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The Adjutant General's Department*

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HISTORY

IN discussing the history of The Adjutant General's Department, it is essential that we consider also the history of our General Staff, for, under the present method of functioning of the War Department, Corps Areas, Armies, Corps, and Divisions—in other words, of headquarters where officers of The Adjutant General's Department are assigned to duty—the General Staff and The Adjutant General's Department are so inter-related that of necessity we cannot discuss one without discussing the other.

As you know, the General Staff was created by law in 1903; and this was due in great part to the vision of the then Secretary of War, Mr. Root. From 1903 until 1917, the General Staff functioned in various ways. During this period, there appears to have been no definitely prescribed method of functioning of this body in the War Department. From no General Staff in 1903, the pendulum, as often occurs in America, swung far in the other direction, so that by the beginning of the World War, the General Staff had absorbed many of the administrative duties which should have been performed by The Adjutant General's Department.

When the World War actually came upon us, we had no prescribed organization of the General Staff for our General Headquarters, Armies, Corps, and Divisions, nor a method for it to function. We had no American Staff. When the small group of officers who accompanied General Pershing arrived in France, they visited the various Allied units and headquarters and observed the operation of their Staffs. Based on this observation, a tentative organization of the General Staff for General Pershing's Headquarters was prescribed. In all other respects, the headquarters resembled the old Department Headquarters in the United States. It soon became evident that such a set-up for

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General Headquarters was impracticable. The President of a great railroad cannot spend days consulting the divisional superintendents as to the details of switch installation or track replacement, nor can the Chief Engineer read endless memoranda on the necessity of repairs to certain locomotives. If tunnels are to be built under great rivers, terminals erected in the heart of large cities, and grades reduced over mountains, the directing heads must be as free as possible to consider the great questions of finance, of strategic location, and of operation. Such was the case in our oversea forces in 1917. It was necessary to relieve not only the commander but the members of his General Staff of all possible administrative detail in order that they might be free to consider the larger general questions and to prepare plans of operation. Consequently a board of officers was convened to consider the organization and functioning of the entire A. E. F. This board, of which I was a member, visited the various headquarters in France and considered the many special problems to be met by the new services which had not existed in the old Army. The result was the promulgation of General Orders No. 31, G. H. Q., A. E. F., 1918, which remained substantially in effect until the end of the War. Under this organization The Adjutant General's Office functioned in an entirely new way. In reality, it was a very necessary, although only an unofficial, part of the General Staff, functioning not under any particular section of that body, but with all of them. Acting, in some ways, as a coordinating section of the General Staff and performing, in addition, directly under the general supervision of the Chief of Staff, many duties such as the handling of cablegrams, matters concerning personnel, decorations, casualties, records, etc. The functioning of The Adjutant General's Department in France at General Headquarters is the foundation upon which the present Department is operating, and the base of this foundation rests now, as then, in freeing the Commander and his General Staff of all possible administrative detail.

During the time that General Pershing was engaged in creating an efficient General Headquarters in France, based on Allied experience and our own study, the War Department in Washington was expanding rapidly to meet conditions as they came up at home. Naturally, the organization which resulted differed from that for General Headquarters in France. Duties were assigned differently than in France and such assignments as were made on different considerations than those upon which they had been based there. Consequently when peace came, it was necessary that the whole field of General Staff inter-relation with other agencies should be considered and a new policy and procedure evolved based upon the law and our experience on both sides of the ocean. For this reason, General Pershing, shortly after he became Chief

of Staff in 1921, convened a board, known as the Harbord Board, to create an organization for the General Staff, assign to it certain duties, and to consider the relations of the General Staff to other military agencies. I was fortunate enough to be a member of this board. The report of the Harbord Board, as finally approved by General Pershing, provided an organization of the War Department General Staff and a method of functioning for it in connection with all other agencies of the War Department. It prescribed a similar functioning at all lower headquarters provided with a General Staff. The basic idea in the operation of the War Department General Staff is that it shall establish broad policies and principles, under which the different operating agencies can function. In other words, there is sufficient flexibility given to the operating services so that, in applying a policy, they may be able to use their own judgment in making various decisions. In approving the proceedings of the Harbord Board, General Pershing said that it crystallized our experiences in the World War, and that he hoped the organization therein provided would not be changed without the most serious consideration.

This brings us down through the historical part of my talk to the present day. It finds the War Department functioning under the approved proceedings of the Harbord Board, and The Adjutant General's Office the custodian of all essential War Department records, as well as the administrative coordinator of instructions issued by the War Department. This same system is in effect in our Corps Area, Oversea Department, and Division Headquarters, and today, if our country should be so unfortunate as to have another general mobilization, we should have for our General Headquarters, Armies, Corps, and Divisions, a prescribed organization and method of functioning not only of the General Staff but also of all elements of the Staff. In other words, we have today a real American Staff which is based on our laws, our World War experience, and our American ideas. I cannot leave the subject of the General Staff without saying a word of praise about it. *It is a changing body of selected officers, and, with its National Guard, Reserve, and Regular Army members, it is a cross section of every element of the Army of the United States. As a rule it is blamed for all things which are not done and for its disapprovals, but seldom credited for the many things that are done. In other words, it is all right when it approves, but all wrong when it disapproves.*• As The Adjutant General of the Army, I have the opportunity of seeing, more than any other man, the functioning of the whole General Staff, particularly in the War Department. I am glad to have this opportunity of paying tribute to its square, efficient, and splendid service; and, as American soldiers, you should be, as I am, proud of this fine organization. I

think that what I have said so far makes it quite evident that I am a strong believer in a General Staff, but especially in one that is free to perform its duties of planning for war and of preparing broad policies for others to carry out.

THE MISSION

A clear statement of the mission of the Department is a difficult task, as the duties of The Adjutant General's Department were so many and varied that it is almost impossible to cover them all. In order to attempt this, even in a general way, I must first give you a brief picture of the general set-up of today in the War Department so that you may visualize why the mission is as I shall state it finally.

As you know, our War Department exists for the purpose of maintaining a proper defense on land. It is the necessary overhead at the seat of Government, by which our military forces are administered, supplied, equipped, and trained. If one man could do this, it would be a fine thing. Overhead in Washington would be reduced then to the minimum, and we would have only the Chief of Staff of the Army, under the Secretary of War, at the seat of Government. It is evident, however, that no one man could ever do this, so the Chief of Staff is provided by law with certain necessary military assistants. These assistants are known collectively as the War Department General Staff, and might be detailed in sufficient number to make plans for and carry out all the tasks assigned to the Chief of Staff. However, experience has shown that if a body of individuals should attempt both to plan and carry out the many activities charged to the Chief of Staff, they very quickly would become involved in so many administrative details that there would be no time to plan efficiently. This necessitates some agency or agencies which will be less concerned with the plans of the Chief of Staff, but which will be engaged primarily in handling the many details and in carrying out these plans as prepared by the War Department General Staff. In other words, an *operating* agency or agencies are needed. Here again, it would be a fine thing if all *operating* functions of the War Department could be charged to one man—a general manager, so to speak. But the *operating* functions of the War Department are much more extensive than the *planning* functions. The Chief of Staff might delegate all operating functions to one man and provide him with sufficient assistants so that his tremendous task might be carried out, but it would be more than one man could ever hope to control and operate efficiently. The operating functions of the War Department must be decentralized, therefore, and yet they must be coordinated from an administrative viewpoint by some one operating agency, such as the general manager of whom I have spoken. In the War Department, therefore, you find these operating functions so de-

centralized that specialized tasks are assigned to suitable officers, each with suitable assistants and each more or less a specialist in his own line. I refer to the War Department Chiefs of Branches and Bureaus, such as the Quartermaster General, the Surgeon General, the Chief of Ordnance, the Chief of Engineers, the Chief of the Militia Bureau, and so on. The law prohibits the War Department General Staff from operating when an agency already exists which can be used for the purpose, yet, as I have said, some one agency must coordinate administratively the operation of all these specialized operating agencies. By this I mean one operating agency must see to it that all War Department instructions prepared by the seventeen branches in Washington for the guidance of Corps Area Commanders and other field agencies are in agreement with War Department plans and policies and in harmony with each other. If this administrative coordination is not performed before instructions are sent to Corps Area Commanders and others, the evil effect resulting on the troops of receiving probably conflicting instructions from several branches of the War Department seems only too evident. Furthermore, there are many War Department operating functions which cannot be assigned logically to any one of the branches I have mentioned. Consequently, the Chief of Staff uses The Adjutant General for all operating functions which do not fall logically to one of the other branches, and assigns him, in addition, the task of coordinating the administrative activities of all operating branches. This makes The Adjutant General both a Chief of Branch and the administrative executive of the War Department. I trust that what I have said will tend to make it clear to you why it is that the general mission of The Adjutant General's Department may be stated briefly as follows:

The Adjutant General's Department will execute administratively the instructions and policies of the Commander and his General Staff at all headquarters and, in so doing, will relieve the General Staff as much as possible of all administrative detail. It will act also as an operating branch in all administrative matters which are not specifically charged to some other operating branch of the service.

In the foregoing statement of the mission, I have included all large headquarters for the reason that the mission is the same in all headquarters which are provided with General Staffs. I refer to Corps Area and Department Headquarters and the Headquarters of Armies, Corps, and Divisions. As I have stated, at those headquarters the War Department assigns officers of The Adjutant General's Department for duty.

Having now stated the mission of the Department, as I see it, I shall mention briefly the principal duties which fall to the Department under its mission in the War Department. The duties of the other headquarters are very similar.

1. To operate as custodian of all official records of the War Department.

2. To operate as the central War Department office through which all incoming and outgoing communications pass.

3. To take initial action, and often the completed action, on all incoming official War Department correspondence (except that pertaining to mobilization and war plans), in accordance with the law, regulations, and approved policies; in cases of importance, where no policy has been established, to obtain a policy and act thereunder in all like cases, or to transmit them to the appropriate General Staff Section for study. It may be of interest to know that The Adjutant General's Office, exclusive of returns, forms, stated reports, etc., is now handling each year approximately four million communications. The War Department General Staff has so successfully established policies for these that in the past year, of the four million, only about ten thousand communications were sent to the General Staff. Of these ten thousand, a great percentage related to training, supply, and financial matters which necessarily had to be studied and sent finally to the Secretary of War for his personal action. These would include the communications on these subjects from the Chief of the Militia Bureau.

4. To prepare, or cause to be prepared, under approved General Staff policies, all general and special orders and instructions except those relating to mobilization and war plans.

5. To operate the War Department functions in connection with the procurement, reception, and classification of military personnel (commissioned and enlisted); their subsequent assignment, reclassification and reassignment, promotion, transfer, separation, and replacement. In the War Department these duties are charged by law to the Personnel Bureau of The Adjutant General's Office.

6. To operate, under approved General Staff policies, the War-Department activities in connection with decorations, citations, awards, leaves of absence, furloughs, and discipline.

7. To prepare, or cause to be prepared, statistics of all kinds, including those for use by the War Department General Staff and the War Department branches.

8. To operate the Army Welfare Service.

9. To establish in time of war and cause to be operated an Army Postal Service in the Theater of Operations.

10. To procure and supply the military establishment with A. G. O. blank forms, War Department publications, and various instructional matter.

11. To prepare the mobilization plans of The Adjutant General, both in his capacity as the administrative executive of the War Department and as a Chief of Branch.

ORGANIZATION TO ACCOMPLISH THE MISSION

I shall outline only the organization of The Adjutant General's Office in Washington. All other adjutants generals' offices—that is, at Corps Area and Department Headquarters and at the headquarters of the large combat units—are organized in the same way, hence are miniatures of the Washington Office. The only material difference is that they do not include office divisions which pertain to the old records of the War Department. In the War Department, the Office of The Adjutant General is sub-divided into nine divisions, each of which is charged with one or more of the operating duties pertaining to the mission of the Department, and which I have already stated.

The nine divisions are as follows:

The Personnel Bureau, consisting of three divisions:

The Officers' Division, which handles everything concerning the individual officer of the Regular Army, his procurement, assignment, promotion, retirement, death, etc.

The Enlisted Division, which handles everything relating to the individual warrant officer, field clerk, and enlisted man of the Regular Army.

The Reserve Division, which handles everything relating to the individual officer and enlisted man on the Reserves.

In addition to the divisions of the Personnel Bureau, there are:

The Miscellaneous Division, which handles, as its name implies, a multitude of subjects; in general, all subjects which do not relate to individuals, including most of the output of the War Department General Staff.

The Publication Division, which issues all orders, circulars, regulations, and manuals to the service, and sees to it that there is uniformity of expression and accuracy in all these documents.

The Old Records' Division, which takes care of and conducts correspondence in connection with some thirty million of records running from the beginning of our country until 1912.

The World War Division, which has custody of and conducts all correspondence in connection with the records of the World War, involving some one hundred and sixty-seven million documents pertaining to organizations in service during that period and to individuals who

entered the service between 1912 and 1919. It is this Division of my office which conducts considerable business with the Adjutant General of the various states, and consequently I think it is appropriate to discuss the nature of its work in this regard.

Shortly after the opening of the World War, the National Guard of the various states was drafted into the Federal Service and organized into divisional units for intensive training preparatory to the ordeal before them in France. In the process of consolidation and reorganization the designations of the units were changed. Upon demobilization of the various organizations, all the records in their possession were forwarded to The Adjutant General's Office. Upon receipt, they were removed from the thousands of packing boxes in which they were sent, separated according to their nature, scheduled, and placed in filing cases, which process made them available for reference. As a result, the muster rolls, rosters, returns, and other records have now all been arranged, cross-referenced, and filed in such a manner as to make possible the connecting of the records of National Guard organizations with subsequent records of their respective numbered units as newly designated. In connection with the receipt of records of demobilized commands, it has been found that there are still many documents in the hands of former officers which are essential to the files of the Department for both historical and administrative purposes, the individuals not realizing the importance of placing these valuable papers in a repository where they will be preserved to posterity and at the same time be available to historical writers, military students, divisional associations, and the like. I have appealed to these individuals through the press and War Department circulars to forward such records to my office. I feel that you can assist in this regard and I take the liberty of requesting you to advise anyone having such documents or papers in their possession either to forward them to my office or communicate with me.

When National Guard organizations changed their distinctive State designations to numbered units of the Federal Army or when a National Guard organization was broken up and men transferred to various other organizations, certain funds were transferred pro rata with the men. Later when the Army was demobilized, the funds on hand were turned over to the Chief of Finance. It is now contemplated to turn over to the States the proper portion of the funds turned in by the demobilized units. In order to do this it was necessary to trace the individuals of the National Guard through all the organizations in which they served to their final unit. This has involved an extensive and careful search of the records and the work is virtually completed insofar as my office is concerned.

Another task that required extensive search of the World War records was in connection with the preparation of a National Guard Register by the Militia Bureau, which set forth the services of the officers in the National Guard including their Federal Service in the Army during the World War. The latter information was obtainable from the files of my office, and required searching records of approximately 10,000 individuals. I was pleased to cooperate in this work, knowing that the publication of such a report would be of value to the service generally and particularly to the National Guard, especially in reference to computing the longevity pay of officers. It may interest you to know that the 1926 Register contains approximately 11,976 names, about 10,900 of whom had service in the Army during the World War.

Under the Act of Congress of July 11, 1919, statements of service showing the military history of officers, army field clerks, members of the Army Nurse Corps, cadets at the Military Academy, and enlisted men, who served during the World War, were prepared and transmitted to the Adjutant General of the various states. About 4,051,606 statements of service have been prepared and dispatched, of which 207,969 were for officers and 6,754 for Army field clerks, 22,419 for army nurses, 903 for cadets at the Military Academy, and 3,813,561 for enlisted men. Of the total number of statements of service, as stated above, 432,642 were for those who entered the military service through the National Guard, 16,152 of these being for officers, and 416,490 for enlisted men.

With the passage of the various State Bonus and other laws granting benefits and privileges to veterans of the World War, there was imposed upon state authorities, particularly the adjutants general, large administrative tasks. It necessitated that those officials make available the records of all individuals from those states who served and who were entitled to any of the benefits. The statement of service cards furnished by my office gave in a large part the information necessary to adjudicate the claims. However, there were numerous cases where the individuals applying for the benefits granted by a state would claim residence in that state notwithstanding the fact that they had given another as their residence upon entry in to the service, with the result that their statement of service cards had been dispatched to those other states. This necessitated that the adjutants general refer to my office all such cases for any other information pertinent to residence. In addition, certain questions arose in the administration of the several State Bonus laws where the officials in charge would require information relative to the status of certain organizations or groups of individuals and as to certain types of service. All these matters were handled through the World War Division of my office by its clerical

force, where possible, supplemented by a force employed by the State authorities.

Another activity of this division of my office having relation to the National Guard has been the preparation of detailed battle statistics covering the part taken by American troops in the military operations of the World War. Aside from the value of such statistics to the student of military operations, there has been a general demand for the compilation of data on this subject. About a year ago the office began a recheck of its personal records to show battle participation of organizations in the American Expeditionary Forces and the extent of the losses of those organizations. This compilation was extended to take in the casualties of the American Forces in Siberia and those caused by enemy vessels acting against our transports carrying troops to Europe. The work has now been completed and statistics covering the following have been published: battle casualties in the American Expeditionary Forces by divisions, regiments in divisions, and non-divisional units; casualties by arms of service; by component forces, that is, Regular Army, National Guard, National Army, and Reserve Corps; by major operations and defensive sectors, commissioned officers being classified by grades; by major operations and defensive sectors, showing losses by divisional and non-divisional units; number of wounds, including separate statement as to the men who were wounded more than once on distinct occasions, that is, the number of second, third, and fourth wounds, also showing type of wound—whether gunshot wound, shell wound, or gassed and whether severe, moderate, or slight.

Resuming now the divisions of the office, we have—

The Selective Service Division, which takes care of and conducts correspondence in connection with the draft records of twenty-four million men and five thousand draft boards of the World War.

And finally, the Executive Division, which is superimposed over the whole office, and handles the assignment of officers of The Adjutant General's Department, the clerical force of the A. G. O., the estimates, supplies, and war plans of the office.

Of the nine divisions of the office I have mentioned, six relate to current affairs of the Army and to the future, hence are set up in immediate proximity to the principal offices of the War Department General Staff so that they can more easily relieve the General Staff of all possible administrative detail. The other three, namely, the Old Records, World War, and Selective Service Divisions are located elsewhere in Washington. It may be of interest to emphasize again that the organization I have outlined to you has been tested in war, and is that which was used at General Headquarters in the A. E. F. during the World War. It is an organization which can be expanded in War without any material

change, except as to increased floor space and personnel, and this, I believe, is the soundest method of peacetime military organization.

Now a few words as to the general operation of The Adjutant General's Office. In order that there may be coordinated action in the War Department, all communications not of a personal nature addressed to the Secretary of War, the Assistant Secretary of War, Chief of Staff, and Deputy Chief of Staff, are sent to The Adjutant General for draft of a reply. They are handled in the office in exactly the same way as communications coming in from the service. The replies to these communications, together with those prepared for my personal signature, are sent from the various divisions of the office to the Information Section of the Executive Division and then to me personally. Those for the officials I mentioned are reviewed, initialed, and forwarded for signature. In certain cases, letters or documents are prepared in other branches for the signature of the officials I have referred to, and in that event they are cleared through the appropriate division of my office to insure coordination. By having these communications come to me through the Information Section of my office, the Chief of that Section has an opportunity of seeing everything that is going on and of having full information of current action, so that he is always able to give out complete and accurate information to individuals requesting it by personal visit, telephone, etc. This Section is located directly opposite my own room. Individuals coming to the office who do not desire to see me personally are received by the Chief of this Section who is widely known for his efficiency, courtesy, and as a dispenser of accurate information, not only on matters relating to The Adjutant General's Department, but to the whole War Department.

The Adjutant General's Office is an enormous administrative machine. It was completely reorganized by me in 1922 to meet the provisions of the Harbord Board. I personally prepared its present plan of operation, supervised the physical arrangement of all divisions and sections, and prescribed the routing of communications from the mail room to the divisions. Every effort has been made to cut out unnecessary motion and so-called red tape. It is today a vast business organization, with, in my opinion, up-to-date procedure. Effort is constantly made by every one in the office to improve its operation by every means possible. Experienced clerks attend business efficiency meetings, all new mechanical devices are carefully considered with a view to adoption if suitable, and everything possible done to make the office an efficient business organization.

While my office, as stated, handles approximately four million communications each year, exclusive of the bonus and form reports, no communications may remain in the office without action within forty-

eight hours. In fact most communications are acted on the day they arrive. In the event that any communication is not acted on within forty-eight hours, a personal explanation must be made to me by the officer in charge of the division in which this occurs. Any delay is ascertained by means of daily reports from the divisions. By acted upon, I mean the necessary action taken either by making the decision or acting under the policies of the General Staff, referring it to the proper agency, or otherwise doing something with the communication. Telegrams are not placed in baskets, but passed from hand to hand and immediate action taken on them.

At this point, I desire to go a little bit more into the details of a very large task assigned to me personally, in addition to my duties as The Adjutant General—one which is now being rapidly completed. I refer to the War Department's administration of the World War Adjusted Compensation Act—the bonus.

Briefly, the task included the following operations:

a. Preparation of plans for handling the work, including concurrences thereon by the Veterans' Bureau, the Navy and Marine Corps, the Comptroller, and many other agencies. This was accomplished in 1922, and kept current until funds became available in June, 1924.

b. Procurement of an adequate office force from Civil Service lists, their instruction in the provisions of the Act, in record and filing methods, in the use of modern mechanical appliances, and, finally, in the receipt, handling, and acting upon the applications and the final transmission of the certificates to the Veterans' Bureau showing the adjusted service credit determined and certificates showing the amounts due in the case of each veteran or dependent.

c. Procurement and installation of the necessary mechanical appliances, filing cases, and other office equipment and supplies.

d. Preparation, printing, and distribution of twelve million application blanks. This distribution was made so that the blanks would be available on the same day to veterans all over the United States, however remote their residence. A second distribution covered all foreign countries. The latitude of the foreign distribution is realized when it is stated that during a period of two months alone applications executed upon these blanks were received from veterans residing in more than seventy different countries and geographical limits of the world, exclusive of the possessions outside the continental limits of the United States.

A few statistics should be of interest on the matter:

Funds became available on June 14, 1924.

The first veteran's application was received June 24, 1924.

The task of acting upon applications received was begun early in August, 1924.

The peak of the work of the War Department was reached about the middle of October, 1924, when, with an office force of 2,517 clerks, 32,000 applications were checked against the records and 32,000 certificates were sent in one day to the Veterans' Bureau. As the work has decreased since that time, the office force has been correspondingly reduced.

On January 1, 1925, the date that insurance certificates were due to be sent out by the Veterans' Bureau, the War Department had sent the Veterans' Bureau 1,622,033 certificates, one for every application received up to and including December 22, 1924.

On March 1, 1925, the date of the issuance by the Veterans' Bureau of cash payments by check, the War Department had sent 2,219,053 certificates to the Bureau, one for every application received up to February 23, 1925, and since then the work has been kept absolutely current. To date we have sent over two million eight hundred and thirty thousand certificates of service to the Veterans' Bureau.

So you can see that the operation of the bonus has been no small task, and is a good example of the facility with which expansion can be accomplished in The Adjutant General's Office as at present organized to meet a particular situation, especially such as we might expect upon the outbreak of a major emergency.

In connection with the procurement and installation of the necessary special equipment and supplies for the operation of the bonus, the Department made an estimated saving over probable costs of about a half million dollars. This was accomplished through the use of mechanical appliances, borrowed equipment, and the setting up of special repair units, such as a typewriter repair shop, a carpenter shop, and the like.

RELATIONS

With Commanders.—The Adjutant General in the War Department of necessity must have more or less frequent direct dealings with the Chief of Staff of the Army. A similar relation may be found advisable between commanding generals and their adjutants general at other headquarters. This is a matter which properly is regulated by the commanding generals concerned, but should be based upon freeing the higher authorities of the headquarters from as much administrative detail as possible, without in any way depriving them of the necessary and authorized control of all agencies and activities of the command.

With the General Staff.—In order that The Adjutant General in the War Department may relieve the higher authorities to the greatest possible extent of all administrative details, so that he may execute efficiently the policies and instructions of the General Staff, he is clothed with authority commensurate with his responsibility, and acts

as the administrative executive of the War Department. At the other headquarters I have mentioned, the adjutant general thereof acts as the administrative executive to the extent directed by the commanding general and his general staff. He keeps the chief of staff and other members of the general staff informed at all times as to matters which will enable the chief of staff to exercise the strong control contemplated by existing laws and regulations. On the other hand, he must be careful to act himself on administrative matters for which policies and instructions already exist, and must avoid forwarding trivial matters to the general staff for action.

With other Operating Heads.—An adjutant general at any headquarters acts in a dual capacity. First, to the extent directed by the commanding general, he acts as the administrative executive of the headquarters for the purpose of carrying out the policies and instructions of the commanding general and his general staff. In this capacity, while acting wholly within the extent directed by the commanding general, he is authorized to issue instructions in the name of the commanding general to all other agencies of the headquarters. Second, he occupies a position as a member of a section of the administrative staff of the headquarters in all respects similar to that of officers of other sections of the administrative, supply, and technical staff of the headquarters and in coordination with them.

With the Troops.—An adjutant general of any headquarters is the administrative mouthpiece of the headquarters. He issues orders and instructions to the troops in the name of the commanding general. All such orders or instructions are based either on existing policies or on special instructions approved or directed by his superiors.

An adjutant general's office at any headquarters constitutes the information center to which individuals of the command should apply for information and instructions. It is the particular duty of adjutants general to maintain a courteous attitude and to furnish information and assistance to the troops. This must be done, whenever possible, without interfering with the work of other agencies at the headquarters, particularly the work of the commanding general and his general staff.

The adjutant general of a headquarters maintains close liaison with corresponding officers of subordinate headquarters. With a view of improving the administrative service rendered to the troops, he should make, on appropriate occasions, such suggestions to their commanding officers as are of a constructive or helpful nature.

In discussing the matter of the relations of my Department with other operating bureaus of the War Department, I realize that you are most interested in those pertaining to the Militia Bureau. In our daily contact there are two general classes of cases which arise, those which

my office acts upon finally under approved policies laid down by the Secretary of War or the General Staff, and those which originate in or are transmitted to the General Staff for action. The first class consists of those cases pertaining to the assignment of members of the Regular Army to duty with the National Guard and those pertaining to personnel matters relating to National Guard officers holding reserve commissions. With reference to the dual status, on the recommendation of the Chief, Militia Bureau, a study is now being made by the General Staff on this question. After Federal recognition by the Chief, Militia Bureau, in a few cases reserve commissions have not issued due to adverse facts of record in The Adjutant General's Office concerning the applicant's prior Federal service. The Militia Bureau and The Adjutant General's Office, however, are now working out a scheme by which hereafter Federal recognition shall go hand-in-hand with a reserve commission. The second class consists of cases concerning mobilization, training, supply, and like matters. These latter cases are handled by the proper section of the War Department General Staff which has detailed to it a proportion of National Guard and Reserve Officers. With reference to cases of the nature of the second class, upon receipt of the instructions covering them from the Staff, my office transmits them to the Chief of the Militia Bureau for the necessary action.

