joseph Konstantyn
Thalo, James Sparks
Thomas, Luther David, Jr.
Titko, Andrew
Toole, Mack
Torcellini, Edmund Edward

2nd Lt. (Temp) to 1st Lt. (Temp):

Vallee, Albert John
Van Nostrand, Robert Gaige
Vestal, William Arthur
Waflor, Harold Charles
Ward, John Edward
Webb, James Ruffin
Webb, Norman Clyde
Weil, Adolph Sigmund
Weller, Charles Eckenrode
Wellman, William Emory
Wickwire, Parker Everington
Williams, Sears
Williamson, Edwin Holt
Winsor, James Kenneth
Wood, Henry Bradford, Jr.
Young, James L.
Zanetos, Nick
Zarger, Edward Augustus

ment and methods of finding directions in the field both by day and at night. Trainees are taught how to dig slit trenches and fox holes. Men learn how to move in squad columns, as skirmishers, in squad wedges, how to fall while carrying a rifle, how to crawl and creep under fire.

Night operations find the trainees going into the field in units divided into two sections. One section is taken out under the cover of darkness and hidden north of the drill field. The remaining section goes out looking for the hiders, using extended order drill tactics. If the seekers find the hiders, they are considered the winners. If, however, the hiders succeed in staying hidden, they win.

The two five-mile hikes are made with the trainees carrying gas masks, cartridge belts and canteens. Periodically the officer in charge of the hike yells "gas!" or blows his whistle indicating "air raid." The ten-mile hike is made under full pack with the trainees going into bivouac for the night.

The course is rapidly becoming one of the most popular in basic school. It is taught with a great deal of realism and the constant reminder that the methods given may someday save the lives of many Signal Corps men.

XI

Purchases:

NEW PROCUREMENT DISTRICT

In accordance with authority granted by the Commanding General, Headquarters, Services of Supply, under date of November 5, 1942, steps have been taken to establish a Signal Corps Procurement District in the vicinity of Fort Monmouth, Asbury Park, New Jersey.

This new procurement district will contract for and procure radio transmitting and receiving apparatus, including electronic devices for sound recording, sound and direction detection, communications, controlling and measuring; other communication equipment, including telephone, telegraph and signaling apparatus and wire, cable and accessories; and experimental research and development equipment of like nature.

This district will operate as an exempted activity without geographic limits under the supervision of the Chief Signal Officer.

The procurement district will consolidate, control and prevent duplication of the procurement functions now being performed by the Signal Corps Radar Laboratory and the Signal Corps General Development Laboratory by simplifying procedure, obviating inconvenience and delay, reducing personnel, and promoting efficiency by consolidating these procurement functions into one procurement district.

Price Adjustments:

Numerous additional conferences have been held with companies assigned to the Signal Corps by the War Department Adjustment Board, relative to overall profit adjustments. Agreements have been reached with several companies. One signed agreement involved a refund of $1,161,000.

XII

Resources:

BERYLLIUM COPPER IN SIGNAL CORPS EQUIPMENT

Beryllium copper is an alloy which is finding a comparatively small but important place among the materials of Signal Corps equipment. The alloy has great strength combined with good electrical heat conductivity and resistance to wear. When properly heat treated, beryllium copper exhibits a remarkably small amount of elastic drift or hysteresis compared to other bronzes and to steel. This characteristic has brought increased use of the material for calibrated springs and instruments of all kinds, where accuracy of spring properties is vital, as well as in the electrical field, wherever maintenance of constant contact pressure is desired.

Signal Corps items made of beryllium copper are switch or relay contacts of the spring type, potentiometer arms, washers, relay springs, tube socket connectors, rotary switch contacts, and similar electrical parts. Expansion of the electrical indicating instrument industry has resulted in an increased demand for beryllium copper springs of fine quality and accuracy. Its advantages are calibrated tension, high fatigue resistance, high elastic modulus, and excellent electrical conductivity.

The Signal Corps does not require a very large over-all quantity of beryllium copper, but the quantity it does need is highly important. The only suitable substitute in many cases is phosphor bronze, which requires another strategic material -- tin. Allocations of beryllium copper to Signal Corps suppliers are conditioned by its requirement in chemical and oil industries and other places where spark hazard is serious, since safety tools used under such conditions are usually tipped with "low sparking" beryllium copper to minimize the danger of explosions.

