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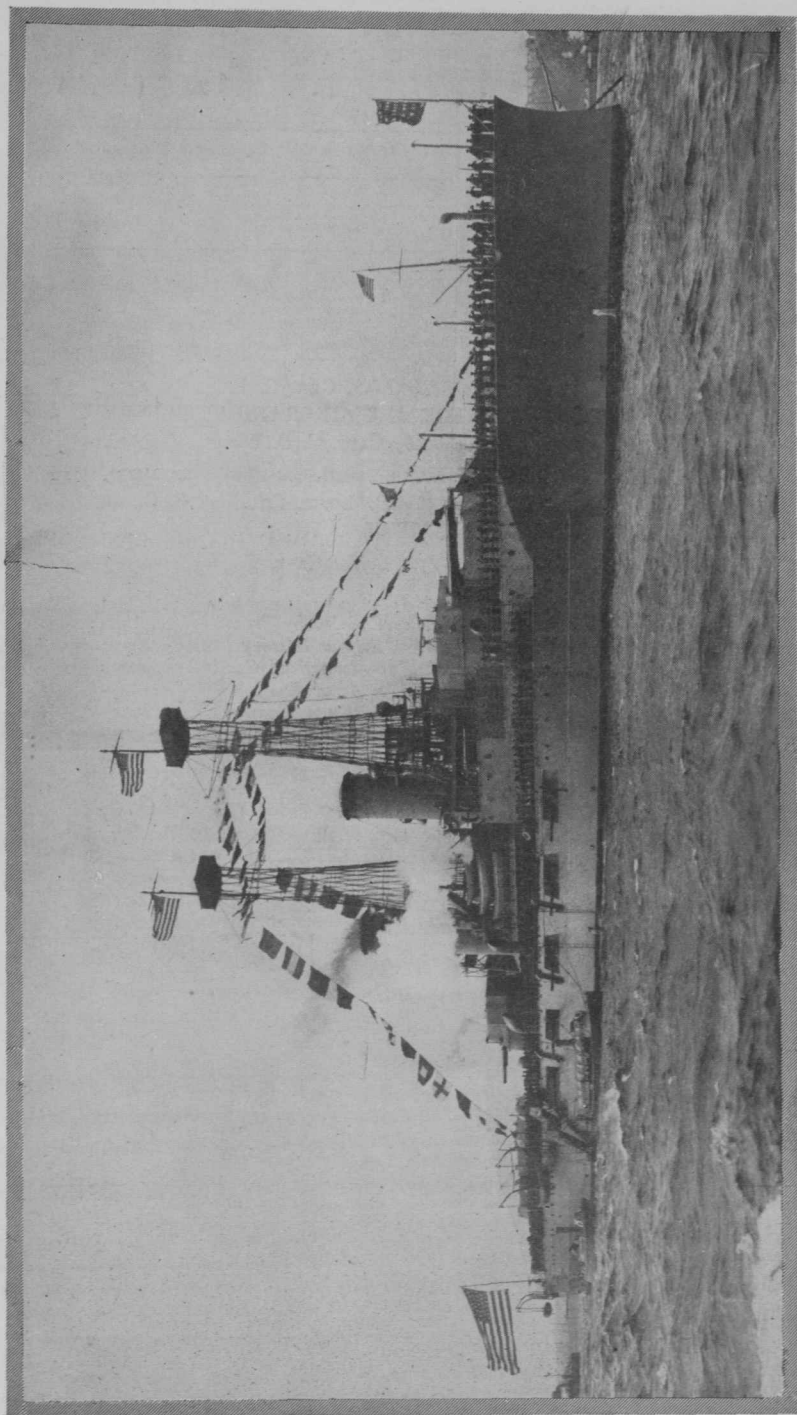
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U. S. S. NORTH DAKOTA

Length overall, 518 feet 9 inches. Beam 85 feet 3 inches. Draft, mean 27 feet. Displacement, full load, 22,060 tons. Guns: ten 12-inch, two 5-inch, two 3-inch AA, two machine, two landing. Torpedo tubes, 21-inch; two submerged. Armor: Belt, 11 inch; turret, 12 inch. Horse Power, 25,000. Speed, 21 knots.

THE COAST ARTILLERY JOURNAL

Volume 68

JANUARY, 1928

Number 1

Leadership*

By MAJOR GENERAL C. P. SUMMERALL

LEADERSHIP may be defined as that intangible quality in a commander which inspires men to follow him through hardship and danger with confidence and assurance. It is a quality needed in every commander from the senior general down to include the squad leader; for its lack invariably results in unnecessary loss of priceless lives, if not in disaster. In addition to tactical and technical ability, the true leader possesses the power of controlling and directing his men so as to create a teamwork which will bring maximum results.

Impulses must come from the top. The real leader initiates impulses for his subordinates and adds force to those impulses which come from above. Having a succession of such leaders, as it goes down through the chain of command an order gathers power, each subordinate leader adds his impetus, so that when the order reaches the point of execution it carries irresistible forcefulness.

The commander is the instructor, administrator, coordinator, and energizer of his unit. His is the head that plans clearly, the hand that executes energetically, the heart that inspires. He is essentially the morale officer of his unit; he creates and directs a unanimity of thought and action along the general lines which concern the mission of his unit, and he inspires in his subordinate commanders the same mental attitude with respect to their units. The commander must know and mind his own business and impose the same obligation on his subordinates.

A study of the leaders who have stood out in history and within the purview of our own observation demonstrates that each had his own particular method of handling men, but at the foundation of every successful method are found certain fundamentals, viz: example, appeal, recognition.

A military unit is no better than its commander; it is a faithful mirror and measure of his character and capacity. The officer who would influence his men must actually be what he desires them to become. He must be willing and able to do anything he orders them to

*Extracts from an address at meeting of Reserve Officers' Association of District of Columbia.

do, and more. He must share their hardships and discomforts; his interest in their welfare must be demonstrated to them. He must live and conduct himself so as to be worthy of their respect; they are unerring in their preceptions, and they not only quickly discover, but they abhor, shams of every kind. Men demand a reasonable degree of justice, they expect a leader to be fair and understanding. A single act of glaring injustice on the part of a commander will never be forgotten and will injure his prestige and influence.

Men must have trust in their leader in order cheerfully to follow him; they read the expression in his face and are unconsciously influenced by his appearance, manner, and tone of voice. Self-control becomes, therefore, a vital attribute of a leader; to be calm, self-possessed, and self-confident, even in the face of danger, is indispensable. The leader must not only believe that he is right, but he must be so sure of it that he will convince everyone else, by everything he says and does, that his plans and purposes are right. Thus he will make men sure of success even though the plans might not be the best that could have been adopted.

The loyalty of a commander to his unit is generously reciprocated. Loyalty works downward, it begins with the commander. The leader who is not loyal to his men will get little or no loyalty from them. Loyalty from the subordinate to the senior is not a voluntary condition, it is not capable of being turned on and off like an electric light. Loyalty, like love, is an involuntary reaction which manifests itself only in response to proper stimuli. Loyalty may be latent or undeveloped but it is there in the breasts of your men, capable of being aroused by proper stimulating conditions.

The leader who appeals to the reason and the pride of his men is exercising a powerful influence for teamwork. It is not always feasible to explain the reason for an order, but whenever possible, men should be informed of the plan and what is expected of them in its execution.

Each and every member of a command should be instructed as to the general role and mission of his unit. Where men are treated like thinking men, they generally think. Respect and affection for the commander and pride in the unit are the best stimulants for effort. They respond eagerly to the leader who tells them of their accomplishments, the situation, and the necessity for further effort. Thereby they come to feel a personal relationship toward the leader and a personal identification with his plans. Each man acquires a sense of individual responsibility to perform his part even to the extent of thinking that success depends upon his own efforts.

Appeal to reason may be negative as well as positive. The effective leader dispels imaginary evils and obstacles. He creates a state of

mind and a method of thinking that add immeasurably to the fighting power of his command. Indeed, many difficulties are wholly imaginary. Defeat comes not so much from physical efforts as from a state of mind which makes men reduce or cease their efforts. When properly identified with his troops, the personality of the leader remains in their minds, and in the stress of battle his influence encourages them and strengthens their resolution.

Men do not fight for fear or for material reward. Courage and fortitude are spiritual and are not influenced by material considerations. A man fights for pride in himself and in his command. Pride is a basic instinct of human nature, no human being is wholly devoid of self-respect. The soldier is especially sensitive by reason of his subordination, and when once his pride is aroused he becomes intensely solicitous and jealous of preserving it. In the same way he becomes loyal to his command and his comrades, and he would forfeit his life rather than act unworthily of them or incur the censure of those whom he respects.

The soldier has a normal sense of justice. When recognition of a praiseworthy act is withheld he experiences discouragement and depression. His richest reward is recognition by his leaders. This may vary from a simple word of approval to the highest decoration or citation in accordance with the merits of the case. On the contrary, censure or blame rouses the equally elemental quality of self-preservation. The man who humiliates his subordinates or who abuses his authority will forfeit their respect and arouse their antagonism and even their hatred. Men want and admire firmness and positiveness, but command must be exercised so as to leave no personal sting. True discipline comes from pride and not from fear. Arbitrary and harsh measures may be easier to adopt, but they will multiply troubles out of all proportion to the gain.

Men are pleased by having their superiors know their names and something of their performances. While there are limitations to such a knowledge by higher commanders, in the lower echelons a leader should make every effort to know his subordinates personally and make them realize his individual interest in them.

Victory lies in the hearts of your men. Win their hearts and victory is yours. The foundation of a fighting unit is in the quality of its individual members, from commander to private. When these individual members think, feel, and act in mutual sympathy and support, where they live up to the motto—all for one, one for all—the unit properly belongs to that honorable group known in war as First-Class Combat Troops.

