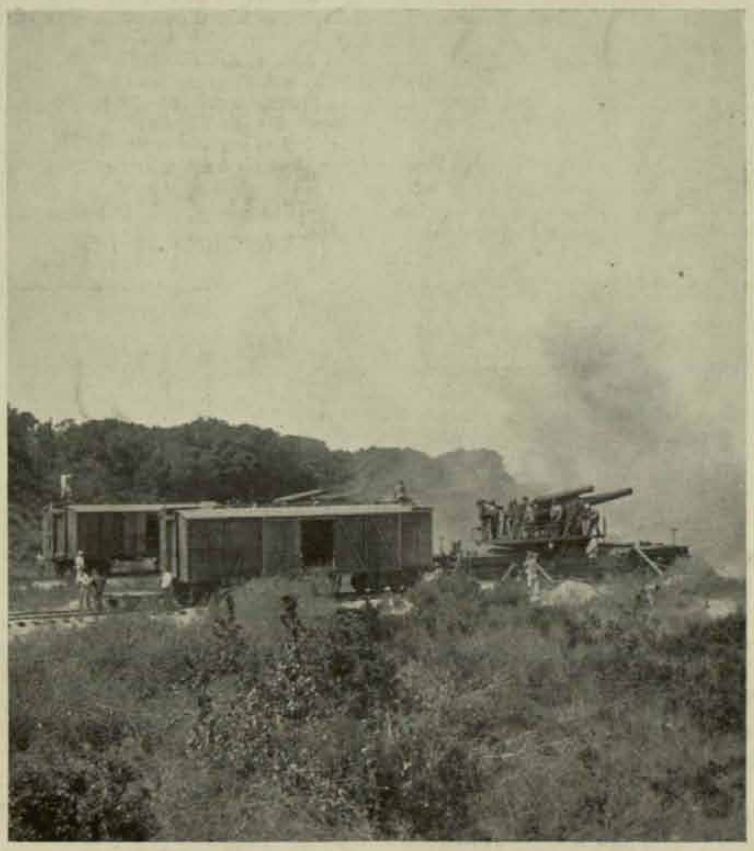
COAST ARTILLERY JOURNAL



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THE COAST ARTILLERY JOURNAL

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Notes of the Coast Artillery Association

The U.S. Coast Artillery Association Meeting at Fort Monroe

The Association meeting held at Fort Monroe, Virginia, on May 27-28, 1932, was an unqualified success and, it is hoped, marks the beginning of a series to be held annually where all members may gather in good fellowship for the interchange of ideas and to observe the progress being made in the Coast Artillery Corps.

The success of the meeting was due in large part to the excellent planning and cooperation of Colonel H. E. Cloke, the Commanding Officer at Fort Monroe, and his staff of assistants. This cooperation was evident throughout the entire garrison. Each visitor, no matter what his component, was aware of the spirit of hospitality which pervaded the entire period. The great diversity of events scheduled for the entertainment and instruction of the members left nothing to be desired by the members.

The arrangements made by the local authorities for the reception of the visitors were superb. Registration was conducted in the School building where the visitor signed up for the recreational activities in which he desired to participate and was furnished a well prepared book of information including a program of events. From this time on he was in the hands of the Fort Monroe garrison who furnished transportation and guides. The trip around the School and post was greatly enjoyed especially by those who had not visited Monroe in recent years.

During the afternoon of the first day the Association was honored by the presence of Honorable Patrick J. Hurley, the Secretary of War, who flew from Washington to be its guest and to witness the demonstration firings. At the conclusion of the demonstrations all present were given the opportunity to meet the secretary. Afterwards Mr. Hurley made a short informal talk which was extremely pleasing and well received. The Beach Club was again the scene of festivities that night when a dance was held.

The following day (Saturday) began with a review in honor of the visitors. The President of the Association, Major General John W. Gulick, Chief of Coast Artillery, received the review. Standing with him in the reviewing line were many of the distinguished guests. Following the review the business meeting of the Association was held in the Liberty Theater. General Gulick presided and opened the meeting with a short talk. Colonel H. E. Cloke, Vice President, U. S. Coast Artillery Association, then read the report of the Executive Council which dealt with the activities and accomplishments of the Association in the short period of its existence. At this time the sketch of the trophy to be awarded by the Association was exhibited. The Secretary-Treasurer's report was also read, covering the financial condition of the Association and the Coast Artillery Journal.

Following the reports of the officers the President called upon the representatives of the various local chapters for remarks. General John J. Byrne spoke for the New York chapter, the largest in the country. Other speakers were: Colonel H. P. Newton, C. A.-Res., Washington; Colonel F. E. Johnston, U. S. A., Ret., Washington; Colonel John L. Roberts, U. S. A., Ret., New York; Colonel H. L. Spencer, 211th C. A. (Mass. N. G.), Boston; Colonel H. J. Watson, U. S. A., Ret., Cleveland; Colonel S. B. I. Duncan, 198th C. A. (Del. N. G.); Colonel Philip Hurley, 242d C. A. (Conn. N. G.); Major E. B. Gray, C. A. C., Richmond; Captain C. H. Fleming, C. A.-Res., Pittsburgh; Captain J. L. Hayden, C. A. C., West Point.

The following resolution was moved at the close of the meeting and unanimously adopted:

> "Resolved that it is the unanimous vote of the asembled members of the U. S. Coast Artillery Association and their desire to extend to the Chief of Coast Artillery, the District Commander, Third Coast Artillery District, their staffs, and the regular army garrisons on duty at Fort Monroe and Langley Field their sincere thanks and appreciation for the many courtesies extended and the delightful hospitality which has contributed so much to the happy success of the Second meeting of the Association."

The dinner dance at the Hotel Chamberlin on Saturday night officially ended the meeting although many chose to continue their pleasant stay over the following holidays. The attendance from a distance was not high but this was expected due to the economic situation. Considerable impetus was given by the attendance of Brig. Gen. John J. Byrne, (N.Y.N.G.) commanding the New York Coast Artillery National Guard Brigade and fifty New York Coast Artillery National Guard Officers. The interest of these members is worthy of special notice due to the distance traveled. Quite surprising was the number of regular officers who attended. There were about thirty of these present, mostly from Washington. Many had not been stationed on a Coast Artillery post for years and enjoyed the visit as much as any of the others. The turnout of the Reserve was somewhat disappointing. The local garrison and invited guests from surrounding communities swelled the crowd at the demonstration to sizeable proportions and all present were enthusiastic for a repetition of the meeting next year. The Executive Council wishes to announce that future annual meetings of this nature rest in the hands of the membership of the Association.

THE UNITED STATES COAST ARTILLERY ASSOCIATION

"The purpose of the Association shall be to promote the efficiency of the Coast Artillery Corps by maintaining its standards and traditions, by disseminating professional knowledge, by inspiring greater effort towards the improvement of materiel and methods of training, and by fostering mutual understanding, respect and cooperation among all arms, branches and components of the Regular Army, National Guard, Organized Reserve and Reserve Officers' Training Corps."

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"The following shall be eligible for Active membership:

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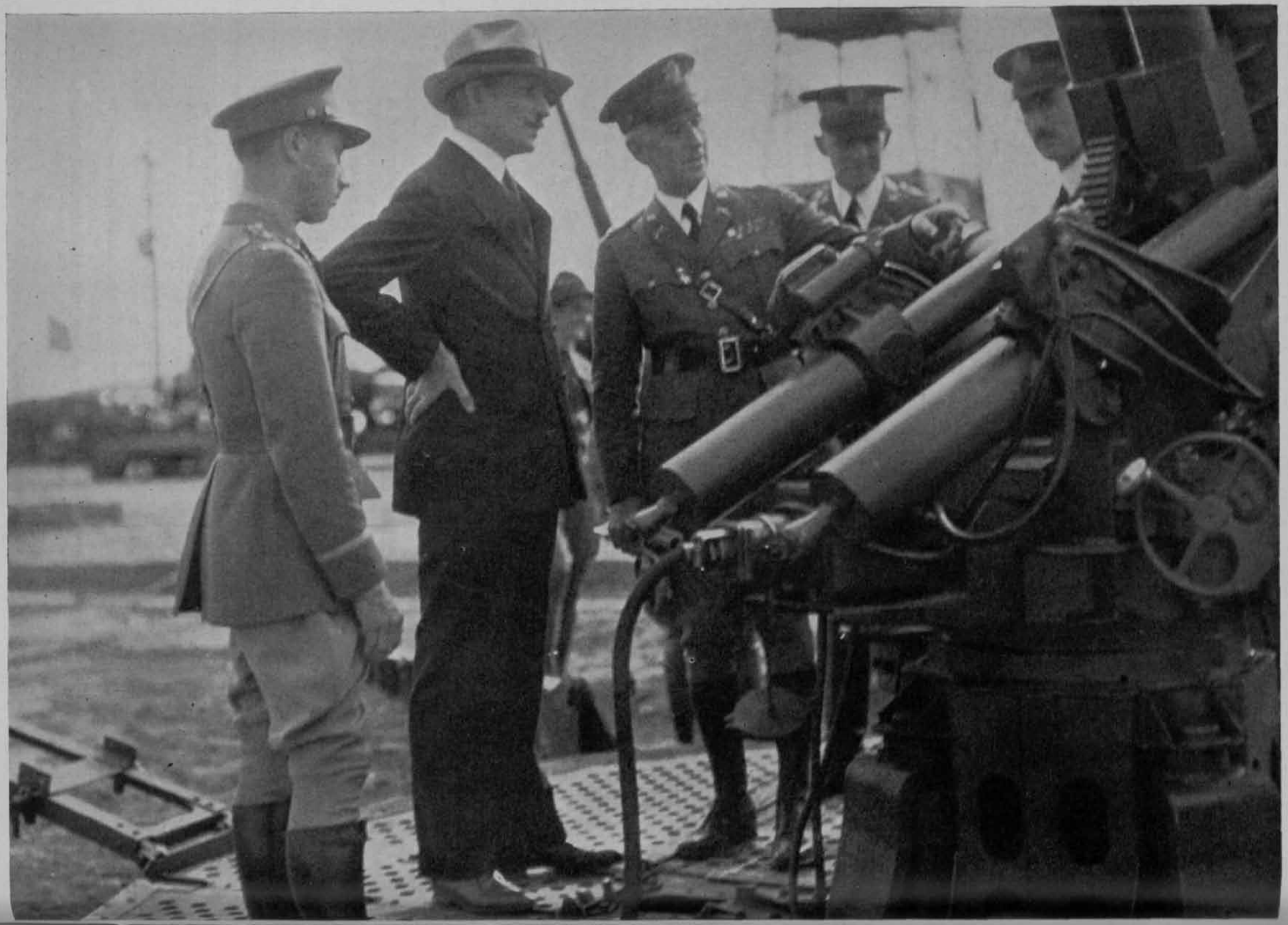
"The following shall be eligible for Honorary membership:

a. Civilians who have demonstrated their interest in national military preparedness.

b. Persons who have rendered distinguished services to the Association or to the United States."



Harbor Defense Command

By Major Kenneth McCatty, C. A. C.

THERE are two distinct major problems to be solved in preparing a Coast Artillery command for battle. I refer to the major subdivisions of the science of Coast Artillery, Artillery Technique and Battle Command.

In artillery techinque we have reached, through the medium of the TRs and CAMs, aided and abetted by our own valuable COAST ARTILLERY JOURNAL, a fair degree of unformity, so that we can count with considerable certainty on hitting any target that moves at six miles per hour through mid-range in perfect visibility when the battery commander is ready to fire. We can even point with pride to practices fired under conditions not so perfect, in which good results were attained. On the subject of battle command we are not so sure of ourselves. We do not get very much opportunity to study the subject or judge of the results we should justly expect.

There are several reasons for this. One is that our battle command training, under the generic name of "communication drill," is usually limited to the direction of the hypothetical fire of a few undermanned batteries at hypothetical targets moving on imaginary and occasionally, tactically unsound missions. Even our annual command post exercises are usually depressed under the burden of so many secondary missions that tactical training is relegated to obscurity. The result of all this is a remarkable dearth of recorded experience and opinion to help the staff of a Harbor Defense Commander to provide a simple and smoothly running machine for the many functions of battle command. It is hoped that some discussion of this very important subject may be stimulated.

When faced with the problem of organizing a Harbor Defense Command, the Harbor Defense staff finds very little in the training regulations to guide it in assigning detailed duties to the command post personnel. TR 435-300 makes graceful reference to the Staff Officer's Field Manual, which in turn enumerates in age-old platitudes what should be expected of an efficient staff (more help to the commander than to the staff) and there the matter is dropped. Tables of organization throw no additional light on the picture. Experience and individual idiosyncracies guide, and the results are, to say the least, in some cases remarkable. In equipment the command posts reflect the characters of the succession of commanders, and I would venture to state that in no two of our Harbor Defenses are the command installations more than approximately parallel. Gadgets and plug boards are the rule; lacking these we find subordinate commanders charged with control of their commands and given no more equipment than an observing instrument and a telephone. One feature we find common to all, the universal transmission of command through the ubiquitous telephone operator, adding the incapacity of an untrained mind to the inefficiency of an antiquated telephone.

We have, at these harbor defenses, just been through a command post exercise in which every element of our administrative, command, intelligence and communications system was completely manned, with sufficient personnel to control and direct fire, and to transmit and set data on all armament. The command system was the one described in this article. Needless to say, the harbor defense will not be named nor the armament described. To show the completeness of the test imposed on the system, I will simply state that we served, twenty-four hours a day for ten days, a Harbor Defense organized into five groups, with ten major caliber batteries, seventeen secondary batteries, fourteen searchlights and mine command, on a front of twenty-five miles. Our organization worked with gratifying smoothness despite many shortcomings in equipment and lack of experience in all ranks in the methods used. The following paragraphs are a discussion of the principles involved in the command system we developed, with a detailed description of the duties of the individual members of the command post details, submitted in the hope that they may be some value to some other operations officer, and in the further hope that we may sometime acquire as standard a system of fire direction as we have of fire control.

About the tactical organization of the command nothing will be said, as this subject is much under discussion. In our grouping we followed only one principle, facility of command. There are many factors in every situation that indicate departure from the prescription that only armament covering the same water area be included in each group, if we interpret this to mean also armament of generally similar range. We simply asked the question of each battery, "How can fire of this battery be most simply and effectively directed?" and the answer dictated its assignment.

Harbor Defense Headquarters

The Harbor Defense is nothing more than an artillery strong point in the front line and as such must operate in closest liaison with all supporting forces. It cannot withstand a determined attack alone nor can it predict the intentions of an enemy with the intelligence facilities of its own troops. The Harbor Defense Commander is concerned with the administration of his command, the repulse of seaward and possibly air attack, support of field forces, liaison with naval forces. and the coordination of intelligence from all sources. His liaison and communications must be perfect, and the efficiency of his command is determined largely by the rapidity and smoothness with which his command system functions. He must decentralize in order that he will not collapse under the burden of his manifold

duties. In our organization we anticipated the ideas expressed in General Kilbourne's article and divorced the seaward action from all other functions of command, leaving the Harbor Defense Commander free to control the broader phases of the battle. A Seaward Defense Command was organized, which consisted of a Seaward Defense Commander, a Seaward Defense Staff and the five groups. This might have been called a groupment, but the term would have been misleading. The control of the Seaward Defense Commander over his command was tactical only.

The most efficient staff is helpless without proper means to permit it to carry out its mission, so our first concern was to devise the basic principle on which our machine would operate. Experience told us that the two outstanding failures in past exercises had been (1) delays in command due to congested communications and (2) errors in command due to transmission through intermediaries. To reduce the possibility of the recurrence of these failures we evolved, as a basis on which to work, two principles. These were as follows:

(1) Two complete and independent communication nets, command and intelligence; the first carrying commands, instructions, orders and intelligence downward through all echelons, the second carrying intelligence and reports upward.

(2) Direct communication between the officer issuing and the officer executing a command, with the elimination of transmission through intermediaries.

The layout is partially depicted in the Communication Diagram, Figure 1. You will note that the command net is broken at each echelon. This permits uninterrupted functioning of each headquarters while receiving commands from the next higher. Note the unbroken intelligence lines from the battery command post to the H. D. C. P. This permits intelligence to be flashed through the entire intelligence chain and still be absorbed by each intermediate command post.

We had a time putting across our direct communication principle on some of our group commanders who had spent the greater part of their service in training telephone operators. The usual complaint was that it interfered with more important duties. There is no more important duty than to determine the intentions of the higher commander. The "more important duty" in most cases is a grand stand seat for the show outside. I can quote one incident to prove the effectiveness of direct communications. The Operations Officer, Seaward Defense, gave an incomplete command to the Group Commander, Group III. A correction was immediately asked and given; total time of the entire transaction, command and correction, about ten seconds. I hesitate to estimate the time that would have been involved in this simple transaction through a chain of telephone operators. There were other incidents in this and past exercises that would prove the soundness of this principle, but my space is limited.

We will now proceed to a detailed account of the duties of the staff and command post personnel of the three echelons of command, Harbor Defense, Seaward Defense and Group. A skeleton organization only is described. Actually it must be augmented to provide reliefs for personnel. To permit continuous operation, orderlies and messengers are necessary, and in some cases assistants to the assistants are desirable. Personnel whose duties are laid down in manuals and regulations, such as searchlight crews, signal details, etc, are passed over without comment. They are fitted into the organization in accordance with the existing installations.

The Harbor Defense administrative staff needs no commentary here, as the war duties are simply an amplification of the peace functions. Our administrative sections carried on in the rear echelon of the Harbor Defense Headquarters, in much their normal manner. The forward echelon, including only the operations, intelligence and communications sections, was concentrated at the Harbor Defense Command Post.

H. D. Command Post Detail

Operations Section.
- Operations Officer.
- Operations Plotter.
- Operations Recorder.

Intelligence Section.
- Intelligence Officer.
- Intelligence Clerk.
- Assistant Intelligence Clerk.

Communications Section.
- Communications Officer.
- Assistant Communication Officer.
- Message Center Personnel.
- Maintenance and Operating Personnel.

You will note the absence of the Searchlight Officer. The searchlights are delegated with the rest of the armament to the Seaward Defense.

The Operations Officer issues in the name of the Harbor Defense Commander all tactical commands and orders. He does not intrude upon the tactical duties of the Seaward Defense Commander or upon the administrative functions of the Adjutant. As far as the seward action is concerned, the Harbor Defense Operations Officer has little more to do than to determine, from the intelligence at his disposal, the expected time of arrival of an enemy element within the zone of fire and to advise the Seaward Defense Commander so that the command may be alerted at the proper time, with due regard to the conservation of our forces. The operations detail consists of the Operations Plotter (Master Gunner, draughtsman), who maintains the Battle Map, and the Operations Recorder, who keeps the Operations Journal and does the clerical work in connection with field orders, etc.

The Harbor Defense Battle Map is a map of the area, mounted on a large board on the wall of the H. D. C. P. (All the maps used as battle maps in the

Fig. 1. Command and Intelligence Nets. Showing the personnel and communications for the Seaward Defense Command Post and Three Groups.

Fig. 2. Seaward Defense Battle Map. Showing Water Areas, Grid Lines, Fields of Fire for Three Groups, and the Group Centers for Plotting.

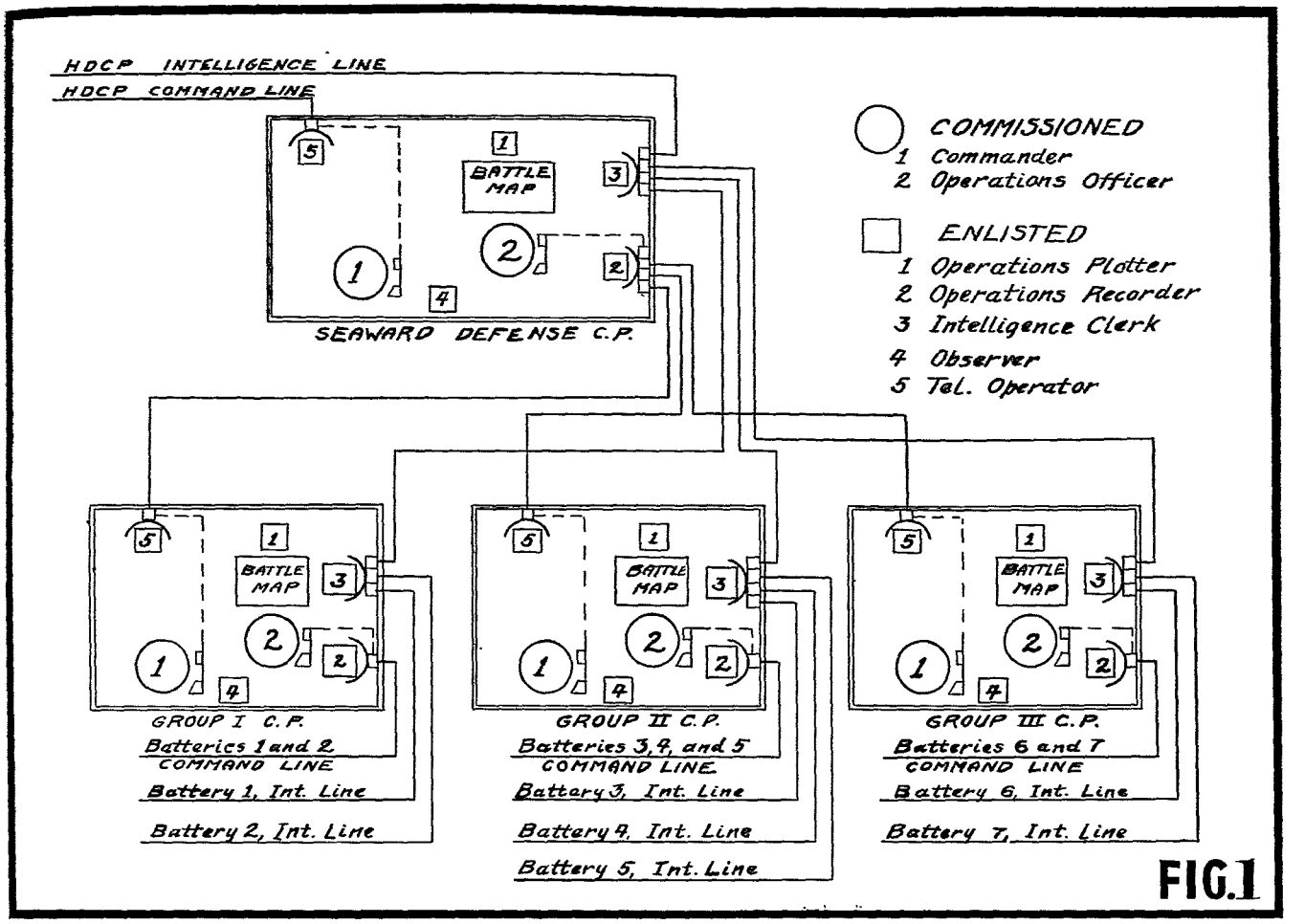

HDCP INTELLIGENCE LINE
HDCP COMMAND LINE
BATTLE MAP
SEAWARD DEFENSE C.P.
COMMISSIONED
1 Commander
2 Operations Officer
ENLISTED
1 Operations Plotter
2 Operations Recorder
3 Intelligence Clerk
4 Observer
5 Tel. Operator
GROUP I C.P.
Batteries 1 and 2
COMMAND LINE
Battery 1, Int. Line
Battery 2, Int. Line
GROUP II C.P.
Batteries 3, 4, and 5
COMMAND LINE
Battery 3, Int. Line
Battery 4, Int. Line
Battery 5, Int. Line
GROUP III C.P.
Batteries 6 and 7
COMMAND LINE
Battery 6, Int. Line
Battery 7, Int. Line

FIG. 1

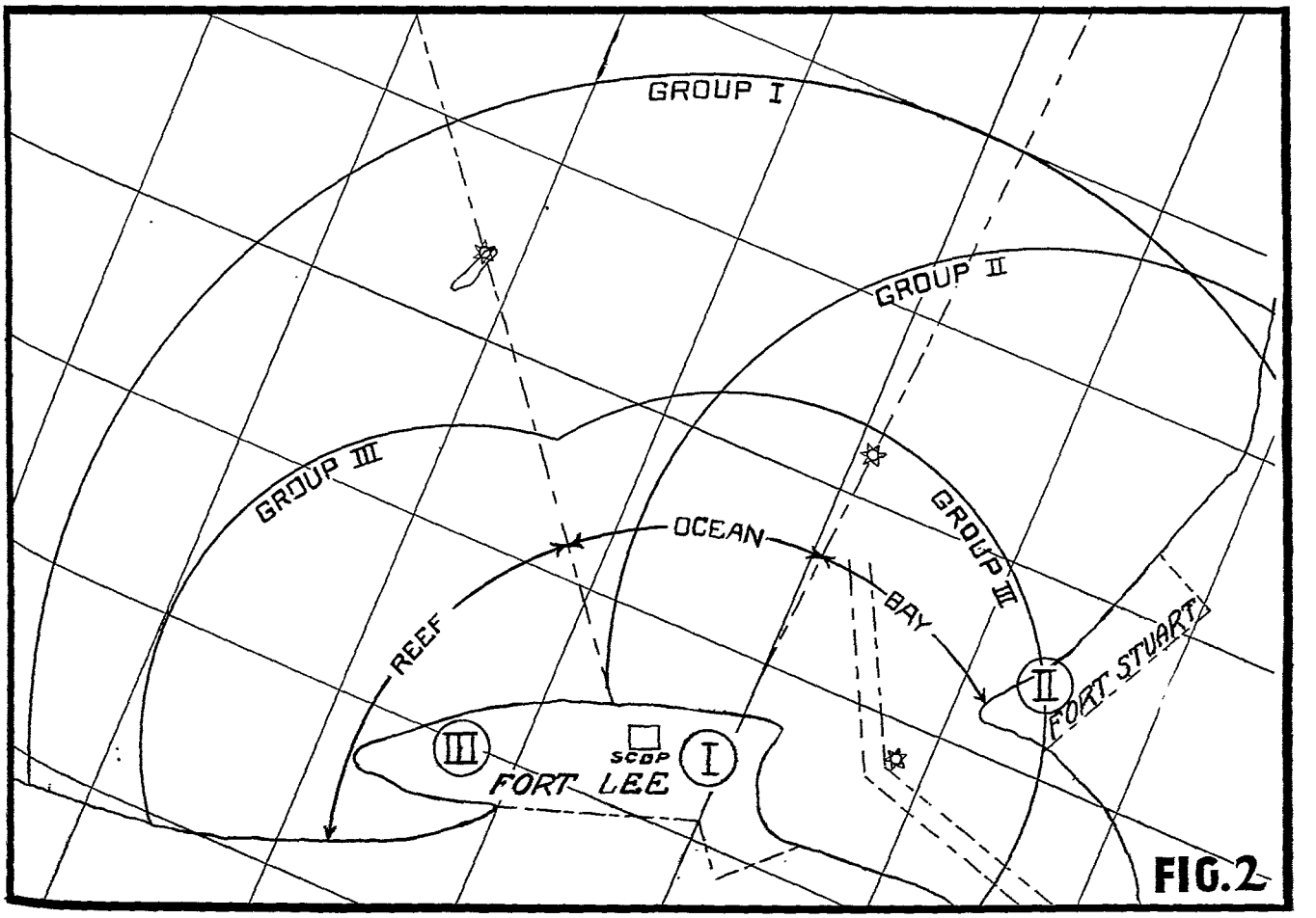

GROUP I
GROUP II
GROUP III
GROUP III
OCEAN
REEF
BAY
FORT STUART
FORT LEE
SCDP

FIG. 2

various command posts are of the same scale and edition, to eliminate confusions.) On this map appears:

(a) The seaward limit of gunfire.

(b) The water areas, coordinate lines, latitudes and longitudes.

(c) Azimuth circles around the principal observation posts, to facilitate location of targets by range and azimuth.

(d) The location of inshore patrols.

(e) Positions of supporting troops.

(f) Known locations of enemy elements.

The adjuncts to the battle map are a scale of yards and miles, arranged to pivot around centers located at the principal observation posts, a protractor, and a series of time-travel scales, for ships at various speeds. Disregarding for the present the Harbor Defense activites in connection with beach defense or field forces, the use of the battle map is simple. The Operations Plotter locates on the battle map a reported enemy element, with its speed and direction. Successive reports (normally originating with the inshore Patrol) follow the movement of the enemy. This permits the Operations Officer to estimate the time of arrival of the enemy within range and to send out the alert.

The Harbor Defense Intelligence Officer, assisted by his two clerks, receives, records, analyses, weighs and disseminates all intelligence from all sources. He is responsible for the coordination of the entire intelligence system of the command, allocation of areas for observation by subordinate units, insurance of continuous observation, and the organization of forward observation posts and patrols. He maintains liaison with the Naval Forces, Inshore Patrol, Air Service, Antiaircraft and Field Forces, particularly with a view to taking advantage of such intelligence as may be thereby accumulated. He maintains the intelligence journal and prepares the report called for by TR 210-5; this is the only office of the command in which an intelligence report is prepared. Such additional commissioned and enlisted personnel as may be necessary or available as assistants to the Intelligence Officer are employed in manning forward Intelligence Posts of the Harbor Defenses, or in supervising the functioning of the intelligence system. The Intelligence Officer may be allotted certain searchlights for observation, in which case they are withdrawn from control of the Seaward Defense Commander.

The Assistant Intelligence Clerk receives the intelligence reports over the telephone or by messenger from the Seward Defense, and through the message center from all other sources, and records all messages in the journal. The Intelligence Clerk enters the items in the G-2 Work Sheet and assists the Intelligence Officer to prepare the daily Intelligence Report. All intelligence received is, of course, immediately available to the operations section.

The functions of the Communications Section divide naturally between the Maintenance of Communications and Direction of Communications. As to how these are distributed between the officers of the section depends largely on the individuals. In our organization the Communications Officer supervised the installation and maintenance of communications throughout the entire command, leaving to the Assistant Communications Officer, the direction of the message center.

Coast Artillery readers need no introduction to the message center. As a general thing it is overdone in our field exercises, particularly when it is interposed as a link in the chain of command and intelligence. Our message center was a convenience rather than a burden, as it efficiently took care of communication to all units and services in rear of the Forward Echelon, and kept out of the way of communication within the tactical command. On these two basic principles any message center organization will work.

Seaward Defense Command Post

Seward Defense Commander.
Operations Section.
- Operations Officer.
- Searchlight Officer.
- Operations Plotter.
- Operations Recorder.
- Telephone Operator to H.D. C.P.
- Searchlight Switchboard Operator.

Intelligence Section.
- Observer.
- Intelligence Clerk.

The Seaward Defense Commander is concerned with one thing only, the fight to seaward. Protection of his flanks, rear, the roof over his head, and the support of field forces, remains in the hands of his superior. He is not responsible for intelligence, beyond passing on what his observing stations see and report, and executing such missions of observation as may be directed. He issues only tactical commands; if a field order is necessary to effect a reorganization or to issue general instructions, the Seaward Defense Commander acts as a staff officer for the Harbor Defense Commander, under whose authority the order is issued. The Seaward Defense Commander is relieved of the issue of routine and stereotyped orders by the Operations Officer; he directs the action but frees himself of the details.

The Seaward Defense Command Post is normally in a commanding position, overlooking the field of action, but this is by no means as important as is generally supposed. In no case can the Seaward Defense Commander expect a view over the field of action of his entire command, particularly when the enemy makes normal use of natural and artificial concealment. Reliance must be placed on the representation of the situation on the Battle Map, otherwise the commander may be intrigued into tactical error by his own limitations as an observer. This observation is equally true of Group Command Posts.

The Operations Officer supervises the Battle Map and issues orders, in the name of the Seaward Defense Commander, direct to the Group Commanders. He has a hand telephone set, hung conveniently over the map, through which he can be connected by means of a key set to any or all groups over the command net. The key set is operated by the Operations Re-

corder, whose headset is in parallel with the Operations Officer's telephone, enabling him to hear and record all orders sent, with time of sending. This record constitutes the operations journal.

In issuing a firing order, the routine is as follows: The Operations Officer calls to the Recorder, "Group I, Commander." The Recorder closes the Group I key, thereby connecting himself with the operator in the Group I command post, and calls for the Group Commander. When that officer is on the phone, the Operations Officer issues the order. Transmitted as it is direct from the officer issuing to officer executing, the chances of delay and error in transmission are reduced to a minimum.

The Operations Plotter maintains the Battle Map. He is provided with a table on which is mounted a map of the area including a short distance beyond the maximum range of the armament. On this is entered such information as is necessary to assist the commander to make tactical decisions. This will include:

(a) The water areas, coordinate lines, latitudes and longitudes.

(b) The field of fire of Groups (not batteries), including mine fields.

(c) Azimuth circles around important points of observation.

(d) Circles at the general locations of group centers, for the purpose of making a record of group assignments. These circles need not coincide with the actual locations. A glance at the map, (Fig. 2) will show what is meant. Groups II, III and V are all concentrated at Ft. Lee. On the Battle Map the circles representing the groups are spread out so that the radial lines indicating group assignments to targets are not too closely superimposed. This will be clarified as the duties of the plotter are explained.

The plotter places a piece of overlay paper on the map and draws orienting intersections for future record. Intelligence is received of the location, strength, speed, direction and time of origin of report of an enemy unit. This is plotted on the overlay, with notations of all the information. Successive reports give successive locations of the enemy. The path of his movement is indicated by a broken line; at each point where definite information is received, such information is entered in detail. The target is now coming within range of Group II and is assigned by the Operations Officer to that group. The plotter draws a radial line from the Group II circle to the position of the target at the time of assignment, and along this line enters data identifying the command, such as time, distribution, rate of fire and such other data as may be included in the command. It is usually possible for the Seaward Defense Command Post to know without report when a group has opened fire; in any case this intelligence will be received sooner or later and will become an entry on the battle record by means of notation or suitable symbol. Successive reports permit the movement of the target and possible effects of fire to be plotted. It now becomes desirable to withdraw Group II from this target. Another radial line is drawn, this time dotted, giving time of the command to cease fire and other data, such as Fire Shifted, Target Destroyed, Target Obscured, etc.

In a major action we must expect that the Seaward Defense will be concerned with the movement of many target groups, and our overlay will soon be cluttered up with target tracks, assignment lines and notations. The plotter takes advantage of a lull or break in the

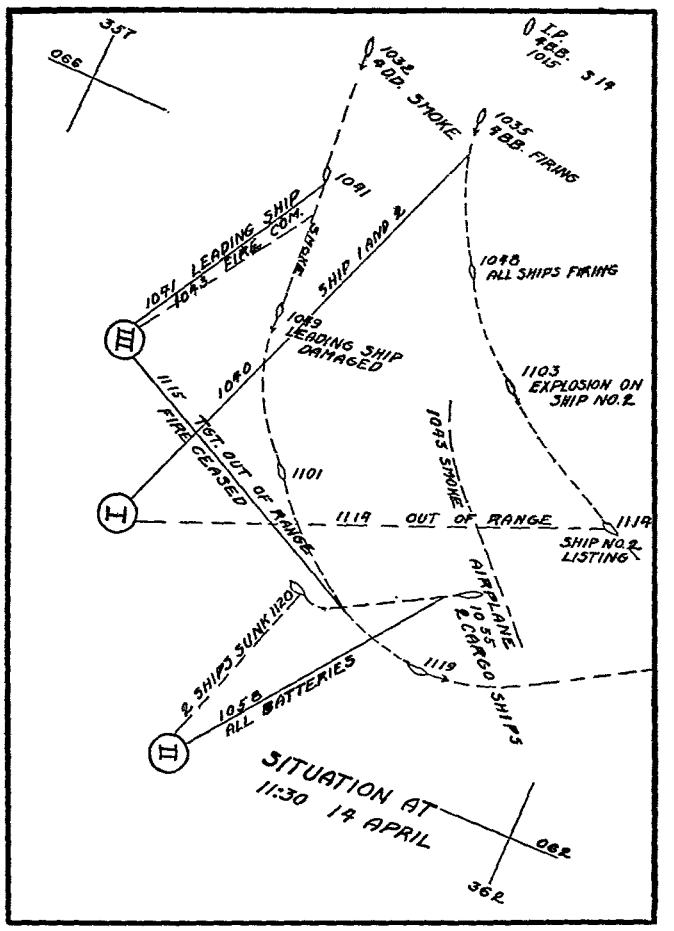


Fig. 3. Seaward Defense Battle Map Overlay, removed from the map at 11:30 A. M., April 14th, showing (1) A destroyer squadron laying some screen, taken under fire by Group III from 10:43 to 11:15; (2) A battleship division bombarding the defenses to cover a blocking raid, taken under fire by Group I from 10:40 to 11:14; (3) The movement of two blocking ships, sunk by Group II at 11:20.

action, marks the overlay with the notation "Situation at (0715, 18 May)" and removes it for file with the operations journal. He replaces it with a clean overlay on which the situation as last known is represented, and proceeds.

We now have, as a result of this operation, as complete a record of the progress of events during the phase as could be expected in the confusion of battle. In conjunction with the Operations Journal and the records of subordinate units, it should permit the reconstruction of the action for historical record and more important in our peace-time wars, for critique. It also offers a continuing representation of the situation both as regards the enemy and the employment of our own armament for the Seaward Defense Commander and the Operations Officer. This is all important, as it is hardly likely that, with proper use

by the enemy of screening from the air and surface ships, any one station will ever secure uninterrupted observation.

The intelligence by which the plotter keeps his situation posted is received from:

(a) The Intelligence Clerk.

(b) The Observer.

(c) The Operations Officer (Target assignment).

(d) The Seaward Defense Commander (Messages, usually written, from the H.D. Intelligence Officer).

The Intelligence Clerk is the S.D.C.P. terminus of the Intelligence net from the group command posts. He is equipped with a key set by means of which he may be connected with any or all of the group command posts or the H.D. C.P. He normally keeps all his keys closed, so that he is available to receive communication from all the intelligence clerks of the groups. Upon receipt of a report from a group, he records it in writing on a message slip provided for that purpose, and passes it to the Operations Officer, for entry on the battle map or other disposition. The message may be passed back by the Operations Officer for transmission to the H.D. C. P. by telephone, or if the location of the two posts permits, sent by runner to the H.D. Intelligence Officer, where it becomes an entry in the intelligence journal.

It might be contended that the Intelligence Clerk will be a pretty busy individual. This is true, but in our exercise he had no difficulty in keeping up with his job. In one arbitrarily selected period of two hours, the Intelligence Clerk, S. D. C. P., received, recorded and passed on for disposition some fifty reports, of from six to twenty words each. Analysis of these reports showed but nine of tactical importance. The need of an Intelligence Officer may also be advocated; such an officer in the Seaward Defense Command Post would be no more than a commissioned clerk, occupying space that can be ill spared. If an officer were available for such duty, he would be better employed in a forward observation post, where his experience and training would permit him to accumulate and evaluate information for the Harbor Defense Intelligence System direct.

Where the Seaward Defense Command Post occupies a commanding position an Observer is detailed to assist the commander and to accumulate such information as may be available from his point of observation.

We have one telephone operator to account for. This operator is the S. D. C. P. terminus of the command line from the H. D. C. P. He is not employed to receive any but routine messages (such as "Close station" which no operator ever muffed). He mans his telephone continuously, so that communication may be checked as often as required; upon call he notifies the Seaward Defense Commander, who receives commands direct. These orders are recorded in the higher command post; the Seaward Defense Commander makes no record of orders received except to aid his own memory. Important orders are usually sent to him in writing.

The searchlight installations at the various harbor defenses differ so widely that no generalizations can be laid down for the routine of their employment. At our S. D. C. P. there was the controller for one light and a switchboard for the cross connection of most of the remaining lights to all the groups. This entailed the employment of a searchlight switchboard operator, as assistant to the Searchlight Officer, and a separate telephone net known as the Searchlight Control Net for the control of the lights. The searchlight crews are not accounted for under Command Post personnel their duties are definitely prescribed.

Group Command Post

Group Commander.
Operations Section.
- Operations Officer.
- (Searchlight Officer)
- Operations Plotter.
- Operations Recorder.
- Telephone Operator to S. D. C. P.
- Searchlight Control Telephone Operator.

Intelligence Section.
- Observer.
- Intelligence Clerk.

The organization and functions of the Group Command Post are an exact counterpart of those of the Seaward Defense with the Groups replaced by Batteries. Each member performs duties similar to those of his brother in the higher echelon. The Operations Plotter records the track of targets assigned to his group, and maintains a record of the action with regard to those targets alone. The Intelligence Clerk receives, records and passes on up, this time by telephone only, all intelligence which comes in from the battery command posts. The Operations Recorder records the commands sent to the batteries. In our set up, the group command net was not equipped with a key set on account of shortage of lines. All command lines from the Group to the Batteries were bridged at the switchboard. This worked perfectly. The searchlight control telephone operator comes to life when the group is assigned one or more searchlights whose controllers are not in the group station. The commands for control of searchlights are so stereotyped that operators can be trained for their transmission; besides which no great tragedy results if error is introduced. In each battery command post there was a command line operator, who handed his telephone over to the Battery Commander to receive important orders, and an Intelligence line operator, who passed intelligence messages up. The chances of error on this man's part are eliminated by the coroborative reports which pour in from all observing stations when anything shows up.

Thus we have, with a minimum of personnel, accomplished our purpose in providing:

(a) A command net, originating at the H. D. C. P., and terminating at the guns, from which the fallible telephone operator is eliminated.