SIGNAL CORPS TECHNICAL COMMITTEE

Approvals by S.O.S.:

1. The Commanding General, Services of Supply, has approved the following Military Characteristics in accordance with recommendations of the Signal Corps Technical Committee:

Teletypewriter Set TC-16-( ):

This consists of a typing reperforator unit with standard communication keyboard and a transmitter distribution unit. It can produce a perforated and printed tape from received line signals and retransmit simultaneously or later as desired. It can also transmit a perforated and printed tape simultaneously for home copy or later retransmission. This set can be used with the standard Signal Corps Telegraph Printer Set EE-98 to produce printed page copy. It will be used at points where relaying between different circuits is required and at message centers using teletypewriter equipment. Telegraph Printer Set TC-16-( ) is arranged to operate on 115 or 230 volt, 50 or 60 cycle supply, or 110 volt dc supply. Provision for 25 cycle, 115 or 230 volt operation can be made when required by furnishing an alternate rectifier unit. For transportation the equipment will be placed in suitable packing cases, the main case to be arranged for a table when desired.

Interphone Equipment RC-99:

This equipment, for use in vehicles in conjunction with Radio Sets SCR-510 and SCR-610, consists of components of standard interphone equipment with the exception of one new control item, Control Box BC-739. The only difference in the installation of Interphone Equipment RC-99 in different type vehicles is in the number of Control Boxes BC-606-A used. This equipment can be used in either 12 volt or 24 volt vehicles by using the proper interphone amplifier.

Telephone Repeater Set TC-29-( ) (Voice Frequency, 4-Wire):

Consists of Telephone Repeater EE-99 which is a four-wire, voice frequency device, and necessary auxiliary equipment for its operation in the field. It is powered either from dry cells or from a 12 volt storage battery through a power pack. The dry cells or the power pack without the storage battery may be housed within the portable wooden case in which the set is assembled.

Repeater Set TC-18 (Terminal):

This set, the major component of which is Repeater TG-30 (Terminal) will provide teletypewriter or manual telegraph transmission over long field wire lines or open wire lines. This unit will operate between neutral type terminal instruments and either a two-way path polar system (British) or a type B polarization system. The repeater is capable of transmitting and receiving 60 speed teletypewriter signals over line sections made up of about 40 miles of field Wire W-110-B under wet weather conditions, or approximately 150 miles of 104 mil copper open-wire line.

Repeater Set TC-19 (Intermediate):

This item is to be located at an intermediate point on a field wire or open wire line which is equipped with Repeaters TC-18 (Terminal). It will operate on a line using either two path polar system (British) or type B polarization system. Only one intermediate repeater is to be used between a pair of terminals, and it is anticipated that such an arrangement will provide satisfactory telegraph service over 80 to 100 miles of Wire W-110-B under wet weather conditions.

Projector Equipment PH-408:

This equipment, known as Special Service "J" Kit, is used to project 16-mm sound motion pictures. It is intended to entertain up to at least 1,000 men. The equipment consists of two commercial 16-mm sound projectors, one commercial 55-watt public address amplifier, one 9' x 12" screen, one power unit and necessary accessories and auxiliary components for operation.

Radio Set SCR-555-( ):

This equipment is intended to be used for intelligence purposes, primarily by Radio Intelligence Companies, to locate enemy transmitters operating within the frequency range of 18 to 65 megacycles at any distance where the transmitter can be heard. The equipment is transportable in trucks, open trailers, or aircraft. It is broken down in units, each of which is of such size and weight that it can easily be carried by hand by two men and is so constructed that it can be placed in operation or disassembled in less than thirty minutes by six men.

Radio Set SCR-556-( ):

The description of this set is similar to Radio Set SCR-555-( ) above, except that it covers the frequency range of 65 to 140 megacycles.

Recording Equipment RC-169-( ):

This is a general purpose sound recording equipment complete with all accessories, packed in a single weather proof packing case. The unit will be capable of being carried by one man. The purpose of this equipment is for field or office use in recording dictation, conferences, telephone, telegraph or radio messages, and for reproducing the recorded material aurally or electrically into wire lines or into radio sets. Power for operation is from either a 115-230 volt, 50-60 cycle, power source or 12 volt storage battery.

