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CONTENTS

U. S. S. WRIGHT . . . . . *Frontispiece*

TRAINING . . . . . *By* MAJ. GEN. C. P. SUMMERALL 1

SOME RANDOM THOUGHTS ON ANTIAIRCRAFT ARTILLERY . . . 5
By MAJ. P. D. BUNKER

HARBOR DEFENSE MOBILIZATION PLANS 18

PREPAREDNESS FOR WAR . . . . . *By* COLONEL G. RUHLEN 30

GENERAL OFFICERS OF THE REGULAR ARMY 45

EDITORIAL 63
Promotion and Retirement—The Bayonet's the Thing—Talking Us Out of Hawaii—Pacifism Rebuked.

PROFESSIONAL NOTES 67
Forty-second Coast Artillery (Railway)—Military Academy Ratings—Board of General Officers to Study Congestion Among Commissioned Officers—Coast Artillery Graduates at Leavenworth—Army Notes—Guidon Awarded at University of Pittsburg—The Officers' Reserve Corps—Wars of France—Classification of Coast Artillery Organizations.

COAST ARTILLERY BOARD NOTES 78

BOOK REVIEWS 87
British Documents on the Origins of the War—The Great Crusade—Statesmanship or War—The History of Fort Riley—H. E. and P. Burning Ground—Windjammers and Shellbacks—Through Liberia—Through Europe on Two Dollars a Day—Traveling Light—How to Be Happy in Paris Without Being Ruined—The Latin Quarter, Past and Present—Red Pants and Other Stories.

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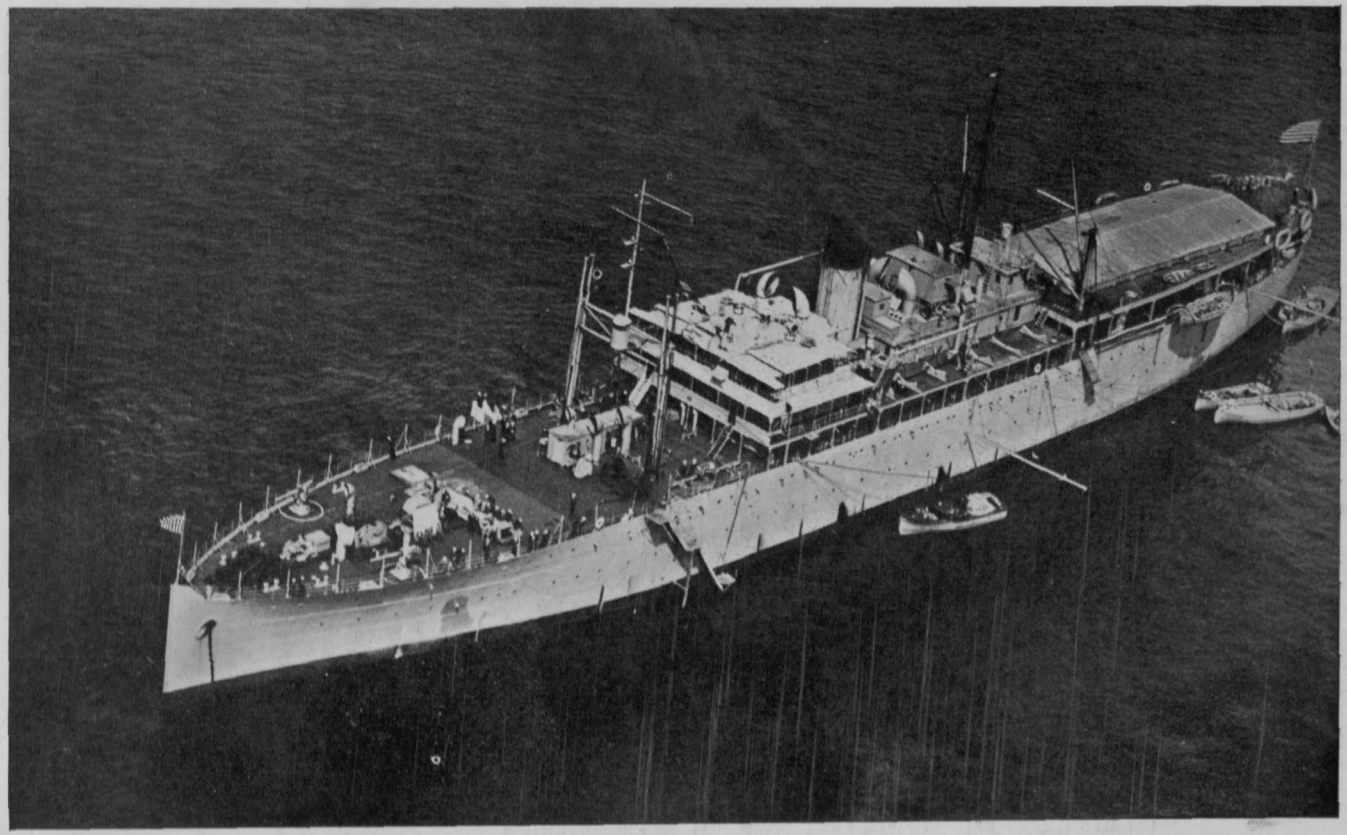


OFFICIAL PHOTOGRAPH, U. S. NAVY

U. S. S. WRIGHT, AIRCRAFT TENDER

THE COAST ARTILLERY JOURNAL

Volume 67 JULY, 1927 Number 1

Training*

By MAJOR GENERAL CHARLES P. SUMMERALL

* * * * *

WHILE it may appear trite to reiterate the rôle of Infantry, I feel that in the confusion of public thought concerning the art of war the occasion should not pass without the re-affirmation of the part that the arm has ever taken, and in all human probability that it must ever take in battle. Quite properly the School teaches that various arms and many agencies are indispensable for the efficiency of the Army. Thus the fire power of the Artillery, the aircraft, and the tanks; the mobility and the extended action of Cavalry, the art of fortification of the Engineers, the technical communications of the Signal Corps, and the peculiar contributions of other branches have their assigned parts in campaign and in battle. No one of them, however, nor all combined, could drive a properly organized enemy from his position or prevent his ultimate advance. They are valuable only as they serve and save the Infantry. It is only the Infantry that can capture prisoners and guns or that can prevent the enemy from crossing our lines. While it must not be claimed that Infantry can act alone with reasonable hope of success, it is absolutely true that the other arms, save Cavalry fighting as Infantry, would be doomed to certain failure. The Infantry marks the battle-line; their dead tell how the tide of battle is moving; theirs is the post of highest honor for it is the place of greatest danger. Every soldier knows well the truth of these doctrines, and our Service Schools are a guarantee that the training of our troops will be sane and sound. The men who bear the burden of responsibility for National Defense are eagerly urging the development and the increase of all forms of artillery and ammunition, of aircraft and bombs, of authorized chemicals and technical accessories, but they are equally determined to have a highly trained infantry arm with improved semi-automatic rifles, machine guns, tanks, and all other appropriate infantry weapons.

*Address at the Graduation Exercises of the Infantry School.

The especial privilege that the students have enjoyed of gaining increased knowledge imposes upon them a correspondingly increased obligation of imparting that knowledge. It is not practicable for every officer in the Army to attend a service school. Indeed it is not essential that all should do so if those who have become qualified will properly teach. Many of you will go at once to commands and all will do so eventually. Every post, and indeed every battalion and company, can and should be a school for professional training. It is the duty of the commanding officers of every echelon to organize and conduct the technical as well as the practical training of the officers and enlisted men of his unit. There is no place where, and no season when, this cannot be done, and no circumstances under which it will not add to the contentment as well as the efficiency of those commanded.

Let it be a primary objective of each one of you to see that all of your subordinates are taught by you at least as much as you have learned and more as you acquire additional knowledge. Even were you not deeply interested, the Army expects and has a right to demand a full measure of your time and talents. You are honored by a commission in the Nation's armed forces. You may be entrusted with the high and grave responsibility for other men's lives and upon your preparation and your conduct may rest the issues of victory or defeat and the very existence of your Country. From a population of more than one hundred and twenty millions of people, you are among 12,000 men to whom is confined the responsibility of maintaining and disseminating the Science and the Art of War. You have only to continue and to require of your subordinates the same degree of industry that you have practiced at this School to experience a soldier's pride in creating a fighting command. It is not even sufficient that you should be qualified to exercise the duties of your grade. War demands youth. It is upon the shoulders of younger men that the task of leading corps, divisions, and brigades must rest. Your studies should include troop leading of the higher echelons if you would be prepared to avail yourselves of the opportunities that would come in an emergency.

While it is true that the officers of your generation are trained more highly than your predecessors, it is equally true that the Army of today has not emphasized something that is at least as essential to the profession of arms. Fighting efficiency cannot be obtained through academic methods alone. It can only be realized by possessing and inculcating the military spirit. Basically this spirit manifests itself by pride in being an officer or soldier. There must be pride in the uniform, in the rank and command one exercises, in the traditions of one's branch and of the Army, in the social status that one enjoys and in the military

hierarchy. The expression "officer and gentleman" must be in reality one word, and he who would be the best officer must also be the truest gentleman. The military spirit carries a worthy impulse to excel by merit and to advance one's self in reputation and rank, not by self-seeking or injury to others, but by unselfish rivalry and sheer ability. It seeks not material gain but the honor of excelling. There is no asset in peace like the reputation of having a highly efficient soldierly command and no guarantee for advancement in war like having a command that takes its objectives. First-class troops, whether in garrison or in campaign, can only be created through the existence of the military spirit. Efficiency cannot be hidden and no place or service is too obscure for it to be recognized and rewarded.

The military spirit is disclosed by the discipline of a command. This is not the discipline of the guard house or fear of punishment. Such evidences are the failure of discipline. True discipline can only come from self-respect and pride in one's organization and service, and it is infused by the officer who possesses these qualities and who deals justly with those under his authority.

The military spirit inculcates loyalty; it abhors criticism of superiors or complaints about hardships. It seeks to cooperate and secure perfect teamwork. It creates an atmosphere for effective command, in which an order gathers strength as it is transmitted and reaches the point of execution with irresistible force.

The military spirit is reflected by the dress and deportment of a command. The wearing of neat and correct uniform is the best advertisement of any organization. The erect bearing, the ceremonial salute, and the formal phraseology in military intercourse give tone and dignity that are distinct aids to discipline. Unhappily these evidences are too often emphasized by their absence.

No training of troops worthy of the name can exist without the military spirit. Perfunctory movements in close order and ceremonies, unanimated commands, and uncorrected errors are a harmful waste of time, while even a short exercise with spirit and precision will develop the mental attitude and the mechanical perfection that are basic in training.

Punctiliousness as to detail is the basis of efficiency, whether it concerns the individual or the organization; whether it relates to the business or the recreational activities of the command; whether it has to do with the equipment and care of men, animals, or transportation; whether it affects the internal life of the troops or their associations with the civil population.

It is inconsistent with the military spirit for an officer to permit himself or his men to become unfit physically through preventable causes for the active service that may be required of them. Physical fitness may and often does require self-denial and simplicity of living, but these are among the soldierly virtues that the Army must possess.

The military spirit is evidenced by the conscientious devotion to duty that often requires high moral as well as physical courage. It is not uncommon to hear comments about inefficient individuals, whereas commanding officers have it within their power to require reasonable standards of efficiency within the power of everyone or to place wilful neglects and failures upon efficiency reports with a view to the elimination of the unfit. Only a lack of moral courage to face the temporary disapproval of others appears to deter responsible authorities in many cases from the full discharge of their obligations. The Army is what the commanding officers in every echelon make it, and its efficiency is a measure of the military spirit of the officer corps.

There was a time when a man was described as "an officer of the old school" because he was the embodiment of the military spirit. Such men exalted duty with troops and sought arduous rather than inactive service. There can be no greater calamity than a sentiment which underrates assignment to a regiment and gives preferment to officers who have not qualified primarily as troop leaders. Such is the spirit that has come down to us in the customs of the service which have the binding force of law. It may sleep in the hearts of men but it can never die, for like nobleness it "will rise in majesty to meet thine own." If your command has the military spirit and the technical training that you are qualified to impart, it will be superior in peace and it will take its objectives in war.

Today there is celebrated the victory of one of our greatest battle days. On the 28th of May, 1918, the 28th Infantry, supported by the sister arms and services, made the first American assault in the Great War at Cantigny. By its superb military spirit and technical training it carried its objectives with such courage, fortitude, and gallantry that the Allied world took heart and the enemy was correspondingly shaken. The regiment paid a terrible price in killed and wounded, as the Infantry must always do, but its spirit rose with its losses. I need give you no further proof of the truths that I have tried to convey than the example of this noble regiment whom the American Army honors on this anniversary.

Some Random Thoughts on Antiaircraft Artillery

By MAJOR PAUL D. BUNKER, C. A. C.

"Well, in *our* country," said Alice, still panting a little, "You'd generally get to somewhere else—if you ran very fast for a long time, as we've been doing."

"A slow sort of country!" said the Queen. "Now *here*, you see, it takes all the running *you* can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!"—*Lewis Carroll.*

EVER since the war our technical press has devoted a great deal of space to antiaircraft artillery, and it would seem hardly necessary to add another to the steadily growing accumulation. Our excuse lies in the reaction produced by some of these articles—the feeling that "That has been said before."

It may be, after all, that there will be statements in this paper which have been made before. Almost everything really worth while has been said at least once, so one must possess unusual conceit to think he can produce a novel thought on any of the usual topics of conversation. The weather, for example, has been talked about for a considerable length of time although, as someone patly remarks—in spite of that fact nobody has really *done* anything about it. Now, while it might be impossible to say anything new about the weather, it is, perhaps, less hopeless to attempt saying something new about the "archies."

Not that newness alone is sufficient justification for a statement. A modicum, at least, of instrinsic worth is a desirable attribute, if only to warrant discussion and, perhaps, lead to a search for improvements. We do not improve by reading for the tenth time that, at the beginning of the War, it took 10,000 shots to bring down an airplane and that at the end of the War it took only 1,000. On the other hand, we *might* improve if we read an article advocating the tracking of airplanes at night by ultra-violet rays or by radio. At least, it would provoke discussion.

Since the War the Antiaircraft Artillery has improved steadily, and lately it has been progressing by leaps and bounds. This is not only desirable but even necessary to its existence. It must keep ahead of the developments in aviation in order to hold its own. It cannot stand still; if it does not progress then it must retrograde. Verily, as the Red Queen says: "It takes all the running *you* can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that."

This paper, then, will be a modest attempt to "run twice as fast as that." It will consist of certain observations made as a result of several years spent in more or less close connection with antiaircraft artillery. Many of the ideas set forth are not original with the writer; none of them, so far as known, can claim to be "doctrine." They are here put down in the hope that some among their number may be found worthy of attention and, possibly, action, and thus play their part in the further improvement of the archies. Let us begin with fundamentals and first discuss

The Rôle of Antiaircraft Artillery

Heretofore it has been considered that one antiaircraft regiment constitutes the logical defense for a corps front. Recently, however, there has developed the idea that this is hardly the best solution to the problem. There seems to be a growing belief that each division should have an antiaircraft machine-gun battalion of its own. Here the question may be asked, Why a special unit of this nature, when the Division already has oodles of machine guns, and some of them told off for AA protection at that? The answer lies in the old saw about the impossibility of serving two masters. Hitting an airplane with a machine-gun bullet is a highly specialized business; it takes special training, and lots of it. It simply doesn't fit in with terrestrial machine-gunnery. The comparative record of airplanes brought down during the World War proves it. So the logical procedure seems to be to augment the already overloaded Division by giving it an antiaircraft machine-gun battalion of its own. The mission of this battalion, presumably, would be the protection of the Division, not only along its battle front, but also while on the march, etc.

As a result of this change in organization, when, as, and if effected, the rôle of the antiaircraft regiment changes accordingly. The logical position for the gun batteries may be affected only slightly, but the machine-gun battalion is entirely released from front-line work and is made available for the protection of sensitive points and areas farther to the rear. Whether these points are distribution points, mobile reserves, rail-heads, arterial roads, or other vital elements will—er—"depend on the Situation" (God bless these Schools!) But cases can easily be imagined where protection of such vulnerable points as these will become of paramount importance, and antiaircraft machine guns—or even the larger guns—will have to be posted to fulfill this mission. They may be stationed to protect certain Corps activities or agencies.

In reconnoitering for positions to accomplish these missions, the presence of the divisional machine guns introduces another complica-

tion. That is the necessity—or rather, the desirability—of linking together the fields of fire of all machine guns to secure maximum protection. For example: In Fig. 1 let us assume that A-B-C-D represents the protective zone of the divisional machine-gun battalion and that the Corps AA regiment is assigned (among its missions) the duty of furnishing protection at E.

It is evident, of course, that this mission could easily be fulfilled by locating a machine-gun battery at E, but it is also evident that if we located this battery at F then will not only its primary mission be fulfilled but, in addition, its protective zone (shown by the dotted circle)

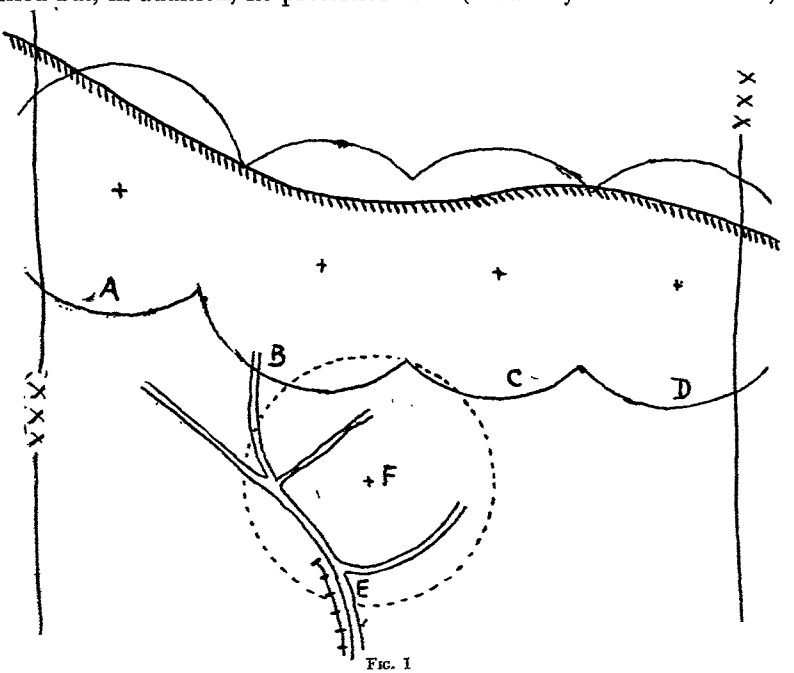


Fig. 1

will link up with the protective zone of the divisional battalion and thus serve to increase the time during which an advancing plane could be kept under continuous fire. The airplane's line of approach, of course, enters the problem, but the above is sufficient to illustrate the principle.

This point of interlinking fields of antiaircraft fire must receive attention, also, in planning locations for the gun batteries. Assuming that the effective range of action of a gun battery is 5000 yards, we may cut three circles from transparent celluloid (or make three wire rings) with radii of 5000 yards, according to the scale of the map in use and, by juggling them around on the map, we may arrive at a logical decision as to where the batteries should go, in a very short time. In

ordinary, varied terrain we may save hours of footless reconnaissance by selecting approximate battery positions from the map in this manner —provided the map is fairly good. If we know the positions where other AA guns are, or are going to be, it is a comparatively simple task to select our own approximate positions so as to link up the various fields of fire for maximum effect. In actual practice in time of peace, it is easily possible for the Colonel, the gun Major, and his Captains, together, to decide in a few minutes on positions which will fulfill their missions and will require only unimportant changes later. On average terrain, reconnaissance will usually discover an acceptable position within a half-mile of that selected from the map.

Due to the change, described above, in the rôle of the MG battalion, the employment of the regiment as a whole will experience a corresponding change. The bonds between the two battalions (gun and machine-gun) which are loose at best, will be weakened still further. It well may happen that the two battalions are employed in widely separated areas. This means several things: the battalion sections of the Service Battery must be well equipped and trained to cope successfully with the resulting supply problems; the battalion must be capable of independent existence over reasonable periods; liaison must strengthen between regimental and battalion headquarters—or the colonel may lose one or both of his battalions.

This matter of "liaison" naturally brings to mind the subject of

The Communication Net

Let us here voice a grave doubt as to the practicability of the extensive systems of telephonic communications which we sometimes see —on paper. This doubt is evidently no personal and private property of our own, because the Powers That Be have recently seen fit to abolish one small link in the net—the lines connecting sections of the machine-gun platoons. We have the sneaking suspicion that some of these type diagrams show, not what their authors think is *necessary*, but what they would *like* to have.

The laying and the recovery of wire are not the simplest and quickest jobs in the world. With practice, and in peace time, much wire can be put down in a very short time, but even then it is a tricky proposition, and the least little thing may change a record-breaking performance into a farce. In war, the task is much harder and slower; even after the wire is laid, its maintenance is always difficult and sometimes impossible.

The obvious answer is to use the minimum amount of wire. Radio is of no great help in this trouble; it has too many disadvantages to permit it to oust the telephone except in a few special cases. Wire is,

of course, a vital necessity to the proper functioning of the Antiaircraft Intelligence Service, so much so, in fact, that we are coming more and more to the opinion that whatever wire we are able to lay (and maintain) should be reserved for intelligence purposes alone. These purposes would include alerts, alarms, urgent intelligence messages, and other matters of like importance. On the other hand, routine summaries of intelligence, administrative matters, and even movement orders should not be permitted to clog the lines, but should be sent by messengers, instead.

Taken all in all, messengers are at least as reliable as the telephone, and they are often much quicker. To the inexperienced, it is perfectly astounding to see the amount of time that can be wasted by two persons of limited vocabularies in sending and receiving and checking a telephone message of the simplest sort.

We said that radio has its disadvantages. For instance, tests seem to indicate that sending a message by radio within the regiment is slower than to send the same message by motorcycle. This is unqualifiedly true if the message sent by radio is coded, and is often true of messages sent in the clear. Messages in the clear would rarely, if ever, be used in war, so the proposition develops that radio within the regiment is inferior to messenger service, although, at that, the radio is more certain than the telephone.

While on the subject of radio, it is a good opportunity to announce our fixed opinion that the radio truck is too slow. What is needed is a radio plant on a faster vehicle, with a closed or weatherproof body. This plant should be self-contained and self-sufficient; that is, it should contain the apparatus necessary to charge its own batteries and furnish, from its own generator direct-connected to the motor, the power needed for the sending and receiving sets. With the recent advances made in radio, what with power amplifiers and A-B-C eliminators, this project holds attractive possibilities for development.

After which parenthetical remark, let us return to our wire. The work of the wire-laying details can often be simplified by a judicious selection of CP's, battery positions, etc. A glance at Fig. 2 will show what is meant. The installation shown at A entails three road cross-overs; by changing the CP's slightly, as in B, all three cross-overs are eliminated. It is especially important that the battalion commanders, in selecting their CP's, give due weight to the wire-laying problem and make it as easy and convenient as possible. This also applies to battery commanders and, to a lesser degree, to the regimental commander.

As to the physical operation of laying and recovering wire, much

could be said. There are many kinks in this business that are learned by experience—the men quickly pick them up and in a very short time the crews become very adept. In our country, wire trucks should keep to the right of the road, not only in laying the wire but also in picking it up; otherwise a speeding auto crashes into them and time (at the very least) is lost. Don't say that this sort of accident is unlikely; it actually has happened. And some cars move just as fast in war as in peace; faster.

Often the wire laying detail can throw or guide the wire onto roadside bushes (it should never be left in the gutters) without dismounting from the trucks. Under such circumstances the work proceeds expeditiously but under average conditions in time of peace, and on roads comparatively free from traffic, two miles per hour is a fair all-round average of wire-laying speed. Under the same conditions, wire is reclaimed at the rate of two and a half miles per hour.

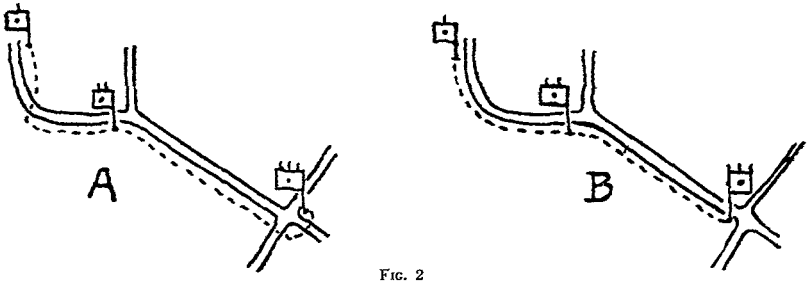


Fig. 2

If traffic regulations permit, it is much better to lay wire during daylight hours. A single truck on a road need not be a fatal indication of our hellish purposes to the enemy and sometimes this advance laying of wire helps out a great deal, especially when the unit has the wire to spare. This should be recognized by those in authority and, if necessary, be incorporated in our doctrine on the subject.

While on the subject of concrete figures, always acceptable in Map Problems and the like, let us advance a few numerical results which may serve as approximate yardsticks until they are superseded by something better. Assuming, in a searchlight platoon, that the commander is prepared to lay four lines simultaneously, one to each light, experience seems to indicate that his platoon can be ready for action in thirty-five minutes from the time that the gun battery commander selects his positions and the four light wire trucks start with the platoon commander. This disregards any line between the SL platoon CP and the SL battery CP—the latter being non-existent in spite of the wire diagrams before mentioned. (The net of the gun battalion is used, when necessary, instead.)

It takes, say, five minutes to get tractors off the trailers—often it is done in four minutes, even at night. About the same length of time to put them back on the trailers again.

Using two tractors per battery it takes an average of 40 minutes to put the guns in position, counting from the time the battery arrives on the road opposite its position. Add to this the time for levelling, etc., which varies greatly with the character of the soil, and we have, say, 50 minutes for the time it takes to get a battery off the road and ready for action. It can resume "March Order" on the road in 40 minutes. These are not parade-ground times, but conservative figures obtained under field service (peace time) conditions. The gun battery wire is all in, almost as soon as the guns are, and in any case, should be complete before the guns are ready to fire. As regards the whole gun battalion, it will take about two hours to install all of the communications, counting from the time that the Bn. CP arrives on the road opposite its new position.

It is hard work to crank a mile of wire onto a spool. Our wire trucks should have some arrangement for making the moving truck itself do this drudgery. (Applause from the ranks!) It should be a simple task to design a friction drive mechanism for transferring energy from the truck wheels to the take-up reel. Gearing would not do, of course, because the reel must spin faster when nearly empty than when it is nearly full.

There is another complication to this wire-laying game. It may happen that the batteries are to move to new positions but, as usual, must extend protection in their old positions up to the very moment of departure. This means that at least some of the old wire net must be left intact, and yet the guns must be ready for action as quickly as possible after reaching their new positions. If the wire is abandoned, the chances for its recovery by its rightful owners are practically nil; if they stop to pick it up, their movement may be too much delayed. All of which shows the necessity for each unit having plenty of wire on hand at all times, preferably enough for two nets.

In many situations, advanced listening posts are essential, and each listener needs his own private telephone line—he hasn't time to wait for a clear wire on any lines belonging to other units. Our present trucks are too slow and cumbersome for posting these listeners and for running their telephone lines; high speed vehicles should be supplied for this purpose. It's like harnessing an elephant to a sulky. We'll go into the matter of trucks later, but we'll here voice our conviction that the Cadillac should displace the heavy truck wherever possible. For example, wire laying and recovery, reconnaissance, posting listeners,

for fire-control instruments, radio, and the like. The AA regiment is a comparatively high-tension outfit, and speedy vehicles should be used wherever they can do the work. Not that I hold any particular brief for the Cadillac, but it is already standard for the Searchlight Battery, and its further dissemination throughout the command would entail no new problems.

We said that there are kinks in laying wire; here is one that is used successfully in at least one gun battery: All of the wires leading from the battery switchboard to any particular gun are cabled and wound on a reel which is mounted on a bit of plank and provided with a good serviceable crank. When the CP is established and the gun dropped at its position, a man grabs the gun end of this cable and runs to the gun with it, the reel unwinding the while. Same for the other three guns. The wire ends, being tagged, are quickly connected in their proper places and in a few seconds the battery is completely wired. When the battery pulls out, the wires are cast off at the guns and the cables are quickly cranked back onto the reels.

Now comes the time when we must turn our attention to one of the principal items in the make-up of the regiment, that is:

Motor Equipment

It seems conclusively established that the FWD is in disfavor in the AA service. This truck has its good points, it is true, and it is doubtful if any truck could be evolved which would satisfy everybody concerned. But the consensus of opinion indicates that even now better trucks for the purpose are available on the market. The FWD has insufficient power to tow the AA trailer mount up moderate grades. This is fatal to speedy movements, for it entails either putting our towing trucks in tandem or bringing the tractors into play to pass the obstacle. We venture the prediction that our popularity would be considerably less than zero if we cluttered up the roads like that in war time. One of the main disadvantages of the FWD as now furnished, lies in the narrow tires. On smooth and slippery roads there is very little traction. I have seen one from a standing start, slip sideways into the ditch—but then, anything was possible on those Eustis roads before the concrete was in! On soft roads the FWD is prone to "dig in." On average roads we incur the righteous wrath of the civilian population for the havoc wrought by these narrow tires. Double-width treads are prayerfully urged by many gun battery commanders. The coupler mechanism also comes in for its share of criticism; it should be better adapted to backing, as well as pulling, and should permit a smaller turning arc.

The Searchlight Battery, with its high-speed equipment, represents what is probably the most mobile ground unit in existence today among military forces. In the writer's opinion, there exists no logical reason why the Machine-gun Battalion cannot be given the same—or almost the same—degree of mobility. The loads of this battalion are principally concerned with *space*, not weight. To use high-speed vehicles would result in many advantages, and among them one which is never mentioned, that is, a greater suitability for riot and similar expeditionary duty. To explain: Antiaircraft machine guns are easily adapted to ground firing; the reverse is not so easy. Many of our National Guard units are machine-gun outfits, antiaircraft, pure and simple, or with that as one of their missions. National Guard troops must expect to be called in case of riot duty. A machine-gun outfit equipped with Cadillacs could move from its armory to the scene of trouble in a fraction of the time it would take an FWD outfit. It would also be much more effective in patrolling. In fact, it would be much more useful, all around. All of which constitutes a selling argument for popularizing such an organization with the National Guard and, through them, with the tax-payer. The same argument—of utility—applies also to the units of the Regular Army.