Observing and Plotting Hits for Antiaircraft Artillery

By CAPTAIN G. B. WELCH, C. A. C.

THE Coast Artillery Corps has for many years located the splashes of its seacoast artillery firings with respect to the target by methods of as high a degree of precision as possible. Photography is used from the towing vessel, and accurate observing instruments measure the angular deviations as seen from the battery. It was natural, therefore, when antiaircraft artillery target practice procedure became fairly well stabilized, that attempts should be made to analyze the results by locating the bursts with respect to the towed sleeve target. Then, knowing the hypothetical danger zone, the number of hits, percentages, and rates of hitting might be determined.

It is needless to point out that with four guns firing at a rate of twenty or more shots per gun per minute, the number of bursts in the air at one time makes the determination of the location of any one of them an extremely difficult problem. Indeed, it is a problem that is just beginning to be satisfactorily solved. The method described in C. A. Memorandum No. 7 and various other publications is one of rectangular coordinates. An observer in the towing plane, looking through a specially constructed grill, determines the distance each burst is from the target along two axes, that is, over or short, high or low. These data he plots on a plotting paper reproduction of the grill fastened to his left arm. There are many distractions tending to make his plot inaccurate. First, the cold of the upper atmosphere numbs his fingers while the wind from the propeller tends to disturb his balance. Then, having observed a shot, he must look down at the plot and make a number at the proper place corresponding to the number of the shot in the string. By this time several more have burst and the target has moved away from its original position with relation to these shots. These factors lead to the observer watching a group of shots and reproducing the group on his plot as best he can with consequent inaccuracies.

A method has been suggested, but, so far as I know, never tried out, of having the grill etched on glass. The glass is then coated with a transparent retouching fluid of some kind upon which marks can be made with a stylus or pencil. Then, as the observer sees the shots

through the grill, he marks their apparent location immediately. The use of such a grill would tend to eliminate the inaccuracies resulting from the replotting process now in use. On the other hand, it would tend to place the observer in a more strained position, since both hands must be stretched out before him while manipulating the grill and stylus.

Assuming, however, that we have the bursts accurately located in the plane perpendicular to the course of the target, that is, over or short, high or low, it is necessary to know the other coordinate of the three dimensional system in order that the absolute relation to the target shall be fixed; that is, we must know the distance of the burst ahead of or behind the target in yards. This is measured in mils deviation and converted to yards by multiplying by slant range over one thousand. The slant range used should, of course, be different for each shot. In actual practice, however, the range used is the average for the whole course. It will be noticed in a study of this process just described that no attention is paid to the changing angle of approach of the target as it flies past the battery. In plotting each burst, it is considered that the target is flying at right angles to the battery-target line. This is by no means always the case and inaccuracies in the location of hits are thereby introduced.

Of course, percentages, rates of hitting, etc., determined by a method of known inaccuracy are themselves inaccurate. To make these data represent true conditions, the observations must be precise and the method of plotting must accurately reproduce the true relations of the target and bursts. Beginnings have been made with marked success of a photographic method of measuring deviations, using a motion picture camera at either end of a measured base line. The problem of synchronizing these cameras together with the problems pertaining purely to the photography involved are rapidly being solved and the service can probably look forward to the use of this means of observation of anti-aircraft artillery fire in the not-too-distant future.

In the meantime, however, new methods of visual observation may replace the old. It is proposed to describe a method of observing and plotting based on two terrestrial observation stations located at either end of a measured base line. One of these stations should be near the guns, the other from two to six thousand yards away and preferably somewhere in prolongation of the target's usual courses.

The instrument used to make these observations is important. Such

an instrument should provide for an operator who tracks the target, one who reads lateral deviations, and another who reads vertical deviations. When four guns are firing at their maximum rate, it is desirable to have two such instruments at each station so that each observer reads deviations only in one direction; that is, one reads all the rights, another all the lefts, etc. A suitable instrument has been improvised in the 61st Coast Artillery. It consists of a model 1920 AA telescope fitted with a cross arm which carries at either end a Model 1917 gun sight. Each sight is so mounted that it can be adjusted in any direction and its line of collimation made to coincide with that of the AA telescope. In one



FIG. 1

of the gun sights the reticule is turned so that the mil scale is vertical. Figures 1 and 2 show how easily such an arrangement can be improvised. In this case, the cross arm is of wood and the sights are held in place by straps of thin iron. Adjustment is provided by taper shims of wood by means of which the sights are lined up with the telescope. Any ordnance machine shop can easily turn out a metal arm fitted with suitable clamps and adjusting screws, thus providing a somewhat more stable set up than that shown in these illustrations.

The operation of an observing station equipped with these instruments requires seven men, at least three of whom should be officers. The seven are used as follows:

- 1—Observer (tracks the target)
- 2—Observer (reads lateral deviations)

- 3—Observer (reads vertical deviations)
- 4—Recorder (lateral deviations)
- 5—Recorder (vertical deviations)
- 6—Recorder (reads and records azimuth)
- 7—Timekeeper (synchronizes readings and operates telephone).

The target is, of course, being tracked when the guns open fire. At the first burst, the timekeeper starts a stop-watch and thereafter calls out the seconds, one, two, three, etc. The lateral and vertical observers call out the deviations to their respective recorders, who set down each reading opposite the figure on their record sheets corresponding to the

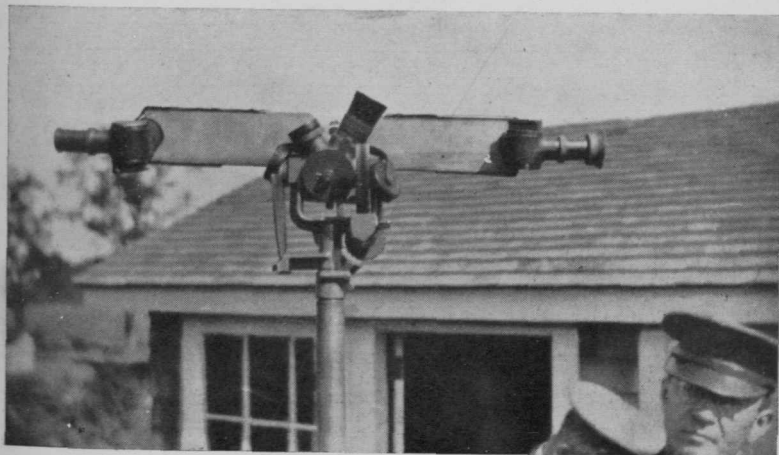


FIG. 2

second just called out by the timekeeper. These figures have been previously mimeographed or printed on the records in columns from one to any convenient number as 40 or 60. This time record of deviations furnishes the means of synchronizing the readings from the two stations. A somewhat more accurate method of synchronizing these readings is to telephone them to a central chronographic instrument. Such an instrument is fairly simple to improvise and may be hand operated. The method just described is, however, very accurate when the personnel becomes proficient in its use. In addition to the deviations, the following records are necessary:

Altitude—Kept at the height finder.

Angular Height—Kept at the gun sight, height finder, or other suitable instrument.

Azimuth—Kept at the observing instrument beginning with the first burst and read and recorded every five seconds thereafter until the last burst.

An example will serve to show how the results of observations taken as described above should be plotted. The same method is also suitable for plotting deviations determined by photography.

Let the length of the base line be 3000 yards and its azimuth 900 mils. The altitude of the target is an average of 3000 yards. Call the two stations P_1 and P_2 . Twenty shots are fired in 20 seconds. In the records shown below, only the first ten are recorded.

 RECORDS KEPT AT P_1

Azimuth Keeper			Lateral Deviation			Vertical Deviation		
Time	Azimuth (mils)	Shot	Right	Left	Yds.*	High	Low	Yds.*
0	0	1	10		43	5		21
5	90	2		20	86	10		43
10	160	3		5	21		10	43
15	220	4	5		21		20	86
20	288	5	3		13	10		43
		6		2	9	15		65
		7		10	43		5	21
		8	15		65	5		21
		9	5		21	10		43
		10	0	0	0		10	86

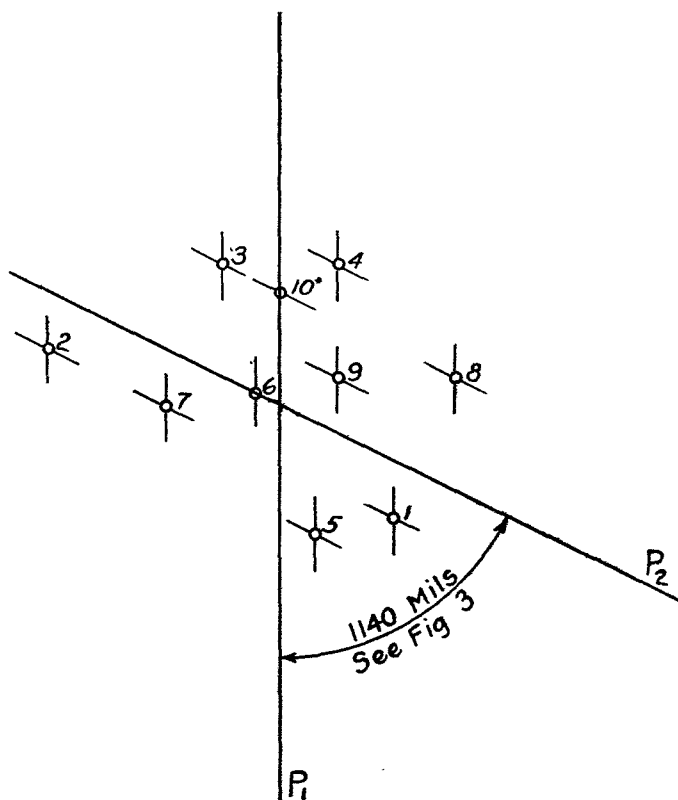
 RECORDS KEPT AT P_2

Azimuth Keeper			Lateral Deviation		Vertical Deviation	
Time	Azimuth (mils)	Shot	Right	Left	Yds.*	(May be omitted at this station)
0	5260	1		5	19	
5	5330	2		5	19	
10	5430	3	10		38	
15	5510	4	15		57	
20	5620	5		10	38	
		6	0	0	0	
		7		5	19	
		8	10		38	
		9	5		19	
		10	10		38	

* Computed values

From the azimuth keepers' records the plot shown in Figure 3 is made. The course of the target during the string is plotted and the twenty shots distributed along this course. No attempt has been made to record the azimuth of the target at each shot but now a very close estimate can be formed by scaling. This is not necessary, however, as the azimuth does not change very much for several shots. In this construction the shots were grouped in groups of five and rays drawn from each station to the center of each group. These rays were lettered R_1 , R_2 , etc., and the tabulated data obtained for each ray. The columns headed R and R' and α were scaled from the plot. The remaining data in the tabulation were computed.