Recording Equipment RC-179-( ):

This equipment consists of a portable recorder reproducer unit and a portable transcription unit both of which will be contained in a case provided with lugs for permanent mounting on a table, bench or in a vehicle. The purpose of this equipment is for field or fixed station use by radio intercept organizations for continuous recording and transcription of radio telegraph and telephone messages. The equipment will be capable of operation from 115-230 volts, 50-60 cycle power source and will be operable during transport over moderately rough roads or terrains and when tilted 10 degrees from horizontal in any direction.

2. The Commanding General, SOS, has approved the Revision of Military Characteristics as follows:

Radio Set SCR-503-( ):

This item is to be composed of 3 units each of which will be independent in operation. Two of these units, which cover the frequency ranges of 100 kilocycles to 1000 kilocycles and 1000 kilocycles to 3 megacycles have been completely developed and are standard equipment for issue to Radio Intelligence Companies. A third unit is being developed to cover the frequency range up to 18 megacycles. This action is taken to increase the number of units from 2 to 3 thereby increasing the upper frequency limit from 3 megacycles to 18 megacycles.

Radio Set SCR-300-( ):

This is a small portable transceiver weighing approximately 35 pounds. It is for advance units of Field Artillery and Infantry Units. The set is similar to Radio Set SCR-195 in physical size, weight and appearance, the principal difference being that Radio Set SCR-300-( ) is frequency modulated while Radio Set SCR-195

is amplitude modulated. This action is taken to decrease the minimum range from 5 to 2 miles; to increase the maximum weight from 25 to 35 pounds; to limit the frequency coverage from 3 bands to one band from 40 mc up to 48 mc; to supplement the power supply by providing a light dry cell battery capable of 4 hours operation, by making provision for an additional heavy dry cell battery capable of not less than 12 hours of continuous operation; to provide for breaking the set down into two packages for transportation purposes. Development is to be continued on a wet cell battery, capable of being charged, to supply necessary voltage for this set.

Radio Set SCR-612-( ):

This receiving set consists of two units or cabinets, one housing the radio receiver and the other containing the power supply. Both units shall be so designed that they are suitable for either standard relay rack or table mounting. The receiver has an output jack for connection to a standard loudspeaker which is a separate item. The set covers the frequency range from 100 to 20,000 kc in not more than eight bands and in this range it will respond to three types of signals, namely: amplitude modulated, continuous wave telegraph over the entire band, and frequency modulated signals over the band 2,000 to 20,000 kcs. The set is to be used as part of the mobile radio direction finder central and the mobile radio intercept central. This action is taken to provide a power supply suitable for operation from ac power sources of 115 and 230 volts, plus or minus 15 per cent, 50-60 cycles. The receiver shall be capable of operation with power supply unit eliminated and the substitution of suitable battery, dynamotor or vibrator for operation from a storage battery supply. The power unit shall conform to and shall be interchangeable with, the power unit used with Radio Sets SCR-613 and SCR-614.

Radio Set SCR-613-( ):

This receiving set consists of two units or cabinets, one housing the radio receiver and the other containing the power supply. Both units shall be so designed that they are suitable for either standard relay rack or table mounting. The receiver has an output jack for connection to a standard loudspeaker which is a separate item. The set covers the frequency range from 18 mc to 156 mc in not less than three bands and is capable of receiving continuous wave and both amplitude and frequency modulated signals. It is to be used by Radio Intelligence Companies in connection with intercept and direction finder centrals. This action is taken to provide a power supply identical with Radio Set SCR-612-( ) described above, which power unit shall be interchangeable with power units used with Radio Sets SCR-612-( ) and SCR-614-( ).

Radio Set SCR-614-( ):

This receiving set consists of two units or cabinets the same as those for Radio Sets SCR-612-( ) and SCR-613-( ) described above. The receiver also has an output jack similar to these sets. It is used as a part of mobile radio direction finder central and mobile radio intercept central and for other intercept applications. This action is taken to provide power supply identical with Radio Set SCR-612-( ) described above, which power supply is interchangeable with Radio Sets SCR-612-( ) and SCR-613-( ).