In this same connection, it must be remembered that one of the duties of antiaircraft machine guns will be to protect troops on the march. It is unlikely that we will have enough of these guns to post them along the line of march and let them stay there until the march is finished; they will have to "leap-frog" along the route. This requires *speed*, as there is no telling how long a detour must be made before the next position is reached. Our present trucks cannot attain the speed necessary for such an operation, and here again the Cadillac supplies the answer. One glance at some of the big touring busses should convince the most skeptical that such a solution is easily possible. The expedient of mounting the guns in trucks which accompany the moving column has its advantages, but constitutes no argument against adding speed to the AA machine-gun battalion. Our solution would be to have a Cadillac fitted to carry two guns and their crews, one gun to be in an airplane "flexible" mount—but easily dismounted for ground use.

Another item which detracts from the mobility of the AA regiment is the trailer which is now used for transporting the 5-ton tractor. This trailer was built for the 10-ton tractor and is unnecessarily heavy and unwieldy for the job. The loading ramps were designed for the 10-ton tractor and, as a result, present too wide a gauge for easy use with the smaller tractor. Incidentally the tractor is too high in its travelling position, and it has to climb too high to get into the trailer in the first

place. Anyone who has tried to run the tractor onto its trailer in the dark, with only a flashlamp for guidance, knows that it is no child's play. The tractor itself is all right; so far as can be learned it has plenty of power for the tasks imposed upon it. It is probable that this type of trailer will soon be superseded by one of the type used in the Field Artillery.

That brings up another point. Has a good reason ever been discovered why our trucks should have such abominable lights? It is often a wonder that our chauffeurs are able to stay on the road at all after dark.

And speaking of leaving the road reminds us of something else. It is found that trucks towing gun trailer mounts are singularly prone to pile themselves ignominiously into the ditch. An analysis of several of these occurrences has led to the following explanation. It does not cover all cases, but many of them. Imagine a truck towing a gun up a gentle rise; it reaches the summit and starts down tthe other side. The brakeman on the trailer cannot see ahead, and is caught unawares; he applies his brake too late or not at all. As a result, the heavy trailer exerts pressure on the towing truck, and a surprisingly great pressure, at that. The truck driver, on the other hand, may slow his engine or even apply his brakes and, seeing what is ahead of him, he naturally does this slowing before the trailer brakeman does. Now, unless the truck and trailer are precisely in line, the trailer tends to slue the truck, and before the chauffeur can stop things, the truck's nose is in the ditch. All of which might have been avoided by some simple means of telling the trailer driver when to apply his brakes. A jerk-line would be better than nothing. Not that damage usually results from such accidents, but the delay and the damage to our peace of mind caused by spending half an hour in straightening out the mess are things to be reckoned with—to say nothing of the ever unspeakable crime of blocking the road.

Every motor vehicle in the regiment should have an odometer, graduated in miles and tenths. This simplifies reconnaissance and the finding of selected positions. Any driver can obey, "Go ahead on this road 2.3 miles to cross roads, then turn right and stop 0.9 miles farther on."

The tank trucks and carts should be equipped with pumps. We may not always be able to let gasoline flow into our tank truck by gravity, we may not always fill at a service station, we may have to pump it out of a tank car, ourselves.

Reconnaissance

The Colonel has practically no reconnaissance to do, if acceptable maps are available. Having received the statements of his mission from higher authority, it is usually best for him to get his two battalion commanders around the map and to settle things right there. Without, in the

least, infringing on the proper initiative of his subordinates, he can ordinarily decide, from the map and his mission, approximately where the three gun batteries must go in, if they are to cover their area properly. Similarly, he can decide the approximate positions which the machine-gun batteries must occupy in order to accomplish their missions. He and the battalion commanders can then mark these approximate positions on their maps, and the latter can be on their merry way to confer with their battery commanders.

The gun battalion commander may tentatively assign approximate positions to each of his batteries and these commanders, in their turn, may depart to select the precise positions they will occupy. Each should, of course, take with him the commander of that platoon of searchlights which is attached to his battery. No valid reason is seen for objecting to this reconnaissance being made during daylight hours. The poorer the maps, the greater the time which must be devoted to this operation. If the guns are to follow the Battery Commander, and not await his return, the latter must be sure to "mark the route."

Ordinarily it would be a waste of time for the gun battalion commander to make a reconnaissance for battery positions and to take all three battery commanders with him. All hands can employ their time to much better advantage—always provided that the available maps are not too inaccurate.

The commander of the searchlight platoon is unable to go to work until the gun battery commander has selected his battery position and his CP. Once these are fixed, the world is his oyster, and he starts at once his reconnaissance for positions for his lights, secure in the knowledge that the battery commander will not play him the dirty trick of changing to a better position 300 yards away. Having previously caused his lights to rendezvouz near at hand, he hurriedly searches for a good position for the most important light, drops a "marker" there, drives back to the starting point, orders one light to the marked position, and proceeds to find the logical place for the next light. There are occasions where he can save time by ordering all four lights to start laying wire immediately in the direction of their probable locations. Well trained crews will not go too far, or pass an excellent position, but will wait at suitable localities until the platoon commander has got around to them and either vindicated their judgment or moved them to a better position.

In view of the growing tendency to assign machine-gun batteries *areas* to defend, instead of ordering them to specific points, the selection of positions in the machine-gun battalion is correspondingly simplified. The MG battalion commander can assemble his battery com-

manders, go over the situation with them, assign them to areas or general localities which will enable them to perform the tasks imposed, and then dismiss them to select the precise positions for each of their platoons.

This scheme of minimizing the work of reconnaissance and of avoiding duplication of effort greatly relieves the regimental and battalion commanders, and gives them the time needed for visiting the units of their command and for coordinating these units.

It is a great temptation, sometimes, to start on a reconnaissance and order your unit to follow immediately or at a specified time. But woe betide you if your outfit runs past its destination before you can stop it! Or if it takes the wrong road! Because, sometimes, it is impossible to turn around on the road. In fact, it would be well to assume (as they do in map problems) that it is *always* impossible to turn around on the road. Well, *almost* always. It is a great deal better to take any reasonable detour than to run the slightest risk of getting stuck on the road. Many an arrival at Blois will tell you that. What your commander is looking for is not necessarily the officer who will bull his way through difficulties by main strength and awkwardness, but rather the one who avoids the difficulties through foresight and gets his battery there quickly with the least wear and tear on the men and the materiel.

The Searchlight Battery

It appears to be doctrine, in the Division, that the artillery regiments shall be paired off with the infantry brigades. That is, the 1st FA, for example, habitually works with, say, the 1st Brigade. This for the purpose of building up a team technique that will work more or less automatically and to mutual satisfaction.

The same idea should hold with respect to the searchlight platoons in their employment with the three gun batteries. The same platoon should always work with each battery. More than that, whenever that gun battery goes into position its attendant platoon of lights should accompany it as a matter of routine, without the necessity for orders on the subject—except, of course, when the lights cannot be needed. In this way, the gun battery commander and the SL platoon commander will soon develop a team technique that will lighten the labors of both and add greatly to the efficiency of the battalion. Presumably the platoon of lights will be "attached" to the gun battery, and there will be no question as to jurisdiction or command, but even so, if each of these two officers, through long and close association, has come to know the other's methods, and how to combine his own efforts therewith, there will be little trouble in the tactics of the battalion.

When the searchlights are dispersed among the gun positions, what becomes of the Searchlight Battery organization? The platoons may be rationed with the gun batteries to which they are attached; the remainder of the battery may be attached to the battalion headquarters detachment. There is no battery CP; the battery commander becoming a member of the battalion commander's staff.

All of this does not mean that the light platoons remain forever dispersed among the guns. The training of a searchlight battery can best be effected, and most economically, when the battery is assembled in one place. This is a cogent reason for continuing the SL Battery organization, instead of abolishing it and adding a platoon of lights as an organic part of each gun battery. The commander of a gun battery has his hands full, in training his gun crews and range section, without having his work doubled by training his own searchlights in addition. So it appears that the present organization and employment of the Searchlight Battery is logical and meets the needs of the situation.

Organization

The Antiaircraft Regiment is a beautiful thing. Not that it is perfect, but it has travelled appreciably along the road toward that goal. To those who are acquainted with its functions and possibilities it brings visions: of high-strung racehorses, for their nervous energy and instant reactions—of intricate keyboards of pipe-organs, with their infinite capabilities—of a battleship's engine room, with its combination of precise coordination and unlimited power.

Whether or not the regiment will be increased by a battalion of 37-mm. AA guns, as is advocated by some, is in the lap of the future; at present only surmises on this point can be made. But whichever way the decision goes, the AA Regiment will maintain its position as a *corps d'élite.* Gone are the days when the "cosmoliner" flushed in embarrassment as the "doughboy" invited him to "join the Army." Nowadays he grins tolerantly and retorts with Battery A's parody on "Casey Jones":

Ow, we hop aboard the Cadillac
  An' step on the gas;
The "Mobile Army" eats our dust
  An' sees us zippin' past.
Ya needn't fear the bombin' planes
  That keep ya 'wake o' nights—
We'll be there to chaperone ya
  With the ——'s lights.*

* Number of regiment supplied on request.

Harbor Defense Mobilization Plans

EVERY organization in our service has—or should have—on hand in its files an up-to-date set of plans covering all its activities during a period of mobilization. While the War Department has never prescribed a form for unit mobilization plans, directives have, in many cases, been issued by corps area commanders or by chiefs of branches outlining forms to be followed by supordinate units. These forms must, of course, be followed; but from many points of view, uniformity in the construction of mobilization plans would seem to be desirable. Under present conditions there are almost as many forms as there are plans.

To be complete, a mobilization plan should provide for a maximum of celerity and a minimum of friction in all the activities pertaining to the assembly, recruitment, organization, transportation, reception, sheltering, subsisting, clothing, equipping, training, sanitation, hospitalization, and welfare of the forces to be mobilized. Mobilization is thus an activity of the Zone of the Interior, but in harbor defenses it is complicated by the fact that the concentration takes place in a combat zone (or possible combat zone). The harbor defense mobilization plan must therefore provide also for a maximum effective defense during the period of mobilization.

Any plan that accomplishes all the purposes of mobilization with a high degree of effectiveness may be considered complete, regardless of its form; but plans remain in force for a long time, while officers change station at brief intervals. If the plans prepared in the several harbor defenses were all prepared on the same model, it would simplify the task of familiarizing one's self with the plans in force as one moves from station to station. Lack of general uniformity has no particular advantages.

It is probable that the form of the field order—a form known to all officers and one that has stood the test of time—will have a particular appeal to many officers—particularly those who have received instruction in the special and general service schools. There are no major objections to such a form, although there are some minor objections. In general, the field-order form does not lend itself readily to full consideration of Zone of the Interior activities, and it has not

been used by the War Department. This should be sufficient to cause the discard of the field-order form and the adoption of some other—preferably a form based on that used by the War Department, with suitably modified subdivisions.

In a narrative form, mobilization procedure may be arranged more or less chronologically, with sections devoted to the major subjects or phases of mobilization. In this form, full information and full instructions of general interest appear in the body of the plan—that is, in the basic plan—and the tables, charts, maps, etc., containing detailed information are placed in annexes or appendices. Supplementing the basic plan and its annexes, will be the unit plans of the organizations to be mobilized and of each of the staff departments, to which any one interested in the details of operation of any combat or staff element of the harbor defenses during the period of mobilization may refer.

While the following outline has been prepared primarily as a reminder list of subject matter to be included in any plan, whatever its form, it is also offered as an outline for use where no other form is prescribed. The general arrangement is applicable to any organization —combat or staff—and is sufficiently flexible to allow expansion or contraction to fit the special needs of any particular locality. The harbor defense has been selected as combining general plans with details of mobilization. Higher headquarters are but little interested in details; lower headquarters are interested in little but details.

It will be seen that the question of separation of the operations pertaining to the Zone of the Interior from those pertaining to the Combat Zone receives no emphasis. The period of mobilization is not so long that it creates a problem in this respect. Readiness for service so as to provide for effective defense during mobilization may be cared for in the program of training. The only other point requiring particular attention is the separation of harbor defense headquarters from regimental (or other) headquarters, where necessary, so that the troops may be made mobile. If headquarters personnel must come from the organizations, the details should be so distributed that the relief of any unit will not disrupt the operations of headquarters.

The Plan Outlined

Confidential

UNIT MOBILIZATION PLAN

HARBER DEFENSES OF ——

FORT —— ——

19——

Contents

	Paragraphs
Section I.—General Considerations	1 – 7
Section II.—Forces to be Mobilized	8 – 9
Section III.—Zone of the Interior Installations	10 – 11
Section IV.—Mobilization Areas	12 – 14
Section V.—Phases of Mobilization	15 – 16
Section VI.—Mobilization Procedure	17 – 22
Section VII.—Personnel	23 – 26
Section VIII.—Supply	27 – 35
Section IX.—Training	36 – 37
Section X.—Intelligence	38 – 42
Section XI.—General Instructions	43 – 45
Section XII.—Test Mobilization	46 – 47

Annex I.—General Map, Harbor Defenses of —— and Vicinity.
Annex II.—Personnel and Organization Tables.
Annex III.—Personnel Requirements.
Annex IV.—Reception and Classification Center.
Annex V.—Staff Plans.
A. Quartermaster Plan.
B. Medical Plan.
C. Engineer Plan.
D. Signal Plan.
E. Ordnance Plan.
F. Finance Plan.
G. Chemical Warfare Plan.
Annex VI.—Reminder List.
Annex VII.—Unit Plans.

Section I

GENERAL CONSIDERATIONS

	Paragraph
Purpose	1
Mission	2
Responsibility for Execution	3
The Mobilization Plan	4
Definitions	5
References	6
The Harbor Defense Commander	7

Maps: General Map of the Harbor Defenses of —— and Vicinity. See Annex I.

1. *Purpose.*—(Under this heading specify that the purpose of the plan is to establish the basis and designate the steps and responsibilities for the mobilization of the organizations and units assigned to the harbor defenses, including assembly,

movement to stations, recruitment, shelter, subsistence, supply, basic training, and care during the mobilization period.)

2. *Mission.*—(Give the mission in general terms. If available facilities or corps area plans indicate the utilization of the harbor defenses for concentration or training areas, include that purpose in a statement of the mission.)

3. *Responsibility for Execution.*—(Point out that the harbor defense commander is responsible for the execution of the plan after approval, and direct that no alteration in the plan be made without approval by higher authority.)

4. *The Mobilization Plan.*—(Indicate where and how copies of the plan—including a "work" copy—are to be kept, and when and how revision is to be made.)

5. *Definitions.*—(Define M-day, M plus one month in terms of days, first phase, and similar expressions used in the plan.)

6. *References.*—(Refer to A. R. 120-10, 130-10, and 135-10.)

7. *The Harbor Defense Commander.*—(Give name, rank, office location, and office telephone number of the harbor defense commander.)

SECTION II

FORCES TO BE MOBILIZED

	Paragraph
Forces Allocated	8
Tables of Organizations	9

8. *Forces Allocated.*—(List the combat organizations—by regiment, separate battalion, etc.—and staff department detachments to be mobilized in the harbor defenses.)

9. *Tables of Organization.*—See Annex II. (Indicate the organizational tables and charts that may be found in the Annexes, leaving unit Tables of Organization to appear with the unit plans. The following are suggested as useful.)

a. Harbor Defenses of ——.
b. Harbor Defense Headquarters.
c. Organization Chart and Manning Table, Harbor Defense Headquarters.
d. Tactical Organization, Harbor Defenses of ——.
e. Armament Manning Table, Harbor Defenses of ——.
f. Assignments to Armament and Elements of the Defense.

SECTION III

ZONE OF THE INTERIOR INSTALLATIONS

	Paragraph
Installations	10
Liaison	11

10. *Installations.*—(In the corps area there will be certain installations required, such as Reception Centers, Replacement Centers, Mobilization Camps, etc. Should any of these be located within the harbor defenses, they receive consideration here. This section will thus be an elaboration on plans received from higher headquarters. While recognizing much of the local staff department activity as pertaining to the Zone of the Interior, no local staff department enters into this section because of the greater convenience in considering all staff questions in the supply section. The local replacement center or reception center, if established, should not be confused with similar corps area installations.)

11. *Liaison.*—(Explain in general terms how contact with the Zone of the Interior is to be maintained during the period of mobilization.)

SECTION IV

MOBILIZED AREAS

	Paragraph
Harbor Defense Area	12
Unit Areas	13
Staff Departments	14

12. *Harbor Defense Area.*—(Comes within what mobilization area?)

13. *Unit Areas.*—See also Annexes I and II.

a. (Give each regiment or separate combat organization a sub-paragraph and show assignments on M-day and on arrival at war stations. The amount of detail will vary with the situation. For a Regular regiment located entirely within the harbor defenses, it will be sufficient to prescribe: "M-day: Reorganization and mobilization at peace time stations"; but if the batteries move to or occupy more than a single fort, it will be desirable to show the war station of each battery. For a National Guard regiment, show the armory at which each battery mobilizes—unless a single armory is used by the regiment—and show the war station of each battery. An Organized Reserve regiment will normally be listed by battery.)

14. *Staff Departments.*—(No details are required. As these will probably operate by detachment from their peace time stations, it will usually be sufficient to prescribe mobilization at their normal stations, and to refer to the department plans. Special instructions of general interest may be added.)

SECTION V

PHASES OF MOBILIZATION

	Paragraph
Table of Progress	15
Special Instructions	16

15. *Table of Progress.*—(As the troops all pertain to the first phase, this only need be considered here. This paragraph will therefore show the prescribed status of each unit in personnel and equipment—as a percentage of the war strength—on M-day and at the end of each successive mobilization month of the first phase.)

16. *Special Instructions.*—(Using as many paragraphs as may be necessary, include here special instructions concerning personnel to be detailed to schools on M-day, the employment of civilians to replace soldier labor, etc. Most of this paragraph will be in elaboration of plans from higher headquarters.)

SECTION VI

MOBILIZATION PROCEDURE

	Paragraph
General Control	17
Notification of M-Day	18
Notification by Subordinates	19
Informatiton Center	20
Instructions to Organizations	21
Instructions to Staff Departments	22

17. *General Control.*—(Subordinate units to use this plan as a directive. Harbor defense commander to regulate mobilization, movements, advance parties, etc.)

18. *Notification of M-Day.*—(List the commanding officers or offices to be notified by the harbor defense commander, and give the form of the order or message to be employed.)

19. *Notification by Subordinates.*—(Indicate responsibility for transmission of notification, and such other instructions as may be considered necessary. Require that each officer keep an up-to-date list of all individuals to be notified by him,

showing name, home and business address, and home and business telephone numbers of each.)

20. *Information Center.*—(It will ordinarily be desirable on M-day to establish an information and personnel office at the normal point of entry into the harbor defense area for the purpose of receiving, assisting, and guiding incoming organizations, detachments, and individuals. Give full information and instructions.)

21. *Instructions to Organizations.*—(Methods of recruiting and of obtaining commissioned personnel, preparations for movement, times of movement, use of advance parties, and other details differ so greatly between organizations that it is more convenient to give full instructions to each organization in turn or, if the organizations be numerous, to group them as Regular, National Guard, and Organized Reserve and to give full instructions to each group.)

a. Regular Regiments (to establish regimental headquarters—distinct from harbor defense headquarters—if not already established; inactive units to become active; time of movements to war stations; how enlisted personnel is to be obtained; etc.)

b. National Guard Regiments. (Places of mobilization, detail and conduct of advance parties, recruiting activities, time at which to be prepared to move, arrangements to be made for transportation, etc. Note that recruiting need not be taken up in detail, as it comes up again in "Personnel.")

c. Organized Reserve Regiments. (Places and times of mobilization, method of expansion, recruiting parties, times of movements, etc.)

22. *Instructions to Staff Departments.*—(In general, these will contain normal functions, but will, in some cases, require the establishment of branch offices. Provision should be made for the establishment of any command posts not established. Include special instructions of general interest, in regard to mobilization procedure only.)

SECTION VII

PERSONNEL

	Paragraph
Requirements	23
Procurement	24
Reception and Classification	25
Personnel Tables	26

23. *Requirements.—a.* Commissioned Personnel. See Annex III.

b. Enlisted Personnel. See Annex III.

24. *Procurement.—a.* Commissioned Personnel. (State, for Regular Army, National Guard, and Organized Reserve organizations, how commissioned officers will be procured during the mobilization period, and the duties of organization commanders in this respect.)

b. Enlisted personnel. (Explain the period and method of recruiting for each component, qualifications of recruits—in general terms, method of completing enlistments, disposition of recruits, procedure after close of period for acceptance of voluntary enlistments, reports, requisitions, etc.)

25. *Reception and Classification.—a.* Commissioned Personnel. (Responsibility of commanding officers in regard to classification and employment of commissioned personnel, etc.)

b. Enlisted Personnel. (Give general information regarding the reception and classification center, if established—methods, records, procedure, etc. Put details in an Annex.) See Annex IV.

26. *Personnel Tables.*—See Annexes II and III.

SECTION VIII

SUPPLY

(See also Annex V, Staff Plans.)

	Paragraph
Transportation	27
Troop Movements	28
Shelter	29
Subsistence	30
Organization and Individual Equipment	31
Forage	32
Hospitalization	33
Sanitation	34
Welfare	35

27. *Transportation.*—(Facilities and systems available for handling freight and passenger traffic; schedules; arrangements for transporting incoming organizations, detachments, and individuals; procedure; control; etc.) For details, see Annex V.

28. *Troop Movements.*—(Require each organization to keep on hand a troop movement table showing (a) home station and destination, (b) number of officers, warrant officers, and enlisted men to be transported, (c) estimated total weight and cubic measurement of property to be transported, and (d) kind, character, and amount of transportation required; explain arrangements to be made for movements; etc.)

29. *Shelter.*—*a.* Data. See Annex No. 4 to Annex XII.

b. Assignment. (Shelter—kind and location—to be furnished organizations and detachments.)

c. Construction. (Instructions regarding location and construction of cantonments, tent shelter, etc.) See Annex No. 3 to Annex XII.

d. Officers. (Arrangements for shelter of officers.)

e. Noncommissioned staff. (Arrangements for shelter of noncommissioned staff officers.)

f. Staff departments. (Arrangements for housing detachments of staff departments.)

g. Animals. (Arrangements for housing animals.)

30. *Subsistence.*—*a.* (Arrangements for initial and subsequent messing of combat organizations and detachments.)

b. Noncommissioned staff. (Arrangements for messing noncommissioned staff officers—separate messes, attachment to organizations, etc.)

c. Staff departments. (Arrangements for messing detachments from the staff departments—separate messes, attachment to organizations, etc.)

d. Officers. (Mess arrangements.)

31. *Organization and Individual Equipment.*—(General instructions to the organizations appear here. Reference to the plans of the several staff departments will show their own operations.)

a. Procurement. (Methods and sources.)

b. Requirements. (How listed and how filled.)

c. Organizations. (Pre-mobilization equipment to be retained; equipment to accompany troops; sources of additional equipment required; etc.)

d. Distribution. (Distributing points, times and methods of issue, etc. The staff departments will, on M-day, ordinarily discontinue any practice they may have had on dealing with batteries or similar organizations direct, and will thereafter issue only through regimental supply officers or the corresponding officers in other units.)

e. Clothing. (Special instructions.)

f. Accounting. (Instructions regarding accountability and responsibility.)

g. Replacement and salvage. (Instructions, requisitions, etc.)

32. *Forage.*—(Procurement and issue.)

33. *Hospitalization.*—(General instructions; location and establishment of aid and collecting stations, hospitals, etc.; evacuation; etc.)

34. *Sanitation.*—(General instructions.)

35. *Welfare.*—(Instructions regarding religious services, recreational activities, athletics, libraries, post exchanges, motion pictures, hostess houses, morale, welfare organizations, E. & R. officers, etc.)

Section IX

TRAINING

	Paragraph
Training Program	36
Standards of Proficiency	37

36. *Training Program.*—(Outline a training program listing subjects and minimum specifications for each month of the mobilization period. Such programs usually cover a period of twelve weeks, with provisions for the possibility that actually another month will be available.)

37. *Standards of Proficiency.*—(Indicate the standards to be attained by the end of each month of the training period.)

Section X

INTELLIGENCE

	Paragraph
Organization	38
Scope	39
Censorship	40
Counter Espionage	41
Training	42

38. *Organization.*—(Units to be organized, source and amount of personnel, supervision, etc.)

39. *Scope.*—(State the scope of activity of the Intelligence Section during the period of mobilization—observation, liaison, counter espionage, maps, statistics, etc.)

40. *Censorship.*—(General instructions, if any.)

41. *Counter Espionage.*—(General instructions. Most of this and the preceding paragraph will come from the plans of higher headquarters; and the contents of the other paragraphs of this Section will be largely influenced by those plans.)

42. *Training.*—(Intelligence schools, training programs and objectives, details of personnel, etc.)

Section XI

GENERAL INSTRUCTIONS

	Paragraph
Unit Plans	43
Miscellaneous Instructions	44
References	45

43. *Unit Plans.*—(Instructions concerning the preparation, distribution, and care of Unit Plans.)

44. *Miscellaneous Instructions.*—(Add any instructions which have not found a suitable place in previous sections. The plans of higher headquarters should be carefully studied to see that no omissions have been made in conforming to those plans.)

45. *References.*—(A bibliographical list of all War Department or other publications bearing upon mobilization.)

Section XII

TEST MOBILIZATION

	Paragraph
Test Mobilization	46
Other Instructions	47

46. *Test Mobilization.*—(When, where, and how held.)

47. *Other Instructions.*—(Pertaining to test mobilization.)

(Signature.)

Distribution:

(Approval.)

Annex I

GENERAL MAP, HARBOR DEFENSES OF —— AND VICINITY

(Any suitable map, of moderate scale, on which may be indicated, if desired, some of the general features of the mobilization.

Annex II

A. PERSONNEL AND ORGANIZATION TABLES, HARBOR DEFENSES OF ——

(A general table, showing totals by organization for each grade.)

B. HARBOR DEFENSE HEADQUARTERS

(Showing full details of organization and equipment.)

C. ORGANIZATION CHART AND MANNING TABLE, HARBOR DEFENSE HEADQUARTERS

(Showing the organization and command or control chain throughout headquarters, with blanks in which names may be placed upon mobilization.)

D. TACTICAL ORGANIZATION, HARBOR DEFENSES OF ——

(A chart showing all elements of the defense, and indicating the chain of command.)

E. ARMAMENT MANNING TABLE, HARBOR DEFENSES OF ——

(A table showing for each element of the defense the personnel, by grade, required to man that particular element.

F. ASSIGNMENTS TO ARMAMENT AND ELEMENTS OF THE DEFENSE

(Maps, charts, or tables showing the assignments of each unit of the organizations assigned to the harbor defenses. In general, it will be necessary to list the assignments by batteries.)

ANNEX III

PERSONNEL REQUIREMENTS

a. Commissioned and Warrant.—(A table showing authorized war strength, actual strength, and shortage for each grade.)

b. Enlisted.—A table showing, for each organization, authorized war strength, actual strength, and shortage for each grade.)

ANNEX IV

RECEPTION AND CLASSIFICATION CENTER

(A plan, tables of organization, and instructions for the organization and operation of such a center, if one is to be established.)

ANNEX V

STAFF PLANS

A. QUARTERMASTER PLAN

1. *General.*
   - *a.* Purpose.
   - *b.* Duties and Responsibilities.
   - *c.* Quartermaster. (Name, rank, office location, and office telephone number.)
2. *Organization.*
   - *a.* Tables of Organization. See Annex No. 1 to Annex V-A.
   - *b.* Office Organization and Duties.
3. *Mobilization.*—(Movement to war stations, and establishment of branch agencies, distribution points, etc.)
4. *Personnel.*
   - *a.* Procurement. (Civilian and military.)
   - *b. Instructions.*
5. *Supply.*
   - *a.* Transportation. (Rail, motor, water, and animal; facilities, expansion, uses, schedules, traffic, troop movements, etc.)
   - *b.* Installations. (Warehouses, shops, agencies, utilities, administration.)
   - *c.* Shelter.
     - (1) Data. See Annex No. 4 to Annex V-A.
     - (2) Construction. See Annex No. 3 to Annex V-A.
     - (3) Instructions.
   - *d.* Ration Supply.
     - (1) Instruction.
     - (2) Procurement.
     - (3) Distribution.
   - *e.* Clothing. (Instructions, procurement, distribution.) See also Annex No. 5 to Annex V-A.

f. Forage. (Instructions, procurement, distribution.)

g. Other Equipment and Supplies. (Instructions, procurement, and distribution.)

h. Supply Requirements. See Annex No. 2 to Annex V-A.

h. Supply Requirements. See Annex No. 2 to Annex V-A.

i. Salvage. (Instructions.)

6. *Administration.*—(Accountability and responsibility, requisitions, etc.)

7. *Training.*—(Program of instruction.)

8. *Troop Movements.*—(Information necessary, preliminary arrangements, estimates of requirements, etc.)

9. *Miscellaneous.*

ANNEX NO. 1 TO ANNEX V-A

TABLES OF ORGANIZATION

(In full detail.)

ANNEX NO. 2 TO ANNEX V-A

SUPPLY REQUIREMENTS

(Complete supply lists, showing for each class authorized amounts, quantities on hand, and amounts to be procured.)

ANNEX NO. 3 TO ANNEX V-A

PLANS AND ESTIMATES FOR NEW CONSTRUCTION

(Proposed locations should be specified, preferably by drawing upon a map of each site at which construction is contemplated. Sites of tent shelter should also be specified.)