As regards the nature of the relations that exist between the Militia Bureau in Washington and The Adjutant General's Office, there is today a sympathetic understanding of each other's problems and hearty cooperation in their solution. As I stated before, our problems are each other's problems and it is only by such aid and encouragement as we are giving each other today that our goal is reached—that of providing for our country a proper defense in time of national emergency by insuring the united, complete, and coordinated use of the three major components of our one Army—the National Guard, the Organized Reserves, and the Regular Army. In this connection, I quote the following extract from the annual report of the Chief of the Militia Bureau for the fiscal year ended June 30, 1926, which is most gratifying:

Militia Bureau relations with the General Staff, The Adjutant General's Office, and other War Department branches are being carried on in a spirit of hearty cooperation. A better understanding of each other's problems has become increasingly manifest during the fiscal year just closed.

In turn, I should like to record the splendid cooperation and helpful assistance my office receives from General Hammond and his assistants.

The Adjutant General's Department is a Department for service, and I desire you to know that it wishes to serve each component of the Army of the United States efficiently and squarely.

Some High Spots in the Training of a Railway Artillery Battery

By CAPTAIN DONALD B. GREENWOOD, C. A. C.

Third Prize Target Practice Essay Competition

ON January 1, 1926, Battery—— was a recruit outfit. Exclusive of its noncommissioned officers, it has but eight members that had completed a year's service. The only one of these that was not on special duty was in the hospital. The Battery Commander had joined the previous October and had never seen a railroad gun fired. The Executive had served with these guns in the past, but the Range Officer was totally inexperienced in fire control work.

The battery manned 8-inch railroad guns. In past years most of the target practices had been fired from four guns, manned by the concentrated strength of the regiment. This year but two guns were to be fired, manned by the battery firing. No such thing as a plotting section existed, plotting having been handled in the past by one of the other batteries. A sergeant plotter and one corporal were the only men in the battery that had ever worked in a fire-control car. One gun crew had been through an exhibition practice. The other crew consisted of a gun commander, mechanic, two good observers, and a bunch of interested recruits.

Gunners' instruction was utilized to develop readers and telephone men. At its completion, four competent readers and about ten good telephone men were available. The examinations being over, the regiment started on the last lap of its training program for the year.

The Chief of Coast Artillery's report for 1925 showed the battery to have fired two "satisfactory" practices, a notation being made that each had developed "excessive personnel errors." To start with, the Battery Commander determined to locate the cause of these. The fire-control car contained the standard equipment, including a local battery monocord switchboard unit, Cloke plotting board, range percentage corrector, and a universal deflection board. After some investigation, indications were that most of the trouble had been in the universal deflection board. This device requires a cool, intelligent man to handle it, and apparently such a man had not been assigned to it in the past. Among others, numerous errors had occurred in the application of

Battery Commander's adjustment corrections. These corrections were applied by moving an index over a scale to the correction ordered, and then shifting the entire board until the zero of this scale came under the index. The joker lay in the fact that when a "left" correction was ordered, it was necessary to move the index to the right, and vice versa. In the rush of target practice the index had been moved in the wrong direction, and as the correction was not actually applied until the index read zero again, it was impossible for the Range Officer to check the application of the correction without holding up the drill. One such error had resulted in dropping a 200-pound projectile neatly over the tug, about 25 yards from the bow. It was finally determined to reverse the graduations of the correction scale, to have the Battery Commander give the total correction, instead of each individual correction applied, to slide the board over until the correction ordered appeared under the index, and to leave it there. The Range Officer was able to check this setting whenever necessary, and when the experienced corporal was assigned to the device, no more errors developed.

A number of men were tried out on the range percentage corrector with most unsatisfactory results. Finally, in desperation, one of the observers was put on it and handled it throughout the season without error. Both of these devices proved very satisfactory when operated by high class men. The First Sergeant turned out to have been a crack observer in the old days and fitted into the vacancy without a ripple. And then, the method of prediction came up. Every Battery Commander has his own pet training methods, his own ideas on conduct of fire, and above all, his own "gadgets." But the real test of any departure from the standard system lies in whether or not the device or method will accomplish its object without the sacrifice of either speed or accuracy. A predicting device was in use which used the nearest ten seconds time of flight. If the time of flight were 45 seconds, the plotter used 40 or 50. Even were the work of the plotter to be absolutely accurate, an error of five seconds in the time of flight was inevitable at times. The towed target moved at a speed of about 150 yards a minute. The maximum error then, to be expected by the use of this device was 13 yards. As the smallest graduation on the range arm of the plotting board was 20 yards, the device might be considered satisfactory for use in target practice. But the real object of all our training should not be target practice, but efficiency in battle; the ability to deliver a fast, accurate fire at a target moving from 30 to 35 knots an hour; and the device which will allow an error of 13 yards with the target moving 150 yards a minute, will give an error of 100 yards in the position of the setforward point when the target covers 1200 yards in the same time.

A number of predicting systems were tried out, but in the final analysis they all contributed to speed at the expense of accuracy, with the exception of the prediction scales described on page 43, *Gunnery for Heavy Artillery*. As described in the pamphlet, this system labors under a disadvantage in that it requires a separate set of scales for each projectile and powder charge. But if instead of graduating the scales for yards of range, they are graduated to use with times of flight, this disadvantage can be overcome; and the same set used in subcaliber practice and in service. A scale was made for each three seconds time of flight; for instance, the scale designed for 23 seconds covered 22 and 24 also. The maximum error possible was $2\frac{1}{2}$ yards in target practice, and 20 yards against the fastest moving target on which the battery could expect to fire. The operator of the percentage corrector notified the assistant plotter of any change in the time of flight, who, if the plotter did not have the scale bearing the new time of flight, handed it to him. These scales proved to be most satisfactory. They eliminate one man and obviate the necessity for calling off the travel of the target and the travel to the setforward point, with a resulting increase in quietness and speed.

During the entire drill and target practice season, the analysis did not show a single case in which the plotter used the wrong scale. No predicted point was determined, a check being made by having the azimuth which appeared on the display board repeated back to the fire-control car and plotted on a time-azimuth board.

Armsetters were practiced in estimating the travel of the target in azimuth and in setting the arm before the reading came in. They were rarely in error more than $0.^{\circ}03$ in their estimate.

Due to the small size of the fire-control car, difficulty was experienced in hearing when two or more men spoke at once. It was necessary to arrange a sequence of data, so that, with the exception of the armsetters, no two men did speak at once. For instance, on time "one" the readers sent the azimuth of the target to the armsetters, who repeated it and called "Set" when ready. Thanks to the prediction scales, the plotter was able to locate his setforward point without a word being spoken. He called the range of this point to the percentage corrector man, who repeated it and set it on the range scales. The B' armsetter was instructed not to call the azimuth of the setforward point until the range had been repeated back to the plotter. When he did announce this data, the deflection board operator repeated it and set it on his device. The ballistic correction from the Pratt range board was then called to the percentage corrector operator, and the firing data was ready for the guns. This took from 12 to 15 seconds. Observations were taken every 30 seconds, and predictions made one minute ahead.

At first the data obtained from time one were sent out to the guns as soon as ready. But the gun did not fire until time 3, and it was found that the guns were often fired on the data for the succeeding bell, instead of the one intended. The problem was finally solved by holding the data until time 2, and sending it out while the plotter was locating his next setforward point. This obviated the chance of the gun firing on the wrong data, as the display board operators were instructed to wipe all figures from the board on his first stroke of the bell. The data came from the fire-control car about five seconds after that time, and as it took about ten seconds to lay the gun, ample time was available before time 3 on which the gun was to fire. This also gave the range section plenty of time, as instead of 15 seconds, they had 30 seconds to obtain firing data. All firing was done by indirect laying, using the panoramic sight and aiming rule for direction, and the quadrant for elevation. This was necessary, as at no time was the target visible to the gun pointers, six to seven miles of wooded country intervening.

Like all time-interval systems, ours went on strike every once in a while. During the early part of the season, a battery fired a practice using the trial-shot method of adjustment. Trial shots were fired, and after about the third record shot the time-interval bell quit. Fire was stopped and electricians called in for emergency service. After a while, the bell sounded again; but a boat had come up the fairway. It was finally necessary to turn the tug and start over again. By the time all this was over and fire opened, atmospheric conditions had changed, and the seven rounds fired might as well have been turned in to salvage, as far as any value in adjustment was concerned. An interruption of this type being entirely out of the control of the firing battery, "time out" is allowed. It was considered preferable in case of a similar occurrence to shift to the "Ready, Take" system, without interrupting the fire. To this end the assistant plotter was supplied with a stop watch. When the Range Officer announced "Next bell time one," he was careful that the stop watch was started on the third stroke of the next bell. At least once a day the T. I. clock was stopped without warning, and the range section practiced in shifting to the stop-watch system. The assistant plotter was instructed to call "Ready" as the hand passed 26 and 56 seconds, and "Take" at 29 and 59. It took just about one second for the telephone men to repeat "take," and this went over the phones at 30 and 60 seconds. When the day of target practice arrived, the battery was able to shift from one system to the other with the loss of but one observation; and the time-interval system worked perfectly during the entire practice.

Past firings from this type of gun had been by two- or four-gun salvos at one-minute intervals. The records showed pictures of four

splashes in the water, and the deviation of these from the target, but could give no indication as to which gun was responsible for any given splash. It was certain that at least one gun was shooting all over the lot and that a calibration correction was necessary; but no information was available on which to base it. The Battery Commander finally decided to change the method of fire and, instead of firing a salvo every minute, to fire alternate guns every 30 seconds. This gave him a chance to determine what each gun was doing and simplified the problem of spotting without slowing up the rate of fire. The desirability of this soon became apparent in subcaliber practice, as the spotting section did much better work in spotting one shot than it had in locating the center of impact of two. In April, a Reserve battalion held a practice in which the value of the single-shot system was evident. The first and second shots gave deviations of over 200 and short 200 respectively. Had these been fired as a salvo, the center of impact reported would have been zero; but as it soon became evident that Number One was shooting further than Number Two, the possibility of getting any hits per gun per minute, or per hour, for that matter, would have been pretty slim. As it was, the officer conducting the fire made a calibration correction which brought his guns closer together, and his center of impact within a probable error.

The analysis of this shoot showed that Number Two had a much greater dispersion in direction than its companion gun. The Ordnance was called in and found that a considerable space existed between the gears of the traversing mechanism. This was taken up and the excessive dispersion did not appear again. It also became evident that a calibration correction of plus 314 yards was necessary for Number Two gun. This was applied through a device on the Range Percentage corrector. The guns were emplaced close together, and no position corrections had been necessary. As long as the data for each gun were the same, no difficulty had been experienced in firing the guns alternately. But when the elevation for each gun was different, due to the calibration correction, trouble started; and the daily analysis showed that Number One fired on Number Two's data just as often as not. We tried sending the "dope" to Number One on the minute bell, and to Number Two on the half minute; but every once in a while the warning bell failed to ring, and the data invariably went to Number Two. We finally hit on the idea of having two additional stop watches used; one by the percentage corrector man and the other by the deflection board operator. These were started on time one, which was always given on a minute bell, and when the hand pointed to 60 data went to Number One, at 30 it went to Number Two.

A combination of the Callan adjustment board and the modified impact chart was used in adjustment. A black pin was used for Number One gun, a white for Number Two, and a red for the target. The gun pins were placed by a soldier, who, as the board was graduated in percentages, converted the deviations into percentage before placing them. The Battery Commander observed the plot and determined the correction to be applied, placing a red pin in the board at the graduation corresponding. The correction was not announced until the ballistic correction had been given out. There being from 10 to 15 seconds when no other data were being called, the corrections were ordered and applied without interfering with any other operation. The time of flight varied from 25 to 30 seconds, the spotting section reported from 5 to 8 seconds later, and the whole sequence worked very nicely. It is just as necessary for the Battery Commander to train himself in computing and applying corrections as any other operation, and to this end assumed deviations were sent over the spotting phone, even when hypothetical data were being used, and the application of corrections practiced daily. In subcaliber work, the time of flight ran from 9 to 11 seconds. To simulate service conditions, the observers were instructed to hold the reading obtained until the next T. I. bell rang.

The gun drill laid down by current Training Regulations was found entirely satisfactory. However, a tendency to slight part of the drill was noticed. The Battery Commander timed the gun section during the early part of the season, and found them loading in 25 seconds. As the best time ever made by these guns had been one shot per gun per minute, this seemed to open up possibilities. But after watching them a while, he noticed that they were not sponging, were not wiping off the face of the breech, and after removing the projectile from the breech at the close of a simulated round, they did not lower it to the platform, thus saving the time necessary to hoist it up. When questioned regarding all this, the gun commander said that all these things would be done when the gun was fired, but were not necessary now. He was soon impressed with the idea that every effort must be made to have the drill as realistic as possible and that every operation in service practice would be practiced in drill. No more 25-second loadings were noticed.

May at last arrived and the guns were prepared for service. The tests and adjustments outlined in paragraph 29, TR 435-220, were followed so far as they pertained to railroad guns. In addition, an extra lanyard and an extra rammer were obtained and placed near the guns; a pair of pliers was placed in the gunner's pouch to extract any primer which might stick after firing. A net to catch the primer in case of misfire was also handy. Powder was not blended, but was carefully weighed. No variation in the weight of the charges was found. Rotat-

ing bands were calibered. Four of these varied perceptibly from the others. These were laid aside and later fired as trial shots. They developed a maximum dispersion of 580 yards, with a probable error of 125, although their center of impact was very close to the remainder of the series. The remaining 18 shots were fired as rapidly as possible and developed a maximum dispersion of 207 yards, with a probable error of 40. It seems evident that the calibering of rotating bands is something which should not be overlooked.

The battery was to fire two practices: the first with an ammunition allowance of not to exceed 20 rounds, fire to cease when the battery was adjusted; method of adjustment discretionary with the Battery Commander; object of practice to secure adjustment with the minimum expenditure of ammunition, time element to be secondary. The second practice was to be held a week later, with the ammunition remaining from the 32-round annual allowance which had not been fired in the first practice: method of adjustment again discretionary; object of practice to secure an accurate adjustment in a minimum time.

We have four standard methods of fire adjustment. With a major-caliber battery of less than four guns, there are but two suitable methods—successive approximations and trial shots. The former is by all means to be preferred when time permits of its employment. By firing one shot from each gun at a reference point before opening up on the moving target, the battery commander can make a full correction and insure that his target is covered by the zone of dispersion. He then makes a full correction after the first shot at the moving target. But this method takes time. After each shot the battery must wait until the projectile falls and is spotted. A correction must be determined and applied before the next round is fired; and this must be repeated on the second, third, and fourth shot. During this time the target can travel a long way. If sufficient ammunition is available and time is of prime importance, the trial shot method, properly handled, will give the most satisfactory results.

The first practice, with time of secondary importance, was made to order for successive approximations. Two shots were fired at an anchored target, and fire opened at the moving one. In eight rounds, the battery had secured four overs, three shorts, and a "good" range. Each gun had one shot opposite in sense to the other rounds fired by it. Fire was then discontinued. Four hits were secured, three of them during the trial fire phase, which would not have been the case in any other method of adjustment.

The second practice called for trial shots very clearly. During the week intervening between the first and second practices, the battery was drilled in firing series of 18 simulated or subcaliber rounds. If any

three successive rounds fell in the same sense, "Suspend Fire" was ordered, and as the fourth round was in the air when the deviation of the third had been received, the mean of the four were applied before continuing the fire. If any one of three rounds was opposite in sense to the others, any correction called for was applied without holding up the fire. The tug was not started on its course until the field of fire was clear all the way down. The target was tracked by the range section, and when data began to come in, fire was opened on the anchored target. The spotting section reported the deviations, and as soon as the pressure plugs had been removed, fire was shifted to the moving target, less than four minutes having elapsed from the fall of the last trial shot to the firing of the first one of record. The battery was lucky. During the entire practice, not a single correction was necessary after the trial shots. The fourteenth shot blew the target out of the water, but a stick remained and the observers tracked on that. Although the target was obscured for a reading or so by the splash, the armsetters continued to set the arms by estimating the travel. They were accurate to within ten yards. When the practice was over, the battery had obtained eight hits at a mean range of 12,800 yards, eighteen shots having been fired in eight minutes and thirty seconds.

Late in the summer the District Commander's report came in—"Battery——deserves special commendation. Not only were both their practices excellent, but . . . "

APHORISME VII

In the Schoole of Art, doubt begetteth knowledge; So in the School of Policie, Shee is the mother of good successe: for he that feareth the worst, preventeth it soonest. Man naturally interprets things according as he would have them, and so doubts lesse than he should; but hee that doubts most treads the safest path.—Ward's Animadversions of War (London, 1639).

The Red Army

Condensed translation from the *Journal Militaire Suisse* by

COLONEL GEORGE RUHLEN, U. S. A., *Ret.*

MAJOR MONOD of the Swiss army submits, with the following introduction, an article published in the October 15, 1926, issue of the *Journal Militaire Suisse*, on the Soviet Russian Red Army.

The author of this thorough study of the "Red Army," who requests me to respect his anonymity, authorizes me to give publicity to information obtained by him from sources which he knows to be reliable and which are, in fact, open to any one who has kept in touch with current literature on the subject of his writing, including that of the Soviet Russian press. He considers it desirable that what he has to say in the condensed form in which it is here given be made known to the greatest possible number of patriotic citizens among us who should have cognizance of the communistic organizations which he describes and should know how they are functioning because they also have ramifications in our own [Swiss] country.

Much has been written and published about the organization, composition, strength, and armament of the Soviet red army. The article under consideration here gives many interesting details of those special topics but, inasmuch as the readers of military journals are generally conversant with those features of the Soviet military establishment, what he has to say about them will be curtailed or wholly omitted in order that greater emphasis may be given to what he has written about the spirit that pervades and governs those who control the red army and the sinister purposes that animate them in preparing it for its potential employment at home or abroad. It is believed that this feature of the Soviet military establishment has rarely, if ever, been as clearly brought to light as it is in this author's article.

THE RED ARMY

Differs materially from the regular armies of other lands by its spirit, its flag, which is red, and finally in the international purposes that are unknown to and are no part of other armies.

The class characteristics of the red army are: (1) The strong political organizations that are a part of and completely pervade its constitution and organization. (2) Its recruiting system, which is based on the fundamentals of a mixed system that embraces all the regular stand-

ing contingents and the militia and especially the auxiliary forces hereinafter referred to. (3) It owes its origin to the irregular formations of the civil war of 1917-20.

THE RECRUITING SYSTEM

In accordance with a recently issued (1925) decree all citizens of Soviet Russia are subject to military service. This decree provides for a period of military preparation of the conscript, before his enlistment into active service, of one month in each of the two years preceding his enrollment. He enlists for five years, the first two of which he serves in the colors and is then released but subject to recall at any time within the next three years. After that he is entered in the reserve until he reaches the age of 30 or, in some cases, of 40 years. The one month preliminary service before enlistment has for its principal purpose the physical development and training of the coming recruit. The teachers for this training are instructors belonging to branches of the red army and of the reserves. In the navy the period of service after enlistment is four years and subject to recall for one year after that. The citizens enrolled in the Landwehr, (a system similar to the militia in other countries) render an actual service of military instruction and training under arms of eight months distributed over five years. They are a part of the military forces but do not belong to nor constitute a part of the regular standing army. Of reserves proper there are two classes, one of which serves to 30 and the other to 40 years. The large Landwehr formation, which comprises about 50 per cent of the military strength of the Soviet government, enables it to maintain, at a minimum outlay, for the present, a powerful military establishment with a comparatively small standing army. Its aggregate is approximately 800,000 partly trained men, while the regular standing army numbers 562,000 men. The training of the Landwehr is in the hands of officers and noncommissioned officers of the regular army who are detailed for that purpose and relieved, for the time being, from active service with their organizations.

Thanks to these various systems of training the Soviets achieve results superior to those gained by Western armies because they have solved the problem of giving to almost every recruit of the year a valuable, if only a very elementary, training.

The Soviet army comprises ninety per cent national elements apportioned among Russians and Ukrainians, while ten per cent are represented by Tartar, Mongol, and other races. The latter are very skillfully used by the government in the Eastern frontier boundary districts as working elements of attraction and propaganda of Soviet rule, especially in Asia.

ORGANIZATION OF THE RED ARMY

The *People's Commissar for Army and Navy Affairs* stands at the head of Soviet Russian fighting forces. A *Revolutionary Military Council* functions with him. Comrade Unschlicht, at one and the same time President and the *Eye* of the Cheka within the red army, represents the Commissar of the Army.

Subordinated to the Revolutionary Council are: (1) The General Staff of the Red Army of Workers and Peasants, which exercises approximately the same functions as general staffs of other European armies, (2) The *Controlling Inspectorates* for technical preparation of the various army formations, (3) The *Supreme Directorate* (for recruiting, military service, pensions, etc.), (4) The *Directorate for Naval Forces*, (5) The *Directorate for the Air Fleet*, (6) The *Supreme Directorate for Supply—Maintenance—*of the Army and Navy, composed of the following sections: General, Artillery, Engineers, Construction, Intendance, and Finance, (7) The Political Directory of the Army and Fleet, (8) Sanitary and Veterinary Directorate, (9) Military School Detachments, (10) Military Colleges and the Highest Courts of the Department of Military Justice.

The characteristic scheme of this centralized imposing array is: (1) Combination of the Army and Navy under one ministry, (2) Combination of all branches of supply and maintenance under a single Directorate, (3) Functioning of a single political organization.

There are intermediate jurisdictions between the army corps and the central directory, seven in all, called Military Districts. In addition there is a separate Army of the Caucasus, called the "Army of the Red Flag," with headquarters at Tiflis, and, finally, a separate front—that of Turkestan. A "Commander of the Troops" is at the head of each military district. He is assisted by a "Revolutionary Counselor of the Military District." A *Political Directorate* is attached to each military command, which has direction of the entire politico-military activity of the division. In peace the effective strength of the regular infantry division is about 6000 men and the permanent stand of the landwehr or militia division 1500. Whatever remains is attached each year to the landwehr division for training for a short period. The infantry regiment has at its head a "Regimental Directorate," managed by a general staff officer of the regiment and a *Political Commissar*. The composition of the company approximates that of the Germans.

The entire active red army consists of 21 infantry and four cavalry corps, comprising 54 infantry and 8 cavalry divisions and 9 independent cavalry brigades not belonging to the army corps, a total of

562,000 men. In addition to this there are 30 Landwehr divisions. The following formations are not included in the foregoing:

- a. The air fleet of 800 airplanes and 13 balloon detachments.
- b. Ten tanks and a number of armored automobiles and 60 armored railway cars.
- c. Engineer troops.
- d. Fifteen regiments and five special battalions of the communication service and 17 battalions of the T. S. F.
- e. Special service artillery (aside from that attached to divisions) antiaircraft, grenade throwers, and special heavy artillery.

In concluding this subject it may be proper to remark that even though the red army has made prodigious progress in organization since 1918 it is very materially inferior in the technical field to the large West European armies.

THE CORPS OF OFFICERS

Is composed of: commissioned and noncommissioned officers, Political Commissars, Administration and Supply Personnel, Officials of Military Justice, Surgeons, and Veterinarians. It would be erroneous to assume that the present red army consists mainly of officers of the former Czarist army. That may have been the case during the first years of the revolution but that situation is now wholly changed. The corps has been subjected to a *rough-cleaning* process in consequence of which we now find old officers only in the highest general staffs, in the central directorates, in the higher grades of instructors in the military schools, and quite exceptionally among the officers commanding troops. The greater portions of the present red officers have received their training in the military schools since the end of the civil war of 1917-20.

While there are in the troops of the red army 83.7 per cent peasants, 11 per cent workers, and 5.3 per cent citizens of other classes, the officers comprise 58 per cent peasants, 13.3 per cent workers, 28.7 per cent other classes. In the navy there are among the officers 46 per cent workers and peasants. The following is said of the political classifications of the officers: there is in Russia only one political party—the communists. It is that which contains the germ of every organization in the Soviet state. But notwithstanding this fact about 50 per cent of the total strength of the army officers are non-communistic. In the navy the communist officers comprise 20 per cent. Up to the Spring of 1925 there was assigned to each commanding officer from regimental commander upward a political commissar who had the same rights, duties, and responsibilities as the military chief.

The absurdity of such a situation, which represented in fact a dualistic system of command, was found impracticable and it was decided to do away with it in spite of the opposition of the extreme communists. The decree for this change released the military commander from the control of the political commissar in purely military matters but left the commissar in full supervision of matters of political policy, including secret observation of the military commander's conduct and actions by the spies and tale bearers of the political commissar. This measure of release of commanding officers was not extended to the navy.

It may be stated in this connection that the Soviets give great importance to the activities of the political commissars. They are indispensable to them in time of peace for purposes of espionage among the troop masses and still more in war as aids in organizing Soviet propaganda among enemy troops and the population of occupied territory.

The age limit of officers is strictly observed in the Soviet army. It is 50 years for the higher grades and 40 for regimental chiefs; it is materially less for the political commissars.

The officers of the red army are greatly handicapped by want of adequate technical training due to the defective conditions of that training. Their subordination and humiliating tutelage to various Soviet civil political agencies, which exercise incessant control and supervision over them from the standpoint of communistic interests, tend to discourage them from all initiative and from assertion of their rights and proper standing.

THE MILITARY SCHOOLS

Are divided into three catalogues: (1) The high schools or military academies; (2) The Normal Schools, charged with education of subalterns; (3) The Progressive Training Schools for Officers. Of the first there are seven military academies for the General Staff; the Artillery, the Engineer Course, Electro-Technical, Air Craft, Naval Academy, School of Medicine, and the Political Military Institute. The courses at the Military Academy require three years. In selecting officers for the courses great importance is attached to their relation to the communistic party. The percentage of strict communists taking these courses was 85 in the spring of 1925. The Political Military Institute has for its purpose the education and training of the leading political personalities of the army. An intermediate Institute has been created to combine and coordinate the methods of instruction of all the different military branches. It is composed of the "higher instructors" representing each of the several academies.

Soldiers and civilians of ages from 17 to 23 are admitted to the normal schools; the examinations for admission are very elementary.

When they have completed the courses they enter the army as subalterns. For a proper insight into the spirit that pervades the system of instruction of the officers of the red army renders, it is essential to give a brief statement of the principles permeating the system. These are the fundamentals that constitute the doctrines which are given the greatest importance and which are persistently urged as part of their education and training:

Down with Christian charity and love of thy neighbor; what we need is hatred. We must understand how to hate; by that only can we hope to conquer the world.

Religion and communism are incompatible in theory as well as in practice.

We hate Christianity and Christians; even the best among them must be taken as our worst enemies; they preach Christian charity, love of your neighbors and compassion, all of which are contrary to our fundamental principles. Christian charity is an impediment to development of the revolution. We have done with the kings of earth; let us not concern ourselves with the kings of heaven. . . . The so-called Soviet Red Cross distributes among the sanitary soldier personnel of the red army a pamphlet of bolshevistic propaganda and a summons to class hatred, murder and civil war. We quote from it: "Our parole must be armament of the proletariat with the purpose of overcoming, dispersing and disarming the bourgeoisie; that is the only tactics of the revolutionary class."

CARE AND MAINTENANCE OF THE ARMY

The soldier's daily ration comprises 2003 calories. His pay averages one ruble twenty copeks (about 70 cents) per month. The pay of the officers is about one-third that of the former Russian army.