(b) An intelligence net, originating at the Battery and other observation posts, and terminating in the records of the H. D. Intelligence Officer, all information passing over this net being available to intermediate echelons.

(c) The machinery for maintaining at each com-

mand post a complete representation of the situation and a complete record of the action.

(d) The machinery for accumulating, evaluating, recording and disseminating all information received from within and without the command.

Tables of organization contemplate the inclusion in group and groupment headquarters of certain administrative functions. We saw no occasion for these in the tactical organization of a Harbor Defense command of fixed installations. Such matters are handled directly between the battery commanders and the rear echelon of Harbor Defense Headquarters, making use in war of the machinery that is well established in peace.

We feel that we accomplished a definite command system which satisfies one requirement; it works. It follows the trend of thought as expressed in General Kilbourne's article in the JOURNAL in decentralizing the duties of a Harbor Defense Commander, although our field exercises anticipated the publication of that article. Our system is subject to improvement in organization and duties and, greatly so, in matters of equipment. We feel that what success we attained was due to the loyal cooperation of all the officers who were concerned in it, many of whom operated at great physical discomfort due to the lack of suitable equipment and some of whom heartily objected to the changes we inaugurated.

L. to R.: Col. H. E. Cloke; Hon. Patrick J. Hurley, Secretary of War; Maj. Gen. John W. Gulick, Chief of Coast Artillery

A Scheme for Transmission and Dissemination of Intelligence Data in a Harbor Defense

By Major G. Ralph Meyer, Coast Artillery Corps

I QUOTE from TR 435-300, dated June 10, 1930: "Paragraph 58. Transmission and dissemination of intelligence: a. General: The means and methods employed in the transmission and dissemination of intelligence by the harbor defense intelligence service differ from those employed in land warfare only in so far as is indicated in paragraph 55 b, and as influenced by the *necessity for making provisions for the immediate transmission of information of unquestioned urgency* as described in b, below."

"b. Alarms: In order to insure the timely alerting of all or part of his command in case of surprize the harbor defense commander must prescribe suitable means and procedures to be employed by the harbor defense intelligence service which will *facilitate the immediate transmission of information of high priority.*"

With no idea of seeking to pose as an authority on this subject may I be permitted to give a paragraph which I believe could well be inserted at this point in the TR referred to:

"b½: Information: Information as the raw material from which intelligence is constructed travels upward through the tactical chain of command within the harbor defense. It must be evaluated at each command post through which it passes. If of sufficient value to be sent upward its transmission must be facilitated. If of no value it must be stopped to decrease the burden on the communication system. The value of most information decreases rapidly with the elapse of time, hence the necessity for speedy methods of transmisison and recording of such information."

Prior to issue of the present edition of TR 435-300 no mention had been made of the harbor defense intelligence service in our harbor defense training regulations. Four years experience as an instructor in the Advanced Course at the Coast Artillery School at Fort Monroe had impressed on me the extent to which this phase of our troop training had been neglected. Many of the students had given it no thought whatsoever. There was, and still is, a sad look of uniformity in the methods adopted in the various harbor defenses for carrying out this very important function.

Much time and many words have been wasted in objecting to the making of records of messages received and sent during a tactical exercise, a joint maneuver or a battle practice, on the grounds that the record making was not an essential part of the tactical functions and that the number of men required for this purpose was unduly large. I agree that a distinction should be made between the two phases of activity; that a critique of a tactical exercise or joint maneuver should examine into the tactics as distinct from the recording feature. However, even in a tactical exercise covering an operation of but one hour, how well could a commander remember his actions in detail without some notes made at the time of the action? From the historical standpoint there can be no question that records, in detail, of all messages sent and received and action taken thereon are of extreme importance. Great stress is placed on this matter in tactical problems solved by mobile units. I can see no reason why the same requirements should not apply to the harbor defense regiments.

There is another point to be considered in any discussion of this matter. Perhaps it is purely selfish but it is based on the first law of nature—self preservation. Who in the tactical chain of command will be willing to shoulder the responsibility for an error in carrying out orders which results in a serious loss? Each commander may be perfectly honest in recalling that he sent or received such and such a message or order. But the order may have been garbled in transmission, the wording may not have been clear, the commander may have misunderstood the order. There is but one solution. Unchangeable records made at the time.

So much for the necessity of keeping records. Let us now give some consideration to the form which the records should take. As stated before there is no uniformity in the various harbor defenses. Now, that all Coast Artillery organizations are required to be proficient in antiaircraft artillery as an additional assignment, the present would appear to be the proper time to consider some method of securing uniformity in the technique of preparing, transmitting and recording messages. The field message blank Type N-105 prepared by the Signal Corps was designed primarily for general purpose use. It does not lend itself readily to rapid recording or easy tracing through several command posts. In my opinion it is not the most satisfactory form for a message blank for either harbor defenses or antiaircraft artillery. The antiaircraft regiments have recognized this for they have developed their own form for flash messages. These depend upon speed of transmission and recording for their value. The same condition exists to a certain extent in harbor defense operations, for speed in re-

cording messages increases speed in transmission, an important consideration in either intelligence or command messages.

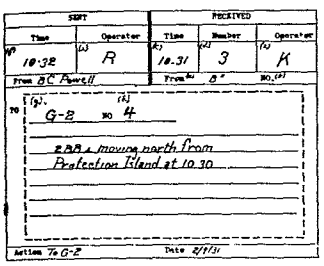
The messages which we seek to record in our Coast Artillery regiments may be divided into three classes:

a. Intelligence or information messages referred to herein as Intelligence Messages. These may be used by all Coast Artillery units.

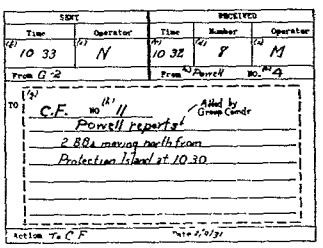
b. Command messages, applicable to harbor defense artillery, fixed or mobile.

c. Flash messages, a special case of the intelligence message for antiaircraft, but with which we should all be familiar.

Let us refer now to the paragraphs quoted from TR 435-300 at the beginning of this article. If we analyze



A-1 Battery Powell record



A-2 Group-2 record

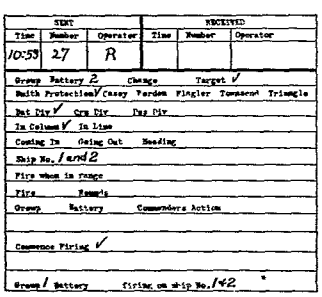
these paragraphs we will find that we must provide "means and procedure for rapid transmission of important information." This necessitates a decision somewhere as to the importance of a certain bit of information, the action thereon, its rapid transmission without error, to the next person in the chain of command. What should a form for a message contain to give greatest promise of carrying out these requirements? It should show the action of the commander who evaluates the information. To avoid error in transmission it should be simple and as nearly "foolproof" as possible; if the form on which the message was written when received can also be used for the sending record there will be less chance of error, since the message will not have to be copied, also the message can be easily traced through the command post and the time required for the commander's action can be determined at a glance.

If we accept the necessity, or perhaps I should say the desirability, of keeping records of historical value what other requirements would be introduced? Our message should show the time it was received by a commander and the time at which he acted on it as well as the action taken. In addition there should be some method of tracing the message through the entire chain of command. This might be done by the context of the message but this may be changed or added to. A numerical designation would be better. The record should also show the operator who received or transmitted it. In order to file this record where it belongs it should be given a serial number in the message center where it is received or sent. It can then be filed in chronological or numerical order with other messages filed at the same message center. If time be synchronized throughout the entire command we will then be able to study our message record and completely reconstruct what has been done.

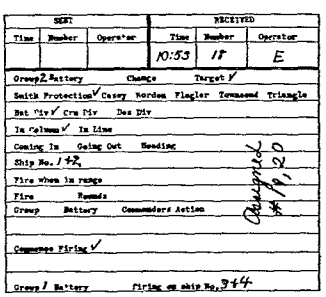
Much of what has been said in the preceding paragraph applies primarily to the intelligence message. Some of it however applies to other messages as well. Where practicable these forms should have as many points in common as possible in order to facilitate training the men in their use. Both command and flash messages have much in common. They must be transmitted and recorded with rapidity to have any value. Fortunately command messages follow stereotyped forms prescribed in training regulations. The same remark applies to flash messages. For this reason it is possible to draw up forms for these classes of messages such that the words transmitted by telephone can be checked off without any great amount of writing. This greatly speeds up the process of recording.

During a year as executive and plans and training officer of a harbor defense a study of this problem was made with a view to arriving at some workable solution. Forms for the various classes of messages were prepared. These were used and changes made where necessary until satisfactory forms were developed. Tactical exercises were conducted weekly for a period of about three months. It was found that the forms speeded up the operations very noticeably. In addition they furnished an excellent method of checking on the operation of the communication personnel. Any delay in handling a message could be detected readily and the exact cause of the delay determined. It was also possible to check up on the commanders' actions and the time they required to make their decisions.

The necessity for certain decisions relative to the time to be entered on messages was recognized at the start. It was decided that the time of receipt of a message should be the time at which the message was



B-1. C.F. (Groupment) record

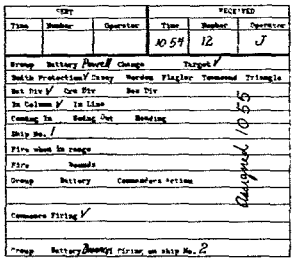


B-2a. Group-2 record

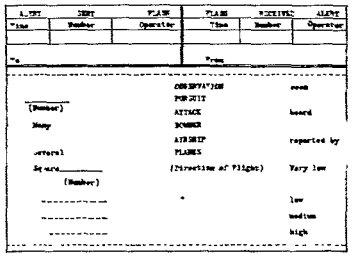
received by the non-commissioned officer in charge of the message center; the time of sending a message should be the time when the commander indicates the action to be taken or directs that a certain message be sent. In this way only could an accurate check be made on the time required to handle a message through a command post.

It is evident that the timepieces throughout the chain of command must be synchronized. This was secured by sending a time signal successively through

the entire chain of command. It was started at the Harbor Defense Command Post at the exact instant at which the drill or exercise was to start. The groupment then passed the time on to its groups and the groups to the batteries. Near the conclusion of the exercise this was repeated, the time being recorded but not transmitted. After the exercise each commander checked this time with the time recorded at



B-3. Battery Powell record



Form C. Flash Message

the C. P. of each of his subordinate commanders and thus determined if any error had crept in to affect the synchronization during the exercise.

Three forms were developed. Form A is for intelligence messages; Form B for command messages; Form C for Flash Messages. These will be taken up in order and details of their use explained.

Four copies of Form A are shown and marked 1, 2, 3 & 4. They will be used to show the method of recording a message in its passage from the point of origin to final destination. We will assume that the observer at the B″ station of Battery Powell (12″M) in Group 2, sees two battleships moving north from Protection Island at 10:30. He reports this to the battery commander who makes the first record of the message (see A-1). At the B.C. station the operator receiving the message enters on the form under "Received" the source of the message in space (a) and his own initials in space (e); he then gives it to the message center sergeant who enters in spaces (c) and (d) the time of receipt and the number of the message, reads or hands the message to the battery commander who directs the action to be taken. As soon as the battery commander directs the action to be taken the message center sergeant notes the action in the space provided at the bottom of the form. Assuming that the action is to forward it to the group commander the sergeant enters the time in space (f) under the heading "SENT" and the destination and message number in spaces (g) and (h) respectively in the body of the message, under the heading "SENT" and gives it to the operator for transmission to the group C.P. The operator calls Group 2 and gives the message as follows: "Number 4. Two battleships moving north from Protection Island at 10:30. End of message." He then enters his initials in the space (i) and returns the form to the message center sergeant who files it. If the message is sent to the Group C.P. by messenger a duplicate copy or a note showing that the message was sent to the group by messenger can be placed in the file.

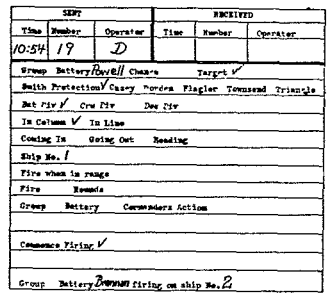
At the Group C.P. the operator receiving the message by telephone will have a blank on which he will have entered his own initials in space (e) and "Powell" in space (a). As he receives the message he records in space (b) the number transmitted at the beginning of the message and records the body of the message starting on the second line of the form. The procedure in this command post and in others up through the chain of command is the same as that at the battery.

Should a commander in the chain decide to make a change or add something to the message he should delete by drawing a line through the necessary words and add new words with a pencil of different color. (see A-2 and 3).

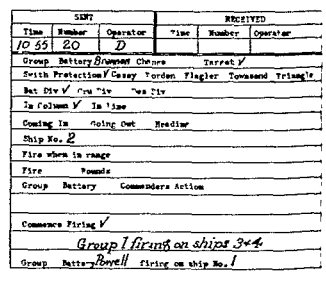
There is certain to be some variation in the clocks at the different command posts; it is impossible to attempt to read the time more accurately than the nearest minute. For these reasons we have used the nearest minute as the time to be entered on a message. The ideal solution of the problem would be a clock numbering stamp which would stamp the consecutive number and time to the nearest second on the message.

Five copies of Form B are enclosed. This is the Form used for command messages. With visibility good and an enemy action developing normally the groupment commander will usually have time to issue orders assigning targets well in advance of the time for opening fire. The form in such cases has little advantage over a message written out completely. When time is limited, as for changing targets, the form has its greatest advantage. Then the message can be sent and recorded at the same time.

Copy B-1 is the message sent from the Groupment Station. The number of the message is not transmitted. The technique of handling the message is generally similar to that for an intelligence message. The principal difference lies in the fact that a com-



B-2b. Group-2 record



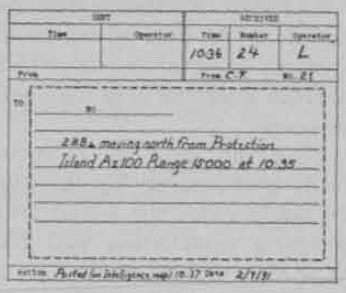
B-2c. Group-2 record

mand message takes precedence over intelligence messages. Where but one line is available between command posts some provision must be made to insure this precedence. This can be done by instructing the telephone operators handling intelligence messages to stop transmitting when they hear the words "Command Message." Command messages are sent from the C.P. by means of a jack set which cuts in on the line. It would be far better to have two lines, one for intelligence and one for command, and this would be done in time of hostilities. It will be noted that

a space is provided on the last line of the form for information as to what other groups or batteries are going to do. This, I believe, is a departure from previous procedure. I am of the opinion that this information should be given whenever batteries or groups are given targets so near each other that there is probability of difficulty in identifying the splashes from different batteries.

Copy B-2a shows the message received at the Group 2 C.P. and Copies B-2b and B-2c show the messages

A-3. C.F. (Groupment) record



A-4. H. D. C. P. record. Recorded in duplicate; one copy to message center file, one copy to H. D. Intelligence-operations map.

sent out to Batteries Powell and Brannon respectively. The Group Commander notes on his record copy the numbers of the messages sent to the batteries of his Group. (See B-2a).

Copy B-3 is the message received by Battery Powell. On it the battery commander notes the time when the target is assigned to his observers.

One copy of Form C, Flash Message is shown. It will be noted that the form shows either "Flash" or "Alert" message. This is based on the system used in the 64th Coast Artillery where it was found that a flash message could be transmitted more quickly to all units by transmitting to the battalion command post and then having the battalion notify other batteries. This method was tested and the message from the battalion was designated an "Alert" message since its purpose was to place other batteries on the alert. This form is submitted primarily because it appears desirable to bring all phases of the subject up together. Organizations with more experience in antiaircraft work will undoubtedly have improvements to offer. It is believed, however, that the form should follow the same general lines as the other forms if this is practicable.

The use of different color paper for each form assists materially in selecting the proper form without loss of time.

This discussion is submitted with but one idea in mind, namely, to insure a uniform, workable system throughout the Coast Artillery. Other harbor defenses undoubtedly have their own systems which may have advantages over the one proposed. It is only by discussion, study and practice that we can eventually evolve a technique which will be satisfactory everywhere. To continue as at present with no attempt at concerted action can lead nowhere.

Champion Basket Ball Team of the Panama Canal Department.

The Fort Randolph Basketball team became champions of the Panama Canal Department Army—Navy Basketball League for the season 1931-32 after winning the final series from Fort Amador, Pacific Side Champions, by the close scores of 44-37 and 41-29.

Left to right: First Row—Garren, Gherardi, Livers, Vincent, Schultz, Hague. Second Row—Andrews, Peterson, Schaeffer, Sommers, Weaver, McNeill, Lieut. Griffith (Coach). Top Row—Beaumont, Stephenson, McCarthy, Galarza, Gustafson, Payne.

The Effect of Antiaircraft Artillery on the Employment of Aviation

By Captain Edward W. Timberlake, C.A.C.

THE effect of antiaircraft artillery on the employment of aviation was a subject of controversy for the ten years immediately succeeding the World War with the matter being finally brought to a head by the claims of Brigadier General William Mitchell, then in the Air Service, to the general tenor, that the "Effect was non-existent." General Mitchell immediately became the patron saint of the Coast Artillery Corps, for while his claims were not strictly confined to facts, he did forcibly bring out the limitations of antiaircraft artillery fire with a consequent renaissance of this activity.

It is peculiar that since the beginning of time the introduction of a new arm or arms into the family of weapons has ever been attended with all the vocal pangs of childbirth. So has it been with aviation and its self-induced counter, antiaircraft artillery.

When Samson took the fresh jawbone of an ass and slew a thousand men therewith, he started such a vogue for the weapon, particularly among the Philistines that for years no prudent donkey dared to bray. Yet despite its initial popularity it was discarded and now appears only as a barrage instrument in acrimonious debate. Turning from sacred to profane history, we find it replete with similar instances of military instruments, each in its day heralded as the *dernier cri*—the key to victory. Yet, each in turn retiring to its proper place of useful though not spectacular importance. Of yore the chariot, the elephant, armor of various sorts, Greek fire, the long-bow and gunpowder, to mention only a few, were so acclaimed. Today the tank, gas and the airplane are aspirants for places on that list. However, it is axiomatic that each new military device is immediately and invariably shadowed by its self-induced counter. In other words, to quote that famous philosopher and builder of men, Tom Jenkins—"There ain't no holt that can't be broke." As a corollary to the above it may be further stated that the initial appearance of each new weapon or military device has ever marked the zenith of its tactical effect, though usually the nadir of its technical efficiency.

When the so-called War Birds attacked us in France and we hid and prayed, now we shout back with an ever-increasing effect. Bombing of an area target in the early days of the war was the comparatively inexpensive amusement of a highly privileged few. Today the bombing of the area target defended by antiaircraft artillery would be so costly as to be almost prohibitive. In discussing a subject so often rehashed by friend and foe alike it may be well to repeat the what, when, where, how and why of the antiaircraft artillery situation.

The effect desired of antiaircraft artillery is that of countering enemy aerial action. This can be best accomplished by destroying the hostile aircraft before they can fly over areas in which their objectives are located, or by destroying the hostile aircraft after they arrived over the area and before they accomplish their missions.

However, the value of antiaircraft artillery must not be judged entirely by the number of planes destroyed. In many cases the antiaircraft artillery fire while not securing destruction will force aircraft either to fly at such a high altitude that their bombing or observation mission will not be accomplished, or will harass and hinder them so that they are unable to carry out their missions effectively.

Further, antiaircraft units should accomplish for the air force what the harbor defenses accomplish for the fleet, that is—"furnish such defense of vital areas as to relieve the air units of the necessity for making the close defense of such areas a primary mission."

To some extent the experiences of the World War form a line of departure in determining the effect of antiaircraft artillery fire in countering bombardment aviation.

With this in view, the results attained by the antiaircraft defenses of Paris, London and certain German cities are considered.

Paris

The French antiaircraft defense of Paris developed as the danger of attack increased. In the beginning from 1914 to July, 1916, the defense was completely airplane. From July 1916 to January 1918, it was partially airplane and partially antiaircraft artillery. From January 1918, ——————, to the Armistice the defense was entirely antiaircraft artillery. From then on, no planes of any nationality were permitted to fly in the vicinity of Paris.

To reach Paris, German planes had to fly through the zone of the front, an intermediate zone, and finally a closely knit antiaircraft artillery defensive zone. Hence the defense of Paris included all of France, and a system of observation and listening posts surrounding the city, reached to the front lines. Planes were reported the moment they crossed the lines and the necessary activities alerted.

From January, 1918, to the close of the war, 28 airplane raids were made on Paris by 485 planes; 35 of these got through, 15 in February, 8 in March, 6 in April, 4 in May, 2 in June, and none thereafter. In fact it was necessary for the German to develop his "Big Bertha" in order to vent his daily hate upon the Parisian. In this connection it is interesting to

note that more havoc was wrought upon the Parisians during the forty-four days that these guns were in action than by bombardment aviation throughout the entire war. It is generally admitted that the only effect the bombardment of Paris by the Germans had was to force the embusques and gigolos to join the colors in self-defense.

London

The defense of London from the air was a gradual development. It had grown from patrols along the coast by inadequate airplanes incapable of offensive combat to a highly coordinated defense consisting of an intricate and widespread intelligence net, unified control of air forces and ground defense, a balloon apron barrage, and gun and airplane areas supported by searchlights.

The key to the system of defense consisted of using alternate gun and airplane areas, definite patrolling lines for the fighting squadrons between the strategically located gun areas. The guns were to break up the hostile defensive formations and the pursuit airplanes were to engage the enemy before they could reform.

The green line definitely fixed the areas of activity of gun and airplane. Inside the green line airplanes always had priority of action. As a part of this system a method of intelligence and communication for the rapid collection and distribution of information of hostile aircraft from the earliest possible moment and throughout the course of the action was developed.

Better tactics and coordination toward the end of the war brought commensurate results in the defense. The last night raid of consequence, the great German effort, was made in May, 1918. About forty bombers made the attempt—of these but thirteen got to London. Six of these thirteen were shot down (three each by gunfire and airplane). Three more were so badly damaged by antiaircraft fire that they broke up on landing. Three escaped after dropping their bombs. The remaining plane came down in London through motor trouble. The German command counted the losses and discontinued the raids.

It is true that the British placed their main reliance upon the air force in this defense. However, the work of the defensive pursuit was largely individual, and great difficulty was experienced in making contact with the raiders. There being only one occasion when a combined attack of at least 3 planes was made against bombers. Although in this period of three days, 52 bombers were opposed by 263 pursuit planes. There was not a single instance during the war, as far as I could discover, wherein a coordinated bombardment attack was stopped by the use of pursuit aviation alone.

It is interesting to note that London was bombed from 21,000 feet by 2000 pound bombs and still stands.

German Antiaircraft Defense

The Germans realized early in the war the prime necessity for the amalgamation of all arms and branches of the air service with the antiaircraft service to secure unified and coordinated functioning of the whole. As a result their antiaircraft artillery defenses were placed under the Commanding General of the Air Force and both arms were used together throughout the war.

The defenses consisted of a frontier line of observation posts connected through an interior system of observation posts with a central headquarters which sifted and evaluated all information and took appropriate action.

Area defenses were established around the industrial region of the Saar, Lorraine, Luxemburg, the munition plants at Krupp at Dusseldorf and Manheim, the Zeppelin base at Freidrickshafen, the bridges crossing the Rhine, and the submarine base at Zeebrugge.

They employed outer and inner rings of searchlights for defenses of localities with mounted night glasses in addition to listening devices, to direct them. Their guns were emplaced on the familiar triangle pattern in small areas and in concentric circles in larger areas.

They early recognized the connection between air attacks and weather conditions and relied largely upon the meteorological service for accurate weather forecast from whence it was readily apparent when enemy air raids would take place.

There were roughly ten times as many air raids made on Germany as Germany was able to make on the Allies and the number of allied planes shot down was fully commensurate with the records of German planes shot down by the Allies. A great many raids never reached their objective. A great many Allied raids reported as successful were found, after the Armistice, to have been ineffective. However, the only effect of German antiaircraft defense was an increasing number of Allied air raids, characterized by massed intensified attack of several squadrons one after the other in a limited sector on the same objective. No price was too great for the Allies to pay.

Tools of the World War

It must be borne in mind that the guns used in the above defenses were of approximately 3-inch caliber, having a muzzle velocity of 1500 to 1800 f. s. and a maximum vertical range of 18,000 feet. All fuzes were dependent upon a time powder train.

The antiaircraft machine guns were poorly mounted, limited to .30 caliber and used almost entirely without sight.

The searchlights used were in general of the 36-inch open type, with maximum range of 3000-5000 yards.

The fire control instruments were either entirely lacking or totally inadequate to the task at hand.

The bombers of the war period, with the exception of the Zeppelins, were limited to about 10,000 feet ceiling, and a speed of 60-80 miles per hour. The pursuit ships could make 120 mph, and had a ceiling of 15,000 feet. They were unstable, had low speed, lacked reliable instruments and their engine performance was so extremely unreliable that when it rained or blew, there was no war so far as the air was concerned.

Lessons of the World War

The raids on Paris, London and various German cities demonstrated that air raids probably will be made in the future on cities for moral and economic effect. We may expect similar raids againsts our cities in a future war in which we may become involved, par-

ticularly when it is considered that fast airplane carriers can mobilize a large air force at any point on our shores very quickly, provided our fleet has been disposed of, or our lines of communication interrupted through the Panama Canal, thus putting our fleet out of action for all intents and purposes without firing a shot. However, it is readily apparent so far as World War experience goes, that as the Allied antiaircraft defenses and intelligence service increased in efficiency fewer projected air raids reached their objectives, with their discontinuance entirely on the part of the Germans during the last part of the war.

However, where resources were unlimited, and no price was considered too high, planes did get through, as witnessed by the intensified attacks of the Allies upon interior Germany. Planes will likewise get through in the wars to come, but the cost will be high.

From antiaircraft artillery viewpoint the following factors were determined from World War experience.

The most effective antiaircraft defense is a highly coordinated defense under one commander, who must amalgamate the efforts of aircraft, artillery, machine guns, searchlights, communications and intelligence and passive means of resistance.

The necessity of an efficient system of communication for the rapid collection and distribution of information of hostile aircraft from the earliest possible moment and throughout the course of the action is basic in the formation of an effective defense.

The basic principle of all warfare, the concentration of superior forces at the decisive point was found to be highly applicable. The highly coordinated intelligence and communication systems developed during the war enabled this principle to be carried out more completely in defense against aerial attacks than in any other form of warfare.

It is believed that while the results of antiaircraft fire on aviation during the World War was highly indecisive, definite promise was given that with proper development, antiaircraft would prove an able counter to aviation.

Effect on Tactics of Aviation

It is generally admitted that the development of antiaircraft artillery materiel has exceeded the development of aircraft since the World War. The modern gun and its robot-like director, assisted by searchlights and sound locators, is several times more efficient against modern aircraft than was the war materiel against the war time aircraft. Hence, one may assume until the contrary is definitely proven, that the antiaircraft artillery is fully capable of fulfilling the role assigned by Field Service Regulations. "To accomplish for the air force, what the harbor defenses accomplish for the fleet;" that is, "furnish such defense of vital areas as to relieve the air units of the necessity for making the close defense of such areas a primary mission....." or in other words, to allow our aviation to keep its units concentrated for a vigorous and unrelenting offensive against the enemy air units; protect a sufficient number of our ground installations and troop formations, including our operating airdromes, from enemy aerial attack by antiaircraft artillery to permit our air force to be employed on the defensive; provide an antiaircraft intelligence service for the warning of all personnel and installations subject to aerial attacks and to render the necessary aid to our units when they are operating over friendly territory and while on their airdromes.

In assuming that we have developed a counter to bombardment aviation capable of accomplishing its mission as hereinbefore stated, it may be well to state what known effect antiaircraft artillery fire has had on aviation tactics and development. We will consider the attempts of our own aviation to avoid the consequences of antiaircraft fire as characteristic of that of all nations, since there were no secrets in time of peace and our own aviation is well abreast of the modern trend.

I believe that bombing tactics have been materially changed quite recently, at least in the American Air Corps, due purely to antiaircraft artillery fire, to wit:

(1) Area bombing limited to night attack from great heights (20,000 to 24,000 feet), by silenced heavy bombardment aviation.

(2) Precision bombing will in general be done by day by low flying bombardment (2,000 to 3,000 feet).

(3) All bombardment attack in particular, to approach target by avoiding localities known or suspected of having antiaircraft artillery. Swamps, jungles, water areas known to be untenanted will be employed in choosing routes to targets.

(4) All bombing of area targets defended by antiaircraft artillery to be preceded by gas and smoke attacks of at least two hours duration, wherein all defensive installations and vegetation thereby will be drenched with persistent chemical elements. This gassing will be done by bombs, and not by spray, from fast low-flying, silenced attack aviation.

(5) Ground straffing with machine guns by attack bombardment discontinued except to secure fire superiority in approaching targets. This work to be done by gas and fragmentation bombs.

(6) All night bombing to employ the principle of the mass. The attacks to be continuous and of a duration of 3 or 4 hours. Bombers caught in searchlights to withdraw and repeat attack; no attempt by such planes to continue on mission when once in beam; no unsilenced bombers to be used in any type of attack.

(7) Attacks to be interspersed with feint attacks.

(8) Diving bombing on precision targets by naval aviation, wherein bomber dives vertically down the dead cone of antiaircraft installations, may be expected.

(9) The parade ground formations of bombers in wedge, javelin, or diamond to be used only for close order drill, never in attack. The cooperation of antiaircraft and defensive pursuit aviation wherein the former breaks up the rigid unmaneuverable formation for the latter to work on, had led to the development of various semi-open mutually supported formations, wherein each plane of a flight is never closer than 100 yards to its neighbor. By an interchange of positions each element and group can change direction instantly,

thus maintaining all the defensive values of formation flying without its former rigid and vulnerable characteristics.

Effect of Antiaircraft Fire on the Development of Aviation

As the claims of General Mitchell aroused the Coast Artillery to the limitations of antiaircraft artillery fire, so has the recent progress made by antiaircraft artillery, as evidenced in recent tests, aroused the Air Service out of the complacency of World War achievement. There has been a remarkable renaissance in development of aviation within the past year, due largely to the effect of antiaircraft artillery tests.

In other words, the antiaircraft artillery has returned the compliment of General Mitchell and forcefully brought home to bombing aviation that if they are seen or heard they will be hit.

The development of bombing aviation has accordingly been toward increased speed, increased ceiling, increased radius of action, and increased load carrying capacity. The increase along the above lines has been accompanied by the reduction of noise, visibility, and vulnerability.

Increase in speed has been brought about through improvement in power unit to 750 hp, due to increase in cylinder pressure and other refinements in motor design, while at the same time stream lining the bomber as a whole has greatly reduced air resistance. The cigar shaped body, egg shaped motor mountings in low-wind of cantilever construction with its consequent elimination of all external braces or struts, and folding landing gear are large contributing factors in the attainment of a speed of 184 miles per hour by the modern Boeing Bomber. A ceiling of 23,000 feet is the combined result of design and power plant and a direct effect of antiaircraft artillery fire.

Recent experiments with the Diesel engine, and the revamping of the principle of the steam engine, under the guise of the mercury vapor engine gives promise to a greatly amplified power unit, capable of greatly magnified radius of action, speed and ceiling, with a greatly minimized consumption of fuel, the present limiting factor.

It is claimed that a new secret paint has been developed which will cause the bomber to disappear in thin air at 8,000 feet. However, all present experience has been to the contrary, as range of vision depends upon the limiting angle or width of the object on one's eyes and color contrast. As long as the limit angle is more than 30 septagesimal seconds an object can be seen. Shades and shadows will always remain and one can hardly conceive of a chameleon-like paint that will be blue, white or grey at the same time to blend with the heavens, and accomplish the reported results.

The noise made by a bombing plane has been greatly reduced. I was told by a member of the National Advisory Committee of Aeronautics, Langley Field, that the stage of present noise reduction left only 15% of the planes' inherent noise. Counting 100% as a maximum noise value the following reductions have been made:

Exhaust muffler....	50%	Gearing down 2:1....	27%
Mounting motor in wings	2%	Reducing propeller vibration	2%
Rounding tip of propeller	2%	Using 4 bladed wooden propeller	2%

Superchargers, whereby the pressure in the carburetor will be kept constant regardless of altitude, will enable a motor of 750 horsepower to develop 750 horsepower at any altitude. At the same time, air resistance being reduced with increase in altitude, greater speeds are attainable. For instance the Boeing B-9 which is capable of 184 miles an hour at 5,000 feet will actually develop 204 miles an hour at 20,000 feet.

Increased ceiling will reduce sound and visibility, hence it is earnestly desired by aviation, since these later elements are the hitting factors of the antiaircraft guns.

It is contemplated that bomber crews will either be inclosed in cabins or supplied oxygen when above 20,000 feet.

However, there are certain heights and speed limits beyond which the human organism can no longer adapt itself to the requirements of still greater increases in height and speed.

Experience of Zeppelin crews proves that as soon as they were driven to 16,000 feet they suffered all manner of difficulties—height sickness, lassitude, intense cold, navigation troubles, and the effect on their bombing was to reduce it to vanishing point.

High speeds mean greatly reduced visibility for the crews in addition to the development of various other human frailities. Consciousness is lost on curves, due to tendency of blood to leave the head. Freedom of movement is hampered, which is particularly important in action.

It is said that the human limitation difficulty can be overcome by removing man altogether from the bombing airplane, by using radio directed planes. However, any radio frequency that can be produced can be reproduced. The bomber that radio can direct, radio can stop.

Higher speed and higher ceiling have necessitated a far more accurate bomb sight. The Sperry Company has turned out a telescopic synchronized bombing sight comparing favorably in efficiency with our Sperry Director. The operator by merely keeping telescopic sight on target after setting in altitude, ground speed, etc., keeps pilot on proper course by means of indicator in pilot bay. When plane reaches theoretically proper position bomb is automatically released. However, the bulk, weight and lack of ruggedness, and consequent difficulties of maintenance of this sight at present preclude its adoption.

Low hedge hopping tactics of attack aviation have necessitated the development of a new bomb, which, when released at 200 feet is retarded by the action of an 8ft. diameter parachute in 50 feet, and drops directly thereafter to the ground, allowing the pilot 4 seconds or 1,000 yards to clear.

To protect both plane and pilot from antiaircraft machine gun fire, experiments are being made to use laminated steel armor 1/8 inch thick, capable of turn-

ing a .30 caliber bullet whose angle of incidence is not greater than 60% at a range of 200 yards. It is contemplated using the steel to the amount of 150 pounds on each plane, beneath the pilot bay, the engine and in front of the radiator. It is not expected to develop armor capable of stopping the .50 caliber machine gun bullet.

The present tendencies of development of antiaircraft artillery are believed to keep the arm abreast of the recent development in aviation. However, antiaircraft will not again stand still and to eliminate an acknowledged weakness in the zones of fire between the .50 caliber and 3-inchgun, every effort is being devoted to developing the 37-mm gun with a timed fuze capable of firing 80 to 100 rounds per minute, thus furnishing adjustment points every four or five rounds.

The .50 caliber machine gun and the 37-mm gun should prove an adequate counter to the recently developed low flying and vertical diving tactics of certain types of bombardment aviation. For during the entire time a low-flying bomber is getting into position to release its bombs or a diving bomber is getting into position for a dive, which to be effective must be vertical, the bomber is an impotent target, except for one brief moment at one definite and predictable point in space, and inasmuch as the diving bomber then must slide down the trajectory of the 37 mm or .50 caliber machine gun, the question naturally arises as to just how many fragments an unreleased bomb will make when struck by a bullet from the above named guns.

World War records show only one instance wherein a pilot dove to certain death in ramming a Zeppelin. It will take much indoctrination to overcome the salutary effects of just one 37 mm or .50 caliber bullet rubbing noses with an unreleased bomb.

The development of the 105-mm gun capable of reaching 52,000 feet altitude, with a muzzle velocity of 3,000 feet per second which will be used for all fixed antiaircraft defense is certainly an answer to the high flying tactics of the bomber. Owing to the fact that the projectile maintains its velocity much longer than that of the 3-inch the time of flight is reduced 40%.

The trend of development of fire control is toward simplification. A simple and accurate range finder is being designed, replacing the inaccurate height finder now in use. The new range finder will be more serviceable, rugged, capable of quantity production, and will determine range independently of altitude. This range will be ground continually into the new simplified director. The new director will be capable of quanity production, will be simple in the operation and sufficiently approximate in its computation for all practicable intents and purposes.

In brief no longer do we attempt to determine the number of angels that can sit on the point of a needle, by means of a third dimensional cam.

An emergency system of sights for the 3-inch and 105-mm guns, to be used when data transmission system goes out, is being developed.

The antiaircraft guns of the next war will be automatically loaded, provided with breach fuze cutters, distant controlled and directed from a director 1,000 yards away in a gasproof shelter.

In conclusion, it may be said that the effect of antiaircraft artillery on the employment of aviation is:

(1) To awaken aviation to its various deficiencies and through friendly rivalry stimulate mutual development.

(2) To completely revolutionize bombing tactics, as developed during the war, and, the ten years immediately succeeding.

(3) To accelerate the development of bombardment aviation.

(4) To counter the threat of bombardment aviation to such an extent that any attack on antiaircraft artillery defended areas will be at such a cost as to be almost prohibitive.

(5) To accomplish for our air force what the harbor defenses accomplish for our fleet.

So much for the peace time viewpoint. However, it is readily apparent that no correct evaluation of the effect of antiaircraft artillery upon aviation, can be determined until the next war.

And, in that next war, we may expect air attacks to be frequent and bloody, but we may rest assured that they will be no more conclusive than are the independent unsupported attacks of any of the other arms.

"Genius," said Napoleon, "is the ability to utilize all the means at hand for the accomplishment of the end sought." This though also applies to military devices. We must use them all. For in the final analysis, wars are fought with men, not with weapons, and it is the spirit of the men who fight and of the men who lead which gains the decision. In Biblical times, this spirit was attributed, probably correctly, to the Lord. For it was the spirit of the Lord—Courage—which came mightily upon Sampson at Lehi that gained the victory —not the jawbone of an ass.

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The International Settlement

By Captain Stanley J. Grogan, Infantry, (DOL)

SHANGHAI, "The Gateway to China," at the mouth of the Yangtze River, has an urban agglomeration consisting of six (6) main areas.

(1) The Old City dating from the eleventh century A. D.
(2) The International Settlement.
(3) The French Concession.
(4) Chapei, a northern, outer suburb.
(5) Pootung, an eastern suburb.
(6) Nanton, a southern suburb.

There are three (3) distinctive administrative areas:

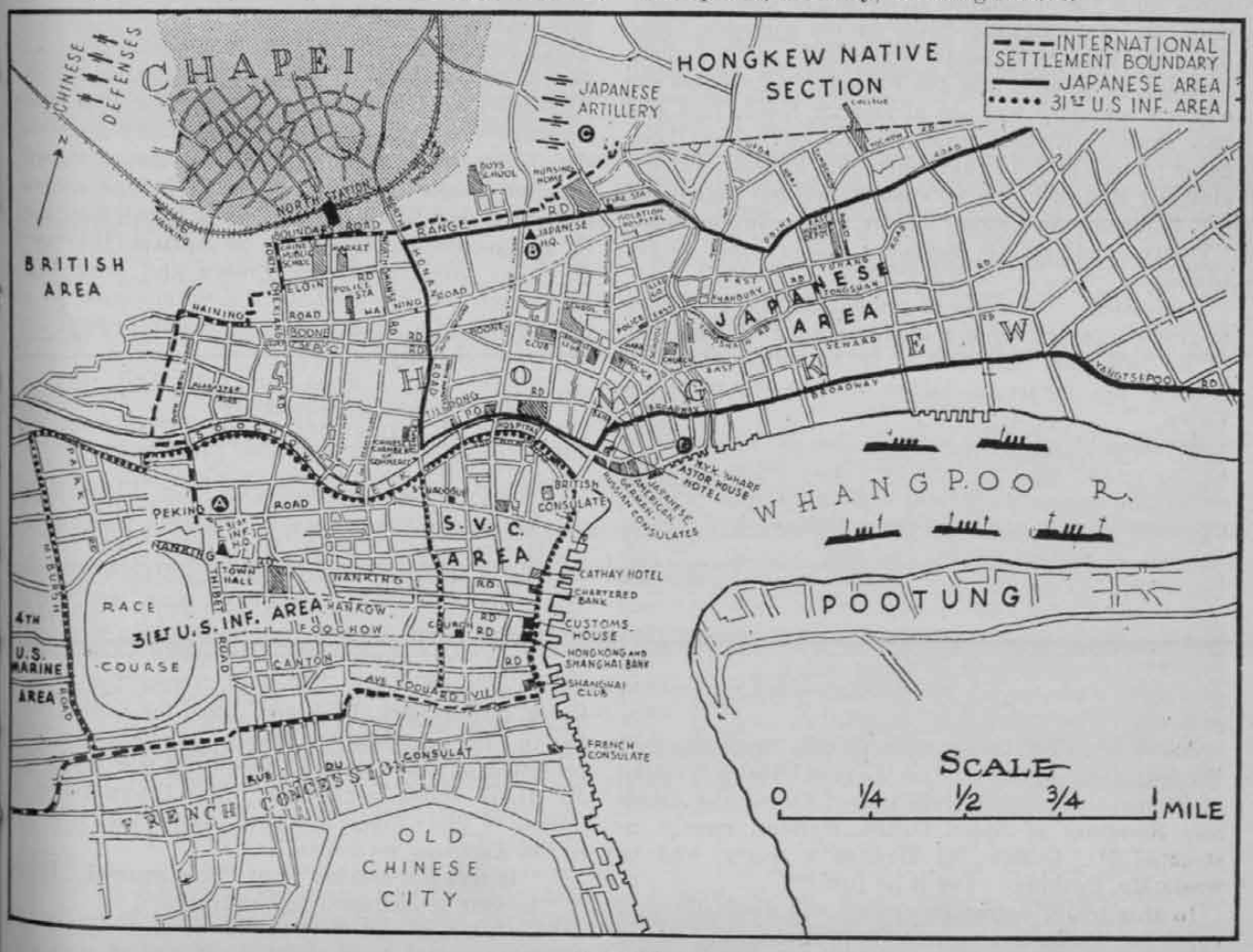
(1) The International Settlement.
(2) The French Concession.
(3) The Chinese Greater Shanghai.