ANNEX NO. 4 TO ANNEX V-A

DATA CONCERNING SHELTER

(Tables showing all buildings in the harbor defenses, purpose for which intended, and capacity.)

ANNEX NO. 5 TO ANNEX V-A

CLOTHING ISSUE MILL

(Plan showing how clothing is to be issued. Will probably not be required in small commands.)

B. MEDICAL PLAN

1. *General.*—(Purpose; duties and responsibilities; surgeon—name, office location, and office telephone number.)

2. *Organization.*—(Tables of organization in Annex No. 1 to Annex V-B; office organization and duties.)

3. *Mobilization.*—Movement to war stations and establishment of branch agencies and subordinate establishments.)

4. *Personnel.*—(Procurement; instructions.)

5. *Supply.*—(Transportation authorized, on hand, and to be procured; installations—hospitals, collecting stations, aid stations, etc.; shelter; hospitaliza-

tion; evacuation; disposal of dead; supplies—procurement, distribution, and requirements in Annex No. 2 to Annex V-B; salvage.)

6. *Administration.*

7. *Training.*

8. *Special Instructions.*—(Sanitation, dental, veterinary, welfare organizations, laboratory, etc.)

9. *Miscellaneous.*

ANNEXES

(Annex No. 1, Tables of Organization, and Annex No. 2, Supply Requirements, similar to the same numbered annexes to the Quartermaster Plan.)

C, D, E, F, G. ENGINEER, SIGNAL, ORDNANCE, FINANCE, AND CHEMICAL WARFARE PLANS

(Each will be built up on the same paragraph headings and arrangements as the Medical Plan, and each will have an Annex No. 1, Tables of Organization, and Annex No. 2, Supply Requirements. The Finance Plan will probably not need Annex No. 2, Supply Requirements, but may find it necessary to substitute an estimate of funds. The Signal Plan will probably require an Annex No. 3, Harbor Defense Communications, to show the Message Center and all agencies of communications. Lacking Chemical Warfare troops, the Chemical Warfare Plan may consist of little or nothing but the table of supply requirements.)

ANNEX VI

REMINDER LIST

a. (Names, business and home addresses, and business and home telephone numbers of all individuals to be notified of M-day by the harbor defense commander.)

b. (In order that no detail may be overlooked, the harbor defense commander should prepare a reminder list showing everything required of him upon receipt of notification of M-day and the specific duties arising during the mobilization period. Many of these details will come from the plans of higher headquarters. A few of them are: completion of manning tables; separation of regimental headquarters from harbor defense headquarters; detail of Information Center and Recruit and Classification Center personnel; designation of medical officers for examination of organizations; notification of organization commanders and staff officers of M-day; procurement of any special funds authorized; selection of personnel for schools or other details; personnel shortages to be reported on M-day and at succeeding intervals; etc. To this list should be added a reminder list for the Adjutant.

c. Blank Forms.—(Forms to be procured for the organizations and departments.)

ANNEX VII

UNIT PLANS

(Similar in structure and arrangement to those of the staff departments, already given. This Annex will include only the plans of regiments or separate organizations, or extracts from those plans. The plans of battalions or batteries, which are Annexes to the regimental plan, need not be filed with the harbor defense plan.)

Preparedness for War

Extracted and translated by
COLONEL GEORGE RUHLEN, U. S. A., Ret.

France's Experience in Providing Her Army with Arms and Ammunition for the World War

INTRODUCTION

FRANCE was, in 1914, without doubt the second great military power in Europe and probably not far from an equality in that respect with her most prominent competitor and potential opponent. It is reasonable to assume that, believing a coming war with Germany to be not only inevitable but imminent, she was making preparations for it to the utmost extent of her resources.

The difference between what France considered necessary in the way of preparation for a coming war in providing her armies with sufficient quantities of arms and ammunition for beginning and carrying it on and her painful and amazing experience of the quantities that were actually needed and used by her in the World War is very clearly shown by the statistical and descriptive matter contained in the following pages. They are extracts from compilations made by Lieut. Colonel Dischler of the German army from a report prepared by Colonel Reboul of the French army, and were originally published in the *Revue Militaire.*

Nothing that has been published since the close of the war can give as striking a picture of the devouring capacity of arms and ammunition of the Juggernaut of modern war as do the figures of quantities with which France entered the war, and which she believed adequate, and those which she found it necessary to provide during the war for carrying it through. The information contained in this article should also serve as a valuable lesson to those who are charged with the solution of the problem of adequate perparation of a nation for war and what that problem implies in the domain of arms and ammunition alone which is, in reality, the most important and most essential element, because an army, however well provided for and equipped in all other respects, is helpless without fighting appliances. Temporary shortages of subsistence, clothing, and other articles of equipment can be endured and made up, but even a momentary failure of a supply of ammunition in an emergency may cause an irretrievable disaster.

Equipment and Supply of the Armies of France with Arms and Ammunitions at the Outbreak and During the Progress of the World War

I. INFANTRY

A. Rifles and Carbines

France had at its disposition in 1914:

2,886,000 rifles, model 1886, M. 93 (Lebel).
50,000 rifles, model 1907 (Indo-Chinois).
380,000 carbines (mousqueton), model 1892, for the dismounted men of the artillery.
220,000 carbines for cavalry.

There were in reserve: 186,000 rifles model 1886, M. 93 (Lebel; 1,200,000 rifles, model 1874 (Gras), caliber II mm. These were no longer in use since introduction of the model 1886. The quantity of 3,000,000 on hand in 1885 had been reduced to 1,200,000 by sales to athletic and other clubs and associations.

The factories at St. Etienne, Chatellerault, and Tulle had, for a number of years preceding the war, ceased to manufacture rifles of the 1886 model and were supplying only parts for replacements. The machines had been changed for other purposes. St. Etienne and Chatellerault furnished only carbines, model 1892 (50 per day), and rifles for colonial troops, so-called *fusils Indo-Chinois*, model 1907 (100 per day). The producing capacity of various works had been materially reduced by the withdrawal of workmen incident to mobilization. The want of technically trained workmen was also seriously felt.

The losses of rifles became very great in August, 1914. Large masses fell into the hands of the German troops in the retirement. In order to relieve the deficiency in rifles, repair centers were established that were to restore damaged rifles in the shortest time possible. But they failed wholly on account of imperfection in organization and for want of technically trained personnel.

The rifle factories were charged with producing, inside of four months, 50,000 carbines, model 1892; 20,000 rifles, model 1907 (Indo-Chinois). This lot of carbines served only to equip those troops not immediately engaged in the front. The rifles thus relieved were intended for the front line troops. In consequence of the losses of rifles the training of recruits suffered much in the first months of the war because they could be equipped only with the old model 1874 rifles. The few

Lebel rifles remaining in the recruit depots were used only for target practice.

The quantities available were, on December 15, 1914:

1,300,000 rifles at the front,
350,000 rifles in the arsenals,
50,000 rifles in Africa.

In order to meet the urgent demand as soon as possible it was attempted to alter the 1874 rifle to the extent of using with it the ordinary infantry ammunition cartridge (8 mm.). About 150,000 to 160,000 rifles were so altered and exchanged with those in the hands of troop units stationed in the rear of the immediate fronts for model 1886 rifles.

France purchased from England, Japan, and America 230,000 rifles. In addition, recourse was had to private industries. But they were so occupied with the manufacture of artillery guns that their first deliveries of rifles were made only in the spring of 1915. Since manufacture of rifles required specially complicated machinery the separate private establishments could, with the exception of Delaunnay-Belleville works (producing 500 per day), be charged with furnishing certain parts only. By means of proper distribution and allotments of certain portions of the work private industries were, after a few weeks practice in manufacture of rifles, in a situation to produce large quantities, namely:

In August, 1915, 46,000 rifles,
In September, 1915, 50,000 rifles,
In December, 1915, 55,000 rifles.

The maximum production was reached in July, 1916—102,000 rifles. From that time on monthly production was reduced to 72,000 since large reserves had already been accumulated. In consequence industries were enabled to begin the manufacture of the automatic rifle, model 1917 (R. S. C.).

The production of carbines, model 1892, was, at the outbreak of the war, 1500 per month. Manufacture of carbines was suspended from May, 1915, to September, 1916, in order to increase the production of rifles. There were produced, during the war:

Rifles, model 1886, M. 93 (Lebel)	220,000
Rifles, model 1907-1915, 1907-1915, M. 1916	2,113,000
Automatic rifles, model 1917 (R. S. C.)	80,000
Carbines, model 1892 and Carbines, model 1892, M. 16	480,000
Carbines for cavalry	50,000

B. Machine Guns

1. *Heavy Machine Guns.*

France had at hand in 1914 over 5,000 machine guns, namely: with the troops, 2,000; at fortresses and depots, 3,000. The machine gun Puteaux had been introduced throughout the army with the exception of certain formations—principally colonial troops who were equipped with the Hotchkiss guns. The machine gun Puteaux was not well liked by the troops because it was too complicated and loading and other jams were too frequent with its use. The less complicated and more durable Hotchkiss was more generally preferred.

On account of losses, as well as on account of increase of machine-gun organizations, the reserves of machine guns were soon exhausted. The Puteaux works were dilatory in deliveries. Their productive capacity did not keep pace with the demand. The works reached their maximum of 60 guns per day only in 1916. At the end of the summer of 1915 the first order was given to the firm Hotchkiss which delivered 100 machine guns per day from the end of 1917. Other models were brought from England and America.

Following is a statement of the acquisition, by manufacture and purchase, by France of machine guns during the war:

Puteaux, model 1917			40,000
Hotchkiss			48,000
Vickers	produced in France,	2,000	12,000
	drawn from England,	10,000	
Lewis	produced in France,	4,500	11,500
	drawn from England,	7,000	
Colt, from the United States,		1,000	1,000
			112,500

2. *Light Machine Guns.*

The equipment of troop organizations with light machine guns (*F. M., fusil mitrailleur*) made greatly increased demands upon the productive capacities of industrial establishments. Of these, 225,000 were made during the war. In addition automatic rifles model 1917 were introduced into the army at the beginning of 1918. The handling of automatic rifles was difficult and required prolonged training.

C. Ammunition

1. *Infantry Rifle.*

Previous to 1914 there prevailed the impression that in a war of the future, as had been the case in the past, infantry would be the main arm. The casualties of the war of 1870-1871 and of the Russo-Japanese war were taken as standards in acceptation of that impression. They were:

	By Infantry Rifles	By Artillery Guns
War 1870-1871	%	%
German Army	90	5
French Army	70	25
Russo-Japanese War		
Russian Army	86	14
Japanese Army	85	9

But in the World War these ratios were reversed. The French losses were:

	%
By infantry arms	23
By artillery	65

Owing to estimates having been based on former war experience ample provision had been made for infantry ammunition. At mobilization there were on hand 1,300,000,000 cartridges. *The daily expenditure was estimated at 30,000,000.* The mobilization plan anticipated a daily production of 3,500,000 from the twentieth day after the beginning of the war for a period of four months. From that time on daily production was to be only 2,500,000. It was assumed that the war would be ended by that time.

The expenditure of infantry ammunition exceeded the estimate only after the increase of the machine-gun-using organizations. The maximum production reached 7,000,000 per day. There were produced during the war an aggregate of 6,300,000,000 cartridges.

2. *Infantry Gernades.*

There were produced during the war:

1. *Rifle Grenades*	77,000,000
2. *Hand Grenades*	
Incendiary grenades	1,100,000
Smoke grenades	2,250,000
Gas grenades	2,800,000
Attack grenades C. F.	34,000,000
Defense grenades D. F.	11,000,000

II. ARTILLERY

A. Field Artillery

The French field artillery was equipped with the 75-mm. cannon, model 1897, and the horse artillery with the 75-mm. cannon, model 12 (Creusot). The field gun, model 1912, was lighter than the 1897 model, but it did not meet the demands made upon it and was therefore replaced by a new gun, model 1913; but on the outbreak of the World War the horse artillery had not yet been supplied with it.

France had, on August, 1914, 1011 field-gun batteries of four guns each, a total of 4800 guns—leaving a reserve of 756 guns. In consideration of what was, before the war, regarded as a copious reserve provision and on account of the further assumption that a modern war would be ended before additional guns could be manufactured, the French mobilization plan had not anticipated the production of guns for a war contingency.

The loss of guns was, however, so great, even in the first months of the war, that the reserve was soon exhausted. New guns had to be made as soon as possible. At the end of September, 1914, the works of St. Chamond and Creusot were called upon for 20 batteries. When, at the beginning of 1915, there was added to the already heavy losses of guns that caused by the bursting of gun barrels due to the use of hastily manufactured and inferior ammunition, etc., further orders were given for the manufacture of 100 guns by the government factory at Bourges and for 500 to private establishments. The last were dilatory in delivery on account of want of skilled mechanics and of the necessary machinery. Deliveries could be made at full swing only in the latter part of 1915 and beginning of 1916. The situation became very critical by that time. The losses were so enormous that France had in its front, in the summer of 1915, only one-half of its equipment of field guns of August, 1914.

In order to make up to some extent for the losses until industries were in position to deliver the guns needed, it became necessary, after October, 1914, to put up with various antiquated models: 90-mm. guns (of which as many as 1000 were in use at times); 95-mm. guns (model Lahilotte of 1873); and in addition some naval guns: 27- and 47-mm.

The losses of 75-mm. guns were as follows:

To January 1, 1916	To January 1, 1917	
Pieces	*Pieces*	*Cause*
1000	2100	Bursting of barrels.
600	2300	Bulging of barrels.
750	3000	Worn out barrels.
400	1600	Destroyed by enemy fire or captured.

As has already been noted, French industrial establishments had become fully able to produce only by the end of 1915 and beginning of 1916; from that time on the current requirements of guns could be furnished and the crisis had been overcome. All old models and the 75-mm. cannon that were no longer in faultless condition disappeared from the front.

The semi-annual production of 75-mm. guns was:

	1915	1916	1917	1918
First half year	60	2150	2300	3800
Second half year	950	2200	3100	2550
	1010	4350	5400	6350

An aggregate of 17,110 pieces.

In 1918 the industries had become developed to such an extent that field guns could be supplied to foreign nations.

In January, 1917, there were on the front 4418 75-mm. guns, and on January 1, 1918, 5152. The numerical distribution of 75-mm. guns during some of the major battles was as follows:

1 gun to 32 meters of front in September, 1915 (Champagne battles).
1 gun to 34 meters of front in July, 1916 (Somme battles).
1 gun to 20 meters of front in April, 1917 (Offensive battles).
1 gun to 15 meters of front in October, 1917 (La Malmaison).

B. Mountain Artillery

The mountain artillery had been equipped with 65-mm. guns. Of these there were 168 on hand in August, 1914. A total of 800 were produced during the war. The 65-mm. guns were used almost exclusively in the Vosges. The 75-mm. guns in the colonies were all exchanged for 65-mm. guns in order to make the 75-mm. available in the European area.

C. Heavy Artillery

Three hundred pieces of heavy caliber were assigned to the field army at the outbreak of the war: namely, 120-mm. long (Bange), in the army since 1878, maximum range 8000 meters; 120-mm. short (Baquet), made in 1890, maximum range 5600 meters (80 guns), 155-mm. guns, short (rapid-fire), named after their inventor Rimailho, in the army since 1904, maximum range 6000 meters (100 pieces).

The siege artillery consisted of 132 mortars. The guns comprised 120-mm. long, 155-mm. long (Bange), and 155-mm. short, model 1881. The mortars comprised 220-mm. mortars, model 1885, maximum range 4300 meters with a projectile containing 65 kilograms of explosive material, and 7800 meters range with a projectile containing 35 kilograms explosives. The heavy guns remaining in the fortresses are to be added to the heavy artillery.

Aside from this there had been ordered in August, 1914, two-hundred and twenty 105-mm. cannon (Creusot and Bourges), to be delivered

August, 1914, to August, 1915; one-hundred and twenty 155-mm. cannon, long, to be delivered 1916-17 (rapid-fire); eighteen 280-mm. mortars, delivery 1916.

Orders for new guns for the heavy artillery were not made in the early months of 1914 after outbreak of the war. Guns were drawn from the siege artillery, fortress artillery, and the navy. The naval guns were especially used as railway guns for firing over rearward emplacements.

In February, 1915, general headquarters ordered some 105-mm. guns, long (rapid-fire), and 280-mm. mortars, rapid-fire. In addition, there were purchased from private industrial establishments guns that had been ordered in part by foreign governments before the war and had not yet been delivered. Furthermore there were guns that private industries had produced on their own account and which were then offered to the government, as follows: 270-mm. coast artillery mortars; 230-mm. coast mortars, maximum range 12,000 meters; 370-mm. mortars (Filloux), maximum range 8000 meters with a projectile of 150 kilos explosive and of 10,000 meters with projectile of 100 kilos explosive.

The decision to reorganize and increase materially the heavy artillery was made in 1915. But only on August 5, 1916, did general headquarters establish a program of equipment of the heavy artillery, and industries were charged with making deliveries as follows:

960	pieces 105-mm. cannon
1440	pieces 155-mm. cannon
2160	pieces 155-mm. cannon
160	pieces 220-mm. cannon
80	pieces 280-mm. cannon
4800	

Only in the first half of 1917 was French industry able to cover every requirement for heavy guns. On April, 1918, there were on hand on the French front the following numbers of guns of each kind named below:

600	pieces 105-mm. guns
1600	pieces 155-mm. guns, short
700	pieces 155-mm. guns, long
170	pieces 220-mm. mortars
3070	

The following table shows how the production of guns mostly used was developed during the war:

	1914	1915		1916		1917		1918		Total
	Half Year	Half Year		Half Year		Half Year		Half Year		
	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	
105-mm. guns, long, model 1913 (Schneider)	60	50	70	100	95	230	275	260	200	1340
105-mm. guns, short, St. Chamond			40	40	50	220	40			390
155-mm. guns, short, Schneider mod. 15 & 17				50	180	280	950	1050	530	3040
155-mm. guns, long, model 1917							130	170	110	410
155-mm. guns, long, model 1918									5	5
220-mm. guns, mortars, short, model 1916						30	75	160	110	375
220-mm. guns, mortars, long, model 1917								5	20	25
280-mm. mortars			15	20	10	20	35	30	25	155
120-mm. howitzers (Schneider)			15	35						50
Aggregate	60	50	140	245	335	780	1505	1675	1000	5790

There were delivered to foreign countries: Russia, 326; Italy, Belgium, Servia, Rumania, 580 guns of various calibers. Of very heavy guns there were manufactured 400- and 520-mm. howitzers. The former were used in the combats at Douamont and Vaux, but the latter could not be furnished in time to take part in the fights. The numerical distribution of heavy guns in some of the major battles was as follows:

1 heavy gun to 40 meters, Champagne battle, September, 1915.
1 heavy gun to 36 meters, battle at Artois, September, 1915.
1 heavy gun to 25 meters, Somme battle, July, 1918.
1 heavy gun to 11 meters, Battle at Malmaison, October, 1917.

D. Ammunition

1. 75-mm. Projectiles.

In 1914, 1700 rounds had been provided for each gun: namely, 1300 rounds fully prepared and 400 held in readiness at the arsenals for completion. Completion was to take effect immediately on the outbreak of war. As an actual fact there were on hand on mobilization only 1400 rounds, 200 of which were ready for completion at the arsenals. The government factories were, according to the mobilization plans, to provide 3600 rounds daily—a little more than three rounds per day per gun. The manufacture of projectiles was, in 1914, reduced to 7000 rounds per day by reason of the seizure, by the Germans, of some areas in the vicinity of Paris. But general headquarters had in September, 1914, already demanded a daily delivery of 40,000 projectiles and a few days later 80,000, and then 100,000 per day.

The expenditure of projectiles was very great in the very first fights. Some batteries fired 1000 rounds in a single fight. On September 10, 1914, the field artillery had left only 500 rounds per gun.

France was obliged to find quickly ways and means for rapid delivery of the ammunition demanded from the front. The works Creusot and St. Chamond could not fill requirements and other places had to be

relied on. On September 14 the war minister Millerand summoned the leading industrial managers to Bordeaux, where the government had taken temporary refuge, to arrange with them for the conversion of their works for the immediate manufacture of ammunition. But in order to meet the demand rapidly it was necessary for these private establishments to convert their establishments to manufacture ammunition without delay by means of the introduction of wholly new appliances. It was therefore decided to shift to new methods, drills, boring, etc. This materially lightened the difficulties of the processes but at the expense of quality. The pre-war specifications required, in tests of projectiles, that the wall of the projectile should sustain a pressure of 1400 kilos per square centimeter. This requirement was reduced to 400 kilos.

The ammunition delivered at that time was bad. The consequence was that a large number of field guns, as has been heretofore noted, were rendered unserviceable inside of thirty days' use by inferior ammunition, which caused bursting of gun barrels, and by other defects. This loss was, under the then condition of shortage of field artillery pieces, severely felt.

The relation of shrapnel to shells was between 15 to 26 and 11 to 26. But since the manufacture of shells is easier than that of shrapnel it was decided, in order to meet the pressing demands for ammunition, to produce for the time being only shells. By reason of the transition to the war of position the call for shells also became more imperative than for shrapnel. In the table given below the monthly and the aggregate production of 75-mm. projectiles is shown.

	Months	*Shells*	*Shrapnel*	*Gas Projectiles*	*Ordinary Projectiles*	*Aggregate*
1914	August	300,000	440,000			790,000
1914	September	190,000	280,000		5,000	475,000
1914	October	250,000	140,000			390,000
1914	November	280,000	100,000		40,000	380,000
1914	December	490,000	70,000			600,000
1915	January	900,000	110,000		100,000	1,110,000
1915	August	1,910,000	300,000			2,210,000
1916	January	2,540,000	480,000			3,020,000
1916	August	4,225,000	685,000	295,000		5,205,000
1917	January	4,920,000	805,000	325,000		6,050,000
1917	May	5,800,000	810,000	400,000		7,010,000
1917	August	4,925,000	840,000	165,000		5,930,000
1918	January	4,375,000	645,000	415,000		5,435,000
1918	August	4,425,000	470,000	740,000		5,635,000
1918	September	3,900,000	590,000	1,145,000		5,635,000
1918	October	3,145,000	555,000	870,000		4,570,000
Total output to Oct., 1918		167,870,000	27,780,000	12,245,000	360,000	208,265,000

While the mobilization plan had contemplated a production of 409,000 projectiles for the monthly maximum, the production for May, 1917, reached more than 7,000,000 rounds. The great expenditure of 75-mm. projectiles in some of the major battles is shown by the following table:

Dates	*Breath of Front*	*Time Days*	*No. Projectiles*	*Tons*
Champagne Battle, Sept., 1915	1 kilometer	5	40,000	320
Somme Battles, June-July, 1916	1 kilometer	17	134,375	1075
On the day of attack	1 kilometer	1	18,750	150
La Malmaison, Oct., 1917	1 kilometer	6	218,780	1750
Day of Attack, and Champagne Sept. 26, 1918	1 kilometer	1	52,500	420

2. *Heavy Artillery Projectiles.*

The mobilization plan had provided for a daily production of only 465 rounds of projectiles for the 155-mm. cannon. There was, for the time being, no provision for manufacture of ammunition for the other heavy guns. The quantities on hand were considered ample in every way in case of war. In August, 1914, there were on hand projectiles for guns as given below:

90-mm. cannon	1,600,000 rounds
95-mm. cannon	1,150,000 rounds
120-mm. cannon	1,300,000 rounds
155-mm. cannon	1,000,000 rounds
220-mm. mortars	200,000 rounds

Only factories furnished with the requisite equipment of presses came into question for the production of ammunition for the heavy artillery. The unsatisfactory experiences with the manufacture of projectiles for the 75-mm. guns by means of the boring or drilling process discouraged use of that method for making projectiles for heavy guns. The production of such projectiles was therefore confined to a small number of factories.

After February, 1915, application was made to private industry for the manufacture of that class of projectiles and they were permitted to make them of cast iron to hasten delivery. Those could be produced more readily but their military value was materially lessened. Since the walls of cast iron projectiles had to be made thicker they could be made to contain only from 1/3 to 1/4 the customary quantity of explosive, thus reducing the explosive effect to a small number of larger pieces without penetrating force.

In the summer of 1915 the manufacture of heavy artillery projectiles of cast steel was begun. While these were a material improvement over those of cast iron, they did not have the striking effect of wrought

steel. The rate of expenditure of heavy-gun projectiles increased very rapidly and reached its maximum in 1917. The quantity of heavy artillery projectiles produced during the war is as follows:

Date	*Steel*	*Cast Steel*	*Shrapnel*	*Canister*	*Gas*	*Cast Iron*
Jan. 1915	70,000	50,000				
Aug. 1915	70,000	50,000				25,000
Jan. 1916	90,000	95,000				25,000
Aug. 1916	320,000	410,000	5,000	3,000		15,000
Jan. 1917	385,000	520,000	17,000			
Aug. 1917	490,000	560,000	2,000	1,500		
Jan. 1918	640,000	440,000	2,000	500	120,000	
Aug. 1918	320,000	561,000	15,000	5,000	60,000	
Total for the war period	14,400.000	15,400,000	170,000	40,000	1,150,000	325,000

Grand total of all kinds 31,485,000 rounds

There were made for the remaining classes of guns projectiles, as follows:

Guns	*of cast steel*	*all other materials*
90-mm.	2,635,000	5,700,000
95-mm.	3,100,000	5,500,000
105-mm.		8,300,000
120-mm.	4,900,000	12,000,000
220-mm. mortars	700,000	2,000,000

As heretofore stated the 90- and 95-mm. guns were used only as auxiliaries. On July, 1916, more than 250 tons of projectiles were used on a kilometer front in the battle on the Somme and 750 tons on October 27, 1917, in the battles at Malmaison.

III. GUNPOWDER AND EXPLOSIVES

A. Gunpowder

The French army had adopted for its use, with very few exceptions (a few minenwerfers), the gun powder B. This powder, slightly deficient in smoke, was discovered in 1884, after a number of trials, by the chemist Vieille. The gun powder B has the great advantage, over all other gun powders, of a lower combustion temperature, thus being less destructive of material coming in contact with it, but it has the disadvantage of a very circumstantial method of manufacture and deficiency of keeping quality in storage.

The French government has, for the present, reserved to itself the monopoly of manufacturing this powder. In 1914 the government had six factories furnishing this powder, with daily capacity of 15 tons per day for all. The mobilization plan had contemplated an increase of only 25 tons daily production up to the end of the second month after mobilization, which was to run parallel with the increase in other munitions. But this program was upset in the very first weeks of the war

by the unexpected great expenditures of munitions of all kinds. Even in August the powder factories delivered 30 tons per day and in December 50 tons, but even that quantity was insufficient. New powder factories were built at Toulouse, Ripault, St. Medart, and Bergerac, so that toward the end of the war 500 tons of powder per day could be made—twenty times the quantity that had been anticipated. But that rate was never reached, the maximum deliveries were 400 tons per day in June, 1917.

The manufacture of gun powder B is, as has been above stated, quite complicated, and in addition considerable time is required to prepare a factory to make daily deliveries of a specific quantity required—generally 16 months are required. The factories of 1915 could, therefore, begin deliveries for supplying the whole army only about the middle of 1916. It became necessary, therefore, to turn to foreign countries. As early as October, 1914, orders were given in the United States for delivery of 3000 tons during 1915. American industries were not prepared for deliveries of such quantities, so that more time was required before the first deliveries arrived in France. The U-boat war made its influence also disagreeably felt at this time, when every ton of powder was urgently needed in France. Not until the summer of 1916 was American industry able to make satisfactory deliveries. The importation of gun powder B from the United States was about one-fourth of the entire quantity used by France. The following tabular statement shows production and delivery rates at various dates during the war.

Months	*Quantities to be delivered*	*Quantities actually delivered*	
		In France	*From U. S.*
	tons per day	*tons per day*	*tons per day*
July, 1914	15	15	
September, 1914	25	30	
January, 1915	80	50	1
October, 1915	150	100	25
April, 1916	250	180	70
April, 1917	450	370	90
April, 1918	450	290	100

Although France was, from 1917 on, in a situation to produce its requirements of gun powder in that country, considerable quantities were nevertheless drawn from the United States. Approximately ten tons of raw material is required to produce one ton of finished powder, all of which had to be procured almost wholly from abroad. In view of the constantly increasing difficulties of obtaining sufficient transportation it was deemed expedient to import the finished product. The saving in transportation was 90%. For the same reason gun cotton was

made of tolidin instead of toluol. The principal materials required for manufacture of gun powder B are: alcohol, ether, and gun cotton. The ether was obtained from alcohol.

1. Alcohol.

At the beginning of the war it required 20 hectoliters of alcohol to produce one ton of powder. By special methods this was afterwards reduced by one half. The French mobilization plan had contemplated a daily production (of alcohol) of 500 hectoliters, but that was soon found to be wholly inadequate. The total supply of alcohol on hand was embargoed at the outbreak of the war. Requisitions called for were:

1915	about 2000 hectoliters per day	=	42,840	gallons
1916	about 4000 hectoliters per day	=	85,680	gallons
1917	about 7000 hectoliters per day	=	184,900	gallons
1918	about 6000 hectoliters per day	=	178,520	gallons

2. Gun Cotton.

Before the war there were only two factories in France that made gun cotton: namely, the establishment of Angoulème and Moulin Blanc. By enlargement of those establishments it was possible to produce 50 tons of gun cotton per day from April, 1915. But notwithstanding the erection of new factories in Angoulème, Toulouse, and Bergerac, it became necessary to call on private industries and the United States. In order to meet requirements until private industries and the United States were able to make deliveries all supplies of powder and compressed gun cotton on hand in the navy were overhauled and made serviceable.

B. Explosives

In France melinit, tolidin, cresolite were used principally for explosives for filling projectiles; fillings for shrapnel were black powder and those for navy torpedoes were compressed gun cotton. The raw materials needed for making the explosives were obtained from abroad, and principally from Germany. France was therefore required to have at hand large quantities for war emergencies. Since the finished explosives were well adapted to long storage, large supplies were on hand, and it was assumed that they would be amply sufficient in case of war. The mobilization plan did not therefore contemplate any increased production of explosives. The three government factories St. Chamas, Bourges, and Esquerdez were simply to use up their raw material at hand. The factory at Esquerdez in the north of France was quickly

abandoned at the outbreak of war and fell into the hands of the German troops.