The most prominent deficiencies in the technical organization of the arms are: want of light machine guns and artillery; insufficient heavy artillery and aircraft—especially of motors for the latter. All motors have heretofore been imported from abroad. To this must be added the inefficient qualities of the cavalry horses, due to destruction by the bolshevik government of the former excellent breeds of horses and exhaustion of sources of supply, and, finally, the bad condition of all working tools.

SUMMARY

It is of interest to consider the answer to the question: "What is, in short, the actual practical power of the red army?"

One must accept as an established fact that notwithstanding its many deficiencies the army is stronger than is generally believed. The inherent

valuation of its power is explained by the fact that there is general ignorance in Europe of the essential development of the inner elements of strength of the red army since 1922, 1923, and especially 1924. At this time it is no longer a question of the armed bandits that engaged attention at the beginning of the civil war. Its positive points may be summarized as follows: (1) The red army assures annually the instruction of the greater portion of the youthful contingents fit for military service, and this notwithstanding that the regular army is of small numerical strength compared with the 130 million population of Russia; (2) The organization of the red army conforms in general lines very well to the special circumstances of the Russia theater of war; (3) The enrollment in the army of popular bolshevik forces that were not formerly called into military service must also be credited to its advantage.

The defects of the army are: (1) The corps of officers is wanting throughout in initiative and necessary preliminary preparation. (2) The technical equipment is insufficient. It is difficult to state which one of these deficiencies preponderates over the other; it seems, at any rate, that it would be easier to complete the technical equipment than to create a fully competent corps of officers under the conditions in which the officers in active command are called upon to render service. Among these untoward conditions are the exasperating uncertainty of their material situation in respect to salary, quarters, and maintenance, and especially the atmosphere of suspicion and espionage in which, thanks to the persistent supervision of the political commissars, they are obliged to work.

In this survey the question of the so called "Red Army" only has been given consideration, but it would be quite erroneous to believe that the forces at the disposition of the political Soviet government or, what is the same thing, of the chiefs of the bolshevik internationale are restricted to that army. As an actual fact the forces at their disposal are much greater. In respect to Russia proper alone the Soviet government has available special forces destined "*to hold in leash its interior enemies.*" Among these are: the troops of the Cheka or G. P. U. comprising thirteen regiments of infantry, three cavalry regiments, numerous district detachments, a special corps of frontier guards, and other formations for special purposes (Tchou), in the aggregate about 250,000 men.

To this must be added that the red general staff has undertaken the formation and supervision of armed communistic forces outside of Soviet Russia in the form of communistic "centuries," communistic sporting organizations, and foreign detachments of the G. P. U. All these formations are inspired, organized, directed, and financially supported from Moscow by intervention of military instructors of the

red army. In support of what is here stated we may be permitted to quote from a circular of the central committee of the bolshevik internationale, addressed to the communist party of the world:

The central committee of each communistic party must dispose of the permanently armed forces for fulfillment of special purposes and to watch over the security of the central committee and its organizations. . . One of the members of the central committee, the chief of the military detachment, has direct sole supervision of this. . . . The supreme command of all these armed forces in combination is in the hands of the executive committee of the bolshevik internationale . . . The central committees of the communistic parties furnish and secure the maintenance and provisioning of the military detachments; the executive committee of the Kominturn provides means indispensable for the armament and technical organization.

Similar attempts have been made in the oriental regions (especially in Mongolia, where a new red army is in process of formation) and in China. Some advances of the same kind are also under way in Africa. The bolsheviks in Canton established a military communistic school there more than a year ago. Only when one takes into the reckoning the sum of all that is given in the preceding lines will it be possible to form a correct estimate of the role that is played by the red army and its auxiliaries in the hands of its bolshevistic directors. The standing army is in itself an important central organization of military preparedness not only for the armed forces of Soviet Russia but also for all the other numerous bolshevik military aids which, as has been stated, have come into existence not only in Russia but in other parts of the world.

One is also justified in assuming that the formations of the red army and its various Western and Eastern detachments constitute only a first line of communication for the proposed destruction of civilization that must be attained by propaganda in the first line and then followed up with the armed forces whether it be by application of perfected methods of civil war among their neighbors or by intervention in progressive national conflicts at the opportune moment.

COMMENTS BY THE TRANSLATOR

A brief summary of the man power of the Soviet Russian military establishment given in the foregoing pages is as follows:

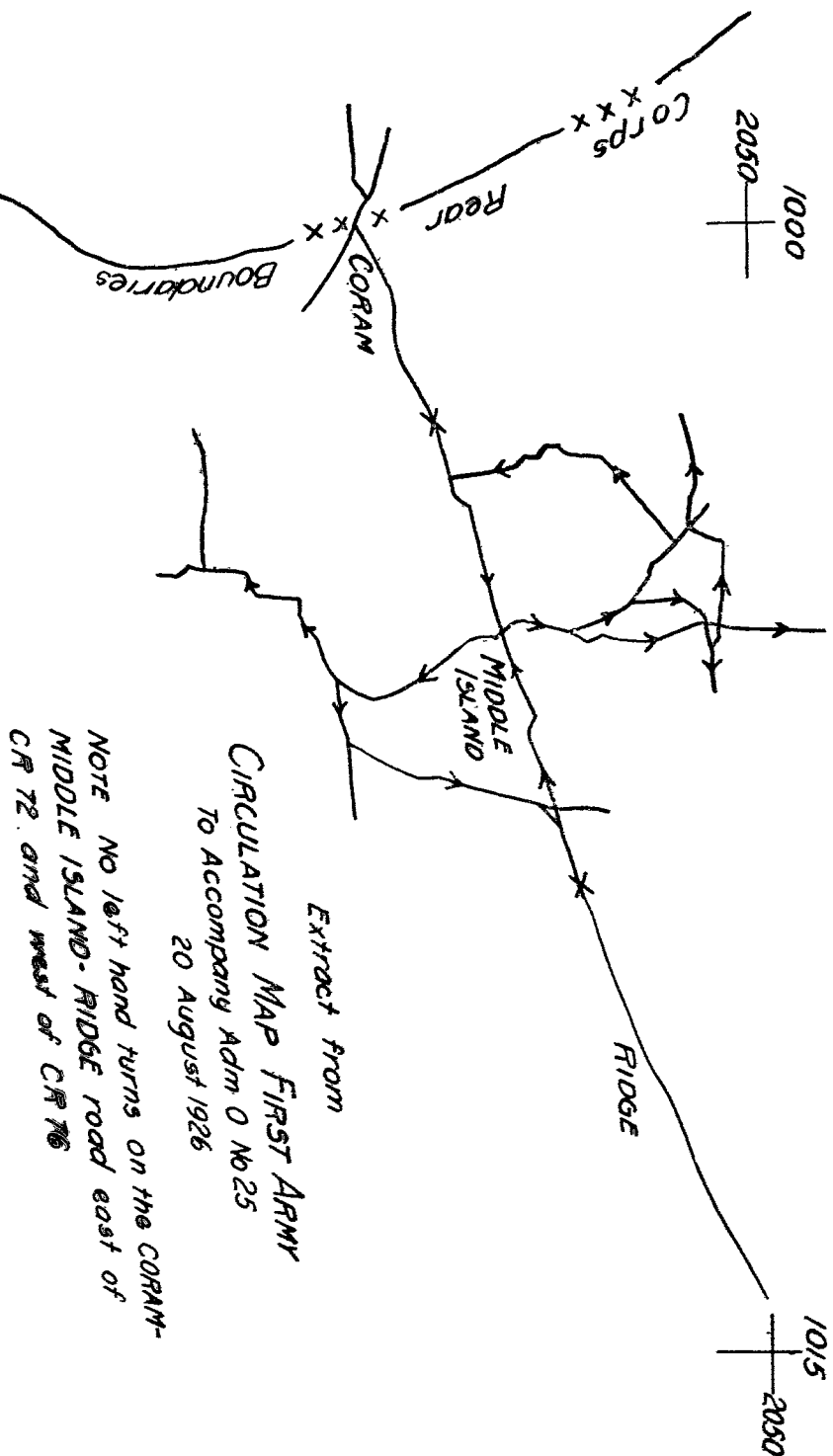
A regular standing army of 562,000 men; a Landwehr "militia" approximating in organization, time and extent, and nature of training and equipment that of the state troops of our own National Guard, of 800,000 men; an indefinite number of special troops forming a part of the regular standing army but not included in the enumeration of

that body above given and consisting of heavy and anti-aircraft artillery, aviation squadrons, balloon units, tanks, engineers, communication and intelligence units; a well-trained, organized, and thoroughly disciplined military police force (Cheka) "for holding in leash turbulent interior elements," numbering 250,000 men; enlisted men released from active service in the ranks in the regular army after two years of intensive training and placed on a sort of "furlough" status for the remaining three years of obligatory service but liable to be called in at a moment's notice, numbering at this time about 500,000 men; a reserve made up in part of enlisted men discharged from the army after termination of their terms of enlistment and held to compulsory service in an emergency until 30 and in some cases 40 years of age.

The writer calls attention to some weak points and serious deficiencies in the Soviet military establishment among which are: inadequacy of equipment in respect to quantity and quality (based on the most modern standpoint of arms and materiel) with special reference to light artillery, machine guns, tanks, airplanes, gas, transportation facilities, and motor vehicles; deficiencies in the morale of the lower grades of officers on duty with troops, due in part to the somewhat low order of intelligence of the population from which they are selected and consequent incapacity to take full advantage of the educational and training courses of the military schools.

The deficiencies in arms and equipment are no doubt due wholly to economic pressure and financial stringency that can be overcome only with the progressive improvement of Russia's industrial situation—the best promise in that direction being development of her latent natural resources. Opportunities for stimulating such development are being eagerly sought after by industrial agencies from almost every nation in the western world and the United States.

A very significant instance of such development, as well of the Soviet government's peculiar aptitude for exploiting it to its fullest extent for the advancement of its military features, is presented in detail in the article "Red Skies" by Mr. George Marvin, published in the December, 1926, issue of the magazine, *Asia*. In that article Mr. Marvin furnishes some surprising information relating to the unexampled progressive increase and development, during 1925 and 1926, of industrial aviation throughout Russia proper and its Asiatic dependencies and "spheres of influence." This extension is ostensibly wholly in the direction of industrial development, but it is very evident that the Soviet government is fully aware of its potential military significance. A marked feature of the extension of aerial transportation throughout Russia and the Far East is the friendly interest that appears to have



been taken in fostering and stimulating it by the German airplane manufacturing and operating Junker syndicate which, it is believed, has furnished Soviet Russia financial and technical assistance in pushing the work.

The other defect in the Soviet military system, backwardness in intellectual education and training and want of initiative in its line officers of company commander and lower grades has been fully recognized by the Soviet military hierarchy and is being remedied by improvement in methods of instruction. (See page 572, *COAST ARTILLERY JOURNAL* for December, 1926).

Thoughtful consideration of the contents of the German writer's article on the strength of the Soviet army and the spirit that animates it, or at least of the spirit that the communistic Soviet government is attempting to instil into its rank and file, cannot fail to impress the reader with the thought of the mighty instrument that is being forged in Eastern Europe. Russia occupies not only a large section of Europe and northern Asia but has extended its control over the comparatively backward races inhabiting Turkestan and Mongolia and is engaged in pushing its tentacles into Persia, Afghanistan, India, and even into China.

From what has been presented and is confirmed by publications appearing in the press—and frequently in the Soviet press—from time to time, it is quite evident that Soviet Russia is engaged in building up, even if it has not already at its disposal, a military force that, from a defensive point of view at least, makes it the dominant military power of Europe today.

Military experts of West European powers are inclined to give great weight to the well-known and generally admitted weak points of the Soviet military establishment in making estimates of its efficiency compared with their own. It is believed, however, that those deficiencies are, to a large extent, neutralized by factors that enter in to the reckoning; and among these are Russia's well nigh impregnable geographical position against attack from without and the intense nationalism of its racially homogeneous population that has heretofore always tended to unite it in a solid mass of fanatical resistance to foreign invasion. Taking these conditions into account in connection with what has been above stated about her present trained military man power, one is justified in the belief that Russia is today in position to resist successfully attack from even the most powerful military nation of Western Europe. The inherent racial antipathies that have always existed among those nationalities, taken in connection with their conflicting economic industrial barriers and the local political factions that distract their governments and their people, will effectively preclude the com-

bination of a sufficient number of them for decisive military action against Soviet Russia.

Whether or not Russia will be invited to participate, or if invited will participate, in the much discussed projects for military and naval reduction of armaments is a very open question. From present aspects of the situation it would appear that Russia's interests are in the direction of opposition to reduction of armaments among her Western European neighbors because support of their enormous military establishments is exhausting their industrial resources while her own are improving from day to day thus rendering her potential future opponents less formidable for aggression or defense. Taken all in all Russia's future policy is well outlined in remarks of the closing paragraph of the German writer's article which is, in effect, passive acquiescence in existing conditions and quietly awaiting a favorable opportunity for "intervention" in the controversies of her Western neighbors when such intervention is most opportune for the advancement of her own interests.

APHORISME II.

The keenest Razor will turn edge at a more solid substance, but the tough and dull Axe is able to encounter the hard and sturdie Oke, and overpower him: So experience teacheth, that hot and fierie spirits are apter to get a purchase, than to keepe it. Hee therefore that hath the fortune to get the victory, but not the judgment to make use thereof, stands upon slipery yce, and is subject to fall on either hand.—Ward's Animadversions of War (London, 1639).

The Modified Noyes Puff Board for Moving Targets

By LIEUT. COLONEL HARTMAN L. BUTLER
Coast Artillery Corps

IN the December, 1921 JOURNAL Major Edward P. Noyes wrote an article describing his excellent puff board for moving targets. This installation was amplified by the original designer after the above date, and other amplifications and modifications have recently been made. The writer succeeded this officer in charge of the Coast Artillery unit, R. O. T. C., University of Alabama, and upon request this article is being written.

The installation as now used occupies two adjoining rooms—one, the standard C. A. Harbor Defense Fixed Gun Plotting Room, and the other, the Observing, Puff Board, and B. C. Station Room. The two rooms are connected with the standard telephone and T. I. Bell lines.

PUFF BOARD (PLATE 1)

The scale is one inch equals 75 yards. The frame, 12 inches square, consists of corner and cross braces and four posts 4"x 4"x 3'6" high, surrounded within six inches of the top by 12"x 1" boards. On top of the posts are tightly stretched two diagonal stringer wires (No. 10 B&S). On top of the stringer wires is mounted the cover, formerly of bluish green cheese cloth, now of copper screen wire. Nail buoys and a miniature bell buoy are in the water area. At the rear end of the board the shore area representing Pensacola Harbor is painted. A miniature lighthouse and other buildings are shown.

GUN ARM AND TRAVERSING MECHANISM (PLATES 2, 3, and 4)

The gun arm consists of a strip 1"x 3"x 14' long, supported by frame cross braces and is pivoted under the gun arm sight center. Near the outer end it is equipped with a roller to make the traversing easier. There are picture wires with coil springs at their ends attached to the outer end of the gun arm—one extending to the right and one to the left under the screen (not shown in the plates)—thence through pulleys to the 4-inch diameter traversing drum equipped with a handle which is operated by the gun pointer. Several wrappings of the wire are made

and the central one is attached rigidly to the drum to prevent slipping while traversing.

GUN SIGHT (PLATES 2 and 3)

At present, the seacoast sight, Model 1898, is used, although the panoramic sight with fixed aiming point on the right or left, displaced 1600 mils to the normal of the board can also be used. The sight with the Hagood bracket is attached to the top of a vertical 5"x 5"x 4' box frame, which is pivoted by a bolt through braces at the top and by a bolt at its bottom through an iron washer that is counter sunk in the azimuth box, nailed to the floor. This vertical frame is also rigidly attached to the gun arm and communicates the traversing motion to the

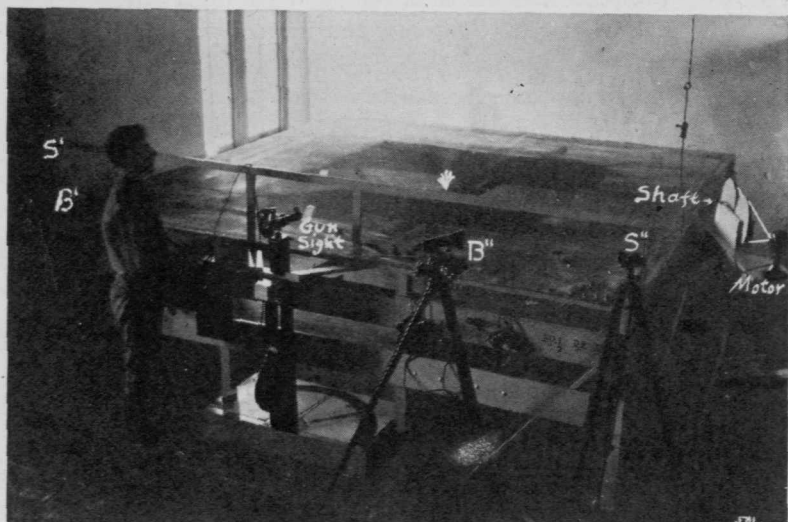


PLATE I

sight. A gun azimuth circle is drawn on the top of the box and a pointer on the sight vertical box frame indicates the gun azimuth to the nearest ten hundreds of a degree.

ELEVATING OR RANGE MECHANISM (PLATES 2, 3, and 4)

The mechanism includes the carriage receptacle mounted on a 1-inch grooved and greased strip on top of the gun arm and which carries the two bottles—the rear one containing the sulphuric acid, sg-1800, and the other household ammonia joined together by a glass tube and the rear bottle connected by rubber tubing to a rubber bulb, the pressing of which produces the puff of smoke. This receptacle is pulled in

or out along the gun arm grooved strip for the different range settings by means of a picture wire attached fore and aft through coiled springs and thence one end extends to a pulley at the front end of the gun arm, then back to another pulley at the rear end of the gun arm, then down to the elevating drum, thence back up to another pulley at the rear end, then back to the aft end of the carriage receptacle. The wire is wrapped and attached to the elevating drum in a similar manner as to the traversing drum. The elevating drum, 5-inch diameter, receives its motion

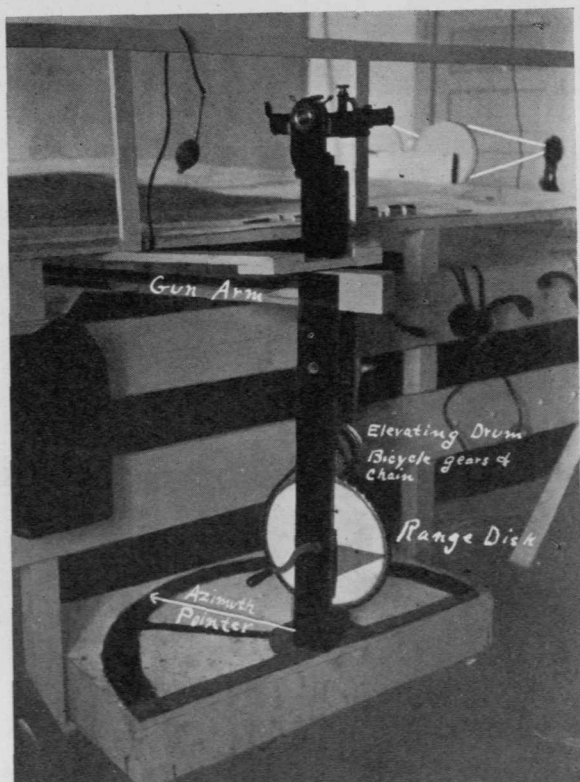


PLATE II

from the range disk crank and then transmits it to the puff carriage by means of a large and small bicycle gear and chain, step-up 1 to 5, connecting the disk with the elevating drum. As a result one turn of the range disk covers the outer two-thirds of the range of the board. This disk is marked with equidistant graduations with a least reading of 10 yards, for actual range, originally plotted every thousand yards. By examining Plate 1 closely, a ship may be seen just under the rail and the puff just beyond.

OBSERVATION INSTRUMENTS (PLATE 1)

Two azimuth instruments, Model 1900, are mounted at the end of the board on a base line 7000 yards (or 93.3 inches) apart and 1000 yards (or 13.3 inches) in rear of the gun center.

Due to the short distance involved it is desirable to get low-power instruments. In the original base line orientation with the two instru-

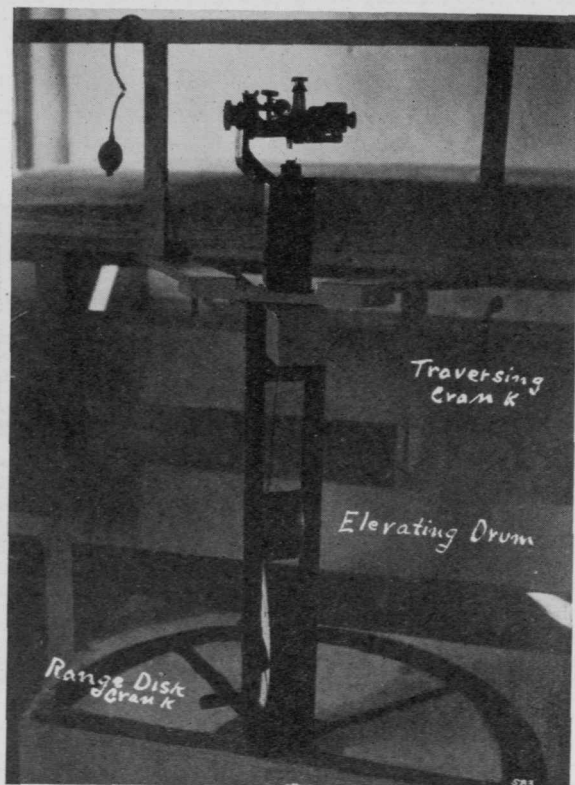


PLATE III

ments pointed at each other, the cross-wires of the distant instrument can be seen provided white paper is held behind the latter. Two datum point nails are then located at the outer end of the board and used for future orientation.

SPOTTING INSTRUMENTS (PLATE 1)

An aiming circle on the right and a type EE field glass on the left are mounted at the rear corners of the board 10,800 yards (or 12 feet) apart and the right and left deviations in mils are communicated to the Gray Spotting Board, located in the plotting room.

TARGETS

A fleet of miniature battleships, destroyers, submarines, commercial boats, etc., made of wood and painted, are provided. They are constructed to show the more prominent features of each class, such as funnels, masts, turrets, guns, etc. They are made to the scale of the board and vary from $\frac{1}{2}$ to $1\frac{1}{2}$ inches long. One or more targets are towed across the board at a time, by means of the step-down mechanism shown in Plates 1 and 2 (to the right), the power being furnished by a fan motor. The target is towed by a fine green silk thread practically invisible, which is wound up on the $\frac{1}{4}$ -inch or $4\frac{1}{2}$ -inch shaft shown in Plate 1. This shaft revolves at a rate sufficient to move the target about

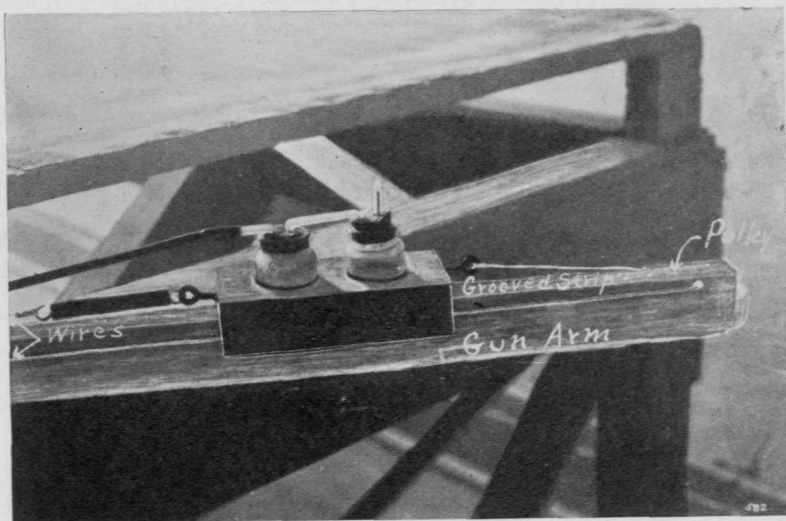


PLATE IV

sixteen miles per hour and gives about a 45 minute track on one leg diagonally across the board. Different speeds are obtained by using different size shafts.

OPERATION

The operation is virtually the same as that followed in a Harbor Defense Battery, Case II practice. Hypothetical ballistic data are assumed, the target is started on its course, observations taken on forward mast, course plotted, percentage ballistic corrections applied, and corrected ranges and deflections telephoned to the Puff Board Range Setter. Traversing of the gun arm ceases at the last bell when the gun pointer announces "Fire". At the end of the time of flight—read from the range disk—the range setter announces "Ready—Splash"

and presses the bulb making the puff. The spotters and gun pointer observe the puff and announce the deviations, the Gray Board functions, and the Battery Commander announces the corrections in accordance with the adjustment of fire method used. The effect of the adjustment of fire corrections, provided the service is without error, is to strip the corrected ranges of their ballistic corrections. With this system the real gun probable error does not exist, but the parallax errors of observation, backlash of board and errors in predicting, and various personal errors, provide a total error approaching 100 yards at times, which is a reasonable substitute.

The real merit of the system, as I see it, is its composite nature. All operations are under two adjoining ceilings. Personal errors can readily be seen and corrected, and one or more problems can be fired without haste during a session.

CONSTRUCTION AND COST

The original puff board was dismantled this fall, moved and entirely reconstructed, and electrical communications installed in a period of about six weeks by Staff Sergeant Cyrus C. Lemmond, working alone. He also made several mechanical improvements and deserves considerable credit for his designs and labors.

The cost as paid by the University, is estimated as follows:

Lumber	\$ 5.00
Drums	2.00
Hardware	1.50
Cheese cloth	1.70
Gears	1.50
Electric Fan	10.00
TOTAL	\$21.70

If copper wire screening is used, add \$11.00. With proper salvaging much of the above cost can be eliminated.

Field Exercises for Antiaircraft Artillery

(Concluded)

FIELD EXERCISE No. 7

(To be issued at 1:00 PM, 13 August)

1. GENERAL SITUATION.—*a.* Maps: Geological Survey, New York, 1:500,000. Corps of Engineers, U. S. Army, Tactical Map, 1:62,500; Riverhead, Moriches, Setauket, and Fire Island quadrangles.

b. A coalition of European Powers (Blue) and the United States (Red) have been at war since 1 April, 1926. The Red fleet, being inferior to the Blue, has withdrawn to bases in Chesapeake Bay. By the end of July, Blue had reduced the fortifications at the eastern entrance of Long Island Sound and is using Martha's Vineyard and Block Island as temporary bases for military operations. Red holds New England and Long Island and has been assembling a considerable force in the western part of Long Island. A submarine mine barrier opposite Old Field Point denies to Blue the use of Long Island Sound west of that point. A Red force occupied the north shore of Long Island east of Old Field Point.