Shanghai first came to the attention of the Western World, in a political sense, on August 29, 1842, the date on which the Treaty of Nanking was signed, bringing to an end the first war between England and China. By the terms of this treaty Shanghai was one of five (5) Chinese ports opened to foreign residence and commerce. This treaty did not provide specifically for exterritoriality or extraterritoriality i. e., communal or international law rule. The English government said extraterritorialty was applied in that treaty though not actually embodied, in that the treaty read, in part, as follows, regarding foreign merchants:

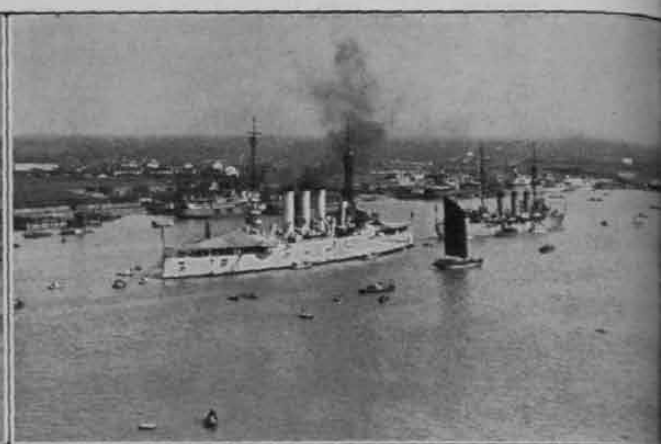
"They with their families and establishments shall be allowed to reside for the purpose of carrying on their mercantile pursuits without molestation or restraint," in the five treaty ports, one of which was Shanghai.

On October 8, 1843, the Nanking Treaty was supplemented and regulations for trade were agreed upon by China and England and by this supplementary treaty England became "the most favored nation" and the two governments agreed upon tariff provisions.

On November 14, 1843, Captain George Balfour, Indian Artillery, established the British Consulate at Shanghai, became the first Britian Counsul at Shanghai, and on that date—November 14, 1843—Shanghai was opened, formally, to foreign trade.



The American Consulate



Man o' War Row

Captain Balfour rented quarters containing fifty-two (52) rooms at an annual rent of four hundred dollars ($400.00) with the Taotai he arranged for land for a settlement. Since it was illegal to sell outright land belonging to His Imperial Majesty it was arranged to rent the land in perpetuity at an annual rental. No definite boundaries marked this first settlement or "British location." The settlement was one of 150 acres, with the Whangpoo River as the eastern boundary, the Yankingpang River as the southern boundary, the western boundary undefined, and the north bounded by what is now the Peking Road. Later the western boundary was put at Barrier Road (now Honan Road). Britain regarded this location as hers. Some historians hold that while this location was exclusively British it was a "concession" and they quote the following definitions by Dr. Tyau in his book, "Treaty Obligations Between China and Other States":

Concession: "A piece of ground conveyed by deed or grant in perpetuity to a lessee state for the residence of its nationals, the same to be administered by it, 'saving the sovereign rights of the Emperor of China.' "

Settlement: "A site selected for the residence of all foreigners, within which they may organize themselves into a muncipality for certain purposes and be governed by their elected representatives."

Now, the British admitted all who come to "British Location" stipulating only that whatever regulations were imposed on British residents should also be borne by the others. Some historians declare, therefore, that the entry of other than British nationals under these conditions made the location a 'half settlement' instead of a whole concession.

America's first treaty with China, the Treaty of Wanghai, was signed on July 3, 1844. Caleb Cushing negotiated the Treaty for the United States. The American Secretary of State, Daniel Webster, merely instructed Mr. Cushing to arrange a treaty, and he wrote Mr. Cushing: "Let it be just."

In this treaty extraterritorialty was distinctly provided for; China was expected to protect United States citizens within her borders, and the United States was granted all rights and privileges given to Great Brit ain by the "most favored nation" clause.

On October 24, 1844, the Treaty of Whampoa wa signed by France and China. It differed from th British and American treaties with China only in tha it denied to China the right to arrest French criminal in places open to foreign commerce.

The Belgians and the Swedes were next to negotiat treaties.

In 1849 there was a slight rift between the thre treaty nations—England, America and France, whe France insisted that land could not be purchased i "French Ground" without the consent of the Frenc Counsul, The United States and England maintaine that China had no power to give exclusive rights t any one people (the French) after having conceded general rights to all. The French based their clai on an agreement entered into on April 6, 1849 by M Montigny, first consul for France and Ling Taota This agreement provided for the establishment of an government of a French concession with definite boun daries, which were:

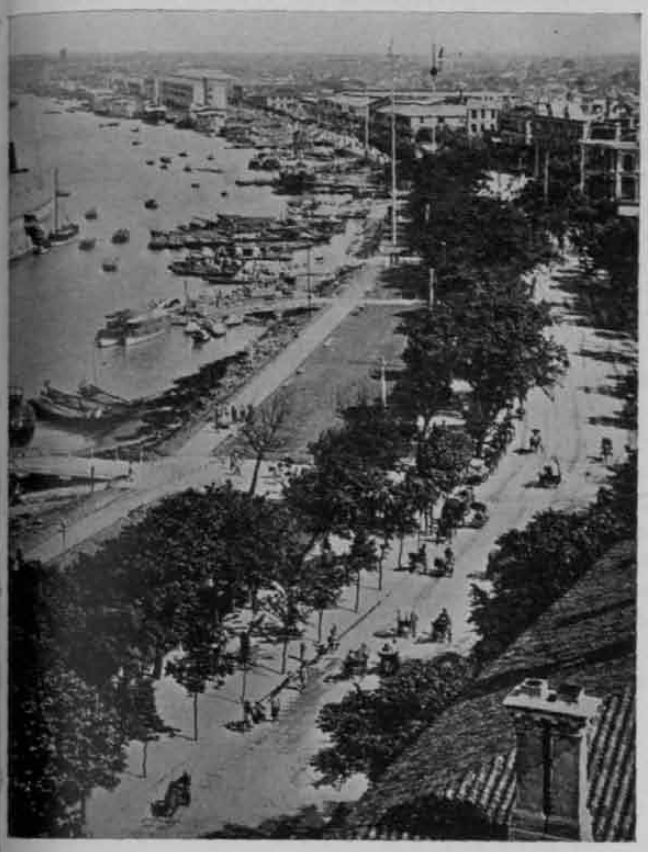
South—Part of moat along City Wall
North—Yangkingpang River
East—River side from Canton Guild to Yangkin pang river.
West—Creek, Kuan-ti-Miao, to Chow famil bridge subject to further extension if desired.

American and French merchants went into th "British Location" to settle and maintained that the had equal rights with the British as a result of t treaties of their respective governments with Chin H. C. Wolcott, first acting American consul, estab lished a consulate in Hongkew, across the Soocho Creek, in February, 1854, and raised the United Stat flag in "the American settlement." Britain and Taot protested but the situation politically was unchange Mr. H. B. Morse in his book, "The International R lations of The Chinese Empire," says (Vol. 1, p. 34 re the American settlement:

"It was not created" but "just growed. It wa in fact, a settlement by suffrance."

The International Settlement, as such, dates fro July 11, 1854, when the three Treaty Consuls,—

cock, Murphy, and Edan,—for England, United States and France, respectively, drew up a code of regulations applicable to the British and French concession



The Bund

areas, giving them an international Municipal Council. China agreed to the regulations. One of the main reasons for drawing up these regulations was to get a common governing body because the English and American naval authority present in the harbor from time to time was independent of the ministerial or consular authority on land. A year previously, on April 12, 1853, the Shanghai Volunteer Corps, came into being at a meeting of the community attended by the consuls and naval officers of the three Treaty powers. It was determined to adopt a policy of armed neutrality and organize a volunteer corps due to the proximity of the Imperial Camp on Soochow Creek and of the rebel camp—the Small Swords— in the Chinese city of Shanghai. The French, however, helped the Imperialists drive out the "Small Swords."

On June 26, 1858 the Treaty of Tientsin ended the British-French war against China and extraterritoriality was further elaborated. Treaties of 1842-1844 and 1858-1860 defined the legal basis on which intercourse between the Occident and China was to be conducted; although modified from time to time, the main outlines are still the basis of the legal status of foreigners in China.

In 1862 the French formally withdrew from the Land Regulations of 1854 that marred the birth of the International Settlement and ever since 1862 the French Concession has been a distinct municipality. The Land Regulations of 1854 while drawn up by the British, American and French Consuls covered the British and French concessions.

The American Settlement in Hongkew was at this time called "the Cinderella among the settlements." Edward Cunningham, of Russell and Company, and George F. Seward, United States Consul, in 1863 asked for one municipal government for both settlements. The union was effected on September 21, 1863, and what is sometimes called the "International Settlement north of the Yangkingpang" was born. Seward and Huang Taotai agreed to the following boundary lines for the United States Concessions.

Starting from a point opposite the Defence Creek it extended down the Soochow Creek and the Whangpoo, to three (3) miles up the Yangtzepoo Creek, and then in a straight line back to the point facing the Defence Creek.

This union brought the American concession within the Land Regulations of 1854.

An International Mixed Court was established in the Settlement in 1864.

In 1870 control of the Shanghai Volunteer Corps was given solely to the International Municipal Council, and a rifle range was built.

The Volunteer Corps consists of infantry, machine gunners, field artillery, with a total strength of around 1600 including its reserves. Its members include Americans, British, Italians, Portuguese, Chinese and Japanese.

There is also the Shanghai Defense Force, of professional soldiers, amounting normally to a mixed division (British strength) with armored cars and attached troops. In 1928 the strength of this force was reduced to that of a British brigade.

For more than 60 years the United States Consuls, who were layman and consul merchants, were the sole American courts in China. In 1848 the Congress of the U. S. decided that "jurisdiction in criminal and

Visiting the Great Wall

civil matters shall in all cases be exercised and enforced in conformity with the laws of the United States, which are hereby, so far as necessary to exe-

cute said treaty, extended over all citizens of the United States in China."

Land regulations were agreed to with China in 1845, 1854, 1869, 1898 and 1899.

The International Settlement exercises complete powers of self-government, including police control. The executive power is the Municipal Council, elected until 1926 entirely by the foreign tax payers. But the Treaty Powers permitted Chinese to live within the settlement, taxed them but did not permit them a voice in the government. The Chinese population became 95% of the Settlement. Student demonstrations and a wave of Chinese nationalism resulted in the Rendition Agreement of 1926 which gave Chinese a voice in the government of the Settlement, and provided that three Chinese be members of the Council. The Council consists of:

Five British members.
Three Chinese members.
Two Americans members.
Two Japanese members.

The boundaries of the International Settlement and of the French Concession have been extended from time to time, by the building of roads, as the result of internal crises that would result in China granting an extension. Definite dates of International boundary extensions were November, 1848, June, 1803, July, 1899 and International roads were extended in 1926. There are twelve nations represented in the International Settlement. The extension of the International Settlement in 1899 gave it an area of 8.35 square miles or 5,584 English acres. It is 7.5 miles at its greatest length and 2.27 miles at its greatest width.

There are five distinct steps marking the growth of International Settlements from a trading post to an international commercial and industrial center:

1. Granting consent for Chinese to reside within boundaries of Settlement and 95% of population became Chinese.
2. Change from trading post to manufacturing center after Chinese-Japanese War of 1895.
3. Development of harbor after Boxer outbreak enabled Shanghai to become one of the great shipping ports of the world.
4. Adoption of policy of neutralty by International Settlement making it of great political importance for factions could meet there and plan against government and it was a safe harbor for political refugees.
5. Revolt of Chinese residents against paternal government and growing spirit of nationalism and student demonstrations resulting in Chinese getting voice in Settlement government.

The foundation of the International Settlement rests on:

(1) Treaties.
(2) Land Regulations.
(3) Political force; moral force—"God helps those who help themselves."

The United States does not assume responsibility for the government of any concession. The American concession "just growed." American citizens live in all concessions. They enjoy the rights and privileges of all "treaty foreigners." In Shanghai the American School and the American Church are in the French concession, a distinct municipality, and many Americans live there. Nearly all American business houses are in the International Settlement which has Americans on its Municipal Council, the executive power.

Over a century ago Napoleon Bonaparte said of China:

> "There lies a sleeping giant. Let him sleep; for when he wakes he will move the world."
>
> Europe woke the giant. John Hay, the American minister said:
>
> "The storm center of the world has shifted—to China. Whoever understands that mighty Empire has a key to world politics for the next five centuries."

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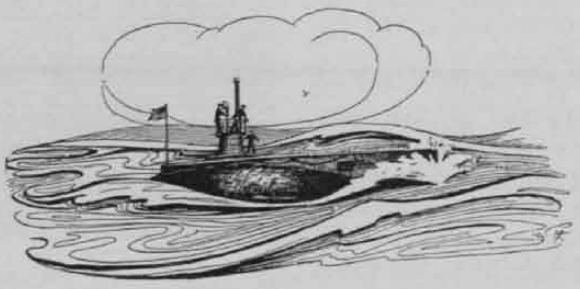


On Foot Through the Cagayan Valley

By Lieutenant T. Q. Ashburn, Jr.

"A tour of duty in the Philippine Islands is not complete without a trip through the Ifugao and Bontoc country. The natives, their life and customs, are far more interesting than the Moros of Mindanao and Sulu. Although the tribes are non-Christian, it is perfectly safe for a white man to travel among them unarmed."—MILITARY HANDBOOK OF THE PHILIPPINE ISLANDS.

AFTER days of preparation, arranging for transportation, telephoning ahead for accommodations at rest houses, consulting with constabulary officers, hiring guides and purchasing food and equipment, we found ourselves at Bontoc, the jumping-off place for our great adventure. Three days north of Babuio, the mountain health resort of the Philippine Islands, we were already out of touch with civilization except for the single telephone line that connected out-of-the-way rest houses with constabulary posts scattered like needles among a haystack of mountains.

Our trip up the zig-zag trail from Manila to Baguio had seemed like a dream. A winding ribbon of road, spiraling ever upward, chiseled in the bone of a mountain range, stood, an everlasting tribute to the dream and perserverance of an army engineer; the coolness and tang of the air an invigorating tonic after the muggy, fetid heat of Manila; the scent of the pine needles too good to be true! It all had seemed a dream, for one instinctively felt that two such extremes of climate and scenery could not by any freak of nature exist in the Philippine Islands; not even seven hours by automobile from Manila. And from the first time we saw an Igorote, clad only in a "G-string," at No. 1 gate, we thrilled to the lure of the primitive. Even after becoming accustomed to the non-Christian tribes we never ceased to feel a little catch in our throats when looking down from the clouds over "Happy Valley" or at the breath-taking scenery that a munificent Creator had splashed throughout the Mountain Province to atone for his oversight in the other parts of the Philippines. Non-Christian or savage, one felt instinctively that this country must produce a finer type of people than the civilized lowlands. At least they were finer physical specimens, with magnificent limbs moulded in bronze and a primitive code which they lived up to! But I digress.

At Bontoc we found our two cargadores waiting for us. Small, with high cheek bones and crystal-clear eyes, barrel-like chests, and arm and leg muscles standing out like cords, they wore only a "G-string." Grinning from ear to ear, they informed us that their names were, respectively, Dumlao and Amado. Without bargaining beforehand for good rates, we engaged them on the spot and demanded that they take us to an "Oolog."

Striding ahead like two panthers, they conducted us to a long nipa shack, raised high off the ground by bamboo poles, and called to the girls inside who came to the windows and smiled shyly at us. So this was an "Oolog!" This primitive shack, nesting among the pines, was where the unattached girls of the tribe lived and received their boy friends! Trial marriage. Modern? Bunk! For many thousands of years the people of the northern mountains of Luzon have practised this custom. The picture of the two girls clad only in banana leaves would seem to prove conclusively that Mother Eve still roams the far corners of the earth; at least in an "Oolog" if no longer in Eden.

We left Bontoc at 7:00 a. m. the next morning and had luncheon at Baluag Camp where we came across an old woman smoking a cigar as big as she was. With her scrawny neck and monkey face protruding from an old "Mother Hubbard," her cavernous cheeks and sunken eyes, and with one dirty bare foot peeping shamelessly from beneath her dress, she resembled an old scarecrow more than a human being.

After partaking of a cold meal on the trail, our cargadores tried to work us by demanding more than their schedule called for. Being ignorant of their customs, we agreed to pay them one peso (fifty cents) per day for carrying our forty pounds of equipment. Being successful in their demands, they passed the word along and thereafter it was impossible for us to secure cargadores at the fixed rate of seventy centavos (thirty-five cents) per day.

We learned later that some Americans had been in the habit of giving twenty centavos or less, extra, each day for chow money. As the Igorote seldom gets enough to eat, this is not a bad plan for getting good service, although it should be impressed upon them at the time that this is a voluntary gift and not a requirement. We also learned that cargadores should be hired daily instead of for the entire trip because they are then both cheaper and fresher and there is less risk of them developing sore feet. But, unfortunately, we didn't learn this until too late.

In our baggage we had included some articles of barter such as tobacco, which the entire Igorote family smokes, matches, which are always eagerly received, buttons, greatly desired by the young men as ornaments for their hats, needles, and perfume of the five and ten cent variety. While small change could usually procure what was needed, the natives apparently placed a higher value upon the above-mentioned articles.

After agreeing to pay our cargadores what they asked, we continued on the trail and finally arrived that same afternoon at the private rest house of Mr. Sarol in Tinglayan. The term "Rest House" was to all intents and purposes a misnomer for neither was

it a house nor was it restful. A mere bamboo shack on stilts, it differed from an "Oolog" only in size—it was smaller. Nevertheless, it was a shelter even if the rats did carry away my sock which, in an unguarded moment, I had left on the floor under the rough bench

Photo by Air Corps, U. S. Army

Air View of Camp John Hay

of bamboo which served as our bed. Thereafter we learned that an iron-clad rule of the trail was that one must never leave shoes or clothing on the floor at night on account of the huge rats that infest all the "rest houses." Having served two years in the Philippines, I was prepared to have my socks carried off by the ants but not by the rats.

The next morning we awoke stiff and tired, to resume our journey. The trip from Tinglayan to Bangad was uneventful except for our difficulty in making ourselves understood at Luboagan, where we desired to purchase a "Minook," as Dan called it. Finally, by flapping his arms and cackling like a chicken and then by repeating the performance and squatting to give an imitation of a hen laying an egg, he managed to make himself understood. By the time we got the chicken, I was convulsed with laughter and the two cargadores were flat on the ground howling in glee. Even the natives were so tickled that the tears were running down their faces for the primitive gives way to his emotions unrestrainedly. I started to enter the nipa shack to pay for the chicken when the owner, gesticulating violently, motioned me away. Since this was the first time in history a native had ever refused money from an American, my curiosity was aroused. Later I learned that the bamboo poles laid horizontally on short supports to form a cordon around the house, which I in my ignorance had mistaken for a fence, signified that there had recently been a death in the family and that it was bad luck for the bereaved to have a stranger enter.

After a welcome break of chicken in our diet which had heretofore consisted of sandwiches and flat-tasting boiled water, we celebrated by drinking some San Miguel beer which had providentially found its way to this small barrio in Northern Luzon. Then in spite of a consuming desire for a mid-day siesta, we "hit the trail" and entered the sub-province of Kalinga where we were met by the "King" in all his glory. He had received word of our coming and was dressed for the occasion as the picture clearly shows. Fortunately, in return for a little "Cumsha" in the shape of tobacco, some perfume and a dozen large pearl buttons, we had no difficulty in persuading him to pose for his picture. I say fortunately because ordinarily the mountain people believe that an "Anito" (evil spirit) looks out of the camera lens and that a shorter life is certain if the camera is pointed at them. Sometimes pictures can be obtained by getting the native to look through the finder, thus arousing his curiosity, while another photographer gets his picture.

Finally, we left the "King" and pushed on to the constabulary station tucked away in the mountains of Luboagan where we spent the night this time in a wooden shack instead of a nipa one. With the experience of the previous night still fresh in our minds, we hung our clothes on a rope stretched across the room and slept the rest of the weary.

After breakfasting on fried eggs, secured from our friends the constabulary, we left Luboagan and on the way to Limus were spell-bound as the superb beauty of the country unfolded before us. Mountains, embraced by pine trees, climbing to the skies; a veritable stairway to Paradise! Breath-taking chasms that awed by their stillness. Gorge-cutting falls that babbled of eternity. Beautiful green rice paddies carved like wisdom teeth in the very jaws of the hills! Step upon step of rice terraces, tilled by the mighty carabao, plucking a living for primitive man from the very visage of Nature.

Occasionally we would pass bands of Igorotes, traveling in groups of a dozen or more for self-protection beating their "Devil Chasers" (short canes slit like a clothespin so as to whang when struck upon the ground) to ward off the white man's "Devils;" the women and children, with great loads upon their heads turning aside their faces as we passed. Igorotes—Indians—Indians—Igorotes! Which were they? Were we in the Philippine Islands or in our own United States? It seemed hard to decide.

At Limus, a small barrio, we met the man who mutilated himself in order to frighten his enemies. That he succeeded in striking terror in the hearts of all who surveyed him is well borne out by the picture. Pushing on to Pinucquc, we met Major Dosser of the Philippine Constabulary who entertained us most of the evening with descriptions of the people of Apayao and some of their customs.

It seems, according to the Major, that the tribe is known locally as the Isneg and they usually treat travelers very well. In some rancherias (towns) however, the people appear surly or suspicious. In other they will all take to the hills or only a few men will remain. None of these things denote danger unless

A River Valley in Benguet

A Zig-Zag Trail in Benguet

large bodies of armed men congregate without women and children.

Isneg do not care to give their names. No man should be asked directly what his name is unless the person asking knows him well and has forgotten it. Ask the man with him and the information will be forthcoming.

No Isneg woman should be joked with or touched by anyone. We had to caution our cargadores about this for they had rather fancied themselves with the women in Bontoc.

It is not necessary to drink bassi that is offered. If the traveler pleads that he is afflicted with a weak stomach, his refusal will give no offense. If a drunken Isneg insists that the visitor drink with him, the latter can pretend to drink and all will be well.

In some places the owner of a house will make energetic protests against the stranger entering. It is considered an omen of bad luck for a stranger to set foot in a house where a child is expected.

With all this useful information carefully digested, we left Pinucpuc the following morning and had occasion to gain some first hand information about still another Isneg custom. In order to get to Ripang which was to be our next stop-over, it was necessary to cross the Saltan River which at the time was high and dangerous. After a great deal of persuasion we had the Presidente (Mayor) of Pincpuc build us a stout bamboo raft for three pesos but when the raft was completed, our two cargadores refused to set foot on it. We urged them in every way, at first with soft promises and cajoleries, then with threats, but all to no avail. Solemnly, they informed us that the death of a child forbids the father crossing a stream of any size for one year. It seemed that Dumlao had lost his four months old son less than a year ago and his boon companion, Amado, refused to go on without him. Finally, after much argument and a voluminous amount of interpreting, the Presidente came to our rescue and provided us with two other cargadores from his rancheria who guided us to Ripang where we were able to secure fresh eggs and a "Minook" from the Municipal Secretary.

We left Ripang early the next morning in order to have luncheon at the Presidente's house in Talafugu where we met Diego Kinaguran, the most famous fighter in the Province. Small, grey-headed, with piercing black eyes that still snapped in spite of his years, he beamed like a full moon when I referred to his fame. Chuckling with pride that his exploits were still remembered in far-off Manila, he told me that he had fought both the Spaniards and then the Americans in the early days until he was defeated by the latter in 1905 and had to surrender his son, Juan, to the Provincial Constabulary Commander as a guarantee of good faith. Juan was educated by Captain H. Knauber, Provincial Commander at that time, and is now Sanitary Inspector of Apayao. The Old Man seemed very proud of his son and was quite disappointed that we had to leave without meeting him.

Before departing, however, we learned how Governor Harris of the Mountain Province abolished head-hunting in the "Days of the Empire." It seems, according to Old Diego Kinaguran, that when the governor first arrived in the Mountain Province, he found that the first requisite of manhood was an enemy's head. Neighboring rancherias were constantly warring among themselves and in each barrio the man who took the most heads was elected chief, by virtue of his prowess. Gathering all the chiefs of the rancherias together, Harris told them that he represented the "Great White Father in Washington" and that they must adopt the white man's customs and abolish head-hunting. Indignantly, they arose from where they had been squatting in a circle around the Governor and stated proudly that for generations they had followed the customs of their ancestors and that never would they consent to abandon this ancient and honorable custom.

"Very well," said Harris, "if you won't adopt my customs, I must adopt yours. Now you are all chiefs, selected for your prowess in taking heads. I am a greater chief than any of you and have never taken a head. Consequently, I am ashamed. Therefore, in order to prove my power to you, I am going to take the heads of all your dearest relatives! You can't take

my head for I have the Army and the Constabulary behind me. Now think it over. Do I adopt your customs or do you adopt mine?"

The result was that head-hunting or rather the practice of collecting heads publicly has been abolished to this day. Throughout the recital of this tale, Old Kinaguran chuckled and chuckled as he recalled how Harris had caught him where the hair was short.

Upon being pressed for more information, the lovable Old Man opened up and told us how highly the Igorotes had prized their warrants as non-commissioned officers in the Constabulary. It seems that Governor Harris organized the Igorotes into Constabulary companies and made the sons of Chiefs first sergeants. One day an Igorote ran amuck and killed a man in his own town. The first sergeant of the nearest constabulary company was sent to bring in the murderer. Now it happened that this first sergeant was the son of the bitterest enemy of the chief of the rancheria where the crime was enacted. Nevertheless, the people of the town not only allowed their hereditary enemy safe conduct but actually captured the head-hunter and turned him over to the sergeant because they had promised Harris to abolish head-hunting.

On the way back to headquarters, the prisoner attempted to escape and his captor shot him through the leg. Since this all happened on the mountain trail and the wounded man was much bigger than the sergeant, the latter was in a terrible quandary. His orders said to bring in the prisoner dead or alive and if he went back for help, the man might escape. Therefore, his duty was obvious; he pulled out his pistol and killed the prisoner. Then he reported to the Governor.

Shortly thereafter, an enraged deputation from the dead man's village called on the governor and demanded the first sergeant's head. Harris tried to explain that the sergeant thought he was in the performance of his duty when he killed the man but the visiting chief said "No, he was not! When he shot him to prevent his escaping, that was performance of duty. But when he killed him, that was murder. Now, we want this man's head!"

Harris argued and argued and asked the chief if he wouldn't accept ten pigs, twenty chickens and three carabao in exchange for the sergeant's head; more than had ever been offered for one life!

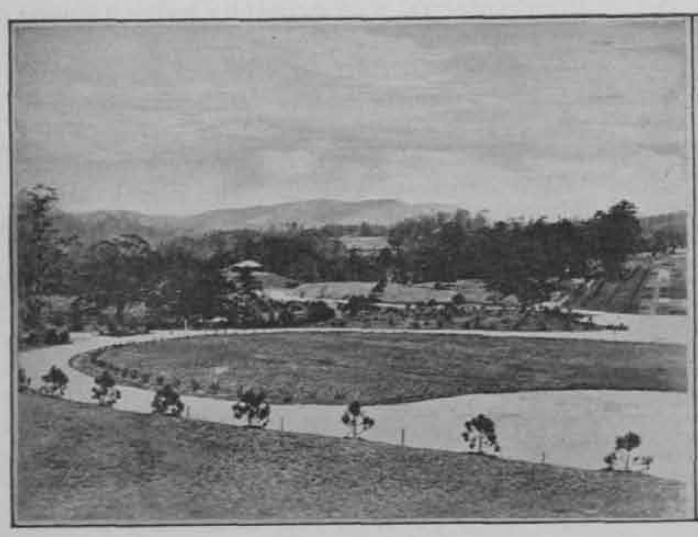
But the Igorotes stubbornly refused the offer. They demanded a head for a head! Finally, in desperation, Harris asked if there was nothing that would satisfy the tribe's honor except a head. The natives conferred among themselves and then triumphantly announced "Yes! We demand either this man's head or his warrant as first sergeant!" So the governor had to reduce the soldier to a private and transfer him to another post to live down the disgrace.

After regretfully taking leave of the Presidente and Diego, we pushed on to Banuan and from there to Kubagao, the capitol of Apayao where we made arrangements with the constabulary officers to use their banquillas for the trip down the Abulug River the next day.

This trip took us about eight hours but it was a welcome relief from the monotony of hiking every day. It was much easier to sit in a banquilla and let the scenery roll by as the current carried us downstream, even if our hearts did leap into our mouths several times as we miraculously dodged jagged rocks in the stream. The remainder of the trip from Tauit to the mouth of the Futol (dagger) River was uneventful and we spent the night in the house of a fat Spanish mestiza with three double chins who styled herself "Dona Castoria." In spite of her bulk and Grande Dame airs, when once her tremendous inertia was overcome, she could make even a carabao steak, smothered in grease, taste good.

From Dona Castora's to Appari where we put up at the poor hotel of another Spaniard named Fernandez was but a day by rowboat and before we knew it we were at our destination, the mouth of the Cagayan Valley!

From that moment on our trip lost interest and we could scarcely wait to get back to civilization and good food. Wasn't it Napoleon who said "An Army Marches On Its Stomach!"?



Grounds of Governor General's Mansion, Baguio

Amphitheater, Baguio

The Japanese Language Detail

By First Lieutenant John Weckerling, Infantry (D.O.L.)

WHEN I was ordered to Japan "for the purpose of pursuing a course of study in the Japanese language," as my orders read, I naturally consulted persons whom I supposed at the time to be acquainted with conditions in Japan and with the requirements, aims, and scope of the language course. I was variously told that "the detail was a cinch"; "a matter of four years leave"; "why you will have a palace to live in, complete with tinkling brook, stone idols and lanterns, etc." * * * "You can have a houseful of servants for $10.00, etc., etc." However, my own idea in asking for the detail was "serious," in a manner of speaking, but it was very nice of course to hear that things were so very perfect from the standpoint of the pay check.

Nevertheless, I had visited Japan during 1925 and was not prepared to believe everything in regard to this haven for limited incomes.

I do not intend to give the impression that living conditions in Japan are bad. They are not. For a time after the great earthquake in 1923 foreign houses were scarce and, when available, rents prohibitive. Things are changing, however, and foreign houses are being built rapidly and the number of foreigners in Japan is decreasing. Rents are reasonable and compare favorably with those of the United States. For that matter some may find the Japanese type of house not at all bad.

Amusements are getting better and many things which foreigners consider indispensable can be bought in Japan with increasing celerity. However it is not the purpose of the present article to discuss living conditions in a detailed way but to give some idea of the Japanese language and the methods of study pursued by the officers who are detailed as students.

The officer who comes out to Japan with the idea that this is "four years leave" is going to be just as disillusioned as the officer who thinks he can rent a palace (with lacquer bridge) and servants complete for twenty dollars. On the other hand it is not entirely a four-year grind.

The Japanese Language

To begin with the Japanese language is one of the most difficult languages in the world. Up to the year 400 A. D. the Japanese had no written language, but about that time a number of court scholars imported a part of the Chinese ideographs and applied them arbitrarily to the Japanese words. The original idea of the Chinese character or ideograph system of writing was that of drawing a picture or characterization of the object supposed to be represented. However thru the centuries great changes in their manner of writing were evolved and they were shortened considerably. Nevertheless to this day these evolutions may be traced or actually seen in the case where the writing of a character has changed but little.

Other invasions of Chinese ideographs occurred and were used in the same manner as related above. Therefore we find that the readings or sounds of these present day characters will have, in most cases, a number of Chinese and Japanese readings. However the great length of time that has passed since the adoption of these ideographs together with the fact that the Japanese mouth and tongue could not frame the harsh-sounding consonants of the Chinese, makes it impossible for the Japanese and the Chinese to understand each other today in speech. The general idea of written things is, however, understood.

Of course the Chinese never adopted the Japanese language, so there is no reason for them to understand a Japanese talk, but the Japanese did have the tremendous influence of the Chinese ideographs and their sounds upon their language. They even did such things in their enthusiasm for the culture of the Middle Kingdom as to use the pure Chinese sounds of many words and to put two Chinese sounds together to make them a Japanese word. Notwithstanding today the spoken languages are completely different and each must start from scratch in learning the other's tongue.

The Influence of Other Foreign Languages on Japanese

With the limited relations with European countries due to the fact that Japan was not "discovered" by them until the 16th century and principally due to the exclusion of all foreigners by the Tokugawa Shogunate in 1639, there was little or no foreign influence on the Japanese language up to the opening of Japan by Perry in 1854 except for the extremely few words that have been taken from the Dutch and Portuguese traders and missionaries and adopted into Japanese. It must not be thought, however, that the vogue for things Chinese ever entirely waned and many scholars and educated persons even today are enthusiastically reading the Chinese classics and literature. With the opening of Japan to Western influences and the Restoration of power to the Imperial house in 1868, there followed the events known to the world today so well that they do not bear repeating. The small insignificant Japan of 1868 (so thought of by foreigners) hardly out of feudalism (in fact it was not abolished until a few years later) amazed the world by becoming a first-class power in a surprisingly short time. These events, of course, had a great effect upon the language. English has become the predominate tongue among the foreign languages and is taught in all schools. It is the technical and commercial language, and many words are adopted into the Japanese with a native accent.

The Army however requires their officers and non-

commissioned officers to know the intricate parts of rifles, machine guns, etc., by the very difficult native names.

Various Styles

One of the most perplexing things to foreigners is the fact that in addition to the ordinary conversational Japanese there are various styles, such as the letter writing style, speech and literary styles. In each of these styles there are words, expressions and phrasings that are peculiar only to that special style and which, if used for instance in conversation, would sound extremely ridiculous.

Also in writing the characters the Japanese will not as a general thing write them as they are printed in the newspapers. He will abbreviate them (in the approved method if educated) or in his own style if he does not happen to know the correct way of abbreviation. The

JAPANESE CHARACTERS

The character.	*Slightly abbreviated.*	*Greatly abbreviated.*
東	東	东
櫻	櫻	桜
間	間	冒

style of greatest abbreviation called "sosho" (literally meaning "grass writing") looks like nothing clearer than snake tracks to the uninitiated, especially when written carelessly. At that many Japanese have confided to me that another man's handwriting is almost entirely unintelligible in parts to them but that the general meaning can be guessed.

The Language Course and Methods of Study

The usual method of study is for the teachers to come to the homes of the students. The text books are those that have been written by foreigners who have made a long study of Japanese. Most students combine the study of these textbooks with the more pleasant direct method of learning to speak fluently, i. e., conversation.

Language students are given a monthly allowance of $45.00, which is just sufficient to cover the cost of books and to pay the teachers for two hours of instruction daily.

The present Military Attaché is, however, making a trial of the school system and the three officers who reported in Japan in October, 1931, are combined into a language study group under an experienced teacher for the first period of six months. Classes are held daily except Sundays for a period of three hours—the remainder of the time being devoted to preparation and study. If this method proves a success it will doubtless be continued.

Other than to be prepared to pass a comprehensive examination the student officer is very much on his own as to methods of study to be pursued.

Most officers, especially those who are married, stay in Tokyo for the full four years with the exception of

The character as written hundreds of years ago.		*The character of today.*
山	YAMA or mountain. The idea was of a mountain with three peaks.	山
川	KAWA or river. Notice the stream.	川
⊙	HI or sun.	日
水	MIZU or water. Notice the resemblance to river.	水
木	KI or tree. Note the branches and the roots.	木
女	ONNA or woman. Note the resemblance to a woman carrying a bundle —the usual fate of women in primitive times.	女
子	KO or child.	子
火	HI or fire. Note the flames rising.	火
馬	UMA or horse. In the old character the legs, mane and tail can be plainly recognized.	馬
鳥	TORI or bird.	鳥

the time spent in travel, duty with a Japanese military organization or when away for the summer. Bachelor officers, however, frequently spend a long period of time, occasionally six months, living in the interior. There are advantages and disadvantages to either method chosen and each must be considered by the students individually.

Students are encouraged to travel about in Japan as much as possible. The railway fares are very low. Official leave is not required for travel in Japan or Korea.

During summer the climate of Tokyo is such that

intensive study, especially for those who have been in Japan concentrating on language study for over a year, is practically impossible. There are easily accessible mountain and seashore resorts close to Tokyo where cottages may be rented at a fair price rental which most officers will find within their incomes if managed properly.

Sports

Some form of exercise should be indulged in while studying Japanese. In Tokyo there is a large tennis club with which officers may affiliate at special diplomatic terms. There are many beautiful walks in and around Tokyo. Golf is possible at Karuizawa, a mountain resort, in summer. Mountain climbing, hunting, skiing and skating can be had within five or six hours from Tokyo. Some students go to the Y.M.C.A. in Tokyo for handball or swimming. However the new American Embassy has a very nice pool which will be available in 1932. Members of the diplomatic Corps in Japan (which would include student officers) are permitted to ride horses of the imperial stables at specified times. Polo was started at the Japanese Cavalry School by a former language student and games are sometimes arranged between teams representing the School and the members of the diplomatic Corps in Tokyo. Good mounts are extremely scarce, however.

Amusements

There are no presentations of the legitimate drama in Tokyo in English except for the rather high standard of amateur productions of the Tokyo Amateur Dramatic Club. However there are several good theatres presenting "talkies" of the latest vintage. At present building is a talkie theatre which when completed will compare favorably with some of our own cinema temples. The Japanese are rapidly becoming adept in the production of "revues," in Japanese of course, but which are done in the foreign manner. These are rather interesting, especially to those of the students who are fairly advanced in the language. The native drama known as Kabuki, may also be interesting to advanced students. Among the Kabuki plays, however, the more modern ones are likely to have the greatest appeal to foreigners. Few care for the "judo" as an exhibition (known to Americans as "jiu jitsu") which is made extremely dull by experts, strange as it may seem. The defense is so good that the spectacular holds of "judo," from the viewpoint of the spectator, are seldom seen. "Sumo," the form of wrestling popular with Japanese, seems like so much pushing and tugging from the foreign point of view and is not very interesting in our eyes.

Baseball is probably the most popular sport in Japan. However professionalism has not as yet entered the game to a great extent, hence the best games or the Japanese World's Series are the Six-Team University League matches and the annual Waseda-Keio matches. The latter two teams, even tho they do not win the championship, attract the largest crowds. This match, in fact a series of three games, might easily be compared to the interest of Americans in the Army and Navy football game. The Meiji Stadium has been enlarged to accommodate 60,000 persons, but proves insufficient when the Keio-Waseda matches are played. The fall of 1931 saw the coming of the big league stars, Cochrane, Grove, Simmons, Gehrig, Frisch, O'Doul, etc., who played the best teams in Japan a series of games. As yet the Japanese have developed only one or two pitchers who could hold the big leaguers down to a reasonable score, but they field and run bases with the best of them. The main criticisms of the big leaguers were lack of hitting power, hustle and judgment in plays, but they praised the Japanese very highly notwithstanding. Quite naturally the games were well attended, especially in Tokyo where tickets were at a premium. There should be another visit in 1932, certainly one in 1933.

Group of American Officers and Japanese Officers of the General Staff

Most of the big stars of the concert world come to Tokyo including European stars who seldom visit America. Galli-Curci, Heifetz, Paderewski and many others appear here regularly.

The radio broadcasting is mostly in Japanese and of no especial interest to foreigners except students who listen in for the practice it gives them in Japanese. However occasionally there is an evening of foreign music by the Tokyo Symphony Orchestra. The latter organization also gives concerts.

Social

Officer students are on the Diplomatic List and are usually invited, with their wives, to the larger official affairs. To what extent an officer goes about socially in Tokyo is largely dependent upon his pay and personal inclinations. The requirements of study, too, do not permit of wide social participation for the first year or so. The officer himself will usually be the best judge of the amount of social participation he desires after he arrives in Japan.

A certain amount of association with foreigners is however, in the opinion of the writer, not only desirable but essential. The idea that some may shut themselves off from all intercourse and plunge into desperate study is a mistaken one, I believe. While such seclusion may give an initial advantage it is certain to cause the too diligent hermit to become "fed-up" long before his tour of duty is completed. It is easy to get into

very strange states of mind in the Orient, or for that matter, wherever one is completely divorced from his usual surroundings, and this fact should be borne in mind by the student or prospective one.

The language students are always invited to the following official parties given by the Imperial Household Department:

New Year's Presentation at the Palace.

Cherry Blossom Party at the Shinjuku Palace.

Chrysanthemum Party at the Shinjuku Palace.

The Imperial Household Minister's Reception at the Hama Detached Palace.