Radio Set SCR-597-( ):

This radio set is to be used in Division Corps and Army Nets, Army Air Forces' long distance nets, in air support units for relatively short telegraph and telephone communication and in various installations in aircraft warning and pursuit interceptor systems. This action is taken to eliminate all mention of installation of this radio set in a truck (Truck K-53).

Radio Set SCR-504-( ):

This is a direction finding receiving set, suitcase mounted, with frequency range 100 kc - 65 mc. This action is taken in order that the weight of the set may be increased by about 5 pounds due to the necessity of using steel in place of aluminum and to include a power unit to provide battery charging from a 6 or 12 volt storage battery.

Signal Lamp Equipment SE-11:

This is a small portable Signal Lamp Equipment with medium ranges for visual code signaling. The equipment weighing about six pounds, consists of Signal Lamp M-227, open type sight, a light tripod gun stock, spare bulbs, goggles, remote control wire complete in weather proof carrying case. This action is taken to change the military characteristics with reference to the beam width change feature to read as follows: "Beam width to be set at 8 degrees at 1000 yards".

3. The Commanding General, SOS, has approved the standardization of the following items:

Processing Equipment PH-406:

This is a combination processing equipment outfit for processing negatives and prints from 35-mm to 4" x 5" prints. The

item consists of one Omega Enlarger, Model D-11, with modified base consisting of an iron disk. This enlarger can be operated on either 110 volts AC or on 6 to 8 volts DC. All items comprising this equipment will be packed in two trunks of identical outside dimensions. This action is taken in order that Signal Photographic Companies may be issued the minimum amount of equipment necessary for the job intended.

Processing Equipment PH-395:

This item comprises a processing equipment which will be used with Identification Equipment PH-385. Items which are now standard in the Signal Corps and are being regularly issued to Photographic Companies will make up this equipment. All items are securely and safely packed in a trunk which has a small case permanently installed therein for holding some of the smaller items.

Teletypewriter Set TC-16-( ): As above described.
Interphone Equipment RC-99: As above described.
Telephone Repeater Set TC-29-( ) (Voice Frequency, 4-Wire): As above described.
Radio Set SCR-300-( ): As above described.
Projector Equipment PH-408: As above described.

Facsimile Equipment RC-58-( ):

This is a tape transceiver equipment for facsimile transmission on paper tape of either handwritten material or text prepared on a special tape typewriter. The facsimile equipment will operate over radio or high quality voice circuits. This equipment will work satisfactorily over 15 miles of Wire W-110-B and over 17 miles when used in conjunction with Radio Set SCR-193-( ) in the moving vehicle. It has been found that a greater range is obtained with facsimile than with voice transmission using the same radio set. It was also found that tape facsimile equipment provides greater speed of transmission than voice or telegraph.

Projector Equipment PH-412:

This is a complete 35-mm sound motion picture installation. The purpose of this action is to combine various standard items into one equipment for the convenience of the Motion Picture Service. The equipment will be permanently installed at posts, camps and stations.

4. The Commanding General, SOS, has approved the reclassification of the following item from Substitute Standard to Standard:

Radio Set SCR-555-( ): As above described.
Radio Set SCR-556-( ): As above described.

5. The Commanding General, SOS, approved the reclassification of the following item from Standard to Substitute Standard:

Telephone Central Office Set TC-4:

This set consists of Switchboard BD-96 and necessary auxiliary equipment for its operation in the field. It is used at division and similar headquarters. This action is taken as standard Telephone Central Office Set TC-12 will probably satisfactorily fill the military requirements.

6. The Commanding General, SOS, has approved the classification of the following items as substitute standard:

Teletypewriter Set TG-19:

This set consists of a commercial page printing unit with standard keyboard, a perforating unit and a transmitter unit together with commercial steel table and commercial rectifier. The page printing teletypewriter unit is capable of transmitting or receiving electrical teletypewriter signals and at the same time making a page copy. The tape perforating unit when operated by the keyboard either locally or at the same time signals are being transmitted to a line, make a perforated tape. This tape when passed through the transmitter unit transmits electrical teletypewriter signals to a line or local circuit. The equipment is arranged for operation on 115 volt, 50 or 60 cycle supply. This action is taken so that this set, Perforator Transmitter TG-23 and Reperforator Set TG-25 may be used as stop-gap equipment until Telegraph Printer Set TC-16-( ) is available for use.