2. SPECIAL SITUATION (BLUE).—*a.* Blue plans contemplate the occupation of Long Island as a preliminary to an invasion of Red territory.

b. Early on the morning of 12 August, the I Corps, with the mission of establishing a beach head on Long Island and driving in the Red covering forces, forced a landing with two divisions in the vicinity of Friars Head—the 1st Division on the right, the 2d Division on the left—and drove the Red force to the west. The hostile resistance stiffened during 13 August, and by 3:00 PM a Red force estimated as a division was holding the line: Manorville—Linus Pond—Forest Lake—crossroads 72—crossroads 110—Wading River, with a small force of cavalry on the high ground east of South Manor covering the right flank. The air service reports columns of Red troops marching east on Long Island, heads of columns at 2:00 PM on the general line: Smithtown Branch—Central Islip—East Islip.

c. At this time (3:00 PM) the situation of the I Corps is as follows:

(1) Boundary between the 1st and 2d Divisions: crossroads 67 (to 2d Division)—Long Pond (to 1st Division)—Terryville (to 2d Division).

(2) The 1st Division has advanced with brigades abreast. The divisional artillery is being displaced forward to support the advance. Field trains of the division are in the area: Baiting Hollow—crossroads 124—road junction 67—crossroads 85. Service trains are west and south of Centerville.

(3) The 2d Division (less 4th Brigade) is on the left of the 1st Division, with covering detachments south of the Peconic River. Field trains are between Calverton and crossroads 67. Service trains are in the area: Sweyze—crossroads 20—crossroads 30—road junction at (1026.6-2052.2).

(4) The 4th Brigade is in corps reserve in the area: Sweyze—crossroads 85—Calverton.

(5) The 3d Division, landing at several points on the northwest shore of Great Peconic Bay, is concentrating about Riverhead.

(6) The 101st Field Artillery Brigade (less ammunition train) began debarkation at Greenport during the night 12-13 August and is concentrating in the area: Friars Head—Baiting Hollow—road junction at (1026.6-2052.2)—road junction 99.

(7) Other corps troops and trains, debarking on the north shore of Long Island and at Greenport, are concentrating in the area: Centerville—crossroads 23—Aquebogue—Northville (all exclusive). Concentrations will be completed shortly after dark 13 August.

(8) The 62d Coast Artillery (assigned to the I Corps) debarked at Greenport during the night 12-13 August and is now occupying positions as follows:

1st Battalion:

Battery B near road junction 99 (between Centerville and Baiting Hollow).

Battery C near crossroads 30 (2000 yards northwest of Riverhead).

Battery D near road junction 79 (1½ miles east of Centerville).

Command post, and bivouacs of Battery A and the Combat Train are in the vicinity of crossroads 100 (west of Centerville).

2d Battalion:

Batteries G and H are attached to the 1st and 2d Divisions, respectively, and are covering the field trains of the divisions. The remainder of the battalion is covering the bivouacs of division service trains and corps troops, Battery E being in the northern part of the area and Battery F in the southern part. Command post in the vicinity of crossroads 30.

The regimental command post is with the corps command post at Centerville.

d. The remainder of the First Army, consisting of the II Corps and army troops, will begin debarkation at various points on the eastern

end of Long Island during the night 13-14 August. The corps commander has been notified that a regiment of anti-aircraft artillery will arrive at Riverhead early on the night 13-14 August to cover elements in that vicinity.

e. At 3:00 PM, at his command post at Centerville, the corps commander announced the following plan of action for 14 August:

(1) The corps will attack at 4:30 AM, tomorrow, penetrating the hostile position between Long Pond and Grass Pond and driving the enemy to the west.

Line of departure: Hill 89—eastern end of Deep Pond—crossroads 83—Swan Pond.

Boundary between divisions unchanged.

(2) The 1st Division, making its main effort on its left, will capture the hostile position opposite Long Pond, and advancing in its zone of action, will assist the 2d Division by flanking action to the south.

(3) The 2d Division will penetrate the hostile position between Long Pond and Grass Pond and drive the enemy to the west.

(4) The 101st Field Artillery Brigade, moving into position tonight, will support the corps in the attack.

The 101st Field Artillery, from positions west of road junction 115, will support the 1st Division.

The 102d Field Artillery, from positions east of Swan Pond, will support the 2d Division.

The 103d Field Artillery, from positions south of the Wading River Station—road junction 115 road, and the 104th Field Artillery, from positions near the crossroads 85—road junction 75 road, will be in general support.

(5) The 3d Division will remain in the vicinity of Riverhead in corps reserve.

(6) The 62d Coast Artillery (AA) will cover the assault elements of the corps in the attack.

(7) The corps artillery has priority on the following roads after 10:00 PM: Baiting Hollow—Wading River Station road; crossroads 85—crossroads 67—crossroads 83 road; crossroads 52—Calverton—Forest Lake road.

(8) Axes of Signal Communications:

I Corps: Centerville—crossroads 83.

1st Division: Baiting Hollow—Wading River Station—Rocky Point.

2d Division: Sweyze—Forest Lake—Ridge.

Command Posts:

I Corps: Centerville.

1st Division: Baiting Hollow.

2d Division: Sweyze.

f. The Corps G-4 informed the Commanding Officer, 62d Coast Artillery (AA), that division and corps service trains would remain in their present bivouacs. Refilling point for all classes of ammunition: Aquebogue after 6:00 PM, 14 August. Refilling point for other supplies: Northville.

g. At 3:30 PM, 13 August, the Commanding Officer, 701st Coast Artillery (AA) arrived at Centerville and after consulting with the Chief of Staff and the Commanding Officer, 62d Coast Artillery (AA), announced that his loading elements would arrive in the area about 6:00 PM, that his gun defense would extend west to the general line: Centerville-Sweyze, and that he would furnish machine-gun defense for the corps troops and trains and a portion of the 3d Division.

3. REQUIREMENT.—The Orders issued and occupation of positions by the 62d Coast Artillery (AA).

FIELD EXERCISE No. 8

	Paragraphs
SECTION I. Situation	1-2
II. Special Situation (continued)	3
III. Special Situation (continued)	4

SECTION I

(To be issued at 8:00 AM, 14 August)

NOTE: The situation in Field Exercise No. 8 is a continuation of the situation in Field Exercise No. 7.

1. MAPS: Geological Survey, New York, 1:500,000. Corps of Engineers, U. S. Army, Tactical Map, 1:62,500; Riverhead, Moriches, Setauket, and Fire Island quadrangles.

2. SPECIAL SITUATION (BLUE).—*a.* The attack of the I Corps was launched at 4:30 AM, 14 August, as ordered. By 8:00 AM, reports from the divisions and from the air service showed that the bulk of the hostile force had withdrawn during the night leaving a covering force in position. The covering force has been driven back and is resisting the Blue advance on the general line: western edges of Long Pond and Grass Pond.

b. The air service reports that entrenchments are being prepared on the general line: hill one mile east of Rocky Point—road junction 83—road junction 93—hill one mile south of Ridge. Considerable activity was observed on the general line: Miller Place—Coram Hill.

SECTION II

(To be issued at 10:00 AM, 14 August)

3. SPECIAL SITUATION (BLUE).—*a.* At 10:00 AM, the situation as reported by the divisions is as follows:

(1) The attack has continued with irregular advances and the assault units are becoming disorganized. Regimental and brigade reserves are being advanced on the roads. A portion of the artillery of the 1st Division is enroute to positions in the vicinity of the road northwest of Long Pond. A portion of the artillery of the 2d Division is en route to positions south of Long Pond. The 4th Brigade has been ordered to advance at 11:00 AM, via roads south of Swan Pond-Sandy Pond-Grass Pond, to drive in the hostile covering forces and to develop the enemy position south of Ridge. The 1st and 2d Divisions will establish ammunition distributing points near crossroads 100 and crossroads 83, respectively, by 1:00 PM.

b. Preparations are being made for the forward displacement of the 101st and 102d Field Artillery, to begin at 12:00 noon.

c. Hostile attack aviation is operating against columns marching on the roads.

SECTION III

(To be issued at 12:00 noon, 14 August)

4. SPECIAL SITUATION (BLUE), continued.—a. By 12:00 noon, the advance elements of the 1st and 2d Divisions had driven in the hostile covering force and were in contact with the Red position on the line: hill one mile east of Rocky Point—road junction 83—road junction 93—hill one mile south of Ridge. The bulk of the divisional artillery has been advanced, that of the 1st Division occupying positions in the area: Long Pond—crossroads 200 yards northwest of Long Pond—hill 2000 yards west of Long Pond; that of the 2d Division occupying positions in the vicinity of the road junction 2500 yards northeast of Ridge. The 101st and 102d Field Artillery are beginning forward displacement to the area between Wading River and road junction 129 and the area west of Grass Pond, respectively. The head of the 4th Brigade is approaching Swan Pond.

FIELD EXERCISE No. 9

SECTION I. Situation and Requirement	Paragraphs 1-3
II. Extracts from Tactical and Administrative Plans of Divisions	4

SECTION I

(To be issued at 5:00 PM, 14 August)

NOTE: The situation in Field Exercise No. 9 is a continuation of the situation in Field Exercise No. 8.

1. MAPS: Geological Survey, New York, 1:500,000. Corps of Engineers, U. S. Army, Tactical Map, 1:62,500; Riverhead, Moriches, Setauket, and Fire Island quadrangles.

2. SPECIAL SITUATION (BLUE).—*a.* The continuation of the attack after 12:00 noon failed to dislodge the Red force from its position and at 5:00 PM the situation of the I Corps was as follows:

(1) The 1st and 2d Divisions, each with Brigades abreast, were in contact with the hostile position. The artillery of both divisions has been advanced. The 101st Field Artillery is in position between Wading River and road junction 129. The 102d Field Artillery is in position east of Grass Pond. One battalion of the 103d Field Artillery has been advanced to positions east of Long Pond.

b. The air service has reported Red forces on the general line: Miller Place—Coram Hill—Bellport Station, engaged in constructing entrenchments and obstacles and clearing ground.

c. Information has been received from the First Army that the II Corps would begin its advance on the left of the I Corps during the night 14-15 August, and that a regiment of cavalry, attached to the II Corps, would reach a north and south line through Moriches by 12:00 noon, 15 August. Certain army troops and establishments will arrive at and north of Riverhead after 12:00 midnight, 14-15 August. The 702d Coast Artillery (AA), arriving at Riverhead at 7:00 PM, is attached to the I Corps.

d. At this time (5:00 PM) the corps commander at his command post at Centerville announced the following plan of action for 15 August:

(1) The corps will continue the attack at 4:30 AM, 15 August, drive in the hostile covering force, and develop the Red position on the line: Miller Place—Coram Hill—Bellport Station in its zone of action.

(2) The 1st Division, making its main effort on its left, will assist the advance of the 2d Division.

Zone of action unchanged.

(3) The 2d Division will attack in the direction: Ridge—Terryville.

Zone of action:

Right boundary: unchanged.

Left boundary: crossroads 48 (inclusive)—Middle Island (exclusive)—crossroads 81—crossroads 96 (both inclusive).

(4) The 3d Division will advance on the night of 14-15 August to the area: Manorville—railroad crossing 57—South Manor. On the morning of 15 August the 3d Division (less one brigade) will advance on the left of the 2d Division, drive in hostile covering forces, and develop the Red position on the front: Middle Island (inclusive)—Yaphank

(exclusive). It will cover the left of the corps until the arrival of the II Corps Cavalry.

(5) The corps artillery will support the attack from present positions, the 101st Field Artillery supporting the 1st Division, the 102d Field Artillery supporting the 2d Division, the 103d and 104th Field Artillery in general support. These elements which remained in position today will be prepared for forward displacement when contact is made with the Red main position.

(6) One brigade of the 3d Division will remain in the vicinity of Manorville in corps reserve.

(7) Corps and division air services will operate from airdromes south of Centerville.

(8) The 62d Coast Artillery (AA), with the 702d Coast Artillery (AA) attached, will cover the corps in the attack.

(9) Command posts:

I Corps: forward echelon at crossroads 83 after 3:00 AM.

1st Division: Wading River Station.

2d Division: Forest Lake.

3d Division: Manorville.

e. At 6:00 PM, the corps G-4 gave the Commanding Officer a memorandum of details which would appear in the Administrative Order, as follows:

(1) Supply:

(a) All supplies except ammunition:

Refilling point: Northville.

Distributing point for corps troops: crossroads 85
(1020.8-2052.0).

(b) Ammunition:

Refilling point: Aquebogue.

Distributing points for corps artillery: crossroads 100
and North Pond.

(2) Evacuation:

Hospital stations for corps troops: Riverhead.

(3) Traffic:

Division rear boundaries, effective at 1:00 AM, 15 August:
crossroads 112—road junction 86—crossroads 1000 yards east of
Swan Pond—crossroads 102 (all to divisions)

(4) Trains:

(a) Corps Train and 101st Ammunition Train remain in
present bivouacs.

(b) Other corps troops, following division service trains, move to bivouacs between Baiting Hollow and Calverton.

(5) Rear echelon, corps headquarters, remains at Centerville.

3. REQUIREMENT.—The orders and occupation of positions for the 62d Coast Artillery (AA).

SECTION II

(To be made available after 7:00 PM, 14 August, to any member of the 62d Coast Artillery (AA) on his request made to an umpire representing a division commander or member of his staff)

4. EXTRACTS FROM TACTICAL AND ADMINISTRATIVE PLANS OF DIVISIONS.

a. 1st Division:

(1) Division reserve (one battalion) will be in the vicinity of Wading River Station.

(2) Distributing point for artillery ammunition: east of Long Pond.

(3) Field trains of the division are advancing to bivouacs east of Deep Pond. Service trains, moving via the Baiting Hollow-Wading River Station road, will move to bivouacs just west of the division rear boundary, beginning at 8:00 PM.

b. 2d Division:

(1) The division reserve (one regiment, less one battalion) will be in the vicinity of crossroads 72.

(2) Distributing points for artillery ammunition: road junction 55.

(3) Field Trains of the division are moving via Calverton to bivouacs east of Grass Pond.

(4) Service Trains, beginning at 8:00 PM, will move to bivouacs just west of the division rear boundary, motorized elements moving via the crossroads 67-road junction 86 road, animal elements via Calverton.

c. 3d Division:

(1) Combat troops, followed by animal elements of trains, move to the Manorville area via the road south of the Peconic River, beginning at 7:00 PM. Motorized elements will move via the Riverhead-Great Pond-Bald Hill-crossroads 45-crossroads 102-road to bivouacs in the east part of the division area.

(2) The advance guard will establish an outpost in prolongation of the line held by the 2d Division.

FIELD EXERCISE No. 10

	Paragraphs
SECTION I. Situation and Requirement	1-3
II. Special Situation (continued)	4
III. Special Situation (continued)	5-6

SECTION I

(To be issued as of 6:00 PM, 15 August)

NOTE: The situation in Field Exercise No. 10 is a continuation of the situation in Field Exercise No. 9.

1. MAPS: Geological Survey, New York, 1:500,000. Corps of Engineers, U. S. Army, Tactical Map, 1:62,500; Riverhead, Moriches, Setauket, and Fire Island quadrangles.

2. SPECIAL SITUATION (BLUE).—*a.* By 6:00 PM, 15 August, the I Corps, with the II Corps cavalry on its left, had driven in the Red covering force and was in contact with the hostile outpost positions which is on the general line: road junction 152 (2000 yards southeast of Miller Place)—crossroads 68—Middle Island—pond in Carmans River northwest of Yaphank—Beaverdam Creek. The Red battle position is on the general line: Miller Place—road junction 104—road junction 90—eastern slope of high ground one mile east of Coram Hill—crossroads 105—Bellport Station. The outpost is partially entrenched and provided with wire entanglements. The strengthening of the battle position has continued.

b. The landing elements of the II Corps, which is advancing with two divisions abreast, will reach a north and south line through Moriches by daylight, 16 August.

c. The I Corps, during the night 15-16 August, will occupy a defensive position on the general line: crossroads 142 (1000 yards west of Rocky Point)—road junction 78—high ground west of crossroads 72, road junction 52 and Yaphank, with local security detachments in contact with the hostile outpost. Forward displacement of the 103d and 104th Field Artillery to the area: road junction 83—Ridge—Long Pond—road junction 109 was started during the afternoon and will be completed after dark.

3. REQUIREMENT.—The Commanding Officer, 62d Coast Artillery (AA), will submit to the umpire a statement of any change in the disposition of the regiment which he may desire to make as a result of the situation as known at 6:00 PM, 15 August, which was not covered in orders issued in Field Exercise No. 9, giving the location of each element moved and the time of occupation of positions.

SECTION II

(To be issued as of 5:00 AM, 16 August)

4. SPECIAL SITUATION (BLUE) *Continued.*—*a.* At 5:00 AM, 16 August, orders from the First Army for an attack on the morning of 17 August were received at the command post of the I Corps at crossroads 83. The Antiaircraft Artillery Annex is as follows:

ANNEX No. 3 TO FIELD ORDERS No. 8

FIRST ARMY

ANTIAIRCRAFT ARTILLERY

First Army,
RIVERHEAD, L. I.
16 August 1926, 4:00 AM.

Maps: Geological Survey, New York, 1:500,000. Corps of Engineers, U. S. Army, Tactical Map, 1:62,500; RIVERHEAD, MORICHES, SETAUKET and FIRE ISLAND quadrangles.

1. *a.* A hostile force estimated as four divisions is occupying a defensive position on the general line: MILLER PLACE—RJ 104—RJ 90—eastern slope of high ground one mile east of CORAM HILL—CR 105—BELLPORT STA. See G-2 Report (omitted).

b. (1) The First Army attacks on the morning of 17 August to penetrate the hostile position in the direction: YAPHANK STA—LAKE GROVE and drive the enemy to the west.

Time of attack: 4:30 AM.

Boundary between I and II Corps: BALD HILL (to II Corps)—MANORVILLE—CORAM HILL (to I Corps)—LAKE GROVE (to II Corps).

(2) The I Corps, making its main effort on its left, will capture the high ground near CORAM HILL, assist the II Corps in the capture of the high ground between CORAM HILL and NEW VILLAGE, and drive the enemy to the west in its zone of action.

(3) The II Corps, attacking with two divisions abreast, will penetrate the hostile position in the direction: YAPHANK STA—LAKE GROVE and drive the enemy out.

(4) The artillery with the First Army will support the attack by a preparation participated in by all available guns commencing at 2:30 AM, and by progressive concentrations. The army artillery (two regiments) will support the attack from positions in the area: RIDGE—RJ 83—railroad crossing 93—CR 48.

(5) The 12th Infantry will remain in the vicinity of MANORVILLE in army reserve.

(6) Army troops and establishments will be located in the area: RIVERHEAD—AQUEBOGUE—NORTHVILLE—CENTERVILLE.

2. The antiaircraft artillery with the army will cover the army in the attack.

3. *a.* Corps antiaircraft artillery will cover the combat elements in the attack. The II Corps will establish its initial gun defense in depth near its right boundary and will be prepared for early forward displacement in the direction of the main blow.
- b.* Army antiaircraft artillery:
 - (1) The 701st Coast Artillery (AA), with the 703d Coast Artillery (AA) attached, will cover the troops and establishments in the area: RIVERHEAD-AQUEBOGUE-NORTHVILLE-BAITING HOLLOW-CALVERTON. Positions will be occupied early on the morning of 16 August.
 - (2) The 702d Coast Artillery (AA) reverts to army control at 6:00 PM, 16 August. During the night 16-17 August it will occupy positions covering the army reserve at MANORVILLE and elements of divisions and corps in the vicinity. It will be prepared for forward displacement during the attack to provide a continuous defense in rear of the main blow of the army. Initial dispositions will be coordinated with those of the corps antiaircraft artillery.
4. For administrative details see Administrative Orders No. 15, First Army.
5. *a.* Axes of Signal Communication:

First Army and 701st Antiaircraft Artillery Brigade: RIVERHEAD-HOLTSVILLE.

702d Coast Artillery: MANORVILLE YAPHANK-NEW VILLAGE.

b. Command Posts:

First Army and 701st Antiaircraft Artillery Brigade: RIVERHEAD.

701st Coast Artillery: RIVERHEAD.

702d Coast Artillery: MANORVILLE.

By Command of General A:

X
Chief of Staff.

SECTION III

(To be issued at 8:00 AM, 16 August)

5. *a.* At 8:00 AM, at his command post at crossroads 83, the corps commander explained the situation and announced to his staff and the division commanders the following plan for the attack on 17 August

(1) The corps will attack tomorrow to penetrate the hostile position in the vicinity of Coram Hill, assist the advance of the II Corps, and drive the enemy to the west.

Time of attack: 4:30 AM.

Line of departure: Present line of resistance.

Zones of Action:

1st Division, no change.

2d Division: right boundary, no change;
left boundary: CALVERTON (incl)—crossroads 42—MIDDLE
ISLAND—crossroads 96 (all excl).

3d Division: right boundary: same as left boundary 2d Division;
left boundary: same as left boundary I Corps.

(2) The 1st Division, making its main effort on its left, will assist the advance of the 2d Division and drive the enemy to the west.

(3) The 2d Division, less one regiment, making its main effort on its left, will capture the hostile position opposite Middle Island and assist the advance of the 3d Division by flanking action to the south.

(4) The 3d Division, less one regiment, making its main effort on its right, will capture the hostile position north of Coram Hill, and driving hard in the direction: Coram—Selden—New Village, will assist the advance of the II Corps. The 12th Infantry will remain in the vicinity of Manorville in army reserve.

(5) The artillery with the corps will support the attack by a preparation, participated in by all available guns, commencing at 2:30 AM, and by successive concentrations. The corps artillery will occupy positions during the night 16-17 August and support the attack as follows:

(a) The 101st Field Artillery from positions in the area: Shoreham—Rocky Point—road junction 109; the 102d Field Artillery from positions in the area: road junction 103—road junction 83—road junction 85; and the 104th Field Artillery from positions in the area: Ridge—road junction 83—road junction 107, will be in general support.

(b) The 103d Field Artillery, from positions in the vicinity of crossroads 98, will support the 3d Division. Prior to the artillery preparation, firing will be from present positions only.

(6) The 8th Infantry will assemble southwest of Grass Pond in corps reserve.

(7) Movement of troops in preparation for the attack will be made during the night 16-17 August. Every effort will be made to preserve secrecy. All elements will be in position for the attack by 2:00 AM, 17 August.

(8) Corps and division air services will operate from airdromes south of Centerville. The 101st Balloon Group is assigned as follows: 101st Balloon Company will observe for the 1st Division and the 101st Field Artillery; the 102d Balloon Company will observe for the 2d Division and the 102d Field Artillery; the 103d Balloon Company

will observe for the 3d Division and the 103d Field Artillery; and the 104th Balloon Company will observe for the corps and the 104th Field Artillery.

(9) Command Posts:

I Corps: crossroads 83.
1st Division: Wading River Station.
2d Division: Forest Lake.
3d Division: crossroads 48.

(10) Written orders for the attack will be issued by 11:00 AM.

b. The Corps G-4 informed the Commanding Officer, 62d Coast Artillery (AA), that rear elements of the corps and the divisions would remain generally in their present locations and that distributing points for corps artillery ammunition would be established well forward.

6. REQUIREMENTS.—*a.* A memorandum of the antiaircraft artillery subparagraph of the corps field order as recommended by the Commanding Officer, 62d Coast Artillery (AA).

b. The orders issued by all elements of the 62d Coast Artillery (AA) and the occupation of positions.

FIELD EXERCISE No. 11

	Paragraphs
SECTION I. Situation	1-2
II. Special Situation (continued)	3-5
III. Extracts from Tactical and Administrative Plans of Divisions	6

SECTION I

(To be issued at 4:00 PM, 14 August)

1. GENERAL SITUATION.—*a.* MAPS: Geological Survey, New York, 1:500,000. Corps of Engineers, U. S. Army, Tactical Map, 1:62,500; Riverhead, Moriches, Setauket, and Fire Island quadrangles.

b. A coalition of European powers (Blue) and the United States (Red) have been at war since 1 April 1926. The Blue fleet gained control of the sea and a Blue expeditionary force reduced the fortifications at the eastern entrance of Long Island Sound and is using Martha's Vineyard and Block Island as temporary bases for operations having as the immediate objective the occupation of Long Island.

c. On 12 August, the I Corps (Blue) forced a landing on the north shore of Long Island in the vicinity of Friars Head and drove the defending Red force to the west.

2. SPECIAL SITUATION (BLUE).—*a.* The 62d Coast Artillery (AA), under orders to proceed to Riverhead where it passes to the control of

the I Corps, began debarkation at Greenport at 12:00 noon, 14 August. The head of the regiment will reach Riverhead at 7:00 PM.

b. The Commanding Officer, 62d Coast Artillery (AA), accompanied by the Executive, Plans and Training Officer, Intelligence Officer, a clerk, and a motorcycle messenger, preceded the regiment and arrived at the command post of the I Corps at Centerville at 4:00 PM. By 5:00 PM, these officers had been informed of the situation of the I Corps, which was as follows:

(1) The advance of the I Corps was opposed by a Red force, estimated as one division, which fought a delaying action in successive positions. At 5:00 PM, 14 August, the Red force was holding the line: hill one mile east of Rocky Point—road junction 83—road junction 93—hill one mile south of Ridge. The air service has reported Red forces on the general line: Miller Place—Coram Hill—Bellport Station engaged in constructing entrenchments and obstacles and clearing ground.

(2) The 1st and 2d Divisions, each with brigades abreast, were in contact with the hostile position. The artillery of both divisions had been advanced. Boundary between divisions: crossroads 67 (to 3d Division)—Long Pond (to 1st Division)—Terryville (to 2d Division). The 101st Field Artillery is in position between Wading River and road junction 129. The 102d Field Artillery is in position east of Grass Pond. One battalion of the 103d Field Artillery has been advanced to positions east of Long Pond. The remainder of the regiment is in position south of the Wading River Station—road junction 115 road. The 104th Field Artillery is in position near the crossroads 85—road junction 75 road. The 3d Division is in bivouac in the vicinity of Riverhead.

(3) Field Trains of the 1st Division are in the area: Baiting Hollow—crossroads 124—road junction 67—crossroads 85. Service Trains are west and south of Centerville.

(4) Field Trains of the 2d Division are between Calverton and crossroads 67. Service Trains are in the area: Sweyze—crossroads 20—crossroads 30—road junction at (1026.6-2052.2).

(5) Corps troops and trains are in the area: Centerville—crossroads 23—Aquebogue—Northville.

(6) The 105th Coast Artillery (AA) is covering the combat elements and part of the rear elements of the I Corps. (Locations of elements are the same as those of the 62d Coast Artillery (AA) at the completion of Field Exercise No. 8.) The 701st Coast Artillery (AA) is in position covering elements in Riverhead and north and northeast thereof.

SECTION II

(To be issued at 5:00 PM, 14 August)

3. SPECIAL SITUATION (BLUE), continued.—*a.* At 5:00 PM, the Commanding Officer, 62d Coast Artillery (AA), was present at a conference at the corps command post at Centerville when the corps commander announced the following plan of action for 15 August:

(1) The corps will continue the attack at 4:30 AM, 15 August, drive in the hostile covering force, and develop the Red position on the line: Miller Place—Coram Hill—Bellport Station in its zone of action.

(2) The 1st Division, making its main effort on its left, will assist the advance of the 2d Division.

Zone of action unchanged.

(3) The 2d Division will attack in the direction: Ridge—Terryville.

Zone of action:

Right boundary: unchanged.