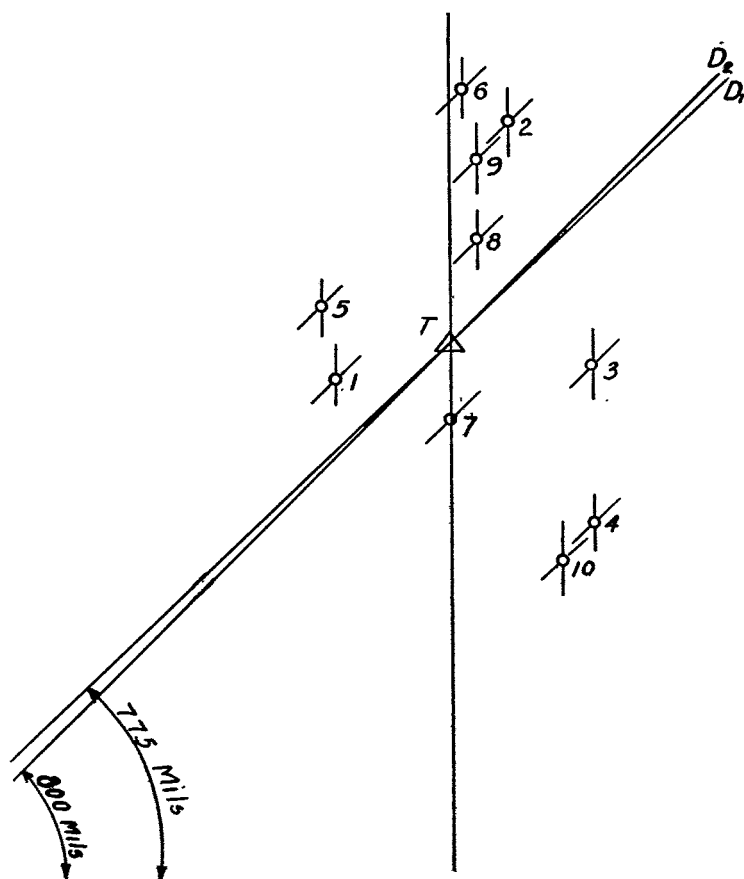
With the tabulated data, the horizontal projection of the bursts can be constructed. This is shown in Figure 4. The gun-target



*HORIZONTAL PROJECTION
OF FIRST 10 SHOTS
FIG. 4.*

NOTE: Figures 4 and 5 were constructed on cross section paper using a scale of 50 yds=1 inch.

line is the center of the paper. This will always be the case where P_1 is located at the battery as it should be. Then the ray to P_2 is laid off at the proper angle α for its first position and the first five shots plotted.



*VERTICAL PROJECTION
OF FIRST 10 SHOTS*

FIG. 5.

Then another sheet is used if necessary, although in this case and probably in most other cases several groups can be plotted on the same sheet. The rights, lefts, overs, and shorts can then be scaled and tabulated.

We are now ready for the vertical projection. This is shown in

Figure 5. Here a convenient location for the target is selected and the line representing the angular height laid off for the first group. Using the data tabulated from Figure 4 for overs and shorts and the data tabulated as vertical deviations at the P_1 station, the first group can be plotted. Then draw the angular height line for the second group and repeat the process. More than one plot may be necessary due to the confusion of lines for a large practice.

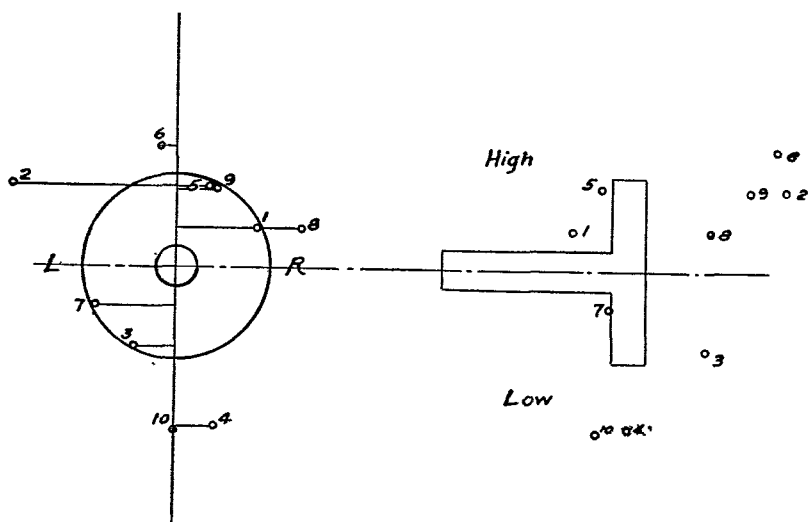


FIGURE 6
FINAL PLOT OF FIRST
10 SHOTS. NO HITS

With the data now available from Figures 4 and 5 we can plot the location of each burst on the hypothetical target. This is shown on Figure 6. A target is drawn to the same scale as the plotting of shots and laid over the vertical projection on Figure 5, taking care in tracing each group of shots that the axis of the target corresponds to the angular height line on which that particular group has been plotted. Plotting the location on the end projection of the hypothetical target consists in transferring the vertical projection over to the end projection and laying off the lateral deviations as tabulated from Figure 4.

The method just described can be simplified by plotting the mean location of the target using for this purpose the average altitude and

angular height and the average azimuth readings from the base end stations. All shots are plotted on the angles established by these average values. This modification sacrifices, to some extent, accuracy for simplicity, but is probably as accurate as the data which must be used. The more accurate method is, however, to be recommended for use whenever sufficient data are available.

The whole field of bilateral observation of antiaircraft artillery fire is just opening up and much study can be profitably expended in developing its possibilities in analysis, altitude determination, etc.

MAXIM III

An army which undertakes the conquest of a country has its two wings resting either upon neutral territories, or upon great natural obstacles, such as rivers or chains of mountains. It happens in some cases that only one wing is so supported, and in others that both are exposed.

In the first instance cited—viz., where both wings are protected—a general has only to protect his front from being penetrated. In the second, where one wing only is supported, he should rest upon the supported wing. In the third, where both wings are exposed, he should depend upon a central formation, and never allow the different corps under his command to depart from this, for if it be difficult to contend with the disadvantage of having two flanks exposed, the inconvenience is doubled by having four, trebled if there be six; that is to say, if the army is divided into two or three different corps. In the first instance, then, as above quoted, the line of operation may rest indifferently on the right or on the left. In the second it should be directed toward the wing in support. In the third, it should be perpendicular to the center of the army's line of march. But in all these cases it is necessary, at a distance of every five or six days' march, to have a strong post or an entrenched position upon the line of operation, in order to collect military stores and provisions, to organize convoys, to form of it a center of movement, and establish a point of defense to shorten the line of operation of the army.—Napoleon's Maxims of War.

Military Situation of Argentina

By LIEUTENANT COLONEL FRANK GEERE, C. A. C.

THE unintelligent of our citizenry have a hazy impression, engendered from the past, that all South American countries are torrid lands of a dead civilization, occupied by a mongrel people combining the worst traits of the native barbarians and their Latin conquerors, whose chief products are bananas and revolutions.

On the other hand relatively few intelligent citizens adequately realize South America's immensity, its phenomenal development, and its vast potential possibilities. Of the ten republics occupying an area two and a half times that of our own country, three of them already exercise a marked influence in the commercial affairs of the world, and in a few generations may even become powers in the world. One is territorially larger than the United States, with immeasurable natural resources, and is capable of being some day, though not in our lives, the greatest producing and manufacturing country on earth. Another is two-thirds as large as the United States and is one of the largest exporters of meats, cereals, and hides in the world—a country that can give lodgement to 100,000,000 people and furnish nourishment for as many more when her whole area is utilized. The third, while not yet of much commercial standing, produces 60 per cent of the world's nitrate supply, a substance vital to the agricultural production of many countries. Taken as a whole, those ten republics produce bountifully every essential of life and civilization—something no other continent can claim.

Naturally enough our interest in the welfare of the South American republics is paramount. The increase of the prosperity, the continuance of the independence, the preservation of the peace, and the political relations of those ten self-governing states are matters of intimate concern to us. Any foreign war in which they may become involved and their neutrality or alliance in case of any war in which we ourselves may become involved are apt to be vital to our own interests, a matter which that wise statesman, James Monroe, early foresaw and indirectly pronounced upon. Consequently, with the rapid commercial development of our sister republics of the southern continent comes a growing interest in their capacity for their own protection, and military men find their attention turned to the military situations.