The consumption of shells had been very materially increased soon after the transition to the war of position. It must be remembered that soon after September, 1914, army headquarters made requisition for a supply of 40,000 to 50,000 shells for the 75-mm. field cannon alone, calling for explosive material of about 40 tons. The mobilization plan had anticipated only 4,000 shells for the 75-mm. field gun by that time. In order to meet requisitions it became necessary to build new factories and to charge private industries with procurement and also to import from abroad.

In 1917 the French government had 12 factories and as many private establishments making explosives. Three "factory groups" were added to the above mentioned factories: namely, Port-St.-Louis-du Rhône, St.-Martin-de-Crau, and the former German St. Tons. These factories were in southern France, where chemical industry was well developed.

The maximum capacity of the government and private factories was 985 ton per day, but that quantity was never reached. In July, 1917, there was delivered 870 tons of explosives per day, including 170 tons of chlorinated explosives. In 1918 the demand was lessened and the factories produced only 400 tons per day.

The firm "Schneider" introduced an explosive under the name "Schneiderite" made of a combination of ammonium nitrate and dinitronapthalin with which satisfactory trials had been made in the Balkan wars. Furthermore, trials were made with an explosive made up with chloric acid calcium. But since those were sensitive to explosion by shock or heat they could be used only after being treated with paraffin or vaseline, and then only for charging hand grenades or mines. They were still too sensitive for use in projectiles. There was no difficulty in the manufactures of these explosives. There were produced per day: May, 1915, 40 tons; March, 1916, 100 tons; December, 1916, 175 tons.

Quite harmless-appearing industrial establishments, such as paint works or paint-making factories can be readily and quickly adapted to making explosives. Great difficulties were encountered by the *service de poudre* during the war, not only in obtaining raw material but also in recruiting the necessary working personnel. This consisted in July, 1914, of about 7600 men and at the end of 1917 of 120,000. That number was reduced to 87,000 by the time of the armistice. In the year 1918 one-fourth of the laboring forces in this field were women.

General Officers of the Regular Army

1775-1927

EDITOR'S NOTE.—The following lists include only commissions issued in the Regular Army; they do not include brevet commissions nor commissions in the Volunteers or the National Army. The following symbols are used: * indicates a graduate of the United States Military Academy; [1] indicates service during the Revolutionary War; [2] service during the War of 1812; [3] service during the War with Mexico; [4] service during the Civil War; [5] service during the War with Spain; [6] service during the World War. These lists are not elsewhere available, except in part in Heitman's *Historical Register of Officers of the Continental Army* and *Historical Register and Dictionary of the United States Army*, and Powell's *List of Officers of the Army of the United States.*

GENERALS

NO.	NAME	APPOINTED	VACATED		DIED	REMARKS
			DATE	CAUSE		
1	Washington, George [1]	15 Jun 1775	23 Dec 83	Resigned	14 Dec 99	Cmdg Army; Thanks of Congress (8), medal, and two stands of colors; Pres US, 1789-97; Lt. Gen. 1798.
2	*Grant, Ulysses S. [3 4]	25 Jul 1866	4 Mar 69	Vacated	23 Jul 85	Cmdg Army; Thanks of Congress and medal; Sec War *ad in*, 1867-68; Pres US, 1869-77; Gen Ret, 1885.
3	*Sherman, William T. [3 4]	4 Mar 1869	8 Feb 84	Retired	14 Feb 91	Cmdg Army, 1869-83; Thanks of Congress (2).
–	*Grant, Ulysses S. [3 4]	3 Mar 1885	3 Mar 85	Retired	23 Jul 85	Gen, 1866.
4	*Sheridan, Philip H. [4]	1 Jun 1888	5 Aug 88	Died	5 Aug 88	Cmdg Army; Thanks of Congress.
5	*Pershing, John J. [5 6]	3 Sep 1919	13 Sep 24	Retired		Gen (emer), 1917; Thanks of Congress.

LIEUTENANT GENERALS

NO.	NAME	APPOINTED	VACATED		DIED	REMARKS
			DATE	CAUSE		
1	Washington, George [1]	3 Jul 1798	14 Dec 99	Died	14 Dec 99	Cmdg Army; Gen, 1775.
2	*Grant, Ulysses S. [3 4]	2 Mar 1864	24 Jul 66	Promoted	23 Jul 85	Cmdg Army.
3	*Sherman, William T. [3 4]	25 Jul 1866	3 Mar 69	Promoted	14 Feb 91	
4	*Sheridan, Philip H. [4]	4 Mar 1869	31 May 88	Promoted	5 Aug 88	
5	*Schofield, John M. [4]	5 Feb 1895	29 Sep 95	Retired	4 Mar 06	Sec War, 1868-69; Cmdg Army, 1888-95; MH.
6	Miles, Nelson A. [4 5]	6 Jun 1900	8 Aug 03	Retired	15 May 25	Cmdg Army; MH.
7	Young, Samuel B. M. [4 5]	8 Aug 1903	9 Jan 04	Retired	1 Sep 24	
8	Chaffee, Adna R. [4 5]	9 Jan 1904	1 Feb 06	Retired	1 Nov 14	
9	Bates, John C. [4 5]	1 Feb 1906	14 Apr 06	Retired	4 Feb 19	
10	Corbin, Henry C. [4 5]	15 Apr 1906	15 Sep 06	Retired	8 Sep 09	
11	MacArthur, Arthur [4 5]	15 Sep 1906	2 Jun 09	Retired	5 Sep 12	MH.

MAJOR GENERALS

NO.	NAME	APPOINTED	VACATED		DIED	REMARKS
			DATE	CAUSE		
1	Ward, Artemas [1]	17 Jun 1775	23 Apr 76	Resigned	28 Oct 00	
2	Lee, Charles [1]	17 Jun 1775	10 Jan 80	Dismissed	2 Oct 82	Thanks of Congress.
3	Schuyler, Philip [1]	19 Jun 1775	19 Apr 79	Resigned	18 Nov 04	
4	Putman, Israel [1]	19 Jun 1775	3 Jun 83	Retired	19 May 90	
5	Montgomery, Richard [1]	9 Dec 1775	31 Dec 75	Killed	31 Dec 75	
6	Thomas, John [1]	6 Mar 1776	2 Jun 76	Died	2 Jun 76	
7	Gates, Horatio [1]	16 May 1776	3 Nov 83	Hon. Dis.	10 Apr 06	Thanks of Congress and medal.
8	Heath, William [1]	9 Aug 1776	3 Nov 83	Hon. Dis.	24 Jan 14	
9	Spencer, Joseph [1]	9 Aug 1776	13 Jan 78	Resigned	13 Jan 89	
10	Sullivan, John [1]	9 Aug 1776	30 Nov 79	Resigned	23 Jan 95	Thanks of Congress (2).

NO.	NAME	APPOINTED	VACATED DATE	VACATED CAUSE	DIED	REMARKS
11	Greene, Nathaniel [1]	9 Aug 1776	3 Nov 83	Hon. Dis.	19 Jun 86	QMG, 1778-80; Thanks of Congress (2), medal, stand of colors, and two field guns.
12	Arnold, Benedict [1]	17 Feb 1777	25 Sep 80	Deserted	14 Jun 01	Thanks of Congress and a horse.
13	Alexander, William [1]	19 Feb 1777	15 Jan 83	Died	15 Jan 83	Thanks of Congress.
14	Mifflin, Thomas A. [1]	19 Feb 1777	25 Feb 79	Resigned	20 Jan 00	QMG, 1775-77.
15	St. Clair, Arthur [1]	19 Feb 1777	3 Nov 83	Hon. Dis.	31 Aug 18	MG, 1791.
16	Stephen, Adam [1]	19 Feb 1777	20 Nov 77	Dismissed	— Nov 91	
17	Lincoln, Benjamin [1]	19 Feb 1777	29 Oct 83	Resigned	9 May 10	Sec War, 1781-83; Thanks of Congress.
18	Lafayette, P. J. du M. de [1]	31 Jul 1777	3 Nov 83	Hon. Dis.	30 May 34	Thanks of Congress and a sword.
19	Coudray, Philip T. du [1]	11 Aug 1777	15 Sep 77	Died	15 Sep 77	IG of Ord.
20	DeKalb, John [1]	15 Sep 1777	19 Aug 80	Wounds	19 Aug 80	
21	Howe, Robert [1]	20 Oct 1777	3 Nov 83	Hon. Dis.	12 Nov 85	
22	McDougall, Alexander [1]	20 Oct 1777	3 Nov 83	Hon. Dis.	8 Jun 86	
23	Conway, Thomas [1]	13 Dec 1777	28 Apr 78	Resigned	— —— 00	Insp Gen.
24	Steuben, Frederick W. von [1]	5 May 1778	15 Apr 84	Resigned	28 Nov 94	Insp Gen; Thanks of Congress (2) and a sword.
25	Smallwood, William [1]	15 Sep 1780	3 Nov 83	Hon. Dis.	14 Feb 92	Thanks of Congress.
26	Parsons, Samuel H. [1]	23 Oct 1780	22 Jul 82	Retired	17 Nov 89	Thanks of Congress.
27	Knox, Henry [1]	15 Nov 1781	20 Jun 84	Hon. Dis.	25 Oct 06	C of Art, 1776-83; Cmdg Army, 1783-84; Sec War, 1785-94.
28	Duportail, Louis L. [1]	16 Nov 1781	10 Oct 83	Retired	— —— 02	C of Engrs.
29	Moultrie, William [1]	15 Oct 1782	3 Nov 83	Hon. Dis.	27 Sep 05	Thanks of Congress.
30	St. Clair, Arthur [1]	4 Mar 1791	5 Mar 92	Resigned	31 Aug 18	Cmdg Army; MG, 1777.
31	Wayne, Anthony [1]	5 Mar 1792	15 Dec 96	Died	15 Dec 96	Comdg Army; Bvt MG, 1783; Thanks of Congress and a medal.
32	Hamilton, Alexander [1]	19 Jul 1798	15 Jun 00	Hon. Dis.	12 Jul 04	Insp Gen; Cmdg Army, 1799-1800.
33	Pinckney, Charles C. [1]	19 Jul 1798	15 Jun 00	Hon. Dis.	16 Aug 25	Bvt BG, 1783.
—	Knox, Henry [1]	19 Jul 1798	19 Jul 98	Declined	25 Oct 06	MG, 1781.
34	Lee, Henry [1]	19 Jul 1798	15 Jun 00	Hon. Dis.	25 Mar 18	Thanks of Congress and medal.
35	Hand, Edward [1]	19 Jul 1798	15 Jun 00	Hon. Dis.	3 Sep 02	Bvt MG, 1783.
36	Dearborn, Henry [1] [2]	27 Jan 1812	15 Jun 15	Hon. Dis.	6 Jun 29	Cmdg Army; Sec War, 1801-09.

NO.	NAME	APPOINTED	VACATED DATE	VACATED CAUSE	DIED	REMARKS
37	Pinckney, Thomas [1 2]	27 Mar 1812	15 Jun 15	Hon. Dis.	2 Nov 28	
38	Wilkinson, James [1 2]	2 Mar 1813	15 Jun 15	Hon. Dis.	28 Dec 25	Cmdg Army, 1796-98, 1800-12; Bvt MG, 1812.
39	Hampton, Wade [1 2]	2 Mar 1813	16 Mar 14	Resigned	4 Feb 35	
40	Lewis, Morgan [1 2]	2 Mar 1813	15 Jun 15	Hon. Dis.	7 Apr 44	
41	Harrison, William H. [2]	2 Mar 1813	31 May 14	Resigned	4 Apr 41	Thanks of Congress and medal; Pres US, 1841.
—	Davie, William R. [1]	2 Mar 1813	2 Mar 13	Declined	18 Nov 20	BG, 1798.
—	Ogden, Aaron [1]	2 Mar 1813	2 Mar 13	Declined	19 Apr 39	
42	Izard, George [2]	24 Jan 1814	15 Jun 15	Hon. Dis.	22 Nov 28	
43	Brown, Jacob [2]	24 Jan 1814	24 Feb 28	Died	24 Feb 28	Cmdg Army, 1815-28; Thanks of Congress.
44	Jackson, Andrew [1 2]	1 May 1814	1 Jun 21	Hon. Dis.	8 Jun 45	Thanks of Congress and medal; Pres US, 1829-37.
45	Macomb, Alexander [2]	24 May 1828	25 Jun 41	Died	25 Jun 41	Cmdg Army; Bvt MG, 1814.
46	Scott, Winfield [2 3 4]	25 Jun 1841	1 Nov 61	Retired	29 May 66	Cmdg Army; Bvt MG, 1814; Bvt Lt Gen, 1847; Thanks of Congress and two medals.
47	Taylor, Zachary [2 3]	29 Jun 1846	31 Jan 49	Resigned	9 Jul 50	Thanks of Congress (3) and three medals; Pres US, 1849-50.
48	Pillow, Gideon J. [3]	13 Apr 1847	20 Jul 48	Hon. Dis.	8 Oct 78	(BG, CSA, 1861.)
49	Quitman, John A. [3]	14 Apr 1847	20 Jul 48	Hon. Dis.	17 Jul 58	Bvt MG, 1846; Sword from Congress.
—	Benton, Thomas H. [2]	— — 1847	— — 47	Declined	10 Apr 58	
—	Cummings, William	— — 1847	— — 47	Declined		
50	*McClellan, George B. [3 4]	14 May 1861	8 Nov 64	Resigned	29 Oct 85	Cmdg Army 1861-62; Thanks of Congress.
51	Freemont, John C. [3 4]	14 May 1861	4 Jun 64	Resigned	13 Jul 90	MG Ret, 1890.
52	*Halleck, Henry W. [3 4]	19 Aug 1861	9 Jan 72	Died	9 Jan 72	Cmdg Army, 1862-64.
53	Wool, John E. [2 3 4]	16 May 1862	1 Aug 63	Retired	10 Nov 69	Bvt MG, 1847; Thanks of Congress and sword.
54	*Grant, Ulysses S. [3 4]	4 Jul 1863	2 Mar 64	Promoted	23 Jul 85	
55	*Sherman, William T. [3 4]	12 Aug 1864	25 Jul 66	Promoted	14 Feb 91	

NO.	NAME	APPOINTED	VACATED DATE	VACATED CAUSE	DIED	REMARKS
56	*Meade, George G. [3 4]	18 Aug 1864	6 Nov 72	Died	6 Nov 72	Thanks of Congress.
57	*Sheridan, Philip H. [4]	8 Nov 1864	4 Mar 69	Promoted	5 Aug 88	
58	*Thomas, George H. [3 4]	15 Dec 1864	28 Mar 70	Died	28 Mar 70	Thanks of Congress.
59	*Hancock, Winfield S. [3 4]	26 Jul 1866	9 Feb 86	Died	9 Feb 86	Bvt MG, 1865; Thanks of Congress.
60	*Ricketts, James B. [3 4]	3 Jan 1867	3 Jan 67	Retired	22 Sep 87	Bvt MG, 1865.
61	Long, Eli [4]	16 Aug 1867	16 Aug 67	Retired	5 Jan 03	Bvt MG, 1865; Demoted to BG Ret, 1875.
62	*Johnson, Richard W. [3 4]	12 Oct 1867	12 Oct 67	Retired	21 Apr 97	Bvt MG, 1865; Demoted to BG Ret, 1875.
63	*Wood, Thomas J. [3 4]	9 Jun 1868	9 Jun 68	Retired	25 Feb 06	Bvt MG, 1865; Demoted to BG Ret, 1875.
64	*Hooker, Joseph [3 4]	15 Oct 1868	15 Oct 68	Retired	31 Oct 79	Bvt MG, 1865; Thanks of Congress.
65	*Heintzelman, Samuel P. [3 4]	22 Feb 1869	22 Feb 69	Retired	1 May 80	Bvt MG, 1865.
66	*Schofield, John M. [4]	4 Mar 1869	5 Mar 95	Promoted	4 Mar 06	Cmdg Army, 1888-95; Bvt MG, 1865; MH.
67	Sickles, Daniel E. [4]	14 Apr 1869	14 Apr 69	Retired	3 May 14	Bvt MG, 1867; MH.
68	Robinson, John C. [3 4]	6 May 1869	6 May 69	Retired	18 Feb 97	Bvt MG, 1865; MH.
69	*Carroll, Samuel S. [4]	9 Jun 1869	9 Jun 69	Retired	28 Jan 92	Bvt MG, 1865.
70	*Sherman, Thomas W. [3 4]	31 Dec 1870	31 Dec 70	Retired	16 Mar 79	Bvt MG, 1865.
71	*Hartsuff, George L. [4]	29 Jun 1871	29 Jun 71	Retired	16 May 74	Bvt MG, 1865.
72	*McDowell, Irvine [3 4]	25 Nov 1872	15 Oct 82	Retired	4 Mar 85	Bvt MG, 1865.
—	*Ord, Edward O. C. [3 4]	28 Jan 1881	On retired list		22 Jul 83	Bvt MG, 1865.
73	*Pope, John [3 4]	26 Oct 1882	16 Mar 86	Retired	23 Sep 92	Bvt MG, 1865.
74	Terry, Alfred H. [4]	3 Mar 1886	5 Apr 88	Retired	16 Dec 90	Bvt MG, 1865; Thanks of Congress.
75	*Howard, Oliver O. [4]	19 May 1886	8 Nov 94	Retired	26 Oct 09	Bvt MG, 1865; Thanks of Congress; MH.
76	*Crook, George [4]	6 Apr 1888	21 Mar 90	Died	21 Mar 90	Bvt MG, 1865.
77	Miles, Nelson A. [4 5]	5 Apr 1890	6 Jun 00	Promoted	15 May 25	Bvt MG, 1867; Cmdg Army, 1895-1903; MH.
78	Fremont, John C. [3 4]	28 Apr 1890	28 Apr 90	Retired	13 Jun 90	MG, 1861.
79	*McCook, Alexander M. [3 4]	9 Nov 1894	22 Apr 95	Retired	12 Jun 03	Bvt MG, 1865.
80	*Ruger, Thomas H. [4]	8 Feb 1895	2 Apr 97	Retired	3 Jun 07	

NO.	NAME	APPOINTED	VACATED		DIED	REMARKS
			DATE	CAUSE		
81	*Merritt, Wesley [4 5]	25 Apr 1895	16 Jun 00	Retired	3 Dec 10	Bvt MG, 1865.
82	Wheaton, Frank [4]	2 Apr 1897	8 May 97	Retired	18 Jun 03	Bvt MG, 1865.
83	*Forsyth, James W. [4]	11 May 1897	14 May 97	Retired	24 Oct 06	Bvt BG, 1865.
84	Bliss, Zenas R. [4]	14 May 1897	22 May 97	Retired	2 Jan 00	MH.
85	Brooke, John R. [4 5]	22 May 1897	21 Jul 02	Retired	5 Sep 26	
86	Corbin, Henry C. [4 5]	6 Jun 1900	15 Apr 06	Promoted	8 Sep 09	Adjt Gen.
87	Otis, Elwell S. [4 5]	16 Jun 1900	25 Mar 02	Retired	21 Oct 09	Bvt MG, 1899.
88	Young, Samuel B. M. [4 5]	2 Feb 1901	8 Aug 03	Promoted	1 Sep 24	
89	Chaffee, Adna R. [4 5]	14 Feb 1901	9 Jan 04	Promoted	1 Nov 14	
90	MacArthur, Arthur [4 5]	5 Feb 1901	15 Sep 06	Promoted	5 Sep 12	MH.
91	*Wilson, James H. [4 5]	11 Feb 1901	2 Mar 01	Retired	23 Feb 25	Bvt MG, 1865.
—	Shafter, William R. [4 5]	18 Feb 1901	On retired list		12 Nov 06	MH.
92	Wheaton, Lloyd [4 5]	30 Mar 1901	15 Jul 02	Retired	17 Sep 18	MH.
93	Hughes, Robert P. [4 5]	1 Apr 1902	11 Apr 03	Retired	27 Oct 09	
94	Bates, John C. [4 5]	15 Jul 1902	1 Feb 06	Promoted	4 Feb 19	
95	Davis, George W. [4 5]	21 Jul 1902	26 Jul 03	Retired	12 Jul 18	
—	Merriam, Henry C. [4 5]	19 Feb 1903	On retired list		18 Nov 12	MH.
96	Breckinridge, Joseph C. [4 5]	11 Apr 1903	12 Apr 03	Retired	18 Aug 20	
97	Ludington, Marshall I. [4 5]	12 Apr 1903	13 Apr 03	Retired	26 Jul 19	
98	Wade, James F. [4 5]	13 Apr 1903	14 Apr 07	Retired	23 Aug 21	
99	Summer, Samuel S. [4 5]	26 Jul 1903	6 Feb 06	Retired		
100	Wood, Leonard [5 6]	8 Aug 1903	5 Oct 21	Retired		MH.
101	Kobbé, William A. [4 5]	19 Jan 1904	20 Jan 04	Retired		
102	Sanger, Joseph P. [4 5]	20 Jan 1904	21 Jan 04	Retired	15 May 26	
103	*Bates, Alfred E. [4 5]	21 Jan 1904	22 Jan 04	Retired	13 Oct 09	
104	Randolph, Wallace F. [4 5]	22 Jan 1904	23 Jan 04	Retired	19 Dec 10	
105	*Gillespie, Geo. L. [4 5]	23 Jan 1904	17 Jun 05	Retired	27 Sep 13	MH.
106	Ainsworth, Fred C. [5]	23 Apr 1904	16 Feb 12	Retired		Mil Sec; AG.
107	*Story, John P. [4 5]	17 Jun 1905	19 Jun 05	Retired	25 Mar 15	
108	Randall, George M. [4 5]	19 Jun 1905	8 Oct 05	Retired	14 Jun 18	
109	Weston, John F. [4 5]	8 Oct 1905	15 Nov 09	Retired	3 Aug 17	MH.
110	*Grant, Frederick D. [5]	6 Feb 1906	11 Apr 12	Died	11 Apr 12	

NO.	NAME	APPOINTED	VACATED		DIED	REMARKS
			DATE	CAUSE		
111	Greely, Adolphus W. [4 5]	10 Feb 1906	27 Mar 08	Retired		
112	Lee, Jesse M. [4 5]	18 Sep 1906	2 Jan 07	Retired	27 Mar 26	
113	*Bell, James F. [4 5]	3 Jan 1907	8 Jan 19	Died	8 Jan 19	MH.
114	McCaskey, William S. [4 5]	15 Apr 1907	2 Oct 07	Retired	10 Aug 14	
115	Humphrey, Charles F. [4 5]	1 Jul 1907	1 Jul 06	Retired	4 Jun 26	MH.
116	*Duvall, William P. [4 5]	2 Oct 1907	13 Jan 11	Retired	1 Mar 20	
117	Hall, Charles B. [4 5]	28 Mar 1908	29 Apr 08	Retired	11 May 14	
118	*Barry, Thomas H. [5]	29 Apr 1908	31 Oct 19	Retired	30 Dec 19	
119	*Mackenzie, Alexander [4 5]	25 May 1908	25 May 08	Retired	23 Feb 21	
120	O'Reilly, Robert M. [4 5]	14 Jan 1909	14 Jan 09	Retired	3 Nov 12	
121	*Carter, William H. [5]	13 Nov 1909	19 Nov 15	Retired	24 May 25	MH.
122	Hodges, Charles L. [5]	14 Jan 1911	13 Mar 11	Retired	26 Dec 11	
123	*Davis, George B. [4 5]	14 Feb 1911	14 Feb 11	Retired	16 Dec 14	
124	*Murray, Arthur [5]	14 Mar 1911	4 Dec 15	Retired	12 May 25	
125	Wootherspoon, William W. [5]	12 May 1912	16 Nov 14	Retired	21 Oct 21	
126	*Aleshire, James B. [5]	24 Aug 1912	12 Sep 16	Retired	1 Jun 25	QM Gen.
127	Funston, Frederick [5]	17 Nov 1914	19 Feb 17	Died	19 Feb 17	MH.
—	Graham, William M. [4 5]	4 Mar 1915	On retired list		11 Jan 16	
—	Kent, Jacob H. [4 5]	4 Mar 1915	On retired list		22 Dec 18	
—	Baldwin, Frank D. [4 5]	4 Mar 1915	On retired list		22 Apr 23	MH (2).
128	Gorgas, William C. [5]	4 Mar 1915	3 Oct 18	Retired	4 Jul 20	Sur Gen; Thanks of Congress.
129	*Goethals, William C. [5]	4 Mar 1915	15 Nov 16	Retired		Thanks of Congress.
130	*Scott, Hugh L. [5 6]	30 Apr 1915	22 Sep 17	Retired		
131	*Bliss, Tasker H. [5 6]	20 Nov 1915	31 Dec 17	Retired		Gen (emer), 1917; Bvt Gen Ret, 1918.
—	Anderson, Thomas M. [4 5]	— Mar 1916	On retired list		8 May 17	
—	Osterhaus, Peter J. [4]	— Mar 1916	On retired list		2 Jan 17	
132	*Mills, Albert L. [5]	1 Jul 1916	18 Sep 16	Died	18 Sep 16	MH.
133	*Weaver, Erasmus M. [5 6]	6 Jul 1916	23 May 18	Retired	13 Nov 20	C of CA.
—	Clem, John L. [4 5]	28 Aug 1916	On retired list			
—	*Pennington, A. C. M. [4 5]	29 Aug 1916	On retired list		30 Nov 17	
—	Schwan, Theodore [4 5]	29 Aug 1916	On retired list		27 May 26	MH.
—	*Hains, Peter C. [4 5]	29 Aug 1916	On retired list		7 Nov 21	

PROPERTY OF U.S.

NO.	NAME	APPOINTED	VACATED DATE	VACATED CAUSE	DIED	REMARKS
—	*Ernst, Oswald H. [4]	29 Aug 1916	On retired list		21 Mar 26	
134	*Sharpe, Henry G. [5 6]	16 Sep 1916	1 May 20	Retired		QM Gen, 1916-18.
135	*Pershing, John J. [5 6]	25 Sep 1916	3 Sep 19	Promoted		
136	Devol, Carroll A. [5]	31 Oct 1916	31 Oct 16	Retired		
137	*Liggett, Hunter [5 6]	6 Mar 1917	21 Mar 21	Retired		Lt Gen (emer), 1918.
138	*Morrison, John F. [5 6]	15 May 1917	20 Dec 21	Retired		
139	*Morton, Charles G. [5 6]	15 May 1917	15 Jan 25	Retired		
140	*Sibert, William [5 6]	15 May 1917	4 Apr 20	Retired		Thanks of Congress.
141	*March, Peyton C. [5 6]	23 Sep 1917	1 Nov 21	Retired		Gen (emer), 1918.
142	*Crozier, William [5 6]	6 Oct 1917	1 Jan 19	Retired		C of Ord, 1901-18.
143	*McIntyre, Frank [5 6]	6 Oct 1917				C Bu Ins Af.
144	*McCain, Henry P. [5 6]	6 Oct 1917	26 Aug 18	Retired		Adjt Gen.
145	*Black, William M. [5 6]	6 Oct 1917	31 Oct 19	Retired		C of Engrs.
146	*Squier, George O. [5 6]	6 Oct 1917	31 Dec 23	Retired		C Sig O.
147	*Chamberlain, John L. [5 6]	6 Oct 1917	6 Nov 21	Retired		Insp Gen.
148	*Crowder, Enoch H. [5 6]	6 Oct 1917	14 Feb 23	Retired		JA Gen.
149	*Coe, Frank W. [5 6]	24 May 1918	19 Mar 26	Retired		C of CA.
150	*Williams, Clarence C. [5 6]	16 Jul 1918				C of Ord.
151	Rogers, Harry L. [5 6]	22 Jul 1918	27 Aug 22	Retired	12 Dec 25	QM Gen.
152	*Harris, Peter C. [5 6]	1 Sep 1918	31 Aug 22	Retired		Adjt Gen.
153	Ireland, Merritt W. [6 5]	4 Oct 1918				Sur Gen; MG (emer), 1918.
154	*Bullard, Robert L. [5 6]	27 Nov 1918	15 Jan 25	Retired		Lt Gen (emer), 1918.
155	*Dickman, Joseph T. [5 6]	9 Jan 1919	6 Oct 21	Retired		
156	*Harbord, James G. [5 6]	8 Sep 1919	29 Dec 22	Retired		
157	*Kernan, Francis J. [5 6]	14 Oct 1919	1 Dec 22	Retired		
158	*Beach, Lansing H. [5 6]	9 Jan 1920	18 Jan 24	Retired		C of Engrs.
159	*Summerall, C. P. [5 6]	5 Apr 1920				
160	*Holbrook, W. A. [5 6]	1 Jul 1920	23 Jul 24	Retired		C of Cav.
161	*Farnsworth, C. S. [5 6]	1 Jul 1920	27 Mar 25	Retired		C of Inf.
162	*Snow, William J. [6 5]	1 Jul 1920				C of FA.
163	*McAndrew, James W. [5 6]	1 Jul 1920	4 Mar 21	Terminated	30 Apr 22	MG. 1921.
164	*Hines, John L. [5 6]	1 Jul 1920	4 Mar 21	Terminated		MG, 1921.