Contact with Japanese

Contact at first with Japanese will be limited to teachers, servants, shopkeepers and the Japanese employes at the Embassy. It is extremely difficult to keep up relations with Japanese who will be a help to you in your study of the language. The officer student will find that, for the most part, the ones that he will meet will all speak good if not perfect English, or if that is not the case, will want to improve their English at his expense. This will not discourage the energetic officer, however, for there are many Japanese of the type that he wants to meet and talk to who do not speak English, however few they may seem the first six months or so that the officer is in Japan. Some officers make arrangements with university students to exchange conversational practice on an hour for hour basis.

The Military Attaché arranges from time to time stag parties to which Japanese officers of all grades are asked and if the officer student is adept contacts may be continued with these officers.

Cafés or "beer halls," as they are known among the language officers, probably belong under the three previous headings at once, viz., Sports, Amusements and Contact. There are the modern tea house and are rapidly displacing, if they have not already actually displaced, the geisha, at least in the affections of the modern youth. If not visited too often they are an excellent means of assisting the beginner in the Japanese language in helping him overcome the first timidity in speaking and in finding out just how the common terms are used. After all the time spent with the teacher, while highly instructive, is apt sometimes to have its limitations.

Tour of Duty with Japanese Military Organization

The Mission in the Japanese language study is "to acquire a working knowledge of the Japanese language." When the officer student has been in Japan about two and a half or three years he is then sent for a six months tour of duty with a Japanese military organization, usually outside of the city of Tokyo. This duty will, if anything, tell the student whether or not he has achieved his objective in the language, as one is in constant association with the officers of the regiment to which assigned and there is much mutual entertaining, especially immediately after arrival and reporting to the Regiment and just before departure back to Tokyo. The language officers usually improve greatly in fluency, and the ability to conduct a conversation with persons of any grade or station during this assignment, tho they are apt to forget the minor academic points acquired from books.

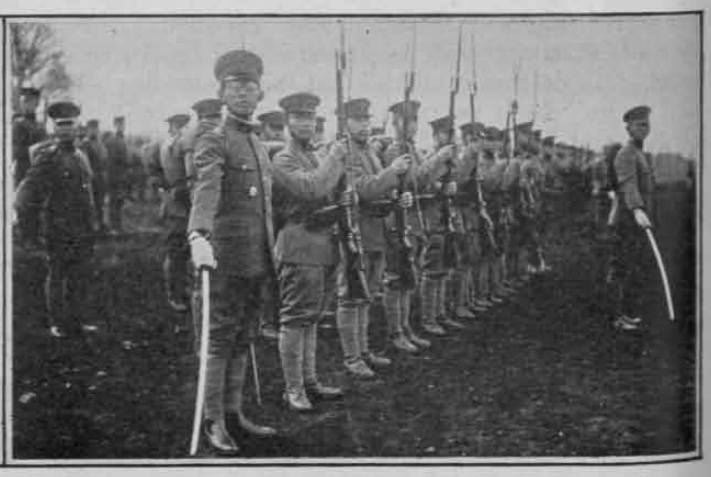
The Japanese Grand Maneuvers

Generally officers are sent to the Japanese Grand Maneuvers to accompany the Military Attaché during the third or fourth years of their detail.

Toward the end of the language detail the officer students are required to spend a short time in the office of the Military Attaché, as determined by the A.C. of S., G-2-War Department, and the Military Attaché.

Conclusion

The young officer of the ages around 28-33, who is anxious to have a "specialty" on his record in the War Department and perhaps attempt something out of the ordinary in the way of military duties, acquire a broad outlook of world affairs and to be able to witness the inner workings of one of the best armies of the world, not to mention the knowledge and understanding that comes of four years of residence in Japan and association with Japanese of all classes, can do little better than try for this most interesting detail.



Left:—Lieut. Weckerling and Officers of the Machine Gun Company, the Infantry School, Chiba, Japan. Right:—Prince Chichibu, Heir Presumptive to the Imperial Throne, Commanding his Company in the 1932 Tokyo Review. The Prince is a Captain, a Recent Graduate of the Staff School.

Kosciuszko the Patriot—Father of American Artillery

By Elizabeth Camille Brink, Military Intelligence Division, General Staff

THIS year that marks the 200th anniversary of the birth of the Father of Our Country, marks also the name of a great Polish Colonial patriot, Tadeusz Kosciuszko, whose name will be associated with George Washington and the founding of the American Republic as long as our history endures. More than a century has passed since he died in exile, an impoverished and broken-hearted failure, yet the American soldier and citizen still thrills to the name of Kosciuszko, whose gallant and useful services in the American Army during the Revolutionary War have been credited at different times with saving the American cause. And the American artillery man as he sends fire data to his battery from his O.P. may well pause to pay honor and respect to Kosciuszko—the Father of American Artillery.

A worn and faded manual which now reposes in the Library of Congress at Washington is the testimonial of his services to the artillery. The "Maneuvers of Horse Artillery" adapted to the service of the United States was prepared by Kosciuszko at Paris in 1800, at the request of General William R. Davie, then American Minister to France. Translated by Colonel Jonathan Williams eight years later, a copy of the manual was presented to President Jefferson, who despite his ideas of peaceable coercion had nevertheless the foresight to realize that a time might come when the field artillery manual would speak in eloquent terms. That time was near at hand. In 1812 the United States and Great Britain were at war, and with no system of artillery instructions except those prepared by Kosciuszko. The manual was then purchased from the West Point Philosophical Society for $200 and the "exercises for cannon" and "maneuvers for horse artillery" were officially distributed to the service by the War Department with the now time-worn formula "for the information and guidance of all concerned." Kosciuszko may not have looked into the future and penetrated all the mysteries of range-finding, antiaircraft, and airplane observation, yet even an honor graduate of Fort Sill, poring over the musty pages of the manual, will see in Kosciuszko a kindred soul—a true artilleryman, who was proud to make a little easier the path of the infantry, then as now the "Queen of Battles."

Fortune placed Kosciuszko in his early life in a variety of situations. The younger son of a poor but noble Lithuanian family he was educated to be a military engineer and became a star graduate of the Royal Academy at Warsaw. Through scholarships awarded him he was permitted to study for five years in the institutions of learning of the principal European capitals where advanced study in military engineering gave him a position of eminence in his chosen profession, with which later he was to distinguish himself so brilliantly in the greatest services he rendered to Washington and the Continental Army—the field military engineering and fortification.

Hardly had Kosciuszko finished his education when he became imbued with the cause of liberty, of fighting for a freedom denied his own country. Turn back the pages of history one hundred and fifty-six years, to the year of 1776. It is the time of the great American revolution. The soldier pioneers are streaming through the passes—up the Shenandoah Valley, through Virginia and Pennsylvania and on to Philadelphia "the City of Brotherly Love." Through the mountains, by wagon, train, by flatboat, by horse, and afoot they came, not forgetting their rifles. Washington had blazed the trail. In Philadelphia the American soldier was first to know the beloved Polish patriot, who, impelled by his hatred of oppression and ardor for the cause of liberty, had, upon learning in Paris of the struggle between Britain and her North American colonies, hastened across the Atlantic and associated himself with the gallant patriots of our revolutionary period. "I have come," said he, presenting himself to Washington at Philadelphia, "to fight for the cause of American independence." He was the first of the noted galaxy of foreign officers who volunteered for the cause of the Colonies and to join the armies of Washington.

The highly trained technician arrived at a time of great moment. His first service was to fortify Philadelphia—at that time one of the vital nerve centers of the new-born republic, against attack by the British fleet. For this vital contribution Congress awarded him the rank of colonel in the Engineering Corps. His next assignment was with Gates' army of the North in 1777. This was the beginning of a dark period for Washington's Army. With little clothing and poor food, and having suffered one defeat after another, the army learned that General Burgoyne was coming down through New York from the north. Having demonstrated his ability in the fortification of Philadelphia, Kosciuszko was now commissioned to devise a plan for the defense of Saratoga and to check the British advance. He fortified Bemis Heights. Burgoyne's force was crushed by the Americans in the Saratoga Valley and hope flamed anew in the American colonies. The successful operations which led to the surrender of Burgoyne at Saratoga, and the part which Kosciuszko played in this battle reveals his inestimable worth to the Continental Army. It was the turning point in the War—for a victory by Burgoyne at that time might easily have brought in its wake complete defeat

and placed an entirely new face upon subsequent world history. General Gates acknowledged his indebtedness in his official report to Congress, and Washington at the time reporting the value of his work stated: "Kosciuszko is a gentleman of science and merit." Jefferson credits Kosciuszko with selecting the position from which the Americans fought, and with covering its weak point with redoubts from the hill to the river.

Kosciuszko

This victory put new heart into both the civilians and soldiers of the Revolution, at a vital time when reverses rather than victories were the rule. Following this decisive and victorious engagement of our history, the independence of the United States was recognized by many European powers, though the War still continued.

Historians point to Kosciuszko's greatest achievement in the War for American independence, in his fortification of West Point on the Hudson—whose site he is supposed to have chosen, and where years afterwards a monument was erected to his memory as "the hero of two worlds." West Point then controlled the main line of communication from New England south to the central and southern colonies. The importance of its fortification was that the Hudson River was the only route by which the British could operate with troops from Canada and New York. Hence, it was a position regarded by Washington as indispensable. But Kosciuszko pushed up the fortifications rapidly and in 1778 the gigantic task was completed and West Point was impregnable. He also laid out additional forts to protect West Point in case British forces were sent from New York. Washington again recognizing his merit says in a dispatch: "To his care and sedulous appreciation, the American people are indebted for the defenses of West Point."

Kosciuszko was now made engineer in the Army of the South in 1780, with Washington's most valued and trusted officer, General Nathaniel Greene, in command. Later, Kosciuszko succeeded Laurens in charge of military intelligence. His service in the south covered virtually the whole range of modern Staff work—from supply to operations and troop movements. At those times when war often became guerilla warfare, the brilliant Kosciuszko, despite his rank, fought with the rest as a common soldier. His devised means for rapid movement of troops and provisions, in the way of improvised pontoon bridges often served as means of escape for the American columns retreating from Cornwallis and the King's forces. "His zeal for public service seems incomparable" wrote Greene of the young Polish engineer.

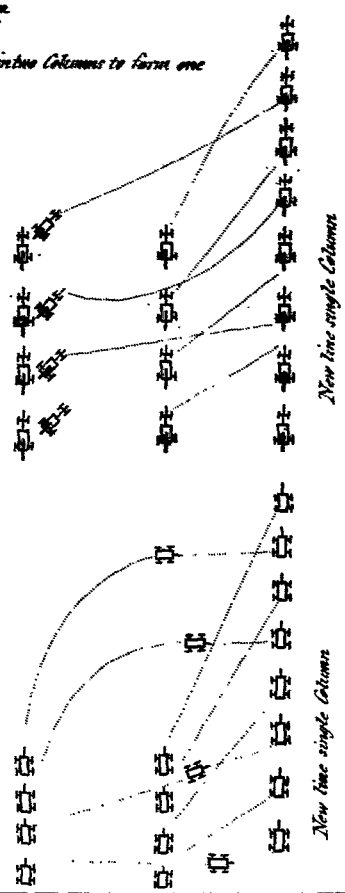
He remained in the south until the end of the war. When the United States became a reality Congress passed a resolution: "That the Secretary of War transmit to Kosciuszko the brevet commission of Brigadier General, and signify to that officer that Congress entertains a high sense of his loyal, fruitful and meritorious services." A spot of land where Columbus, Ohio now stands was also designated to him; and he was one of the three distinguished foreigners to be elected as member of the "Society of the Cincinnati" established in 1783. But Kosciuszko, unwilling to accept payment for his services to America, willed the money and lands offered to him to Thomas Jefferson. The famous document that Kosciuszko left with Jefferson at Philadelphia reveals the strength and noble purity of the principles of liberty in the heart of the Pole. Having seen slavery in all its phases in the south he foresaw a broader scope of human freedom in America, the goal of liberty extending to all peoples. Kosciuszko's will stands out as a flaming torch lighting the path of human progress.

> "I, Tadeusz Kosciuszko, being just on my departure from America, do hereby declare and direct that, should I make no other testimentary disposition of my property in the United States, I hereby authorize my friend, Thomas Jefferson, to employ the whole thereof in purchasing negroes from among his own slaves, or any others, and giving them liberty in my name; in giving them an education in trade or otherwise; in having them instructed for their new condition in the duties of morality, which may make them good neighbors, good fathers and mothers, husbands and wives, in their duty as citizens, teaching them to be defenders of their liberty and country, of the good order of society, and in whatsoever may make them happy and useful; and I make the said Thomas Jefferson executor of this.
>
> 5th of May, 1798 T. Kosciuszko."

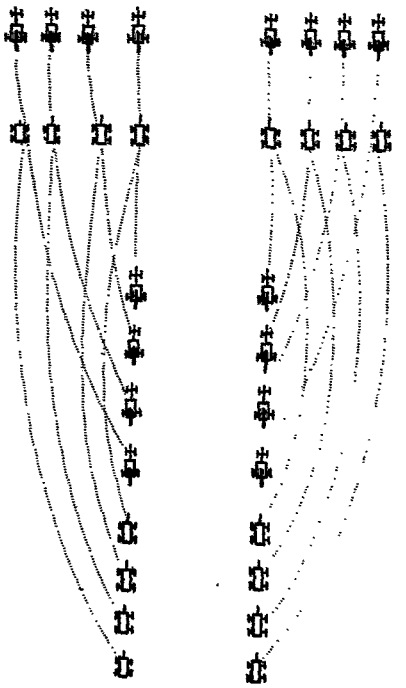
Of Kosciuszko, Jefferson wrote: "He is as pure a son of liberty as I have ever known, and of that liberty which is to go to all, and not to the few and rich alone." These qualities and nobility of character later

3.D MAN.R

Being in two Columns to form one

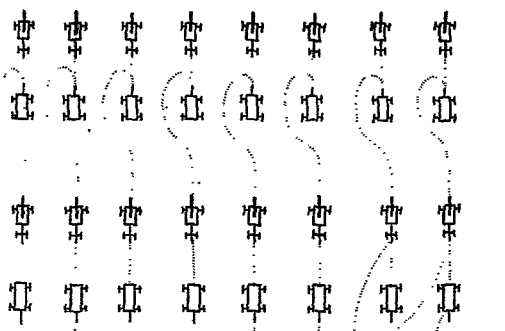


4.TH MAN.R



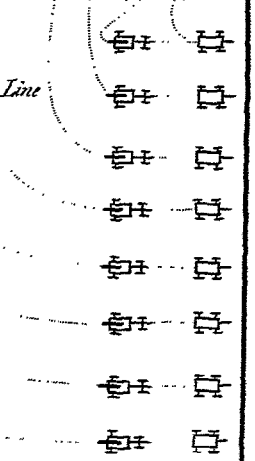
Being in two Columns — Display on the right and left of the two leading Pieces

12.TH MAN.R *Being in Battery to retreat in the same order*

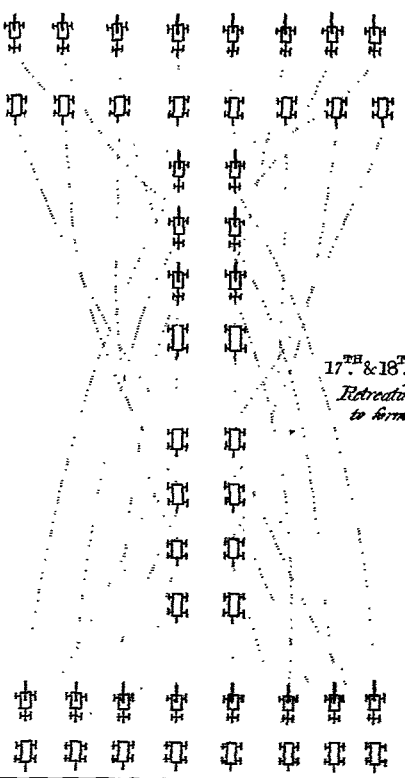


13.TH 14.TH & 15.TH MAN.R

To change the direction of the Line of Battle retreating



16.TH MAN.R *Marching in retreat in Battery to form upon the two centre Pieces centre in front retreating*



17.TH & 18.TH MAN.R

Retreating in Columns to form Battery

brought him to a high place in Poland, where he continued as the idol long after the cause he so valiantly fought for was lost.

In America, Kosciuszko saw the genesis of an experiment which later was to prove of great value to him in Poland. The valiant struggle for independence of the ill-equipped colonial farmers and their success against one of the best trained armies in the world, led the Polish patriot to visualize a day when his own peasant population might successfully throw off the foreign yoke and build up a national life of their own. Kosciuszko made a noble attempt to realize this dream. Confirmed and strengthened in his ideals by his association with Washington and those who fought for American independence, when Kosciuszko returned to his native land he was soon to play a more conspicuous part in the cause of liberty. In 1791, the attempt to resist the tyrannical Russia, and to free Poland from despotic and deadening influences which that power so long exercised over her destinies, called forth the most gallant effort in the life of the noble Polish patriot. His conduct at this time was such as to merit the everlasting esteem of his countrymen and of the world.

The voice of Kosciuszko, calling upon his countrymen to deliver their land from a servile yoke, raised the whole Polish nation in arms. His proclamation for liberty breathed a spirit of patriotic self-devotion which rekindled a sympathetic feeling in every land. The simple peasants awakened to their first feeling of national consciousness rallied round him. Exchanging the implements of husbandry for the implements of war, the soldiers inspired also the peasantry, who, arming themselves with pikes and scythes, rushed fearlessly upon the cannoneers of the north and carried their batteries of artillery.

One incident which sheds great glory upon Kosciuszko was the attack against the Prussian army. An army of 40,000 soldiers of the warlike Frederick and commanded by Frederick William in person was advancing upon Warsaw. With 15,000 men, Kosciuszko attacked this formidable army in a long and bloody engagement. Though the Prussian army was not driven from the field, the object of the attack was gained, for so great was the setback given to the Prussians and so small the loss to Kisciuszko's forces that Kosciuszko was further enabled to cut to pieces the Russian forces encamped near Warsaw and to establish himself in a position to defend the city. In the meantime Kosciuszko had organized a successful war of diversion in southern Prussia, which caused Frederick William to withdraw his army for protection of his own dominions. But fortune, which had thus far followed his banner as he long successfully resisted the concentrated attack of an overwhelming Russian force, was soon to desert him and Poland; for single-handed and alone Poland could not contend with the colossal power of Russia aided by the disciplined Prussian armies. In the end the army and purposes of Kosciuszko were defeated when in a later battle he fell covered with wounds, and with him fell the hopes of Poland, whose national existence was soon extinguished and whose territory was divided among the conquerors. His failure remains one of the most noble and tragic struggles for national freedom.

Revenging herself for the frequent defeat of her armies the Empress Catherine of Russia imprisoned Kosciuszko. He was confined in a dungeon and set at liberty only after her death. High honors were offered him by the young Czar to enter the Russian service, but he declined and became an exile from his country. The wounds from which he never recovered, which made it almost impossible for him to walk, did not deter him from revisiting his friends in America in 1797, where he was acclaimed as a true friend of the Republic which he called his second fatherland. It was here he left his famous will with Jefferson. In 1817, at the age of 71, he died in a Swiss village where he lived with some friends. His body was removed in great state to Cracow, where it was buried in the cathedral by the side of Polish Kings.

And so in this year of grace 1932, when we celebrate the birth of the Father of Our Country, and recall the stirring events of 1776, when America, a frontier country, had not yet come of age; let the lofty patriotic Kosciuszko not be forgotten. As we come to the present, there is no measure by which we can weigh the services of the noble Pole to our nation. To name a few of his services to our army and nation is not enough. It explains in part why we honor and revere him at this present time. But there is a further reason. The name of Kosciuszko represents the character of achievement that we all admire. It embodies and visualizes that for which all America stands. The years that followed his service to America and brought his whole life to bear upon his own national problems reveals a sureness and courage, and a clear, courageous grasp of the essentials of freedom. The new trail that he struck for the common people of his own country has been followed with a procession of ideals that have led them up to, and opened the gates to the present united Republic of Poland.

Brilliant and dazzling as were the battles gained and the feats of armies routed, they fall into insignificance when one speaks of the superior and ennobling virtues which adorned the character and immortalized the name of Kosciuszko. His generous self-devotion in the cause of liberty, his constancy of purpose to principles which guided his conduct, were surpassed only by the purity of principle and uprightness of intention which dictated them. He combined the qualities of heart which most exalt the human character with the qualities of mind requisite to the happiness of man and country.

Throughout history his name will remain as a symbol of liberty. Outside the city of Cracow an imposing monument bears only this supremely eloquent inscription, "Kosciuszko, the Friend of Washington." Close by the White House in the Capital of our nation, Washington, another memorial symbolic of his lofty patriotism reads, "And Freedom Shrieked as Kosciuszko Fell."

A Neutral Observer At Shanghai

I ARRIVED at Shanghai late in February and had an early opportunity to talk with various officials of the Nationalist Government. The impression I got from them was that they were highly gratified by the success of the Chinese 19th Army in withstanding the offensive action of the Japanese military and naval

COLONEL L. D. GASSER AND REGIMENTAL STAFF
Left to Right: D. M. N. Ross, Adjutant; Lt. Col. G. A. Lynch, Executive Officer; Captain Harry Adamson, Intelligence Officer; Captain E. H. Conner, Plans and Training Officer.

forces at Shanghai which had recently taken place and was continuing. I asked if what had taken place at Shanghai would tend to unite China in support of the Nationalist Government, and the Chinese officials, with one exception, told me that it certainly would.

I met several Chinese ladies of position and intelligence who were taking an active part in Red Cross work, organizing hospitals, caring for the wounded, etc. I saw several truck loads of wounded being brought to one of their hospitals.

I had an opportunity soon to visit the sector held by the Americans. Colonel Gasser, commanding the 31st Infantry of the American Army, had done excellent work in organizing this sector and strengthening it, not only for repelling attacks but also for protecting his men. He had given rigid orders to prevent firing and altogether, in my opinion, is simply splendid. The regiment has made a fine impression, the behavior and appearance of the men being excellent. It is most unfortunate, however, that they have had to wear old heavy O. D. uniforms evidently left over from the World War stock.

The American infantry holds a sector facing the Chapei area of the city where the Japanese have been unable to make any advance whatever. The Japanese join the American on the right, and the American Marines join them on the left? The Marine sector extending to and joining with the British on their left.

When I visited the lines, rifle and machine gun fire was being carried on almost continuously immediately in front of the sector, but this fire was directed to the flank against the Japanese, and not against the American. During the night there was some intermittent shelling, mainly carried on by the Chinese against Japanese points of importance.

At daybreak on the morning of the 24th, I went to visit the Japanese front north of Shanghai and between that city and the Woosung forts at the mouth of the river.

It appears that the Japanese, having been unable to advance through the Chapei District without incurring heavy losses, had decided to drive through the Chinese left, making the main effort with their right, but that their attack had resulted in but limited success, the Chinese having made a surprisingly effective resistance. The Japanese line was thus bent back to the Woosung forts on the right, or north.

After about an hour's drive by car I reached the headquarters of General Uyeda, commanding the Japanese forces, and had an interview with him.

At that time the Japanese air service was bombing, with over 200 pound bombs, what appeared to be a Chinese center of resistance in a suburban town not over 2500 yards from division headquarters, and there was much machine gun and rifle fire on the immediate front. I was surprised to see this bombing at what was clearly an artillery target, aerial bombing being, of

International News Photos, Inc.
31st Infantry Troops in Position

course, an exceedingly expensive and inefficient method for use against such targets.

General Uyeda's force consists of a reinforced division, including three infantry brigades, a battalion or more of mountain artillery, a battalion of field artillery about 70 mm. and a battalion of 5.9 howitzers.

He also has a little cavalry. The General said that he had met with unexpectedly stiff resistance from Chinese forces on his right.

Headquarters was established in what appeared to be an old farm building. A message center was going with much talking on the six or seven telephones in use. In a corner several officers were studying an airplane mosaic. Others were looking at maps and the General, with his Chief of Staff (a major general) and one other officer, was at the table in a small alcove over which a tent was pitched, the roof of the house probably being leaky.

A military funeral, attended by several companies of infantry, was taking place near the Division Headquarters.

All the equipment that I saw was excellent, as were also the uniforms. The men were of splendid physique, but they impressed me very much as being listless. This may have been due to the weather, which was cold with a biting wind, but more probably it was because of their lack of success against the Chinese.

The consensus of opinion at Shanghai is that the Japanese have fallen far short of what was expected of them. It is certain that the marines and sailors, when they attempted to take Chapei, were driven back in a hurry by the Chinese. That, of course, was street fighting, which is very difficult.

I was told that the Japanese naval fire has been inferior and that their troops cannot shoot well. The terrain is perfectly flat, and observation consequently is poor. I saw no balloons. I had heard that the Japanese were going to use smoke tactically. I did not see any being used, but it was hardly necessary, as the whole view was obstructed by smoke from burning farms and villages. I was told that some of the airplane bombs in striking the ground had failed to explode. My informant offered to show me a large dud nearly buried in the ground, but I did not have time to go and see it.

Photo by U. S. Recruiting Bureau
Soochow Creek

After leaving the Japanese Headquarters, I returned to Shanghai and then proceeded to the Chinese front. The General in command was not to be found at his headquarters. I was much interested in the Chinese troops and talked to a number of the infantrymen. Most of them seemed to be men of nineteen or twenty or even younger, some mere boys being among them. They were poorly equipped, not well uniformed, but their morale was exceedingly high, due doubtless to the success so far attained and to the fact that for the first time perhaps they are now receiving rations and pay and are the heroes of the hour. Apparently it is the opinion of all in the 19th Chinese Army that they have gained a signal victory over the Japanese. As this is the first time in modern history that this has happened, the high morale is easy to explain.

The U. S. S. Pittsburgh at Shanghai

Some observers have always maintained that, if properly trained, equipped and led, the Chinese would make good soldiers. They have developed fairly good methods in using railroad artillery and seem to know how to utilize a defensive organization in depth so that the troops do not present much of a target but are able, when the Japanese advance, to develop machine gun and rifle fire upon them and even to mix it up with them with hand-grenades and the bayonet. Many of the wounded had bayonet wounds, so I was told by a Chinese Red Cross worker.

I saw a very ingenious system of machine gun defense in which the grave mounds with which the country is dotted were used for gun emplacements. The works were invisible from the air and nearly so from the ground. The man I talked with said they did

not fear the aerial bombing, because the Japanese could not hit them.

My opinion with respect to the situation was that the Japanese, while awaiting reinforcements from Japan, were consolidating the rather slight gains in ground they had made and were preparing to attack with the intention of smashing the left of the Chinese and driving them to the southwest. Their reinforcements of a division were expected to arrive at Shanghai in a few days.

The 19th Chinese Army had also been reinforced so that the Chinese then had a force estimated at nearly 60,000 as opposed to the Japanese total of 20,000. It was clear that the Japanese were much in need of their expected reinforcements.

I understand that they were somewhat surprised when they attacked what they thought was the Chinese left, to find other Chinese troops still further to the north and on their own flank. The forts at Woosung were, when I left, still held by a few Chinese infantry, and were in the right rear of the Japanese. I thought I could see Chinese infantry infiltrating towards the Japanese right rear as we passed Woosung going out, and the forts were then under bombardment.

I did not have the opportunity to observe the use of tanks by the Japanese. There are quite a few canals, but otherwise the ground is suitable. The use of gas by the Japanese would have done the trick, as the Chinese have no protection against it. I was told that the Japanese were getting from five to ten thousand gas masks. This would indicate that they intended to use gas. Probably they were holding its use in reserve as an extreme measure.

Experience here gives recent confirmation to our conclusions that tenacious infantry cannot be shot out of a position.

Courtesy of *The New York National Guardsman*

The Ears of the Army

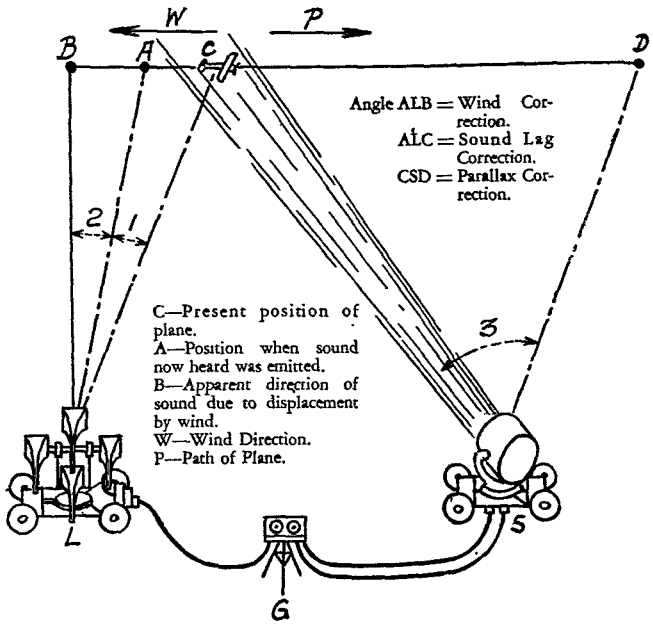
By P. R. Bassett*

WHEN we are startled by a noise we respond immediately and unconsciously by going through a set of reactions which are so normal as to pass almost unnoticed, and yet, on analysis, are most amazing in their efficiency. Let us see what happens. Suppose a man is walking in the woods and there is a rustling in the brush; he stops instantly, turns his head directly toward the sound, and looks straight in that direction. His intent gaze immediately sees any motion at that spot and the unknown danger then becomes located and known. All done in an instant, but how? We will analyze the process.

First, the man stands still. This is for two important reasons—he wants to steady his hearing and seeing instruments so they will function most efficiently and he wants to cease making any sound so he may hear better the unknown sound. Then he turns his head directly toward the sound. That seems to be a simple act, but strange as it may seem the correct explanation was unknown until within the last thirty years when the binaural sense of the ears was discovered. Previously it had been thought to be a matter of equal loudness to the two ears to locate a sound. The simple experiment, however, of stuffing cotton in one ear, thus changing the relative loudness without causing one to lose sound locating ability, shows that some additional explanation is needed.

The binaural sense is the ability of two ears to detect the phase relation of the sound waves striking them. For example, a sound coming from a point ahead but somewhat to the right of a listener reaches the listener's right ear slightly before it reaches the listener's left ear. This is evident because the path is shorter. A sustained sound is a series of waves in the air travelling at 1,100 feet per second. If one ear of a listener is slightly nearer the sound source than the other, that ear receives the crest of every wave slightly before the other ear and this condition is interpreted in our brain as "the sound is coming from the right." So we turn our head to the right until the crests of the sound waves reach both ears at the same instant i. e. the waves reaching the two ears are in phase. The distance from sound source to the two ears is then the same, hence it follows that the head is facing directly towards the source of sound. The accuracy of the binural senses varies with individuals but normally runs better than 5 degrees in azimuth. The spacing between ears is 6 inches. Five degrees error therefore means that the listener can turn his ears to within ½ inch of the same distance from the sound source. As sound travels 13,200 inches per second it is evident that the ears detect by the binaural sense a difference in time as small as 1/26,000 of a second. All of this little digression about angles and time is only an outline of what went on when our listener in the woods "turned his head."

The next step in the sequence was that he "looked straight." That is, his eyes trusted his ears. His ears located the sound within 5 degrees and his eyes centered on this small zone. The field of view of the eyes is over 120 degrees but the zone of good visual



This diagram shows the elements of the sound lag corrector problem.

acuity is only about 5 degrees in diameter, so that the smallest motion or indication within this zone will be immediately seen.

So the man in the woods was startled by a noise and in a few seconds found and saw the source of the noise. Technically speaking, however, we witnessed a remarkable performance of a binaural sound-locating device mounted on a noiseless bearing which swung a stereoscopic range finder immediately and directly on the object sought.

The problem of night defense against aircraft contains all the elements just described. A distant sound is heard, its direction must be located and the airplane source must then be visually picked up. The problem, however, is on a very large scale, miles instead of yards. This large scale introduces complications which make it most difficult of solution. In fact, progress in its solution has lagged in many countries due to its apparent hopelessness. We are not equipped by nature to deal with a distant danger such as a night bomber. Nature did a superb job for nearby dangers but the distant bomber is an entirely new and unnatural type

* Chief Engineer, Sperry Gyroscope Co., Inc.

of peril and can only be met by new and artificial extensions to our senses.

It all began in the World War. As soon as aircraft flew at night antiaircraft defense sprang up. Field searchlights were limbered up and became antiaircraft searchlights over night. The lights quickly drove the planes up to safe heights but it was immediately evident that the advantages were all with the airplanes.

It came to be a familiar sight to see numerous searchlight beams frantically waving in the sky trying to find some elusive plane, and many a busy night netted no pickups.

The difficulty was that the unaided ear proved to be surprisingly inaccurate in locating an airplane. It was found that the ear could only locate within a zone of about 15 to 20 degrees but the searchlights had an angle of spread of only between 1 degree and 2 degrees. This means that there was a ratio of the order of 200 to 1 between the area to be searched and the area of the searching beam. Now if the airplane should stand still, the searchlight operator could find it by systematically moving the beam back and forth across the area to be searched, but no such luck; the plane is moving rapidly so that the zone to be searched is also moving and hence a systematic search becomes impossible and the game becomes one of chance of a 1 degree beam intercepting a 1/8 degree plane in a haphazard search of a 15 degree field. This proved to be a most ineffective and losing game. All of the air defense organizations began experimenting with sound locators. The devices were mainly of two types —paraboloid reflectors, and collecting horns. Figure 1 shows an actual installation of a paraboloid behind the lines of the western front.

The theory of the sound paraboloid was that it would collect the incoming sound waves and, by reflection, bring them down to the focal point, acting just the reverse of a searchlight and collecting sound instead of projecting light. At the focal point of the paraboloid were four small open end tubes which carried the focussed sound to the ears of the listeners, two tubes went to the ears of the elevation listener and two tubes to the ears of the azimuth listener. The listeners attempted to set the angle of the paraboloid so that the intensity of the sound was the same in both ears. The binaural sense or phase effect was not utilized in the parabola. These paraboloids proved very clumsy and inefficient. The inherent trouble with the sound reflector was the sound of the airplane itself which consists fundamentally of frequencies of low pitch. The main part of the energy in the noise from an airplane lies in the frequencies between 100 and 200 cycles per second. When it is considered that sound travels at 1,100 feet per second, it is evident that the wave length of the main sound is approximately 10 feet from crest to crest. There is, of course, some additional noise of higher frequency which would have shorter wave lengths. Figure 2 shows a sound analysis curve of an airplane in flight.

Trying to reflect and focus a 10-foot wave is not easy. The reason is that it takes a reflector larger than the wave length in order to show any signs of efficiency. It should be several times larger than the wave length, but this would be quite impractical because the reflector would have to be 20 or 30 feet in diameter. Consequently, the reflector was reduced to the smallest size possible, which gave it a diameter about equal to the main wave length, 10 feet. Even this minimum size gave an instrument too clumsy to be portable.

The following analogy will show how a reflector acts with large waves. If we should drive a pile in shallow water and watch the effect of the waves as they passed it, it would be very noticeable that the pile does not reflect the large waves or swells, which are considerably larger than the diameter of the pile. But the pile reflects quite perfectly all of the small ripples whose wave lengths are less than the diameter of the pile. The same was found to be true with even these large paraboloids—they lost the majority of the main sound from the airplane but caught only the higher frequencies, the overtones and hums of the airplane parts.

The other type of listening device which was brought out in quite a variety of forms was the collecting horns.

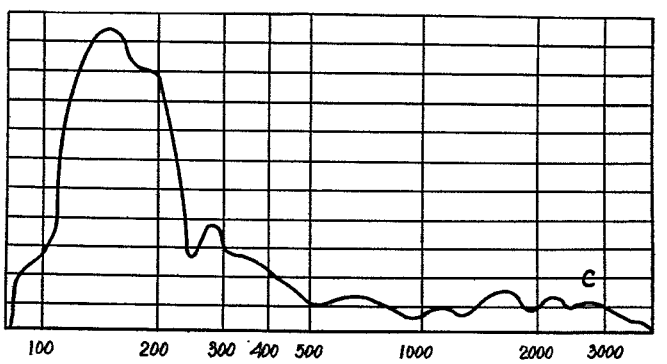


Fig. 2. This Curve Shows the Frequency (Tone) Distribution of the Sounds Emanating from a Typical Single-Motored Airplane.

It will be observed that more than half of the sound occurs at the low frequencies. A multi-motored bombing plane has an even greater proportion of the low tones. The horizontal graduations are frequencies in cycles per second. The vertical coordinates are arbitrary units used in the acoustic laboratory.

This depended on the binaural sense and consisted of four horns or groups of horns mounted at the four ends of a cross-arm, which was universally mounted, so that it could turn to any angle. The two horizontal horns were connected by means of tubing to the ears of the azimuth listener and the two elevation horns connected to the ears of the elevation listener. In this case, the listeners turned the horns until they were in such a direction that the incoming sound gave the sensation of being centered in their heads. This we can recognize as the same effect as described before; that is, the sound entering the two horns was in phase, and consequently the horns were normal to the incoming wave front.

Here again, the efficiency of these units was not as great as anticipated and the reason was the same, that in attempting to make a portable unit of not too large dimensions the horns were very small with respect to the wave lengths they were to collect, and consequently the main part of the sound again could not enter efficiently in the small horns and be transmitted

through the rubber tube to the listener's ears. Many of the early designs had horn mouths less than one foot in diameter.

It was practically not until the end of the war that the best solution was hit upon. "Long horns," four single horns of large size, came into use as the sound collectors. This work was started in America by Dr. Stewart in 1918 and is the basis of the modern sound locator. When a horn is used as a sound collector, it does not have to have a mouth opening as large as the wave length of the sound it collects, but it does need a mouth opening or entrance chamber which is a fair fraction of the wave length; for example, about one-third to one-fourth. The reason that the horn dimensions can be smaller than reflector dimensions is that the two function quite differently. A horn, with a large end tapering to a small end, functions more or less as a piston and cylinder. The sound wave, as it enters the large mouth of the horn, presses the air toward the small end, and as it takes some energy to push and pull the air in the tube, so the mouth of the horn must be large enough to admit enough of the cross-section of the wave to act as this piston. A horn must be designed very carefully so that the amount of energy admitted to the mouth of the horn is sufficient to take care of the load or the work necessary to be done in pumping the air back through the tapered portion all the way to the ear. If the design is not correct, the energy just does not pass all the way through.

Private Edward O'Connor of Battery A, 62nd C. A. (Antiaircraft) from Fort Totten, N. Y. enjoys being in the movies which were made recently by the Signal Corps during a revision of the Army's training film on the subject of Antiaircraft Artillery.

To go back to the analogy of waves in water, let us suppose that an open-ended pipe is placed horizontally just at water level. It is very evident that the water rushes in and out of the pipe with each wave very efficiently, even when the pipe diameter is one-third of the distance from crest to crest of the waves. If, however, the pipe is made very small, it is evident that the waves strike the end of the pipe, but there is not enough area nor time for the water to flow in and out of the pipe with any efficiency at all, and the pipe remains more or less plugged. This is quite similar to what happens with horns as collectors. They must have a certain minimum size just as a reflector must, but they will operate more efficiently than a paraboloid reflector, even when they have only 10% of the mouth opening of the reflector.

Another feature, the importance of which has been learned from recent experience is that as these collecting horns act as piston and cylinder, so they must be treated in the way of extreme refinement. Smoothness of contour, accuracy of taper formula, avoidance of sharp bends are of great importance in the efficiency of the sound tract.

Referring again to Figure 1, it will be noticed that there is considerable distance between the sound locator and searchlight. There are a number of reasons for this. The two cannot be combined in one instrument for reasons of portability, and therefore they must be separated so that each has clearance for all angles of search. Also, it is very important that the sound locating station is quiet, and hence it was removed from the searchlight. This made it necessary to transmit the angles determined by the sound locator to the searchlight, and during the war this was done entirely by either calling across from one location to the other, or by field telephone. Both of these methods were slow and clumsy. It is not surprising, from what we know now of the inefficiency of the sound collector and the slow method of transmitting the data, that sound locators did not improve the general results of antiaircraft searchlights as much as was hoped for from the size and elaborateness of the apparatus. Consequently, sound locators came out of the war with a bad reputation and unfortunately this reputation still adheres in many quarters. Development work on sound locators practically ceased right after the war. It was not until antiaircraft searchlights and distant controls had been developed to such a stage that we were convinced anew that something must be done in the way of sound locators in order to take full advantage of the excellent efficiency of the newer antiaircraft searchlights. The U. S. Army carried on experiments over several years in developing the best formula for the collecting horns. An exponential formula was finally arrived at which gave superior field results, and this has been adopted by the U. S. Army for their standard equipments.

The Sperry Company starting also with the horn formula as designed at Frankford Arsenal have designed an improved type of sound locator as an essen-

tial accessory to the searchlight. In the present design of Sperry sound locator, all of the past history of sound locating has been taken into account. The best line of development has been selected and a great many improvements and refinements have been put into the design of the present Sperry equipment. It has been found that in acoustic apparatus a great amount of attention must be paid to the small details. Its efficiency depends upon the refinement.

Even at its best, however, there are limitations to the sound locating problem which it is important to understand. To locate the direction of the incoming sound and then compute with sufficient accuracy the position of the airplane so that a searchlight beam can be opened up directly on the airplane is the ideal that cannot be reached. Since this cannot be done, we must speak of the efficiency of the sound locator, not in terms of how often it can open on the target but in terms of how much it can reduce the mean area of the sky in which it is necessary to search with the beam for the target. If the unaided ear can locate within 15 degrees and the sound locator can locate within 5 degrees, we have reduced the searching area in the proportion of 9 to 1, and therefore have reduced our pick-up time to at least one-ninth of what it was with the unaided ear.