Of all the South American states the Argentine Republic engages most our sympathetic interest, for in so many respects it approaches

nearer than any other to our own country. Emerging a free state from a war for independence against the dominion of a foreign monarchy, it has achieved a similar form of government by a converse process. We, a federation from the start, fought a great civil war to preserve that federation. Argentina began its independence as a loosely knitted group of provinces dominated by one more populous and powerful than the rest (Buenos Aires) and fought a succession of civil wars, or revolutions if you like, extending over a period of 100 years to accomplish co-equal federation, with the natural consequence of a strong national spirit in the people of today.

Like us, the people have developed from a mixture of European stock which has almost wholly supplanted the native races, rather than blending with them as in many Latin American countries. As with us in the past, a liberal immigration policy has stimulated the expansion of the population, nearly half being foreign born and the rest almost wholly of European stock, mostly Latin. As an example of the rapid increase of Argentina's population, in the past ten years it has advanced nearly 20 per cent, a condition which our own recent restriction has favored by diverting much of Europe's outflow to the southern continent.

Like us, Argentina's people reflect the influence of their early colonizers in their language, literature, and culture—Latin theirs, Anglo-Saxon ours. In other characteristics they are not very dissimilar, for today they are an alert, vigorous, and progressive race, with a keen appreciation of personal liberty and individual rights. More than any other South American nation has this one grown away from the spirit of intrigue and corruption and a controlling idea that authority and the sword are co-partners, an inheritance from the Latin founders of an earlier age that has been responsible for so many revolutions in the Latin republics. The Argentinians have come to understand and respect the relations of law, order, and peace, to prosperity. Having accepted the doctrine of Sarmiento, Argentina's Lincoln, to "found schools and you will do away with revolutions," we find them today supporting a government in most respects identical with our own, depending for its peaceful maintenance upon the principle of popular education, public libraries, and the secret ballot. Contributing to the social and political evolution of this people, a wonderful climate has done much for the physical quality of the resultant race. Such, then, is the personal element, which is so great a factor in the military effectiveness of any country.

This people, numbering less than nine and a half million, occupies a territory whose extent is two-thirds the area of the United States—

equal to that part east of the Mississippi plus Iowa, Minnesota, and the Dakotas. Its western border is 3000 miles directly north and south, with the towering Andes for a wall. Its eastern boundary is the Atlantic Ocean, with a frontage only 200 miles short of our own eastern coast from Maine to Key West. Its northern border is 1000 miles long, two-thirds of which is formed by a navigable river second only to the Amazon. Its widest part is only 800 miles, while its southern end is but 250 miles across.

Except for some forest land in the northern section and a strip along the southern half of its western boundary, this territory is mostly all vast plains, well watered. It is blessed by a climate far superior to our own, ranging from the north with a climate not unlike that of our Gulf states, but without the same extreme heats, to the south where that of Minnesota is approximated yet without the extreme severities of its winters. The middle part, including a belt equal to half the country's area, has a most equable climate. It is this climate combined with a very fertile soil that gives Argentina her great agricultural value. From the military standpoint, however, Argentina has no serious climatic obstacles to campaign at any season, such as rainy or torrid seasons that would make the health of troops a serious problem.

Except in one respect, Argentina could hardly be better situated for military defense. With the buffer states at the north, in case of war with Brazil the narrow corridor between Uruguay and Paraguay can be easily closed. The relatively small states themselves present serious problem. In case of war with Chile, the passes through the Andes can be easily defended, while invasion from the south is rendered practically impossible by the difficulties of crossing the Andes and the prospect of a long and difficult campaign in traversing the vast stretches of pampas, involving communication lines of great length. With favorable frontal conditions, natural obstacles on any major flank, and ideal interior communications from the railway net radiating from the heart of the republic, Argentina is fairly safe in case of serious war with any of her neighbors.

As to invasion from overseas, she is weak indeed if her adversary has a modern navy, both because of her long coast line and of her absolute dependence on outside sources for metals and machinery. There are only four real ports, but to the south, though there are few good landing places due to lack of anchorages, there are not wanting some protected harbors. However, as already stated, the pampas renders invasion from the south no simple matter. Argentina's vital area, then, is the province of Buenos Aires, which can be easily reached from the sea and

for whose coast practically no defense has been provided.

We have the axiom that the size and character of the force required for national defense are dictated largely by the extent to which national aspirations and policies conflict with the aspirations and policies of other nations, therefore Argentina's war probabilities must be regarded before her military forces can properly be considered.

In the course of Argentina's history there have been wars and near wars with the neighboring states. These have all been over matters of territory—questions of boundary or sovereignty.

In 1825 war with Brazil was declared over possession of what is now the republic of Uruguay. At the time Argentina secured independence, Brazil, a Portuguese possession, had pretensions to this territory. Its people, however, like those of Argentina, were largely Spanish and had to a great degree participated in that country's war for independence. European influence long kept Brazil from asserting her claims, but the question came to a head in 1825, and was finally settled by Uruguay establishing her own independence in 1828.

From 1864 to 1874 Argentina was at war with Paraguay. A successful revolution in Uruguay brought complications between that country and Argentina and Brazil over treatment of their citizens in Uruguay. To offset this hostile situation the revolutionary president of Uruguay fixed up an *entente* with the dictator of Paraguay, who had ambitions to obtain an outlet to the sea by conquest of the neighboring Brazilian province of Rio Grande do Sul. Getting no satisfaction in her dispute, Brazil invaded Uruguay, which gave the Paraguayan dictator his pretext for invading Brazil by siding with Uruguay. During this conflict Paraguay invaded the Argentine corridor between her and Uruguay. Meantime Brazil had helped restore the Uruguayan *de jure* government, so all three now went after Paraguay, the war ending with the death of the Paraguayan leader after the entire effective male population of Paraguay had been extinguished.

In 1898 war was threatened with Chile. There has always been rivalry with Chile—a natural jealousy over leadership in South American affairs. Any boundary question between these countries involving an expansion of one or the other is a matter of serious dispute. Such questions had arisen twice in the past, in 1878 and 1888, with Bolivia involved. The first was averted with a conciliatory agreement in which our president aided. In 1888, however, the matter of border delimitation again arose and continued a subject of friction until 1898, when war was threatened; but it was averted by arbitration, a treaty finally being ratified unreservedly between those countries in 1902.

Thus the independence of Uruguay obviates difficulty with Brazil;

Paraguay's reformation since her complete mopping up in the '70's renders further conflict with her quite unlikely; and the definite boundary settlement with Chile makes for continued peace in that quarter. Trade barriers may cause complications, but mutual reduction of these in time is not improbable and they are not likely to be causes of war.

The probability of war with a European country is equally remote. Argentina is well removed from possibility of entanglements, and her liberal immigration policy, with its resultant generous blend of European blood, eliminates any racial animosities. She provides a free and safe field for large foreign investments. She is not a trade competitor with any European country, and all depend in great measure upon her large exports of prime foodstuffs. Added to this is our Monroe Doctrine's tacit guarantee of protection as an influence in her favor. These things minimize the exposed coast line to which I have referred, and it must seem, indeed, that Argentina has fully weighed them from the fact that but two of her ports are defended, that her coast artillery comprises of only two battalions (naval), and that her effective navy consists of only two battleships, four destroyers, and some mine ships.

In Argentina's military system and organization we find many familiar features. After the World War, when our own people were agitating for a fixed military policy, there was much advocacy of the Swiss and Australian systems. Whatever we may have borrowed from those sources, there is little doubt we took something from Argentina's system, which was established in 1901. On the other hand, Argentina took much from our new troop organization in reforming her army, which theretofore had been organized largely on the German plan.

There are three components of the Argentine land forces—the Regular Army, National Guard, and Territorial Guard—the tactical organization in all three of which is analagous. The first is maintained and administered wholly by the federal government, and consists of the active army and its reserves, the latter being given periodic training. The second is administered by the separate states and territories, respectively, and is inactive except for the periods its units are called for training, when it is uniformed, equipped, and subsisted by the federal government. The third comprises those who have passed beyond National Guard qualification, and is no more than an organization on paper of registered numbers, since it receives no training at all and is subject only to call of the respective states and territories in time of war for local service, in which respect it corresponds to the "home guards" formed by our own states during the World War. The national



land forces proper, therefore, are the first two components only.

Under a system of registration, each able-bodied male born in Argentina, regardless of nationality, from the age of 20 to 45 belongs to the military forces of the country. He registers in the first three months of his 19th year; at the age of 20 he is enrolled in the Regular Army; at the age of 30 he passes into the National Guard; at the age of 40 he passes into the Territorial Guard, and at 45 his military obligation ceases.

The active Regular Army is filled by voluntary enlistment and draft. The organic law fixes a minimum of 5000 volunteers and 12000 conscripts, the maximum number of conscripts depending on the annual budget. During the past five years the number has varied between 20,000 and 25,000; at present it is 22,000. The service term in peace is one year. However, not all complete that year. Many of the volunteers are candidates for reserve commissions, and those who qualify at the end of three months, pass to the reserve as subaltern officers. All conscripts who can satisfy a certain standard of rifle marksmanship at the end of three months also pass to the reserve in the grades they hold. Recent enrollment figures of males between 18 and 45 show a total, roundly, of 2,000,000. Since forty per cent of these, or roughly 800,000, belong to the Regular Army, it can be seen that less than 35% of the annual contingent get from one year to three months continuous training, and that over 65% escape the draft. These latter are assigned to the Regular Army reserve, as well as those who have completed their conscription terms, and are subject to call for two periods of training, not exceeding one month each, during their term in the reserve.

The reservists are all assigned for mobilization, first, to units of the active army within the numbers requisite for expansion to war strength, and second, to the inactive units of the Regular Army required to complete its organization on a war footing. Together, at mobilization, these constitute the "first line", of which the National Guard is not a part, as with us.