NO.	NAME	APPOINTED	VACATED		DIED	REMARKS
			DATE	CAUSE		
165	*Allen, Henry T. [5 6]	2 Jul 1920	4 Mar 21	Terminated		MG, 1921.
166	*Shanks, David C. [5 6]	2 Jul 1920	4 Mar 21	Terminated		MG, 1921.
167	*Cronkhite, Adelbert [5 6]	3 Jul 1920	4 Mar 21	Terminated		MG, 1921.
168	*Read, George W. [5 6]	3 Jul 1920	4 Mar 21	Terminated		MG, 1921.
169	Bundy, Omar [5 6]	3 Jul 1920	4 Mar 21	Terminated		MG, 1921.
170	Wright, William M. [5 6]	3 Jul 1920	4 Mar 21	Terminated		MG, 1921.
171	*Muir, Charles H. [5 6]	3 Jul 1920	4 Mar 21	Terminated		MG, 1921.
172	*Menoher, Charles T. [5 6]	3 Jul 1920	4 Mar 21	Terminated		C of AS; MG, 1921.
173	*Haan, William G.	3 Jul 1920	4 Mar 21	Terminated	26 Oct 24	
174	*Edwards, Clarence R. [5 6]	5 Mar 1921	1 Dec 22	Retired		
—	*McAndrew, James W. [5 6]	5 Mar 1921	30 Apr 22	Died	30 Apr 22	MG, 1920.
—	*Hines, John L. [5 6]	5 Mar 1921				MG, 1920.
—	*Allen, Henry T. [5 6]	6 Mar 1921	13 Apr 23	Retired		MG, 1920.
—	*Shanks, David C. [5 6]	6 Mar 1921	17 Jan 25	Retired		MG, 1920.
—	Wright, William M. [5 6]	7 Mar 1921	29 Dec 22	Retired		MG, 1920.
—	*Cronkhite, Adelbert [5 6]	7 Mar 1921	1 Feb 23	Retired		MG, 1920.
—	*Read, George W. [5 6]	8 Mar 1921	19 Nov 24	Retired		MG, 1920.
—	*Muir, Charles H. [5 6]	8 Mar 1921	18 Jul 24	Retired		MG, 1920.
—	*Menoher, Charles T. [5 6]	8 Mar 1921	20 Mar 26	Retired		MG, 1920.
—	*Haan, William G. [5 6]	8 Mar 1921	31 Mar 22	Retired	26 Oct 24	MG, 1920.
175	*Bell, George [5 6]	22 Mar 1921	30 Nov 22	Retired	28 Oct 26	
—	*McCain, Henry P. [5 6]	22 Jul 1921	On retired list			MG, 1917.
176	*Patrick, Mason M. [5 6]	5 Oct 1921				C of AC.
177	*Bailey, Charles J. [5 6]	6 Oct 1921	1 Dec 22	Retired		
178	Sturgis, Samuel D. [5 6]	7 Oct 1921	1 Aug 25	Retired		
179	*Hale, Harry C. [5 6]	2 Nov 1921	10 Jul 25	Retired		
180	*Helmick, Eli D. [5 6]	7 Nov 1921				Insp Gen.
181	*Hodges, Harry F. [5 6]	21 Dec 1921	22 Dec 21	Retired		Thanks of Congress.
—	*Bundy, Omar [5 6]	23 Dec 1921	17 Jun 25	Retired		MG, 1920.
182	*McGlachlin, E. F. [5 6]	1 Apr 1922	2 Nov 23	Retired		
183	*McRae, James H. [5 6]	1 May 1922				
184	*Hart, William H. [5 6]	28 Aug 1922	2 Jan 26	Died	2 Jan 26	QM Gen.
185	*Davis, Robert C. [5 6]	1 Sep 1922	1 Jul 27	Retired		Adjt Gen.

NO.	NAME	APPOINTED	VACATED		DIED	REMARKS
			DATE	CAUSE		
186	Brewster, André W. [5 6]	1 Dec 1922	9 Dec 25	Retired		MH.
187	*Lewis, Edward M. [5 6]	2 Dec 1922				
188	*Winn, Frank L. [5 6]	2 Dec 1922	5 Dec 22	Retired		
189	*Russel, Edgar [5 6]	2 Dec 1922	5 Dec 22	Retired	26 Apr 25	
190	*Duncan, George B. [5 6]	6 Dec 1922	10 Oct 25	Retired		
191	*Hinds, Ernest [5 6]	6 Dec 1922				
192	*Howze, Robert L. [5 6]	30 Dec 1922	19 Sep 26	Died	19 Sep 26	MH.
193	*Lassiter, William [5 6]	30 Dec 1922				
194	*Ely, Hanson [5 6]	2 Feb 1923				
195	*Bethel, Walter A. [5 6]	15 Feb 1923	15 Nov 24	Retired		JA Gen.
196	*Babbitt, Edwin B. [5 6]	14 Apr 1923	19 Sep 24	Retired		
197	*Bandholtz, H. H. [5 6]	3 Nov 1923	4 Nov 23	Retired	7 May 25	
198	*Hay, William H. [5 6]	5 Nov 1923	6 Nov 23	Retired		
199	*Gordon, Walter H. [5 6]	7 Nov 1923	18 Jan 24	Retired	26 Apr 24	
200	*Saltzman, C. M. [5 6]	1 Jan 1924				C Sig O.
201	*Sladen, Fred W. [5 6]	19 Jan 1924				
202	*Taylor, Harry H. [5 6]	19 Jun 1924	26 Jun 26	Retired		C of Engrs.
203	*Hutcheson, Grote [5 6]	19 Jul 1924	20 Jul 24	Retired		
204	*McAlexander, U. G. [5 6]	21 Jul 1924	22 Jul 24	Retired		
205	*Smith, William R. [5 6]	23 Jul 1924				
206	*Craig, Malin [5 6]	24 Jul 1924				C of Cav, 1924-26.
207	*Hersey, Mark L. [5 6]	20 Sep 1924	2 Nov 24	Retired		
208	Johnston, William H. [5 6]	3 Nov 1924	19 Oct 25	Retired		
209	Hull, John A. [5 6]	16 Nov 1924				JA Gen.
210	*Weigel, William [5 6]	20 Nov 1924	25 Aug 27	Retired		
211	*Martin, Charles H. [5 6]	16 Jan 1925				
212	*MacArthur, Douglas [6]	17 Jan 1925				
213	*Nolan, Dennis E. [5 6]	18 Jan 1925				
214	Noble, Robert E. [6]	8 Feb 1925	8 Feb 25	Retired		MG (emer), 1918.
215	*Walker, Kenzie W. [5 6]	24 Feb 1925				C of F.
216	*Fries, Amos W. [5 6]	24 Feb 1925				C of CWS.
217	Allen, Robert H. [5 6]	28 Mar 1925				C of Inf.

NO.	NAME	APPOINTED	VACATED		DIED	REMARKS
			DATE	CAUSE		
218	*Kuhn, Joseph E. [5 6]	18 Jun 1925	31 Aug 25	Retired		
219	*Graves, William S. [5 6]	11 Jul 1925				
220	*Hagood, Johnson [5 6]	2 Aug 1925				
221	*Connor, William D. [5 6]	1 Sep 1925				
222	*Poore, Benjamin A. [5 6]	11 Oct 1925	22 Jun 27	Retired		
223	*Connor, Fox [5 6]	20 Oct 1925				
224	Brown, Preston [5 6]	10 Dec 1925				
225	Cheatham, Benj. F. [5 6]	3 Jan 1926				QM Gen.
226	*Hero, Andrew [5 6]	20 Mar 1926				C of CA.
227	*Crosby, Herbert B. [5 6]	21 Mar 1926				C of Cav.
228	*Jadwin, Edgar [5 6]	27 Jun 1926				C of Engrs.
229	*Smith, Harry A. [5 6]	20 Sep 1926				
—	*Ashburn, Thomas Q. [5 6]	28 Feb 1927				Inl Water Com.
230	*Wahl, Lutz [5 6]	1 Jul 1927				Adjt Gen.
231	*Barnum, Malvern H. [5 6]	23 Jun 1927	3 Sep 27	Retired		
232	Alexander, Robert [5 6]	26 Aug 1927	17 Oct 27	Retired		

BRIGADIER GENERALS

NO.	NAME	APPOINTED	VACATED		DIED	REMARKS
			DATE	CAUSE		
1	Gates, Horatio [1]	17 Jun 1775	16 May 76	Promoted	10 Apr 06	Adjt Gen.
–	Pomeroy, Seth [1]	22 Jun 1775	22 Jun 75	Declined	19 Feb 77	
2	Thomas, John [1]	22 Jun 1775	6 Mar 76	Promoted	2 Jun 76	
3	Montgomery, Richard [1]	22 Jun 1775	9 Dec 75	Promoted	31 Dec 75	
4	Wooster, David [1]	22 Jun 1775	2 May 77	Wounds	2 May 77	
5	Heath, William [1]	22 Jun 1775	9 Aug 76	Promoted	24 Jan 14	
6	Spencer, Joseph [1]	22 Jun 1775	9 Aug 76	Promoted	13 Jan 89	
7	Sullivan, John [1]	22 Jun 1775	9 Aug 76	Promoted	23 Jan 95	
8	Greene, Nathaniel [1]	22 Jun 1775	9 Aug 76	Promoted	19 Jun 86	

NO.	NAME	APPOINTED	VACATED		DIED	REMARKS
			DATE	CAUSE		
9	Frye, Joseph [1]	10 Jan 1776	23 Apr 76	Resigned	— —— 94	
10	Arnold, Benedict [1]	10 Jan 1776	17 Feb 77	Promoted	14 Jun 01	
11	Armstrong, John [1]	1 Mar 1776	4 Apr 77	Resigned	6 Mar 95	
12	Thompson, William [1]	1 Mar 1776	3 Apr 81	Died	3 Sep 81	
13	Lewis, Andrew [1]	1 Mar 1776	15 Apr 77	Resigned	26 Sep 81	
14	Moore, James [1]	1 Mar 1776	9 Apr 77	Died	9 Apr 77	
15	Alexander, William [1]	1 Mar 1776	19 Feb 77	Promoted	15 Jan 83	
16	Howe, Robert [1]	1 Mar 1776	20 Oct 77	Promoted	12 Nov 85	
17	DeWoedtke, Fred W. [1]	16 Mar 1776	28 Jul 76	Died	28 Jul 76	
18	Mifflin, Thomas [1]	16 May 1776	19 Feb 77	Promoted	20 Jan 00	QM Gen.
—	Whitcomb, John [1]	5 Jun 1776	5 Jun 76	Declined	— —— 12	
19	Mercer, Hugh [1]	5 Jun 1776	12 Jan 77	Wounds	12 Jan 77	
20	Reed, James [1]	9 Aug 1776	— Sep 76	Retired	13 Feb 07	
21	Nixon, John [1]	9 Aug 1776	12 Sep 80	Resigned	24 Mar 15	
22	St. Clair, Arthur [1]	9 Aug 1776	19 Feb 77	Promoted	31 Aug 18	
23	McDougall, Alexander [1]	9 Aug 1776	20 Oct 77	Promoted	8 Jun 86	
24	Parsons, Samuel H. [1]	9 Aug 1776	23 Oct 80	Promoted	17 Nov 89	
25	Clinton, James [1]	9 Aug 1776	3 Nov 83	Hon. Dis.	22 Dec 12	Bvt MG, 1783.
26	Stephen, Adam [1]	4 Sep 1776	19 Feb 77	Promoted	— Nov 91	
27	Gadsden, Christopher [1]	16 Sep 1776	2 Oct 77	Resigned	28 Aug 05	
28	Moultrie, William [1]	16 Sep 1776	15 Oct 82	Promoted	27 Sep 05	
29	McIntosh, Lachlan [1]	16 Sep 1776	3 Nov 83	Hon. Dis.	20 Feb 06	Bvt MG, 1783.
30	Maxwell, William [1]	23 Oct 1776	25 Jul 80	Resigned	12 Nov 98	
31	Smallwood, William [1]	23 Oct 1776	15 Sep 80	Promoted	14 Feb 92	
32	DeFermoy, M. A. R. [1]	5 Nov 1776	31 Jan 78	Resigned	— —— —	
33	DeBorre, Prud'Homme [1]	1 Dec 1776	14 Sep 77	Resigned	— —— —	
34	Knox, Henry [1]	27 Dec 1776	15 Nov 81	Promoted	25 Oct 06	C of Art.
35	Nash, Francis [1]	5 Feb 1777	7 Oct 77	Wounds	7 Oct 77	
36	Poor, Enoch [1]	21 Feb 1777	8 Sep 80	Died	8 Sep 80	
37	Glover, John [1]	21 Feb 1777	22 Jul 82	Resigned	30 Jan 97	
38	Paterson, John [1]	21 Feb 1777	3 Nov 83	Hon. Dis.	19 Jul 08	Bvt MG, 1783.
39	Wayne, Anthony [1]	21 Feb 1777	3 Nov 83	Hon. Dis.	15 Dec 96	Bvt MG, 1783; MG, 1792.

NO.	NAME	APPOINTED	VACATED		DIED	REMARKS
			DATE	CAUSE		
40	Varnum, James M. [1]	21 Feb 1777	5 Mar 79	Resigned	10 Jan 89	
41	DeHaas, John P. [1]	21 Feb 1777	3 Nov 83	Hon. Dis.	3 Jun 86	Bvt MG, 1783.
—	Cadwalader, John [1]	21 Feb 1777	21 Feb 77	Declined	11 Feb 86	Decl BG, 1778.
42	Woodford, William [1]	21 Feb 1777	13 Nov 80	Died	13 Nov 80	
43	Muhlenberg, Peter [1]	21 Feb 1777	3 Nov 83	Hon. Dis.	1 Oct 07	Bvt MG, 1783.
44	Weedon, George [1]	21 Feb 1777	11 Jun 83	Resigned	11 Nov 93	
45	Clinton, George [1]	25 Mar 1777	3 Nov 83	Hon. Dis.	20 Apr 12	Gov NY; Bvt MG, 1783; Vice Pres US, 1805-12.
46	Hand, Edward [1]	1 Apr 1777	3 Nov 83	Hon. Dis.	20 Apr 12	Adjt Gen, 1791-83; Bvt MG, 1783; MG, 1798.
47	Scott, Charles [1]	1 Apr 1777	3 Nov 83	Hon. Dis.	22 Oct 13	Bvt MG, 1783.
48	Learned, Ebenezer [1]	2 Apr 1777	24 Mar 78	Resigned	1 Apr 01	
49	Huntington, Jedediah [1]	12 May 1777	3 Nov 83	Hon. Dis.	25 Sep 18	Bvt MG, 1783.
—	Reed, Joseph [1]	12 May 1777	9 Jun 77	Declined	5 Mar 85	Adjt Gen, 1776-77.
50	Conway, Thomas [1]	13 May 1777	13 Dec 77	Promoted	— —— 00	
51	Pulaski, Casimir [1]	15 Sep 1777	11 Oct 79	Wounds	11 Oct 79	C of Dragoons.
52	Stark, John [1]	4 Oct 1777	3 Nov 83	Hon. Dis.	8 May 22	Bvt MG, 1783; Thanks of Congress.
53	Duportail, Louis L. [1]	17 Nov 1777	16 Nov 81	Promoted	— —— 02	C of Engrs.
—	Cadwalader, John [1]	10 Sep 1778	10 Sep 78	Declined	11 Feb 86	Decl BG, 1777.
54	Summer, Jethro [1]	9 Jan 1779	3 Nov 83	Hon. Dis.	18 Mar 85	
55	Hogun, James [1]	9 Jan 1779	4 Jan 81	Died	4 Jan 81	
56	Huger, Isaac [1]	9 Jan 1779	3 Nov 83	Hon. Dis.	17 Oct 97	
57	Gist, Mordecai [1]	9 Jan 1779	3 Nov 83	Hon. Dis.	9 Jul 92	Thanks of Congress.
58	Irvine, William [1]	12 May 1779	3 Nov 83	Hon. Dis.	29 Jun 04	Sup Mil Stores, 1800.
59	Morgan, Daniel [1]	13 Oct 1780	3 Nov 83	Hon. Dis.	6 Jul 02	Thanks of Congress and medal.
60	Williams, Otho H. [1]	9 May 1782	16 Jan 83	Retired	16 Jul 94	
61	Greaton, John [1]	7 Jan 1783	3 Nov 83	Hon. Dis.	16 Dec 83	
62	Putnam, Rufus [1]	7 Jan 1783	3 Nov 83	Hon. Dis.	1 May 24	BG, 1792.
63	Dayton, Elias [1]	7 Jan 1783	3 Nov 83	Hon. Dis.	17 Jul 07	
64	Armand, Charles T. [1]	26 Mar 1783	3 Nov 83	Hon. Dis.	30 Jan 93	Approbation of Congress.
65	Wilkinson, James [1, 2]	5 Mar 1792	2 Mar 13	Promoted	28 Dec 25	Cmdg Army, 1796-98, 1800-12; Bvt BG, 1777; Bvt MG, 1812.

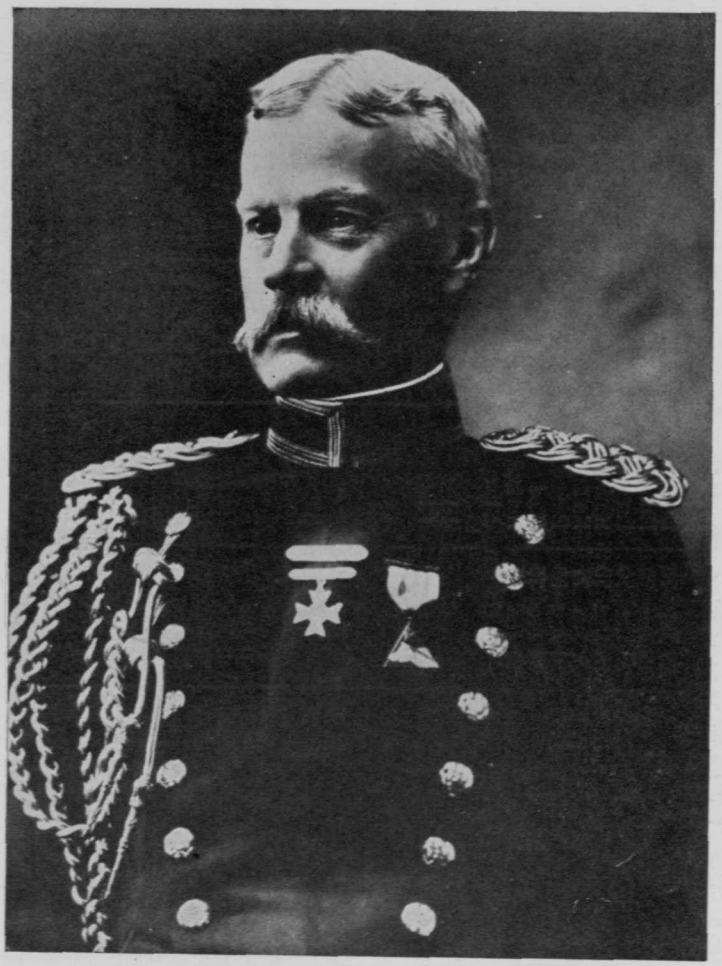
NO.	NAME	APPOINTED	VACATED		DIED	REMARKS
			DATE	CAUSE		
66	Brooks, John [1]	11 Apr 1792	1 Nov 96	Hon. Dis.	2 Mar 25	
67	Putnam, Rufus [1]	4 May 1792	14 Feb 93	Resigned	1 May 24	BG, 1785.
68	Posey, Thomas [1]	14 Feb 1793	28 Feb 94	Resigned	19 Mar 18	
—	Brooks, John [1]	19 Jul 1798	19 Jul 98	Declined	2 Mar 25	MG, 1792.
—	Dayton, Jonathan	19 Jul 1798	19 Jul 98	Declined	— — —	
69	Washington, William A. [1]	19 Jul 1798	15 Jun 00	Hon. Dis.	6 Mar 10	Medal from Congress.
70	Huntington, Ebenezer [1]	19 Jul 1798	15 Jun 00	Hon. Dis.	17 Jun 34	
71	White, Anthony W. [1]	19 Jul 1798	15 Jun 00	Hon. Dis.	10 Feb 03	
72	Davie, William R. [1]	19 Jul 1798	15 Jun 00	Hon. Dis.	18 Nov 20	Decl MG, 1812.
73	Sevier, John [1]	19 Jul 1798	15 Jun 00	Hon. Dis.	24 Sep 15	
74	North, William [1]	19 Jul 1798	15 Jun 00	Hon. Dis.	4 Jan 36	Adjt Gen; Inspr, 1784-88.
75	Hampton, Wade [1 2]	15 Feb 1809	2 Mar 13	Promoted	4 Feb 35	
76	Gansevoort, Peter [1 2]	15 Feb 1809	2 Jul 12	Died	2 Jul 12	Thanks of Congress.
77	Bloomfield, Joseph [1 2]	27 Mar 1812	15 Jun 15	Hon. Dis.	3 Oct 23	
78	Winchester, James [1 2]	27 Mar 1812	31 Mar 15	Resigned	27 Jul 26	
79	Lewis, Morgan [1 2]	3 Apr 1812	2 Mar 13	Promoted	7 Apr 44	QM Gen.
80	Hull, William [1 2]	8 Apr 1812	25 Apr 14	Cashiered	29 Nov 25	
81	Flournoy, Thomas [2]	18 Jun 1812	13 Sep 14	Resigned	24 Jul 57	
82	Cushing, Thomas H. [1 2]	2 Jul 1812	15 Jun 15	Hon. Dis.	19 Oct 22	Adjt and IG, 1802-07.
83	Armstrong, John [1 2]	6 Jul 1812	13 Jan 13	Resigned	1 Apr 43	Sec War, 1813-14.
84	Smyth, Alexander [2]	6 Jul 1812	3 Mar 13	Terminated	17 Apr 30	Insp Gen.
85	Chandler, John [1 2]	8 Jul 1812	15 Jun 15	Hon. Dis.	25 Sep 41	
86	Harrison, William H. [2]	22 Aug 1812	2 Mar 13	Promoted	4 Apr 41	
87	Boyd, John D. [2]	26 Aug 1812	15 Jun 15	Hon. Dis.	4 Oct 30	
88	Pike, Zebulon M. [2]	12 Mar 1813	27 Apr 13	Killed	27 Apr 13	AG and IG.
89	Parker, Thomas [1 2]	12 Mar 1813	1 Nov 14	Resigned	24 Jan 20	
90	Izard, George [2]	12 Mar 1813	24 Jan 14	Promoted	22 Nov 28	
91	Winder, William M. [2]	12 Mar 1813	15 Jun 15	Hon. Dis.	24 May 24	AG and IG, 1814.
92	McArthur, Duncan [2]	12 Mar 1813	15 Jun 15	Hon. Dis.	28 Apr 39	
93	Cass, Lewis [2]	12 Mar 1813	1 May 14	Resigned	17 Jun 66	Sec War, 1831-36.
94	Howard, Benjamin [2]	12 Mar 1813	18 Sep 14	Died	18 Sep 14	
95	Swartwout, Robert [2]	21 Mar 1813	5 Jun 16	Hon. Dis.	19 Jul 48	QM Gen.

NO.	NAME	APPOINTED	VACATED DATE	VACATED CAUSE	DIED	REMARKS
96	Williams, David R. [2]	9 Jul 1813	6 Apr 14	Resigned	15 Nov 30	
97	Brown, Jacob [2]	19 Jul 1813	24 Jan 14	Promoted	24 Feb 28	
98	Covington, Leonard [2]	1 Aug 1813	14 Nov 13	Wounds	14 Nov 13	
99	Macomb, Alexander [2]	24 Jan 1814	24 May 28	Promoted	25 Jun 41	C of Engrs, 1821-28; Bvt MG, 1814.
100	Smith, Thomas A. [2]	24 Jun 1814	17 May 15	Hon. Dis.	— Dec 18	Retained as Bvt BG.
101	Bissell, Daniel [2]	9 Mar 1814	17 May 15	Hon. Dis.	14 Dec 33	Retained as Bvt BG.
102	Gaines, Edmund P. [2]	9 Mar 1814	6 Jun 49	Died	6 Jun 49	Bvt MG, 1814; Thanks of Congress.
103	Scott, Winfield [2 3 4]	9 Mar 1814	25 Jun 41	Promoted	29 May 66	Bvt MG, 1814.
104	Ripley, Eleazer W. [2]	15 Apr 1814	1 Feb 20	Resigned	2 Mar 39	Bvt MG, 1814; Medal from Congress.
105	Jackson, Andrew [1 2]	19 Apr 1814	1 May 14	Promoted	8 Jun 45	
106	Parker, Daniel [2]	22 Nov 1814	8 May 22	Supernum	5 Apr 46	Adj & IG, 1814-21; PM Gen, 1821-22.
107	Jesup, Thomas [2 3]	8 May 1818	10 Jun 60	Died	10 Jun 60	QM Gen; Bvt MG, 1828.
108	Atkinson, Henry [2]	13 May 1820	1 Jun 21	Hon. Dis.	14 Jun 42	Retained as Bvt BG.
109	Wool, John E. [2 3 4]	25 Jun 1841	16 May 62	Promoted	10 Jun 69	Bvt BG, 1826; Bvt MG, 1847.
110	Twiggs, David E. [2 3]	30 Jun 1846	1 Mar 61	Dismissed	15 Jul 62	Bvt MG, 1846; Sword from Congress.
111	Kearney, Stephen W. [2 3]	30 Jun 1846	31 Oct 48	Died	31 Oct 48	Bvt MG, 1846.
112	Pierce, Franklin [3]	3 Mar 1847	20 Mar 48	Resigned	8 Oct 69	Pres U S, 1853-57.
113	Cadwalader, George [2 3]	3 Mar 1847	20 Jul 48	Hon. Dis.	3 Feb 79	Bvt MG, 1847.
114	Hopping, Enos D. [3]	3 Mar 1847	1 Sep 47	Died	1 Sep 47	
115	Smith, Persifor F. [3]	30 Dec 1856	17 May 58	Died	17 May 58	Bvt MG, 1847.
116	Harney, William S. [3 4]	14 Jun 1858	1 Aug 63	Retired	9 May 89	Bvt MG, 1865.
117	*Johnston, Jos. E. [3 4]	28 Jun 1860	22 Apr 61	Resigned	21 Mar 91	QM Gen; (Gen, CSA).
118	Sumner, Edwin V. [3 4]	16 Mar 1861	21 Mar 63	Died	21 Mar 63	Bvt MG, 1862.
119	*Mansfield, J. K. F. [3 4]	14 May 1861	18 Sep 62	Wounds	18 Sep 62	Bvt BG, 1861.
120	*McDowell, Irvin [3 4]	14 May 1861	25 Nov 72	Promoted	4 May 85	Bvt MG, 1865.
121	*Anderson, Robert [3 4]	15 May 1861	27 Oct 63	Retired	27 Oct 71	Bvt MG, 1865.
122	*Meigs, Mont. C. [3 4]	15 May 1861	6 Feb 82	Retired	2 Jan 92	QM Gen; Bvt MG, 1864.
123	*Rosecrans, Wm. S. [3 4]	16 May 1861	28 May 67	Resigned	11 Mar 98	Bvt MG, 1865; BG, 1889; Thanks of Congress.
124	*Thomas, Lorenzo [3 4]	3 Aug 1861	22 Feb 69	Retired	2 Mar 75	Adjt Gen; Bvt MG, 1865.
125	*Ripley, James W. [2 3 4]	3 Aug 1861	15 Sep 63	Retired	15 Mar 70	C of Ord; Bvt MG, 1865.
126	*Cooke, P. St. G. [3 4]	12 Nov 1861	29 Oct 73	Retired	20 Mar 95	Bvt MG, 1865.