Left boundary: crossroads 40 (inclusive)—Middle Island (exclusive)—crossroads 91—crossroads 96 (both inclusive)

(4) The 3d Division will advance on the night of 14-15 August to the area: Manorville—railroad crossing 57—South Manor. On the morning of 15 August the 3d Division (less one brigade) will advance on the left of the 2d Division, drive in hostile covering forces and develop the Red position on the front: Middle Island (inclusive)—Yaphank (exclusive). It will cover the left of the corps until the arrival of the II Corps cavalry.

(5) The corps artillery will support the attack from present positions, the 101st Field Artillery supporting the 1st Division, the 102d Field Artillery supporting the 2d Division, the 103d and 104th Field Artillery in general support. Those elements which remained in position today will be prepared for forward displacement when contact is made with the Red main position.

(6) One brigade of the 3d Division will remain in the vicinity of Manorville in corps reserve.

(7) Corps and division air services will operate from airdromes south of Centerville.

(8) The 105th Coast Artillery (AA), with the 62d Coast Artillery (AA) attached, will cover the corps in the attack.

(9) Command posts:

1 Corps: forward echelon at crossroads 83 after 3:00 AM.

1st Division: Wading River Station.

2d Division: Forest Lake.

3d Division: Manorville.

b. At 6:00 PM, the commanding officer, 105th Coast Artillery (AA), informed the commanding officer, 62d Coast Artillery (AA) of the contents of a memorandum of details which would appear in the Administrative Order, furnished by G-4, as follows:

- (1) Supply:
 - (a) All supplies except ammunition:
Refilling point: Northville.
Distribution point for corps troops: crossroads 85 (1020.8-2052.0).
 - (b) Ammunition:
Refilling point: Aquebogue.
Distributing points for corps artillery: crossroads 100 and North Pond.
 - (2) Evacuation:
Hospital stations for corps troops: Riverhead.
 - (3) Traffic:
Division rear boundaries, effective at 1:00 AM, 15 August: crossroads 112—road junction 86—crossroads 1000 yards east of Swan Pond—crossroads 102 (all to divisions).
 - (4) Trains:
 - (a) Corps Train and 101st Ammunition Train remain in present bivouacs.
 - (b) Other corps troops, following division service trains, move to bivouac between Baiting Hollow and Calverton.
 - (5) Rear echelon, corps headquarters, remains at Centerville.
4. The remainder of the situation will consist of the orders issued in Field Exercise No. 9 by the Commanding Officer, 62d Coast Artillery (AA). These orders to be corrected as to designation of regiments and dates.

5. REQUIREMENT.—The orders and occupation of positions by the 62d Coast Artillery (AA).

SECTION III

(To be made available after 7:00 PM, 14 August, to any member of the 62d Coast Artillery (AA) on his request made to an umpire representing a division commander or member of his staff)

6. EXTRACTS FROM TACTICAL AND ADMINISTRATIVE PLANS OF DIVISIONS.

a. 1st Division:

- (1) Division reserve (one battalion) will be in the vicinity of Wading River Station.
- (2) Distributing point for artillery ammunition: east of Long Pond.
- (3) Field trains of the division are advancing to bivouacs east of Deep Pond. Service trains, moving via the Baiting Hollow—Wading

River Station road, will move to bivouacs just west of the division rear boundary, beginning at 8:00 PM.

b. 3d Division:

(1) The division reserve (one regiment, less one battalion) will be in the vicinity of crossroads 72.

(2) Distributing points for artillery ammunition: road junction 55.

(3) Field Trains of the division are moving via Calverton to bivouac east of Grass Pond.

(4) Service Trains, beginning at 8:00 PM, will move to bivouacs just west of the division rear boundary, motorized elements moving via the crossroads 67—road junction 86 road, animal elements via Calverton.

c. 3d Division:

(1) Combat troops, followed by animal elements of trains, move to the Manorville area via the road south of the Peconic River, beginning at 7:00 PM. Motorized elements will move via the Riverhead—Great Pond—Bald Hill—crossroads 45—crossroads 102 road to bivouacs in the east part of the division area.

(2) The advance guard will establish an outpost in prolongation of the line held by the 2d Division.

FIELD EXERCISE No. 12

	<i>Paragraphs</i>
SECTION I. Situation and Requirement	1-3
II. Information Available after 8:00 AM, 16 August	4
III. Plans and Orders of the 105th Coast Artillery (AA) . . .	5
IV. Location of Elements of the II Corps During Daylight of 16 August	6-7
V. Extracts from Field Orders of the II Corps, 4th Division and 5th Division	8-10

SECTION I

(To be issued as of 5:00 AM, 16 August)

NOTE: The situation in Field Exercise No. 12 is a continuation of the situation in Field Exercise No. 11.

1. MAPS: Geological Survey, New York, 1:500,000. Corps of Engineers, U. S. Army, Tactical Map, 1:62,500; Riverhead, Moriches, Setauket, and Fire Island quadrangles.

2. SPECIAL SITUATION (BLUE).—*a.* At 5:00 AM, 16 August, the following order was received at the command post of the 62d Coast Artillery (AA):

ANNEX No. 3 TO FIELD ORDERS No. 8

FIRST ARMY

ANTIAIRCRAFT ARTILLERY

First Army,
RIVERHEAD, L. I.
16 August 1926, 4:00 AM.

Maps: Geological Survey, New York, 1:500,000. Corps of Engineers, U. S. Army, Tactical Map, 1:62,500; RIVERHEAD, MORICHES, SETAUKET and FIRE ISLAND quadrangles.

1. *a.* A hostile force estimated as four divisions is occupying a defensive position on the general line: MILLER PLACE-RJ 104-RJ 90-eastern slope of high ground one mile east of CORAM HILL-CR 105-BELLPORT STA. See G-2 Report (omitted).
- b.* (1) The First Army attacks on the morning of 17 August to penetrate the hostile position in the direction: YAPHANK STA-LAKE GROVE and drive the enemy to the west.

Time of attack: 4:30 AM.
Boundary between I and II Corps: BALD HILL (to II Corps)-MANORVILLE-CORAM HILL (to I Corps)-LAKE GROVE (to II Corps).
- (2) The I Corps, making its main effort on its left, will capture the high ground near CORAM HILL, assist the II Corps in the capture of the high ground between CORAM HILL and NEW VILLAGE, and drive the enemy to the west in its zone of action.
- (3) The II Corps, attacking with two divisions abreast, will penetrate the hostile position in the direction: YAPHANK STA-LAKE GROVE and drive the enemy out.
- (4) The artillery with the First Army will support the attack by a preparation participated in by all available guns commencing at 2:30 AM, and by progressive concentrations. The army artillery (two regiments) will support the attack from positions in the area: RIDGE-RJ 83-railroad crossing 93-CR 48.
- (5) The 12th Infantry will remain in the vicinity of MANORVILLE in army reserve.
- (6) Army troops and establishments will be located in the area: RIVERHEAD-AQUEBOGUE NORTHVILLE-CENTERVILLE.
2. The antiaircraft artillery with the army will cover the army in the attack.
3. *a.* Corps antiaircraft artillery will cover the combat elements in the attack. The II Corps will establish its initial gun defense in depth near its right boundary and will be prepared for early forward displacement in the direction of the main blow.
- b.* Army antiaircraft artillery:
 - (1) The 701st Coast Artillery (AA), with the 703d Coast Artillery (AA) attached, will cover the troops and establishments in the

area: RIVERHEAD-AQUEBOGUE-NORTHVILLE-BAITING HOLLOW-CALVERTON. Positions will be occupied early on the morning of 16 August.

- (2) The 62d Coast Artillery (AA) reverts to army control at 6:00 PM, 16 August. During the night 16-17 August it will occupy positions covering the army reserve at MANORVILLE and elements of divisions and corps in the vicinity. It will be prepared for forward displacement during the attack to provide a continuous defense in rear of the main blow of the army. Initial dispositions will be coordinated with those of the corps antiaircraft artillery.

4. For administrative details see Administrative Orders No 15, First Army.

5. *a.* Axes of Signal Communication:

First Army and 701st Antiaircraft Artillery Brigade: RIVERHEAD-HOLTSVILLE.

62d Coast Artillery (AA): MANORVILLE-YAPHANK-NEW VILLAGE.

b. Command Posts:

First Army and 701st Antiaircraft Artillery Brigade: RIVERHEAD.

701st Coast Artillery: RIVERHEAD.

62d Coast Artillery: MANORVILLE.

By Command of General A:

X,
Chief of Staff.

3. REQUIREMENT.—The occupation of positions for the attack by the 62d Coast Artillery (AA).

SECTION II

(Information available after 8:00 AM, 16 August)

4. The following information will be made available to any member of the 62d Coast Artillery (AA) on request made to an umpire representing the Commanding Officer, I Corps, or a member of his staff, or the Commanding Officer, 105th Coast Artillery (AA), or a member of the staff of that regiment.

a. At 8:00 AM, at his command post at crossroads 83, the corps commander, I Corps, explained the situation and announced to his staff and the division commander the following plan for the attack on 17 August:

(1) The corps will attack tomorrow to penetrate the hostile position in the vicinity of Coram Hill, assist the advance of the II Corps, and drive the enemy to the west.

Time of attack: 4:30 AM.

Line of departure: Present line of resistance.

Zones of action of divisions unchanged.

(2) The 1st Division, making its main effort on its left, will assist the advance of the 2d Division and drive the enemy to the west.

(3) The 2d Division, less one regiment, making its main effort on its left, will capture the hostile position opposite Middle Island and assist the advance of the 3d Division by flanking action to the south.

(4) The 3d Division, less one regiment, making its main effort on its right, will capture the hostile position north of Coram Hill, and, driving hard in the direction: Coram-Selden-New Village, will assist the advance of the II Corps. The 12th Infantry will remain in the vicinity of Manorville in army reserve.

(5) The artillery with the corps will support the attack by a preparation, participated in by all available guns, commencing at 2:30 AM, and by successive concentrations. The corps artillery will occupy positions during the night 16-17 August and support the attack as follows:

(a) The 101st Field Artillery, from positions in the area: Shoreham-Rocky Point-road junction 109; the 102d Field Artillery, from positions in the area: road junction 103-road junction 83-road junction 85; and the 104th Field Artillery, from positions in the area: Ridge-road junction 83-road junction 107, will be in general support.

(b) The 103d Field Artillery, from positions in the vicinity of crossroads 98, will support the 3d Division.

Prior to the artillery preparation, firing will be from present positions only.

(6) The 8th Infantry will assemble southwest of Grass Pond in Corps reserve.

(7) Movement of troops in preparation for the attack will be made during the night 16-17 August. Every effort will be made to preserve secrecy. All elements will be in position for the attack by 2:00 AM, 17 August.

(8) Corps and division air services will operate from airdromes south of Centerville. The 101st Balloon Group is assigned as follows: 101st Balloon Company will observe for the 1st Division and the 101st Field Artillery; the 102d Balloon Company will observe for the 2d Division and the 102d Field Artillery; the 103d Balloon Company will observe for the 3d Division and the 103d Field Artillery; and the 104th Balloon Company will observe for the corps and the 104th Field Artillery.

(9) Command Posts:

I Corps: crossroads 83.
1st Division: Wading River Station.
2d Division: Forest Lake.
3d Division: crossroads 48.

(10) Written orders for the attack will be issued by 11:00 AM.

b. The Corps G-4 informed the Commanding Officer, 105th Coast Artillery (AA), that rear elements of the corps and the divisions would remain generally in their present locations and that distributing points for corps artillery ammunition would be established well forward.

c. The II Corps advanced during the night 15-16 August, with the 4th Division on the right and the 5th Division on the left, and is now in concealed bivouacs, with leading elements of divisions on a north and south line through Moriches. The command post of the II Corps is at East Moriches. The command posts of the 4th and 5th Divisions are at South Manor and crossroads 63 (northwest of Center Moriches), respectively.

Telephone service with the II Corps, through the Army command post at Riverhead, is available.

NOTES: Information of the present location of elements of the II Corps may be obtained by reconnaissance of the area or by personal inquiry made at any of the following places:

Command post, II Corps.
Command post, 4th Division.
Command post, 5th Division.

SECTION III

(To be made available at 10:30 AM, 16 August)

5. Plans and Orders of the 105th Coast Artillery.

a. The plans announced, and the orders issued by the Commanding Officer, 62d Coast Artillery (AA), in the solution of Field Exercise No. 10 will be considered in this exercise as the plans and orders of the 105th Coast Artillery (AA).

SECTION IV

(To be made available to any member of the 62d Coast Artillery (AA) on personal reconnaissance of the area or on inquiry made at any of the following places: Command post, II Corps; Command post, 4th Division; Command post, 5th Division)

6. Location of Elements of the II Corps during daylight of 16 August.

a. Boundary between 4th and 5th Divisions: road junction 72—crossroads 45 (both to 5th Division)—railroad crossing 76 (to 4th Division)—crossroads 98—Yaphank Station (to 5th Division).

b. The combat elements of the 4th Division are in concealed bivouacs west of the line: road junction 50—crossroads 68—railroad crossing 76. Service trains are east of the above line.

c. The combat elements of the 5th Division are in concealed bivouacs in the area: Center Moriches—railroad crossing 76—crossroads 60—Moriches. Service trains are in the area: crossroads 46—crossroads 45—railroad crossing 76—railroad crossing 74.

d. The 201st Field Artillery Brigade (less Ammunition Train) is in the area: Eastport—East Moriches.

e. The corps train and 201st Ammunition Train are in the vicinity of East Quogue. Other troops are in the vicinity of East Moriches and Speonk.

f. Corps and division air services are operating from airdromes northeast of Riverhead.

g. The 205th Coast Artillery (AA) is covering the corps as follows:

1st Battalion:

Battery B, south of road junction 56 (south of South Manor).

Battery C, northwest of Center Moriches.

Battery D, north of East Moriches.

2d Battalion:

Batteries E and F are attached to the 4th and 5th Divisions, respectively, and are covering service trains.

Battery G is covering corps trains in the vicinity of East Quogue.

The 2d Battalion, less Batteries E, F, and G, is in the vicinity of East Moriches.

7. Orders of the II Corps for the attack will be issued at 11:00 AM.

SECTION V

(To be made available to any member of the 62d Coast Artillery as follows: At the command post, II Corps, at 11:00 AM; at the command posts, I Corps, 4th Division, or 5th Division, at 11:30 AM.)

EXTRACTS FROM FIELD ORDERS OF THE II CORPS, 4TH DIVISION AND 5TH DIVISION

8. Extracts for Field Orders of II Corps.

a. Line of departure: high ground east of YAPHANK—CARMANS RIVER.

b. Boundary between divisions: RJ 72—CR 45 (both to 5th Division)—railroad crossing 76 (to 4th Division)—CR 98—YAPHANK STA.—MEDFORD STA. (to 5th Division)—LAKE RONKONKOMA (to 4th Division).

c. The 201st Field Artillery Brigade supports the attack from positions in the area: RJ 83—railroad crossing 93—RJ 2000 yards south of CR 98—RJ 66. See March Table attached (omitted).

d. The 17th Infantry, less one battalion, will remain in the vicinity of SR 52 in corps reserve.

e. The 205th Coast Artillery (AA) will cover the combat elements of the corps in the attack.

- (1) The 1st Battalion will occupy initial positions as follows:

Battery B, moving under control of the 4th Division, will occupy a position about one mile north of railroad crossing 93 by 11:00 PM.

Battery C, moving under control of the 5th Division, will occupy a position in the vicinity of the RJ one mile south of CR 98 by 1:00 AM.

Battery D will occupy a position in the vicinity of CR 48 by 2:00 AM (movement directed in March Table, omitted).

- (2) The 2d Battalion, less Battery G, will cover rear echelons of combat units, distributing points and command posts in the zones of action of divisions, the corps command post, and elements in the vicinity. Battery G will cover train bivouacs in the vicinity of East Quogue.

f. Troop movements will be made under cover of darkness. All elements will be in position for the attack by 2:00 AM.

9. Extracts from Administrative Orders, II Corps.

a. Supply:

(1) Refilling point for Class I Supplies: QUOGUE STA.

(2) Refilling point for ammunition: AQUEBOGUE.

(3) Distributing points for corps artillery ammunition: RJ 56 (south of SOUTH MANOR) and CR 46.

b. Evacuation:

(1) Hospital Station for corps troops: WEST HAMPTON.

(2) Collecting stations for animals: RJ 72.

c. Division rear boundaries: unimproved roads east of CR 102-RJ 56-CR 46-RJ 38 (all to divisions).

d. Corps park: vicinity of EAST QUOGUE.

10 Resumé of orders of 4th and 5th Divisions.

a. Movement of troops to attack positions begins at 8:00 PM, movement controlled by march tables. Roads to the front will be in continuous use until 2:00 AM.

b. A coalition of European powers (Blue) and the United States South Manor-crossroads 63. Service trains remain in present bivouacs.

FIELD EXERCISE No. 13

(To be issued at crossroads 98 at 8:00 AM, 21 August)

1. GENERAL SITUATION.—*a.* Maps: Geological Survey, New York, 1:500,000. Corps of Engineers, U. S. Army, Tactical Map, 1:62,500; Riverhead, Moriches, Setauket, and Fire Island quadrangles.

b. A coalition of European powers (Blue) and the United States (Red) have been at war since April, 1926. Blue gained control of the sea and early in July reduced the defenses at the eastern entrance of Long Island Sound. Using Block Island and Martha's Vineyard as temporary bases the Blue First Army forced a landing on the north shore of Long Island in the vicinity of Friars Head and against increasing resistance drove the defending force to the west.

2. SPECIAL SITUATION (BLUE).—*a.* By 16 August the advance elements of the First Army had driven in Red covering forces and were in contact with a Red position on the general line: Miller Place—Coram Hill—Bellport Station. On 17 August the First Army attacked and drove the Red force to the west.

b. By the evening of 20 August the assault elements had driven the enemy back to the general line: Nissequogue River—Smithtown—Brentwood—Bayshore but were unable to make further progress. Reds prevented the operation of Blue naval vessels in Long Island Sound by means of submarine mines and naval coast defense forces.

c. Supplies for the First Army, landed on the eastern part of Long Island, had been accumulated in depots in the vicinity of Riverhead. During the progress of the attack, expenditures and the increasing length of haul resulted in a reduction of the stocks available for the combat elements, particularly artillery ammunition.

d. During the night 20-21 August the First Army established a refilling point for artillery ammunition north and south of Middle Island between road junction 62 and the road junction 2200 yards south of Middle Island for the immediate replenishment of stocks with the artillery and as a reserve for a contemplated resumption of the attack on 23 August.

e. The 105th Coast Artillery (AA) and the 205th Coast Artillery (AA) are in positions generally west of the line: Stoney Brook Station—Lake Grove—Ronkonkoma—Bohemia, covering advance elements of the I and II Corps, respectively. The 701st Coast Artillery (AA), attached to the II Corps during the progress of the attack, is in position covering elements in the area: Holbrook—Holtsville—New Village. The 702d Coast Artillery (AA), with the 703d and 62d Coast Artillery (AA) attached, is covering establishments in the vicinity of Riverhead.

f. At 6:00 AM, 21 August, the commanding officer, 62d Coast Artillery (AA), received the following message from brigade headquarters:

701st Antiaircraft Artillery Brigade,
RIVERHEAD, L. I.,
21 August 1926, 5:30 AM.

To the Commanding Officer, 62d Coast Artillery (AA):

1. The First Army established a refilling point for artillery ammunition north and south of Middle Island during the night and will accumulate a reserve for use in an early resumption of the attack.

2. You will withdraw your regiment from positions at once, proceed via the SWEYZE—CALVERTON—MANORVILLE—CR 98 road, and cover the refilling point.

3. Attached is a partial copy of the Circulation Map, First Army, now in effect. Traffic on the route indicated will be heavy throughout the day and night.

4. Forward Echelon, Headquarters First Army and 701st Antiaircraft Artillery Brigade opens at MEDFORD STATION at 12:00 noon today.

By Command of Brigadier General A:

X,

Chief of Staff.

g. At 9:00 AM, 21 August, the Commanding Officer, 62d Coast Artillery (AA), accompanied by his party and the battalion commanders with their parties, arrived at crossroads 98 (Camp Upton). The head of the regiment will arrive at the same point at 10:00 AM.

3. REQUIREMENT.—The occupation of positions by the 62d Coast Artillery (AA).

FIELD EXERCISE No. 14

1. GENERAL SITUATION.—*a.* Maps: Geological Survey, New York, 1:500,000. Corps of Engineers, U. S. Army, Tactical Map, 1:62,500; Riverhead, Moriches, Setauket, and Fire Island quadrangles.

b. A coalition of European powers (Blue) and the United States (Red) have been at war since April, 1926. Blue gained control of the sea and early in July reduced the defenses at the eastern entrance of Long Island Sound. Using Block Island and Martha's Vineyard as temporary bases, the Blue First Army forced a landing on the north shore of Long Island in the vicinity of Friars Head and drove the defending force to the west.

c. By the evening of 20 August the Blue force was stopped on the general line: Nissequogue River—Smithtown—Brentwood—Bayshore.

2. SPECIAL SITUATION (BLUE).—*a.* During the night 20-21 August the First Army began preparations for the continuation of the attack. Supplies were advanced from depots located in the vicinity of Riverhead to refilling points well forward. A refilling point for artillery ammunition was established at Middle Island.

The Army Air Service has been preparing airdromes east of Camp Upton cantonment and between the crossroads 48—crossroads 98 road and the crossroads 48—Ridge road.

c. The 701st Coast Artillery (AA), attached to the II Corps, is covering elements in the area: Holbrook—Holtsville—New Village. The 702d Coast Artillery (AA) went into position on 21 August to cover the refilling point at Middle Island. (The elements of this regiment are in the positions occupied by the 62d Coast Artillery (AA) in Field Exercise No. 13.)

d. The 703d Coast Artillery (AA), with the 62d Coast Artillery (AA) attached, has been covering establishments in the vicinity of Riverhead.

e. On the morning of 22 August the First Army issued orders for an attack on the morning of 23 August. The Army Air Service was assigned offensive missions, beginning at daylight 23 August, bombardment aviation operating from airdromes north of Riverhead, the Attack Wing operating from the new airdromes northwest of crossroads 48. The Attack Wing was directed to concentrate at the new airdromes during the afternoon of 22 August.

f. The Administrative Order announced the corps rear boundaries on the line: Port Jefferson—Coram—Medford Station—Patchogue (all to corps). Refilling point for artillery ammunition: Middle Island. Refilling points for other supplies were established within the corps areas.

g. The Antiaircraft Artillery Annex contained the attachment of the 701st Coast Artillery (AA) to the II Corps, continued the 702d Coast Artillery (AA) on its mission of covering the refilling point at Middle Island, and directed the 703d Coast Artillery (AA) to cover establishments in the vicinity of Riverhead.

h. The 62d Coast Artillery (AA) was ordered to cover the airdromes northwest of crossroads 48. The march table accompanying the order directed its movement via Ridge to crossroads 98, the head of the column to arrive at the point at 3:00 PM, 22 August.

i. The command post, First Army and 701st Antiaircraft Artillery Brigade, was established at Medford Station on 21 August.

j. The Commanding Officer, 62d Coast Artillery (AA), accompanied by his party and the battalion commanders with their parties, arrived at crossroads 98 at 1:00 PM.

3. REQUIREMENT.—The occupation of positions by the 62d Coast Artillery (AA).

APHORISME X

It is unwarrantable to runne an extreme hazard, save onely when extreme necessity commands: therefore a wise Generall ought never to venture his fortune upon one daies tryall, or doubtfull chance of Battell, when he foresees by militaire inductions that he may obtaine his purpose without blowes.—Ward's Animadversions of War (London, 1639).

PROFESSIONAL NOTES

The Eleventh Coast Artillery

The Coat of Arms of the 11th Coast Artillery (Harbor Defense) was approved by the War Department in 1924. Its blazonry is:

Shield: Gules (red) a bend cottised or (gold) between in sinister Chief a triangle voided, point up, argent (silver), and in dexter base a fleur-de-lys of the second (gold).

Crest: On a wreath of the colors (gold and red) an osprey's head erased proper (in natural colors).

Motto: Audax et Vigilans (Daring and Vigilant).

The shield is that of the old 56th Artillery, Coast Artillery Corps, of which two batteries of the 11th Coast Artillery were a part. The silver triangle was the insignia for the 56th Artillery in France. The fleur-de-lys was taken from the coat of arms of the old Province of Ile de France where the regiment first went into action. The bend was taken from the coat of arms of the Coast Defenses of Long Island Sound, where the 56th Artillery was organized. The crest, the osprey's head, also was taken from the coat of arms of the Coast Defenses of Long Island Sound, where the 11th Coast Artillery was organized in 1924.

The history of the units of the 11th Coast Artillery are as follows:

Headquarters Battery, 11th Coast Artillery, was organized in 1919 as the 5th Company, Coast Defenses of Long Island Sound; designated the 4th Company, Long Island Sound, in 1921; and became Headquarters Battery, 11th Coast Artillery, in 1924.

Battery A, 11th Coast Artillery, was organized in 1907 at Fort Totten, N. Y., as the 135th Company, Coast Artillery Corps; designated the 3rd Company, Fort Totten, N. Y., in 1916, and 3rd Company, Coast Defenses of Eastern New York, in 1917; became the 1st Company, Coast Defenses of Eastern New York, in 1921, and was disbanded in September of the same year; was reconstituted and consolidated with Battery A, 11th Coast Artillery, which designation was adopted in 1924.

Battery B, 11th Coast Artillery, was organized in 1907 at Fort McHenry, Md., as the 141st Company, Coast Artillery Corps; designated the 2nd Company, Fort Strong, Mass., in 1916, and 10th Company, Coast Defenses of Boston, in 1917; changed to 5th Company, Coast Defenses of Boston, in 1920; was transferred to the Coast Defenses of Long Island Sound and called the 9th Company, Coast Defenses of Long Island Sound, and 141st Company, Coast Artillery Corps, in 1922; became Battery B, 11th Coast Artillery, in 1924.

Battery C, 11th Coast Artillery, was organized in 1907 at Fort Baker, Calif., as the 148th Company, Coast Artillery Corps; designated as the 1st Company, Fort Baker, Calif., in 1917, and 14th Company, Coast Defenses of San Francisco, in 1917; later in the same year it became the 25th Antiaircraft Battery of the 1st Antiaircraft Battalion; was sent to France and participated in the St. Mihiel and Meuse-Argonne offensives; returned to the United States in 1919 and was sent to San Francisco where it again assumed the designation of 14th Company, Coast Defenses of San Francisco; became 148th Company, Coast Artillery Corps, in 1922; and Battery C, 11th Coast Artillery in 1924.

Battery D, 11th Coast Artillery, was organized in 1907 at Fort Wadsworth, N. Y., as the 157th Company, Coast Artillery Corps; designated the 3rd Company, Fort Terry, N. Y., in 1916, and the 15th Company, Coast Defenses of Long Island Sound, in 1917; became the 9th Company, Coast Defenses of Long Island Sound, in 1918; merged with the 6th, 7th, and 12th Companies, Coast Defenses of Long Island Sound, in 1921; was reconstituted in 1921, and became the 157th Company, Coast Artillery Corps, in 1922; designated Battery D, 11th Coast Artillery, in 1924.