The short period of training which the rank and file of this first line get, plainly calls for an efficient officer corps and body of non-commissioned officers, for upon them largely depends the efficiency of that first line. This need is met by most excellent provisions.

The budget at present provides for 1500 officers of the combat branches in the active army. These are appointed exclusively from graduates of the government military college (near Buenos Aires) after a four-years' course of training and discipline—an excellent school that compares favorably with similar institutions in many larger countries. They are well paid, with efficiency the basis of promotion, and

so constitute a zealous, competent, and contented corps. They perform all troop and staff duties of the permanent establishment, and a very small number are assigned to cooperate with the state military authorities in connection with registration and the National Guard, but take no part in the training of that component. The medical, legal, supply, and maintenance departments are officered by an additional 417, who, excepting a few in the higher positions, are all civilians holding relative rank. Thus, the permanent force has a total officer personnel of little more than 1900 for all purposes, which, compared with other armies, is really a modest proportion, and must indeed be efficient to be adequate.

The 5000 volunteers fixed by law are all professional non-commissioned officers, or reserve officer candidates. In the case of the first element, they must be students of the public schools to enlist. In those schools when a boy becomes 12 he begins to receive military drill and at 15 he is trained to shoot. Rifle practice, by the way, is almost a national institution; great interest is taken in it, and almost every community has its rifle club, as well as these schools, which the government encourages and supports by furnishing the ammunition and instructors. These public school boys correspond then to those of our junior R. O. T. C. units. To join the army as volunteers they must apply in their 16th year and are enlisted at 17. After receiving training at one of the schools for non-commissioned officers, they are given their first grade. They are allowed to re-enlist up to 50 years of age and receive an annually increasing bonus to encourage them to remain in the service, which is very nicely called the "constancy premium."

In the case of the second element of the 5000 volunteers—the reserve officer candidates, these must be students at the national colleges or graduates of government normal schools or institutes (at which military training is given), or who are studying for the professions, and must apply for enrollment three months before the end of their 18th year. If accepted, they are enlisted at such time as their education is finished but within two years from the call of their draft class, and at the end of three months' service they stand examination, the successful ones being furloughed to the reserve as lieutenants. Though different in detail, we find here something considerably akin to our own Reserve Officers' Training Corps.

Among the Latin American countries the estimated campaign efficiency of Argentina's first line is rated as first by all qualified observers. The people are well satisfied with their military system and take pride and interest in their regular establishment. Recalling that a blend of good stock and a splendid climate have combined to develop them

into a healthy, vigorous race, and that the development of the nation has produced a strong national spirit, it may well be understood that the active army rates well in physique, stamina, morale, and loyalty; and considering its fine officers' corps and non-commissioned officer backbone, it is not surprising that its discipline is excellent. It is thus a fine nucleus to absorb the reserve.

The second line—the National Guard—is composed of those who have passed from qualification for the first line; *i. e.* all able bodied non-exempted males between 30 and 40. When their first line status ends they pass to the military jurisdiction of the states and territories in which they reside, on whose rolls they are taken up with the grades they hold, and, I believe, assigned to local paper units. They are obligated to report for four periods of training of not more than two weeks each during the ten years.

The facilities for this training are not so good, as the federal government provides no instructors, except to permit the employment by the states of retired army officers, who cannot be included in the local mobilization scheme as they remain subject to federal call. The officers' corps is composed, therefore, of the reserved officers with three months training received eight or nine years before, in the grades to which they have been since or may be promoted. The non-commissioned officers undoubtedly are drawn from those who completed a year's conscription in the regular forces, which would average ten years past.

Nor does it seem, from all available information, that there is any provision in case of general national mobilization for a distribution of part of the regular officers to assist in bringing this force to a state of effective training for campaign. Considering that at such mobilization 65% of the rank and file would have had only a previous scattering total of two months training in the first component, averaging ten years past, and the other 35% a year's previous training averaging ten years past, and that the whole would have averaged only a month's subsequent training of two-week periods in the National Guard, it is apparent that the federal government cannot expect its second military component to become very readily available for a theater of action after mobilization, and that it is therefore truly a second line and in no way an echelon of the first.

Argentina is divided into five regional commands, or division areas, which are subdivided into a total of 62 military districts for registration, enrollment, and mobilization purposes. The headquarters of the division areas respectively are at Buenos Aires (federal district), Campo de Mayo, Parana, Cordoba, and Tucuman. The active forces



are about evenly distributed between these areas, which it will be noted, are strategically located with respect to the various territorial fronts and the railway net. That net is conveniently disposed for quick concentrations, and provides excellent communication lines converging on the heart of the republic.

It is not essential to this discussion to enter into the details of the organization of the troops themselves, but it is interesting to note that the Argentine infantry division at war strength conforms generally to ours, except that in place of four infantry regiments the Argentine has three and a cavalry regiment of four squadrons. One other difference is an engineer battalion and a signal battalion where we have an engineer regiment and signal company. The character of the country, with its great stretches of open pampas, makes apparent the need of a cavalry unit in the division, and in this connection we must remember that Argentina, like all great cattle countries, is a land of good horsemen. Indeed, the cavalry is accounted by observers as its finest arm.

The war strength of a division is 16,000; in peace it is about 3,850. The reduction occurs not merely in the number of men per sub-unit, but in a reduction of sub-units themselves. For instance, the infantry peace regiments consist of two battalions of two rifle companies and a machine gun company each, as compared with the war regiment of three four-company battalions, while the two squadrons of the cavalry regiment become four in war time. This is referred to by way of indicating the expansional character of the first line in connection with its absorption of the reserve and the provisions for mobilization to which I have previously referred, and so add point to the fact that Argentina has a very definite and practical scheme of military preparedness.

The fact that the equipment of the Argentine troops is not very modern and that its war reserve of munitions is quite deficient detracts much from the efficiency of the national defense. The army is well clad, for the government manufactures its own tentage and all military clothing, including shoes, in its quartermaster shops at Buenos Aires, for which much of the material is procured locally. The capacity of these plants can be greatly increased in case of war. But while Argentina produces wool, cotton, leather, meats, and cereals in quantities to be self-supplying in war time, coal, iron, and sulphur are almost entirely lacking, and there is very little copper, rubber, or nitrate. For these reasons Argentina is a great exporting country with few manufactures, for which all of the machinery is imported. Her heavy ordnance was all obtained from Germany and since the Versailles treaty its replacement is dubious; it is already antiquated.

However, the government is well alive to its situation, for the remedy of which it is now moving. A purchasing commission has been in Europe for some time, the plan being wholly to re-equip the army with small arms and artillery. A contract has been let with a German firm for the construction of a powder and explosives factory capable of satisfying the peace and war time needs of both army and navy. An airplane factory has already been completed which was to have delivered 50 training planes early this year, but which will probably not be able to manufacture motors for some time to come. The existing small arms arsenal at Buenos Aires is to be moved to the provinces and greatly expanded. This arsenal already manufactures rifle and machine gun spare parts and barrels, sabers, bayonets, and all leather equipment used by the peace army, and has a modern cartridge loading plant capable of producing 1,000,000 rounds a day in war time.

Notwithstanding, Argentina must always be dependent on outside sources for her metals and machinery, and though as a wealthy nation she has great buying power and it is estimated that in case of a major emergency she could equip and maintain an army in the field nearly equal to her military man power, that is contingent on her foreign sources of supply being uninterrupted. In case of war with a foreign naval power she would be helpless, which, as pointed out earlier in this discussion, undoubtedly accounts for an apparent dependence on not becoming involved with such a power, having, as well, the moral influence of the Monroe Doctrine in the corner of her eye.

MAXIM I

The frontiers of states are either large rivers, or chains of mountains, or deserts. Of all these obstacles to the march of an army, the most difficult to overcome is the desert; mountains come next, and broad rivers occupy the third place.—Napoleon's Maxim's of War.

Annual Reports of the War Department

Extracts

FROM THE REPORT OF THE ADJUTANT GENERAL

THE act of Congress approved July 2, 1926 (The Air Corps Act) provides that the authorized commissioned strength prescribed by the act of June 4, 1920, be increased by 403, this increase to be distributed over a five-year period beginning July 1, 1926; and not to exceed one-fifth of the total increase to be made during the first year.

On November 11, 1926, the last emergency (World War non-regular) officer, who for several years had been undergoing treatment for physical reconstruction, was discharged at the Walter Reed General Hospital, Army Medical Center, Washington, D. C., thereby completing the demobilization of the World War Army.

The actual strength of the Army on June 30, 1927, by classes of personnel, is shown below:

Commissioned officers:

Regular Army	11,816
Philippine Scouts	97
Retired (Regular Army and Philippine Scouts), on active duty	163
Total commissioned officers	12,076
Total warrant officers (including 1 retired on active duty) . .	1,263
Total enlisted men (including 25 retired on active duty and 6,863 Philippine Scouts)	119,929
Aggregate	133,268

In addition to all of the foregoing, there were 681 Army nurses (498 regular and 183 reserve), 34 contract surgeons, and 878 cadets at the United States Military Academy, in service on June 30, 1927, making altogether 134,861 individuals in the military service of the United States on that date.

The grades of the 114 commissioned officers who resigned during the fiscal year were as follows: lieutenant colonel, 2; major, 11; captain, 27; first lieutenant, 35; second lieutenant, 39. The branches of service represented were as follows: Judge Advocate General's Department, 1; Quartermaster Corps, 6; Medical Department, 22; Finance

Department, 1; Corps of Engineers, 6; Ordnance Department, 1; Signal Corps, 1; Corps of Chaplains, 1; Cavalry, 6; Field Artillery, 20; Coast Artillery Corps, 14; Infantry, 27; Air Corps, 8.