Perforator Transmitter Set TG-23-( ):

This set includes a commercial standard keyboard perforator, a transmitter unit, a commercial steel table and a commercial rectifier. When the keyboard is operated manually, a perforated tape is produced. This perforated tape, when passed through the transmitter unit transmits electrical teletypewriter signals to a line or local circuit. The equipment is arranged for operation on 115 volt, 50 or 60 cycle supply. This action is taken so that this set, Teletypewriter Set TG-19 and Reperforator Set TG-25 may be used as stop-gap equipment until Teletypewriter Set TC-16-( ) is available for use.

Reperforator Transmitter Set TG-25-( ):

This item consists of a non-typing teletype equipped with series governed motor and rectifier for operation on 50-60 cycle, 115 volt power supply. It produces a perforated tape from received electrical signals and contains an automatic transmitter for sending from tape. This action is taken so that Teletypewriter Set TG-19

and Perforator Transmitter Set TG-23-( ) may be used as stop-gap equipment until Teletypewriter Set TC-16-( ) is available for use.

7. The following item was reclassified from Limited Standard to Substitute Standard:

Theodolite ML-47-( ):

This instrument furnished in a hardwood carrying case, is used for sighting meteorological balloons to determine angular elevation and azimuth. It has a right angle prism at the center of the telescope tube whereby an observer is able to look constantly in a horizontal plane while sighting objects in space. The magnifying power is approximately 25 diameters. Small electric lights for night work are included in the equipment. This action is taken so that manufacture and procurement may continue on the item until development of Theodolite ML-247 is completed.

8. The following items were reclassified from Standard to Limited Standard:

Power Unit PE-53:

A portable gasoline engine driven alternator with single phase output of 115 volts, 3 kc at 25 cycles. This action is taken as a military requirement for the item no longer exists.

Reel Cart RL-16:

A 2-wheel, hand-drawn reel cart for carrying two Reels DR-4 which can be revolved for distribution or recovering wire. This action is taken in view of the proven superiority of standard Reel Cart RL-35 over Reel Cart RL-16 in weight and performance.

9. The following items were classified as Limited Standard:

Perforator Set TG-11:

This set is similar to Perforator Set TG-23-( ) described above, except that no transmitter unit is included. This action is taken as the item is no longer required.

Reperforator Set TG-13:

The typing reperforator unit used to make perforated tape from received electrical signals in Reperforator Set TG-13 is similar to the one provided as part of Reperforator Transmitter Set

TG-23-( ), described above. This action is taken as Reperforator Set TG-13 is no longer required.

Further Recommendations by SCTC to S.O.S.:

The Signal Corps Technical Committee made additional recommendations to the Commanding General, Services of Supply:

1. That Military Characteristics be adopted as follows:

Recording Equipment RC-199-( ) (High Fidelity):

This item of equipment will consist of a portable recorder reproducer unit and a portable transcription unit each of which will be contained in a case provided with lugs for mounting on a table, bench or vehicle. The purpose of this equipment is for field or fixed station use and interceptor organizations for continuous recording and transcribing radio telephone signals, particularly when speeded up, inverted or scrambled. This equipment will also be used for other wide band interceptor units. The recorder-reproducer shall be provided with standard Signal Corps headset and means of input and output monitoring. Both units shall operate from 115-230 volt, 50-60 cycle power sources and shall be operable when tilted 10 degrees from horizontal in any direction.

Radio Set SCR-551-( ):

This is a radio direction finder with frequency range of 2 to 20 megacycles and is used for tracking of friendly aircraft and for radio intelligence purposes. The equipment is transportable in trucks, open trailers or aircraft.

2. That the following items be standardized:

Maintenance Equipment ME-11:

This action deletes Maintenance Equipment ME-11 from the parts list of Telephone Central Office Set TC-4, and provides for separate issue.

Maintenance Equipment ME-30:

This action deletes Maintenance Equipment ME-30 from the parts list of Telephone Central Office Set TC-12 and provides for separate issue.