Battery E, 11th Coast Artillery, was organized in 1907 at Fort Miley, Calif., as the 161st Company, Coast Artillery Corps; designated the 2nd Company, Fort Barry, Calif., in 1916, and 16th Company, Coast Defenses of San Francisco, in 1917; became Battery B, 18th Artillery, Coast Artillery Corps, in 1918, and at the close of the World War again assumed the designation of 16th Company, Coast Defenses of San Francisco; became 161st Company, Coast Artillery Corps, in 1922, and Battery E, 11th Coast Artillery, in 1924.

Battery F, 11th Coast Artillery, was organized in 1922 as the 10th Company, Coast Defenses of Long Island Sound; designated 175th Company, Coast Artillery Corps, in 1922; and became Battery F, 11th Coast Artillery, in 1924.

Battery G, 11th Coast Artillery, was organized in 1901 at Fort Terry, N. Y., as the 100th Company, Coast Artillery; designated as the 4th Company, Fort Terry, N. Y., in 1916, and 14th Company, Coast Defenses of Long Island Sound, in 1917; became Headquarters Company, 56th Artillery, Coast Artillery Corps, later in the same year, participated in the Oise-Aisne and Meuse-Argonne offensives in France in 1918, and was disbanded in 1921; reconstituted and consolidated with the 3rd Company, Coast Defenses of Long Island Sound, in 1922. This latter Company was formed from the 8th Company, Connecticut National Guard, Coast Artillery, in 1917 as the 28th Company, Coast Defenses of Long Island Sound, and became the 3rd Company, Coast Defenses of Long Island Sound, in 1918, and the 100th Company, Coast Artillery Corps, in 1922. Designated Battery G, 11th Coast Artillery, in 1924.

Battery H, 11th Coast Artillery, was organized in 1907 at Fort H. G. Wright, N. Y., as the 131st Company, Coast Artillery Corps; designated the 4th Company, Fort H. G. Wright, N. Y., in 1916, and 2nd Company, Coast Defenses of Long Island Sound, in 1917; absorbed by the 1st Company, Coast Defenses of Long Island Sound, in 1921; reconstituted in 1921; designated the 131st Company, Coast Artillery Corps, in 1922; and became Battery H, 11th Coast Artillery, in 1924.

Battery I, 11th Coast Artillery, was organized in 1907 at Fort Turnbull, Conn., as the 132nd Company, Coast Artillery Corps; designated the 3rd Company, Fort H. G. Wright, N. Y., in 1917, and 1st Company, Coast Defenses of Long Island Sound, in 1917; 132nd Company, Coast Artillery Corps, in 1922; and became Battery I, 11th Coast Artillery, in 1924.

Battery K, 11th Coast Artillery, was organized in 1907 at the Presidio of San Francisco as the 146th Company, Coast Artillery Corps; designated the 5th Company, Fort H. G. Wright, N. Y., in 1916, and 3rd Company, Coast Defenses of Long Island Sound, in 1917; became Battery C, 56th Artillery, Coast Artillery Corps, later in the same year; participated in the Oise-Aisne and Meuse-Argonne offensives in France in 1918; and was disbanded in 1921. Reconstituted in 1922 and consolidated with the 8th Company, Coast Defenses of Long Island (also organized in the same year), and designated the 146th Company, Coast Artillery Corps; and became Battery K, 11th Coast Artillery in 1924.

The personnel of the regiment wear a distinct regimental badge on their uniform which consists of the crest and motto of their Coat of Arms.

Extracts from Annual Reports

FROM THE ASSISTANT SECRETARY OF WAR

Settlements.—Settlements made by the World War Foreign Debt Settlement Commission with foreign government during the fiscal year in which the War Department was interested included settlements with Belgium, Czecho-Slovakia, Esthonia, France, Latvia, and Roumania. Credit sales of surplus property to such governments included in the settlements amounted to \$485,422,131.50.

Foreign Claims.—Claims of the United States against Germany for reimbursement of costs of maintenance of the Army of Occupation.

	<i>Amounts</i>
Balance due the United States, June 30, 1925	\$240,269,641.78
Credits allowed to Germany through the Reparations Commission at Paris for abandoned enemy war material, Armistice trucks, and spare parts	7,128,394.36
Balance due United States, June 30, 1926	\$233,141,247.42

Beginning with September 1, 1926, under Article 3 of the agreement concerning the distribution of the Dawes annuities, dated January 14, 1925, the United States is to be paid the sum of 55,000,000 gold marks per annum on account of costs of the Army of Occupation until settled.

Real Estate.—During the year 11,136.85 acres of land, buildings, etc., were sold for the total sum of \$1,671,501.90. The net proceeds will be deposited in the Treasury to the credit of the Military Post Construction Fund, as created in the Act of Congress approved March 12, 1926.

FROM THE CHIEF OF STAFF

Regular Army.—Approximately 49 per cent of the total authorized peace strength of the Regular Army—5525 officers and 58,370 enlisted men—was engaged in connection with the training of other elements of the Army of the United States during the summer training camp season of the past year.

Comparative Strength, Officers and Enlisted Men, Regular Army

	<i>Authorized N. D. A., 1920</i>	<i>Actually serving with Branch June 30, 1926</i>	<i>Decrease</i>	<i>Per cent of Reduction</i>
Chemical Warfare	1,301	496	805	61.9
Infantry	114,201	45,191	69,010	60.4
Engineers	12,602	5,167	7,435	59.0
Quartermaster	21,054	8,811	12,243	58.2
Field Artillery	38,901	16,483	22,418	57.6
Coast Artillery	31,201	13,912	17,289	55.4
Cavalry	20,951	9,504	11,447	54.6
Signal Corps	5,301	2,596	2,705	51.0
Finance	1,042	515	527	50.6
Medical	16,437	8,112	8,325	50.6
Ordnance	4,853	2,571	2,282	47.0
Air Corps	17,516	9,574	7,942	45.3
D. O. L. & D. E. M. L.	11,663	8,132	3,531	30.3
Others	703	643	60	8.5
Total	297,726	131,707	166,019	55.8

Desertions.—Compared with the preceding fiscal year, a slight decrease appears in the number of desertions, though the rate still remains unsatisfactory.

Resignation of Officers.—The number of resignations by commissioned officers of the Regular Army during the past year totals 187. This marked increase in resignations during the recent fiscal year, as is the case with the desertion of enlisted men, is probably due in part to the present conditions under which officers must live.

Summary.—My four years of duty in the War Department have brought me into intimate contact with all branches of the service and with all of the elements of the Army of the United States. During this period, I have become increasingly confirmed in my conviction that the original National Defense Act of 1920 constitutes a sound military policy for this country. It envisions a Regular Army of sufficient strength to constitute immediately a first line of defense, to garrison our foreign possessions and to provide efficient instruction and the facilities therefor for the other elements of the Army of the United States. The Act recognizes the value and necessity of a strong National Guard, organized and trained with a view to prompt mobilization. By the provision for the Organized Reserves, the act follows our traditional policy of reliance in time of need on augmentation of our military strength to the degree required from the citizens of the nation. The Reserve Officers' Training Corps and the Citizens' Military Training Camps are fitted into the scheme of defense as sources for trained military leaders of the emergency units.

We have been operating under the provisions of the National Defense Act for over five years. In comparison with other periods of our history, it is very evident that our present military establishment is far superior. Our technical research maintains contact with world development. We have both organization and plans calculated to prevent much of the confusion and waste which marked mobilization in the past. The composite qualifications and readiness of the available commissioned personnel constitutes a distinct military asset.

On the other hand, progress in these particulars has not been obtained without cost. The Regular Army has undergone reductions until it has now barely forty per cent of the strength originally contemplated by the National Defense Act of 1920. National Guard development has been retarded. Reserve officers do not receive sufficient practical experience. Stocks of reserve materiel and equipment have been seriously depleted. Army installations, both temporary and permanent, have deteriorated at an undue rate. As a further consequence of reductions, both the Regular Army and the National Guard are so skeletonized as to lack that "readiness for immediate mobilization" prescribed by the Defense Act.

Upon the enlisted strength of the Regular Army has fallen the brunt of a great part of the restriction of funds. There have been organized new and essential branches of the service; there have been incorporated in the older branches many new weapons and technical appliances; and the drain on the Regular Army in connection with many and varied instruction projects has been very pronounced. Nevertheless, within the continental limits of the United States there are only 16,000 more enlisted men than was the case at the close of the fiscal year 1916. These reductions have had a serious effect upon the readiness of units to take the field, as they have required abnormal demands on the individuals of the permanent military establishment. These conditions are not of moment to the Regular Army alone. They vitally affect its obligations to all other elements of the Army of the United States.

In final analysis, it is to be remembered that under the National Defense Act we started with 280,000 enlisted men in the Regular Army. On the basis of this strength, our organization and plans provided for six field armies in a major emergency. Incident to the gradual reductions and curtailments, we considered

it necessary to adhere to the principles of the National Defense Act of 1920. For this reason the framework of six field armies was retained;—though the reductions and curtailments one at a time have caused an inevitable weakening of the original structure by the removal of important struts. This means a sacrifice in readiness. Units must be organized in time of need if we are to have a proper tactical balance. Time is, as it always has been, an all-important factor in military operations, and never is it of more importance than in the early stages, where a few divisions ready to take the field may gain successes in the first month which might well be decisive. This situation actually confronts us and merits the most serious consideration.

FROM THE ADJUTANT GENERAL OF THE ARMY

Actual strength of the Army on June 30, 1926.—The actual strength of the active Army of the United States on June 30, 1926, by classes of personnel, was as follows:

Commissioned officers:

Regular Army (active list).....	11,681
Philippine Scouts (active list).....	98
Retired Regular Army, on active duty.....	135
Retired Philippine Scouts, on active duty.....	18
Reserve, on active duty.....	210
Emergency (World War non-Regular), undergoing treatment for physical reconstruction	1
Total commissioned officers.....	12,143

Warrant officers:

Regular Army (active list).....	1,325
Retired Regular Army, on active duty.....	2
Total warrant officers.....	1,327

Enlisted men:

Regular Army (active list).....	112,856
Philippine Scouts (active list).....	7,072
Retired Regular Army, on active duty.....	27
Reserve, on active duty.....	18
Total enlisted men.....	119,973
Grand total	133,443

In addition to all the foregoing, there were 673 Army nurses (498 Regular and 175 Reserve), 30 contract surgeons, and 822 United States Military Academy cadets, making altogether 134,968 individuals in the military service of the United States on that date.

Of the 133,443 commissioned officers, warrant officers, and enlisted men accounted for above, 94,561 were serving in the continental United States, 14,433 in Hawaii, 12,189 in the Philippines, 8,645 in the Canal Zone, 1,161 in Porto Rico, 1,015 in China, 363 in Alaska, 9 in Europe (attached to the Graves Registration Service), and 1,067 were either en route from one country to another or were serving as military attachés in various countries.

Sources of appointment of commissioned personnel.—The following statement shows the sources of appointment of the 11,779 Regular Army and Philippine Scouts officers in service on June 30, 1926:

<i>Status at date of appointment</i>	<i>Number in service</i>
In civil life ¹	3,496
Graduate of U. S. Military Academy	3,280
Officer, Philippine Scouts	18
Retired officer	17
Retired enlisted man	3
Enlisted man, Regular Army	1,189
Officer, National Army	275
Enlisted man, National Army	289
Officer, Reserve Corps	2,012
Enlisted man, Reserve Corps	216
Medical Reserve Corps	103
Officer, National Guard	336
Enlisted man, National Guard	281
Volunteer officer	44
Volunteer, enlisted man	17
Contract surgeon or veterinarian	146
Flying cadet	1
Warrant officer, pay clerk, Army field clerk, or field clerk Quartermaster Corps	51
In Public Health Service	3
In Revenue Cutter Service	1
In Coast and Geodetic Survey	1
Total	11,779

¹ Includes, in addition to those who had no previous military service, men who had service as volunteers during the war with Spain and former members of the Officers' Reserve Corps or National Army, who were separated from service and returned to civil life.

Losses of the Army.—The percentage of desertion among enlisted personnel for the fiscal year was 7.26 as compared with 7.39 for the previous fiscal year.

Retired officers with Civil War service.—Among the Regular Army officers on the retired list on January 30, 1926, were 75 who had served as officers or enlisted men of the Army, Navy, or Marine Corps during the Civil War.

Officers' Reserve Corps.—The strength of the Officers' Reserve Corps increased from 95,154 on June 30, 1925, to 103,829 on June 30, 1926—a net gain of 8,675.

Enlisted Reserve Corps.—During the same period the strength of the Enlisted Reserve Corps increased from 5,115 to 5,775, principally in the Infantry and Air Service sections.

Reserve Officers' Training Corps.—For several years, as the general public has become more impressed with the importance of adequate national defense, there has been a steadily increasing enrollment in the Reserve Officers' Training Corps. It was estimated that at the existing rate of growth the enrollment for the fiscal year 1926, if not limited, would reach 135,000, a number considerably in excess of that which could be adequately handled with available personnel and funds. Corps area commanders were accordingly instructed early in July to take measures to insure that the initial fall enrollment, fiscal year 1926, would not exceed the initial fall enrollment, fiscal year 1925. Applications from 19 institutions for the establishment of Reserve Officers' Training Corps units were disapproved because of lack of sufficient funds.

On June 30, 1926, there were 323 units of the Reserve Officers' Training Corps, with a total enrollment of 106, 778 in existence at 223 civilian educational institutions throughout the United States, of which 223 were senior units, with an enrollment of 68,553, and 100 were junior units, with an enrollment of 38,225.

Citizens' Military Training Camps.—During the summer of 1925 forty-two camps were conducted at military posts and camps in various parts of the United States. The total attendance at these camps was 33,914.

Foreign officers attending Army schools.—During the fiscal year the War Department received an unusual number of applications to permit officers of foreign armies to take courses at our military schools, a fact which is significant as an indication of the high repute that the military school system of the United States Army now enjoys among foreign nations.

FROM THE QUARTERMASTER GENERAL

The average cost of the components of the garrison ration for the fiscal year 1926 was \$0.3612.

Forty laundries were operated. Laundry service was furnished enlisted men at \$1.75 per month per man. Net savings to the United States, after deducting all expenses for operation, supplies and depreciation, totalled \$260,913.34.

From the sale of waste material the Government realized approximately \$1,045,378.70.

Receipts from sales of surplus property, together with the value of surplus property transferred to other Government departments without funds, amounted to \$954,598.83.

The three principal construction projects undertaken during the fiscal year 1926 were the replacement of temporary buildings at Walter Reed General Hospital; the construction of a new post, Wright Field, at Dayton, Ohio, made necessary for the Air Corps by the abandonment of McCook Field; and the construction of additional facilities at Madison Barracks, N. Y.

FROM THE CHIEF OF ORDNANCE

The experimental carriage for mounting, interchangeably, either the 155-mm. gun or the 8-inch howitzer has been thoroughly tested by the Field Artillery Board, whose report on this carriage is generally favorable. Certain modifications have been recommended which will be incorporated in the pilot as soon as practicable, after which the carriage will be re-submitted to the Field Artillery Board for further test.

The design and manufacture of a high-powered 105-mm. antiaircraft fixed mount was undertaken during the year. Due to the weight of the round of ammunition (67 pounds) it was found necessary to provide this mount with an automatic loading device, in order that a high rate of fire might be maintained. Manufacture of the gun, carriage, and sighting system has been completed, and the unit will be tested at the Aberdeen Proving Ground during the present fiscal year.

Eighteen sound locators, exponential horn type, T1, under manufacture during the fiscal year 1925, were completed early in the fiscal year 1926, and have been issued to six regular antiaircraft regiments. An improvement of the exponential sound locator has been developed, the new type being designated as T2. Two of these have been completed. The Bureau of Standards has cooperated with the Ordnance Department during the year in an attempt to increase the range and directivity of the sound locator, and has developed a condenser transmitter for use with the exponential horn. Radio amplifiers were used to increase range and directivity. The new equipment will be tested during the summer of 1926.

The pilot 14-inch gun railway mount, model of 1920, upon completion of its proof firing at the Aberdeen Proving Ground, was shipped in October, 1925, on its own wheels, to the Pacific Coast. This unusual trip of such a large railway mount

was accomplished without undue difficulty. Recently, this mount was successfully emplaced at Fort McArthur, California, on an all-around fire emplacement. A second mount of this type is now practically completed and undergoing shop test at the Watertown Arsenal. Two additional mounts are nearing completion. The appropriations for the fiscal year 1927 include funds for trucks of 5-foot gauge for two of these mounts, in order to make them suitable for use on the railroad in Panama. It is anticipated that the modification of these trucks will be completed within the year.

The service test of the "Caterpillar 30" tractor progressed to a point where the Chief of Field Artillery recommended its adoption as a standard medium tractor, and the necessary steps to complete standardization of this vehicle have been taken. It will be shown as the standard medium tractor in the next revision of the Book of Standards, and the 5-ton tractor, model of 1917, which was formerly standard, will be carried as a substitute.

The "Caterpillar 60" test was completed, and the Chief of Field Artillery recommended that it be standardized as the heavy military tractor. After being cleared for procurement by The Assistant Secretary of War, The Adjutant General approved it as to type as the standard heavy tractor, to replace the 10-ton model 1917 tractor. When revised, the Book of Standards will show the "Caterpillar 60" as the standard, and the 10-ton model 1917 as the substitute heavy tractor.

FROM THE CHIEF OF CHEMICAL WARFARE SERVICE

The chemical agents employed during the World War are probably about as effective for the production of casualties as any which may be discovered in the future. There are, however, great possibilities for a more economical and effective use of these chemical agents. These possibilities necessitate the development of more effective defensive measures and every effort is being made to develop the best equipment for this purpose.

Screening smokes are assuming more and more importance in connection with the development of defensive measures and a number of important developments in this connection have been brought to a successful conclusion during the past year. Mechanical research has also resulted in improving the various types of chemical warfare ammunition and weapons.

FROM THE CHIEF OF ENGINEERS

A revised general fortification project should be presented to Congress for approval which will place our harbor defenses in a proper condition to ward off naval attacks against our cities and naval bases. Appropriations may then be secured in accordance with the financial situation without further argument as to their necessity.

Amounts needed to initiate a general revival of the project for installation of 16-inch guns along commercial lines are stated in the body of the report. It is urged that due consideration be given to the necessity of providing these funds in the established order of priority. Piecemeal appropriations should be avoided.

Funds should be provided annually for the preservation and repair of fortifications and their accessories in sufficient amounts to prevent such deterioration as will eventually necessitate a greater outlay of money to remedy.

The procurement of searchlights should be greatly increased to keep pace with the development of aircraft and anti-aircraft and to insure some basis for expansion in event of war.

It is believed that our existing coast defense project is based on sound principles which have not been altered by the development of new implements of war-

fare. From the viewpoint of a strategical defensive the first hostile forces to be encountered will be naval and air forces. The first lines of defense against these are our own naval and air forces. Should the hostile naval force by any chance succeed in defeating or eluding our navy, it must be borne in mind that the first objective of our air force will be the hostile air force. It is yet to be proved that the battleship cannot be protected against air attack by airplanes and anti-aircraft fire. Granting that aircraft constitute formidable means of assistance in protecting our coast line, it would nevertheless be unsafe to depend solely on that means of defense after our navy has been passed. The airplane is primarily a weapon of offense and not of defense. It will very probably be engaged with hostile aircraft at the time hostile battleships begin an attack on our coasts. We must have other defensive means to combat the armament of the battleship. The ultimate success of our naval and air forces is dependent on offensive action. The offensive cannot be undertaken unless we are assured that our seacoast cities, navy yards, and harbors are reasonably protected against bombardment, because we would otherwise be forced to chain down our means of offensive warfare to our coasts and harbors.

It is perhaps needless to emphasize the importance of pushing the work at the Panama Canal. Considering both the commercial and strategical importance of the Canal, it is obvious that its proper protection should be one of the prime considerations in our plans for National Defense. At the present rate of appropriations it will be 22 years before the program for the installation of 16-inch guns at the entrances to the Canal is completed. The uneconomical effects of piecemeal appropriations are already beginning to show in expenditures in excess of the original estimates which were based on an annual appropriation of at least \$500,000 a year. Appropriations should either be based on an economical expenditure of funds or deferred altogether until the Government can afford to provide sufficient funds to carry on the work with a view to completion three years after commencement.

FROM THE CHIEF OF FIELD ARTILLERY

Regular Army.—Improvement in the organization of training in the Regular Army is noted. There is a tendency in our service to devote too much time to tactical training in the combined arms at the expense of the basic technical training within the arm. More time should be allotted to this basic technical training.

Morale.—The most vital, the most neglected, and the most harmful evil of all those under which the Army is suffering today is "living conditions." After nearly eight years, the sore has become chronic and is accepted as a visitation of Providence. No delay should be permitted in presenting for remedy the deplorable housing conditions in the Army. The Field Artillery requires considerable areas for its training, and has been placed as a rule in camps or stations near such areas. There it struggles to patch up buildings not worth patching; to replace underpinning before the quarters collapse. In fire-traps of the most absurd nature, it houses its personnel, animals, and materiel. Criminals in many local jails and most penitentiaries are incomparably more comfortably housed than is the Regular Army at many stations. Fire losses, due to this housing condition, have been great.

Promotion.—There is in the Field Artillery alone, between the classes of 1917 and 1918 of the Military Academy, a block of approximately 400 officers. There is another block of less size between the classes of 1918 and 1919. On account of

these blocks, the Field Artillery has today 267 captains, practically all of whom were captains or higher in 1918, and who will still be captains twenty years from now. There are in the Field Artillery 195 first lieutenants who will still be lieutenants twenty years from now. These estimates are based on retirement for age and will doubtless be somewhat reduced by unforeseen casualties, but in any case these figures disclose a serious situation calling for remedy. This question should be carefully studied with a view to materially reducing the blocks described above so as to insure officers of junior grades a steady, even though slow, rate of promotion.

FROM THE CHIEF OF AIR CORPS

Small Per Cent Learn to Fly.—Of the total number of students that enter the Primary Flying School, and of all classes, the officers of the Regular Army, of the Reserve, of the National Guard, and the flying cadets, the number completing the entire course at this school and at the Advanced School is very small. It becomes more and more apparent that some men can learn to fly and that others cannot, just as some have musical or mathematical ability and others do not.

Civil Aviation.—It may be safely said that in the transportation of mail by air the United States is well in the van. In carrying freight and passengers, more progress has been made abroad. This growth in Europe is largely due to government aid in the form of subsidies. Such subsidies have, of course, not been available to struggling civil flying concerns in the United States.

Target Practice Results, 64th Coast Artillery

It is believed that a brief summary of the results obtained during the past target practice season of the 64th Coast Artillery (AA) will be of interest to the service.

Guns (Table 1).—The Richards dual sights were used on all guns.

TABLE I
64th Coast Artillery—Summary Target Practice, 1926

3-inch Antiaircraft Guns, Trailer Mount
(Totals of 3 day and 1 night practices for each battery)

	"B"	"C"	"D"	"F"	"G"	"H"	REGIMENT
Altitude	2400	2425	2139	2083	2101	2138	2214 (Aver.)
Shots Fired	271	286	315	317	313	335	1837
Time (Seconds)	345.5	347.1	449.8	475.3	456.1	493.3	2576.1
Shots per Battery per Minute	45.8	49.4	43.7	42.0	41.9	42.7	44.25
Sleeves Shot Down	4	2	2	1	^a 3	^b 2	^c 5
Hits	85	46	92	101	92	127	543
Hits per Battery per Minute	14.4	7.96	12.79	13.6	12.1	15.84	12.8
Per Cent Hits	31.4	16.1	30.0	32.2	29.1	37.7	29.6

a.—2 additional sleeves shot down in preliminary practice.

b.—3 additional sleeves shot down in preliminary practice.

c.—5 additional sleeves shot down in preliminary practice.

BATTERY "F"										
64 TH COAST ARTILLERY										
(ANTI-AIRCRAFT)										
FORT SHAFTER, T.H.										
DATE OF FIRING. SEPT 16, 1926										
COURSE NO	SHOT NO	SLANT RANGE	LATERAL DEV. IN YDS. PER 100 RIGHT - LEFT	VERTICAL DEV. IN YDS. PER 100 HIGH - LOW	RANGE DEV. IN YDS. PARALLEL TO THE TARGET	HITS IN THEO- RETICAL TARGET	RDS. PER BTRY PER MIN.	HITS PER BTRY PER MIN.	PERCENT HITS	REMARKS
16	1	3500	0	7L	0	HIT				NO TRIAL SHOTS WERE
	2	3470	35L	21L	+30					FIRE; MAJ. ROWLAND'S
	3	3440	48L	14L	+40					METHOD OF ALTITUDE
	4	3410	34R	34L	-15	HIT				AND DEFLECTION COR-
	5	3390	0	7L	0	HIT				RECTIONS WERE USED,
	6	3370	13L	13L	-10	HIT				ADJUSTING ON BURSTS.
	7	3350	47L	7L	+8					TARGET LEFT TO
	8	3330	0	7L	-45	HIT	40.3	32.3	80%	RIGHT - SPEED 110 MPH
	9	3320	7L	20L	-6	HIT				SERIES OF 20 ROUNDS
	10	3310	10L	0	-55	HIT				ORDERED FIRED.
	11	3300	7R	7L	-42	HIT				TARGET SHOT DOWN
	12	3290	0	7L	0	HIT				ON 15 TH SHOT AT 8 31 PM.
	13	3290	0	13L	0	HIT				TARGET AGAIN ON THE
	14	3280	0	6H	-30	HIT				COURSE AT 9 24 P.M.;
	15	3280	7R	6H	-96	HIT				FIRING RESUMED WITH
		TARGET SHOT DOWN ON 15 TH SHOT AT 8 31 PM								TARGET AT APPROXIMATE
FIRST	C.I.	3350	7L	9L	-15					LY SAME POINT ON COURSE
15 ROUNDS	PE		13	6	23					WHERE TARGET WAS
		TARGET AGAIN ON COURSE AT 9 24 P.M								SHOT DOWN, NO CHANGE
18	16	3380	0	14L	0	HIT				OF CORRECTIONS.
	17	3390	7R	7H	-45	HIT				
	18	3400	0	0	-11	HIT				
	19	3400	0	0	-11	HIT				
SERIES OF	20	3410	0	7H	-59	HIT				
20 ROUNDS	C.I.	3365	5L	7L	-17		40.2	34.2	85%	
	PE		11	7	22					
FELIX N PARSONS										
2D LT 64 C.A.										
BATTERY COMMANDER										

ENP

TABLE II

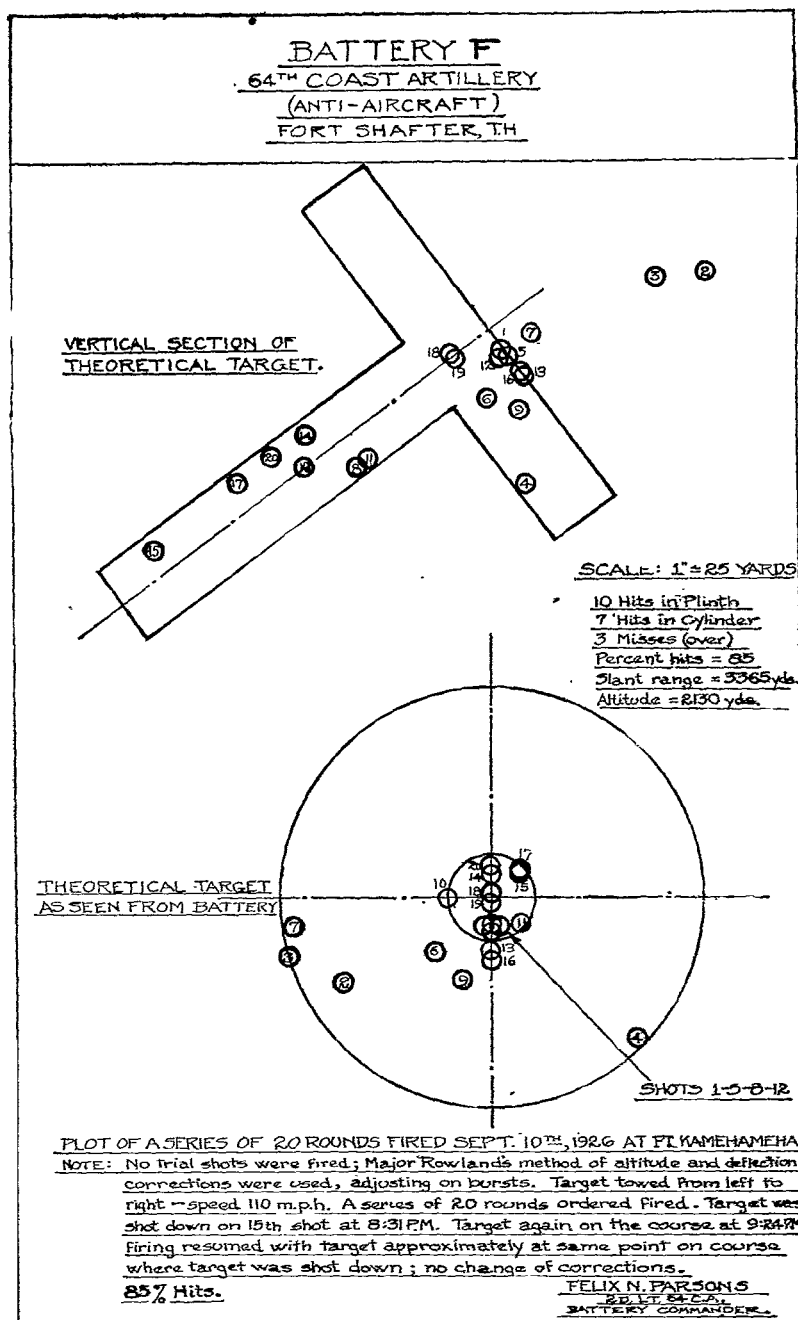


FIG. 1

Generally, the practice of firing strings of twenty shots during the flight of the plane in one direction past the battery was followed—this principally as an aid in taking and recording data from various stations on location of bursts. Statistics on what is considered the best of these strings of twenty shots has been extracted from target practice reports and is shown in Table II.