For several years past the question of reducing the number of desertions in the Army has been the subject of constant study in the War Department, and various plans looking to a betterment of existing conditions have been considered. During the fiscal year covered by this report intelligence tests for recruits were introduced experimentally in each corps area in addition to other precautions enjoined upon recruiting personnel. Greater care has been taken in the selection of recruits, with the result that the decrease in desertions noted in the annual report for the fiscal year ended June 30, 1926, was more pronounced during the year ended June 30, 1927. The losses from all causes among enlisted men during the year aggregated 71,015. As there were 119,929 enlisted men in the Army on June 30, 1927, and 71,015 others had been separated from the service during the preceding twelve months, 190,944 represents the total number of enlistment contracts in force during the year. Based upon this figure the percentage of reported desertions for the year is 6.07 as compared with 7.26 for the previous fiscal year.

The strength of the Officers' Reserve Corps, by grades, on June 30, 1926, and on June 30, 1927, was as follows:

<i>Strength</i>	<i>Major General</i>	<i>Brigadier General</i>	<i>Colonel</i>	<i>Lieut. Colonel</i>	<i>Major</i>	<i>Captain</i>	<i>First Lieut.</i>	<i>Second Lieut.</i>	<i>Total</i>
June 30, 1926	13	101	1104	3085	9941	20,384	24,949	44,252	103,829
June 30, 1927	15	102	1132	3159	9903	20,694	26,917	48,092	110,014

NOTE: Of the 110,014 reserve officers enumerated in the foregoing tabulation, 8,451 were also members of the federally recognized National Guard.

Of the officers appointed during the past year 5,018 were Reserve Officers' Training Corps graduates of the school year 1926-1927, and 23 were graduates of the Blue course at the Citizens' Military Training Camps held during the summer of 1926. The remainder were variously selected from among enlisted men of the Regular Army, National Guard and Reserve Corps, National Guard officers, and civilians, the latter including many who were formerly in the military service.

The results from the Reserve Officers' Training Corps and the Blue course at the Citizens' Military Training Camps during the years 1923 to 1926, inclusive, as sources of procurement for the Officers' Reserve Corps were as follows:

<i>Source of Appointment</i>	<i>Appointments Accepted by graduates of</i>				<i>Total for 4 Years</i>
	1923	1924	1925	1926	
Reserve Officers' Training Corps	3752	3933	4619	5319	17,623
Citizens' Military Training Camps	639	708	399	20	1,766
Total	4391	4641	5018	5339	19,389

During the fiscal year a grand total of 16, 889 reserve officers underwent a period of training.

On June 30, 1927, the close of the last academic year, the Reserve Officers' Training Corps consisted of 325 units with a grand total enrollment of 108,957, an increase of 2,179 over the preceding year.

The Military Training Camps Association assisted materially in the procurement of candidates for the Citizens' Military Training Camps. Many other leading civilian organizations took an active interest in this campaign. The American Legion Auxiliary is now conducting a successful Citizens' Military Training Camp poster contest. Sixty-five educational institutions throughout the United States have shown their interest in the Citizens' Military Training Camps by offering scholarships to selected candidates at these camps. The Military Training Camps Association has been very active in securing these scholarships. The boards of education in six different States have authorized high school credits for Citizens' Military Training Camp attendance, while the State Boards of Education in three additional states have recommended that such credit be given.

For the first time in the history of the Military Academy the members of the graduating class were appointed second lieutenants in the several combatant branches of the Regular Army on graduation day and their commissions delivered to them as a part of the graduation exercises.

The successful accomplishment of this procedure was effected by a carefully planned adjustment of the administrative work of this office and the thorough cooperation of the West Point authorities, and resulted in the elimination of considerable clerical work heretofore necessary, such as the issuance of letters of appointment, mailing of commissions, etc. Delays in accepting appointments were thus prevented, and the status of the graduate with respect to pay and rank was immediately fixed. Moreover, each graduate, under the new arrangement, departs from West Point holding the position for which he has been striving for four hard years.

Of the 2,071 commissioned officers of the Regular Army, exclusive

of Philippine Scouts officers, on the retired list on June 30, 1927, sixty, or approximately 2.9 per cent, had served in the United States Army, Navy, or Marine Corps, otherwise than as cadets, prior to April 9, 1865, as against 3.6 per cent on June 30, 1926.

The following statement shows the sources of appointment of the 11,913 Regular Army and Philippine Scouts officers in service on June 30, 1927:

<i>Status at date of appointment</i>	<i>Number in service June 30, 1927</i>
*Civil life	3,525
Graduate of United States Military Academy.....	3,394
Enlisted man, Regular Army.....	1,166
Officer, National Army.....	266
Enlisted man, National Army.....	277
Officer, Reserve Corps.....	2,030
Enlisted man, Reserve Corps.....	212
Officer, National Guard.....	336
Enlisted man, National Guard.....	275
Volunteer officer	43
Volunteer enlisted man.....	17
Warrant officer, pay clerk, Army field clerk, or field clerk, Quartermaster Corps	52
Contract surgeon or veterinarian.....	144
Medical Reserve Corps.....	100
Retired officer restored to active list	17
Retired enlisted man.....	3
Public Health Service.....	3
Revenue Cutter Service	1
Coast and Geodetic Survey.....	2
Flying cadet	32
Officer, Philippine Scouts.....	18
Total.....	11,913

*Includes, in addition to those who had no previous military service, men who have had service during the War with Spain, the World War, or in the Regular Army, but who were separated from the service and returned to civil life prior to their present appointment in the Army.

During the fiscal year 680 enlisted men were placed on the retired list, 253 retired enlisted men died, and 5 were discharged to accept pension, leaving 8,128 enlisted men on the retired list at the end of the fiscal year.

FROM THE REPORT OF THE CHIEF OF AIR CORPS

Operations—Pan-American Flight—On December 21, 1926, five amphibian airplanes, piloted by ten Air Corps Officers, left San Antonio, Texas, for a flight through Mexico, Central America, around South America, through the West Indies, arriving at Washington, D. C., the final stop of the flight, on May 2, 1927. This

flight was designated officially as the Pan-American Flight. It very early came to be known by the newspaper world as the "Good Will" Flight. It covered a distance of 22,065 miles. It created a great interest on the part of the military and civil authorities, in those countries, in American manufactured airplanes and engines. The flight also obtained a large volume of publicity in the countries through which it passed, and, speaking of the political significance of the flight, one of our ambassadors—through whose post the flight passed—stated that it had done more good than ten years of diplomatic correspondence. The unfortunate feature of the flight was the loss of two of the pilots through a collision of two of the planes at Buenos Aires. The report of the flight covers, very thoroughly, this accident and should be carefully surveyed prior to forming any opinion as to its nature and the responsibility therefor.

Hawaiian Flight—On the morning of June 28, 1927, at 7:09 A. M., two pilots of the Army Air Corps left Oakland Airport, California, in a Fokker Transport, equipped with three Wright motors, for the longest over-water flight ever attempted. Twenty-five hours later the plane landed at Wheeler Field, Territory of Hawaii, having accomplished the mission and completed a pioneer flight of over 2400 miles. The personnel engaged in the undertaking has rendered a report indicating that the plane and engines functioned satisfactorily. The navigational section of the report affords some valuable material on this subject. This flight represented a tremendous advance in military aviation. Of it the Chief of Staff of the Army stated, in substance, that it had the greatest military significance in the Western Hemisphere since the opening of the Panama Canal.

Combined Maneuvers—From a tactical standpoint, the outstanding operation of the Army Air Corps, during the year, was its participation in the combined maneuver during the period from May 11th to 21st, 1927, in conjunction with the 2d Division at San Antonio, Texas. The objects of these maneuvers were:

The combined training of air and ground troops operating as a field army under the commander of a field army.

Demonstration of Air Corps cooperation with ground troops.

An extended test of Air Corps materiel and equipment operating under field conditions.

Practical training in the staff work of an Army Air Service.

The operations were such as would normally arise in the employment of an air force and air service operating with a field army. The concentration of Air Corps troops for these maneuvers was in itself a practical exercise involving the rapid mobilization of air units to a

theater of operations. All available pilots and air planes of the First Pursuit Group, Selfridge Field, Mt. Clemens, Michigan; the 2d Bombardment Group, Langley Field, Virginia; the 3d Attack Group, Fort Crockett, Galveston, Texas; the 12th Observation Squadron, Fort Sam Houston, Texas; and the 16th Observation Squadron, Fort Riley, Kansas, were concentrated at Army flying fields near San Antonio. These units all moved by air, and their passage demonstrated the military value of airways. Also, the efficient completion of the movement—all units arriving at San Antonio on schedule—was greatly facilitated by the development of commercial airports in the territory traversed. En route to the maneuvers, air force demonstrations were held at Fort Benning, Georgia, Fort Riley, Kansas, and Fort Sill, Oklahoma. These demonstrations were for the purpose of showing the fire-power of bombardment and attack airplanes. These maneuvers offered the first opportunity since the war for an Air Corps staff and an Army staff to conduct joint operations. It was gratifying to note that this was accomplished without confusion or any striking difference of opinion concerning the principles involved or the details of staff operations.

Antiaircraft Tests.—During the months of September and October, 1926, the Air Corps organization at Phillips Field cooperated with the Coast Artillery and the Ordnance Department in the conduct of anti-aircraft tests. 291 hours and 51 minutes were flown in day and night missions, and an excellent opportunity was afforded the Army Air Corps for testing out new tow-target equipment.

Mississippi Flood Relief.—The Army Air Corps cooperated with those in charge of the flood relief over the inundated area in the Mississippi and Arkansas River Valleys. The 154th Observation Squadron of the Arkansas National Guard worked practically throughout the period. Planes were also furnished from Kelly Field and Bolling Field. In addition to carrying messages and serums, and locating individuals in areas cut off by the flood waters, the Army Air Corps undertook to make a photographic map of the flood zone at the request of the River Commission to help in the work of preventing similar floods in the future.