Since the time available for picking up a fast moving airplane is only a matter of a few minutes at the most, it is quite apparent that any reduction of time as great as one-ninth may be the difference between a fair pick-up and a complete miss, and this actually proves to be the case.

A good binaural exponential horn sound locator, however, can determine the direction of an incoming sound with an accuracy of ¼ degree. The reason that such a remarkable accuracy can be obtained through the binaural sense is that the listener has increased the base line, or the distance between his ears, from 6 inches to 10 feet by using the horns. As was mentioned previously, a listener detects the phase shift by sensing which ear is nearer to the source of the sound. If the ears are sensitive to a half-inch difference in the two sound paths, it is apparent that the unaided ear must turn 5 degrees to make a one-half inch difference, but two horns 10 feet apart make a one-half inch difference with only ¼ degree turn. Hence, the increased accuracy.

There have been mentioned in the last few paragraphs two accuracy figures which show a great discrepancy. It is possible to locate a sound with a good binaural locator within an angle of plus or minus ¼ degree, but with such a locator it is impossible to guarantee an airplane location within an angle of plus or minus 3 degrees.

The cause of this discrepancy is distance. It can be told of in the interesting story of what may happen to the sound on its long trip from airplane to listener. We are interested in locating the airplane at distances of from six miles down to two miles. Sound travels at 1,000 feet per second on a cool night, so that if an airplane is four miles away it takes twenty-one seconds for the sound to travel from plane to locator. In this same 21 seconds, however, the airplane, travelling at 120 miles per hour, will have moved 3,500 feet, so it will be two-thirds of a mile from the point at which it was when radiating the sound that the listener is hearing. This is equivalent to 9 degrees maximum difference of angle between the direction of the incoming sound and the actual airplane position. The plane may be 9 degrees to the right or 9 degrees to the left, or, if coming directly toward the listeners it will be several degrees higher in elevation than the sound. The only thing sure is that it will

Fig. 1. Sperry Antiaircraft Searchlight and French Sound Paraboloid. In location behind the Western Front, 1918.

not be in the direction that the sound is coming from. No wonder sound locators have been erratic and mistrusted. This effect is known as sound lag, it is the largest error which must be compensated for in locating the airplane. Various guess methods and stop-watch methods have been used in the past in an attempt to determine the sound lag corrections.

In the Sperry Sound Locator, there is incorporated for the first time an automatic sound lag computer. The rate of change of the incoming sound angle is made to set up an indication on a dial which gives the number of degrees and the direction to the predicted position of the airplane. This sound lag prediction is then added or subtracted, as the case may be, to the data which is being transmitted to the searchlight controller.

If that were all, the job would still be comparatively easy. But we must be able to picture another series of effects which are beyond control and which may be grouped under the term "atmospheric effects."

In the acoustic laboratory or in buildings, the air which transmits sound is considered as a uniform and homogeneous medium. Four miles of outdoor air is not. First, there is wind. If there is a cross-wind, it carries the sound sidewise with it and, as we have seen, the sound is so slow it has considerable time to be drifted. A twenty-mile an hour cross-wind will drift the sound 600 feet sidewise as it comes from the 4-mile target. This is an additional error of 2 degrees. But if the 20-mile an hour wind were measured on the ground and used in the calculation of the correction, we are wrong again. A ground wind of 20 miles at night nearly always means a wind of 40 to 50 miles an hour at the altitude the airplane is flying. Hence, the average wind through which the

sound passes is probably 35 miles an hour, and the drift error would therefore be about 3½ degrees. It is apparent that cross-wind cannot be forgotten even though there may not be enough meteorological data available to make a precise correction. The Sperry Sound Locator Corrector has three settings for wind correction, (1) the direction of the wind, (2) the velocity of the ground wind, (3) the velocity of the altitude wind. From these three inputs, the output data is automatically corrected.

If, instead of a cross-wind, the wind is blowing toward or away from the target, a much more complicated wind effect is noticed. This is called wind refraction. It means that as the sound passes from the high velocity upper winds to the low velocity ground winds, it is actually bent in a curved path so that the direction the sound finally enters the horn is not a true indication of the sound source. If the sound is coming down wind, it is bent downward. If it is going upwind, it is bent upward and may often be so bent upward as to entirely pass over the listener and be unheard. That is why on windy days it is frequently impossible to hear airplanes at any distance against the wind, and yet they can be heard great distances with the wind. It is not that the wind carries the sound along, it is that it bends the sound down to us, whereas the upwind bends or refracts the sound up over our heads.

Wind refraction is most difficult to compute with any accuracy, but average errors of this cause may be solved in the Sperry Corrector as the wind component changes from cross-wind to path wind and added to or subtracted from the elevation data.

Even temperature differences of the air from ground to altitude cause sound bending which is called temperature refraction. This error under normal conditions, however, is less than one degree and hence is not worth correcting for. The temperature data is usually not available in the field, so the correction would be of no value.

There are many other minor effects which also increase the sound locator's troubles. For example, everyone has noticed how a distant airplane sounds first faint, then surges louder for a few seconds, and then almost fades away into silence. It is seldom a steady sound. This is caused by atmospheric irregularities, wind gusts, etc. It is the same effect acoustically that causes a star to twinkle visually. The atmospheric irregularities cause both the distant sound or distant light to come through slightly wandering or erratic paths instead of straight lines. When these paths converge on the ear or eye, the sound or light increases; when the paths diverge, they fade. In the case of distant sound, the surging causes an apparent diffusion which makes accurate listening difficult, but this is overcome as the plane approaches and the sound becomes steady and louder.

We have only touched on some of the more interesting and important effects of atmospheric acoustics. It is enough, however, to show why the sound locator, even though perfect in itself, cannot overcome entirely the unknowns of the intervening medium. It is also evident why early sound locators were disappointing in their results.

In the new Sperry Sound Locator, with its automatic corrector, the problem has been solved to the point where this apparatus can function with a 60-inch High Intensity Searchlight to greatly increase the efficiency of the system.

The area to be searched can be so reduced in size by the immediate and continuous transmission of corrected data to the searchlight controller that pick-up time is reduced from X to less than 30 seconds under normal conditions.

LOYAL GUARDSMEN

THE military of Delaware, comprising the 198th and 261st Coast Artillery regiments, has just achieved an unusual distinction. Every officer and enlisted man, according to a report made a few days ago, was in attendance at the annual inspection of his unit on the designated dates. The inspection took place this month, ranging over a period of about three weeks. Some of the members who should have been home because they were not well were voluntarily on hand at the inspection in order that the record of their command might be perfect.

This is highly commendable. The National Guard of Delaware is composed of young men who obviously are inspired by a patriotic impulse. They have cooperated with the officers in building up a creditable organization. When they voluntarily inconvenience themselves, to enhance the reputation of the service, they show a loyalty that is highly commendable and that augurs well for the future of the Guard and its value to the state.

—*Every Evening,* Wilmington, Del.

The Song of Lieutenant Hiawatha

Adjutant, Battery Commander, Ordnance Officer, Artillery Engineer, Outpost Officer, in addition to his other duties, in the Harbor Defenses of Backwoods

Introduction:

SHOULD you ask me, "Whence these stories?
Whence these legends and traditions
With the odors of the oil-rooms,
With the dew and damp of shot-rooms,
With the curling smoke of mortars,
With the clicking of typewriters,
With their frequent repetitions
And their wild reverberations
As of thunder in the mountains?"
I should answer, I should tell you,
"From the forts and reservations,
From the isles in Backwoods Harbor,
From the land of the Caretakers;
From the land of the Gun-Greasers;
From the batteries and the barracks,
Where the Sea Gull, the Wa-Shu-Ta,
Feeds along the beach and mudflats."
You who stand now in the class-room
At the school at Old Point Comfort,
Teaching Gunnery and Tactics;
Where to locate all the strong-points
And the centers of resistance;
How to find at night the north-star;
How to make the guns and mortars
Hit the center of the target,
Or the point you call "set-forward";
Listen to this Backwoods legend,
To this song of Hiawatha!
You who sit in swivel chairs
In the Great White Father's City,
Making personnel allotments,
With your spurs upon the desk-tops;
Apportioning the first-class privates
And the corporals and buglers,
And the officers and sergeants,—
Listen to this simple story,
To this song of Hiawatha!
You who have the firing batteries,
A hundred men upon the roster;
Forty of them out each morning
Working on the guns like beavers,
Like Ahmeek, the King of Beavers,
Cleaning up for target practice,
While the captain, with much grumbling,
Checks the tools for two guns only;—
Four screwdrivers, bar, for pinions,
And a few assorted wrenches;
Stay your busy course a moment,
Read how fare the other warriors;
Read this song of Hiawatha!

Hiawatha and Chief Silver Eagle

By the shores of Backwoods Harbor,
By the shining Big-Sea-Water,
Stood the wigwam of the Colonel.
Chieftain of the tribe, the Colonel,
Wearing eagles on his shoulders,
Silver eagles, clutching arrows;
The Keneus, the great War-Eagles.
Dark behind it rose the city,
Rose the black and gloomy chimneys,
Rose the poles with wires upon them.
Bright before it beat the water,
Beat the clear and sunny water,
Beat the shining Big-Sea-Water.
There the wrinkled Silver Eagle
Caught Lieutenant Hiawatha,
Made him captain of the battery,
Adjutant, to sit in council,
Engineer, and Ordnance Officer;
Gave him other totems also,
He must sign Reports of Changes,
Count the turned-in P X coupons,
Give the wampum out on pay-day;
(Some of it was silver wampum,
But the most was made of jawbone).
And the wrinkled Silver Eagle
Imposed other tasks upon him;
To take care of all the outposts,
All the forts and all the islands;
To keep the war-canoes in order,
And to keep them on the water,
On the shining Big-Sea-Water;
Going back and forth to islands,
Every day, to all the islands,
When the sea was warm with sunshine,
Or when the ice was thick upon it.
Thus the Song of Hiawatha
Sings of busy days that followed
In the land of Backwoods Harbor.
With the sun rose Hiawatha
As each morn the loud-voiced War-Gun
With its thunders woke the warriors,
All day long, until the sunset,
He and all the braves were busy
As Ahmeek, the King of Beavers.
And, when night had come to Backwoods,
And Guskewau, the darkness, wrapped her,
And shut were all the doors of wigwams,
Then he sent the warriors homeward.
But Lieutenant Hiawatha
Lingered many weary hours
Until sleepiness o'ercame him,
And he climbed with weary footsteps
To his wigwam on the hillside.

Hiawatha's Morning

As the Morning Star was waning,
And the east was tinged with daylight,
And the War-Gun's thunderous clamor
Woke the people from their slumbers,
Forth each day went Hiawatha
To his many varied labors.

At the Engineer and Signal office
Found he many things for action;
Shipping tickets for his signing,
Stock card entries for his checking;
By the thousands did he find them,
Myriad as the stars in heaven.
And he found some strips of birch-bark,
Letters from the Great White Father;
Writing telling of the changes
That were made in regulations;
Telling him to take the red lamps
From the Class A lines on switchboards,
And to use instead some green lamps.
But they did not send the green lamps
Or the wampum for to buy them.
And the birch-barks told him also
That he must scrape the painted railings,
Which last week the tribe had painted
With the best of their black war paint;
Paint them now with olive-drab paint.
For this also, no paint sent him,
Or the wampum for to buy it,
Nor the squaws to do the painting.

And another birch-bark told him
To discharge all civil labor,
For the work which they were doing
Could be done by warrior labor.
And this caused him greatest anguish,
For the men whom he must discharge
Had been with the tribe from boyhood.

At the Ordnance Office, also,
Many things required his signing;
But the telephone was ringing;
Silver Eagle wished to see him
At the chieftain's council-tepee.
So without signing any papers
Forth went Hiawatha, running,
To report to Silver Eagle.
But the chieftain had forgotten
Why it was he wished to see him;
Talked with him an hour, inanely,
Then sent him about his business.

Then, as Adjutant, the warrior
Checked and signed Reports of Changes,
And the monthly tribal rosters,
And the clothing slips and payrolls;
(Made of jawbones were the payrolls.)
But the war canoe was waiting,—
Called the L-boat in his language,—
To take him to the other islands
Where his braves, with grease and war paint,
Worked like beavers, painting arrows
To be stored for use in war-time.
Other braves, with blocks and tackle,
Raised the mortars from their trunnions,
Scraped the rust from springs and pistons,
Let them back upon their trunnions.

There Lieutenant Hiawatha
Climbed among the piles of arrows,
Counted them, and checked the painting;
Told the braves where they should stack them.
Then he went to other islands,
Where he counted all the wrenches,
Checked the brickwork of the buildings,
Looked for leaks on all the roof-tops,
Three men only, had each island,
To take care of all the war-guns,
All the wigwams, and the phone-lines,
Cut the grass, and paint the dock-gear.
They must also do the cooking,
For their squaws would not stay with them,
Since the islands were so lonesome.

Then the coxswain of the L-boat
Blew upon his whistle loudly;
Telling Lieutenant Hiawatha
That the tide was running outward;
He must turn the boat's prow homeward
Ere the channel lost its water.
So they went across the harbor
Breaking ice in chunks before them,
Scraping mud upon the bottom,
While they prayed to Mudjekeewis
That the engine would keep running.

Hiawatha's Afternoon

To his wigwam went Hiawatha,
For the sun was high in heaven.
In haste he ate his meal of fishes,
And rushed again to the warriors' tepee.
There the telephone was ringing;
"This is Congressman Dan Webster,
In the Great White Father's City.
Tomorrow there will be a funeral
In my district near your village.
I must have a firing detail;
Eight fine braves with bows and arrows,
And a bugler to make music."
But Lieutenant Hiawatha
Told him that he could not help him.
All his braves were painting arrows
And could not be spared for funerals.
Then the mighty Daniel Webster
Answered with virulence and dudgeon;
Talked of Chiefs of Staff, and Generals;
Said he'd see the Secretary.
Twenty minutes, at the day rate,
Thus he talked to Hiawatha,
But he could not have the detail.

Then Lieutenant Hiawatha
Telephoned to other islands,
But he found they would not answer;
For the cable had been broken
By a steamship dropping anchor
Right upon the cable crossing.
So he radioed Big Chief Two-Stars
For a ship to fix the cable.
"In eight more moons," he answered, lightly,

"When the sea is warm and sunny,
Then our ship will fix your cable."
Then the busy Hiawatha
Counted all the P X coupons,
Signed some new ones, burned the old ones;
Made the entries on the ledgers;
Signed the checks, and banked the wampum.
Then another solon called him
For a funeral in his district;
Thirty minutes, at the day rate,
He talked, but could not have the detail.
So Lieutenant Hiawatha
Toiled that winter afternoon,
Checking clothing requisitions;
Planning ways of running engines
With too small a gas allowance;
Fitting shoes and socks on warriors;
Seeing that the lights in barracks
Were turned out when not required;
Writing in emplacement books
Records of dismounting mortars;
Ordering wood of pine or hemlock
To fix the floors of base-end stations;
Ordering valves and copper gaskets
To fix the engines on the L-boats.
When the darkness fell around him,
When Guskewau, the darkness, wrapped him,
Homeward, then, went Hiawatha.
Then on pemmican he feasted,
Succotash, and haunch of bison,
With his squaw and young papooses.

Hiawatha's Night

After all the feast was finished,
Hiawatha took his surveys,
Board reports, and depositions;
Worked on them till sleep o'ercame him.
Then lying underneath his bearskin
Peacefully slept Hiawatha;
Heard not the lapping of the waters,
Or the whispering of the pine trees,
Or the moaning of the fog-horns.
But the jangling telephone
Woke him from his peaceful slumber.
It was a member of the congress
In the Great White Father's City,
Calling for a funeral detail;
Calling late, to get the night-rate,
After one o'clock, the night-rate.
Thus we leave bold Hiawatha
As he throws the phone receiver
Across the wigwam, through the window
Tears the feathers from his head-dress;
Mutters curses incoherent;
While the tree-tops shake with laughter,
With their melancholy laughter,
At the words of Hiawatha.

Meeting of the West Point Branch of the U. S .C. A. Association

THE local chapter of the Coast Artillery Association held its last meeting of the present academic year, April 12, 1932. The meeting was the largest of the year, approximately sixty, including many guests, being present.

The meeting was addressed by Lt. Colonel R. C. Richardson, Jr., who chose as his subject: "The Rise of Fascism In Italy."

Colonel Richardson served as military attache to Italy during the period 1926-28 and gave a most interesting and informative discussion of his subject.

Upon the recommendation of the nominating commitee, Capt. James L. Hayden, Chairman, the present officers, Lt. Colonel Sanderford Jarman, President and Capt. Wm. H. Donaldson, Secretary and Treasurer, were re-elected for the coming year.

A Foreign Student's Experience With the R.O.T.C.

By Su-Lee Chang

GRATEFULY he left the rector's office and congratulated himself on being permitted to be a visiting member of the Georgetown University Reserve Officers' unit. He pulled the major's hands while shaking cheerfully. It was an added distinction he thought that the authorities were so gracious as to give him the same equipments as what the rest of the boys have. He went home, put on the uniform, and walked back and forth in his own room with a childish gay. He really quivered with a new vibration. His mind, however, is serious, for the opportunity which he was having, was, in his way of thinking, unique.

Several weeks passed unnoticed. Standing in line he seemed shorter than the average. Marching on the parade ground he had to take quick steps to catch up with the rank. At times, the rifle wiggled right and left on his shoulder. Half of the commands given by the student officers seemed different from what he read in the manual. There were occasional rest periods with laughing and joking. Soldiery is not a simple profession, he immediately realized. It requires, first of all, self-discipline.

He called at the office of the military department in uniform. A feeling of cordiality and friendship has already existed between officers of the department and himself. Military courtesy in school seemed to be reduced to a minimum. He knocked at the door and was admitted. He saluted the major and the captain and stood still. His saluting was corrected. Friendly conversations followed covering a number of interesting topics. It became familiar. He almost forgot that it was a cadet talking to officers. But when he left he raised his hand smartly up and down and marched off militarily. A thought ran through his mind. It was not the major or the captain—who, in civilian clothes, are ordinary "Misters"—but the system and the uniform that matter. They represent tradition, honor, and dignity. He learns, and is glad to learn, courtesy. One must be strictly honest in performing his part of the game. It is the living spirit of a military organization.

The armory is a place of education. The fundamentals of sighting and target practice are taught to those who join the rifle club. He probably has no flair for shooting but he liked to try. And he did. He cleaned and oiled the rifle. Stretching on the floor, with one eye closed, he aimed and fired. There was no indication where the first bullet landed. "Hold and squeeze," the captain said repeatedly, as he looked through the telescope. He held and squeezed; still he missed the target frequently. After long and arduous practice he made the required number of points and graduated to a more difficult position. There is a principle in doing everything. In this particular place, mental cerebration is most essential. There must be close co-ordination between the mind and the body.

The temperature ran a new low. It was an extremely cold day. Like a school-boy he sulked and wanted to be excused from the day's drilling. He reached for the phone but dropped it before calling. All marched to the gymnasium and practiced rifle manual. The wind was howling outside, but the air was warm inside. Some of the boys grumbled and murmured, but they continued the drill until the hour expired. When one paused for a moment to think how often we let outside forces smack at our lazy bone and submit ourselves timidly to the evasive and shirking in-

The Author

clinations of human nature, one is astoundingly surprised. Is not this a searching thought?

There are rifles, automatic rifles, and machine guns. He studies the first two thoroughly and knew a little about the other. Field stripping and assembling were learned with enthusiasm. One day they all went to the woods and fired. He is learning the technique of the use of arms. He never learns them as an art of aggressive war. It is wrong psychology. Many lectures were devoted to personal hygiene, public sanitation, military laws and history. There is a wealth of information and facts in store for him. It is a way to knowledge.

He observed to his satisfaction the entire absence of militaristic proselitizing and the high-powered preaching of ideas of nationalistic egotism which the pacifists fear. It is in reality an unsurpassed citizenship and personality training by methods known in military science. It helps to develop in the youth admirable qualities of self-discipline, courtesy and obedience, esprit de corps perseverance, mental and physical coordination, a desire to know, and the ability to think. These qualities will stand anyone in good stead for individual as well as for national life. Love for one's country is natural. Once the direct benefits of military training are given, authorities may rest assured that patriotism and a sense of duty will take care of themselves amply well.

To the mind of a foreign student who, in his school days, knew nothing of such an opportunity, and whose country today presents the tragic scene of torn humanity, one of the causes for which being the lack of proper and rigid citizenship training, the indelible impressions created by the Reserve Officers' Training Corps system are surprising, but natural.

* * *

The writer of this article, while on duty in Washington as a junior member of the Chinese legation staff, pursued a special course of instruction in the ROTC only, at Georgetown University. Mr. Chang withdrew from Georgetown in February, 1932, in order to become a flying cadet at Randolph Field, Texas. He is now receiving training by special permission of the Government.—THE EDITOR.

THE Army can live on short rations, it can be insufficiently clothed and housed, it can even be poorly armed and equipped, but it is doomed to destruction without the trained and adequate leadership of its officers. An efficient and sufficient corps of officers means the difference between victory and defeat.

Everything in war, and for war, can be improvised except the trained officer. Battles are won not by men but by a man.

Skilled officers, like all other professional men, are the result of continuous and laborious study, training and experience. There is no short cut to the peculiar type of knowledge they must possess.

—From a statement by General Douglas MacArthur, Chief of Staff, before a Congressional Committee in connection with the Army Appropriation Bill.

The Foreign Military Press

Reviewed by Major Alexander L. P. Johnson, Infantry

BOLIVIA.—*Rivista Militar*,—October, 1931.

"Information concerning the armies of South America—Argentina," by Lieut. Col. O. V. L.

The military forces of the Argentine Republic comprise three components: the Army of the Line; the National Guard, and the Territorial Guard. The Army of the Line consists of the active army and its reserves. Service is compulsory. Upon completion of their active service conscripts pass into the reserve and remain in that category until their thirtieth year of age. The National Guard consists of officers, N. C. O.'s of the National Guard and citizens between 30 and 40 years of age. The Territorial Guard comprises officers and N. C. O.'s of the Territorial Guard and citizens between 40 and 45 years of age.

The national domain is divided into five administrative military zones, to each being assigned one division and certain other formations and services. The division commander also functions as zone commander and as such shoulders the responsibilities incidental to mobilization.

The division staff is organized in five sections: I. general staff; II. recruiting and orders; III. supply and administration; IV. medical and veterinary services; V. military justice. The division consists of headquarters and headquarters troop; infantry headquarters and three infantry regiments (each with one accompanying battery of four 75's); one regiment of cavalry; artillery headquarters and one regiment of field artillery (four batteries of 75's and one battery of 105's); one batallion of engineers (pontoniers); ammunition and field trains, and divisional hospital. In addition, there are three independent cavalry brigades, two Alpine detachments and two regiments of Mounted Infantry. The cavalry brigade consists of headquarters and headquarters troop; three regiments of cavalry; one M. G. Squadron; one battalion Horse Artillery (two batteries of 75's) and one detachment of Mounted Engineers (pontoniers). The Alpine detachments consist of headquarters; one regiment of Alpine Chausseurs; one platoon of Alpine Scouts; one battalion mountain artillery, and one company engineers (sappers). The regiment of mounted infantry has 2 battalions (19 officers and 360 men).

The peace strength of the Argentine army is about 5000 officers and 20,000 men. The first levy comprises 250,000 men. The total mobilized man power of Argentina amounts to approximately 700,000 officers and men. Argentina has neither an antiaircraft nor any coast defense system. The infantry armament includes the Argentine Mauser rifle, model 1909; the Colt and Maxim type machine gun and the Argentine Madsen automatic rifle. All these use calibre 7.65 ammunition. The cavalry is armed with the Mauser carbine using infantry ammunition, the lance, sabre or machete. The artillery materiel represents a variety of models, some of rather old type.

The cultural level of officers is high. Professional training is provided by the following institutions: 1. The San Martin Military Academy, founded in 1869, which offers a four year course of instruction to about 1,500 cadets. Graduates assigned to the artillery or engineers are required to pursue a post-graduate course of two years. 2. The infantry, cavalry and artillery schools offering courses extending from 15 days to six months; and 3. the Superior War College, founded in 1900, which offers a three years course in higher staff and command training to about 35-45 officers. In addition to these, there are also a school of military aviation, a signal school, a school for physical training and fencing, as well as a N. C. O. school and a school for musicians.

CANADA.—*Canadian Defense Quarterly*,—January, 1932.

"General Pershing and the Battle of Hamel," by W. B. Kerr.

The author takes issue with the statement in General Pershing's memoirs regarding the use of American troops by the British at Hamel, on July 4, 1918, without the consent of the Commander-in-Chief of the A. E. F., whose comment is quoted along with the details of the incident to the effect that it "showed clearly the disposition of the British to assume control of our units . . ." The author seeks to answer the query: "did the British in the Hamel affair do anything contrary to the will of the Americans involved?" He cites General Sir John Monash's "Australian Victories in France in 1918" (pp. 52-55) to show, that the American 33rd Division had for some weeks been in training with British and Australian contingents, that this fact suggested the idea to General Monash to invite American cooperation, and that he applied to the Fourth Army and secured permission to use 2000 United States troops in the affair. The author believes that General Pershing's own version: "the British requested . . . Read . . . to permit some of the troops . . . to take part," is ambiguous since the word "request" implies an exercise of authority short of command. The situation is, in the author's opinion, clarified by Divisional Adjutant Huidekoper, whose "His-

tory of the 33rd Division" states that "General Rawlinson had asked permission of the Commanding General of the II American Corps to utilize certain American units in an attack which he contemplated making." The author attributes all responsibility for the incident to Major General Read, commander of the II Corps who, knowing the orders he had received from General Pershing, and the latter's attitude towards the use of American troops, nevertheless, believed that he might allow himself some latitude in carrying out instructions. "Accordingly he granted the permission, probably wholeheartedly, and sanctioned the employment of eight companies, 2000 men of the 33rd Division, with the Australian Corps." Upon reconsideration of the matter, the force was reduced to 1000 men and General Monash rearranged his plans accordingly. General Pershing, when informed of the plan, disapproved the same and "advised Read that our troops should not participate." This left General Read in a difficult position, but he decided that "advice" after all "was not imperative, and that he might let the matter stand."

On July 3, General Pershing, then in Paris, saw Field Marshal Haig and later called Read on the telephone giving him "further and positive instructions that our troops should be withdrawn." At the same time Haig communicated with Rawlinson, and Monash was instructed that no American troops were to be used. Preparations for the attack had progressed too far for such sudden changes. Monash protested, Rawlinson explained the situation at British G. H. Q., and as a result Read was informed "that no change could be made without orders from Field Marshal Haig," who, however, "could not be reached." Field Marshal Haig, when informed of the situation, decided to let "everything go on as originally planned" and thereby assumed the responsibility for disregarding Pershing's directions. Nevertheless, the author concludes that Major General Read was primarily responsible for the employment of American troops contrary to General Pershing's wishes by accepting Rawlinson's invitation. Responsibility in the second place, the author believes rests upon the shoulders of the American Commander-in-Chief, because by his "advice" on July 2, "he had permitted Read the option of continuing the Americans in the line of battle." The author believes that there is "no evidence of a disposition to control but every evidence of courtesy and consideration," and that the British acted contrary to General Pershing's wishes only when "forced . . . either to cancel the operations or to use the Americans."

CHILE.—*Memorial del Ejercito de Chile,*—December, 1931.

"Mountain Warfare," by Major Ernesto Salbach.

From a tactical point of view mountains represent highly specialized theatre of war. Their height and ruggedness, defiles, scarcity of roads and railway communications, dearth of telegraph and telephone lines, frequent storms of considerable intensity and, in certain regions, the presence of snow perpetual or seasonal, abrupt changes of temperature and numerous other conditions tax the endurance of man and beast to the extreme. These regions seriously affect the technique of fire of all arms and they slow up considerably all military operations. Past experiences indicate that the tactics of lowlands are inapplicable to military operations in mountainous regions even though the underlying principles remain the same.

In crossing the Caucasus, Alexander the Great lost 50% of his army in six days. Hannibal, crossing the Alps in 218 B.C. lost 25,000 foot soldiers, 75,000 horsemen and 37 elephants, or 20% of his effective strength while covering a distance of 300 km in 16 days. Francis I crossing the Alps in 1515, lost 47,000 infantry, 2,500 cavalry and 370 guns, while the same feat in 1800, cost Napoleon 40,000 infantry, 3,400 cavalry and 40 guns, covering a distance of 200 km in 14 days. San Martin, Argentine patriot, crossing the Andes in 1817, lost 5,000 men and 16 guns, 10,000 mules and 2,000 horses, covering a distance of 250 km in approximately 13 days. These historic examples have inclined military leaders to the belief that the possession of a mountain frontier or the mountainous character of a country was sufficient protection against invasion, hence a small garrison would suffice for national defense. The World War, however, demonstrated the utter fallacy of this assumption. Moreover, it proved the decisive importance of Alpine troops for mountain warfare.

Winter and mountains, even Alpine regions have ceased to be the obstacles they formerly were to military operations by great masses. Thorough familiarity with the characteristics, handicaps and perils presented by mountainous terrain is essential to success. Far-sighted peace-time training will materially reduce the hazards of war. Lack of such familiarity with the mountains, and the lack of suitable organization and training for mountain warfare were responsible for Enver Pasha's disastrous winter campaign in the Caucasus in 1914-1915, which cost the Turks 78,000 men out of an army of 90,000. Similarly the Russian army barely escaped annihilation in the Carpathians during the winter 1914-1915, while the Austro-Hungarian army, accustomed to the mountainous terrain, suffered no particular hardships campaigning at high altitudes in eight to twelve meters of snow. Italy being essentially a mountainous country, has since the beginning of the century sought to train her officers and troops in the tactics of mountain warfare. Italian troops so trained and acclimated rendered excellent services in the Alps, while troops from the south and from coastal regions not so trained suffered terribly. World War experience also indicates that while troops trained for warfare in lowlands and open plains never prove satisfactory in Alpine regions, quite the reverse is true of Alpine troops. Thus, the historic example

of the Alpine regiments of Austria-Hungary. At the outbreak of the war this splendid body of troops was taken to the steppes of Russia where they successfully opposed the Muscovite steam-roller.

At the beginning of the war Germany did not have any Alpine troops. She was compelled, however, to organize such units in course of the conflict. Ordinary troops were given special training in mountain warfare before they were so employed. Whenever conditions compelled omission of such special training, the consequences were invariably disastrous.

Mountain warfare exacts of each individual a firm character, considerable gallantry, self-confidence and will to endure privations, sacrifices and the serverest hardships. The good mountaineer must have a powerful physique and sterling morale that will enable him to subsist and keep going under the most adverse conditions. Mountains reduce considerably the importance of masses, of mere quantity. "Quality becomes paramount."

Considering the mountainous character of Chile, and the historic facts reviewed, the author advocates the organization and training of the bulk of the Chilean army as Alpine troops.

AUSTRIA.—*Oesterreichische Wehrzeitung,*—February 12, 1932.

"American-Japanese Naval Strategy," by Naval Lieut. Hans Sokol, Retired.

Considering the possibilities of a conflict between the United States and Japan, the author points out that even the purely geographical problems involved appear well nigh insoluble. Not even with British support could the United States establish an effective blockade of the Japanese Empire, hence to strike at Japan's economic life is practically out of question. It is obvious, however, that a naval decision is necessary to determine the issues of a war between these powers. This means, of course, the necessity of offensive action. The natural objective of such an offensive would be the most vulnerable or the most accessible point of the enemy's coast, unless indeed the opposing navies meet on the high seas.

A Japanese offensive against the American coast (San Francisco or Panama Canal) would be a gamble as long as Hawaii remains in American possession. The distance alone is a factor which, in the absence of suitable naval bases, entails a risk no admiral would care to assume. The most brilliant victory would be barren of results. The situation is more favorable with respect to an American offensive using Honolulu as a base. Even so, it would be a very risky undertaking. Geographically, therefore, the situation is unfavorable for an offensive by either side. It leaves the possibility, however, of raids by single vessels. Thus the Panama Canal might conceivably be the objective of Japanese air raids or other attempts seeking its destruction.

The comparative strength of the Japanese and American navies impose upon the former a defensive, and upon the latter an offensive role. Japanese cruiser raids or war on commerce could hardly inflict serious injury upon America's economic life. It is hardly to be expected that Japanese submarines could successfully emulate the example of the German U-boats. The American naval personnel is technically superior to the Japanese, especially in the field of aviation which does not seem to sit well with the Japanese. The victors of Tsushima may, however, have the advantage of morale and tradition. Nevertheless, the author believes, that it is not unreasonable to assume that the intangible factor of morale likewise restricts Japanese action to "interior lines." The author concludes that "paradoxical though it may seem, a naval war between these two powers would result in a draw," and in the absence of a possibility to carry the war to hostile territory, such conflict is bound to remain one of diplomats.

The picture would materially change were Great Britain to intervene on the one side or the other. Such intervention would make available the necessary bases for naval operations and open the possibilities of land warfare. British help would supply Japan with the means for offensive action, or it would enable the United States to undertake extensive landing operations in Japan or Japanese possessions. In the event of such a conflict, the author states, European public opinion takes an Anglo-American line-up for granted. "That," he adds, "may be true today. The morrow, however, is wrapped in darkness and may bring surprises."

FRANCE.—*Revue des Forces Aeriennes,*—December, 1931.

"Military Aviation in Japan."

Since the arrival in Japan of a French military mission, in 1919, Japanese military aviation has made considerable progress notwithstanding serious casualties. In 1925, the Japanese Air Force was reorganized as an independent arm. At the same time the suppression of four divisions permitted an increase of the Air Force and a modernization of its materiel.

The Japanese Air Force consists at present of eight regiments and one balloon battalion. The organization comprises 11 observation, 11 pursuit and 4 bombardment squadrons with a total of 267, 276 and 41 airplanes respectively. Eleven bombers are equipped for night operations. In addition Japan has 39 training planes. (Der Luft-Attache, April, 1931)

GERMANY. — *Artilleristische Rundschau,* — February, 1931.

"Opinions Regarding Antiaircraft Artillery," by First Lieut. Pickert.

The author reviews an article by Major Vauthier, French Army, published in 1928 under the title "Questions d'Artillerie Anti-Aerienne." The object of that essay was to dispel the prevailing notion that there is something very obscure and mysterious about the functioning of antiaircraft artillery. As a matter of fact

the author states, a few hours of effort will suffice with the average person to acquire a fairly good working knowledge of its technique. The fire of antiaircraft artillery is uninfluenced by terrestrial conditions. Positions of antiaircraft guns must be accessible from highways yet be masked against ground observation. The high rate of speed of the moving target presents the only serious aspect of the problem. Pursuit planes, because of their high speed and irregularity of flight are particularly difficult targets. The high velocity of the antiaircraft projectile offers a partial compensation for this handicap. Even so, in the computation of all firing data we must take into consideration the amount of displacement of the target laterally, vertically or in the direction of the plane of fire during the flight of the projectile. Effort is being made in certain countries, notably France, Great Britain and the United States to increase the effectiveness of antiaircraft guns by means of increased velocity and calibre of the ammunition. The weight of mobile guns definitely limits the possibilities in that direction.

Vauthier insists that antiaircraft guns should possess the mobility of divisional artillery, and that they should use the same ammunition in order to simplify the supply problem. From this opinion the author dissents on the ground that antiaircraft ammunition must of necessity and invariably will differ from that of terrestrial artillery. Medium antiaircraft guns must possess a high operative and a certain amount of tactical mobility. According to Vauthier, the 30-second fuse marks the practical limit of effectiveness for light and medium antiaircraft materiel. Any increase in the time of flight of the projectile impairs the basic hypothesis, that the airplane travels approximately in a straight line, at the same elevation and at a constant rate of speed. Small calibre rapid fire antiaircraft guns and automatic antiaircraft guns are effective at lower elevations only with very high velocity ammunition. This class of guns should possess the mobility of the infantry cannon because of the frequency of their employment in the front line.

Range finding apparatus is of paramount importance to A. A. artillery. France abandoned the two-station system of range finding in favor of the one-station system because of the difficulty of maintaining communications. Success of the A. A. artillery depends upon the range finder and its effective and efficient use. According to Vauthier, the central fire control apparatus is likewise an important part of the equipment. He calls it the brains of the battery for it determines the firing data and transmits the same to the guns in usable form. Each battery should have two complete sets of this equipment, so that one may always be in reserve. Searchlights and listening devices are indispensable for night firing. An efficiently organized wireless communications net is equally vital. Frequently a delay of a few seconds in the transmission of information may have serious consequences. Vauthier also insists upon the provision of battalion fire control equipment to facilitate centralized control of the three batteries at favorable moments.

European opinion differs as to the organic assignment of antiaircraft artillery. Vauthier believes each division should have one organic light A.A. battery of four and one automatic A.A. battery of six pieces. These, in his opinion, will provide complete antiaircraft protection for the division. Others hold that A.A. units should not be assigned organically below the corps. German authorities believe that the division must be capable of independent action, hence it should have organic antiaircraft artillery.

Immediate command over antiaircraft artillery is likewise subject of a lively controversy. Vauthier believes that A.A. artillery should not be placed under the artillery commander or the Air Force Commander as that would tend to relegate the antiaircraft artillery to second place. He advocates a separate Antiaircraft Artillery commander on the corps staff.

The author observes that one of the outstanding tactical problems of today is the antiaircraft protection of a division in route column. Owing to the present state of development of aviation it is impossible to protect the column effectively at every point against aerial attack or observation. The presence of an organic divisional antiaircraft unit would not improve the situation materially. Road and traffic conditions will generally prevent the leapfrogging of antiaircraft units along the route of march unless they be assured an absolute and automatic right of way at all times such as is enjoyed by city fire departments. In any event, it must be regarded as axiomatic that the traditional route columns of great length are altogether things of the past. Vauthier emphasizes the importance of *"concentration et surprise"* as the basic principle in the tactical employment of antiaircraft artillery. Irregular, spasmodic bursts of fire are preferable to sustained action, while the dispersion of antiaircraft artillery will entail failure to even a greater extent than in the use of other arms.

—*Deutsche Wehr,*—January 22, 1932.

"Japanese-American Incidents in Manchuria."

Arrest of an American officer in uniform and the maltreatment of the American vice-consul at Harbin indicate the impossibility of continued denial or ignoring of the existence of an actual state of war. It may be going too far to connect these incidents, caused by subordinates, with the Japanese High Command on the scene, or to consider them as deliberate expressions of Japanese contempt for the United States. Yet one cannot escape the feeling that the United States has lost considerable prestige in the Orient, and that as a result of her possible withdrawal from the Philippines coupled with her avowed pacifistic policy she will continue to lose a great deal more. It is not thought that Japan is pursuing a policy of deliberate provocation, although it seems quite probable that she entertains a low regard for America's indecisive foreign policy which may convey to Japan a sense of security. There still is a wide gulf between diplomatic notes and reference to the Kellog and Nine Power pacts, and energetic action.

GREAT BRITAIN.—*Journal of the Royal United Service Institution,*—November, 1931.

"The International Situation—A European Danger Signal," by Major E. W. Polson Newman, B.A., F.R.G.S.

European nations are grouped in two camps. In the one are those nations which benefited territorially or otherwise as a result of the Great War, and have pledged themselves to a peace based upon the *status quo*. In the other are those nations which lost territorially or otherwise and, therefore, favor a readjustment of conditions. Notwithstanding these basically conflicting policies there is a general policy of international cooperation. It is obvious, however, that European cooperation and the status quo cannot long continue to exist side by side. Sooner or later both groups will have to choose between peace, progress and economic stability obtainable only by a readiness to make national sacrifices if necessary, and inevitable war which is bound to result from their present determination to preserve or redeem at any cost national possessions.

Although the proposed Austro-German Customs Union had the appearance of a purely economic arrangement, it was in fact a significant danger signal. It came as a warning that the status quo created by the treaties of Versailles, St. Germain and Trianon was about to revive the old problem of the balance of power. The present mental state of Europe bodes ill, and nothing short of an imminent danger of another European war is likely to restore her balance of judgment. Much talk about disarmament generally presages a serious crisis, and the present occasion may not be an exception to the rule. Perhaps, the imminent danger of war with all its consequences may have a deterring effect and incline European nations in favor of peace even at the price of certain sacrifices. The contention, that the maintenance of the status quo is an essential safeguard of peace is untenable in the interests of Europe. Enforced peace can only pave the way for future wars. The victors must be prepared to part with certain portions of their gains. Adequate compensation must be provided, however, for reasonable concessions made in an honest attempt to rectify grievances which arose from errors and injustices of the peace settlements.

It is impossible to maintain the relative strength of European nations on the basis of 1918. Adjustment by sensible and straightforward anticipation is preferable to an otherwise inevitable clash of arms. The chief obstacle to such a course lies in the prevailing attempt to seek the impossible, of having everything both ways: cooperation and the status quo. In the words of Mussolini, "the question of the Polish Corridor and that of the Hungarian frontiers are serious problems which Europe has to face today. The conditions imposed upon the Hungarians by the Treaty of Trianon cannot be regarded as justice . . . neither of these questions is easy of solution, but no solution is possible unless an attempt is made to find one."

HUNGARY.—*Magyar Katonai Szemle,*—September, 1931.