NO.	NAME	APPOINTED	VACATED		DIED	REMARKS
			DATE	CAUSE		
127	Hammond, William A. [3]	25 Apr 1862	18 Aug 64	Dismissed	5 Jan 00	Sur Gen; BG Ret, 1879.
128	*Pope, John [3 4]	14 Jul 1862	26 Oct 82	Promoted	23 Sep 92	Bvt MG, 1865.
129	*Hooker, Joseph [3 4]	20 Sep 1862	15 Oct 68	Promoted	31 Oct 79	Bvt MG, 1865.
130	Taylor, Joseph P. [2 3 4]	9 Feb 1863	29 Jun 64	Died	29 Jun 64	Com Gen.
131	*Totten, Josepir G. [2 3 4]	3 Mar 1863	22 Apr 64	Died	22 Apr 64	C of Engrs; Bvt MG, 1864.
132	*Meade, George G. [3 4]	3 Jul 1863	18 Aug 64	Promoted	6 Nov 72	
133	*Sherman, William T. [3 4]	4 Jul 1863	12 Aug 64	Promoted	14 Feb 91	
134	*McPherson, James B. [3]	1 Aug 1863	22 Jul 64	Killed	22 Jul 64	
135	*Ramsay, George D. [2 3 4]	15 Sep 1863	12 Sep 64	Retired	23 May 82	C of Ord; Bvt MG, 1865.
136	*Thomas, George H. [3 4]	27 Oct 1863	15 Dec 64	Promoted	28 Mar 70	
137	*Delafield, Richard [2 3 4]	22 Apr 1864	8 Aug 66	Retired	5 Nov 73	C of Engrs; Bvt MG, 1865.
138	Holt, Joseph [3]	22 Jun 1864	1 Dec 75	Retired	1 Aug 94	JA Gen; Sec War, 1861; Bvt MG, 1865.
139	*Eaton, Amos B. [3 4]	29 Jun 1864	1 May 74	Retired	21 Feb 77	Com Gen; Bvt MG, 1865.
140	*Hancock, Winfield S. [3 4]	12 Aug 1864	24 Jul 66	Promoted	9 Feb 86	Bvt MG, 1865.
141	Barnes, Joseph K. [3 4]	22 Aug 1864	30 Jun 82	Retired	5 Apr 83	Sur Gen; Bvt MG, 1865.
142	*Dyer, Alexander B. [3 4]	12 Sep 1864	20 May 74	Died	20 May 74	C of Ord; Bvt MG, 1865.
143	*Sheridan, Philip H. [4]	20 Sep 1864	8 Nov 64	Promoted	5 Aug 88	
144	*Schofield, John M. [4]	30 Nov 1864	4 Mar 69	Promoted	4 Mar 06	Sec War, 1868-69; Bvt MG, 1865; MH.
145	*Howard, Oliver O. [4]	21 Dec 1864	19 Mar 86	Promoted	26 Oct 04	Bvt MG, 1865; MH.
146	Terry, Alfred H. [4]	15 Jan 1865	3 Mar 86	Promoted	16 Dec 90	Bvt MG, 1865.
147	Rawlins, John A. [4]	3 Mar 1865	12 Mar 69	Resigned	6 Sep 69	C of S; Bvt MG, 1865; Sec War, 1869.
148	*Ord, Edward O. C. [3 4]	26 Jul 1866	6 Dec 80	Retired	22 Jul 83	Bvt MG, 1865; MG Ret, 1881.
149	*Canby, Edward R. S. [3 4]	28 Jul 1866	11 Apr 73	Died	11 Apr 73	Bvt MG, 1865.
—	*Paul, Gabriel R. [3 4]	28 Jul 1866	On retired list		5 May 86	Bvt MG, 1865.
150	*Brice, Benjamin W. [3 4]	28 Jul 1866	1 Jan 72	Retired	4 Dec 92	PM·Gen; Bvt MG, 1865.
151	*Humphreys, Andrew A. [3 4]	8 Aug 1866	30 Jun 79	Retired	27 Dec 83	C of Engrs.
152	Fessenden, Francis [4]	1 Nov 1866	1 Nov 66	Retired	2 Jan 06	Bvt MG, 1865.
153	Rousseau, Lovell H. [3 4]	28 Mar 1867	7 Jan 69	Died	7 Jan 69	Bvt MG, 1867.
154	*Townsend, Edward D. [3 4]	22 Feb 1869	15 Jun 80	Retired	10 May 93	Adjt Gen; Bvt MG, 1865.
155	*Augur, Chris. C. [3 4]	4 Mar 1869	10 Jul 85	Retired	16 Jan 98	Bvt MG, 1865.
156	Sweeny, Thomas W. [3 4]	11 May 1870	11 May 70	Retired	10 Apr 92	

NO.	NAME	APPOINTED	VACATED DATE	VACATED CAUSE	DIED	REMARKS
157	McIntosh, John B. [4]	30 Jul 1870	30 Jul 70	Retired	29 Jun 88	Bvt MG, 1865.
158	Kiddoo, Joseph B. [4]	15 Dec 1870	15 Dec 70	Retired	19 Aug 80	Bvt BG, 1867.
159	*Hardin, Martin D. [4]	15 Dec 1870	15 Dec 70	Retired	12 Dec 23	Bvt BG, 1865.
160	Lynch, William F. [4]	15 Dec 1870	15 Dec 70	Retired	29 Dec 70	
161	Ross, Samuel [3 4]	1 Jan 1871	1 Jan 71	Retired	11 Jul 80	Demoted to Col Ret, 1875.
162	*Crook, George [4]	29 Oct 1873	6 Apr 88	Promoted	21 Mar 90	Bvt MG, 1865.
163	*Shiras, Alexander E. [3 4]	23 Jun 1874	14 Apr 75	Died	14 Apr 75	Com Gen; Bvt MG, 1865.
164	*Benét, Stephen V. [3 4]	23 Jun 1874	22 Jan 91	Retired	22 Jan 95	C of Ord.
—	*Wood, Thomas J. [3 4]	3 Mar 1875	On retired list		25 Feb 06	Bvt MG, 1865; MG, 1868; Demoted to BG Ret, 1875.
—	Crawford, Samuel W. [4]	3 Mar 1875	On retired list		3 Nov 92	Bvt MG, 1865.
—	*Johnson, Richard W. [3 4]	3 Mar 1875	On retired list		21 Apr 97	Bvt MG, 1865; MG, 1867; Demoted to BG Ret, 1875.
—	Long, Eli [4]	3 Mar 1875	On retired list		5 Jan 03	Bvt MG, 1865; MG, 1867; Demoted to BG Ret, 1875.
165	*Macfeely, Robert [3 4]	14 Apr 1875	1 Jul 90	Retired	21 Feb 01	Com Gen.
166	Dunn, William M. [4]	1 Dec 1875	22 Jan 81	Retired	24 Jul 87	JA Gen; Bvt BG, 1865.
167	*Emory, William H. [3 4]	1 Jul 1876	1 Jul 76	Retired	1 Dec 87	Bvt MG, 1865.
—	Finley, Clement A. [3 4]	10 Jul 1876	On retired list		8 Sep 79	Sur Gen, 1861-62.
168	*Alvord, Benjamin [3 4]	22 Jul 1876	8 Jun 80	Retired	16 Oct 84	PM Gen; Bvt BG, 1865.
169	*Marcy, Randolph B. [3 4]	12 Dec 1878	2 Jan 81	Retired	22 Nov 87	Insp Gen; Bvt MG, 1865.
170	*Wright, Horatio G. [3 4]	30 Jun 1879	6 Mar 84	Retired	2 Jul 99	C of Engrs; Bvt MG, 1865.
171	Hammond, William A. [4]	27 Aug 1879	27 Aug 79	Retired	5 Jan 00	BG, Sur Gen, 1862-64.
172	Brown, Nathan W. [4]	8 Jun 1880	6 Feb 82	Retired	4 Mar 93	Bvt BG, 1867.
173	Drum, Richard C. [3 4]	15 Jun 1880	28 May 89	Retired	15 Oct 09	Adjt Gen; Bvt BG, 1865.
174	Myer, Albert J. [3 4]	16 Jun 1880	24 Aug 80	Died	24 Aug 80	C Sig O; Bvt BG, 1865.
175	*Hazen, William B. [4]	15 Dec 1880	16 Jan 87	Died	16 Jan 87	C Sig O; Bvt MG, 1865.
176	Miles, Nelson A. [3 4]	15 Dec 1880	5 Apr 90	Promoted	15 May 25	Bvt MG, 1867.
177	*Sacket, Delos B. [3 4]	2 Jan 1881	8 Mar 85	Died	8 Mar 85	Insp Gen; Bvt MG, 1865.
178	Swaim, David G. [3]	18 Feb 1881	22 Dec 94	Retired	17 Aug 97	JA Gen.
179	Rucker, Daniel H. [3 4]	13 Feb 1882	23 Feb 82	Retired	6 Jan 10	QM Gen; Bvt MG, 1865.

(Continued in next Month's Journal)



COLONEL RAMSAY D. POTTS

Commandant, Coast Artillery School, February 22, 1904-August 11, 1906

EDITORIAL

Promotion and Retirement

NO topic of discussion in military circles in recent years has aroused a greater interest or a greater diversity of opinion than the question of reduction of the hump that now exists in the Army. The induction of a large number of World War officers of about the same age into the Army, followed by a reduction in the total authorized strength, has resulted in a condition which will have a most serious effect upon the future efficiency of the Army. Not only do these officers and the officers junior to them face slight opportunity for advancement to senior grades, but their number is such that the ultimate termination of their careers at almost the same time will cause such rapid changes in the senior grades that a serious personnel problem will ensue.

During the last session of Congress a number of remedial measures were proposed, but these seem to have been, in large part, unacceptable to the service. That any measures to be presented to Congress during the coming session may be representative of the views of the Army at large, boards of officers have been convened in all corps areas and overseas departments, and at all service schools. These boards are charged with studying the entire promotion question and with securing the views and recommendations of all officers of the service and harmonizing them into definite conclusions and recommendations. It is anticipated that the reports of these local boards will present a fair cross-section of Army views relative to promotion, retirement, and kindred subjects.

The problem is one of extreme complexity. Promotion must be stimulated, and this means that vacancies must be provided. The hump must be reduced in order that in later years all the senior grades may not be filled by officers of the same age and length of service, and this means that separations from the active list from among the officers within the hump must be encouraged or required. The creation of secondary humps must be avoided, and this means that the separations from the active list in successive years must not be excessive.

As to the question of re-arrangement of the promotion list, the service appears about equally divided. Those officers who would be favorably affected would naturally approve a change; those unfavorably affected would disapprove. As there is approximately one of the latter for each

of the former, the weight of opinion will lie with such officers as would not be affected by any re-adjustment. To such an officer it would appear that the present arrangement in the company grades complies fully with the law as it stood at the time these officers accepted their commissions, but that in some respects the arrangement shows no rhyme, and little reason. It must nevertheless be admitted that the arguments presented for a re-arrangement possess great plausibility, however bad the precedent might be.

As to the question of promotion and elimination, the trend of opinion seems, in general, to favor:

(1) Promotion on length of service, with some restriction on total numbers in each grade or group of grades.

(2) Age in grade retirement.

(3) No selection; that is, the law should operate automatically.

(4) Complete advantage taken of existing laws, and strict adherence to physical standards.

(5) Limited voluntary graded retirement.

Many officers would approve of a limited amount of promotion by selection, except for the fact that they fear selection could not be properly safe-guarded and would give rise to politics within the Army. They admit, in principle, that demonstrated merit should be rewarded, but they doubt the practicability of assuring that the reward would go to the meritorious alone.

Should retirement for age in grade be adopted, it will be necessary to limit the annual number of retirements, because of the fact that, however high the age limits may be placed, the number attaining those limits each year for a number of years would greatly exceed the desirable number of vacancies. As an example, nearly six thousand promotion-list officers (majors, captains, first lieutenants, and second lieutenants) are now in an age group from thirty to forty-one, inclusive, and thirty-three hundred of these fall within the narrow limits of thirty-two to thirty-six, inclusive. In the end, however, with a promotion on length of service and a judicious selection of age for each grade, the hump will be effectively reduced and the section providing for age-in-grade retirements will become pratically inoperative.

Whatever the final result may be, no action will be taken until after most comprehensive study. The Army may congratulate itself that the personnel problem is being attacked at this time, and it may anticipate Congressional action leading to improved prospects for the junior officers.

The Bayonet's the Thing

Military authorities of Great Britain, France, and Germany have argued that the late war gave to armed conflict an entirely new aspect; that warfare henceforth will be waged from trenches and through the agency of planes, tanks, and motorized artillery. This would relegate infantrymen and cavalrymen to positions of secondary importance. It is the machine age in industry; the machine age also in war, these European strategists insist.

The professional American thought is different, as the general staff at Washington outlines it. These experts believe that "man remains the fundamental instrument in battle"; that "man in the bulk" fights with greatest efficiency when on foot; that battle is "normally determined by physical encounter with the bayonet or the fear thereof"; that the primary duty of other arms when associated with infantry is to "assist the infantry to achieve its mission by protecting and aiding it."

Such has been the mission of the infantry since wars began. It has not been changed in any fundamental sense by the advent of mechanized instruments of death, the American general staff argues. While European experts believe that the late war with its stabilized trench fighting marked a permanent departure in war making, the American insists that that was merely a deviation from an age-old rule and that warfare in the future as generally in the past will be waged between mobile forces.—*Cleveland Plain Dealer.*

Talking Us Out of Hawaii

The Philippines and Guam are now held by sufferance, not by strength, and if Hawaii were abandoned by the army and navy the American first line of defense to the west would be on the Pacific coast.

That such a proposal should be made seems madness. It must be regarded abroad that the United States is in a psychopathic state and can be sent home in a barrel from any negotiations undertaken. We seem to insist on conferences that something may be taken from us.

If that is the American state of mind there is no objection abroad to obliging, but we suspect that if the American government were willing to pull out of Hawaii the British not only could object but would stop it. J. B. would arise from his chair as he heard his friend Samuel agreeing to this, take him by the arm and lead him out for a walk in the fresh air, or, if need be, hop on him, gag him, and yell for help. There are at least British dominions which do not want the United States naval base removed from Hawaii.

Something worse than the corn borer is at work in the United States. Some bug is producing an unnatural excitement. Bedlam is mistaken for Elysium. It is no wonder that other people believe that if the United States is given an emotional shot in the arm it will give up its shirt.

Half our trouble abroad is caused by the fact that America does not always act as a madman, although it is generally talking as one. Disappointment turns to anger. The old gentleman appears to be about to throw everything out of the window and when some one closes it on him he is called a traitor to humanity.

No other people would expect the United States to be soft in the head if the United States did not give so many indications of international imbecility.

If Japan and Great Britain get America into a conference at Geneva the only things we'll save out of it will be the things Great Britain may insist that Japan put back in our pockets.—*Chicago Tribune.*

Pacifism Rebuked

Those extreme pacifists who do not seem to learn anything from national experience are rebuked, if only they realized it, by the reports of the activities of our marines in China, Nicaragua and elsewhere In this day, pregnant with war-like possibilities, in the Orient, defensive preparedness is, as it always has been, of great importance, and those who plead for a reduction of the ranks of our Regular Army and against the extension of our coast defenses are merely shutting their eyes to our great national need of more rather than of less protection.

These same extremists were blind to the fact that our military requirements when we entered the World War would have to be gathered together in helter-skelter, money-wasting fashion and, worse than that, that our sacrifices in blood would be the greater because of our lack of professional soldiers.

Although in a certain sense every intelligent man is a pacifist, as he is bound to have a peaceful outlook upon the world and a high hope for the amity of nations, to let the mental attitude of the peace-at-any-price citizen prevail is not to appreciate the possibilities of what, for example, may arise at any day as a point of danger to America and other civilized powers over in embroiled and frenzied Asia. * * * —*Los Angeles Times.*

PROFESSIONAL NOTES

Forty-Second Coast Artillery (Railway)

The Coat of Arms of the 42nd Coast Artillery was approved by the War Department on June 18, 1926, and its blazonry is as follows:

Shield: Gules (red) three piles issuant from base *or* (gold), a bend counterchanged.

Crest: On a wreath of the colors (gold and red) an oozlefinch (from the shoulder sleeve insignia worn by the Railway Artillery reserve in France) *vert* (green) armed, capped and collared on the legs *or* (gold).

Motto: Nous Soutiendrons (We will support).

The shield is red for artillery, the three piles or wedges represent the three battalions which were separated during the World War and operated the 1st Battalion in Alsace, the 2nd near Commercy and St. Mihiel in Lorraine, and the 3rd near St. Menehould in Champagne. The bend is the principal charge of all of the coat of arms of Alsace, Lorraine, and Champagne, and therefore the bend over the three piles symbolized the unity of the three battalions notwithstanding their separation. Gold is the principal tincture of the arms of Alsace and Lorraine and also appears in the arms of Champagne. The green cozlefinch in the crest is taken from the shoulder sleeve insignia worn by the Railway Artillery Reserve in France, of which this regiment was a part. The oozlefinch is a fictitious bird, a specimen of which is kept at the Officers' Club at Fort Monroe, Virginia. A characteristic trait of this bird, so it is asserted, is that it always flies backward to keep the dust out of its eyes. The motto, "*Nous Soutiendrons,*" suggests the mission of an artillery unit.

The battle participation of the 42nd Coast Artillery was as follows:

1st Battalion: Belfort Sector, VII French Army, April 19 to November 11, 1918 (Alsace).

2nd Battalion: Butte du Mesnil, IV French Army, February 11 to 14, 1918 (as Batteries "L" and "M," 52nd Artillery, C. A. C.).

Toul Sector, VIII French Army (Bat. "C" only), July 5 to September 25, 1918.

Nancy Sector, VIII French Army (Bat. "D" only), July 5 to September 25, 1918 (Lorraine).

3rd Battalion (Battery "F" only): Champagne Sector, IV French Army, April 16 to September 22, 1918.

Champagne-Marne Defensive, July 15 to 18, 1918 (Champagne).

The history of the units of the 42nd Coast Artillery is as follows:

Headquarters Battery was organized in 1918 at Toul, Muerthe et Moselle, in France, as the Headquarters Company, 42nd Artillery, Coast Artillery Corps; received the additional designation of 201st Company, Coast Artillery Corps, in 1922; and became Headquarters Battery, 42nd Coast Artillery, in 1924.

Service Battery, 42nd Coast Artillery, was organized in 1918 at Camp Jackson, South Carolina, as the Service Battery, 42nd Artillery, Coast Artillery Corps; designated, 202nd Company, Coast Artillery Corps, in 1922; and became Service Battery, 42nd Coast Artillery, in 1924.

Battery A, 42nd Coast Artillery, was organized in 1907 at Fort Adams, Rhode Island, as the 130th Company, Coast Artillery Corps; designated 4th Company, Fort Adams, Rhode Island, in 1916, and became Battery I, 7th Provisional Regiment, Coast Artillery Corps, in 1917; changed designation to Battery I, 52nd Artillery, Coast Artillery Corps, in February, 1918, to Battery A, 42nd Artillery, Coast Artillery Corps, in July, 1918; additional designation of 130th Company, Coast Artillery Corps, given in 1922; became Battery A, 42nd Coast Artillery, in 1924.

Battery B, 42nd Coast Artillery, was organized in 1901 at Fort Moultrie, South Carolina, as the 117th Company, Coast Artillery; designated the 2nd Company, Fort Adams, Rhode Island, in 1916, and Battery K, 7th Provisional Regiment, Coast Artillery Corps, in 1917; became Battery K, 52nd Artillery, Coast Artillery Corps, in February, 1918, and Battery B, 42nd Artillery, Coast Artillery Corps, in July, 1918; given the additional designation of 117th Company, Coast Artillery Corps, in 1922; and became Battery B, 42nd Coast Artillery, in 1924.

Battery C, 42nd Coast Artillery, was organized in 1901 at Fort Columbus (Fort Jay), New York Harbor, as the 122nd Company, Coast Artillery Corps; designated the 6th Company, Fort Hamilton, New York, in 1916, and Battery L, 7th Provisional Regiment, Coast Artillery Corps, in 1917; became Battery I, 52nd Artillery, Coast Artillery Corps, in February, 1918, and Battery C, 42nd Artillery, Coast Artillery Corps in July, 1918; additional designation of 122nd Company, Coast Artillery Corps, was given in 1922; and became Battery C, 42nd Coast Artillery, in 1924.

Battery D, 42nd Coast Artillery, was organized in June, 1917, as the 4th Company, Fort Hamilton, New York; became Battery M, 7th Provisional Regiment, Coast Artillery Corps, in July, 1917, Battery M, 52nd Artillery, Coast Artillery Corps in February, 1918, and Battery D, 42nd Artillery, Coast Artillery Corps, in July, 1918; additional designation of 203rd Company, Coast Artillery Corps, given in 1922; and became Battery D, 42nd Coast Artillery, in 1924.

Battery E, 42nd Coast Artillery, was organized in 1907 at Fort McHenry, Maryland, as the 142nd Company, Coast Artillery Corps; designated 3rd Company, Fort Mills, P. I., in 1916, and 3rd Company, Coast Defenses of Manila and Subic Bays, in 1917; became 142nd Company, Coast Artillery Corps, in 1922, and Battery E, 42nd Coast Artillery, in 1924. This Battery has seen no war service.

Battery F, 42nd Coast Artillery, was organized in 1901 at Fort Hamilton, New York, as the 84th Company, Coast Artillery; designated 3rd Company, Fort Hamilton, New York, in 1916; became Battery F, 8th Provisional Regiment, Coast Artillery Corps, in 1917, and Battery F, 53rd Artillery, Coast Artillery Corps, in February, 1918; designated Battery F, 42nd Artillery, Coast Artillery Corps, in July, 1918; additional designation of 84th Company, Coast Artillery Corps, given in 1922; and became Battery F, 42nd Coast Artillery, in 1924.

Military Academy Ratings

Regular Army officers, commanding the various cadet companies, have just completed their annual military ratings for cadets of all classes. This military rating is part of the graduation standing of cadets and is proportioned among scholarship, military appearance, leadership qualities, drills, athletics, cadet activities, and conduct. This military rating is the sole means of determining initial cadet officer appointments for the ensuing year, and since these appointments are the goal and ambition of all cadets, the military rating justly takes

into account not only the military side of a cadet's life but also the academic and extra-curricular sides. Participation in athletics and connections with cadet publications, choirs, class officers, and the like, comprise the extra-curricular groups.

Under the scheme for rating, each class is allotted a total weight of 2700 for military appearance, leadership, athletics, and activities. Military appearance includes bearing, physique, and neatness and cleanliness of person and clothing; leadership qualities include personality and disposition, loyalty, character, judgment, and manners.

The final consideration in the whole rating is that emanating from academic standing. This scholarship rating, forming part of the military rating (which, in turn, is part of the final graduation standing), is based on the subjects that each class pursues. For the fourth class (freshman) year it includes Mathematics, French, English, and Surveying; for the third class, Mathematics, French, English, History, and Drawing; and for the second class, Philosophy, Chemistry, Spanish, and Drawing. The scholarship rating for the first (senior) class is not considered because it graduates in June, and because the military rating is primarily to determine new cadet officer appointments which take effect each year upon graduation of the first class.

The final military standing for each cadet is the sum of the results of a multiplication factor (different for each subject) times the ordinal standing of the cadet in each of the seven subjects upon which he is rated—scholarship, conduct, tactics (both theoretical recitations and actual drills), bearing and appearance, leadership, athletics, and cadet activities, The cadet of the second class who stands one in this final military rating is invariably chosen as First Captain (Regimental Commander) of the Corps of Cadets for the next year (his last year at the Academy).

In a similar manner, the cadet adjutant, other cadet staff officers, and the cadet captains, are chosen from among these standing within the first twenty. Cadet lieutenants and cadet sergeants are then selected. Permanent corporals, limited to members of the third class, are chosen in the same way, as are the temporary corporals from members of the fourth class. These latter act during the absence of the new second class on furlough, from graduation to the end of August.

One of the most interesting things connected with the entire rating system is that *all* first classmen (seniors) in each company rate all other cadets in their company, including members of their own class, in military appearance and in leadership qualities. The ratings of first classmen in these two subjects are allowed a value of four-fifths in comparison with a rating value of one-fifth allowed the company tactical officer who also rates each cadet in his company. This is more than fair to any cadet concerned since he has at least ten different men rating him, the value of nine of whom is four times the value of the tenth who, in this case, is the company tactical officer. The first classmen rate individually and it has been found that to a remarkable degree the various first classmen have agreed on different cadets concerned.

The ratings for conduct (depending upon demerits) and for scholarship and tactics (which are practically a question of marks) are both taken care of naturally: so many demerits give a cadet a certain conduct mark; scholarship depends upon monthly standing in each academic subject pursued; and tactics are provided for either in recitations, which are marked, or in practical work, which is closely observed and reported upon.

Other interesting points include the ratings for athletic and for cadet activities other than military or academic. Ratings are given in four athletic subjects: Major sports (football, baseball, basketball, track, and lacrosse); minor sports (all others); participation in the annual indoor meet; and participation in intramural athletics. Major sports, properly, are allowed the highest marks. For all sports additional points are awarded for athletic insignia which are won.

Under cadet activities is listed practically everything else which affects a cadet in one way or another. These activities include, for instance, class officers, editorial staffs of the *Howitzer* and *Pointer*, honor committee, athletic representatives, Hundredth Night cast, hop managers, choir members, and the like. According to its importance each of these activities is put in a certain group with a certain mark. The honor committee, for example, comes under the "A" group; choir, "B" group; hop manager, "C" group; and so on.

This rather complicated system has stood the test of four years. It has been found to work out most satisfactorily in practically every case. Provision is even made, where cadets do the rating, to discount any apparently unfair rating. The final standing, itself—a composite of individual standings in the different subjects considered—is most fairly secured by the system of factors which allows four each for scholarship and conduct; three each for tactics, bearing and appearance, and leadership; two for athletics; and one for activities. No matter how excellent a cadet may be in any one subject, therefore, that one alone could not give him the necessary "all-aroundness" that would make him a high-ranking cadet officer. It is why, also, for instance, that a cadet low in scholarship may receive sufficient other credits to rank high in the final military standing. This military rating works most fairly in all ways and with the least of discrimination, favor, and snap judgment.

Board of General Officers to Study Congestion Among Commissioned Officers

The following board of five general officers has been appointed to submit recommendations to the Secretary of War after a study of the condition occasioned by congestion among the 5800 officers who were commissioned during the World War:

Major General Mason M. Patrick, Chief of Air Corps,
Major General Hanson E. Ely,
Major General Robert H. Allen, Chief of Infantry,
Major General Preston Brown,
Brigadier General Ewing E. Booth.

The board will study the recommendations which will be submitted by boards already appointed by Corps Area Commanders and Chiefs of Branches. In the selection of this board, the Secretary of War has provided representation for graduates of the U. S. Military Academy, officers commissioned from the ranks of the Regular Army, and officers who have entered the Regular Army after service in emergency forces. Furthermore, these general officers represent both the line and staff of the Army, and those branches of the service wherein the personnel situation presents marked difficulties.

General Patrick is a graduate of the U. S. Military Academy. As chief of Air Corps he is informed not only of officer personnel problems in that corps

but also in both line and staff branches, the Air Corps being a technical and supply branch as well as a combat branch.

General Ely is a graduate of the U. S. Military Academy. All of his service has been in the line. He is at present serving as Commandant of the War College and was formerly Commandant of the Command and General Staff School. His conspicuous war service and his subsequent duties particularly fit him to appreciate how peace experience contributes to war efficiency.

General Allen served for two years as an enlisted men prior to receiving a commission. As Chief of Infantry he is informed of officer personnel problems in the largest branch, where there are represented all those groups of officers whose situation is under survey.

General Brown served as an enlisted man for three years prior to receiving a commission. He has served as both a line and a staff officer. At present he commands the 1st Corps Area.

General Booth served as a volunteer officer during the Spanish American War and entered the Regular Army at the time of re-organization in 1901. He is therefore well qualified to view the personnel situation from the standpoint of officers who, after serving in temporary forces during war, subsequently accepted appointments in the regular service. He is at present serving as Commandant of the Cavalry School at Fort Riley, Kansas, but will soon report for duty as Assistant Chief of Staff.

Every member of the board is a general officer as a result of conspicuous service during the World War. Each has been awarded the Distinguished Service Medal. General Ely has also been awarded the Distinguished Service Cross.

Coast Artillery Graduates at Leavenworth

We give below a list of Coast Artillery honor graduates, distinguished graduates, and graduates, alphabetically arranged in each class, of the Command and General Staff School, 1926-27, the General Service Schools, Fort Leavenworth, Kansas. The division of the class into honor graduates, distinguished graduates, and graduates ceases with this class, according to a recent announcement.

Honor Graduates

Major Herbert H. Acheson
Major Harvey C. Allen
Major Roy S. Atwood
Major Richard F. Cox
Captain Dale Hinman

Distinguished Graduates

Major Kenneth T. Blood
Major Raymond V. Cramer
Major George W. Easterday
Major Sherman Miles
Major William E. Shedd
Major Charles Thomas-Stahle

Graduates

Captain Paul H. French
Major Robert C. Garrett
Major Samuel F. Hawkins
Major Paul H. Herman
Major Carl E. Hocker
Major Allen Kimberly
Major Manning M. Kimmel. Jr.
Major Lloyd B. Magruder
Major John T. H. O'Rear
Captain Robert E. Phillips
Major George Ruhlen, Jr.
Major Thomas A. Terry
Major James de B. Walbach
Major Albert H. Warren
Major Edward N. Woodbury

Army Notes

Maj. Gen. C. P. Summerall, U. S. A., Chief of Staff, outlined the need of adequate defense forces for "national insurance" in a speech at the Presidental Life Insurance Company dinner in New York City, May 5. He emphasized the wastefulness of unpreparedness and refuted the exaggerations of the cost of national defense.

He said in part:

> There has been considerable exaggeration as to the cost of our national defense. There are those who maintain that all pensions, all funds for the relief, care, and rehabilitation of veterans, and all payments for the reduction of huge national debts incurred in time of war, should legitimately be charged to the natitonal defense. Rather they are for the most part distinctly chargeable to lack of national defense, and to hysterical efforts for the preparation of war after war had loomed upon us. They are the belated payments with heavy penalties and tremendous interest rates, which resulted from failure to maintain our insurance during days of comparative peace and affluence. Let me quote figures from the Federal Budget for the fiscal year 1928. to demonstrate its actual cost. In round numbers, the budget provided for Federal expenditures to the total of $3.256.000,000. Of this sum, $568,000,000, or approximately 17½ per cent of the total, was allotted for the military activities of the War and Navy Department, 8.1 per cent for the Army, and 9.4 per cent for the Navy. This total was provided not only for the maintenance of the permanent establishments, but for the training of all the civilian elements of the Army and Navy. But the actual cost to each citizen of the United States for the national defense is considerably below the figures I have indicated, for the maintenance of security from external aggression devolves almost solely upon the Federal Government. When the total expenditures of national, State, and local governments are considered, the cost of national defense is amazingly small. For instance, of the tax dollar of the cities of New York, Chicago, St. Louis, New Orleans, and San Francisco, approximately 52 cents are spent for city purposes, 15 cents for State purposes, and 55 cents for Federal purposes. Of the latter, less than 5 cents of the tax collected goes for the maintenance of the national defense.—*Army and Navy Journal.*

Guidon Awarded at University of Pittsburg

In the presence of John H. Nicholson, vice president of the National Tube Company and a trustee of the University of Pittsburgh, and several army officers, members of the Reserve Officers' Training Corps of the university, were reviewed on May 6 at the university football field.

Battery A, judged the best drilled unit of the organization, was presented with a guidon by Colonel William R. Dunlap of the One Hundred and Seventy-sixth field artillery, the gift of the Sojourners' Club of Pittsburgh.

Stanford F. Jones, company commander of Battery "A," was picked as the best captain of the battalion and Thaddeus M. Gorski, first lieutenant of Battery "C," was picked as best platoon commander, and were presented with sabers by Major C. B. Shaeffer, president of the Western Pennsylvania Reserve Officers' Association.

The best drilled battery was picked by the following judges: Colonel Dunlap, Colonel Robert M. Brambilla of the Ninety-ninth Division headquarters, and Lieutenant Leith R. Barney of the United States Engineers office. The guidon presented by the Sojourners' Club, a Masonic organization for military men, was

a silk flag, and will be carried by the winning battery until next year. Major Nicholas Shillito, president of the club, and Captain William A. Kimble, secretary of the club, were present at the review.

Major Lloyd P. Horsfall, professor of military science and tactics at the University of Pittsburg, in charge of training members of the R. O. T. C. at the university, Major J. D. Mingos, Captain Maurice Morgan, Lieutenant A. L. Parmelee, and Lieutenant Paul L. Harter, members of the R. O. T. C. staff at the university, were present at the review.