This is my Sixth Annual Report, the last one which I shall submit. During this six-year period I am satisfied that there has been a gratifying and progressively better understanding on the part of other branches of the role that aircraft will play in time of war. Likewise, there is a clearer conception on the part of Air Corps personnel as to the way they must cooperate with ground troops.

FROM THE REPORT OF THE CHIEF OF FINANCE

Prompt payment of bills has resulted in the saving of \$238,246.45 from commercial discounts, i. e., 99.76% of the maximum collectible under contracts having been collected.

Claim Against Germany for Costs of the Army of Occupation

Balance due U. S. on July 1, 1926.....	\$233,141,247.42
Paid by Germany under Article 3 of the agreement dated Jan. 14, 1925 (Distribution of the Dawes' annuities)	8,919,849.17

Balance due U. S. on June 30, 1927.....	\$224,221,398.25
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The total sales in foreign countries of surplus property to date amounts to \$825,231,755.34.

The review of reports of survey made in this office indicates a general improvement in the care and accounting for Government property, the money value of property surveyed during the past year being 10% less than in the preceding year.

Report of Regular Army soldiers' deposits received and repaid with interest during the Fiscal Year ended June 30, 1927, is as follows:

Deposits received:

Number	22,793
Amount	\$1,351,855.36

Deposits repaid:

Number	27,633
Amount of principal	\$1,576,663.95
Amount of interest	41,398.45
Amount remaining to the credit of depositors	\$1,985,870.55
Number of active depositors on June 30, 1927... ..	10,669
Average amount to credit of each depositor	\$186.13

The Finance Department is greatly handicapped by lack of sufficient officer personnel. The act of June 4, 1920, creating the Finance Department, gave it a Chief and 141 other officers. The Act of June 30, 1922, authorized 70% of this number, leaving a total of 99, but the President, under authority granted him by the same Act, increased the number assigned by 30%, bringing it up to 129, which with the Chief makes a total of 130, the number now authorized. With the officer personnel authorized it has been found impracticable to have a finance

disbursing officer at every station where one is needed, and in consequence commanding officers have been compelled to designate officers of other branches to perform finance duties, including disbursing, at 41 separate stations. Of these 41 officers, 20 belong to the Quartermaster Corps, 9 Ordnance Department, 5 Engineer Corps, 3 Cavalry, 2 Field Artillery, and 2 Infantry. Many of these disbursing officers are required to give their entire time to their finance duties and others part time. It is manifestly unfair to place upon officers of other branches of the service, who are without finance training, the responsibility of making disbursements, particularly as such disbursements are becoming daily more and more complicated and any wrong payments resulting from a failure to interpret properly the many conflicting decisions become the personal responsibility of the officer making them. The services of these officers of other branches doing finance work are completely lost to those branches and they might better be permanently assigned to the Finance Department if it were possible to do so. It is recommended that this matter be given consideration so that when the National Defense Act is again amended the allotment of commissioned personnel to the various branches could be so changed as to meet the actual requirements.

FROM THE REPORT OF THE CHIEF OF ENGINEERS

Seacoast Fortifications.—Activities under seacoast fortifications have been limited during the past year mainly to the study and preparation of plans for fortification projects, a continuation of the major armament installation in the Panama Canal, the further development and test of antiaircraft searchlight materiel, and the maintenance of the harbor defenses of the Continental United States, Insular Possessions, and Panama Canal Zone.

In connection with plans for the defense of the frontiers, Insular Possessions, and the Panama Canal, the Chief of Engineers has undertaken the collection and dissemination of railway data pertaining to the movement of railway artillery. A large amount of data have been collected from the railways, and progress has been made in the distribution of this information to the service in a form which will make it readily accessible for the preparation of defense plans and in case of emergency. During the year a general railway map of the United States has been completed and issued.

During the year a revision of the plans and estimate for the 16-inch gun installation at Bruja Point, Pacific entrance of the Panama Canal, was completed. The revision was undertaken with a view to greater economy in the power installation without material loss of

efficiency. The revision has resulted in a net reduction of about \$50,000 in the estimated total cost of the battery.

Projects of the magnitude of a 16-inch gun battery could be far more economically accomplished if funds were appropriated on a non-fiscal year basis.

It has been realized that antiaircraft defense is one of the most important phases of our national defense. The improvements in airplanes since the war, resulting in higher ceilings, greater carrying power, and increased speed of bombing planes, have demanded greater efficiency in antiaircraft artillery and searchlights. Efforts in development since the war have been directed toward providing a drum type of searchlight which would be sufficiently light in weight to meet the needs of mobility and, at the same time, have a beam efficiency equal to or greater than the harbor defense searchlight. This accomplishment was realized in the 1925 model, 150 ampere, duralumin, drum type searchlight.

The interests of our national defense require that appropriations for the purchase of these searchlights be maintained at a higher level than they have in the past, in order that manufacturers may maintain the organization, equipment, and manufacturing space required as a nucleus for mass production in the time of war. The searchlight requirements for the defense of our frontiers, Insular Possessions, and Panama Canal are sufficient to accomplish this without waste for many years to come.

FROM THE REPORT OF THE CHIEF OF CAVALRY

The War Department has given great impetus toward increasing the future efficiency and usefulness of the cavalry by its approval in principle of the following:

That the present Springfield rifle in the cavalry be replaced by the semi-automatic rifle as soon as practicable after a satisfactory type has been developed and tested—present development plans and tests for obtaining a suitable arm to continue.

That an armored car unit be similarly developed, tested, and incorporated in the cavalry division—development plans to continue and when type is approved which meets the military requirements, consideration can be given to the unit for the cavalry division.

That a tank unit be incorporated in the cavalry division, and appropriate antitank weapons in the cavalry regiment (necessary personnel to be taken from cavalry allotment). Present plans for

development and tests to continue, and when the tank and antitank weapons which meet military requirements are adopted, further requirements are adopted, further consideration will be given to be prescribed for the cavalry division.

That an observation squadron, Air Corps, be incorporated in the cavalry division—to be made effective when Air Corps can supply suitable equipment and the necessary personnel.

Consideration is also being given by the War Department to the reorganization of the cavalry regiment with a machine-gun troop as an integral part and with a decrease in overhead and an increase of fire power.

When these measures have become effective, we are assured of a cavalry that will be most valuable in any type of warfare and in any theater of operation.

FROM THE REPORT OF THE CHIEF OF CHEMICAL WARFARE SERVICE

A satisfactory record of accomplishment has been made by the Chemical Warfare Service during the past fiscal year. Although the personnel has been inadequate in numbers, making it necessary for all to extend their efforts beyond the normal requirements of peace, the operations of the Service have been carried on in a satisfactory manner within the necessary limitations of funds and personnel. The work of the personnel of the Service has indicated that a high standard has been maintained among them.

Research and Development.—The outstanding achievements for the year include developments in both individual and collective protection against chemical agents, development of a method for the distribution of chemical agents from airplanes, and decisive results from the boll weevil investigation.

FROM THE REPORT OF THE CHIEF OF ORDNANCE

Rifles.—The principal experimental work on the service rifle has been the continuation of the tests of receiver sight and pistol-grip stock. Minor modifications have been made in the types tested which are now undergoing trial by the using services. The investigation of rust resisting steel for this weapon, for use in the manufacture of barrels, and possibly other components, is being carried on.

Extensive investigation of commercial stainless steel for use in rifles and machine gun barrels and other components is being carried on with the object of eventually making as many components of this type of

material as practicable. Such use, if perfected, would result in far-reaching economy.

Antiaircraft Machine Guns.—The development and procurement of caliber .50 antiaircraft machine guns has continued actively. Ten of these guns were purchased during the year.

Powder-train Fuzes.—Work is being continued on improvement of powder-train fuzes. The present fuzes of this type are reasonably satisfactory for mobile artillery, and steps are being taken to keep alive the art of producing these fuzes. The powder-train composition is not satisfactory for antiaircraft firing, although the altitudes at which dispersion becomes extremely large are considerably above those at which bombing planes ordinarily fly.

Captured Enemy Materiel.—Twenty-six States and five possessions have accepted all the trophies allocated to them. Of the remaining twenty-two States all have accepted part of their allocation. Funds necessary for making shipments ceased to be available with the close of the fiscal year. All interested parties were notified accordingly and urged to submit shipping instructions prior to June 30, 1927. However, approximately four per cent of the cannon and twenty-five per cent of the small articles still remain on hand. Final apportionment of all trophies remaining on hand, in accordance with the provisions of the Act of May 22, 1926, will shortly be made.

FROM THE REPORT OF THE CHIEF OF INFANTRY

Athletics.—The Infantryman must be well-fitted physically to endure fatiguing marches, exposure, and the various hardships incident to combat with the enemy. It is therefore appropriate that the Infantry should make a special effort to promote the physical well-being of its personnel. Athletic games accomplish more than the physical development of the soldier. They develop in the individual characteristics of leadership and a spirit of team-play, both of which are essential in Infantry combat. They also constitute a vital element in building up and maintaining a high individual and organizational morale. For these reasons all forms of athletic training and development constitute an essential part of military training and the officer and noncommissioned officer must be as well qualified to conduct this phase of training as any other phase.

The Regular Army, through the various Reserve Officers' Training Corps units and Citizens' Military Training Camps, is rapidly becoming the principal agent for the physical development of the youth of this country. The heads of the various institutions where Regular

Army personnel is on duty are becoming more insistent each year in their demands for officers and noncommissioned officers who can conduct the physical training of the student body and develop and coach athletic teams. To meet these needs an athletic course has been instituted at The Infantry School. This course will doubtless be still further improved and expanded. The importance of athletic training and the development of athletic teams can well be stressed by the War Department in its training directives.