"Contemporary Problems of Rapidly Moving Troops," by Major Joseph Németh.

Rapidly moving troops comprise all elements of an army possessing greater mobility than infantry and non-motorized artillery. Without attributing peculiar significance to such group of arms, the author subjects to a searching analysis their special characteristics with a view to determining their proper tactical employment.

World War experience inclined military authorities towards the elimination of cavalry in favor of more up-to-date organizations, such as cyclists, motorized infantry, tanks and armored cars. The author believes that the ineffectiveness of cavalry in the World War was as much due to high commanders who failed to employ that arm properly as the traditional cavalry spirit which looked upon dismounted action with disdain and contempt. After the first flurries of adverse judgment, military authorities gradually came back to a more sensible view as to the usefulness of the cavalry arm. It is now generally conceded that the time has not yet come when we may dispense with the services of the cavalry altogether. It still remains an important factor in reconnaissance. Air Service cannot obtain the detailed information commanders in the field must have. Such missions must necessarily be entrusted to ground troops.

Cyclist units, though capable of greater speed than horsemen are largely confined to roads. As roads become impassable, or where they are totally lacking, cyclists quickly lose whatever advantage they possess over cavalry. The cycle pushed by hand becomes an encumbrance which seriously impedes the soldier's marching speed and reduces his mobility below that of the infantryman. Motorized infantry, unless transported in cross-country trucks, is similarly road-bound. But even under the most favorable circumstances motorized infantry, while en route, is highly vulnerable. Neither can it see nor hear; moreover, it depends for its immediate security upon other elements. Armored cars are similarly handicapped although less vulnerable because of their high speed and protective armor. The cavalry alone is independent of roads and capable of performing the important mission of battle reconnaissance irrespective of conditions of terrain. Similarly in pursuit and retirement the cavalry remains an indispensable arm. To be sure, modern battle conditions have made of the cavalry an arm of opportunity, hence it can accomplish its missions only when properly employed and led. Cavalry training should, therefore, be based upon sound tactical lines. Close order drill is no longer of importance. The German cavalry drill regulations actually eliminated that phase of instruction for units larger than the platoon. All cavalry drill formations and movements must be considerably simplified and harmonized with the infantry drill. Dismounted action needs to be emphasized. March endurance must be cultivated and developed. Cavalry must be taught to take advantage of darkness and fog, and it should strive to attain a high degree of efficiency

in reconnaissance, security and screening operations. Co-operation with motorized infantry, cyclists and artillery should form an important part of cavalry training. Current opinion favors a substantial increase in the fire power of the cavalry, although there is a divergence of opinions as to how that should be accomplished. Some advocate an organic horse artillery component for each regiment, others seem to rely upon an increase in the number of machine guns and automatic rifles. The French cavalry regiment includes an organic armored car company.

The subject of proper cavalry tactics still is highly controversial. Some authorities regard cavalry as mounted infantry and advocate its use as such. Others still believe that cavalry should remain mounted as long as it can accomplish its mission by doing so. Thus, Budeny, cavalry leader of the Soviet Army, adheres to the old cavalry doctrine that the trooper should dismount only in case of absolute necessity. Prevailing opinions in the United States and Soviet Russia agree that cavalry action of the war of the future will be characterized by isolated combats of small units scattered over a wide front. In both countries cavalry training emphasizes equally mounted and dismounted action and includes mounted fire action.

The motor as a means of transportation is an important strategic factor, but it is wholly dependent upon road conditions and the state of development of the motor industry of a given country. Under favorable conditions it confers upon the high command an important advantage. The motor in its tactical aspects, as in the case of tanks and armored cars, raises the important question whether or not it should determine the tactical employment and action of the infantry. There may be situations, especially in operations of mechanized forces, when the motor will exercise such decisive influence. In most cases, however, this will not be so. The seizure of ground, the capture of prisoners and materiel still remain essential elements of the mission of every attack. These are normal functions of the infantry. Tanks can only assist in the execution of these missions. The author prefers a 10-15 ton tank carrying an armor of 25-30 mm thickness and capable of a speed of 15-20 km.p.h. Such a tank, in his opinion, will meet all requirements of open warfare operating either in conjunction with infantry or independently.

Armored cars, though restricted to roads, can be successfully employed on reconnaissance, in the service of security, in pursuit or retreat, and in raids against hostile communications. Their great speed favors the element of surprise in their tactical handling. It must be remembered, however, that they are not capable of sustained action.

In summing up the results and effects of motorization and mechanization, the author concludes that in the war of the future the engine will render valuable assistance but the time has not come when it can take the place of the fighting man.

NETHERLANDS. — *De Militaire Spectator,* — January, 1932.

Having rounded out a hundred years of usefulness, this ably edited publication appropriately marks the beginning of its second century with a special Jubilee Number dedicated to Her Majesty, the Queen. It contains among others a number of articles suitable to the occasion including congratulatory messages from the highest military authorities of the realm. May we add our felicitations with the best wishes for continued prosperity and success.

SPAIN.—*La Guerra y Su Preparación,*—September-October, 1931.

"The New Military Laws of Soviet Russia," by Lieut. Col. Beigbeder, Spanish Military Attaché in Berlin.

The military laws of Soviet Russia, superseding those of August, 1928, contain the following provisions:

1. Active military service is divided into four classes:

a. A certain number of recruits serve two years with units of the active army.

b. The majority of 750,000 men who become available annually for active service, are enrolled in divisions of the Territorial Militia. Their term of service varies from eight to eleven months according to the arm of service to which assigned.

c. The remainder, after the requirements of the active army and the territorial militia have been filled, are assigned to special training cadres organized in each locality. These provide military instruction for one month each winter during five consecutive years.

d. Specialist workers perform their obligatory military service of two years in factories and industrial plants producing war materials.

2. For the training of officer personnel military instruction is compulsory for all students of universities and technical institutes. This training consists of courses of theoretical instruction and a period of practical field training of 3-4 months duration with some military organization. Upon conclusion of this course of instruction all candidates are subjected to an examination and, if successful, receive appointment to the grade of platoon commander.

3. Military service is a privilege reserved to workers and peasants. Those not belonging to these privileged classes must, nevertheless, render some service to the state. Formerly they were obliged to pay a military tax. The new law, however, creates special labor organizations in which those excluded from military eligibility must serve a period of two years. They are employed on public utilities and improvements. In time of war they are to be assigned to the auxiliary services and the service of the rear.

4. The Ossoaviachim organization with a membership of five million conducts military training camps, schools, airdromes, target ranges, canters of equitation, etc. for the military training of youths of pre-military age along lines adopted by the fascist militia of Italy.

NATIONAL GUARD NOTES

National Guard Camps—Coast Artillery

Unit	Comdg.	Instructor	Place	Dates	Off.	E. M.
		I Corps Area				
197th (N. H.)	Col. C. E. Rexford	Maj. J. B. Martin	Rye Beach, N. H.	Aug. 6-20	43	694
211th (Mass.)	Lt. Col. H. L. Spencer	Maj. F. M. Green	S. Sandwich, Mass.	July 16-30	18	305
240th (Me.)	Col. G. E. Fogg	Lt. Col. J. S. Dusenbury 1st Lt. S. E. Willard	Ft. Williams, Me.	July 2-16	45	561
241st (Mass.)	Col. G. M. King	Maj. E. K. Smith 1st Lt. P. W. George	Ft. H. G. Wright, N. Y.	July 30—Aug. 13	61	885
242d (Conn.)	Lt. Col. P. Hurley	Maj. H. E. Small	Ft. Terry, N. Y.	July 31—Aug. 14	26	350
243d (R. I.)	Col. J. J. Collins	Maj. A. E. Rowland Capt. M. G. Armstrong	Ft. H. G. Wright, N. Y.	July 16-30	46	616
245th (N. Y.)	Col. B. H. Pendry	Maj. O. C. Warner	Ft. H. G. Wright, N. Y.	July 2-16	55	777
		II Corps Area				
198th (Del.)	Col. J. P. LeFevre	Maj. J. C. Hutson	Bethany Beach, Del.	July 30—Aug. 13	42	680
261st (Del.)	Capt. W. L. Torbert, Jr.	Capt. L. A Hudgins	Ft. Hancock, N. J.	June 11-25	3	60
212th (N. Y.)	Col. Wm. Ottmann	Lt. Col. Allen Kimberly	Ft. Ontario, N. Y.	June 26—July 10	43	726
244th (N. Y.)	Col. L. M. Thiery	Maj. L. B. Weeks	Ft. Ontario, N. Y.	July 24—Aug. 7	58	650
		III Corps Area				
213th (Pa.)	Col. C. J. Smith	Maj. C. B. Meyer Capt. O. D. McNeely	Virginia Beach, Va.	July 24—Aug. 7	44	703
246th (Va.)	Col. A. E. Wood	Maj. M. M. Kimmel Maj. J. deB. Walbach	Ft. Monroe, Va.	Aug. 14-28	40	541
260th (D. C.)	Maj. W. W. Burns	Maj. F. C. Scofield Capt. Caesar R. Roberts	Ft. Story, Va.	Aug. 21—Sept. 4	19	244
		IV Corps Area				
202d (Ill.)	Col. C. C. Dawes	Maj. J. L. Homer Capt. C. O. Bell	Ft. Barrancas, Fla.	July 30—Aug. 15	45	610
203d (Mo.)	Col. T. H. Loy	Lt. Col. W. R. McCleary Maj. R. W. Wilson	Ft. Barrancas, Fla.	July 17-31	47	667
206th (Ark.)	Col. E. C. Robertson	Capt. W. H. Steward Capt. L. Y. Hartman	Ft. Barrancas, Fla.	Aug. 15-19	40	750
263d (S. C.)	Lt. Col. C. C. Smith	Capt. A. P. Bruner	Ft. Moultrie, S. C.	July 17-31	25	406
264th (Ga.)	Maj. Leroy Cowart	Capt. L. H. Thompson	Ft. Moultrie, S. C.	July 17-31	9	118
265th (Fla.)	Lt. Col. M. R. Woodward	Capt. W. F. Putnam	Key West Bks., Fla.	Aug. 7-21	25	466
252d (N. C.)	Col. R. S. McClelland	Maj. F. Kemble	Ft. Moultrie, S. C.	July 31—Aug. 14	62	610
		IX Corps Area				
248th (Wash.)	Maj. E. C. Dohm	1st Lt. L. E. Gray	Ft. Worden, Wash.	June 4-18	13	235
249th (Ore.)	Lt. Col. C. M. Irwin	Capt. L. D. Farnsworth	Ft. Stevens, Ore.	June 14-28	55	622
251st (Cal.)	Lt. Col. H. H. Morehead	Capt. L. E. Spencer	Ft. MacArthur, Cal.	Aug. 6-20	30	381
250th (Cal.)	Col. R. E. Mittelstaedt	Col. C. G. Bunker Maj. J. D. MacMullen	Capitola, Calif.	July 9-23	61	647

National Guard Field Training Camps

ARRANGEMENTS for the field training camps of the National Guard for the coming summer have been completed in the Militia Bureau. The final decisions have been arrived at after extended consultations with the authorities of the several States.

The camps begin about the middle of June and continue through the first week in September. They extend over a period of 15 days each, and afford the personnel of the National Guard an opportunity for field training and putting into actual practice the things they have studied theoretically during the armory drill training periods through the winter.

The popularity of this class of military training is attested by the fact that the attendance at the field training camps last year was the largest in the history of the National Guard. This is attributed to two causes. The unemployment situation had something to do with it, but the fact that the National Guard is attracting a higher class of personnel was responsible for much of the splendid showing. Whole regiments showed up at camp with only a corporal's guard missing from its ranks and dozens of units included a full 100 per cent. These young men are interested in National Defense. They feel that the training opportunities provided are worth while and are willing to devote their time to it. Many of them spend the only vacation period they have during the year at the training camp and calculate that they are amply repaid for their efforts.

To cover the expenses incident to the conduct of

these training camps Congress has appropriated the sum of $9,609,553.00. This is a lot of money, but the returns are fully commensurate with the expenditure. Past experience indicates that it costs the Federal Government an average of about $56.00 for each citizen soldier who attends the camp. This includes the pay and allowances of officers and enlisted men, their transportation from home stations to the camp and return; the subsistence of the enlisted men based upon a ration allowance of 45 cents per man; the transportation of baggage and organizational equipment; the preparation and operation of camps during the training season and dismantling them at the end of the training period, all of which includes the procurement of operating supplies, provisions for camp sanitation and miscellaneous expenses for camp utilities; forage for federally owned animals and those hired for the period of training; and the medical care and hospitalization of officers and men during camp periods.

It is estimated that some 180,000 citizen soldiers will attend the camps this year. They will come from every State in the Union, the District of Columbia, Porto Rico and Hawaii Territory.

Rations for Materiel Caretakers

WITH the construction of a number of warehouses at National Guard camps, a large amount of material and transport have been assembled at these places. Their rehabilitation prior to the summer camps is of vital importance.

The question as to the matter of providing rations for material caretakers engaged upon this work has been put up to the Militia Bureau and the Chief of the Bureau has rendered a decision that will be of interest to all of the States confronted with the problem. General Leach said:

"Under the provisions of National Guard Regulations payment of 75c per day to caretakers is authorized for animal caretakers only, and there is no authority of law for the payment of subsistence to motor mechanics when employed as such. The only time that these men are entitled to subsistence at Government expense is when they go to camp as enlisted men of the organization to which they belong."

Date of Federal Recognition

THERE are five dates which are involved in determining the date of the Federal Recognition of an officer of the National Guard. The latest of these is the one which must be adhered to by the Militia Bureau as the effective date of federal recognition shown on Militia Bureau Form 3*a* which is the official authority for such recognition. The dates are:

1. The date of appointment by State authorities.
2. The date of the completion of the professional examination.
3. The date of taking the oath of office.
4. The date of the existence of a vacancy to which the appointee is assigned.
5. The date asked for by the State authorities.

The appointment of officers of the National Guard is reserved to the State authorities. Such an appointment may be made prior to the candidate's qualification for the office, or it may be made after such process has been completed. In the former case the candidate must go through the steps necessary for qualification before he can be Federally recognized. In the latter case the candidate, having completed all of the steps, received his appointment, takes his oath of office the same day, and is assigned to an authorized vacancy. The last date of this process is then the date of Federal recognition. If the candidate is delayed in taking his oath of office then the date of the taking of such oath becomes the date of Federal recognition.

In case an officer, after completing the physical and professional examination, receiving his appointment and taking the oath of office, has to wait for a contemplated vacancy to occur, then the date of assignment to such vacancy becomes the date of Federal recognition.

Recruiting Plans

AMONG the expedients for the procurement of suitable and qualified personnel for the National Guard, is one adopted by a unit commander in Connecticut that is producing desired results.

His unit is maintained at authorized strength and he has a waiting list of considerable proportions. The applicants on the waiting list are invited to turn out for the regular armory drill periods of the unit where they are assembled in a recruit instruction and training squad.

A man, by attendance at this recruit training and qualifying in the basic requirements, thus earns his position on the enlistment priority of the unit. Those who evidence their interest to the greatest extent get the vacancies in the order of their activities and interest.

The plan also keeps the regular members of the unit pepped up on their interest and drill attendance. They all know there is a waiting list of eligibles ready and anxious to take on in the outfit. They know, too, that unauthorized absence from drills without good and sufficient excuse will bring about their discharge. They also know that a lack of interest in their training and the activities of the unit will have the same effect.

It is through these methods that the unit will keep down original enlistments to a minimum and will go to the field training camp with no recruits to consume the time and effort of instructors.

The plan is commended for a try-out by National Guard unit commanders who are so fotunate as to have waiting lists.

COAST ARTILLERY BOARD NOTES

Communications relating to the development or improvement in methods or materiel for the Coast Artillery will be welcome from any member of the Corps or of the Service at large. These Communications, with models or drawings of devices proposed, may be sent direct to the Coast Artillery Board, Fort Monroe, Virginia, and will receive careful consideration. J. C. Ohnstad, Colonel, C. A. C., President.

Projects Completed During March-April, 1932

No. 727. Standard Single Conductor Mine System.—Recommended that the Single Conductor Mine System be continued as standard.

No. 815. Comments on Target Practice Reports, Fiscal Year 1931—Comments were submitted on all target practice reports for the fiscal year 1931.

No. 872. Service Test of Seacoast Data Transmission System T-7. —The T-7 Data Transmission System was designed to operate with either the data computor or on intermittent data from the plotting board. In addition to intermittent data, it contains an extrapolating feature which permits continuous data to be sent to the gun even though intermittent data is put into the machine. A service test was held at Fort Hancock with the T-7 Transmission System and a plotting board. Modification of the instrument was withheld pending further service test of the transmission system with the Computor T-3.

No. 884. Development Program For Antiaircraft Fire Control.—The Coast Artillery Board drew up a program for the further development of antiaircraft fire control. This program was intended for use as a guide for future construction.

No. 885. Test of Two-Color Fifty Caliber Tracer Ammunition.—A two-color tracer was supplied for test. This tracer burns green for about a thousand yards and then burns red for about 800 yards more. Firings were held to determine the point of color change and burnour point of this tracer, to determine the dispersion of his point and to decide what advantage such a tracer would have in any machine gun firing. The tracer was satisfactory and as a result of the test it was recommended that this type of tracer be issued to the service for caliber .50 machine gun firings and that its value be discussed by battery commanders in their target practice reports.

No. 891. Test of Cotton Substitute for Jute Burlap.—Two samples of cotton substitute for jute burlap were tested by the Coast Artillery Board to determine their suitability as a substitute for camouflage purposes in place of jute burlap. Both samples, as well as a piece of burlap were used to camouflage a three-inch antiaircraft fixed gun battery. The material was left in position for sixty days, during which time it was exposed to various weather conditions, including a severe storm. As a result of this test it was recommended that Cotton Leno, Sample B, be accepted as a suitable substitute for issue as camouflage material in the place of jute burlap, but that sample A be rejected.

No. 892. Test of Diaphragm Optical Gas Masks.—The Diaphragm Optical Gas Masks tested are of a type designed particularly for Naval use. The optical and acoustic features are superior to types previously tested. The construction, however, is such that the use of standard army telephones with these masks is not practicable. The adoption for army use would necessitate either modification in construction of the mask or special telephone apparatus.

No. 902, Graduation of Fire Control Instruments.—The Coast Artillery Board considered a method of graduating the fire control instruments throughout the service in order that a uniform system might be obtained. As a result of the study it was recommended that all mobile units and antiaircraft units of Coast Artillery use mils for triangular measurements, that wherever possible new development work be graduated in mils.

No. 903. Method of Graduating Panoramic Sights for 155 MM Use.—The Panoramic Sights M1917M2E1 were graduated in degrees and hundredths but the scales were so small that the sights could not be accurately set. As a result it was recommended that the issue of this sight be suspended and that sights of this model already issued be recalled. Furthermore, it was recommended that a new sight be designed and submitted for test and that it be graduated in mils.

No. 907. Proposed Instructions and Prescribed Ammunition Allowances for Coast Artillery Target Practices, Fiscal Year 1933.—The Coast Artillery Board submitted a draft of proposed instructions for target practices during the Fiscal Year 1933.

No. 867. Charging Slides for Browning Machine Gun Caliber Fifty.—The T-5 Charging bar was tested to determine its suitability for manually operating caliber fifty machine guns in place of the bolt handles at present installed for this purpose. The charging bar was found far superior to both the long and short bolt handles. The shoulder stock interferes to some extent with the operation of the charging bar so that it was desired to test both fifty and thirty caliber machine guns with the shoulder stocks on the lefthand side of the gun. It was recommended that the charging bar replace the bolt handles.

Projects Under Consideration

No. 608-A. "Duco" Surfacing for Guns. —Under test.

No. 800. Test of Radio Direction Finders.—Under study.

No. 814. Illluminating Device for 12-inch Barbette Carriage Model 1917.—Project held open for retest in connection with the modified shot truck guides.

No. 817. Time Interval Apparatus for Mobile Artillery (Wallace & Tiernon).—Awaiting receipt of redesigned instruments.

No. 829-B. Instruments for Training of Stereoscopic Observers.—Awaiting receipt of instrument.

No. 871. Azimuth Pointer for 12-inch BC M1917. —Awaiting further tests at Fort Hancock.

No. 873. Service Test of Long Distance Seacoast Data Transmission System T-6. —Awaiting receipt of material.

No. 874. Service Test of Seacoast Data Computor T-3.—Awaiting receipt of material.

No. 881. Time Interval Apparatus (Rothenberg). —Under study.

No. 882 Service Test of Anti-Submarine Device. —Report in preparation.

No. 886 Comparative Test of Antiaircraft Director (T-8, M-2, and M1A1 uncoupled).—Undergoing tests at Aberdeen.

No. 887. Test of Height Finder T-12. —Undergoing tests at Aberdeen.

No. 893. Labor and Time Saving Equipment for Cleaning Seacoast Armament.—Undergoing test.

No. 895. Test of Water Proofed Fire Control Communication Cord.—Under test.

No. 896. Service Test of Sectional Wire Pike. —Under test.

No. 898. Test of 220-Ampere Carbon in 60-inch Searchlight with Metal Mirror.—Test awaiting availability of bombardment planes.

No. 900. Test of 3-inch Antiaircraft Truck Mount T-1.—Report withheld pending further test of SKF bearings.

No. 901. Modified shot Truck and Guide for 12-inch Barbette Carriage, M1917.—Awaiting tests to be conducted at Fort Hancock.

No. 904. Portable Single Conductor Mine System (Harrison).—Tests completed—report in preparation.

No. 905. Preparation of Coast Artillery Memorandum No. 13. —Under study.

No. 906. Aliquot Part Charges for Cannon. —Under study.

No. 908. Test of Panel Set, Type AP-33. —Under test.

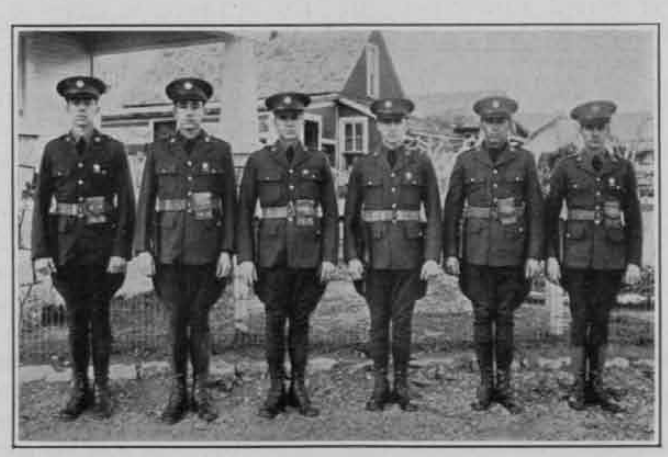
No. 909. Test of Universal Facepieces for Gas Masks.—Test fifty percent complete.

No. 910. Test of Field Telephone Type EE-8-T2. —Under test.

No. 911. Test for Ramps for Antiaircraft Prime Mover M-1.—Under test.

No. 912. Service Test of Demountable Steel Tower for Seacoast Searchlight Use.—Under test.

No. 913. Test of British Panoramic Sight. —Awaiting receipt of material.



Clark Brothers, Btry. E, 203rd C. A., Missouri. Left to Right Howard, Orville, Joe, Arthur, Allen and Virgil

PROFESSIONAL NOTES

Changes in Seacoast Target Practice Regulations

THE following article, prepared in the office of the Chief of Coast Artillery, amplifies and interprets the W. D. annual instruction memorandum issued on April 20, 1932, and if of particular interest at this time. It may be considered official.

Several important changes have been made in the seacoast target practice regulations for the coming year. These changes were decided upon after a careful study of the target practice results of previous years and also, of the comments and suggestions sent in by the service. The changes are, in the main, designed to accomplish the following things:

First: To cause target practice to more nearly approximate battle conditions;

Second: To allow better opportunity for the adjustment of fire and to provide time for more accurate loading and laying of guns;

Third: To place all types of armament on a more nearly equal basis in the matter of scores; and,

Fourth: To simplify the score and the preparation of reports of target practice by National Guard Units. These various changes are discussed below.

Trial Fire. All batteries of caliber 8-inch and above will be required to fire ranging shots at the moving target for trial fire. This is the most likely procedure that would be followed in a battle. The firing of trial shots at a fixed point, if done at all, would be more in the nature of velocity firings and would be accomplished some considerable time before the appearance of a hostile ship in the field of fire.

Method of Adjustment of Rapid Fire Guns. All batteries of caliber 155 mm and below are required to use the bracketing method of adjustment for both trial and record fire. It would be an unusual situation in which rapid fire batteries were able to spot the amounts of the deviation when engaged in actual combat with a hostile ship. Their normal method of fire adjustment would certainly be in the bracketing method. It is logical, therefore, to use this method in target practice. To be consistent only one spotting station is authorized.

Airplane Spotting. Spotting planes are required to maintain a slant range from the target of at least 6000 yards. This is in line with what would be required in action. As a matter of fact a spotting plane would probably have to maintain a range from a hostile ship of at least 10,000 yards. The limit of 6000 yards was chosen as a beginning in order not to unduly complicate the problem before all of the difficulties involved have been realized.

Fire by Salvo. Fire by salvo is still optional but the maximum number of rounds per salvo is two. This is done to permit obtaining more accurate information on what each gun is doing. In the past when four gun salvos were fired it was nearly impossible to match a range deviation with its proper lateral deviation. This resulted in a fictitious number of hits being indicated and, furthermore, battery commanders were unable to get any information on the individual characteristics of their guns. Another advantage of the two shot salvo over the four shot salvo is that better opportunity for adjustment is afforded due to the resultant longer duration of fire with the same amount of ammunition. This change has been recommended by several group and harbor defense commanders. The new regulation requires that effort be made to correctly match range deviations with lateral deviations and that in any case where correct matching is not assured, the hit value of that salvo as determined by the old method of matching is reduced through the use of a formula.

The destroyer target is eliminated for 6-inch and 155-mm batteries. A careful study of the score formula showed that the use of the destroyer target gave these batteries a considerable advantage over other batteries in the matter of obaining a high score.

The number of settling shots allowed to 155-mm batteries is cut from eight to four. Experience has shown that four rounds are sufficient.

In the new regulation the minimum range has been eliminated and normal range for both day and night firing have been prescribed. The B component of the score is multiplied by the ratio of the actual range to the normal range, thus providing a bonus for fire at ranges in excess of the normal range and a penalty for firing at ranges less than the normal range. In general normal ranges for night firing are fifty percent of the normal range for day firing.

Some changes have been made in the table of probable errors to be used in computing the score. The direction probable errors for mortars have been increased. The direction probable errors for the 155-mm guns have been decreased. The range probable errors for the 14-inch railway gun using 1460 pound projectile have been increased. These changes were based on a study of previous firings.

Time. a. K Factors. In order to provide for more careful loading and laying of guns, K Factors have been increased. The present formula for the C component for the score is so designed that little is gained by firing at a rate faster than K. A study of previous practices indicates that a few battery commanders have realized this. Too much effort has been wasted in an attempt to beat "K" frequently resulting in inaccurate loading and laying and in materiel failures. In every case the new K Factors have been adjusted to the intervals obtainable with existing types of time

interval apparatus. This has resulted in some cases of providing a K Factor greater than was warranted by the rates of the fire obtainable with guns. The advantage, however, accruing to these guns is slight on account of the character of the formula for the C Component.

b. Time Out For Adjustment. It Is manifestly desirable to provide for adjustment of fire during record fire. On account of the limited ammunition allowance available insufficient opportunity is provided unless time out is allowed for that specific purpose. In the past the record fire has been continuous and little or no opportunity for making and providing adjustment corrections was provided. The new regulation permits time out during record fire for adjustment purpose. In the case of large caliber batteries firing on the bell one relay is allowed. Similar provisions have been made for other batteries. In order to take full advantage of the allowance for adjustment in the case of batteries firing by case III the command "Relay" should be given when it is desired to apply an adjustment correction. In case II firing the guns may be loaded after firing has been suspended for the purpose of adjustment. The time of flight of the last shots to be used in determining an adjustment correction is thus utilized in the loading and is not lost as time out.

Changes for National Guard. The much discussed "bulls eye" target is now adopted for National Guard firings. The target consists of four concentric rectangles, the size of which is determined by the tabulated probable error for the particular gun firing Values are assigned the impacts in the several rectangles. For convenience in plotting, lateral probable errors and lateral deviations of impacts should be plotted to a scale five times as large as the vertical. The score has two components; i. e., an accuracy component and a time component. The accuracy component is dependent entirely on the total value of impacts in the various rectangles. The time component is dependent entirely on rate of fire. No tabular or graphical analyses are required to be made. In general, the accuracy component has a normal value of 80 and the time component a value of 20.

Mine Practices. Such maintenance detachments as are designated by the War Department will conduct mine practices. Since the majority of the detachments will not fire mines, a special score for practices during which no mines will be fired was prepared. In addition, a larger time allowance without penalty was given maintenance detachments than is permitted regularly organized mine batteries.

Antiaircraft Practices - Gun Practices. Regular units will fire with two guns. This is to permit a longer firing time than is possible with four gun courses and, hence, allows more time for the application of adjustment corrections.

Rate of Fire. The rate of fire which are to be regarded as standard for 3-inch guns have not been attained by troops during the last target practice year. For this reason, these values have been reduced for the coming target practice year.

Range Finding and Spotting. It is imperative that batteries train the maximum number of stereoscopic observers. Only a few batteries in the service have ever fired a target practice with this type of range finding and spotting. In order to encourage training in the use of self-contained rrnge finders all regular antiaircraft gun batteries will be required to fire one practice with no other type of range finding and spotting.

Machine Gun Practices. In some situations fire with tracer adjustment by the individual gunners will be the only method that can be employed. It is necessary therefore, that all units be trained in this method of fire control. To this end it has been prescribed that each regular antiaircraft machine gun battery will fire two of its practices by this method. Improvised devices may be used for the two remaining practices in order to encourage development of machine gun fire control equipment. To ease the burden on the Air Corps, painted bullets may be used, so that the target need not be changed after each course.

Searchlight Practices. All searchlight practices will be conducted under the provisions of the pamphlet "Proposed Regulations for Antiaircraft Searchlight Practices." It is desired to test these regulations thoroughly prior to their incorporation in TR 435-55 and to this end all battery commanders should comment in detail on the various features of these regulations. Low flying and gliding attacks have been added to the regular attacks. Units will not be rated on these attacks this year. Instruction in making such flights is necessary. Battery commanders should comment in detail on the methods employed and difficulties encountered. Where possible minor joint exercises will be held by the Air Corps and searchlight battery. These exercises should be conducted for the benefit of both services. It is hoped that these exercises will result in improvements in methods and materiel.

Regulations for National Guard Seacoast Practices

THE following is quoted from a letter of instructions issued by the Militia Bureau on June 25, 1929, and is still in effect.

"Paragraph 13*a* (2) (c) *6*, Training Regulations 435-55, prescribes that each record service practice held by mortar batteries will be conducted in two or more zones with approximately the same number of shots in each zone and paragraph 13 *b* (4) prescribes that trial shots for mortars will, for any record practice, be fired in two zones, four in each zone. In view of the fact that the ammunition allowance for National Guard Coast Artillery batteries manning 12-inch mortars (12 rounds per battery) is insufficient to carry out the provisions of the regulations mentioned above, the War Department has approved a recommendation that these regulations be waived in the case of National Guard Coast Artillery

batteries and that they be authorized to fire in one zone only.

Coast Artillery National Guard batteries manning 12-inch mortars for service practice, may under their present ammunition allowance, or any lesser allowance, fire in one zone only."

Recently the following questions were asked by a National Guard Instructor in connection with the above and the W. D. Instruction Memorandum, dated April 20, 1932:

"*a.* Shall National Guard mortar batteries fire in one or two zones?

b. Shall National Guard mortar batteries fire one mortar only or one in each pit?

c. Is not the table shown under par. 10 of the memorandum of April 20, 1932, at least partially in error in showing the P. E. (range) for 12-inch mortars as a maximum at El. 45° and a minimum at El. 65°?

To discuss these questions in more detail—

a. A letter from the Chief of Coast Artillery dated June 25, 1929, states that National Guard mortar batteries under their present ammunition allowance of 12 shots, may fire in one zone only.

b. If it is directed that fire be conducted in two zones, with only 8 record shots it would seem almost meaningless to fire a mortar in each pit. Another point is that the maximum strength of the firing batteries of the 265th Coast Artillery is 58 men, so to fire the two mortars would merely mean borrowing men from another battery for additional pit.

c. A comparison of the table P. E. (range) under par. 10 with the previous table given in TR 435-55 and also with firing tables 12-G-1 discloses that in some cases, this table is apparently inverted with respect to the elevation listed. Using the 700 lb. projectile in Zone VIII-B, both the table in TR 435-55 and the firing table 12-G-1 show the smallest P. E. at elevation of 45° and the largest at elevation 65°. The table under par. 10 is exactly opposite and so is thought to be in error."

The answers to these questions are given in the following quotation from a letter of the Chief of Coast Artillery.

"The War Department has followed the practice of not going into great detail in the annual Target Practice Memorandum as far as National Guard organizations are concerned. Paragraph 9, TR 435-55 authorizes Corps Area Commanders to modify the provisions of TR 435-55 in accordance with local conditions. The War Department has therefore left such questions as the number of antiaircraft gun practices to be fired, and the points raised in paragraph 1 of the basic letter to the decision of Corps Area Commanders.

"With regard to the questions raised in paragraphs *a* and *b*, this office believes that due to the limited ammunition allowances, the mortar batteries should fire in one zone only and the number of mortars manned should depend upon the strength of the organization. The disparity between firing table 12-G-1 and the Target Practice Memorandum as noted in paragraph *c* of the basic letter has been noted. The values of the probable error given in the Memorandum are based on studies of target practices made by the Coast Artillery Board and are believed to be more nearly those met in service than the values listed in the firing table and have been approved by the War Department for use in computing scores for Coast Artillery target practices."

Lateral Fire Adjustment in Case II Pointing.

A QUESTION has been asked concerning the relative merits of "jumping the splash" by individual gun pointers as compared with other methods of adjusting fire in direction when Case II pointing is employed.

In the first place, it should be borne in mind that the method known as "jumping the splash" has only a limited application. For its satisfactory use the following conditions must exist:

(a) It must be certain that the gun-pointer will be able to identify the splashes from his own gun.

(b) The time of flight must be materially shorter than the firing interval. In situations where the time of flight is about equal to or exceeds the firing interval this is not a practicable method, unless the firing interval is purposely increased to allow time for the gun pointers to observe the splashes.

(c) It must be reasonably certain that both target and splash will be included in the field of view of the sight. Provision should be made for independent determination of an approximate correction in case the splash is not seen in the sight; otherwise there may be considerable delay and waste of ammunition in securing a lateral adjustment.

(d) The gun pointers must be thoroughly trained in the correct procedure. About the only satisfactory start method of training is by subcaliber practices. On carriages not equipped for traversing by the gun-pointer (10-inch D. C. for example) considerable training is required to insure the instantaneous coordination between gun pointer and traversing detail that is essential for success in this method.

Before going further it will be well to have clearly in mind the procedure in "jumping the splash."

(a) The piece having been fired, the gun pointer tracks the target by traversing the piece, leaving his sight setting unchanged, i. e., it remains set at the last firing deflection.

(b) As soon as the splash appears, he ceases traversing instantly and, by means of the deflection knob, brings his vertical cross hair in line with the splash. The new reading on the splash or deflection scale of the sight will be the deflection which would have caused the splash just observed to be in line with the target.

(c) This reading is kept set on the sight as the deflection for the next shot, no further attention being paid to deflection from the plotting room or other source.

(d) The procedure is repeated whenever lateral deviations indicate that it is necessary.

With alert and well-trained gun-pointers this is a rapid and satisfactory method of lateral fire adjustment when general conditions favor its use.

Lateral fire adjustment may be conducted by observers stationed at or very near the battery. Observers should be equipped with azimuth instruments M1910. Arrangements must be made to furnish the observers with the initial firing deflections set on the guns. There should be an observer for each gun, though one well-trained man may observe for two guns if he is especially alert.

(a) The observer sets the splash pointer of his instrument to the deflection set on the gun. With the deflection thus set he tracks the target, keeping his splash pointer (not the vertical cross-hair) aligned with the target, until the splash appears when he stops tracking instantly and brings the splash pointer at once in line with the splash.

(b) The new reading of the splash pointer is called out to the gun pointer and set as the deflection for the next shot. This method may be used when the time of flight is greater than the firing interval. It may also be used as a check when the splashes are jumped by the gun pointers themselves.

Neither this method nor splash jumping by the gun pointers is very satisfactory for four-gun batteries as there is considerable difficulty in identifying the splashes of individual guns. Probably the most satisfactory method for a four-gun battery using Case II pointing is to stagger the shots in trial fire so that each gun pointer may identify and jump his own splash. It may be more desirable to have the lateral deviations determined by observers at the battery. In either case corrections should be applied to the sights as *lateral calibration corrections* so that all guns may continue to set deflections sent from the plotting room. Subsequent corrections are applied to all guns and made on the deflection board in the plotting room. If the guns fail to shoot together the shots must again be staggered and new calibration corrections determined. This is practically the same as the usual methods of lateral fire adjustments in CaseIII pointing.

As to the relative merits of "jumping the splash," it is generally considered to be the simplest and quickest method of lateral fire adjustment when conditions are such that it may be employed without danger of interfering with the other duties of the gun pointer and when there is no danger of confusion in the nidentification of splashes. It may be satisfactorily employed in combination with other methods as previously suggested.

Precautions to be Observed in Firing Seacoast or Railway Cannon.

PENDING the publication of printed changes, paragraphs 33*i* (3), TR 1370-A and 10*f* (2) (*c*), TR 140-5, are rescinded, and the following substituted therefor:

No charge or section thereof of the base igniter type will be fired which exceeds the maximum allowable diameter as determined by gauges furnished by the Ordnance Department for this purpose. In the single section core igniter type of charge the flame is projected through the center of the charge. With this method of ignition the space between the surface of the charge and the chamber is not of such great importance as with the base igniter type. Single section charges need not, therefore, be gauged. All other precautions as listed above must, however, be taken.

A centipede was happy till
One day a toad in fun
Said: "Which leg moves after which?"
Which raised her doubts to such a pitch
She fell exhausted in the ditch
And could not walk nor run.

COAST ARTILLERY ACTIVITIES

Office of Chief of Coast Artillery

Chief of Coast Artillery
MAJOR GENERAL JOHN W. GULICK

Executive
COLONEL W. F. HASE

Personnel Section
MAJOR G. F. MOORE
MAJOR S. S. GIFFIN

Materiel and Finance Section
MAJOR R. E. HAINES
MAJOR J. H. COCHRAN
CAPTAIN F. J. MCSHERRY

Organization and Training Section
MAJOR J. B. CRAWFORD
CAPTAIN J. H. WILSON

Plans and Projects Section
MAJOR G. R. MEYER
MAJOR R. V. CRAMER

Fort Monroe

BRIGADIER General Stanley D. Embick, who had been in command since October 1. 1930, left Fort Monroe on April 25, enroute for station and duty at Fort Mills, Corregidor, P. I.

For the past month the 51st Coast Artillery has been conducting test firings for the Coast Artillery Board. The 12th Coast Artillery has been conducting antiaircraft firings since April 25th, which will continue until May 5th, for the instruction of student officers of the Coast Artillery School, in antiaircraft gun, machine gun and searchlight work.

On May 5th the 51st Coast Artillery will proceed to Fort Story, Va., with its equipment, for the purpose of conducting firings at that post for student officers of the Coast Artillery School.

On May 12th the 52d Coast Artillery (Ry) will proceed to Fort Story, Va., for the purpose of conducting 8″ railway gun fire for the students of the Coast Artillery School.

Before their return from Fort Story a battle practice scheduled for May 24th will be held at that post by the student officers.

Preparations are now being made to entertain the Coast Artillery Association during its visit at Fort Monroe on May 27-28th.

Preliminary plans for summer training at Fort Monroe have practically been completed. The units to be trained during 1932 include about 350 members of the First Class of the Cadets, U. S. M. A., 252 R. O. T. C. students, 450 C. M. T. C., about 55 officers of the 516th C. A. (AA), 55 of the 523d C. A. (AA), and an equal number of the officers of the 603d Coast Artillery (Ry), the 246th Coast Artillery, Va. National Guard and the 260th Coast Artillery (AA), D. C. N. G.

In addition to the above about 22 officers of each of the 916th C. A. (AA) and 917th C. A. (AA), will report at Fort Monroe, to assist in conducting the C. M. T. Camp.

Effective April 30th, at midnight, the designation of the 12th Coast Artillery is changed to 2d Coast Artillery, under War Department instructions recently issued. The new designations of units are as follows:

Old Designation.	*New Designation.*
Headquarters, 12th C. A.	Headquarters, 2d C. A.
Band, 12th C. A.	Band, 2d C. A.
Headquarters Battery, 12th C. A.	Headquarters Battery, 2d C. A.
Battery A, 12th C. A.	Battery H, 2d C. A.
Battery C, 12th C. A.	Battery C, 2d C. A.
Battery D, 12th C. A. (Story)	Battery E, 2d C. A.

Fort Hancock, New Jersey

THE record of activities at Fort Hancock during the late winter and early spring has been, as usual, a battle between Old Man Training and Old Man Post Maintenance resulting in the usual compromise between these individuals. March 1 saw the end of the gunner's instruction season and the qualification of every eligible man of the firing batteries of the 52nd C. A. to at least second class gunner. Afternoons were given over to post maintenance and post schools, at which every attempt was made to train sufficient men in the techincal duties of a railway outfit, so that trained men would be available in almost any tactical situation.