The above data, plotted to scale (see Figure 1), will assist in visualizing the progress in antiaircraft fire on an aerial target and what may be expected in the future. It is believed the picture is very different from that in the minds of even the most ardent antiaircraft optimists of 1924.

TABLE III

Summary of 1926 Machine-Gun Practice, Battery "I," 64th Coast Artillery (AA)

Battery "I" 64th C. A. (AA)	1st day	2nd day	3rd day	4th day	1st night	2nd night	3rd night	Total
No. Guns Fired	8	8	8	8	7	7	8	7.71
Slant Range, max.-min., yds.	1000-500	1000-500	1000-500	900-500	1000-600	1000-600	1000-600	
Rounds Fired	7265	8792	7862	8231	6914	7608	7944	54616
Time (Min.)	2.27	2.56	2.02	2.14	2.13	2.10	2.02	15.24
Shots per Gun per min.	321	429	487	482	424	456	493	467
No. of Holes in Target	184	218	396	592	234	225	344	2193
Theoretical Hits	410	487	886	1118	434	528	683	4545
Per Cent of Hits	5.63	5.54	11.27	13.58	6.28	6.94	8.59	8.26
Hits per Battery per min.	181	190	439	527	186	251	339	291
Speed of Plane, m. p. h.	75	75	70	75	75	75	75	

Machine Guns.—Table III indicates a pleasing advance in machine-gun efficiency. This work was done with the .30-caliber gun and no advantage was taken of existing authority to fire at slant ranges much shorter than those used.

Searchlights.—The greatest development of the regiment in the antiaircraft problem has been with the searchlights. A record of this progress cannot be indicated statistically as in the cases of the guns and machine guns. It may be stated, however, that a general confidence prevails that any one of the six search-light platoons will find and illuminate any bombing plane flying under 7000 feet altitude in a very few seconds, unless it be hidden by clouds, and that, once found, no plane under the limiting altitude can escape from the beams of two lights.

This effectiveness at comparatively low altitudes had really been attained during the 1925 season following the adoption of the "scissors barrage" which, in brief, is the use of a designated light of the platoon as a base beam which, aided by the sound locator and coaches, is pointed as nearly as possible at the target, while the remaining lights search slowly up and down the base beam, two lights

slightly below and one slightly above that beam. The searching lights invariably compensate for the error of the base beam and the result is a prompt detection of the target in those majority of cases when the base beam does not score a "hit."

The Hawaiian Department contingent of the Air Corps, after having rendered valiant and arduous service in towing targets day and night for the guns and machine guns, sprung a new and interesting problem on us at the close of the searchlight drill period and at the beginning of the preliminary exercises. This surprise consisted of giving us the experience of searching for targets at above 10,000 feet altitude and, as has been found to be the case in so many instances of engineering development, the change of conditions brought about practically a new problem for solution.

On the first preliminary practice Lieutenant Cannon of the Air Corps succeeded in getting a Martin bomber up to 14,000 feet, and it was not discovered on any one of its four flights over a defended area covered by two searchlight platoons. On the second night we planned to meet the new situation by using the scissors barrage much more slowly and by having the searching lights operate along the upper quarter of the base beam. The result was a nearly stationary arch made by the lights of the two platoons, under which the plane, with throttled engine, glided in perfect safety. The net result was a goose egg for the four attacks on that night.

The remaining two preliminary exercises were devoted to experimentation to make the scissors barrage more flexible so it would operate effectively at different altitudes. A system was evolved along these lines which worked successfully in the four record practices which followed. In brief, altitudes were divided into three zones, each zone calling for a change in the rapidity of movement of the searching lights as well as the section of the base beam they covered. Below 7000 feet is "low," between 7000 and 10,000 feet is "medium," and above 10,000 feet is "high." The platoon commander estimates the zone the plane is in from information he may get from the advanced posts, sound locator, or from his own judgment. He announces the zone in his order for the barrage as follows: 1. *Prepare for action*; 2. *No.—base beam*; 3. *Low (medium or high)*; 4. *Barrage*. At the command "barrage" the lights come on instantly and operate as outlined above. If it is discovered that an error has been made in the altitude estimate the change in operation of the platoon is made by the command: 1. *Change*; 2. *High (or medium)*.

It is also possible, when it is difficult to determine the flying altitude, to put one platoon at one zone and the second at a lower or higher zone. This was actually done during the record exercises with satisfactory results.

Martin bombers were used in the first three record exercises, while the effort was made by various pilots, none was able to get above 10,000 feet and the task of finding and illuminating before they could drop their bomb (flare) was not difficult.

On the fourth night a bomber was not available and a D.H.-4 was used. This plane went over the first time almost without sound at a reported altitude of 15,000 feet and was not discovered. Its second flight at 13,500 feet was also successful although the lights were getting close. On the third flight it was caught at 12,000 feet although it was at the time doing high-class aerial acrobatics and

afterward continued such tactics to escape the beams—without success. This feat of discovering and holding a comparatively small plane at this altitude, when it was doing everything possible to avoid the beams and later to escape, is considered noteworthy.

Sound Locators.—Two Exponential Sound Locators, model 1925, with improvised sound lag computers and improvised azimuth and elevation correction charts, were employed by one searchlight battery of this regiment. The other battery employed single-horn improvised listening devices which were devised by members of this command during the previous year.

Fairly good results were obtained from the listening devices by both organizations during the training period when Martin bombers flew on straight courses at altitudes around 7000 feet. However, during the intensive training period, immediately preceding the searchlight exercises, the target planes flew higher and their courses were zigzag or sine curves. During this time the best results obtained with the listening devices were only approximate. At higher altitudes, 7000 feet and above, it is extremely difficult to estimate, even approximately, the altitude of a target plane when the course of the plane is changed frequently and the motors are throttled or shut off completely. Error in the estimated altitude is great, and, as a result of this error in altitude, the sound lag will be in error and the corrected azimuth and elevation will also be in error.

It is believed that with targets at high altitudes, 7000–15,000 feet, the present listening devices can give only approximate direction. During the third record searchlight exercise described above, the D.H.-4 was nearly noiseless at high altitudes when gliding and both types of listening devices were practically useless.

The barrage system of searching covers a considerable area and if the base beam is directed near the target plane by means of a listening device, one of the searching lights will soon discover the plane. Approximate location of the plane by listening devices and searching with the barrage method has been found to be the most effective means of locating target planes at high altitudes. The conclusion reached is that extreme accuracy in recording the direction of sound, while desirable, is really not imperative. When used in combination with the barrage system the simpler and less expensive single horn with radio amplification is practically as effective as the exponential device.

The Air Corps.—The cooperation of the Air Corps was splendid throughout the entire season. All of the heavy requirements for the training and practice of six gun batteries, two searchlight batteries, and one machine-gun battery, were met cheerfully and all missions were conducted with great efficiency. Too much credit cannot be given to their executive, flying, and maintenance personnel for their assistance to another branch, even at the expense of some curtailment of their own training.

Savings Effected by Salvage

It has been estimated that all the money saved by "salvage" in the Army during the past year would pay the salaries of the President of the United States, the Secretary of War and the Assistant Secretaries, all the Major Generals, all the Brigadier Generals and all the Colonels.

Most of the waste materials salvaged consists of old metal, rubber, rags, bottles, hair, hide, stable sweepings, condemned foodstuffs and garbage. The savings is considered more noteworthy in view of the fact that nothing is considered salvage that can, by repair, be made of any possible service to the Army.

Report of Association of Land-Grant Colleges

The Association of Land-Grant Colleges transmitted to the War Department the following report of their committee on military organization and policy which has been approved by the convention.

During the past year agitation against military instruction has been directed particularly against the R. O. T. C. in the land-grant colleges. The Welsh Bill, introduced into the House of Representatives of the 69th Congress, would have prevented the detail of officers to any institution maintaining required military courses. In at least one State a futile attempt was made to secure legislation against military education in the State University. Pamphlets crowded with mis-statements and presenting an entirely distorted view of the purpose of military education and its effect upon youth have been circulated widely and undoubtedly have misled some.

Fortunately the attempts to persuade Congress and State legislatures to usurp the functions of government boards and faculties of State institutions have proved abortive, and the wholesome and beneficial effects of military instruction have become so widely known through the many thousands who have experienced them that efforts of opponents of military training have failed of their misguided purpose. But in view of possible attacks upon one of the most valuable features of public higher education, this Association desires again to go on record in favor of maintaining R. O. T. C. units in all our institutions in full efficiency, including provisions for the constantly increasing enrollment, to the end that the full complement of reserve officers in all branches of the service may be at all times enrolled.

The National Defense Act now in force is the most statesmanlike and efficient measure ever enacted to guard the nation against war and to secure the safety of the republic in case of unprovoked attack. The R. O. T. C., of which the units in State colleges and Universities are the largest element, is an essential feature of that act. Without the continued supply of reserve officers which these units furnish, economically and efficiently and with no disturbance of civilian pursuits, the whole structure of national defense would fall to pieces.

On the basis of our experiences with many thousands of students we declare that it is not true that the R. O. T. C. in our colleges breeds militarism or anything like it. It is ridiculous to assert, as some have done, that America is being Prussianized. No facts in support of such charges have been cited, nor could they be collected on any campus in America. Such assertions show small faith in the good sense of American youth or in the fundamental peace-loving tradition of the American people.

On the other hand we can testify, likewise on the basis of experience with our students, that military education as now conducted is a valuable element in collegiate education, especially in training in leadership. It is not mere instruction in close order drill and in formations for purposes of parade, as is sometimes ignorantly imagined. These college youths are in training as officers, not as enlisted men, and from the first lesson they are led towards powers of command. There are all too few opportunities in ordinary academic life to discipline youth in actual practice of leadership, and the R. O. T. C. provides an opportunity we will not willingly cancel.

Because of its great value as an educational feature, because of our conviction that it is our duty to do our part to keep our country safe, because we do not wish to be responsible for possible calling of untrained citizens to military duty with the awful wastage of human life inevitably consequent therefrom, we re-affirm our position in support of the National Defense Act, the maintenance of R. O. T. C. units on a required basis, and appropriations adequate for their maintenance at the utmost possible efficiency, and we request the Executive Committee of this association to call to the attention of Congress our firm stand on this subject and the need of more officers and of larger funds for equipment of our R. O. T. C. units.

MILITARY NOTES

furnished by

THE MILITARY INTELLIGENCE DIVISION, G. S.

Japan

CHINESE OFFICERS IN JAPANESE MILITARY SCHOOLS.—A special opening ceremony was held on October first at the Army Officers' School in Tokio for a large class of Chinese students admitted to the institute for the three-year course of study. The new class is a much larger one than usual and has representatives from most of the contending factions in China. The registration is as follows:

<i>Representatives from Army of</i>	<i>Officers</i>
Chang Tso-lin	8
Feng Yu-hsiang	16
Li Ching-lin	13
Shin Ching-yang	24
Chang Kai-shek	1
Others	17
	—
Total	79

The numbers entering the school this year are a remarkable increase over any previous enrollment since the World War. This year's enrollment is of special interest as so many of the students represent forces which have been under pronounced Bolshevik influences for some time past. They are admitted into the school under a pledge not to undertake any Communistic propaganda while studying in Japan.

The preference of the Chinese for Japanese military schools is explained by the fact that those who in the past have gone to Japan rather than to American or European schools for their military education seem to have spent their time in more intensive study and to have derived much more benefit than those who attended Occidental schools. This fact has been demonstrated in the recent Chinese internal wars where almost all of the Japanese trained officers have played prominent parts. In addition Chinese topographical conditions require the application of the Japanese system of training and operating rather than the European system.

Germany

A NEW INFANTRY SCHOOL AT DRESDEN.—The new Infantry School at Dresden was opened on November 18, 1926. President von Hindenburg and Major General von Metzsch, Chief of Education and Training, were present at the opening ceremonies. General Metzsch gave the following brief account of the new school:

Some of the barracks of the former Saxon Cadet School have been taken over by the school, and some new buildings, including quarters for married noncom-

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. R. S. ABERNETHY, Colonel, Coast Artillery Corps, President Coast Artillery Board.

Projects Initiated During the Month of December

Project No. 508, Flat Corrections for 3-inch Guns.—The Coast Artillery Board was directed by the Chief of Coast Artillery to comment upon a recommendation contained in a target practice report that the percentage feature of the range percentage corrector be done away with and that flat corrections be used for 3-inch guns.

Project No. 509, Sighting Mechanism for Antiaircraft Machine Guns (Schmidt).—The 63d Coast Artillery (AA) fired a machine-gun target practice using a Modified Brocq apparatus to obtain the deflections, which, after being corrected to add superelevation, were transmitted mechanically to the sights of the machine guns. Excellent results were obtained.

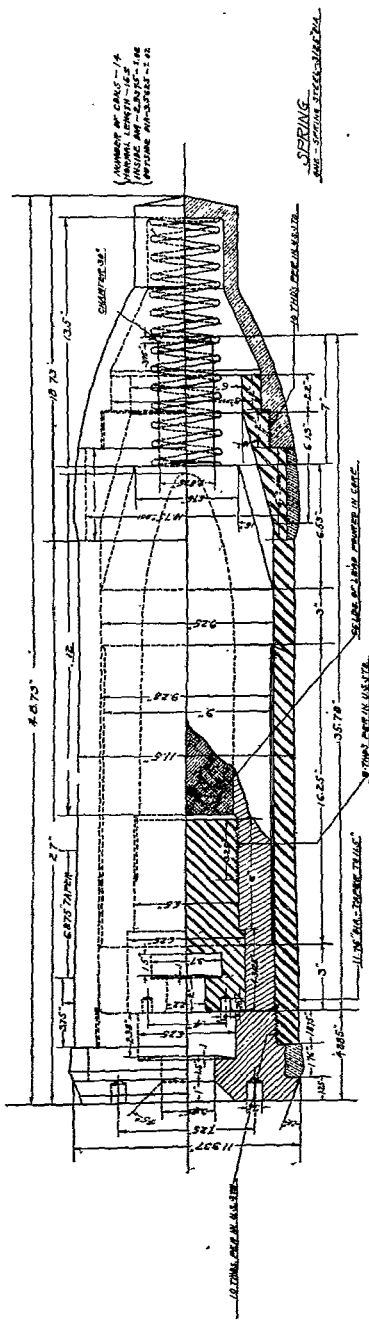
Project No. 510, Instructions Governing Use of Scales for Range Percentage Corrector.—The Coast Artillery Board was directed by the Chief of Coast Artillery to prepare a draft of instructions for Coast Artillery District Commanders in order that they may insure that batteries of their commands are properly equipped to fire projectiles of the weights specified in Circular No. 66, W. D., 1926.

Project No. 511, Test of 250-Ampere Antiaircraft Searchlight Mechanism.—This lamp mechanism, tested at Aberdeen Proving Ground, has been shipped to Fort Monroe for continuing service test, and is now in the hands of the 61st Coast Artillery.

Project No. 512, Test of Experimental Handwheel for 3-inch Antiaircraft Gun Mount, Model 1918.—A larger handwheel designed to facilitate maneuvering gun has been received for test.

Project No. 513, Modification of Panoramic Sight for 155-mm. Guns (Comments on Report of Board of Officers, 55th Coast Artillery).—The Coast Artillery Board has studied the Report of a Board of Officers of the 55th Coast Artillery on modifications recommended to be made to the Panoramic Sight, Model 1917, for 155-mm. Guns. The modified sight (Panoramic Sight, Model 1917 MII) was found to incorporate the more important modifications recommended. The Coast Artillery Board recommended no further modification of the Panoramic Sight, Model 1917 MII.

Project No. 514, Combination Sponge and Rammer for Major-Caliber Armament.—As a result of its study of Combination Sponge and Rammer for intermediate-caliber armament (Project No. 476) the Board has initiated a Project to determine the practicability of adapting the Combination Sponge and Rammer to the major-caliber armament.



CAP-4K
BRASS IN TAIL

FRONT BAND-ACE
BRASS IN TAIL

BODY
BRASS IN TAIL

PAN
BRASS IN TAIL

REAR BAND-ACE
BRASS IN TAIL

BASE
BRASS IN TAIL

PAN BASE
BRASS IN TAIL

WEIGHTS

PART	WEIGHT
BASE	0.8
FRONT BAND-ACE	0.1
BODY	0.1
PAN	0.1
PAN BASE	0.1
REAR BAND-ACE	0.1
SPRING	0.1
TOTAL	1.4

DESIGNED AND MANUFACTURED
AT
HAWAIIAN ORDNANCE DEPOT-HONOLULU-T.H.

SECTION	DESCRIPTION	CLASS	DATE
1	FRONT BAND-ACE	1.2	1917
2	BODY	1.2	1917
3	PAN	1.2	1917
4	PAN BASE	1.2	1917
5	REAR BAND-ACE	1.2	1917
6	BASE	1.2	1917
7	SPRING	1.2	1917
8	CAP-4K	1.2	1917
9	FRONT BAND-ACE	1.2	1917
10	BODY	1.2	1917
11	PAN	1.2	1917
12	PAN BASE	1.2	1917
13	REAR BAND-ACE	1.2	1917
14	BASE	1.2	1917
15	SPRING	1.2	1917
16	CAP-4K	1.2	1917
17	FRONT BAND-ACE	1.2	1917
18	BODY	1.2	1917
19	PAN	1.2	1917
20	PAN BASE	1.2	1917
21	REAR BAND-ACE	1.2	1917
22	BASE	1.2	1917
23	SPRING	1.2	1917
24	CAP-4K	1.2	1917
25	FRONT BAND-ACE	1.2	1917
26	BODY	1.2	1917
27	PAN	1.2	1917
28	PAN BASE	1.2	1917
29	REAR BAND-ACE	1.2	1917
30	BASE	1.2	1917
31	SPRING	1.2	1917
32	CAP-4K	1.2	1917
33	FRONT BAND-ACE	1.2	1917
34	BODY	1.2	1917
35	PAN	1.2	1917
36	PAN BASE	1.2	1917
37	REAR BAND-ACE	1.2	1917
38	BASE	1.2	1917
39	SPRING	1.2	1917
40	CAP-4K	1.2	1917
41	FRONT BAND-ACE	1.2	1917
42	BODY	1.2	1917
43	PAN	1.2	1917
44	PAN BASE	1.2	1917
45	REAR BAND-ACE	1.2	1917
46	BASE	1.2	1917
47	SPRING	1.2	1917
48	CAP-4K	1.2	1917
49	FRONT BAND-ACE	1.2	1917
50	BODY	1.2	1917
51	PAN	1.2	1917
52	PAN BASE	1.2	1917
53	REAR BAND-ACE	1.2	1917
54	BASE	1.2	1917
55	SPRING	1.2	1917
56	CAP-4K	1.2	1917
57	FRONT BAND-ACE	1.2	1917
58	BODY	1.2	1917
59	PAN	1.2	1917
60	PAN BASE	1.2	1917
61	REAR BAND-ACE	1.2	1917
62	BASE	1.2	1917
63	SPRING	1.2	1917
64	CAP-4K	1.2	1917
65	FRONT BAND-ACE	1.2	1917
66	BODY	1.2	1917
67	PAN	1.2	1917
68	PAN BASE	1.2	1917
69	REAR BAND-ACE	1.2	1917
70	BASE	1.2	1917
71	SPRING	1.2	1917
72	CAP-4K	1.2	1917
73	FRONT BAND-ACE	1.2	1917
74	BODY	1.2	1917
75	PAN	1.2	1917
76	PAN BASE	1.2	1917
77	REAR BAND-ACE	1.2	1917
78	BASE	1.2	1917
79	SPRING	1.2	1917
80	CAP-4K	1.2	1917
81	FRONT BAND-ACE	1.2	1917
82	BODY	1.2	1917
83	PAN	1.2	1917
84	PAN BASE	1.2	1917
85	REAR BAND-ACE	1.2	1917
86	BASE	1.2	1917
87	SPRING	1.2	1917
88	CAP-4K	1.2	1917
89	FRONT BAND-ACE	1.2	1917
90	BODY	1.2	1917
91	PAN	1.2	1917
92	PAN BASE	1.2	1917
93	REAR BAND-ACE	1.2	1917
94	BASE	1.2	1917
95	SPRING	1.2	1917
96	CAP-4K	1.2	1917
97	FRONT BAND-ACE	1.2	1917
98	BODY	1.2	1917
99	PAN	1.2	1917
100	PAN BASE	1.2	1917
101	REAR BAND-ACE	1.2	1917
102	BASE	1.2	1917
103	SPRING	1.2	1917
104	CAP-4K	1.2	1917
105	FRONT BAND-ACE	1.2	1917
106	BODY	1.2	1917
107	PAN	1.2	1917
108	PAN BASE	1.2	1917
109	REAR BAND-ACE	1.2	1917
110	BASE	1.2	1917
111	SPRING	1.2	1917
112	CAP-4K	1.2	1917
113	FRONT BAND-ACE	1.2	1917
114	BODY	1.2	1917
115	PAN	1.2	1917
116	PAN BASE	1.2	1917
117	REAR BAND-ACE	1.2	1917
118	BASE	1.2	1917
119	SPRING	1.2	1917
120	CAP-4K	1.2	1917
121	FRONT BAND-ACE	1.2	1917
122	BODY	1.2	1917
123	PAN	1.2	1917
124	PAN BASE	1.2	1917
125	REAR BAND-ACE	1.2	1917
126	BASE	1.2	1917
127	SPRING	1.2	1917
128	CAP-4K	1.2	1917
129	FRONT BAND-ACE	1.2	1917
130	BODY	1.2	1917
131	PAN	1.2	1917
132	PAN BASE	1.2	1917
133	REAR BAND-ACE	1.2	1917
134	BASE	1.2	1917
135	SPRING	1.2	1917
136	CAP-4K	1.2	1917
137	FRONT BAND-ACE	1.2	1917
138	BODY	1.2	1917
139	PAN	1.2	1917
140	PAN BASE	1.2	1917
141	REAR BAND-ACE	1.2	1917
142	BASE	1.2	1917
143	SPRING	1.2	1917
144	CAP-4K	1.2	1917
145	FRONT BAND-ACE	1.2	1917
146	BODY	1.2	1917
147	PAN	1.2	1917
148	PAN BASE	1.2	1917
149	REAR BAND-ACE	1.2	1917
150	BASE	1.2	1917
151	SPRING	1.2	1917
152	CAP-4K	1.2	1917
153	FRONT BAND-ACE	1.2	1917
154	BODY	1.2	1917
155	PAN	1.2	1917
156	PAN BASE	1.2	1917
157	REAR BAND-ACE	1.2	1917
158	BASE	1.2	1917
159	SPRING	1.2	1917
160	CAP-4K	1.2	1917
161	FRONT BAND-ACE	1.2	1917
162	BODY	1.2	1917
163	PAN	1.2	1917
164	PAN BASE	1.2	1917
165	REAR BAND-ACE	1.2	1917
166	BASE	1.2	1917
167	SPRING	1.2	1917
168	CAP-4K	1.2	1917
169	FRONT BAND-ACE	1.2	1917
170	BODY	1.2	1917
171	PAN	1.2	1917
172	PAN BASE	1.2	1917
173	REAR BAND-ACE	1.2	1917
174	BASE	1.2	1917
175	SPRING	1.2	1917
176	CAP-4K	1.2	1917
177	FRONT BAND-ACE	1.2	1917
178	BODY	1.2	1917
179	PAN	1.2	1917
180	PAN BASE	1.2	1917
181	REAR BAND-ACE	1.2	1917
182	BASE	1.2	1917
183	SPRING	1.2	1917
184	CAP-4K	1.2	1917
185	FRONT BAND-ACE	1.2	1917
186	BODY	1.2	1917
187	PAN	1.2	1917
188	PAN BASE	1.2	1917
189	REAR BAND-ACE	1.2	1917
190	BASE	1.2	1917
191	SPRING	1.2	1917
192	CAP-4K	1.2	1917
193	FRONT BAND-ACE	1.2	1917
194	BODY	1.2	1917
195	PAN	1.2	1917
196	PAN BASE	1.2	1917
197	REAR BAND-ACE	1.2	1917
198	BASE	1.2	1917
199	SPRING	1.2	1917
200	CAP-4K	1.2	1917

Fig. 1

Project No. 515, Modification of Scales on Index Boxes of Plotting Boards.

—The Coast Artillery Board has had under study the modification of the scales of index boxes for plotting boards with a view of obtaining more accuracy in setting and reading.