XIV

EQUIPMENT COORDINATION

(Progress Report of the Equipment Coordination Branch, Communication Coordination Division)

Telephone and Telegraph Equipment:

"Teletypewriter" is the word for it: It is planned to substitute the word "Teletypewriter" for the words "Telegraph Printer" as rapidly as possible without upsetting manufacture of name plates, preparation of technical manuals, etc. The new nomenclature will be used on all new designs.

Selection of Teletypewriter for Balloon Barrage Battalions: A study was made of teletypewriter requirements for Balloon Barrage Battalions and tentative recommendations as to types of teletypewriters to be specified have been made.

Reclassification of Reel Cart RL-16: Action was taken to reclassify Reel Cart RL-16 from "Standard" to "Limited Standard" and obtain an approved basis of issue for Reel Cart RL-25 and the substitution of "Reel Cart RL-35 or Reel Cart RL-16" in lieu of "Reel Cart RL-16" on all T/BAs and T/Os.

Reel RL-26 and RL-26-A: Due to maintenance difficulties arising from the fact that several different types of engines are supplied with these reel units, action has been taken to ensure that only those units equipped with "Briggs & Stratton" engines are shipped abroad. The proportion of units equipped with other type engines (Lauson) is relatively small, and all such units will be held in the United States. The assembling of a "Spare Parts and Maintenance" kit for the RL-26-A equipped with Briggs and Stratton engine is being studied and satisfactory results are expected in the near future.

Air Force Equipment:

Direction Finder SCR-555 and SCR-556: Military characteristics and a request for standardization were forwarded to the S.C.T.C. for Radio Sets SCR-555 and SCR-556.

Microphone T-43: Military Characteristics for Microphone T-43, to be used in place of throat type microphone when oxygen mask is not used, were submitted to S.C.T.C. for adoption.

SCR-504: Revision of Military Characteristics of SCR-504 were submitted to S.C.T.C.

SCR-551: The Air Force Equipment Section submitted military characteristics for the SCR-551 to S.C.T.C. for adoption.

Radio Equipment:

Radio Set SCR-597: In compliance with the directive of the Commanding General to reduce the number of special type vehicles, the Military Characteristics for Radio Set SCR-597 have been revised to provide for the use of Shelter HO-17-( ) as a housing unit for the equipment in lieu of Truck K-53.

Radio Sets SCR-612, SCR-613 and SCR-614: The Military Characteristics for Radio Sets SCR-612, SCR-613, and SCR-614, intercept receivers now being developed by the Signal Corps General Development Laboratory, have been recently revised to provide for the use of a power supply that is common to and interchangeable for all three sets, and to change the frequency band of the SCR-614 from 15-600 kc to 15-150 kc. Development is continuing on these receivers and their associated power supplies, but information is not presently available as to when units will be available for test.

Power Unit PE-194: Development of a small light-weight power unit, designed primarily as a power source for Radio Set SCR-284, has recently been completed and models made available for service test. This power unit is to be known as Power Unit PE-194-( ). It is believed, that by using a "family" of interchangeable generators, that it will be possible to use this same power unit with various other field and portable radio sets.

Radio Set SCR-583: Radio Set SCR-583 was designed primarily as a Cavalry set. Power output is approximately 40-watt, weight about 140 pounds complete and is carried in two packages. Frequency range is 2.1 3.1 mc. This set can be mounted on the Phillips Pack and in vehicles using either a 6 or 12-volt electrical system. Four models of this set are now in the hands of the Cavalry Board undergoing service tests.

Projector Equipment PH-408: Projector Equipment PH-408 has been standardized for use by Special Service Units. This equipment includes a dual projector and sound apparatus, and is intended for use in the entertainment of as many as one thousand men either inside or out of doors.

Radio Set SCR-510-XS: A model of Radio Set SCR-510-XS (Crystal Saver) was designed and built by the Signal Corps General Development Laboratory, with the cooperation of the Galvin Manufacturing Company and the Rauland Corporation. This set is primarily a model of the set intended to meet the Military Characteristics of Radio Set SCR-510 without using a great number of crystals. This set uses only nineteen crystals to provide eighty crystal control channels. The Armored Force Board has been designated as a testing agency for this equipment.