On March 1, despite the advent of what seemed a hard winter, the armament of the 52nd was taken off the shelf, dusted off and intensive preparations for the tactical exercises at Wildwood, New Jersey, undertaken. This consisted in the main of five entire mornings per week of home ram (weather permitting) varied with occasional jaunts away from the gun park to sundry places along the Sandy Hook and Way

Points R. R. for practice in emplacement and for subcaliber firing. Occasionally an official car loaded with scouts would take the road to Wildwood to see whether Admiral A of the Red Navy had yet appeared off Delaware Bay and also incidentally to determine such humdrum (though necessary) details as location of observing and spotting stations, condition of tracks and camp sites and establishment of contact with civilian agencies.

On April 25, time was taken out to spruce up the post which was inspected next day by the Corps Area Commander, Maj. Gen. Dennis E. Nolan and his staff. Accompanying him was Colonel Fergusson, the District Commander and observing independently was Brig. Gen. L. R. Holbrook. A review, at which practically every enlisted man on the post was present, was a feature of this inspection. After a tour of barracks, a luncheon was given the visiting officers at the Officers' Club. The entire garrison turned out and the ladies given an opportunity to meet Generals Nolan and Holbrook and their parties. Judging by the amount of victuals consumed and the conversational noise the affair was a huge success. The afternoon was devoted to visiting all the fixed and mobile batteries and other installations. The garrison next day was most gratified to receive a letter from General Nolan commenting most favorably on the morale and efficiency of the command and the excellent condition of all activities. The following are extracts from this letter:

'I wish to congratulate you on the excellent condition in which I found your command on my recent inspection of your post on April 26th last.

"Both at the review and subsequent inspection of the installations it was quite evident from the attitude of your men that they were keenly interested in their work which speaks well for morale.

"The high state of efficiency and superior condition of the guns and fixed defenses, and the motor repair shops were particularly noticeable.

"The condition of the barracks, hospital and other installations left little to be desired.

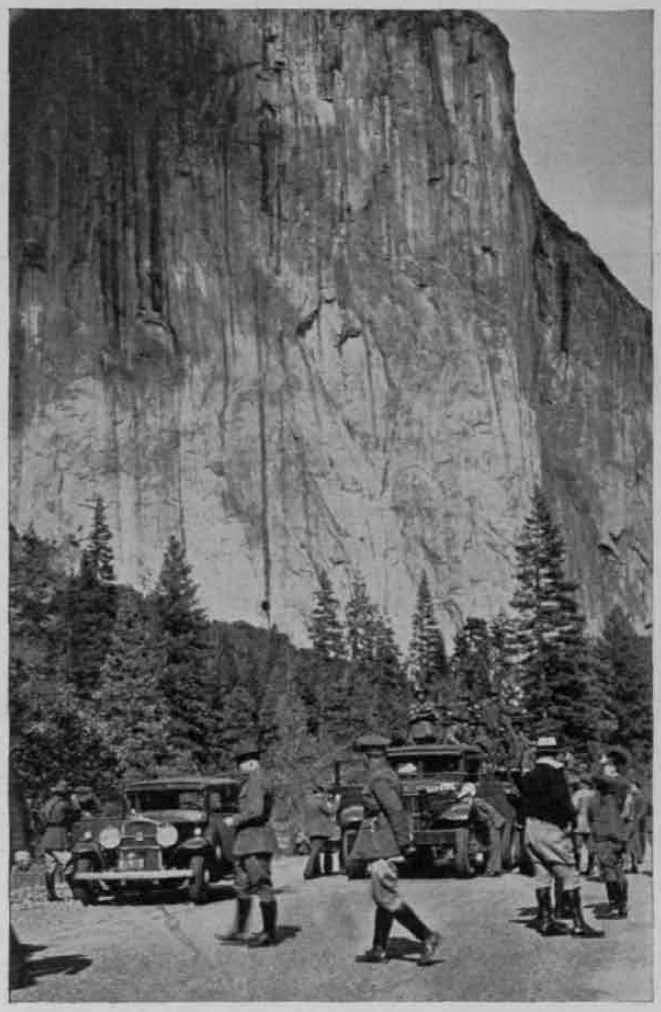
"The 'entente cordiale' which you have maintained with the civilian components associated with you and with the civilian communities in your vicinity is particularly commendable."

Preparation for the movement to Wildwood now occupies the center of the stage. Cobwebs acquired during the winter are being knocked off by daily drills and subcaliber firings. Professionally this exercise is of utmost interest since it involves a strategic move over a considerable distance of heavy mobile weapons, building of firing spurs and a tactical move into position for firing, much as it would occur in time of war. The move should result in much valuable experience for the entire 52nd. The regiment will arrive at Wildwood June 2 and the firing will take place June 3—a postponement from the original time as announced in the last number of the COAST ARTILLERY JOURNAL.

Annual Field Training 63d C.A. (AA)

By Major A. J. French, C.A.C.

FOR the benefit of any listeners who have not heretofore tuned in on the War Department Training Directive, it may be well to begin by saying that there is a requirement that all mobile units will spend each year a period of not less than two weeks in the field, making a march of not less than one hundred miles during that period. Believe it or not,



Yosemite: Park and Volunteer guides show us El Capitan

the primary objective is the recreational feature, and an opportunity must be given to the soldier to see the world, or at least that part of it reasonably accessible to his station.

The 63d Coast Artillery, stationed at Fort MacArthur, California, being always eager to follow this sort of directive, its commander, Lieut. Colonel M. A. Cross, cast about to find time to get in its field training. Originally planned for the month of May as a part of a concentration of troops of all arms at Monterey, as required by the Corps Area training program, something interfered with this,—perhaps a proposed Air Corps maneuver,—and the field period was advanced to the month of March, with the incidental mis-

sion of turning in at San Francisco the old model 3-inch antiaircraft guns which were to be replaced by the newest type, due to arrive from New York by transport about that time.

Six reserve officers of the regiment who had not had previous active duty training during the fiscal year were hastily notified of the opportunity for field duty. Three were able to make the trip, and orders were promptly issued by the Coast Artillery District for them, as well as for any officer of a reserve regiment

Santa Barbara: In the back yard of the Vista Mar Monte. (Board and lodging is cheaper in the foreground)

who was so anxious to make the journey with us that he went the whole time and distance on inactive duty at his own expense.

The regiment, completely entrucked, took the field on March 8th. Daily marches were made in the usual road formation adopted by this regiment, in which each battery marches as a separate convoy, with about ten minute intervals between batteries. Road speeds averaged from ten to fourteen miles per hour, depending on grades and the amount of traffic encountered. The searchlights ordinarily remained in camp for an hour or more after the last battery convoy, gave the camp site a final police, joined the assembled batteries for the noon meal,—a lunch by the road side,—and then proceeded to the new camp with the advance details used for laying out the camp and for other preliminaries.

Due to a serious shortage in light cars and motorcycles, a few private cars, supplied voluntarily by officers and noncommissioned officers, were permitted to accompany the batteries for assisting in traffic control. The regiment has a lot of experience with traffic on its monthly overnight camps, Fort MacArthur being completely surrounded by Los Angeles, the police of which city are perfectly willing to let our traffic guards handle our traffic problems as suits us best. These private cars were all identified by "booster plates", bearing the legend: "63d Coast Art Antiaircraft." which served the double purpose of assisting in identification of cars by personnel of the regiment and answering the questions of the curious.

The itinerary was planned as a circuit, up the Inland Route as far as Merced, then across to Monterey, and down the Coast Route to San Pedro. Besides the obvious training in camping, field conditions and convoy driving, this circuit was planned to permit side trips to two National Parks, Sequoia and Yosemite, and to utilize a military reservation near Monterey known as the Gigling Reservation (for no apparent reason) for field exercises in reconnaissance, selection and occupation of positions. Reconnaissance of the route was limited to one day in advance of the march, and this also applied to the selection of camp sites, although in some instances resort was had to the mails for advance information. One officer, Captain Archibald L. Parmelee, reconnoitered the route, arranged for camping, acted as agent officer, and made the necessary civilian contacts both before and after.

Captain Parmelee reported the mountain section of the Inland Route, known as the Ridge Route, to be in bad shape due to rains and slides of earth, so resort was had to a long detour through the Antelope Valley and the Mojave Desert. For the benefit of statistic hounds:

March 8:	Fort MacArthur to Saugus,	65 miles
March 9:	to Mojave,	71 miles
March 9-10:	to Bakersfield,	73 miles
March 12:	to Visalia,	75 miles
March 14:	to Merced,	98 miles
March 16:	to Gilroy,	84 miles
March 17:	to the Presidio of Monterey,	62 miles
March 19:	to King City,	65 miles
March 21:	to Santa Maria,	117 miles
March 22:	to Santa Barbara,	81 miles
March 24:	to Fort MacArthur,	116 miles

My, what a lot the statisticians miss!

Including, even the real meaning of the weather. We found that we had trusted the California climate too far once more (it has happened before on many an overnight march), and ran into some chilly, not

Near San Luis Obispo: Descending the grade from Nojopui Pass

to say frigid, nights. Remarks were heard that it would take a week in quarters to warm through again. But now in retrospect probably the perpetrators would not own up to their own remarks.

One trick the weather played on us will not soon be forgotten; more likely it will grow with repetition. The wind came up with our arrival in Mojave, and continued to come upper. Campaign hats started in

large numbers for Back East, shelter tents came down as fast as they were put up, and the sand gave a good imitation of the Texas border. When the ridge pole of the headquarters tent broke under the strain, the high command decided that it would be as restful to begin the next day's march without further ado. It was a winding mountain road through Tehachapee Pass to Bakersfield, and a bad one to make with flickering acetylene or oil lamps, but everyone was willing to try it in preference to a night spent standing around in the open merely waiting and wishing for dawn, and, with the greatest caution enjoined on all, we were under way. By 7:30 the next morning everyone was appreciating an ideal camp site on the Kern County fairgrounds and quite ready for a day of rest. There was a score of stories of drivers who went to sleep at the wheel for an instant or two, but all awoke or were awakened by the story tellers just in time to save their vehicles from going over into some unseen canyon's depths.

On two days it rained, but we were fortunate in not having rain in any camp. One rain was responsible for a practical exercise in billeting, at Merced, where the American Legion opened up for us their beautiful Veterans' Memorial building. All personnel slept two nights under a roof, with kitchens established just around the corner in a vacant lot. Fog at the Presidio of Monterey was every bit as wet as rain and a little bit colder, but there, through the courtesy of the post commander, Colonel Ben Lear, 11th Cavalry, camp was made on wooden floors and frames of their C. M. T. C. area, and other conveniences of a permanent camp were available, including hot shower baths.

Bakersfield: Captain Bartlett and Lieut. Davis discussing a special situation (not Blue).

The unforgettable feature of the march is the hospitality that was accorded us all along the line. Wherever service men or ex-service men were gathered together we were entertained like conquering heroes. Free entry was secured into the National Parks for as many as wished to go, our own transportation was augmented by the private cars of citizens, and ranger guides escorted each group through the parks; reduced rates were offered for the men to movie theatres everywhere; at Merced all of the regiment were the guests of the town at their Spanish type cinema palace; and the officers were so frequently invited to meals by chambers of commerce or reserve officers' associations that the camp mess could be sure of only the officer of the day. And with all the hospitality of the citizenry, they still conveyed the impression that they were in our debt, which can only be accounted for on the grounds that Mr. Taxpayer pays out so much and sees so little of the results that he is all enthusiasm when he finds that he may be getting something for his money after all.

On reconsideration, that is not the only explanation nor the most probable reason for our popularity. For it was quite noticeable that we were best received where there was some local military unit. For example, there was a machine gun company of the 185th Infantry at Visalia which turned out in a body and could scarcely be pried away from camp in their interest in the .50 caliber machine guns. Likewise, a similar professional interest as well as the utmost hospitality was displayed by reserve officers' associations, whether small and struggling or large and enthusiatic.

Now we are home again, back to the old routine, and very properly chastened when we see our parade ground borrowed by the U. S. fleet for massed reviews that in numbers look like war time divisions, and for color, like the pre-war evening parades. What have we learned from our triumphal tour of the hinterland? Well, if you need a moral with every tale, with this one why not: It's no trouble to show goods?

Corregidor

GENERAL Kilbourne will leave Corregidor on the June transport, his extension of tour having been cut short by his detail to the General Staff. General Embick is expected to arrive on the June boat, to replace General Kilbourne as Harbor Defense Commander.

During his tour here, General Kilbourne has completed many projects which will contribute greatly to the comfort of future *Corregidoros*. Many of these improvements have been descirbed in the JOURNAL. The following list is given as a brief resumé.

Cement sidewalks have been built along all lines of quarters.

Middleside Officers Row has been terraced and planted with grass.

The Club swimming pool has been completed.

Electric stoves and laundry tubs have been installed in quarters.

Many of the main roads have been tarred to reduce the dust.

Most of the roads in the ravines have been paved so as to be passable for all classes of traffic.

Garages have been built by the Post Exchange in number sufficient to meet requirements.

Corregidor Club: The dressing rooms and showers now being built underneath the club building are almost completed. These are for use in connection with the swimming pool.

The Club has set up a badminton court on the dance floor. The game has proven to be very popular, and the court is in use all day long. It is most highly recommended for installation at any post, either in the tropics or the States. It is one of the fastest of indoor games, although it is very easily learned. It can be played in any fairly large hall, such as a dance hall, gymnasium, or unused storeroom (if such a thing exists). The following plan was followed at the Corregidor Club: the court lines were painted on the dance floor, and the net (similar to a volleyball net) was supported by movable posts such as are used for high jump standards in gymnasia. The Club provides four steel rackets; players buy their own shuttlecocks at the club bar.

Non-Coms' Club: In past years the NCO Club (American) has been shunted around the post from one building to another. A new building has just been erected especially for the club. It is located in the "Davidson Park" area, near the radio towers. This new building is a great improvement on the nondescript shacks which have served as the club building in recent years.

Weather Report: Although the JOURNAL does not ordinarily carry a weather column, we hope the Editor will find space to record the unusual weather experienced at Corregidor during the last rainy season. The normal rainy season at Corregidor starts in the latter part of May. In 1931, the rains did not arrive until August 7; the intervening weeks were a period of most intense heat. Newspaper reports indicated that all parts of the world suffered from unusual heat during that period. When the rains finally came, they made up for lost time. For the first five or six days, the rainfall averaged over 6½ inches per day. On August 13, a 24-hour rainfall of 19.69 inches was recorded. These unusual rains—a whole month's rainfall crowded into two or three days—caused a lot of damage to roads. Even with all the troops on the job, it took nearly two months to clear the landslides.

The 535th Coast Artillery (AA)

New Orleans

ONE of the best examples of Coast Artillery newspaper publicity which has come to attention for some time was in connection with the recent Army Day celebration in New Orleans on April 6. It occurred to Major Gooding Packard, C. A. C., on duty with the C. A. Reserves, that Army Day would furnish an excellent opportunity to demonstrate antiaircraft artillery before a large part of the population of New Orleans and at the same time furnish some instruction for officers of the 535th C. A. With the assistance of Colonel H. R. Richman, Cavalry, D. O. L., Chief of Staff, 87th Division, and Colonel L. Kemper Williams Infantry Reserve, National President of the Reserve Officers Association, it was arranged to secure a detachment of the 69th C. A. (AA) Ft. McClellan, Alabama, to take part in the demonstration.

It happened that at this time a Carnival of the Air was being staged by Famous Flyers, Inc., who cooperated in lending realism to the show after the failure to secure planes from the Air Corps. The *Item Tribune*, a morning newspaper of New Orleans, sponsored the show and gave it valuable publicity in its columns as did all other newspapers of the city. The following quoted from the *Item Tribune* is given as indicative of the enthusiasm which existed and as an example of good newspaper writing.

"One hundred and seventeen years ago a motley force lay near Chalmette to defend New Orleans against a powerful enemy advancing against the city. Last night another force was billeted against Chalmette, come to 'defend' New Orleans against an 'enemy' such as neither Andrew Jackson nor the British General Pakenham had ever dreamed of.

"But unlike its predecessor, this latter 'army' is equipped with the most modern guns and mechanical devices in the catalog of destruction, designed especially for such a foe as it will face.

"A detachment of the 69th Coast Artillery (AA), Ft. McClellan, Alabama, composed of 100 men under the command of Capt. H. J. McMorrow equipped with two 3-inch antiaircraft guns, 4 .50 caliber machine guns for use against aircraft, 4 huge searchlights and as many of the latest sound locators arrived in New Orleans yesterday afternoon. The detachment will give a series of demonstrations featured by a defense of New Orleans against an air squadron piloted by several of the world's most renowned fliers, who will 'attack' Wednesday at 8 p. m. over the Wedell-Williams Airport.

The mock raid will be staged at the Airport with the cooperation of Famous Fliers, Inc., who are here for the Carnival under the editorial sponsorship of the *Item Tribune*. Such men as Wiley Post, Harold Gatty, Jimmy Doolittle and others flying their own planes are expected to take part in the maneuvers."

The following brief account of the demonstration was furnished by Major Packard.

"The original request for the visit was originated on March 16, 1932, and was accompanied by letters of local patriotic citizens urging approval of the visit. This request was disapproved due to the fact that the state of regular army funds would not permit it.

"On May 31 at a conference with Colonel L .Kemper Williams, Inf. Res., National President of the Reserve Officers Association, it was learned that Colonel Williams had obtained the necessary funds and that the detachment would leave Fort McClellan on April 2 arriving in New Orleans for the Army Day demonstration.

"Even on such short notice it was not difficult to give wide publicity to the participation of the AA detachment in the Army Day program. Mr. Leo J. Saeurborn of Famous Fliers, Inc., was to stage a 'Carnival of the Air' starting April 8. One of the local newspapers was sponsoring the carnival and a combined searchlight aircraft demonstration promised excellent advertisement for it. Other city papers men-

tioned the antiaircraft detachment in connection with the Army Day program.

"The detachment of the 69th under Captain McMorrow reached the Louisiana State line about 3:00 p. m. Monday, April 4, and was met by local Reserve officers as well as by an escort of eight state highway police. It was escorted through the business section of the city of Jackson Barracks where Brig. Gen. Ray Fleming, Adjutant General of Louisiana, and his assistant, Major W. D. Shaffer, La. N. G., had made all arrangements to quarter the men and officers. In addition a large room to accomodate two was donated by the St. Charles Hotel for the period the detachment remained in New Orleans. On April 5th the following program was published and sent to all Reserve and National Guard officers of branch in and near New Orleans. Copies were furnished the local newspapers.

Program

April 5. 8:00 p. m. to 10:00 p. m. at Jackson Barracks. General instruction in AA defense.

April 6. (Army Day) 9:30 a. m. to 3:30 p. m. General instruction at foot of Canal Street including parade through business section at 11:30 a. m.

3:30 to 4:30 p. m. Convoy instruction. Movement from foot of Canal Street to Wedell-Williams Airport.

5:30 p. m. Emplacement of guns, machine guns, sound locators, searchlights and fire control instruments for defense of airdrome.

8:00 to 10:00 p. m. At Wedell-Williams Airport. A night attack from the air. Defense to be in charge of personnel from the 545th C. A. (AA). Famous Fliers, Inc., to furnish the attacking planes.

April 7. At Jackson Barracks.

5:00 to 6:00 p. m. Messing the troops in the field.

6:00 to 7.30 p. m. AA Machine Gun instruction—.50 calibre and .30 calibre guns.

7:30 to 9:30 p. m. Artillery instruction.

April 8. 1:00 to 2:00 p. m. Convoy from Jackson Barracks to Wedell-Williams Airport.

2:00 to 5.00 p. m. At airport. Emplacement of equipment and drill. Famous Fliers, Inc., planes to be used as drill targets.

8:00 to 10:00 p. m. Defense of an airdrome against air attack.

The first scheduled instruction 8:00 to 10:00 p. m., April 5, was attended by a great number of officers and enlisted men of the National Guard and Reserves and by many civilians—in all, about 3000 people.

On April 6 police on duty at the foot of Canal Street estimated that at least 10,000 people had visited the detachment. On that day the four visiting officers were guests of Major Walmsley at a formal reception and later were guests at a luncheon at the St. Charles Hotel sponsored by the Army and Navy Club of New Orleans presided over by Lt. Col. L. Kemper Williams. At 7:30 p. m. Capt. Morrow spoke over WSMB, local broadcasting station.

The crowd that turned out to see the night demonstration at Wedell-Williams Airport was estimated at 50,000.

The instruction on April 7 was attended by Reserve officers. No crowds of civilians were present. On that day 2 G. M. C. trucks belonging to the detachment were displayed at the General Motors exhibition at the City Auditorium. One was an old 1917 model and one a 1932 G. M. C. prime mover. In addition one searchlight was sent to the show.

The scheduled instruction on April 8 was well attended by officers and enlisted men of the National Guard and Reserves. About 20,000 civilians were present for the instruction at the Wedell-Williams Airport in the evening.

Comments on officers and enlisted men of the detachment of the 69th C. A. (AA) were full of praise. A National Guard general was heard to say, in effect, "Much as I am impressed by the wonderful fire control instruments I am more impressed by the quiet efficiency of the non-commissioned officers." As the attendance at all meetings was far in excess of anything anticipated the detailed instruction for Coast Artillery Reserve officers was, to a great measure, dispensed with. However, on a few occasions officers of the 545th C. A. (AA) were put in complete charge and not only assisted the officers of the 69th but gained much valuable experience.

Some of the local individuals whose cooperation and assistance added greatly to the success of the visit were as follows:

Colonel L. Kemper Williams, Inf. Res.

Brig. Gen Ray Fleming, Adjutant General of Louisiana.

Major W. D. Shaffer, La. N. G., Assistant Adjutant General.

The Honorable T. S. Walmsley, Mayor of New Orleans.

The City Traffic Police.

The State Highway Police.

From this account it can be seen that publicity for the Army and instruction for the civilian components can be procured at the same time. We should take advantage of every opportunity to show the Army to civilians. After all it is their Army and we should miss no chance to secure public good will.

The 61st Coast Artillery (AA)

Fort Sheridan

ON May 6 and 7 a detachment from the 61st Coast Artillery (AA) took part in the annual "Round-up" at Milwaukee. A large number of Reserve, National Guard and Regular officers were present. The detachment conducted 3-inch gun and machine gun firing over Lake Michigan and, in addition, put on a searchlight demonstration in the evening. It was estimated that over 100,000 persons gathered near the firing point to witness the demonstration.

During the second week in May the regiment took an active part in the Command Post Exercises being held at Camp Custer, Mich. In preparation for this a communications school was operated at Fort Sheridan for three months, during which period officers and enlisted men from the regiment were trained for the

work to be done during the Exercises. The regiment sent a convoy of 25 trucks to Camp Custer, together with a large number of its officers and enlisted men.

The regiment is preparing for a very busy summer training season, which will include the following:

Machine gun target practice, 61st C. A. (AA), during the period from June 3 to 16;

R. O. T. C. encampment from June 17 to July 28;

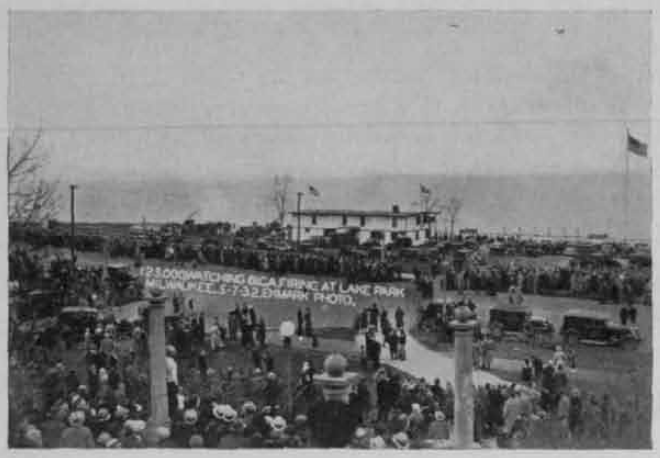
Military tournament at Chicago from June 26 to July 5;

Training of Coast Artillery Reserves: 7th Corps Area, July 3 to 16;

5th Corps Area, July 17 to 30; and 5th Corps Area, July 31 to Aug. 15;

C. M. T. C. encampment July 29 to August 27.

Preliminary training and target practices for the



61st Coast Artillery (AA)—3-inch guns and searchlights, August 15 to September 10.

Annual motor convoy practice march, beginning September 14.

The regiment will not take a major part in the Military Tournament to be held at Soldiers Field in Chicago. However, 5 searchlights are to be sent there, one 3-inch gun and 2 machine guns. In addition most of the regimental transportation will be used during the Tournament for one purpose or another. The detachment probably will include 4 officers and about 100 enlisted men and will be encamped near Soldiers Field, beginning about June 15.

The annual Corps Area Inspection was held April 18 by Major General Frank Parker, and the post and regiment was given a superior rating.

Coast Artillery Reserves, Second Corps Area

Colonel F. W. Stopford, CAC (DOL) Executive

Metropolitan District

ON Saturday, April 23, 1932, the Coast Artillery Reserves of the Second Corps Area received at Fort Totten, N. Y., some very valuable instruction and pleasant entertainment for themselves and friends, through the good will and efficiency of the 62d Coast Artillery, Colonel Edward Kimmel, Commanding.

The following program was carried out:

9:30 A. M.—Inspection of barracks and utilities—officers were assigned in small groups to batteries and conducted through the morning routine.

12:00 N.—Lunch at Battery "A".

1:30 P. M.—Ten minute orientation talk.

1:45 P. M.—Inspection of equipment in march order, but with hoods up and tools displayed.

2:15 P. M.—Execution of Defense Plan No. 3 (Fort Totten area). For purposes of this demonstration, all positions occupied were on the Fort Totten reservation.
Recall at 3:30 P. M.

4:15 P. M.—Formal Guard Mount.

4:30 P. M.—Regimental Parade and Review.

5:00 P. M.—Tea dance, Officers Club.

Every possible effort was made to insure the greatest amount of good to all and with comfort to the individuals. Transportation met all trains and the reception on arrival at the post assured every one of a hearty welcome. Great credit is due to Colonel Kimmel and each member of his regiment for having successfully carried out a day that will benefit materially the relation of the Reserves and the Regular Army and be of lasting good to both.

Some 100 Reserve officers with a very large number of their friends were present. The following regimental commanders were present:

Colonel Francis R. Stoddard, Jr., 533rd C. A. (AA)
Colonel Henry D. Cushing, 539th C. A. (AA)
Colonel Azel Ames, 602d C. A. (Ry)
Lt. Col. H. V. Van Auken, 909th C. A. (AA)
Lt. Col. C. H. E. Scheer, 502d C. A. (AA)
Lt. Col. J. W. Barker, 530th C. A. (AA)

Prior to the troop school on March 21st, the Regimental Commanders and unit instructors gave a dinner at the Army and Navy Club, for the Corps Area Commander, Major General Dennis E. Nolan. At the troop school, General Nolan discussed the increased importance of the Reserves in view of the fact that the absolute minimum of Regular officers required for mobilization is not being maintained. In this connection, General Nolan pointed out the importance of encouraging the ROTC and maintaining the interest of its graduates. He called attention to what was being done in his corps area and commended the work of Coast Artillery Reserves for their efforts, as is evidenced by the close relationship maintained by the organizations through Coast Artillery Reserve Headquarters with Fordham University.

One hundred and twenty officers have signed up to take the preparatory training for the CMTC at Fort Hancock, N. J. in August. A comprehensive schedule requiring two meetings each month and a great deal of individual application has been prepared by and is being carried into effect under the supervision of Major Meade Wildrick. The three regiments designated for this work, are as follows:

533rd C. A. (AA)	Colonel Francis R. Stoddard, Jr.
539th C. A. (AA)	Colonel Henry D. Cushing.
602nd C. A. (Ry)	Colonel Azel Ames.

Up State Units

Maj. Joseph C. Haw, CAC (DOL) Unit Instr.

Work in the Extension School this year has been very successful. By the first of April members of the 513th had completed twice as many subcourses as were credited to that Regiment for the entire school year of 1930-31, while both the 514th and 522nd had more than doubled their achievements of last year.

Monthly meetings of the 522nd in Rochester and Buffalo were continued with usual sucess. The greatest credit is due to the Regimental Commander of this Regiment, and to his chief assistants, Captain James P. Toler, Jr., and First Lieutenant Alfred D. Heggie, for their energy and interest in keeping things going in their Regiment. The Unit Instructor of the Regiment is stationed in Schenectady, 280 miles distant from the center of population of the Regiment, and can not very often visit the Regimental area; so that were the leaders in that vicinity less energetic and capable, it would be impossible to keep up the local activities of the Regiment.

Applications for camp have poured in at a great rate. While the economic situation has given a slight impetus to the desire for active duty, records of past years show that interest in active duty has always been great in this state, and there can be no question that the principal reason for the large number of applications is the genuine interest and enthusiasm of Reserve personnel, whose activity is steadily increasing from year to year. For several years applications for camp have been nearly double the number of vacancies allotted. The figures to date for upstate New York this year are as follows:

Regiment	*Allotment of Officers for Camp*	*Number of Applications*
513th	0	10
514th	16	30
522nd	14	27

It certainly seems a pity that even if appropriations are adequate for the allotments given above, it will be necessary to deprive more than half the applicants of the training that would do so much to improve their military efficiency and their value to the Nation.

In Schenectady meetings of all kinds continued at the rate of two to four a week. Indoor small-bore rifle practice, conducted in cooperation with the Infantry Reserve, came to an end with thirty-six shooters qualified and five unqualified. Outdoor range practice with the caliber .45 pistol and the caliber .30 rifle was started as soon as the small bore work was finished. Several small-bore matches have been fired and regulation pistol and rifle matches are in prospect.

At its annual election of officers, the Schenectady Coast Artillery Association installed the following new officers: President, Captain Henry V. Rector; Vice-President, Second Lieutenant Sewell L. Flagg; Secretary-Treasurer, Captain Frank A. Droms; Members of the Executive Council, First Lieutenants Edward A. Leach and William V. Owen, and Second Lieutenant George H. Lorimer. Brigadier General William K. Cole, United States Army, was elected to Honorary Membership.

Wilmington, Del., Area, 621st CA (HD)

At the University Club meeting of the Reserve Officers Association on March 8th, Lieutenant Colonel C. G. Mettler, Ord. Dept., gave a talk on Weapons Infantry Division, development and their influence on tactics of the Division. On April 12th meeting of the R. O. A., a Mock Trial, General Court-Martial was held. These meetings were well attended by members of the 621st Coast Artillery.

Colonel Frederick W. Stopford, CAC., Executive Coast Artillery Reserves, Second Coast Artillery District, inspected the regimental troop schools on Tuesday, April 26th.

Extension School

The interest in the extension school is shown by the table below:

Organization	*Enrollments*	*Courses Completed*	*Credit Hours*
502nd CA(AA)	37	5	110
513th CA(AA)	52	24	226
514th CA(AA)	289	208	2570
521st CA(AA)	73	25	458
522nd CA(AA)	120	64	914
530th CA(AA)	48	20	370
533rd CA(AA)	51	22	384
539th CA(AA)	43	11	264
602nd CA(RY)	75	33	433
607th CA(TD)	115	53	738
619th CA(HD)	51	21	314
620th CA(HD)	53	28	505
621st CA(HD)	96	29	524
908th CA(AA)	43	13	247
909th CA(AA)	71	29	462
910th CA(AA)	27	8	172
Civilians	84	36	412
C. M. T. C.	121	68	629
O. R.	68	35	531

Houston AA Chapter, U.S.C.A.A.

By Lieut. A. A. Lesikar

At the last meeting of the Houston Anti-Aircraft Chapter of the United States Coast Artillery Association, held on Monday, May 2, at the local University Club, we elected the following officers to hold office during the ensuing year:

President	Lt. Jeff Barnett
Vice-President	Lt. A. A. Lesikar
Secretary-Treasurer	Lt. James A. Smith
Councilmen	Lt. James Fambrough Lt. Hendricks M. Davis Lt. Clair Smith

These officers are to be installed at our next regular monthly meeting to be held in June.

Our chapter, which was organized about a year ago, now has fifteen paid-up members. (We charge a small local fee.) Out of a total of about thirty Coast Artillery officers in our city twenty-two or twenty-three are active in the reserve work; therefore, we feel that we have made good and steady progress during the past year and that during the ensuing year we will be able to number at least each one of the active officers among the members of our local chapter.

Our meetings are held once a month at the local University Club during the noon hour, being, preceded

by a luncheon, and although our local membership consists of fifteen officers, we generally have an attendance at these meetings of around eighteen or twenty. These meetings are always very "snappy" and interesting and I might add, not in the sense of boasting, but with the feeling that we are making marvelous progress, that there have been many remarks of marvel made about our interest in the work and our esprit de corps.

Sometime ago our good friend and loyal instructor, Major Wm. S. Fulton, was transferred to Austin, Texas. We were very much chagrined at being deprived of the Major's good instruction and of his comradeship, especially since he was instrumental in building up our local chapter and the interest in its organization and because he was thorough in his instruction, working with us early and late. Although the major has been transferred and we continue to miss him greatly, we are trying to carry on the work of the chapter that he has begun in the spirit that he has instilled.

The 69th Coast Artillery (AA)

Fort McClellan

BRIGADIER General William McNair, commanding the 4th C. A. District, visited Fort McClellan on the 17th and 18th of March. He beheld the rather unusual spectacle of the entire 69th at its so-called home station and seized the opportunity to inspect its activities.

On March 28, Lt. Ostenberg left with a convoy of 18 vehicles for Fort Screven, Ga., where 485 officers and enlisted men of the 8th Infantry were entrucked and transported to Fort Benning for the Corps Area maneuvers. After a two day lay-over, the convoy left for Fort Oglethorpe, Ga., where 217 officers and enlisted men of the 22nd Infantry hopped on our trucks for their free ride to Benning. Total distance covered by this convoy was 1178 miles. These vehicles then became part of the motor pool of the Concentration Camp for use in moving troops in maneuvers. The Screven troops are to be returned at the conclusion of the exercises. The convoy will have covered over 1800 miles in addition to maneuver mileage by the time it returns to McClellan.

While these vehicles were away, shortly before noon of April 1, without previous notice of the movement, we were ordered to send Batteries A and B with a detachment from Battery E on a round trip exceeding 1000 miles, to leave early in the morning of April 2. The destination was New Orleans; the object, demonstration and firing of antiaircraft equipment for the National Convention of Reserve Officers of the U. S. Our host was Colonel L. Kemper Williams, newly elected President of the Association and our hostess was the City of New Orleans. This convoy, commanded by Captain McMorrow, traveled 136 miles on the 2nd, 218 miles on the 3rd and the remaining 185 miles on the 4th of April. It was met at the Louisiana state line by 20 motorcycle police of the State and at the city line by 20 New Orleans motorcycle police.

Our efforts seemed to please, judging by the letters written afterward. Stops were made at Mobile and Montgomery on the way back. These units rejoined on April 11.

Battery A went to Fort Benning on April 27 and the remainder of the Regiment, less Post overhead arrived on the 30th. Day and night demonstrations were provided, including night firing at towed sleeve target by Battery E under Lt. Pape. The Regiment returned to McClellan May 5.

Battery B again went to Fort Benning May 12, proof-fired all four guns on the 13th, and returned to Fort McClellan by a night march the same day.

522d Chapter, Coast Artillery Association Formed

WE are pleased to announce the formation of the 522d Chapter, Coast Artillery Association at Buffalo, New York. This information comes from Lt. Col. Frederick W. Gilchrist, Commanding Officer of the 522d Coast Artillery (AA) who was elected president of the chapter. The other officials of the chapter are:

Vice President—1st Lt. Wallace G. Campbell
Executive Committee:
Major W. E. Ryan
1st Lt. A. W. Walker
1st Lt. W. L. Hamilton
1st Lt. A. D. Heggie
2d Lt. Lloyd Thomson
Secy.-Treas.—Captain J. P. Toler

The chapter was organized on May 14 at a meeting attended by twenty-five officers, nearly all being members of the 522d. The following distinguished officers of the Coast Artillery Corps were elected honorary members.

Major General John W. Gulick, Chief of Coast Artillery.
Brig. Gen. William E. Cole, U. S. A.
Colonel Frank K. Fergusson, C. A. C.
Colonel Frederick W. Stopford, C. A. C.

The Buffalo Coast Artillery reserve sector has always been very active under the leadership of Colonel Gilchrist. This is all the more commendable due to the fact that there is no Coast Artillery unit instructor in Buffalo. Major J. C. Haw is the unit instructor whose office is located in Schenectady. It is predicted that the functioning of the chapter will add greatly to the enthusiasm and interest which already exists among the Coast Artillery officers of Buffalo and environs.

Organized Reserve Camps—Coast Artillery

Unit	*Comdg.*	*Instructor*	*Place*	*Dates*	*Off.*	*E. M.*
			I Corps Area			
542d (AA)	Lt. Col. B. W. Randall	Col. S. G. Shartle	Ft. H. G. Wright, N. Y.	July 3-16	25	
543d (AA)	Lt. Col. F. E Stockwell	Lt. Col. J. L. Holcombe	Ft. H. G. Wright, N. Y.	July 3-16	27	
601st (Ry)	Lt. Col. C. Mazeau	Lt. Col. J. L. Holcombe	Ft. Hancock, N. J.	July 17-30	19	
616th (HD)	Maj. H. A. Fasick	Maj. J. P. McCaskey	Ft. H. G. Wright, N. Y.	July 16-29	21	
615th (HD)	Col. H. J. Baum	Maj. E. O. Halbert	Ft. Adams, R. I.	June 28—July 14	35	
CMTC			Ft. Adams, R. I.	July 2-31		950
			II Corps Area			
514th (AA)	Maj. N. E. Devereux, Jr.	Maj. J. C. Haw	Ft. Tilden, N. Y.	July 17-30	17	
522d (AA)	Col. F. W. Gilchrist	Maj. J. C. Haw	Ft. Tilden, N. Y.	July 17-30	15	
530th (AA)	Lt. Col. J. W. Barker	Maj. E. H. Thompson	Ft. Tilden, N. Y.	July 17-30	14	
533d (AA)	Col. F. R. Stoddard, Jr.	Lt. Col. W. M. Colvin	Ft. Hancock, N. J.	Aug. 9-22	20	
539th (AA)	Col. H. D. Cushing	Maj. E. H. Thompson	Ft. Hancock, N. J.	July 31—Aug. 13	20	
602d (Ry)	Col. Azel Ames	Maj. Meade Wildrick	Ft. Hancock, N. J.	Aug. 19—Sept. 1	20	
607th (HD)	Col. R. S. Allyn	Maj. Meade Wildrick	Ft. Hancock, N. J.	July 3-16	14	
620th (HD)	Lt. Col. H. R. Johns	Maj. Meade Wildrick	Ft. Hancock, N. J.	July 3-16	10	
CMTC			Ft. Hancock, N. J.	Aug. 1-30		300
			III Corps Area			
523d (AA)	Lt. Col. J. B. Bentley	Maj. H. LeR. Muller	Ft. Monroe, Va.	Aug. 7-20	50	
516th (AA)	Lt. Col. J. B. Bentley	Maj. F. A. Hause	Ft. Monroe, Va.	July 24—Aug. 6	55	
603d (Ry)	Lt. Col. T. A. Scott Thropp	Maj. F. A. Hause	Ft. Monroe, Va.	Aug. 7-20	55	
916th (AA)	Lt. Col. W. W. Nairn	Maj. E. B. Gray	Ft. Monroe, Va.	July 17-30	22	
917th (AA)	Lt. Col. H. P. Newton	Maj. E. B. Gray	Ft. Monroe, Va.	July 3-16	22	
CMTC			Ft. Monroe, Va.	July 6—Aug. 4		450
ROTC			Ft. Monroe, Va.	June 17—July 28		252
			IV Corps Area			
540th (AA)	Maj. R. W. Coward	Lt. Col. R. K. Greene	Ft. Barrancas, Fla.	July 31—Aug. 13	20	
921st (AA)	Lt. Col. F. M. Ellerbe	Maj. E. H. Freeland	Ft. Barrancas, Fla.	July 31—Aug. 13	18	
524th (AA)	Lt. Col. J. K. Jordan	Lt. Col. R. K. Greene	Ft. Barrancas, Fla.	Aug. 14-27	24	
925th (AA)	Lt. Col. W. N. Spencer	Maj. Gooding Packard	Ft. Barrancas, Fla.	July 31—Aug. 13	13	
923d (AA)	Lt. Col. P. N. Pittenger	Maj. E. H. Freeland	Ft. Barrancas, Fla.	Aug. 14-27	25	
969th (AA)	Lt. Col. W. W. Holden	Maj. W. S. Fulton	Ft. Barrancas, Fla.	July 3-16	7	
970th (AA)	Lt. Col. S. C. Lackey	Maj. W. S. Fulton	Ft. Barrancas, Fla.	July 3-16	7	
972d (AA)	Maj. V. G. Cox	Maj. W. S. Fulton	Ft. Barrancas, Fla.	July 3-16	7	
973d (AA)	Maj. O. M. Drake	Maj. W. S. Fulton	Ft. Barrancas, Fla.	July 3-16	7	
ROTC			Ft. Barrancas, Fla.	June 9—July 20		257
CMTC			Ft. Barrancas, Fla.	June 14—July 13		500
			VI Corps Area			
525th (AA)	Maj. J. P. Whittinghill	Maj. W. G. Patterson	Ft. Sheridan, Ill.	July 17-30		
933d (AA)	Maj. E. H. Forster	Maj. A. H. Warren	Ft. Sheridan, Ill.	July 17-30	20	V C. A.
938th (AA)	Lt. Col. W. P. Watson	Lt. Col. W. W. Merrill	Ft. Sheridan, Ill.	July 17-30		
947th (AA)	Lt. Col. A. J. Blocki	Maj. G. F. Humbert	Ft. Sheridan, Ill.	July 31—Aug. 13	22	
949th (AA)	Maj. R. M. Zacharias	Maj. C. J. Herzer	Ft. Sheridan, Ill.	July 31—Aug. 13	13	
506th (AA)	Lt. Col. J. C. Davis	Maj. O. G. Pitz	Ft. Sheridan, Ill.	July 31—Aug. 13	13	
531st (AA)	Col. H. W. Hodgkins	Maj. C. J. Herzer	Ft. Sheridan, Ill.	July 31—Aug. 13	18	
532d (AA)	Lt. Col. J. A. Elliott		Ft. Sheridan, Ill.	July 31—Aug. 13	10	
536th (AA)	Col. C. N. Deakin	Maj. S. F. Hawkins	Ft. Sheridan, Ill.	July 31—Aug. 13	16	
507th (AA)	Lt. Col. R. L. Cochran	Capt. T. R. Phillips	Ft. Sheridan, Ill.	July 3-16		
955th (AA)	Lt. Col. J. R. Sweitzer	Capt. W. H. Sweet	Ft. Sheridan, Ill.	July 3-16	132	VII C. A.
958th (AA)	Lt. Col. F. C. Carl	Col. F. B. Edwards	Ft. Sheridan, Ill.	July 3-16		
960th (AA)	Maj. D. C. Jackson, Jr.	Maj. H. L. King	Ft. Sheridan, Ill.	July 3-16		
ROTC		Maj. C. A. Chapman	Ft. Sheridan, Ill.	June 17—July 28		
			IX Corps Area			
509th (AA)	Col. W. S. Pollitz	Maj. W. K. Richards	Ft. Worden, Wash.	Sept. 11-24	50	
979th (AA)	Lt. Col. F. R. Reynolds	Maj. W. K. Richards	Ft. Worden, Wash.	Sept. 11-24	5	
57th (TD)	Maj. W. W. Briete	Maj. R. H. Fenner	Ft. Winfield Scott, Cal.	July 31—Aug. 13	30	
605th (Ry)	Maj. F. J. Baum	Maj. Fred Seydel	Ft. Winfield Scott, Cal.	May 15-28	23	
608th (TD)	Col. F. E. Baker	Maj. Fred Seydel	Ft. Winfield Scott, Cal.	Aug. 14-27	30	
624th (HD)	Maj. Allen Wight	Maj. W. S. Fulton	Ft. MacArthur, Cal.	July 3-16	2	
626th (HD)	Lt. Col. J. P. MacNeill	Maj. Fred Seydel	Ft. Winfield Scott, Cal.	July 17-30	15	
517th (AA)	Lt. Col. W. J. Brady	Maj. R. H. Fenner	Ft. MacArthur, Cal.	Sept. 11-24	22	
971st (AA)	Col. John Perkins	Maj. W. S. Fulton	Ft. MacArthur, Cal.	July 3-16	7	
974th (AA)	Maj. E. L. Guy	Maj. W. S. Fulton	Ft. Winfield Scott, Cal.	July 3-16	7	
975th (AA)	Lt. Col. F. H. Holden	Maj E. P. Noyes	Ft. MacArthur, Cal.	Aug. 28—Sept. 10	45	
977th (AA)	Lt. Col. E. A. Evans	Maj E. P. Noyes	Ft. MacArthur, Cal.	July 24—Aug. 6	55	
CMTC			Ft. MacArthur, Cal.	June 28—July 27		150
CMTC			Ft. Winfield Scott, Cal.	June 17—July 16		150
ROTC			Ft. Worden, Wash.	June 21—Aug. 1		57

COAST ARTILLERY ORDERS

Brig. Gen. William E. Cole from Hawaii to command 2d C. A. District, New York.