More than 200 students passed in review before the staff and visitors, the bugle and drum corps adding a dash and military atmosphere to the occasion.

In former years cups had been presented to best company commander and best platoon commander, but the Reserve Officers' Association deemed the sabers more military in significance and an addition to the equipment of the recipients. —*Pittsburgh Sun.*

The Officers' Reserve Corps

The Secretary of War has directed issuance of instructions for a number of changes in the administration of the Officers' Reserve Corps, exclusive of federally recognized National Guard officers. The effect of these changes will be as follows:

1. Whereas formerly promotion to fill vacancies was dependent upon a certificate of capacity, which was obtained only by conformity to a prescribed standard, the forthcoming regulations will permit substitution of 300 hours' work in the preceding five years. Fifteen days' training will be counted as 100 hours of such work.

2. Time required in each grade prior to promotion will be as follows:

As a 2nd Lieutenant	3 years
As a 1st Lieutenant	4 years
As a Captain	5 years
As a Major	6 years
As a Lieut. Colonel	7 years
Total	25 years

3. For promotion above the grade of Major, in the cases of those who were not officers in the World War, qualifications must be shown either by graduation from the General Service Schools or by the passing of special examinations.

4. When vacancies exist and the Secretary of War authorizes promotion to the grade of Brigadier General in the Officers' Reserve Corps, selection will be limited to the eligible list of Colonels who have demonstrated their qualification by examinations and practical tests.

5. Whereas in the past in some cases assignment to units has been made of officers living outside the geographical areas of such units, hereafter promotion will be made to such vacancies from officers within the unit area.

6. More responsibility for administration of the Officers' Reserve Corps will be placed upon Reserve officers by provision for a board of Reserve officers, acting on an inactive status, in each Corps Area. These boards will advise on cases of separation and re-appointment of Reserve officers, and also will advise Corps

Commanders with reference to other questions pertaining to the Organized Reserves and the Officers' Reserve Corps.

7. The Unassigned Section of the Officers' Reserve Corps will be discontinued. In lieu thereof, the privilege of assignment and active-duty training will be accorded only to those officers who, during the five-year period of an appointment, have obtained a certificate of capacity, performed 200 hours of military work, completed a correspondence school course, or obtained the necessary certification from their Chief of Branch.

8. Regardless of their eligibility for assignment and active-duty training, all field officers may be re-appointed in the same grade and branch. Captains and Lieutenants, however, having received one re-appointment during which they were ineligible for assignment and active-duty training, and not having maintained the required standards of work during this second appointment, will be given a third appointment only upon the recommendation of a board of Reserve officers convened in their Corps Area.

9. The Executive for Reserve Affairs will serve under the Assistant Secretary of War (Colonel Hanford MacNider), to whom the Secretary of War has delegated supervision of the administration of the Officers' Reserve Corps and the Organized Reserves.

Wars of France

A writer in the October 25, 1926, number of the *Militär-Wochenblatt* enumerates the war years in which France has been engaged from the beginning of the 14th century (from the year 1300 A. D.) to date, with the following result:

In the 14th century, 43 war years, namely: 5 years civil war, 13 years on foreign and 25 on domestic soil. There were fought in those wars 14 major battles, among them Kortryk in Flanders, in which the Flemish captured 400 pairs of golden spurs of French knights, and the battle of Poictiers, in which the French king was taken prisoner.

In the 15th century, 71 war years—13 years of civil war, 15 years on foreign and 43 on home soil. There were fought in these wars 11 major battles, among them Agincourt, Castillon, and Montlery.

In the 16th century, 85 war years—33 of religious and civil wars, 44 on foreign and 11 on domestic soil. Of 27 major battles, 11 were fought in domestic civil wars.

In the 17th century, 69 war years—6 years of religious and civil wars, and 52 years on foreign soil. There were fought 39 major battles.

In the 18th century, 58 war years—51 on foreign soil, 1 religious and 6 civil-war years, with a total of 93 major battles.

In the 19th century we have the 15 years of the Napoleonic wars at the beginning of the century, the July revolution of 1830, the protracted fighting in Algiers, the war of the Belgian revolution, the revolution of 1848, the Crimean war, the Italian war, the war of 1870-71, and colonial fighting in North Africa and in Indo-China.

In the 20th century: 4 years of the World war; the war in Morrocco and in Syria.

Making an approximate total of *350 war years* in the *626 years* since the year 1300 A. D.—*G. R.*

Classification of Coast Artillery Organizations

The following tabulation of the classification of the organizations of the Coast Artillery Corps for 1926 required by Paragraph 35b (2), T. R. 435-55, has been compiled from the general orders issued by the several Coast Artillery District Commanders and is published for the information of all concerned.

For the Chief of Coast Artillery:

C. E. KILBOURNE,
Colonel, Coast Artillery Corps,
Executive Assistant.

EXCELLENT

Battery or Organization	*Coast Artillery Regiments*	*Harbor Defenses of*
E	2d	Cristobal
H	2d	Cristobal
A	3d	Los Angeles
E	3d	The Columbia
D	3d	San Diego
I	4th	Balboa
Hdqrs.	5th	Southern New York
Hdqrs.	6th	San Francisco
A	6th	San Francisco
A	7th	Sandy Hook
E	7th	Delaware
Hdqrs.	8th	Portland
E	10th	New Bedford
G	11th	Long Island Sound
H	11th	Long Island Sound
I	11th	Long Island Sound
K	11th	Long Island Sound
A	12th	Chesapeake Bay
Hdqrs.	13th	Pensacola
A	13th	Pensacola
B	13th	Pensacola
A	14th	Puget Sound
A	15th	Pearl Harbor
B	15th	Pearl Harbor
A	16th	Honolulu
C	16th	Honolulu
B	51st	Fort Eustis
E	52d	Fort Eustis
A	55th	Pearl Harbor
C	55th	Pearl Harbor
D	55th	Honolulu
F	55th	Honolulu
Hdqrs.	59th	Manila and Subic Bays
A	59th	Manila and Subic Bays
B	59th	Manila and Subic Bays
E	59th	Manila and Subic Bays
F	59th	Manila and Subic Bays
G	59th	Manila and Subic Bays
A	61st	Chesapeake Bay
B	61st	Chesapeake Bay
E	61st	Chesapeake Bay
Hdqrs. Detach. & C. T., 1st Bn.	62d	Eastern New York

Battery or Organization	*Coast Artillery Regiments*	*Harbor Defenses of*
E	62d	Eastern New York
A	63d	San Francisco
B	63d	San Francisco
E	63d	San Francisco
A	64th	Fort Shafter
B	64th	Fort Shafter
D	64th	Fort Shafter
E	64th	Fort Shafter
H	64th	Fort Shafter
I	64th	Fort Shafter
A	65th	Balboa
B	65th	Balboa
F	65th	Balboa
A	91st	Manila and Subic Bays
D	91st	Manila and Subic Bays
G	91st	Manila and Subic Bays
B	92d	Manila and Subic Bays
D	92d	Manila and Subic Bays
E	92d	Manila and Subic Bays
F	92d	Manila and Subic Bays
U. S. Army Mine Planter	General Absalom Baird	Long Island Sound
U. S. Army Mine Planter	General J. Franklin Bell	Puget Sound
1st Sound Ranging		Fort Eustis
	VERY GOOD	
Hdqrs.	3d	Los Angeles
B	3d	Los Angeles
A	4th	Balboa
D	4th	Balboa
E	6th	San Francisco
K	6th	San Francisco
Hdqrs.	7th	Sandy Hook
B	7th	Sandy Hook
D	7th	Sandy Hook
A	9th	Boston
Hdqrs.	10th	Narragansett Bay
Hdqrs.	11th	Long Island Sound
Hdqrs.	12th	Chesapeake Bay
B	12th	Chesapeake Bay
Hdqrs.	14th	Puget Sound
G	14th	Puget Sound
Hdqrs.	15th	Pearl Harbor
C	15th	Pearl Harbor
Hdqrs.	16th	Honolulu
D	16th	Honolulu
Hdqrs.	41st	Pearl Harbor
A	41st	Pearl Harbor
B	41st	Pearl Harbor
Service	51st	Fort Eustis
A	51st	Fort Eustis
Service	52d	Fort Eustis
C	52d	Fort Eustis
D	52d	Fort Eustis
Hdqrs. and Service	55th	Pearl Harbor
Hdqrs. Detach. & C. T., 1st Bn.	55th	Pearl Harbor
Hq. Det. & C. T. 2 Bn.	55th	Honolulu

Battery or Organization	*Coast Artillery Regiments*	*Harbor Defenses of*
E	55th	Honolulu
Hdqrs.	61st	Chesapeake Bay
Hdqrs.	62d	Eastern New York
Service	62d	Eastern New York
A	62d	Eastern New York
B	62d	Eastern New York
C	62d	Eastern New York
Hq. Det. M. G. Bn.	62d	Fort Totten
F	62d	Fort Totten
Hdqrs.	63d	San Francisco
Hdqrs.	64th	Fort Shafter
Service	64th	Fort Shafter
Hdqrs., 1st Bn.	64th	Fort Shafter
C	64th	Fort Shafter
Hdqrs., 2d Bn.	64th	Fort Shafter
F	64th	Fort Shafter
Hdqrs., 3d Bn.	64th	Fort Shafter
G	64th	Fort Shafter
C	65th	Cristobal
D	65th	Cristobal
E	65th	Cristobal
Hdqrs.	91st	Manila and Subic Bays
B	91st	Manila and Subic Bays
C	91st	Manila and Subic Bays
F	91st	Manila and Subic Bays
Hdqrs.	92d	Manila and Subic Bays
A	92d	Manila and Subic Bays
C	92d	Manila and Subic Bays
U. S. Army Mine Planter	General Edward O. C. Ord	Sandy Hook
U. S. Army Mine Planter	Joseph Henry	Sandy Hook
U. S. Army Mine Planter	General Wm. M. Graham	Cristobal
	SATISFACTORY	
Hdqrs.	1st	Cristobal
E	1st	Cristobal
Hdqrs.	2d	Cristobal
C	2d	Cristobal
Hdqrs.	4th	Balboa
G	4th	Balboa
E	8th	Portsmouth
Hdqrs.	9th	Boston
C	9th	Boston
C	12th	Chesapeake Bay
D	13th	Charleston
E	13th	Key West
D	14th	Puget Sound
Hdqrs.	51st	Fort Eustis
Hdqrs. Detach. & C. T., 1st Bn.	51st	Fort Eustis
Hdqrs.	52d	Fort Eustis
F	52d	Fort Eustis
C	59th	Manila and Subic Bays
D	59th	Manila and Subic Bays
Hdqrs.	65th	Cristobal
E	91st	Manila and Subic Bays
U. S. Army Mine Planter	Colonel George Armistead	San Francisco

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 May

Project No. 560, Data Routing, Position Finding and Fire Control Naval Targets, Case II and III.—Blue print chart prepared by the Coast Artillery Board. This project has been published in the COAST ARTILLERY JOURNAL.

Project No. 561, Study of Description of Goerz Range and Height Finders.—The Coast Artillery Board received several pamphlets, partly in English, partly in German, describing the operation and merits of certain new range finders. The range finder is a combination Depression Position Finder and Telemeter. The height finders are 2-meter stereoscopic or coincidence and seem to possess some desirable features if accuracy equals the expectations.

Project No. 562, Cloke Plotting and Relocating Board, Rapid Change of Orientation.—The problem of rapidly changing base lines was considered in this project.

Project No. 563, Stereoscope, Lorgnette, Model 1926.—This device, to be used in examining aerial photographs, was sent to the Coast Artillery Board for recommendation as to the desirability of its issue to Coast Artillery organizations and the basis of such issue.

Project No. 564, Theoretical Target, 3-inch Antiaircraft Gun.—A study of the dimensions of the theoretical target shows the size to be conservative. Some base spray exists but the additional volume of such base spray is small compared to total volume.

Project No. 565, Comments on Target Practice Reports, 1927.—The Coast Artillery Board is taking up study of, and comment on, the early 1927 reports of target practice.

Project No. 566, Experimental Gas Proofing, Battery De Russey.—The plotting room at Battery De Russey was gas proofed experimentally and the effect of blast observed during target practice. It was found possible to provide blast proof gas protection by two methods, neither of which was unduly elaborate or expensive. The Coast Artillery Board recommended continuation of development and study with special reference to important long-range batteries.

Project No. 567, Antiaircraft Burst Recording System.—At Aberdeen Proving Ground in 1926 two range rakes were mounted on a Wind and Parallax Computer telescope for observation of deviations of antiaircraft bursts. One man followed the target with the telescope, one man read lateral deviations, one man the vertical deviations of the burst from the center wire of their range rake.

Deviations are spoken into a breast transmitter and heard by a recorder who is located at a chronographic device by means of which records are synchronized.

Project No. 568, Mead Prediction Ruler for Coast Artillery.—This device employs continuous predictions scales drawn upon a band of tracing cloth. The tracing cloth band is mounted upon a wooden strip and may be turned so that the scale corresponding to the proper time of flight is along the fiducial edge of the wooden strip.

Completed Projects

Project No. 414/A, Adjustment of Antiaircraft Fire

I—History of the Project.

1. On July 25, 1926, Coast Artillery Board Project No. 414, "Adjustment of Antiaircraft Fire," was submitted. In the first indorsement thereon, OCCA 665.9/AR-3, dated August 9, 1926, it is stated:

> 1. The conclusions and recommendations contained in Project No. 414 are approved.
> 2. * * *
> *b.* Reference to Par. 6, the statement to the effect that observation from distant stations under service conditions is very exceptional seems well founded. However, it seems quite possible that under certain conditions, particularly those which obtain in rear areas and in portions of the front where aerial activities are comparatively quiet, it may be entirely practicable for the battery commander to receive sensings from a flank observer stationed at another battery.
> 3. *a.* It is desired that the Coast Artillery Board maintain this as an active project and that every advantage be taken of the opportunity presented by antiaircraft firings which members of the Board may witness.

2. Members of the Coast Artillery Board witnessed the Aberdeen firings and endeavored to pay close attention to the adjustments being made and the results obtained.

II—Discussion.

3. In paragraphs 43 to 47, inclusive, of the printed copy of the "Report of Antiaircraft Exercises by 61st Coast Artillery (AA) and Ordnance Personnel at Aberdeen Proving Ground, 1926," great emphasis is laid upon the importance of adjustment of fire. It is stated there:

> 43. *Adjustment of Fire.*—Adjustment of fire is an important factor in the production of hits. Curves of percentage of hits plotted against slant range show that the hitting factor increased with each course when adjustment was being made. In part this is due to a settling down of battery personnel, and in part to the fact that malfunctioning of materiel will develop and can be eliminated in the first courses. Mainly it is due to adjustment.

4. The adjustments determined on previous courses of target are credited with major responsibility for the increased number of hits on subsequent courses. This is probably correct, but it is to be remembered that the improvement was demonstrated on subsequent courses with approximately the same altitude, range, speed, and direction. Time intervening between courses permitted the battery commander to receive reports on range deviations and to analyze the lateral,

vertical, and range deviations as a whole. This is a target practice condition, not to be expected in war.

5. Certainly if a battery commander knows that the center of impact of a series of shots fired on a target has been over, or short, or in error laterally or vertically, and time admits, he will search for the cause of the error before opening fire on a new target. The deviations observed, unless personnel or materiel errors occur, are due to incorrect observation or application of target altitude, speed, or direction. If no cause of error can be found, the battery commander is justified in believing the errors due to incorrect trial shot data and in making further correction.

6. In fire upon an enemy plane or formation of planes, dependence can be placed upon adjustment if the following conditions can be reasonably expected:

a. Flank range observation, with direct communication or range sensings from stereoscopic instrument at battery.

b. No confusion between bursts of more than one battery.

c. Fire control instruments that will seldom err materially.

d. Personnel that will seldom err materially.

e. A battery commander or a spotting section capable of quick analysis and derivation of corrections.

f. Means of applying quickly the determined corrections.

g. Target that will not materially change its direction speed or altitude.

7. Of these conditions, all may be met, with more or less difficulty, except the last one. If the first eight bursts (2 per gun) are taken as a basis for adjustment, at least 5 to 10 seconds must be utilized in determining the proper correction, 5 seconds more in applying the correction, 3 seconds more before the first shot is fired with the correction. This 13 to 18 seconds must be added to the time of flight of possibly 20 seconds before any effect of the correction is apparent. In this interval the target, if continuing on a direct course (at 100 m. p. h.), will have traveled over a mile, all the time under fire. Is it reasonable to expect the pilot to play the opponent's game? The urgency of his mission or nature of his load may prohibit radical change of direction, speed, or altitude, but certainly enough change will occur to impair the value of any correction.

8. It may be suggested that the actions of the plane will impair the accuracy of the data from the computer or director. This is true but to a lesser extent because any change in the target's speed or course is immediately recognized by the computing and sighting instruments and the greater part of any error in the data is due to action of the target only during the time of flight of the projectile.

9. In war time, a plane, keeping as far from antiaircraft batteries as is consistent with the mission involved, will be rarely within range sufficient time to permit careful adjustment.

10. In Paragraph 44 of the Aberdeen Report it is stated that a lateral deviation of less than 20 mils is apt to be constant and should be corrected for because it may be difficult to locate the exact cause; the same applying to vertical deviations of ten mils or less. This depends upon the constancy of the errors. It has been observed at firings that the first few bursts may be obviously in error, but they are followed by apparent hits. There is no certainty that corrections based on the first several rounds do not prevent hits in as many cases as such corrections produce hits. Arbitrary corrections based upon insufficient data or insufficient

firing upon which to base conclusions are considered improper in terrestrial gunnery. The temptation to do this in antiaircraft gunnery is apparent.

11. When fire is first opened the data from a stereoscopic height finder is liable to be in error. As the operator of the instrument continues his observation, the readings will steady down and become more trustworthy. No altitude correction is justified until the altitude readings have become steady and regular.

12. In a well trained, well equipped battery the most frequent cause of error is faulty altitude reading. The error of the best stereoscopic height finder tested to date has been of an average of 75 yards. It may be several hundred yards. The greatest effect of altitude error is range deviation. The greatest deviation in most firings is range deviation. It follows that adjustment by altitude is the most logical as well as the most practical means of adjustment.

13. In all target practices in 1926, battery commanders used adjustment, sometimes during fire, sometimes for subsequent courses. There are insufficient data to determine whether or not, when adjustment was used during fire, the number of hits was increased or decreased.

III—CONCLUSIONS.

14. It is the opinion of the Coast Artillery Board that:

a. There is no doubt that corrections (after careful analysis) based upon previous performance will improve subsequent firing, nor that battery commanders should and will take every opportunity to utilize such adjustment.

b. Adjustment during fire on a target is of value depending upon the length of time the target is subject to fire. It is frequently practical in target practice. In most cases it will not be practical under service conditions.

c. Effort should be made to obtain flank observations so that amount of range deviation can be measured.

d. When flank observation is not available, stereoscopic height finders can give the sense of range deviations.

e. The most common cause of small vertical and lateral deviations is the failure of the gun pointer to "keep on" the target during fire.

f. The most common cause of range deviation is the use of an incorrect altitude.

g. Much of the apparent lateral and vertical deviation is due to range deviation.

h. The most logical and practical means of correcting for range deviations is by change of altitude setting.

i. Caution is necessary in use of adjustment or the corrections applied can cause harm as often as good.

k. Adjustment should be used to supplement, not to replace, careful preparation of fire.

l. Preparation of fire by trial shots, by calibration fire, by adjusting fire upon a burst, and by corrections based on previous fire, will reduce the necessity for adjustment during fire.

m. The remarks, conclusions, and recommendations contained in the original report on Project No. 414, "Adjustment of Antiaircraft Fire," have been substantiated by the firings held in the past year.

n. Paragraphs 43 to 47, pertaining to adjustment of fire, Report of Antiaircraft Exercises, Aberdeen Proving Ground, 1926, are in general, concurred in.

IV—RECOMMENDATIONS.

15. The Coast Artillery Board recommends that:

a. Adjustment of fire be considered supplementary to preparation of fire.

b. Adjustment of range deviations by change of altitude setting be considered the standard method.

V—ACTION OF THE CHIEF OF COAST ARTILLERY.

665.9/AR-5 1st Ind.

War Department, OCCA, May 14, 1927.—To Chief of Ordnance.

1. Forwarded herewith for your information is copy of proceedings of Coast Artillery Board under Project No. 414/A.

2. It is desired to invite special attention to these proceedings in which are presented in clear-cut fashion, some very sound ideas, based on extensive observation and analysis. Due to the fact that a proper fire control system for antiaircraft guns has not been finally determined, it has been impracticable to arrive at definite conclusions concerning the practicability of adjusting antiaircraft fire. The subject has assumed increasing importance during the past few years, and there is, throughout the service, a great divergence of ideas, few of which appear to be based on extensive experience or thorough analysis.

3. The discussion in paragraphs 4 to 13, and the conclusions in paragraph 14, represent the views of this office with the following exceptions:

Par. 12. "It follows that adjustment by altitude is the most logical, as well as the most practical means of adjustment."

Par. 14 *h.* "The most logical and practical means of correcting for range deviations is by change of altitude setting."

Due to the elementary stage that has been reached in this subject, and to the limited data which have been subjected to analysis, it is not believed that a decision can be logically made as to the best method of applying corrections to the data.

4. *a.* The recommendation in paragraph 15 *a* is concurred in.

b. For the reasons set forth in paragraph 2 above, the recommendation in paragraph 15 *b* is not concurred in.

Project No. 568, Mead Prediction Ruler for Coast Artillery

I—HISTORY OF THE PROJECT.

1. The following is quoted from a letter received from Captain E. C. Mead, C. A. C. (DOL):

> 1. I am enclosing my idea of mounting prediction scales and forming a ruler. Everyone I have showed this to seems to think it is extremely practical. Several of the units have used it and find it to be a great time saver, so am sending it in for your study. The operation is simple. The travel is on the red scale and the setforward point at the corresponding graduation on the black. To predict for mortars, locate first setforward point and then move ruler forward so the last plotted point is opposite to the travel reading and the predicted point is now located opposite of the zero of the ruler. The

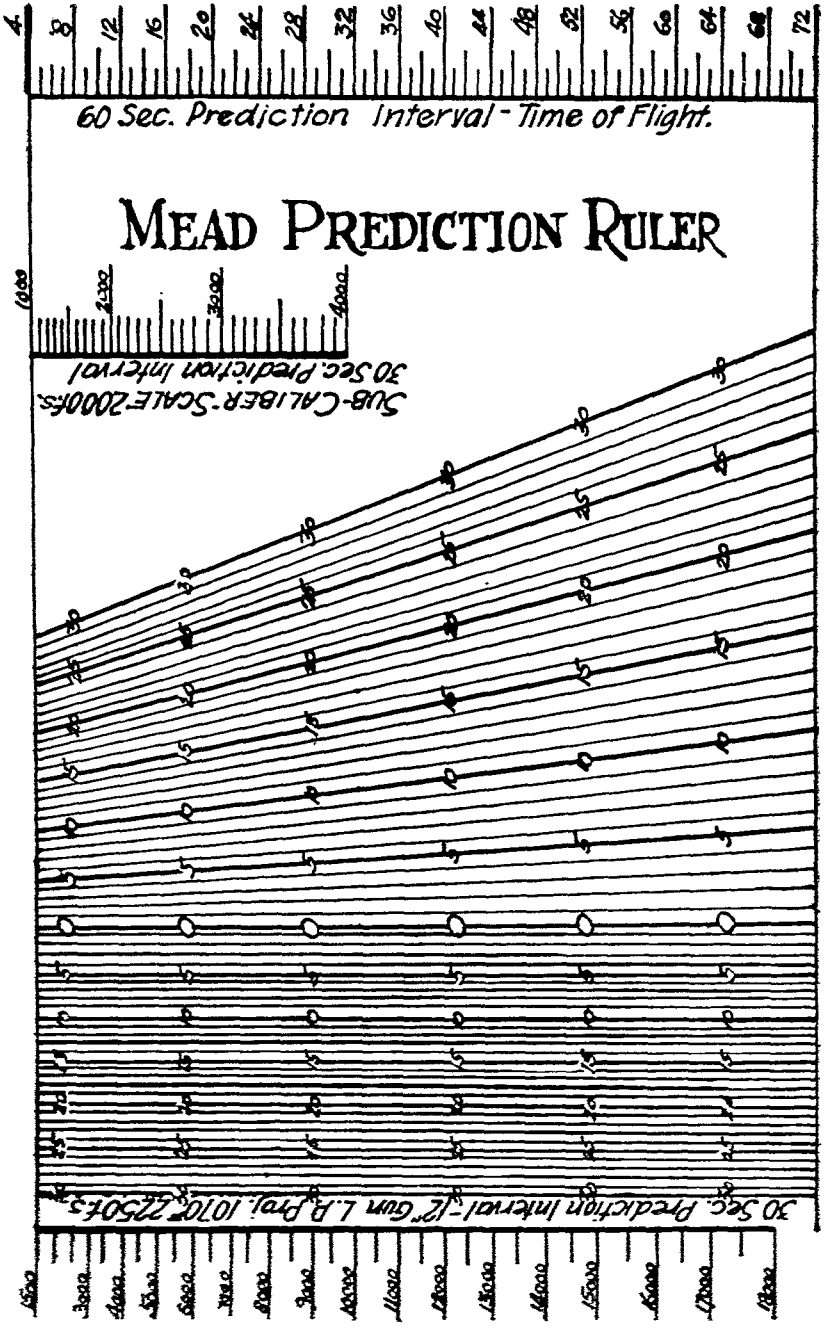

MEAD PREDICTION RULER
60 Sec. Prediction Interval - Time of Flight.
SUB-CALIBER-SCALE-2000 f.s.
30 Sec. Prediction Interval
30 Sec. Prediction Interval - 12" Gun L.P. Pro. 1010 2250 f.s.

Fig. 1

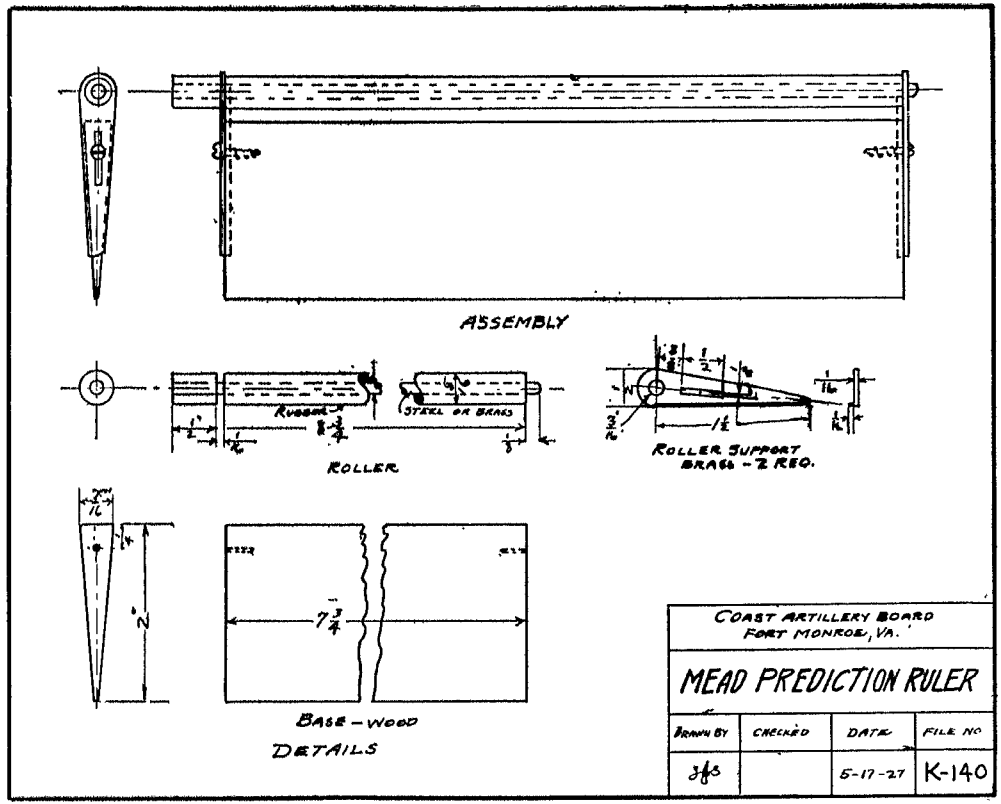

ASSEMBLY
RUBBER
STEEL OR BRASS
ROLLER
ROLLER SUPPORT
BRASS - 2 REQ.
BASE - WOOD
DETAILS
COAST ARTILLERY BOARD
FORT MONROE, VA.
MEAD PREDICTION RULER
DRAWN BY
CHECKED
DATE
FILE NO
5-17-27
K-140

FIG. 2

ruler as made is somewhat crude, but with more mechanical skill should be made much better mechanically. Probably two screws on the end slides would be better. To tighten the roller I loosen slightly the screws and then pry up the end of the roller, then set up the screw. Probably the ideal arrangement would be to make the end slides like a rack as rods with teeth and fit with two screws; have one screw set in a hole in the wood, this screw geared like a pinion; then by turning this the slide would tighten the roll then set up the other screw.

2. One advantage of this ruler is it can have as many range scales put on it as desired and it can be made in any width. The scale can be easily constructed by starting with the zero scale and then putting on the time of flight scale; graduate this as desired; after that is constructed any scale can be put on by the means of a range table. On the ruler submitted the time of flight scale is doubled to use with mortars for a 60-second scale prediction interval. It is mailed set for either 10,000 yards for the 12-inch gun or 32 seconds time of flight for the mortars. This corresponds to a 16-second time of flight using a 30-second prediction interval.

II—Discussion.

2. The scale used on the prediction ruler forwarded by Captain Mead is shown in Figure 1. The scale itself presents nothing new, being similar to prediction scales which have been printed and made up in pad form.

3. The unique point of this prediction ruler is the method of mounting the scale. For this purpose there are employed:

1 wooden strip,
1 roller (rubber tubing upon a steel rod),
2 roller supports, brass.