Completed Projects

Project No. 474, Dummy Projectiles, 12-inch Gun

I—HISTORY OF THE PROJECT.

1. The Coast Artillery Board was directed by the Chief of Coast Artillery (21st Indorsement, OCCA 470.2/G) to make recommendations for the modification of the dummy projectile for 12-inch gun.

2. It appears that there has been considerable trouble with the sliding sleeve type of dummy projectile, particularly in major-caliber armament, and various attempts have been made to remedy the defects by local Ordnance Officers. In the Hawaiian Department a special dummy projectile designed by Mr. Michael Maloney (Fig. 13) was tested in comparison with a modified 12-inch dummy projectile (Fig. 2). The following extracts of Indorsements are quoted:

12

5th Ind.

ARC/lhc

Btry. "C," 16th C. A. Ft. Ruger, T. H., February 24, 1926—To C. O., Ft. Ruger, T. H.

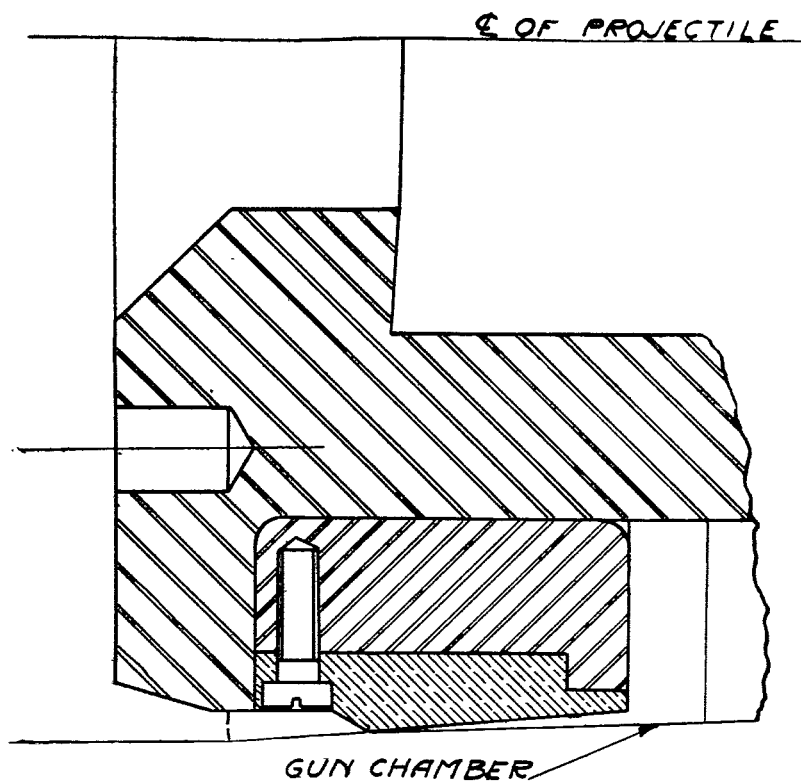
1. In compliance with basic letter the following report is submitted. The comparative test of the two dummy projectiles was commenced in April, 1925, the results of each ramming and extracting being recorded.

2. The Ordnance type projectile, having been designed for a gun and for gun trucks, soon showed its unsuitability for use in a mortar battery until alterations could be made on the rotating band and the bourrelet. The test was discontinued on this projectile until these changes were authorized and completed. The test continued for the Maloney type.

3. Test on the modified ordnance type was commenced once more in November, 1925, and since that time each projectile has been rammed 207 times. Inspection of the records attached will show conclusively that the Ordnance type has given the most if not nearly all the trouble with sticking and is the least satisfactory. However, there are other points to consider besides those tabulated on the test sheet. The Ordnance type is so constructed that the moving parts are all exposed, and as they have to be kept oiled, they cause continual care and cleaning. This feature is especially bad in batteries where sand and dirt are continually blowing around. In the Maloney type these parts are all inclosed and need oiling and cleaning only after long periods of constant use. The Ordnance type has much more brass in its construction, therefore being much more expensive to manufacture. The Ordnance type has another bad feature in that it jumps back after being rammed with the proper force. This necessitates an added push to the rammer, thereby introducing a feature in the drill that isn't necessary in ramming service projectiles. The Maloney type very seldom does this, and in addition the more perfectly this projectile is rammed the easier it comes out, and when poorly rammed it often sticks.

4. After constant and careful observation of these two projectiles in everyday use with all types of ramming details, I believe that the Maloney type is by far the best of the two projectiles and gives the best service with the least amount of care of any dummy projectile I have ever seen in mortar batteries. My opinion is heartily concurred in by all the old noncommissioned officers of this battery who have had a great deal of service with mortar batteries.

* * * * *



MODIFIED REAR BAND
ASSEMBLY FOR
DUMMY PROJECTILE
(DWG. 72-1-34)

GA. 897

FIG. 2

12 13th Ind. AMC/lhc
Btry. "C," 16th C. A., Fort Ruger, T. H., April 5, 1926.—To Fort Ruger, T. H.

1. Record of rammings from 203 to 517 added to 5th Ind. Inspection of these added records and personal observation of the rammings only strengthen my remarks contained in the 5th Ind. One added point, the sliding sleeve type being a longer projectile, there is more danger of it tipping up the truck and dropping into the well. This happened recently and I don't believe it would have occurred had the Maloney type been on the truck instead.

* * * * * MDM/RMF
0.0.470.2/365 17th Ind. Doc 570.2/16
Hq. Hawaiian Department, Office of the Ordnance Officer, Honolulu,
April 12, 1926.—To: The Chief of Ordnance, U. S. A., Washington, D. C.

* * * * *
2. Referring to the third sentence in 15th indorsement, it is believed that the Maloney type may be more stable on the truck due to the center of gravity being considerably more rearward than the sliding sleeve type, rather than the slight difference in length. This feature may help also in ramming as it is no doubt desirable to have the greater weight at the base.

3. Attention is invited to DOC 470.2/10, first indorsement, dated June 25, 1925. The projectile manufactured here has been in constant service since two or more months prior to the date of that indorsement and with different model mortars in both Harbor Defenses. This projectile had been rammed several hundred times prior to the receipt of the sliding sleeve type for test and is still in excellent condition to continue.

C. O. 470.2/365 20th Ind. WFS/EM
War Dept., Ordnance Office, Washington, D. C., July 9, 1926.—To: Office,
Chief of Coast Artillery, Washington, D. C.
470.2/G

* * * * *
2. The modified dummy projectile CA 897 was further modified in the Hawaiian Dept. by changing dimensions 12.24 and 12.6 on the band, sketch CA 1082, to 12.03 and 12.35, respectively, to enable it to be used in the 12" inch mortar, since it was originally made for use in the 12" gun.

3 In making recommendations on this matter, it is desired to call the attention of the Coast Artillery Board to the comparatively large stock of sliding sleeve type dummy projectiles on hand which could be modified, similar to the slide sleeve type tested, at moderate cost and to the fact that no funds for the manufacture of new dummy projectiles are available at present. This particular 12" dummy projectile was modified at a cost of \$96.23 and this price would undoubtedly be considerably reduced should any quantity be so modified. Contrary to the statement made in paragraph three, 5th Indorsement, that the sliding sleeve type would be much more expensive to manufacture than the "Maloney" type, it is believed that the reverse would be the case, since the "Maloney" type requires considerable machining on the interior moving parts and the same amount of brass or bronze would be required on either type, for any given weight of projectile.

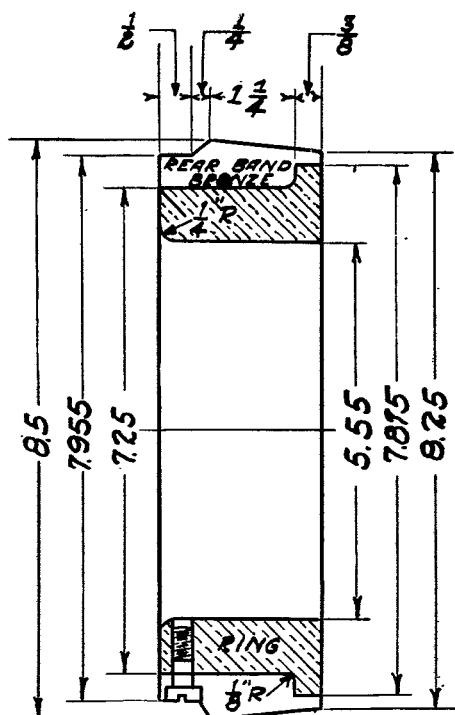
4. Two types of dummy projectiles are now in service, the old spring actuated type and the sliding sleeve type. Spare parts, such as the rear bands, etc., are continually being supplied for these two types and it would be undesirable from this standpoint to have an additional type for which spare parts would be required.

II—DISCUSSION.

3. The Coast Artillery Board believes that the requirements for dummy projectiles are as follows:

a. Similarity in weight, form and balance to service projectile.

b. Should permit (and preferably require) ramming home with the same motions, speed, and force as the service projectile.



**MODIFIED REAR BAND
ASSEMBLY FOR
8-INCH DUMMY PROJ.**
ORD. DEPT. SKETCH, GA. 897, 9-15-23
(DIMENSIONS CHANGED TO SUIT 8-INCH GUN)

FIG. 3

b. Should withstand ordinary rough usage in handling, ramming, and extracting without damage, injury, or failure.

d. Should be capable, as a rule, of ready extraction without delaying or disorganizing drill and instruction.

The first two requirements are met satisfactorily by the present projectile, the third and fourth not satisfactorily. Modification should be made with the view:

(1) Rendering projectile less likely to damage, and

(2) Insuring ready extraction with rare failure.

4. It has always appeared doubtful whether all these requirements could be met by one projectile. In this connection it appears that the means of extraction provided is so lacking in strength and means for quick application of power as to add to the difficulty. For this reason it is suggested here that a much stronger hand extractor with sliding weight to permit a quick hammer blow should offer decided advantage. Such an extractor might well be much heavier than the present one, and might catch the lip of the projectile by an expanding ring, compressed in insertion.

5. The remarks of the Commanding Officer, 51st Coast Artillery, concerning the dummy projectile for 155-mm. gun are quoted as follows:

1. The experience of this regiment with the dummy projectile has been that they always stick, and never jump back after being rammed. Causes for the sticking are different in different projectiles. In some the rear band is apparently so much worn that the projectile is forced too far into the gun; in others the trouble is with the forward ring. The cause of the sticking is believed to be due to the compression of the rings from constant ramming. The ring becomes too tight on the spindle and jams. From Ordnance Department drawing the inside diameter of the ring should be 3.95 inches; the diameter of the spindle is 3.93; a clearance of .02 inches. The inside diameter of ring on a dummy projectile that stuck was 3.93 inches showing a compression of .02 inches.

6. The remarks of the Commanding Officer, 52nd Coast Artillery (Ry), concerning the dummy projectile for the 8-inch railway mount are quoted as follows:

1. The only objectionable feature of the dummy projectile as now issued is its tendency to stick in the bore after moderate use.

2. One dummy projectile for the 8" gun was modified by the Post Ordnance Officer in November, 1925. This projectile was issued to Battery "F" of this regiment, and has been used continuously since that time. The modified projectile has been found very satisfactory; it has never stuck in the bore.

3. There are enclosed herewith a memorandum from the Post Ordnance Officer, together with a sketch of the modification made, and a description of a further modification proposed.

7. The modification as made for the 8-inch dummy projectile is shown on attached sketch (Fig. 3). It will be noted that this modification is along the lines of the modification made by the Ordnance Department on the 12-inch dummy projectile sent to the Hawaiian Department (Ordnance sketches GA 897, GA 1082, GA 1083). The assembly sketch GA 897 is attached (Fig. 2).

8. The steel used in the modified ring of the 8-inch sliding sleeve type dummy projectile at Fort Eustis, Virginia, was turned down from an axle of a salvaged track-laying type road mount for the 8-inch howitzer, presumably made by the Holt Company, manufacturers of the Caterpillar type tractor. The kind

of steel used in the axle is not known but it appears that the deformation of the ring has been eliminated or at least considerably retarded. Since the writing of the above Indorsement by the Commanding Officer, 52nd Coast Artillery, the 8-inch projectile has been rammed over 1000 times without serious sticking.

9. If the difficulty is due to the deformation of the ring which seizes the body of the dummy projectile, it is natural for the larger projectile to give more trouble due to the greater force of ramming.

10. A letter dated July 29, 1926, from the Battery Commander, Battery "A", 16th Coast Artillery, to the Harbor Defense Commander, Fort Ruger, T. H., states that all dummy drill projectiles (both old and new types) at *Battery Randolph* (14-inch rifles) had become unserviceable. Reference was made by the Harbor Defense Commander in the 1st Indorsement of this correspondence to the Maloney type projectile which had at the time of writing (July 30, 1926) been used for 18 months was still giving satisfactory service. No mention was made in this correspondence, however, to the modified 12-inch dummy projectile.

III—CONCLUSIONS.

11. The Coast Artillery Board is of the opinion that:

a. The Maloney type dummy projectile is superior to both the so-called "spring type" and "sliding sleeve" dummy projectiles.

b. The principal defect of the "sliding sleeve" type dummy projectile lies in the ring believed to be from two causes:

- (1) Improper metal,
- (2) Too thin a section.

IV—RECOMMENDATIONS.

12. The Coast Artillery Board recommends:

a. That no further attempt be made to modify the old (spring type) dummy projectiles.

b. That for the present a modified ring of the type made at Fort Eustis and of that shown in Fig. 3 be furnished of a better grade of steel than that now used, probably heat-treated.

c. That if practicable the ring be increased in thickness to give greater strength and that the diameter of the projectile body under the ring be correspondingly reduced.

d. That a more positive grip be devised for the extractor.

e. That an experimental extractor be made, if funds permit, with a sliding weight on the principle of the sliding handle of the commercial nail puller to give additional shock for dislodging stuck projectiles.

f. That if additional dummy projectiles are required for 14-inch or 16-inch guns they be of the Maloney type.

V—ACTION OF THE CHIEF OF COAST ARTILLERY.

1. The conclusions and recommendations of the Coast Artillery Board contained in the enclosed report are concurred in.

2. The recommendations made in paragraph 12, b, c, d, and e pertain to steps that may be taken at the present time to remedy the difficulties which are now being encountered in the service. It is requested that this office be informed of the action that can be taken on those recommendations.

BOOK REVIEWS

Soldiers and Statesmen, 1924-1918. By Field Marshal Sir William Robertson, Bart., Charles Scribner's Sons, New York. 2 Vols. 1926. 6¼" x 9½". 333+327 pp. Ill. \$12.00.

Sir William Robertson, as Chief of the Imperial General Staff, was, or should have been, the responsible military adviser of the British Government between 1915-1918, that is, longer than any other in the World War. The two volumes in which his story is given show plainly that there were other military advisers at times more influential, if not always responsible.

The writer's attitude is indicated in his preface, where we find the following:

The vast problems which British soldiers and statesmen were jointly called upon to solve during 1914-1918, would in any circumstances have tested to the utmost the ability and forbearance of both parties. They were the harder to solve . . . because no one had sufficiently thought out beforehand, the organization of Government and of a High Command for war purposes.

In dealing with the various campaigns, I have . . . thought it desirable to recall the main events from the beginning and not to restrict them to the particular period (December, 1915 to February, 1918) when . . . I occupied the post of chief military adviser and executive officer at Government headquarters.

The more or less apologetic statement of his reasons for and attitude in undertaking this work which follow appear superfluous. The work is not, as this preface inclines one to believe, a brief for the general staff and its chief, an effort to place all the blame elsewhere, or a string of complaints, but a dispassionate and reasonably unbiased account—though quite definitely oriented in point of view—of the persons, their processes of reasoning, and the conditions entering into the more important decisions as to British war policy and grand strategy.

Before the reader goes far he will discover that much of the blame for the spineless, inconstant, and ineffective war policy of the British government is to be laid squarely—and almost inescapably—on that deadliest of all menaces to his country's welfare, the amateur strategist in high place.

In a chapter entitled "The Genesis of the Expeditionary Force," is given a brief resumé of the British government's military policy from 1870, when "the startling achievements of Prussia . . . disclosed to the world something of what could be accomplished by a national army under the guidance of a highly educated General Staff . . .," to the outbreak of the World War in 1914.

We find that the principle of national service was not acceptable; that until 1904 there was no body of officers, no General Staff, whose business it should have been to keep the Government systematically and Scientifically informed on military matters, and then an improper organization; that not until 1906 was the war in alliance with France against Germany seriously considered as an eventuality; that even after that "*the strength and equipment of the Army continued*

to be determined *not by the sum of our military liabilities* but by what the voluntary methods of recruitment could produce within the *financial limits of such annual estimates as the Cabinet deemed politically expedient to lay before Parliament*," (reviewer's italics); that Mr. Lloyd-George in January, 1914, urged that the season was the most favorable in twenty years for cutting down expenditure on armaments; and finally that the same statement on July 23, 1914 (the date of the Austrian ultimatum to Serbia), delivered himself of the following:

The encouraging symptom which I observe is that the movement against it (expenditure on armaments) is a cosmopolitan one and an international one . . . I can see signs, distinct signs of reaction throughout the world.

In the chapter entitled "The Western Front 1914-1915" we read that the Government was unable to furnish Sir John French with proper instructions. His mission was to assist—

- (1) in preventing or repelling the invasion of French territory, and
- (2) in restoring the neutrality of Belgium;

but neither then nor later was he given any information as to the means that would be supplied; and throughout the first half of 1915 the Commander-in-Chief had little or no knowledge of what the military policy of the Government was supposed to be.

In subsequent chapters it appears there were two schools of grand strategy. The school of amateur strategists, of which Lloyd-George was the most persistent and insistent exponent, held that little could be accomplished to break the deadlock on the Western Front and that the greater part of the British land forces might better be employed in the hope of accomplishing brilliant victories in other fields. This school seems not only to have been mainly responsible for the Dardanelles fiasco, the campaigns in Mesopotamia and Palestine, and the British participation in the Salonika expedition, but to have conceived and seriously to have proposed such further diversions as a campaign against Turkey from Alexandretta (1915) and a combined French-British-Italian campaign against Austria through the Julian Alps (January, 1916). They constantly urged a weakening (at times complete withdrawal) of the British Armies in France.

The General Staff continued with the other school whose beliefs were—

- a. That the decisive campaign would have to be fought on the Western front.
- b. That the weakest point of Germany, as well as of the Entente Allies, was in France.
- c. That every effort should be made to strengthen the British armies in France, both in men and materiel, and that there should be no diversions from this except those absolutely necessary for imperial defense.

It is probable that only a British soldier could so frankly portray the vacillating and ineffective war policy that resulted. The author shows how the decisions for the various campaigns were reached, how often the General Staff was overruled, how military advisers were blamed equally for opposing and for not opposing in conference the Government's war policies. His picture, in fine, omits no essential detail.

American readers will be interested in the considerations affecting the "Preparation for 1918," especially as the date of effective American intervention is foreseen. The General Staff advocated a defensive policy in distant theaters, not only to permit transports to be spared for American soldiers, but also to enable the enemy to be met with maximum force should he try to force a decision before the American army could participate effectively in France.

Of special interest to Americans also is the brief resumé in the last chapter of Volume I of the misguided effort to embody American battalions in British divisions, which reflects little credit on British soldiers or statesmen, but much on General Pershing.

The reviewer expected a rather prosy text with the cumbersome though somewhat disjointed style of the work of many British military writers, but found a story more absorbing than any but the best of fiction, one he laid aside with reluctance for his necessary duties.

Sir William Robertson has made a valuable contribution to history and written a highly readable book. The student is advised not to let the high price keep him from owning this work.—R. S. A.

Loyalism in Virginia. By Isaac S. Harrell. Duke University Press, Durham. 1926. 5½"x 7½". 203 pp. \$2.50.

Virginia, the first of British colonies in North America, was, prior to the Revolution, more English in manners, customs, and social organization than any other of the American colonies. The planters imitated the aristocracy of England and demanded for themselves many of the rights and privileges of aristocracy. If loyalism were to be expected anywhere in America, it would be in the landed gentry of Virginia.

Yet, so Professor Harrell finds, there were few loyalists among the Virginian land holders, while the merchants were generally loyal to the home government. Several factors contributed to bring about this condition. The merchants, looking to Old England for their continued business, found it to their advantage to maintain friendly relations with the mother country. On the other hand, the planters had developed a number of interests which indicated a need of separation from the home governing authorities. The constitutional controversy between England and the colony, British restrictions on land settlement in the West, an increasing poll tax, a depreciating currency, an unfavorable trade balance and the consequent indebtedness to English merchants, all helped to bring the Virginian to a point where he was willing to break away from British control.

Professor Harrell, working from original sources, has covered the subject from an economic point of view, without, however, minimizing the social and political aspects of the Revolution. The first chapter is an analysis of the economic conditions in Virginia during the decade preceding the Revolution; the second is a study of the loyalist activities in Virginia during the war. The remaining chapters treat of the punishment of loyalists during the war and of economic matters in the years immediately following the war. The book is a distinct addition to the history of the American Revolution.

Highways and Byways of the Civil War. By Clarence Edward Macartney. Dorrance and Company, Philadelphia. 1926. 5¼"x 8". Ill. 273 pp. \$3.00.

In a succession of vacation trips, lasting over a period of seven years, Clarence Edward Macartney, author of *Lincoln and his Generals*, has visited the scenes of twenty of the greatest battles of the Civil War. "This," says Mr. Macartney, "has enabled me to get a clear understanding of the strategy and tactics of the several campaigns, and to form a mental picture of the great battles, which otherwise would not have been possible. I have tried to describe the battlefields as they were in the 'Sixties when trodden by the ruthless foot of war, and as they are

today, some of them marked with costly and beautiful monuments, and frequented by throngs of visitors; and others, and these the most impressive, as wild and remote as when the clashing armies first invaded their forest solitudes."

Mr. Macartney describes each journey in such detail that the book could be used as a guide book by anyone who wished to follow in his footsteps; and the descriptions of the battlefields and the surrounding country as they appear today are most graphic. A quotation from the introduction to the chapter on Harper's Ferry will serve to illustrate Mr. Macartney's literary style.

With a river to make it glad and a chain of mountains on the right hand and on the left, the Valley of Virginia, as the Plain which tempted Lot, is well watered, like the Garden of the Lord. There may be valleys which are deeper and hills which are steeper, but no valley in all the land where the charm of field and stream and hill is so closely woven with the romance of stirring history. The gateway to the Valley is Harper's Ferry, and Harper's Ferry a gateway to Washington.

In the vivid re-telling of these battles, the emphasis is always on the personal element—the officers and men who fought so desperately for what they believed right—and with admirable fairness the author has done justice to the brave men of both armies. The book shows no bias and no partisanship; but Grant, Lee, Burnside, Jackson, the soldier in gray or the soldier in blue, pass before us in a tragic pageant of loyalty, patriotism, suffering, heroism, and death.

There is but a pitiful remnant left of the men who fought these battles, but Mr. Macartney has caught much of the feeling and sentiment that inspired the soldiers of the North and of the South and makes one realize in a measure the intense passion that urged them on to battle.—E. L. B.

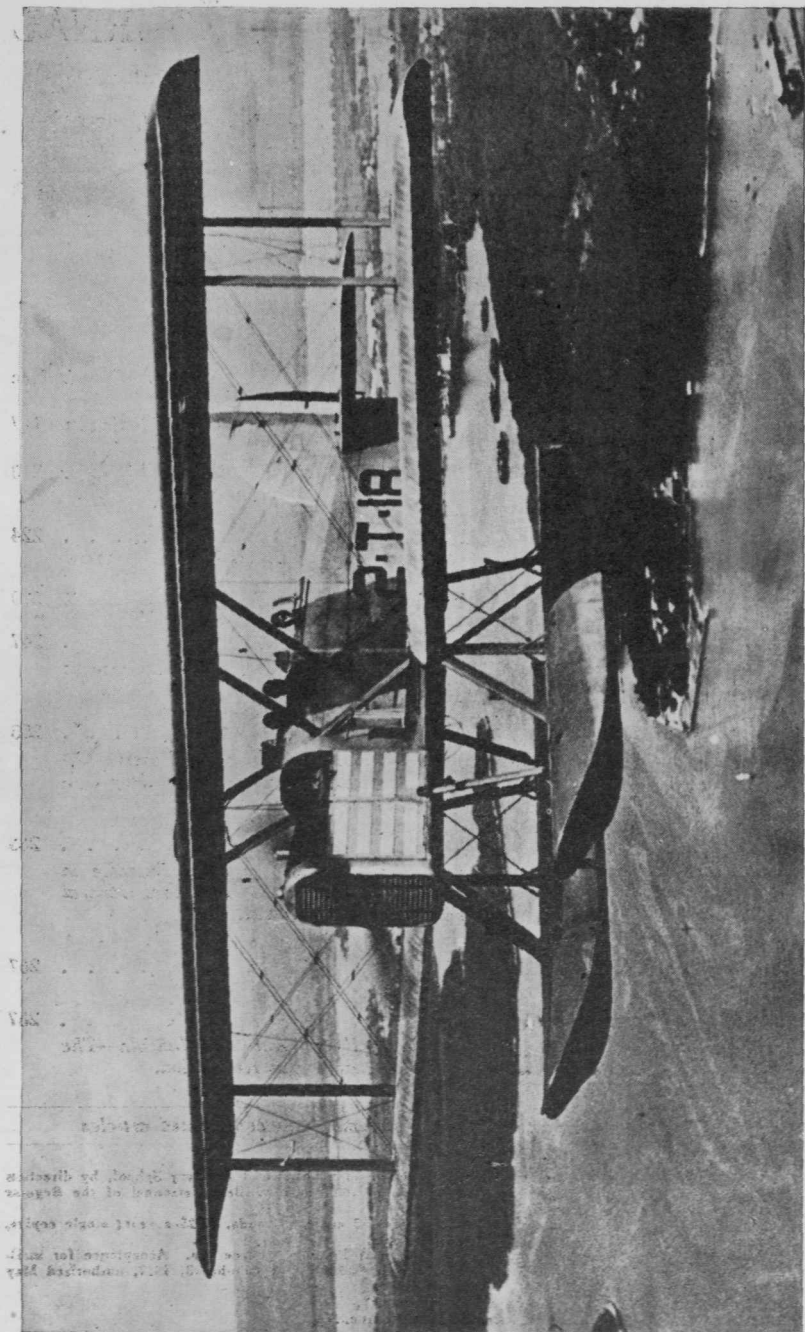
The War God Walks Again. By F. Britten Austin. Doubleday, Page & Co., Garden City, N. Y. 1926. 5¾"x 7½". 274 pp. \$2.00.

A study, in the guise of fiction, of the possibilities of unrestricted warfare with the newer weapons—airplanes, gas, and tanks—in land battles, in naval engagements, and in civil disturbances. The conservative element will look upon the situations as improbable, but they are well worth reading.

APHORISME III.

A Generall is to command and advise, but Souldiers are to execute with their swords what is commanded; in this, but one mans life is in danger; but in that, the hazard of all. Wherefore a Commander in chiefe ought to be covered with the Seven-fold Shield of Ajax, and never expose his person to apparent perill, but in case of a general overthrow and manifest defeat.—Ward's Animadversions of War (London, 1639).

A PRACTICE HOP IN HAWAII



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