Brig. Gen. James H. Reeves from command of 9th C. A. District, Presidio of San Francisco to command the 4th C. A. District, Ft. McPherson, Ga., sailing San Francisco, July 29.

Col. Robert S. Abernethy from 1st C. A. District, Boston, to command Hawaiian C. A. Brig., sailing New York, Aug. 26.

Col. Lawrence C. Brown from Panama to 11th, Ft. H. G. Wright.

Col. Arthur S. Conklin from detail in G. S. C. and Headquarters, Third Corps Area, Baltimore, to 62d, Ft. Totten, April 19.

Col. Frederick L. Dengler, from detail in G. S. C. and Headquarters Ninth Corps Area, Presidio of San Francisco to Philippines sailing San Francisco, Sept. 21.

Col. William R. Doores, retired April 30.

Colonel Ralph M. Mitchell from Panama to R. O. T. C., University of Cincinnati.

Col. George A. Nugent, 11th, Ft. H. G. Wright, to I. G. D., Washington, Sept. 1.

Col. Marcellus G. Spinks from detail in I. G. D. Washington, to R. O. T. C., Miss. State College.

Lt. Col. Malcolm P. Andruss from Panama to recruiting, Buffalo, N. Y.

Lt. Col. Robert P. Glassburn from R. O. T. C., Univ. of Delaware, Newark, to 11th, Ft. H. G. Wright, Sept. 1.

Lt. Col. George W. Cocheu from detail in G. S. C. and Hq. First Corps Area, Boston, to 7th, Ft. Hancock, May 31.

Lt. Col. Matthew A. Cross, 63d, Ft. MacArthur, to Philippines sailing San Francisco, Sept. 21.

Lt. Col. Clifford Jones, from detail in G. S. C. and the Philippines to 13th, Ft. Barrancas.

Lt. Col. Franc Lecocq, 2nd, Ft. Monroe, to Org. Res., Ft. Monroe, Aug. 1.

Lt. Col. Edward A. Stockton, Jr., from Headquarters Second C. A. District, New York to Bureau of Insular Affairs, Wash., Aug. 24.

Lt. Col. Forrest E. Williford from Philippines to detail in G. S. C. and to Headquarters Seventh Corps Area, Omaha.

Major Glenn P. Anderson, 13th, Ft. Crockett, to student Air Corps Tactical School, Maxwell Field, Montgomery, Aug. 25.

Major Donald M. Ashbridge from Bureau of Insular Affairs, Wash., to R. O. T. C., Univ. of Delaware, Newark, June 17.

Major Roy S. Atwood, student, A. W. C., Washington, to Honolulu sailing New York, July 27.

Major Franklin Babcock from detail in the I. G. D. and Hq. Ninth Corps Area, Presidio of San Francisco to Hawaii, sailing San Francisco, Aug. 17.

Major Karl F. Baldwin from instructor, C. & G. S. S., Ft. Leavenworth, to Bureau of Insular Affairs, Wash., June 20. Previous orders revoked.

Major E. E. Bennett from Philippines to Office, Chief of Coast Artillery, Wash., D. C.

Major Robert M. Carswell, student, C. A. S., Ft. Monroe to instructor, Org. Res., Third Corps Area, Richmond, Va.

Major James H. Cunningham promoted Lt. Col. Apr. 1.

Major Octave DeCarre from Hawaii to 13th, Ft. Moultrie.

Major Nelson Dingley, 3rd, from Philippines to 52d, Ft. Monroe.

Major Richard S. Dodson transferred from F. A. and from R. O. T. C., V. M. I., Lexington, to 52d, Ft, Hancock, Aug. 2.

Major Ward E. Duvall, student, C. & G. S. S., Ft. Leavenworth to Hawaii, sailing New York, Aug. 26.

Major George W. Easterday from student, A. C. T. S., Maxwell Field to 5th, Ft. Totten.

Major Richmond T. Gibson, 13th, Ft. Moultrie, to instructor, Fla. N. G., Miami, June 30.

Major William C. Hanna, Ft. Worden, retired, May 21.

Major Clifford R. Jones from R. O. T. C., University of Cincinnati, to Panama sailing New York, Aug. 20.

Major John F. Kahle from Philippines to 2nd, Ft. Monroe.

Major Harold F. Loomis, instructor, C. A. S., Ft. Monroe, to student, Ecole de Guerre, France, sailing New York, June 22.

Major Clarence T. Marsh orders from 62d, Ft. Totten to instructor, C. & G. S. S., Ft. Leavenworth, revoked.

Major Edwin C. Meade from student, C. & G. S. S., Ft. Leavenworth to Panama, sailing New York April 7.

Major William R. Nichols from Hawaii to instructor, C. & G. S. Ft. Leavenworth.

Major Homer R. Oldfield from detail in G. S. C., Wash., to student, Air Corps Tactical School, Maxwell Field, Montgomery, Aug. 25.

Major Frederic A. Price from Hawaii to 62d, Ft. Totten, thence to student, Army Industrial College, Wash., Aug. 17.

Major Earl R. Reynolds, 11th, Ft. H. G. Wright, previous orders to Panama revoked.

Major Abram V. Rinearson, Jr., from R. O. T. C., The Citadel, Charleston, S. C., to student, Adv. Course, C. A. S., Ft. Monroe, Sept. 5.

Major James C. Rudell from student, C. & G. S. S., Ft. Leavenworth, to 69th, Ft. McClellan.

Major Frank C. Scofield, instructor, D. C. N. G., Wash., to Philippines sailing New York, Aug. 26.

Major John L. Scott from student, C. & G. S. S., Ft. Leavenworth, to 69th, Ft. McClellan.

Major Evan C. Seaman, student, C. & G. S. S., Ft. Leavenworth, to 61st, Ft. Sheridan.

Major Edward C. Seeds from Panama to 7th, Ft. Hancock.

Major Jesse L. Sinclair from Panama to 2nd, Ft. Monroe.

Major Carl J. Smith from Hawaii to 13th, Ft. Crockett.

Major John P. Smith, student, Naval War College, Newport, relieved July 13 instead of Aug. 17.

Major Edward A. Stockton, Jr., promoted Lt. Col. March 1.

Major LaRhett L. Stuart from Org. Res., Ft. Monroe, to Philippines sailing New York, Aug. 26.

Major Daniel N. Swan from R. O. T. C., Miss. State College, to Panama sailing New York, Sept. 2.

Major Edgar H. Thompson, from detail in I. G. D. and Hq. Second Corps Area, Governors Island to Org. Res., New York, June 1.

Major Eugene Villaret from student, Ecole de Guerre, Paris, to R. O. T. C., The Citadel, Charleston, S. C., Sept. 1.

Major Berthold Vogel from Hawaii to 2nd, Ft. Monroe.

Major James DeB. Walbach, instructor Va. N. G., Roanoke, to Philippines sailing New York, Nov. 9.

Major Eugene B. Walker, 52d, Ft. Monroe, to instructor, C. & G. S. S., Ft. Leavenworth, Aug. 1.

Major Edward N. Woodbury promoted Lt. Col., March 1.

Capt. Nyal L. Adams from student, C. A. S., Ft. Monroe to 51st, Ft. Monroe.

Capt. Roy T. Barrett from Hawaii to 2nd, Ft. Monroe.

Capt. James C. Bates from Panama to student, Adv. Course, C. A. S., Ft. Monroe.

Capt. Philip F. Biehl from student, C. A. S., Ft. Monroe, to 6th, Ft. Winfield Scott, sailing New York, July 27.

Capt. Harold B. Bliss, from Panama to 6th, Ft. Winfield Scott.

Capt. William G. Brey, previous orders amended: relieved from student C. A. S., Ft. Monroe, to Hawaii, sailing New York, July 27.

Capt. James D. Brown, 2nd, Ft. Monroe, to student, Adv. Course, C. A. S., Ft. Monroe, Sept. 5.

Capt. Oliver B. Bucher from student, C. A. S., Ft. Monroe, to Hawaii, sailing New York, Aug. 26.

Capt. Abraham L. Bullard, 14th, Ft. Worden, to the Philippines, sailing San Francisco, Sept. 21.

Capt. Willis L. Claxton, from Panama, to 69th, Ft. McClellan.

Capt. Harrington W. Cochran from student, C. A. S., Ft. Monroe, to 51st, Ft. Monroe.

Capt. Hugh McC. Cochran, 3d, 52nd, Ft. Monroe, to student, Adv. Course, C. A. S., Ft. Monroe, Sept. 5.

Capt. Morris E. Conable from Philippines, to instructor, Wash. N. G., Ft. Lewis.

Capt. Bernard C. Dailey, student, C. A. S., Ft. Monroe to instructor, Md. N. G., Springfield.

Capt. Leon C. Dennis, 2nd, Ft. Monroe, to student, Adv. Course, C. A. S., Ft. Monroe, Sept. 5.

Capt. James G. Devine, student C. A. S., Ft. Monroe, to Panama, sailing New York, Sept. 2.

Capt. Kenyon P. Flagg, from R. O. T. C., Michigan State College, East Lan-

sing, to Hawaii, sailing New York, Aug. 26.

Capt. Lloyd W. Goeppert, 2nd, Ft. Monroe, to student, Adv. Course, C. A. S., Ft. Monroe, Sept. 5.

Capt. Donald B. Greenwood, from student, C. A. S., Ft. Monroe, to 63d, Ft. MacArthur, sailing New York, July 27.

Capt. Henry F. Grimm, Jr., student, C. & G. S. S., Ft. Leavenworth, to instructor, C. A. S., Ft. Monroe.

Capt. Vernon W. Hall, student, C. & G. S. S., Ft. Leavenworth, to Panama, sailing New York, Sept. 2.

Capt. John H. Harrington, 52d, Ft. Monroe, to student, C. A. S., Ft. Monroe, Sept. 5.

Capt. Charles S. Harris, 63d, Ft. MacArthur, to student, Adv. Course, C. A. S., Ft. Monroe, sailing San Francisco, July 29.

Capt. Walter Hart four months leave and retired, Oct. 31.

Capt. Frank H. Hastings, student, C. A. S., Ft. Monroe, to Philippines, sailing New York, Aug. 26.

Capt. James L. Hayden, from instructor, West Point, to student, Adv. Course, C. A. S., Ft. Monroe, Aug. 20.

Capt. Milton Heilfron, 6th, Ft. Winfield Scott, to student, Adv. Course, C. A. S., Ft. Monroe, sailing San Francisco, July 29.

Capt. Daniel W. Hickey, Jr., 51st, Ft. Monroe to student, Adv. Course, Ft. Monroe, Sept. 5.

Capt. George W. Hovey, 14th, Ft. Worden, to student, Adv. Course, C. A. S., Ft. Monroe, sailing San Francisco, July 29.

Capt. Ephraim P. Jolls from R. O. T. C., University of Delaware, Newark to Panama, sailing New York, Aug. 20.

Capt. James P. Jacobs, 2nd, Ft. Monroe, to student, Adv. Course, C. A. S., Ft. Monroe, Sept. 5.

Capt. Joseph P. Kohn, 2nd, Ft. Monroe, to student, Adv. Course, C. A. S., Ft. Monroe, Sept. 5.

Capt. William F. Lafrenz from Hawaii to student, Adv. Course, C. A. S., Ft. Monroe.

Capt. Percy S. Lowe from Hawaii to 2nd, Ft. Monroe.

Capt. George C. McFarland, 2nd, Ft. Monroe, to student, Adv. Course, C. A. S., Ft. Monroe, Sept. 5.

Capt. Howard S. MacKirdy, 51st, Ft. Monroe to student, Adv. Course, C. A. S., Ft. Monroe, Sept 5.

Capt. Lawrence C. Mitchell, student, C. A. S., Ft. Monroe to Hawaii, sailing New York, July 27,

Capt. Douglas E. Morrison, 2nd, Ft. Monroe, to student, Adv. Course, C. A. S., Ft. Monroe, Sept. 5.

Capt. James B. Muir, Jr., from student, C. A. S., Ft. Monroe, to the Philippines, sailing New York, Aug. 26.

Capt. Geoffrey M. O'Connell, instructor, C. A. S., Ft. Monroe, to Panama, sailing New York, Sept. 2.

Capt. Mahlon M. Read, 11th, Ft. H. G. Wright, to student, Adv. Course, C. A. S., Ft. Monroe, Sept. 5.

Capt. George T. Rice, 52d, Ft. Hancock, to Panama, sailing New York, Aug. 20.

Capt. Carroll G. Riggs from Hawaii to 52d, Ft. Hancock.

Capt. Caesar R. Roberts, 62d, Ft. Totten, to instructor, D. C. National Guard, Washingon, April 15.

Capt. William Sackville from student, C. & G. S. S., Ft. Levenworth, to duty as military attache, Rio de Janeiro.

Capt. Robert C. Snidow, relieved from present duty to July 31 instead of June 18.

Capt. Charles H. Stewart, Fitzsimons Gen. Hosp., Denver, to retiring board.

Capt. Edward W. Timberlake from student, C. A. S., Ft. Monroe, to Hawaii, sailing New York, Aug. 26.

Capt. James E. Troupe from student, C. A. S., Ft. Monroe to 11th, Ft. H. G. Wright.

Capt. Edward L. Supple, 63d, Ft. MacArthur, to student, Adv. Course, C. A. S., Ft. Monroe, sailing San Francisco, July 29.

Capt. Robert J. VanBuskirk, 2nd, Ft. Monroe, to student, Adv. Course, C. A. S., Ft. Monroe, Oct. 1.

Capt. Joseph W. Vann resigned April 22.

Capt. Thomas P. Walsh from Hawaii to 6th, Ft. Winfield Scott.

Capt. William W. Wertz, 2nd, Ft. Monroe, to student, Adv. Course, C. A. St., Ft. Monroe, Sept. 5.

Capt. George W. Whybark from Philippines and to detail in Q. M. C., Ft. Jay, N. Y.

Capt. Volney W. Wortman from Hawaii to 61st, Ft. Sheridan.

Capt. Everhard F. Olsen from Philippines to 51st, Ft. Monroe.

Capt. George A. Patrick from Philippines to 52d, Ft. Monroe.

Capt. Harry R. Pierce from student, C. A. S., Ft. Monroe to 3d, Ft. MacArthur, sailing New York, July 27.

Capt. Joshia D. Powers, from student, C. A. S., Ft. Monroe, to 11th, Ft. H. G. Wright.

Capt. Webster F. Putnam, Jr., from instructor, Fla. N. G., Miami, to the Philippines, sailing New York, Aug. 26.

1st Lt. Laurence W. Bartlett, 51st, Ft. Monroe, to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

1st Lt. Herbert T. Benz, 62d, Ft. Totten to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

1st Lt. Sylvan Berliner from student, C. A. S., Ft. Monroe, to Panama sailing New York, Aug. 20.

1st Lt. Robert W. Berry from instructor, West Point, to student, B. O. Course, C. A. S., Ft. Monroe, Aug. 20.

1st Lt. Charles N. Branham from instructor, West Point, to student, B. O. Course, C. A. S., Ft. Monroe, Aug. 20.

1st Lt. Nathaniel A. Burnell 2d, from student, B. O. Course, C. A. S., Ft. Monroe, to student, Adv. Gunnery Course, Nov. 28.

1st Lt. William H. Burns from Philippines to 11th, Ft. H. G. Wright.

1st Lt. Pio Quevedo Caluya, 92d, Ft. Mills, to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

1st Lt. Clifton C. Carter from student, C. A. S., Ft. Monroe to 62d, Ft. Totten.

1st Lt. John F. Cassidy to Hawaii sailing New York July 27 instead of June 23.

1st Lt. Clair M. Conzelman, 11th, Ft. H. G. Wright, to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

1st Lt. Elmer E. Count, Jr., from instructor, West Point, to student, C. A. S., Ft. Monroe, Aug. 20.

1st Lt. Robert W. Crichlow, Jr., 2nd, Ft. Monroe, to instructor, C. A. S., Ft. Monroe, July 1.

1st Lt. Charles H. Crim, 62d, Ft. Totten, to R. O. T. C., Michigan State, East Lansing.

1st Lt. Frank J. Cunningham from Hawaii to 62d, Ft. Totten.

1st Lt. John W. Davis from student, C. A. S., Ft. Monroe, to Panama, sailing New York April 20.

1st Lt. Lee A. Denson, Jr., from student, C. A. S., Ft. Monroe to 63d, Ft. MacArthur, sailing New York, July 27.

1st Lt. Pierre B. Denson, 2nd, Ft. Monroe, to student, B. O. Course, C. A. S., Ft. Monroe.

1st Lt. Howard O. Douglass, retired, March 31, on account of physicial disability.

1st Lt. E. Carl Engelhart from student, B. O. Course, C. A. S., Ft. Monroe to student, Adv. Eng. Course, Sept. 12.

1st Lt. John M. England, student, C. A. S., Ft. Monroe, to Panama, sailing New York, Sept. 2.

1st Lt. George A. Ford from student, C. A. S., Ft. Monroe to 13th, Key West Barracks.

1st Lt. Ovid T. Forman, student, C. A. S., Ft. Monroe to Philippines sailing New York, Aug. 26.

1st Lt. Edward C. Franklin from student, C. A. S., Ft. Monroe, transferred to Ordance Dept., Springfield Armory, Mass.

1st Lt. Charles W. Gettys from student, C. A. S., Ft. Monroe, to Hawaii, sailing New York, Aug. 26.

1st Lt. Ralph I. Glasgow from student, C. A. S., Ft. Monroe, to Panama sailing New York, Aug. 20.

1st Lt. James R. Goodall from Panama to 52nd. Ft. Monroe.

1st Lt. William E. Griffin, 3d, Ft. Rosecrans, to student, Adv. Gunnery Course, C. A. S., Ft. Monroe, sailing San Francisco, Oct 15.

1st Lt. Richard H. Grinder, Ft Monroe, to student B. O. Course C. A. S., Ft Monroe, Sept 5.

1st Lt. Franklin K. Gurley from student, C. A. S., Ft. Monroe to student, Q. M. C. Motor Transport School, Baltimore, Sept. 7.

1st Lt. John L. Hanley, student, C. A. S., Ft. Monroe, to Panama, sailing New York, Sept. 2.

1st Lt. Joseph E. Harriman from Student, B. O. Course, C. A. S., Ft. Monroe to student, Adv. Eng. Course, Sept. 12.

1st Lt. John Harry, student, C. A. S., Ft. Monroe, to R.O.T.C., Miss. State College.

1st Lt. Malcolm H. Harwell, student, C. A. S., Ft. Monroe, to Hawaii, sailing New York, Oct. 7.

1st Lt. John S. Henn, 52nd, Ft. Monroe, to student, B. O. Course, C. A. S., Ft. Monroe.

1st Lt. John W. Huyssoon, 2nd, Ft. Monroe, to student, B. O. Course, C. A. S., Ft Monroe.

1st Lt. John J. Johnson, 52nd, Ft. Monroe, to student, B. O. Course, C. A. S., Ft. Monroe.

1st Lt. Paul B. Kelly from Hawaii to 51st, Ft. Monroe.

1st Lt. William H. Kendall, 2nd, Ft. Monroe to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

1st Lt. Edward A. Kleinman, 51st Ft.

Monroe, to student B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

1st Lt. Robert H. Krueger, from student, C. A. S., Ft. Monroe, to 51st, Ft. Monroe.

1st Lt. George J. Loupret from Hawaii to 13th, Ft. Barrancas.

1st, Lt. Dean Luce from R.O.T.C., Univ. of Wash., Seattle, to Hawaii Sailing San Francisco, Sept. 23.

1st Lt. John A. McComsey, student, C. A. S., Ft. Monroe, to Philippines, sailing New York, Aug. 26.

1st Lt. Frank C. McConnell from Hawaii to 61st, Ft. Sheridan.

1st Lt. James E. McGraw from student, Mass. Inst. of Technology, Cambridge, to 12th, Ft. Monroe.

1st Lt. George W. MacMillan to 2nd, Ft. Monroe, instead of as previously ordered.

1st Lt. William L. McPherson from Philippines to 52nd, Ft. Monroe.

1st Lt. Albert D. Miller from 2nd, Ft. Monroe, to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

1st Lt. Frank F. Miter, 11th, Ft. H. G. Wright, to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

1st Lt. Samuel H. Morrow previous orders revoked; from 52nd, Ft. Hancock to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 11.

1st Lt. James W. Mosteller, Jr., 2nd, Ft. Monroe, to student, B. O. Course C. A. S., Ft. Monroe, Sept. 5.

1st Lt. Thomas W. Munford from Philippines to 14th, Ft. Worden.

1st Lt. Leif Neprud from student, C. A. S., Ft. Monroe to 10th, Ft. Adams.

1st Lt. Glenn Newman student, C. A. S. Ft. Monroe to Panama, sailing New York, Sept. 2.

1st Lt. Arthur B. Nicholson from student, University of Michigan, Ann Arbor, to 63rd, Ft. MacArthur, sailing New York, Aug. 26.

1st Lt. Douglass G. Pamplin from student, Univ. of Mich., Ann Arbor, to 69th, Ft. McClellan.

1st Lt. Rolin B. Pape, 69th, Ft. McClellan, to Language student, Tokyo, Japan, sailing New York, Aug. 26.

1st Lt. William H. Papenfoth from Panama to 6th, Ft. Winfield Scott.

1st Lt. Felix N. Parsons from Panama to 2nd, Ft. Monroe.

1st Lt. William L. Richardson to 2nd, Ft. Monroe instead of 13th, Ft Barrancas as previously ordered.

1st Lt. Ralph W. Russell, 7th, Ft. DuPont, to student, B. O. Course C. A. S., Ft. Monroe, Sept. 5.

1st Lt. Clarence H. Schabacker from Hawaii to 69th, Ft McClellan.

1st Lt. Frederick F. Scheiffler, 8th, Ft. Preble, to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

1st Lt. Grayson Schmidt from student B. O. Course, C. A. S., Ft. Monroe to student, Adv. Gunnery Course, Nov. 28.

1st Lt. Pacifico C. Sevilla, P. S. student, C. A. S., Ft. Monroe, previous orders revoked; to student Adv. Engr. Course, C. A. S., Ft Monroe, Sept. 12.

1st Lt. Charles E. Shepherd, student, C. A. S., Ft. Monroe, to Panama sailing New York, Sept. 2.

1st Lt. Norman B. Simmonds, 2nd, Ft. Monroe to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

1st Lt. Eugene C. Smallwood from Philippines to 2nd, Ft. Monroe.

1st Lt. Donald H. Smith, 69th, Ft. McClellan, to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

1st Lt. John C. Smith, 2nd, Ft. Monroe to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

1st Lt. Leland S. Smith, 2nd, Ft. Monroe to student, B. O. Course, C. A. S., Ft. Monroe.

1st Lt. Alba C. Spalding, from instructor, West Point, to student, B. O. Course, C. A. S., Ft. Monroe, Aug. 20.

1st Lt. Fiorre J. Stagliano from detail in Ordnance Dept. and Watervliet Arsenal, transferred to Finance Dept. and to Ft. Humphreys, Apr. 6.

1st Lt. William F. Steer, 51st, Ft. Monroe, to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

1st Lt. Vernum C. Stevens, from instructor, West Point, to student, B. O. Course, C. A. S., Ft. Monroe, Aug. 20.

1st Lt. Henry E. Strickland, 51st, Ft. Monroe, to student, B. O. Course, C.A. S., Ft. Monroe, Sept. 5.

1st Lt. Ernest B. Thompson from student, B. O. Course, C. A. S., Ft. Monroe, to student, Adv. Eng. Course, Sept. 12.

1st Lt. George A. Tucker, 62nd, Ft. Totten, to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

1st Lt. Leo D. Vichules, from student, C. A. S., Ft. Monroe to 9th, Ft. Banks.

1st Lt. Vern Walbridge, student C.A. S., Ft. Monroe, to 2nd, Ft. Monroe.

1st Lt. Thomas L. Waters from student, C. A. S., Ft. Monroe, to Hawaii, sailing New York, August 26.

1st Lt. William A. Weddell, 69th, Ft. McClellan, to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

1st Lt. Auston M. Wilson, Jr., from Philippines to 69th, Ft. McClellan.

1st Lt. Fred J. Woods, 61st, Ft. Sheridan, to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

1st Lt. Courtney C. Young, from R. O. T. C., Univ. of Wash., Seattle, to Hawaii, sailing San Francisco Sept. 23.

2nd Lt. Robert L. Anderson, 2nd, Ft. Monroe to 13th, Ft. Barrancas.

2nd Lt. David H. Baker transferred to Air Corps, March 24.

2nd Lt. C. Robert Bard sailing San Francisco to Hawaii, June 7, instead of May 25.

2nd Lt. Arthur H. Bender, 2nd, Ft. Monroe to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

2nd Lt. Gaspare F. Blunda from detail in Air Corps and Randolph Field to Hawaii sailing San Francisco, June 7.

2nd Lt. George R. Carey from Hawaii to 2nd, Ft. Monroe.

2nd Lt. Clifton C. Carter promoted 1st Lt., March 1.

2nd Lt. Matthew K. Deichelmann, 52nd, Ft. Monroe to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

2nd Lt. Parmer W. Edwards from Hawaii to student, B. O. Course, C. A. S., Ft. Monroe.

2nd Lt. Albert G. Franklin, Jr., 62nd, Ft. Totten to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

2nd Lt. Lawrence M. Guyer from Panama to 62nd, Ft. Totten.

2nd Lt. William B. Hawthorne promoted 1st Lt. March 20.

2nd Lt. Joseph Horridge to student, Ordnance School, Watertown Arsenal, Watertown, July 5.

2nd Lt. Henry L. Hughes promoted to 1st Lt. April 17.

2nd Lt. Paul A. Jaccard, 9th, Ft. Banks, to student, B. O. Course, C. A. School, Ft. Monroe, Sept. 5.

2nd Lt. John H. Kochevar, 52nd, Ft. Monroe, to student, B. O. Course, C. A. S., Ft. Monroe.

2nd Lt. John R. Lovell placed on aerial flight duty June 1.

2nd Lt. William F. McKee from Panama to 14th, Ft. Worden.

2nd Lt. Herbert W. Mansfield, 14th, Ft. Worden, to the Philippines, sailing San Francisco, May 25.

2nd Lt. Frank T. Ostenberg, 69th, Ft. McClellan, to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

2nd Lt. George F. Pierce, 10th, Ft. Adams to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

2nd Lt. Guy E. Thrams, 2nd, Ft. Monroe, to student, B. O. Course, C. A. S., Ft. Monroe.

2nd Lt. Harry F. Townsend, 52nd, Ft. Monroe to student, B. O. Course, C. A. S., Ft. Monroe.

2nd Lt. Arthur E. Watson, Jr., promoted 1st Lt. April 1.

2nd Lt Donald B. Webber from detail in Q. M. C. and Mitchel Field, N. Y., to Hawaii, sailing New York, July 27.

2nd Lt. Thomas B. White promoted 1st Lt. March 18.

2nd Lt. Joy T. Wrean, 51st, Ft. Monroe, to student, B. O. Course, C. A. S., Ft. Monroe, Sept. 5.

Warrant Officer Roy C. S. Park, band leader, 63d, Ft. MacArthur, to Hawaii sailing San Francisco, Aug. 17.

Mast. Sgt. Ellis Baldwin, 13th, Ft. Barrancas, retired, March 31.

Mast. Sgt. Frank L. Deuel, 9th, Ft. Banks, retired, May 31.

Mast. Sgt. Charles F. Elgasser, 3rd, Ft. Rosecrans, retired, March 31.

Mast. Sgt. Lee Kye, 15th, Ft. Shafter, retired, May 31.

Mast. Sgt. Walter T. Payne, 52d, Ft. Hancock, retired, May 31.

Mast. Sgt. David A. Runnion, 64th, Ft. Shafter, retired, May 31.

1st Sgt. James M. Cinnamond, 11th, Ft. H. G. Wright, retired, March 31.

1st Sgt. Elmer D. Dearth, 2nd, Ft. McDowell, retired, March 31.

1st Sgt. John P. Fullum, 64th, Ft. Shafter, retired, May 31.

1st Sgt. Charles W. Guldin, 14th, Ft. Worden, retired, March 31.

1st Sgt. Emil A. Hulsenusch, 6th, Ft. Baker, retired, March 31.

1st Sgt. Thomas Keenan, 11th, Ft. H. G. Wright, retired, April 30.

1st Sgt Clayton M. Knight, 9th, Ft. Banks, retired, March 31.

1st Sgt. Francisco Mora, 10th, Ft. Adams, retired, May 31.

1st Sgt. George W. Morrison, 2d, Ft. Monroe, retired, May 31.

1st Sgt. Paul W. Stephenson, 2d, Ft. Monroe, retired, March 31.

1st Sgt. Werton L. Whalen, 14th, Ft. Worden, retired, March 31.

1st Sgt. David Widman, 6th, Ft. Winfield Scott, retired, May 31.

1st Sgt. Max Wolfgang, 59th, Ft. Mills, retired, April 30.

Staff Sgt. Charles Green, 62d, Ft. Totten, retired, May 31.

Sgt. Albert L. Dumaine, 11th, Ft. H. G. Wright, retired, May 31.

BOOK REVIEWS

THE PONY EXPRESS by Arthur Chapman. Published by G. P. Putnam's Sons, New York. 1932. 311 Pages. Price $3.50.

The author states that this is the record of a romantic adventure in business. It is certainly an outstanding addition to the already splendid collection of books written on the early development of the Far West.

In this book, Mr. Chapman gives a most interesting account of the development, conduct, and final failure of the famous "Pony Express" that operated between St. Joseph, Missouri, and San Francisco, California, from April 3, 1860 to October 26, 1861. Whether the idea originated from some frontiersman reading the stories of the dispatch riders of Ghenghis Khan in the thirteenth century, or whether it came from the thousand dollar bet of Mr. F. X. Aubry, who claimed that he could ride from Santa Fe to Independence in six days, or less, by using relays of ponies, is not certain. In any event, the agitation of the settlers in Claifornia for faster mail and news service between "the States" and San Francisco finally caused the concern of Russell, Majors, and Waddell to work out a scheme of relays of fast horses and reckless riders, riding at breakneck speed, to carry mail faster than it had ever before been carried in that frontier country. Up to the time of "The Pony," the only means for the people of California to get their mail was either by steamer to Panama, across the Isthmus by pack mule, and up the coast by another steamer, or by the long southern Butterfield stagecoach route.

For some reason or other, the government at Washington, when it allowed itself to be bothered with the mail problems of the Far Western territory at all, favored the long southern route. It was long a contention in Washington that the difficulties to be encountered in going over the snow-bound Sierra Nevadas and "The Great American Desert," in addition to the dangers of hostile Indians along the road, effectually prohibited the carrying of mail directly west from St. Joseph, Missouri, through Salt Lake City to Placerville, California. It was admitted that the northern route was a thousand miles shorter, but the fears entertained for its practicability gave excuse for political inertia to have full sway, and no governmental support could be obtained for it. However, the willingness of buisness men of that period to take a chance, and the adventurous spirit of the times, made this private concern embark upon what later became the "glorious failure."

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FOCH, THE MAN OF ORLEANS. By B. H. Liddell Hart. Little, Brown and Company, 1932. 463 Pages. $4.00.

Captain Liddell Hart's latest work (which is far more than a biography) presents a World War book of high importance, albeit a rather irritating mixture of fact and controversial criticism after the event, with touches of philosophy by way of interpretation. For a student it is of deep interest and value; the account and the student's own knowledge from other material will profitably combine to clarify the tortuous course of the Western Front campaigns and their mysteries. The more casual reader will find it no less interesting and stimulating.

The question is irresistible: *does* Captain Liddell Hart find that any commander of the army of any nation engaged in the war did his job reasonably well? Pétain scores higher than the others. Foch, against the background of the whole conduct of the land warfare in the West, with glimpses of the Eastern theatre, is shown inflexible to stubborness at the start, academic, his conceptions of his tasks changing but slowly from the doctrinaire stand of the Ecole Supérieure lecturer and disciple of Clausewitz; and always the incurable and often the superficial opportunist. With other conceptions of these tasks could the Marshal have shortened the war? Yes, if you accept Captain Liddell Hart's views.

Foch's disappointment in the Treaty negotiations and in the Treaty itself, and his relations with Clemenceau, are considered in illuminating detail.

The Commander and the Man are drawn as persons of notably different traits. The theme of Foch's spiritual tie with Jeanne d'Arc, expressed in the title and recurrent in the later chapters, fails of convincing; it is a pretty notion, but tenuous. An Epilogue, stressing the force and the mysticism of his character, seeks to evaluate the influence of his career; the key is found in the book's closing phase—"the suggestion of invincibility which became the fact of victory."

Captain Liddell Hart is rarely over-enthusiastic towards America's part in the war. Thus we learn that

the essential contribution of the A. E. F. to events culminating on November 11, 1918, was twenty-four double-size divisions. As for craftsmanship, there is evidence of hurried work, though for the most part the study is readable, vivid, more than excellent. By contrast, a mawkish, labored bit notes "the night of internal crisis" when Foch was born!

There is an index, and a well-selected year-by-year bibliography which includes American and German sources.

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JAPAN'S SPECIAL POSITION IN MANCHURIA; 391 pages. Price $3.00. THE INTERNATIONAL LEGAL STATUS OF THE KWANTUNG LEASED TERRITORY; 233 pages. Price $2.25. JAPANESE JURISDICTION IN THE SOUTH MANCHURIA RAILWAY AREAS; 315 pages. Price $3.00. Written by C. Walter Young. Published by the Johns Hopkins Press of Baltimore, Md., 1931.

Dr. Young presents three studies of the jurisdiction of Japan in Manchuria and her international legal position in that country, which are intensely interesting to the student seeking knowledge of the legal factors entering into the present Far Eastern situation. Each volume is complete in itself and may be read separately. Taken as a series, however, they furnish the most detailed and exhaustive analysis of the legal phase of the struggle in Manchuria that has yet been published.

The author, in the first volume, takes up the subject of Japan's special position in Manchuria as a whole. In the two following volumes he discusses in detail the special cases of the Kwantung Leased Territory and the South Manchuria Railway. In his preface he distinctly states these studies are not history, but rather studies in politics and international law. In fact, he barely gives enough history to furnish a background for his subject. So strictly does the author stick to his objective of discussing purely legal matters that in normal times the books would be dry-as-dust reading, but under the present conditions of Asiatic—and world—diplomatic uncertainty, they are tremendously interesting. The question of China's right to construct railroad lines parallel to the South Manchuria Railway is thoroughly discussed, as is also the right of Japan to maintain railroad guards along the Railway. What is the legal status of the treaties of 1915? Does China still exercise sovereignty over the Kwantung Leased Territory? These and many other vital questions are analyzed from the standpoint of international law and treaty agreements made between China and Japan.

It is believed the author has made a sincere and earnest attempt to be strictly impartial in his treatment of the subject. However, it appears to the reviewer that he is more sympathetic to the Chinese cause and seems more or less inclined to give China the benefit of all doubts. He does not have much patience with Japan's "right to live doctrine" or the "Asia Monroe Doctrine." He discusses both doctrines rather thoroughly, but ignores completely the political turmoil that has existed for the past twenty years in China—and still exists.

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turmoil that has existed for the past twenty years in China—and still exists.

The series of three volumes is recommended to all those wishing to make a legal study of the Manchurian situation. For a more general knowledge only, the first of the series—Japan's Special Position in Manchuria—is recommended.

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DIE MARNE—DEUTSCHLANDS SCHICKSAL? Ein Wort gegen die dramatische Geschichtsauffassung in der militaerischen Literatur. (The Marne—Germany's Fate? A Word against the Dramatic Concept of History in Military Literature.) By Wilhelm Marx, Lieutenant General, German Army, Late Inspector of Artillery. Berlin, E. S. Mittler & Sohn, 1932. pp. 63. Price 40 cents.

As the title and subtitle imply, this is a small work in which General Marx decidedly opposes the concept in the literature of the World War and particularly in the semi-official work of the Reichsarchiv, that the First Marne was lost through faulty leadership of the younger Moltke, and that Schlieffen would have won the war.

Though containing only 60 pages actual text (including a three-page foreword) the pamphlet is so rich in thoughts that no brief review can do it full justice. To a certain extent the brochure is also a strategic study, for which reason it presents a highly interesting addition to the literature of German strategy, irrespective whether one agrees with the author or not.

The little work takes up the dramatic element in military history, the deviation from the Schlieffen plan, the strength of the right wing of the German army on the western front, the errors during the battles, the mission of Lieutenant Colonel Hentsch, the "secondary" reproaches, and concludes with a review and a section devoted to the harmful effects of the dramatic concept in history.

The author maintains that it is foolish to believe that the fate of a large nation depends on one mortal, as exemplified by the widespread notion that Germany lost in Schlieffen the only man who could have won the war. He defends Moltke and Buelow and attempts to prove that Hentsch saved the right wing from a perilous situation.

The right wing was numerically as strong as the smaller number of troops in the field and the strategic situation permitted, and even the transfer of the two corps to the eastern theater of war was a strategic necessity and aided in improving the situation in Poland.

Apart from the technical difficulties of a march and supply, it is scarcely to be assumed that a reserve army following the right wing could have attained the victory, for the secrecy of a great envelopment had been lost through Schlieffen's publication, and indeed was possible only against an inferior enemy. The French and British, however, were capable and would have frustrated the envelopement by timely measures. Even Schlieffen could not have defeated both nations, for both would have fought for years for their existence.

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