Reclassification of Equipment: In an effort to reduce the number of types of equipment and to eliminate equipment no longer used, action has been taken by this Branch to reclassify the following Signal Corps items: Radio Sets SCR-279, SCR-257, SCR-199, SCR-186, SCR-188, SCR-213, SCR-190, SCR-189, SCR-192, Power Unit PE-52, Frame FM-33, Carrier FM-32 and Interphone Equipment RC-44.

Special Signal Equipment:

Jungle Flashlight TL-194: It has been recommended that Military Characteristics be adopted for Jungle Flashlight TL-194 and this flashlight be standardized. The flashlight is a modified commercial type using one standard BA-30 Battery. The basis of issue to be limited to use by personnel engaged in tropical jungle operations.

Blackout Adaptor TL-122-( ): It has been recommended that Military Characteristics be adopted and a development project be authorized for a blackout adaptor capable of being used with Flashlight TL-122-( ) as manufactured by the several manufacturers and when constructed of plastic or other materials.

Meteorological Station Set SCM-13-T1: Arrangements have been made for the additional service test of a model of Meteorological Station Set SCM-13-T1 by the Antiaircraft Artillery Board, Camp Davis, North Carolina. Report of service test by Coast Artillery Board has been received and further action is being withheld pending completion of service test by Antiaircraft Artillery Board.

XV

THE SIGNAL CORPS BOARD

Reports of tests by the Signal Corps Board, Fort Monmouth, have been approved by the Chief Signal Officer during the past month on the following cases:

Signal Corps Board Case No. 462 - Radio Set SCR-268 Trainer Equipment (Restricted):

Radio Set SCR-268 Trainer Equipment is composed of Trainer BC-968-( ), and one of the standard oscillescopes of Radio Set SCR-268. Military Characteristics for Trainer BC-968-( ) were adopted in August, 1942, and the equipment was standardized.

The Signal Corps Board concluded that BC-968-( ) meets the military characteristics and the training requirements for operators of Radio Set SCR-268. The Board recommended that in addition to the basis of issue already adopted, the BC-968-( ) should be issued one each per Signal Reporting Battalion (AW Regiment) and one each Signal Organization (Aircraft Warning Special Type) being activated in the field.

Signal Corps Board Case No. 488, Supplement I - Plastic Reflector for Flashlight TL-122-A:

The Board was requested to examine and test sample plastic flashlights submitted by the Bright Star Battery Company, Clifton, N. J., to determine whether or not flashlights made of plastic and of the same general design as the Flashlight TL-122-A would be a suitable substitute for it.

The Signal Corps Board concluded that a flashlight made of plastic or other substitute material would provide a suitable substitute for TL-122-A in the military service. This substitute flashlight should retain the important mechanical dimensions of the TL-122-A in order to simplify procurement and supply of adapters for special military usages.

It was recommended that:

The Military Characteristics for Flashlight TL-122-A be amended to permit the procurement of a flashlight constructed of iron, steel, plastic, or other suitable material.

The Signal Corps General Development Laboratory be directed to amend technical specifications and prepare dimensioned procurement

drawings for Flashlight TL-122-( ) constructed of iron, steel, plastic or other suitable material.

Procurement of Flashlight TL-122-( ) be based on the dimensioned procurement drawings to insure interchangeability of parts for Flashlight TL-122-( ) constructed of various materials and made by different manufacturers.

Signal Corps Board Case No. 351, Supplement I - Portable Keyers for Use with Code Practice Equipment:

The problem of producing a portable keyer approximately one-half the physical size of Keyer TG-10 has come to the front. A new procurement of Keyer TG-10 is about to be made and it was thought that a considerable saving both of strategic materials and money could be effected by the adoption of this portable keyer in place of the new standard Keyer TG-10. The Board has been requested to examine portable keyers developed by the Gray Manufacturing Company, Lon-ga-tone Manufacturing Corporation, and the International Telephone and Radio Manufacturing Corporation to determine which, if any, was suitable to replace Keyer TG-10.

Other Signal Corps Board Cases:

The Board also considered cases involving Storage Cabinet and Angle Iron Racks for 1½-ton Cargo trucks, reported unfavorably on a Soundscriber Headset of a commercial type, cancelled proposed tests on the Select-O-Phone automatic telephone system, and informed the Quartermaster General of the results of tests of service shoes with modified uppers.