These articles and the method of assembly are shown in Figure 2.

4. The scale is made on tracing cloth. The top and bottom of this strip of tracing cloth are then glued together. The tracing cloth band is then mounted over the wooden strip and the roller. By means of the adjustable collar supports the roller is moved far enough from the thick edge of the wooden strip so that the tracing cloth will be moved around the strip when the roller is turned.

5. The ruler is set for use by turning the roller until the proper time of flight (or range) is set at the thin edge of the wooden strip. The ruler is then placed with the thin edge along the track of the target with the zero at the last plotted point, the red zone on the back track. The plotter notes the number of the red line nearest the next to last plotted point and plots the setforward point at the thin edge of the ruler at the black line having the same number.

6. It is not known how long a tracing cloth scale will last on one of these devices in service. The thinner the edge of the ruler the shorter will be the life of the scale and the thicker this edge the greater will be the probability of parallax errors. With the sample device submitted it is believed that with careful operation parallax errors will be negligible.

7. This prediction ruler is correct geometrically; does not involve any new application of geometrical principles to predicting; and it can be constructed locally at practically no expense. It can be constructed so as to give a reasonable degree of accuracy with high-speed targets, in this respect being superior to separate prediction scales and other types of predictors at present in use.

III—CONCLUSIONS.

8. The Coast Artillery Board does not consider this prediction ruler suitable for adoption as a standard for Coast Artillery use, but does believe that it is the equal of several of the predictors at present in use.

IV—RECOMMENDATIONS.

9. The Coast Artillery Board recommends that the Mead Prediction Ruler be not adopted as a standard for Coast Artillery use, but that a description of it be published in the COAST ARTILLERY JOURNAL and its use, where desired, be authorized pending the adoption of a standard predictor.

V—ACTION BY THE CHIEF OF COAST ARTILLERY.

413.684/C 1st Ind.

War Department, OCCA, May 31, 1927.—To President, Coast Artillery Board, Fort Monroe, Va. (Thru Commandant, C. A. School).

1. The recommendations of the Coast Artillery Board, contained in paragraph 9 of Project No. 568, are approved.

2. It is desired that you take the necessary action to make this project available for publication in the COAST ARTILLERY JOURNAL.

* * * * *

APHORISME XV

In the active part of military service, the General's greatest vertue is to apprehend a present occasion of advantage, and to take it. So on the passive side, the evasion from a sudden and imminent danger is much more noble than a forethought of prevention: for in this is only matter of judgement, but in that is the life of action and execution.—Ward's Animadversions of War *(London, 1639).*

BOOK REVIEWS

British Documents on the Origins of the War. Volume XI—The Outbreak of War, Foreign Office Documents, June 28-August 4, 1914. Collected and arranged by J. W. Headlam-Morley. H. M. Stationery Office, London (British Library of Information, New York). 1926. 7½"x 10¾". 389 pp. $3.00.

To present the British point of view and facilitate historical study of the causes and origins of the World War, and in compliance with the wishes of the Prime Minister (Mr. Ramsay MacDonald), the British Foreign Office arranged to have published a collection of documents which were to be edited by Messrs. G. P. Gooch and Harold Temperly. These gentlemen found that Mr. Headlam-Morley had already "made a very full collection of the relevent British documents" which he consented to complete for publication, and to which he added "a valuable introduction."

The introduction, valuable as it is, is rather difficult reading, and leaves the reader somewhat confused. It is announced that the intention has been to omit nothing, however unimportant, and is claimed that in this edition "the reader has before him the complete text of all the despatches contained in the earlier edition, and all the telegrams in their original and unparagraphed form; he is, therefore, in a position to form an opinion as to the integrity and skill which were shown in preparing the original White Paper."

The introduction goes on to outline the international situation prior to June 28, 1914. Relations with the French were normal but relations with Russia were somewhat disturbed by Russian dissatisfaction over British control of Mesopotamian oil fields, and by British resentment against the actions of Russian consuls in Persia and British apprehensions concerning the situation in Afghanistan.

British relations with Germany are indicated in the earlier despatches to have been quite good—the Baghdad controversy was about to be closed satisfactorily. There were some German irritation and anxiety over an imaginary naval agreement between England and Russia, and far fetched, if slight, resentment because part of the British fleet was visiting Kronstadt in June, 1914, at the same time another part was visiting Kiel.

To this reviewer the complication shows great frankness and fairness, and can only confirm the opinion of most Americans that the German government is primarily and almost entirely responsible for the greatest of all wars.

We find in outline that following the indefensible seizure by Austria-Hungary of Bosnia and Herzgovinia in 1908 to which Serbia was obliged to consent and Russia prevented by awe of Germany from making objection, there was agitation in the two provinces as well as in Serbia for political union of the Serbian people. The acquisitions of territory from Turkey and Bulgaria tended to build up Serbian national consciousness. The assassination of Archduke Franz Ferdinand resulted from Pan-Serbian agitation in the provinces, fostered and encouraged by Serbians in Serbia, some of whom held official positions; but although the Serbian government failed to exercise proper diligence in surpressing this agitation, and probably was somewhat in sympathy with it, there has been no proof of governmental complicity.

Although the death of the heir-apparent was regarded by many in Austria-Hungary as riddance of embarrassment, the people were inflamed and the government resolved to punish and humiliate Serbia so completely as to insure against any further agitation.

Austria-Hungary persisted in disregard of Russia's interest in Serbia, and was given *carte-blanche* by her ally, Germany. Every attempt of Russia to obtain assurance that Serbian territory would be left intact and Serbian independence respected was met by evasion or refusal. The Austrian note to Serbia was presented after two weeks of silence, was apparently drawn so as to make compliance with its demands all but impossible, and was sent in the confident expectation that Serbia would not comply. At the instance of Russia, Serbia went farther towards compliance than could have been expected, but Austria-Hungary promptly rejected the Serbian reply and not once but repeatedly refused to accept that reply as a basis of further negotiation.

The Austria-Hungarian Empire now proceeded to prepare for war on Serbia. Meanwhile Great Britain, thoroughly alarmed, was doing everything possible to prevent a general war. Austria was determined to have her way with Serbia and refusing to discuss her intentions with Russia or any other power; Germany while pretending to urge Austria to moderation was actually doing nothing; Russia was resolved that Serbia should not be made a vassal of Austria; France and Italy less actively were striving for a peaceful solution. Blame has been laid at Russia's door by Teuton propagandists, but it is clear that Russia was willing to go to any length for peace, short of permitting loss of Serbian independence.

Meanwhile British statesmen began to foresee that a European war might result from mobilizations which they attempted to restrain. Nevertheless Austria mobilized against Serbia, Russia began to mobilize against Austria, and general Austrian mobilization followed. In the specious pleadings of certain pro-German propagandists in this country, it is alleged that the Russian order for general mobilization of June 30 preceded and occasioned the German mobilization, but there is evidence in this correspondence, as elsewhere, that no matter whether or not they used the term "general mobilization," the Germans had commenced making full military and naval preparations.

When at the very last minute, after carrying her "bluff" to what she may have believed the limit for safety, Austria signified readiness to treat, the Kaiser sent his ultimatum, which required Russian mobilization to cease within a twelve-hour period—whose times of beginning and end have been kept secret all these years—and made war inevitable.

These papers again demonstrate the cool-headedness of the British statesmen, and the correctness of their attitude; they show that Russia made some missteps but earnestly desired peace; and they leave the reader convinced that while the German government was not actually trying to bring on a war, it did not regard the possibility with great aversion, and as a consequence was willing to take and did take too great risk.

Interesting items included are explanations which seem reasonable enough as to some of the alleged falsifications of Russian official documents; the so-called "minutes" or notes made by Sir Edward Grey and his assistants on some of the despatches, not previously published; and the French text of the Austrian note and Serbian reply.—R. S. A.

The Great Crusade—a Narrative of the World War. By Major General Joseph T. Dickman. D. Appleton Co. 1927. 5¼"x 8". 313 pp. Ill. $2.50.

The word narrative in the sub-title describes the style of the book. It is a narrative of that portion of the World War that fell within the unusually wide personal experiences of the author. One on a hill can see more and further, maybe not all the pebbles and puddles seen by each and every one on the valley roads, but General Dickman, as Commander of the Third Division, Fourth Corps, First Corps, and Third Army, had not only the opportunity to see more but also the human ability to observe many of the more intimate details.

The book opens in the pre-war days of unpreparedness. The statements concerning the ultrapacific attitude and the studied avoidance of preparation has a familiar sound today. Here is a sample: "So long as we are ultimately successful in our wars the American public and officialdom cares little whether it be because of or in spite of our military preparation or lack of same." The "academic stage of the war," the training camp period, was experienced in part by several millions of us. The criticisms of policies are frank.

The Third Division operations at Chateau Thierry and the preparations for and the fighting in the Champagne-Marne sector July 14-15 make a vivid story. The work of the Fourth Corps at Saint Mihiel and of the First Corps in the Argonne is described. The famous march of the First Division across the front of the First Corps in their race for Sedan is told with the viewpoint of the First Corps. The march to and occupation of the American sector of the Rhine by the Third American Army is described in a way to bring fond memories to many and renewed envy to more.

General Dickman is, to say the least, not francophile. However, of an incident on the march to the Rhine, in Longuyon, he writes " . . . expressions of gratitude to America and of praise for our soldiers. . . . In this little scene there spoke the heart of the people unspoiled by envy, jealousy or politics." He does not know which—envy, jealousy, or politics—but something spoiled the attitude of many French officials to a degree greatly resented by the author. Throughout the book he wastes no words in praise of our European allies, nor does he underesteem the enemy. The book displays a firm belief in the soldierly qualities of American youth, faith in the traditions of the United States Army, disillusionment in his conceptions of French efficiency, and an appreciation of the beauty of the Rhine country.

In the foreword by General Pershing is stated, "The History of the World War must rest primarily upon official records." True, but that history can be understood and appreciated only by a knowledge of the details and observations as given in such narrations as *The Great Crusade.*—C. R. F.

Statesmanship or War. By Brigadier General John McAuley Palmer. Doubleday, Page and Company. 1927. 5½"x 8¼". 232 pp. $2.50.

The introduction, contributed by ex-Senator James W. Wadsworth, Jr., of New York, who was chairman of the Senate Military Affairs Committee from 1920 to 1927, is almost entirely a laudation of General Palmer and his services in connection with the writing of the National Defense Act. To those who know General Palmer and his work, this introduction is hardly necessary.

> This book [General Palmer writes in foreword] deals with the influence of military and naval armaments upon the problem of War and Peace. Offensive armaments tend to provoke war. Defensive armaments tend to con-

serve peace. The militarist who proposes the former, and the pacifist who opposes the latter, both stand in the way of ordered peace. Obviously the true path toward better world organization lies in the median way between the extremes of militarism and pacifism.

Washington proposed what he called "a reasonably defensive posture" in a form appropriate for the democratic state. *His proposal was not adopted by his countrymen.* Switzerland, on the other hand, has actually developed the type of armament proposed for us by the father of our country. Therefore in this book I have explained the essential features of the Swiss military system, and have explained how they can be adapted to American conditions *on a purely voluntary basis* . . . [Reviewer's italics.]

Some of the material accumulated for this book was included in a brief paper entitled "Preparedness for Peace" which was submitted to Mr. Bok's American Peace Award in 1923.

Commencing with Clausewitz's definition of war as not an isolated or separate thing in itself but simply a special form of politics, General Palmer goes on to point out that strictly speaking there is no such thing *per se* as a cause of war, that any political controversy may take the form of war, and that whether such controversy may take violent form "depends upon whether the surrounding political institutions are adequate to solve the question at issue and also to prevent the unsuccessful or disgruntled party from appealing to force."

Washington's and the Hohenzollern attitudes in regard to armaments are contrasted by showing that while both sought legitimate ends through peaceful negotiation, Washington proposed by a "respectable defensive posture" to prevent or discourage an aggressor from imposing war, while Frederick and his successors sought to gain their political ends without reference to the merits of their cause by threat of or actual resort to offensive military action. Lack of clear thinking is held responsible for much of the argument as to whether armaments provoke or prevent war since offensive armaments tend to provoke and defensive armaments to prevent war.

The Swiss military system is described at some length and its general principles stated about as follows:

Compulsory universal military training;
Progressively decreasing annual training periods for the masses;
Progressively increasing training periods in the higher grades;
Professional soldiers only for these duties which cannot be performed effectively by citizen soldiers.

Since our geographical situation is very much more favorable and our population greater, General Palmer believes this country can adopt the Swiss system with voluntary substituted for compulsory universal training. So far we can follow him.

But when he proceeds to lay down rules for determining the number of professional soldiers required; to establish a basis for naval armaments; to advocate seriously, as a remedy for all our ills, a department of National Defense, General Palmer is neither so sure of himself nor so convincing.

In using the development of the Coast Artillery Corps to illustrate his thesis that our professional army should be reduced, General Palmer seems to have gone quite astray. It is true that citizens with mechanical aptitude and training can be made into useful Coast Artillery soldiers in a short time, but it is also true that the many millions of dollars worth of armament and accessories will not care for itself, that defense of our important harbors becomes urgent at the very outbreak of war, that learning to operate unfamiliar and complicated mechanisms

requires time, and that technical development cannot be expected of short-time citizen soldiers. It may be added, since General Palmer implies the contrary, that complete professional manning details for seacoast armament have never been advocated.

When the writer undertakes to lay down rules for determining our naval armament needs, he overlooks the underlying principle that our Navy can best defend our shores by offensive action. He goes so far as to leave it to be inferred that our Navy need be strong enough only for defensive action, and particularly that it may be inferior to the British Navy both because of the greater over-sea possessions of Great Britain and the greater capacity for self-subsistence of the United States. The reviewer believes a fair estimate of our naval requirements must provide for protection of foreign trade far beyond the importation of subsistence and defensive materials, as well as reasonable protection of our citizens abroad, and in fine that our Navy should be strong enough to prevent any power, or reasonably-to-be-expected hostile combination, not only from destroying our commerce but from bringing an invading army to, or overwhelming air force near, our shores.

In the final chapter is offered what is called a practical solution of the "Limitation of Land Armaments." Stated briefly this is:

(1) Limit strength of standing (professional) armies to numbers strictly required for internal police, frontier guards, and the protection of colonies.

(2) In addition, allow each nation to form a national defense citizen army of the Swiss model, not trained for offensive action, the limit of strength to be established on liberal basis.

(3) Permit either voluntary or compulsory enlistment.

(4) Generally to reduce percentages of professional soldiers.

It can be admitted that such a reduction of land armaments is not unreasonable, and is in fact a step in the right direction, but not that such limitation could be relied upon to prevent equally matched states or combinations of states from going to war, or to protect weaker states from the aggression of stronger ones.

This is an interesting and valuable contribution to the study of national defense requirements, but, in this reviewer's opinion, disappointing in its latter half.—R. S. A.

The History of Fort Riley. By Captain W. F. Pride. The Cavalry School, Fort Riley. 1926. 6"x 9". 339 pp. Ill. $3.00.

Fort Riley is one of the important posts of the Army and it is well that its history has been made a matter of written record before its past is lost. The post was occupied in 1852 by one company of the First Dragoons. At first it was called Camp Center, because it was known to be near the geographical center of the United States, but after the death of Major General Bennett Riley in 1853, the name was changed to Fort Riley pursuant to General Orders No. 17, War Department, June 27, 1853. Fort Riley is therefore young compared to Fort Leavenworth or Fort Monroe, but it has nevertheless played a major part in the development of Kansas and the western plains.

Captain Pride's first three chapters deal with the early history of the West—"The Land of Quivra," "Louisiana and the Early Explorers," and "Old Trails." Thereafter he centers upon the history of Fort Riley and its vicinity. Apparently every ascertainable detail has, very properly, been included; but it is to be regretted that much of the matter was not placed in an appendix, for the continuity

of the text suffers from the pauses necessary to keep marriages, deaths, rosters, etc., in their proper chronological places. The following, from page 222, is a fair sample:

> Captain George R. Faringhy of the local company of the Kansas National Guard was promoted to Major on the 31st of July, upon which H. N. Nicholson became Captain; Fred Schultz, First Lieutenant; E. A. Faringhy, Second Lieutenant, and E. D. Zellner, First Sergeant.
>
> Logan Grove was dedicated September 24th with Captain Grimes' battery firing the salute. The grove was named for General John A. Logan.
>
> The Fort Riley *Guidon* made its appearance in November. It was a weekly, edited and published at Fort Riley by Messrs. Lowenthal and Mozen. It was published on a commercial basis, the rates being ten cents for one month, or three months for a quarter. The *Guidon* had a long and useful career.
>
> There was no construction during the year, 1895.
>
> The old chapel was thoroughly renovated inside and out and was reopened in August, 1896.

The author is to be complimented on his painstaking research, which was a race against time, as he was under orders for a change of station while he was preparing his copy. The book, although lacking an index, is a valuable contribution to the details of the history of the Army.

H. E. & P. Burning Ground. By Dr. Eng. M. Kostevitch. Imp. d'Art Voltaire, Paris. 1927. 73 pp. Ill. 5*s*.

Dr. Kostevitch, formerly a Colonel of Russian Ordnance, is a specialist in handling explosives. In 1920, he was invited by Messrs. F. N. Pickett and Son to become Chief Safety Inspector of their factories in France and Belgium, consisting of a number of War Ammunition Breaking Down and Explosives and Gas Recovery Plants. His task was to prescribe strict rules to prevent accidents, and this meant that he had to lay down complete details for unloading every type of projectile, no two of which required the same processes. During 1921, 1922, and 1923, he supervised the unloading of more than two and a half million shells, mines, grenades, etc., without an explosion.

The pamphlet is a condensed set of rules to be employed in handling and in destroying many kinds of explosives. While some of these are unknown in our service, American officers will find value in the sections on amatol, picric powder compositions, red and white phosphorous, trotyl and TNT exploders, fuzes, primers, smokeless powder, gun cotton, shrapnel smoke compositions, ground flares, and a number of others.

Windjammers and Shellbacks. By E. Keble Chatterton. J. B. Lippincott Co. 1927. 5½"x 8¾". 254 pp. Ill. $4.50.

Mr. E. Keble Chatterton, the author of *Windjammers and Shellbacks*, has written at least ten other books on the sea, most of them dealing with life aboard sailing vessels and whalers. Today the ocean sailing ship has almost ceased to exist; and Mr. Chatterton's purpose is to preserve for future generations the romance and the daring of the windjammer days, before the brave old shellbacks who were a part of that life and who still live it in memory, shall all have passed away. The author says—and who may deny it—that "most of us are rovers at heart, and here are great happenings afloat that take one right away from the monotony of civilization into the great drama of ships and men and venturesome voyaging."

It is true that as all forms of transportation gain in efficiency and speed there is a corresponding sacrifice of picturesqueness and romance. With the advent of

the steam-propelled vessel ocean transportation leaped forward in a great stride; but there is not one of us who does not thrill to the sight of a sailing ship under full canvas, the personification of the lure and the glamour of the far seas that has always called men from the safe places to follow the ocean path to adventure. For us who feel that thrill, this volume of true sea yarns has been written; for us who must remain at home, and so have to take our "adventure vicariously, putting ourselves into the situations where luckier individuals found themselves, and going into legitimate perils by the co-operation of the imagination and the printed page."

Mr. Chatterton has gathered much original material from manuscripts placed at his disposal by descendants of the famous clipper ship captains like Captain John A. Beebe of the *Brewster* and Captain Benjamin F. Cutler of the *Ariel* and the *Mary Whitridge*. These records and personal journals are of the greatest value today as pictures of the life of the shellback, sailing the Seven Seas in search of trade and adventure.

But many a good yarn was never committed to paper; and Mr. Chatterton has gone to the out-of-the-way places in the world's great ports, where sailors gather when ashore, and has listened to their tales. "The best stories of adventure are told by the actual participators themselves. It is my great pleasure," says the author, "to hand on so many hitherto unpublished sea happenings, that were written down by the persons themselves either immediately after the events, or whilst still their memory was intact."

To prove the "continuity of human character," Mr. Chatterton has selected his yarns of ships and men "not from one generation but from many"; for throughout the centuries there have always been "reasoning men who have responded to this amazing force which has compelled them to leave the security of the shore and the comfort of their homes in order to go afloat in ships and endure the risks which pertain to the nautical life." There are stirring accounts of the efforts of the daring navigators of the Elizabethan age to find a northwest passage to India; of the sufferings and marvelous escapes of the Seventeenth Century sailors captured by the Corsairs of the North African Coast; of the venturesome voyages made by the clipper ships of the early Nineteenth Century, when a "great maritime tradition was being established." The story of the settlement of Providence Island, off the coast of Nicaragua, by the ship-wrecked Edward Seaward and his English bride, has "too much romantic glamour, coincidence, adventure and suspense ever to be acceptable in a novel."

In the closing chapter Mr. Chatterton takes as his text the assertion of Thomas Fleming Day, the yachting authority, that "in a large vessel a man is on the sea; in a small one he is with the sea," and discusses the remarkable voyages made in comparatively recent years by tiny sailing ships like the yawls *Joan, Islander,* and *Sea Bird*. "Such, then, is the modern expression of the old windjammer spirit, for, if the big sailing ships have all but disappeared, the old seafaring must be kept going by these amazingly tiny craft; so that the splendid continuity extending from the times of the Egyptians, through classical days and the Middle Ages, through Tudor and Stuart and Georgian times down past the clipper era and the age of mechanical vessels may never be broken as long as nature provides wood for hulls and men to handle them."

The illustrations for Mr. Chatterton's book are particularly interesting and consist for the most part of splendid reproductions of rare old prints of famous windjammers.—E. L. B.

Through Liberia. By Lady Dorothy Mills. Frederick A. Stokes Company, New York. 1926. 5¼"x 8½". 240 pp. Ill. $3.00.

Africa, the "Mother of Men," holds the same attraction for Lady Dorothy Mills that it has held for many men. To her, a "new world to conquer is . . . the keenest thrill," and she has adventured in many of the world's remote places.

In the present volume, the spirit of adventure carries her on a long and difficult trek through the hinterland of Liberia, a section of which but little is known. This country, founded a hundred years ago by American philanthropists for repatriated negro slaves and established as a republic in 1847, has developed slowly; and it has been only in recent years that the indigenous tribes have been brought under governmental control. This control is not yet so complete that travel inland may be considered safe; cannibalism has not been entirely eradicated nor the influence and customs of native secret organizations entirely overcome.

To the usual difficulties of travel in Africa are added those of the carrier system which prevails in Liberia. Instead of hiring carriers for the entire trip, it is necessary to engage a new set at almost every village. Travel on schedule thus becomes impossible. With luck one may make eighteen or twenty miles a day; one is more apt to make five or six, and it is not unusual to find oneself immobilized for an indefinite period. That carriers are to be found at all at the prevailing rate of pay, in a country where money means little, is probably due to the ease with which a carrier may desert should he feel so inclined. The author found that the natives were most reluctant to work on governmental projects at a shilling a day and inquired of one carrier why, then, he was willing to carry for her at a shilling a day and two pence ration allowance. He replied that "when I get tired I drop load and go for bush . . . No can run from Government! Work every day? a shilling, him small too much!"

The book is an first-hand account of a mysterious country in which Americans should be particularly interested, and is well illustrated. To the stay-at-home who takes his adventures vicariously, this will prove an interesting addition to the travel books of his library.

Through Europe on Two Dollars a Day. By Frank Schoonmaker. Robert McBride and Company, New York. 1927. 5"x 7½". 225 pp. Ill. $2.00.

This is not a guide book in the ordinary sense of the word. Mr. Schoonmaker does not attempt to make up time tables and rush the traveler through Europe on a schedule. It is his idea that the most satisfactory tour is one which is taken leisurely. With limited time he would prefer to see less of Europe, but to see that little thoroughly, than to have only glimpses of the salient features of a greater area. In fact, his pocketbook limitation enforces a leisurely trip—say, thirty or forty miles a day.

The author admits that the two-dollar limit is difficult in Holland and all but impossible in England, but he seems to find no great difficulty in France, Italy, Spain, Germany, or Switzerland. His general scheme in France calls for a tour of the Provinces before reaching Paris, and in other countries his approach is much the same, although geography influences the routing. Mr. Schoonmaker thoroughly enjoys all these countries, and he prepares us to enjoy them. He likes France because of the calm and deliberate attitude of the French towards life; by closing his eyes to the dirt, he finds Italy attractive because of its art; and the beauty of North Africa appeals to him. The courteous hospitality of Spanish hotel-keepers,

the food of Belgium, the sturdy straightforwardness of the Dutch, the understanding friendliness of Germany, the cleanliness of Switzerland, and the home-like atmosphere of England are all counter-attractions pulling him from one country to the other.

Through it all he adheres to his two-dollar budget. It may be that we shall never learn to tour Europe on two dollars a day, but we shall certainly find it less expensive if we heed Mr. Schoonmaker's suggestions on the use of mileage tickets, *pensions*, transit visas, meal tickets, exchange, tips, *prix fixe* meals, hotel guide-books, museum tickets, bargaining, and so on. But his most valuable suggestion is also his last. "When you go to Europe, *leave America behind.*"

Traveling Light. By M. H. Harrigan. Brentano's, New York. 1927. 4"x 6½". 198 pp. Maps. $2.00.

This book was compiled from notes taken by the author during several trips abroad. One of its purposes is to show how a tour of Great Britain, France, Belgium, and Holland may be made at low cost. During the last trip of the author, in the summer of 1926, the average cost of travel, over a period of eight weeks, was $5.50 a day in England and Holland, and $4.00 a day in France and Belgium for all expenses. The round trip across the Atlantic came to $180, making the total cost $495 for the ten weeks.

In plan, the book resembles the familiar guide book—convenient for tourists whose time is limited and who must travel on schedule. For those who need not hurry, the time schedule is of no great value, but the route schedule, assuring a minimum of lost motion in travel, is a great convenience. The author spends twenty-nine days in England and Scotland, eight in Ireland and Wales (an interpolation), thirteen in Paris and its environs, a week in Belgium, and three or four days in Holland. A more satisfactory tour would probably curtail somewhat the outlined trip and allow greater leisure in the part undertaken. The possibilities of London and Paris, for example, can scarcely be touched in the time allotted.

The schedule explains the necessity for traveling light, but the title is as much intended to apply to pocket book as to luggage. Hotels satisfactory to a light pocketbook are named, and in some cases rates are given. Limited funds need no longer deter one from a trip to Europe, and Mr. Harrigan, although including the two most expensive countries of Western Europe—England and Holland—in his itinerary, shows how five hundred dollars can be made to cover a comfortable tour of two months. To one who desires to see a maximum of northwestern Europe in minimum time and at minimum cost, the book will prove most valuable.

How to be Happy in Paris Without Being Ruined. By John Chancellor. Henry Holt and Company, New York. 1927. 4½"x 7½". 212 pp. $2.00.

With the flood of books on Paris now pouring into the market it would appear difficult for an author to find a new topic to discuss, but one can at least say of Mr. Chancellor's book: "Here is something different." The work is really a guide book, in which the information to be found in typical guide books is omitted. Some sixty pages are devoted to matters of lodging and transportation and to developing a background. The remainder of the book treats of places of amusement and recreation—restaurants, cabarets, cafés, theaters, concerts, fairs, races, Montmartre, and Montparnasse. The author gives names and addresses

and the character of the entertainment or food or both to be expected. Most important, he gives the prices being charged (the idea behind the second part of the title), and while the franc is still somewhat unstable, his lists will give a comparative scale in case of further change in the rate of exchange. We note a few omissions of places we consider of good grade, but, although "The author does not claim an intimate knowledge of everything in Paris," the omissions were probably intentional, for the inclusion of all places of amusement would have made the book too bulky and too monotonous. Besides, as Mr. Chancellor says: "There is a great satisfaction in making private discoveries . . . and a tourist worth his salt should refuse to be taken by the hand into every nook and cranny."

The book should accompany you to Paris.

The Latin Quarter, Past and Present. By Jean Emile-Bayard. Translated by Percy Mitchell. Brentano's, New York. 1927. 5½" x 8½". 280 pp. Ill. $4.50.

The Latin Quarter is a land of vague boundaries, on the left bank of the Seine within the 5th arrondissement of Paris and extending somewhat into the 6th. It embraces the Institute, the Luxembourg Gardens, the Medical Faculty, the Collège de France, the Sorbonne, the Odéon, the Panthéon, the Cluny Museum, and other institutions, and has been the center of student activities for many decades.

The book is one of memories—history and anecdotes of famous individuals, cafés and brasseries, and literary and bohemian organizations of former days. One gets an impression of joyous, irresponsible youth, studying hard and playing hard, generous when in funds but often in actual need.

Of the Latin Quarter of today, little can be said. The spirit of the old section has not been revived since the war. Owing to increased means of rapid transportation and to greater material comforts to be found elsewhere, the student has deserted the Latin Quarter. Montmartre has received its quota, but Montparnasse is the section that has drawn most heavily from the former center. The author does not apply the term "Latin Quarter" to this section, but he does recognize the migration to the extent of devoting a chapter to the bohemian element of Montparnasse—the Parnassians. While students are still to be found in the Quarter, they are too sober and too industrious to be able to play with the whole-hearted singleness of purpose of their predecessors. It is to be feared that the romance of the Latin Quarter is altogether of the past.

Red Pants and Other Stories. By Captain John W. Thomason, Jr. Charles Scribner's Sons, New York. 1927. 5¾" x 8½". 246 pp. Ill. $2.50.

Captain Thomason, having made a ten-strike with his *Fix Bayonets*, now turns to the field of imaginative writing, wherein he displays much of the same artistry that made his first book so attractive. The stories in his present work are concerned with the Marine Corps, although the settings vary. The hero of "Red Pants" is a young negro from Texas who gets into the World War as an enlisted man in one of the Moroccan divisions. Two stories feature Mike, a mongrel mascot, and one is a tale of a South American conscript in a revolutionary army. Most of the rest are stories of the Marines in Caribbean and Central American waters. The many illustrations are from Captain Thomason's own pen, and are as characteristic as his dramatic style of writing.