Marksmanship.—It has been demonstrated again and again, that keenness of vision which insures clear definition of the bull's eye by the firer is not essential to making a good score. In fact, a man with such poor vision that he can not see the bull's-eye but can see the target, can, if properly instructed, shoot sufficiently well to qualify as marksman or even better. Naturally, such a man can not compete successfully with the keener visioned expert shots of an organization but, by proper instruction, he can be improved sufficiently well to be an addition and not a detriment to the target record of his organization.

Antiaircraft Defense.—The trend of modern tactics clearly indicates that, in addition to the protection furnished by the Air Corps and by troops of the antiaircraft service, it is imperative that combatant troops on the march, in bivouac, and in battle, be able to protect themselves from air attack.

This protection may be obtained as a result of training that will insure prompt discovery of hostile aircraft; rapid and orderly dispositions to reduce the effectiveness of air attack; use of cover, including camouflage; and timely effective fire against aircraft.

The Infantry School and the Infantry Board are continuing an intensive study of Infantry defense against aircraft. This study is being carried on in cooperation with the other branches, especially the Coast Artillery and the Ordnance Department.

There has been constructed at Fort Benning an aerial target range for 1000-inch firing at moving targets, and experiments are in progress to determine effective methods of training riflemen and machine gunners in accurate firing at aircraft. While these experiments are being conducted primarily to discover the most profitable means and methods of employment of the present Infantry armament and organization, they also include study to determine the desirability of changes in existing organization or armament.

There has been developed at Fort Benning a wheeled mount for the .30 caliber machine gun and an antiaircraft adapter whereby the machine gun may be transported in a position of instant readiness for

firing at aircraft. The model of mount and adapter have had a sufficiently extended test to demonstrate that sound principles of construction have been observed. It is reasonable to believe that further development of this method of transport will, so far as .30-caliber machine gun fire is concerned, solve the problem of protecting marching Infantry from air attack. Also, it is possible this method of transport may be utilized for the .50-caliber machine gun, should experiments indicate the advisability of adding this weapon to the Infantry armament.

FROM THE REPORT OF THE CHIEF OF CHAPLAINS

The restless spirit which occasions periodic occupational change is noticeably absent among the personnel of the Chaplain Corps. They have the fixed purpose of the religious mission and an abiding pioneer spirit to accomplish the Master's work under conditions and circumstances unlike those of the civilian clergy and mostly without the conveniences and equipment provided for even in the most humble towns and rural congregations.

It has been difficult to maintain an established ratio of chaplains among the various denominations, the policy in this particular being disturbed by changes of denominational affiliation by men already in the corps. Over this the War Department does not expect to exercise control. The churches are now represented by chaplains, as follows: Baptist, Northern Convention, 9; Baptist, Southern Convention, 5; Baptist, Colored, 2; Congregational, 10; Disciples of Christ, 7; Lutheran, all bodies, 6; Methodist Episcopal, 18; Methodist Episcopal, South, 10; Methodist Protestant, 1; African Methodist Episcopal, 1; Presbyterian, U. S., 2; Presbyterian, U. S. A., 11; Presbyterian, Cumberland, 1; Protestant Episcopal, 10; Roman Catholic, 23; Reformed, 2; Universalist, 2; Unitarian, 2; Evangelical, 1.

The Chaplain's Reserve Corps has continued during the fiscal year its well known record of interest and cooperation in the religious program of the Army. It has increased in membership and been joined in fellowship by civilian clergy prominent in their churches and communities. The following table gives the total strength of the Chaplains' Reserve Corps at the end of each fiscal year since 1921: 1921, 608; 1922, 636; 1923, 785; 1924, 957; 1925, 1115; 1926, 1172; and 1927, 1215.

Two hundred and forty-three Reserve chaplains have accepted calls to active duty at the various training camps and stations. This number is approximately 20 per cent of the entire Reserve chaplain personnel

and indicates that the chaplains appreciate and support this feature of national preparedness.

Although the problem of this department is primarily one of personnel, carefully selected, suitably trained and properly encouraged, the question of materiel enters to no small extent. If the program of religion for the Army is to be other than a cheap one certain working tools must be provided. Fortunately, those who are charged with the responsibility for making provision for places where services may be conducted have shown unusual genius in the matter of adapting such buildings as are available for the use. However, gymnasiums, dance halls, amusement rooms, theaters, and similar places for assembly, even though they be decorated and furnished by devoted men and women so as to provide the nearest possible to a worshipful atmosphere, must be considered as temporary. At the same time the sentiment should be cultivated that no Army post is complete until a church spire rises among its permanent buildings. As better physical facilities are provided there is little danger of the work of chaplains becoming static.

Among the important assignments given chaplains none has been more worth while than duty on transports carrying troops to and from garrisons outside the continental limits of the United States. The soldiers on transports leaving this country are practically all recruits in a formative state and while the chaplains meet them with a vigorous arrangement for the exercise of their religious inclinations, this is only part of the program. Having visited the countries to which the men are going, chaplains are prepared to give them helpful information about the people among whom they are to live and the conditions surrounding their service.

Careful consideration has been given the matter of providing moral safeguards for the thousands of young men who attended the Reserve Officers' Training Corps and Citizens' Military Training Camps. To supplement the effort of Regular Army chaplains enough Reserve chaplains are called to active duty to insure ministry for Catholics, Protestants, and Jews. It is in these camps that the inspiring church parades have developed.

Except in the case of minors who are students at summer training camps, attendance is voluntary. An inspiring formation of officers and men with suitable music by the band is reviewed by prominent persons who are visiting the command. Spectators are numerous and they usually attend the services. Arrangements are made for groups of the major divisions of the church with music, rabbis, priests, and Protestant clergymen.

Personal service in the decoration of graves at Arlington National Cemetery on Memorial Day was begun in a small way a few years ago by the chaplain at Fort Myer, Virginia, with War Department approval. Each year there has been a considerable increase in the number of requests from Army and Navy personnel that the chaplain provide standard floral emblems in the form of wreaths 22 inches in diameter and place them upon designated graves. It is a custom that might well be perpetuated.

Spiritual forces are nowhere held in greater respect or reverence than amongst military men. The traditions of the Army are all for decency, high mindedness, honorable and gentlemanly conduct, which are concomitants of "religion pure and undefiled." Religion is recognized as essential to the life of the soldier because it furnishes an impetus toward clean and holy living. Encouragement for men to establish their relationship to God, each one according to the dictates of his own conscience, is accepted as an important obligation of an officer's position of leadership. That abundant variety is afforded in religious expression is attested by the fact that twenty-eight denominations are represented in the corps of chaplains and that representatives of many other groups find opportunity for ministering to their followers in the Army. The Army is not cluttered up with religious dissensions.

FROM THE REPORT OF THE QUARTERMASTER GENERAL SUPPLIES

Procurement.—The studies made by the Current Planning and Accounting Division developed the fact that an agency to supervise purchases would be helpful in improving the procurement methods of the Quartermaster Corps. A procurement division was, therefore, set up on June 6, 1927, in the Supply Service where it is in close contact with the purchase, storage and issue activities of the office. This division is charged with the supervision of all matters pertaining to current procurement of supplies, the improvement of procurement methods and the study and analysis of requirements, purchase procedure and prices, in order that the most economic methods may be developed and applied, and costly and wasteful practices and duplications of work eliminated.

New Army Rations.—In investigating reports from the field relative to the inadequacy of the garrison ration, this office conducted a comprehensive and thorough study of the food allowances for enlisted men of the Navy and Marine Corps and as a result recommended certain changes in and additions to the garrison ration in order to furnish a well balanced and adequate ration. These recommendations were ap-

proved by the President and an Executive Order was issued February 3, 1927, putting the new ration into effect July 1, 1927. This new ration compares favorably with the kinds and quantities of food allowances furnished to enlisted men of the other arms of the service. Its cost will approximate 50 cents per man per day, which is approximately a 44 per cent increase over the cost of the ration for the fiscal year 1927. The additional amount authorized will enable organization commanders to provide a wider choice and a greater variety of food articles in arranging menus than has been possible heretofore and will make it possible to purchase within the allowance such articles as fresh fish and fowl, fresh vegetables, fresh fruit, and fresh milk, in lieu of canned articles heretofore used. With this ration allowance it will not be necessary to augment subsistence funds by dividends received from post exchanges and the funds thus released can be used for other purposes to improve the comfort and contentment of the enlisted man.

Uniform Clothing.—The problem of providing a satisfactory uniform for the Army is one of the most difficult with which this office has to deal. The continued issue of uniforms left over from the World War is unsatisfactory to the army, but as a measure of economy it must be continued until the stocks are absorbed. On June 30, 1927, the following quantities of outer garments were on hand: 2,181,169 cotton breeches; 2,552,225 cotton coats; 1,981,852 woolen breeches; 2,700,966 woolen coats; and 1,301,145 overcoats. It will take several years to exhaust this stock, and so long as it is issued, it will have a depressing effect on the morale of the Army. This problem is receiving continuous study and where possible action is being taken to improve the situation.

The manufacture and issue of one special measurement uniform of the roll collar type to each enlisted man per enlistment at the price of a stock uniform is meeting with general favor throughout the service. This results in providing each enlisted man with one well-made, good-fitting uniform for wear at parades and ceremonies and when on pass. The substitution of gilt colored buttons and ornaments for bronze, which is retained for war-time use only, has also proved satisfactory and has resulted in greatly improving the appearance of the uniform.

In order to improve the appearance of the cotton uniforms issued for summer wear, experiments have been conducted in the forty laundries throughout the country with a process for stripping and redying them. In developing this process, valuable assistance was rendered by

the Bureau of Standards and various commercial dye concerns. The results obtained have been satisfactory and make it possible for the troops of each post to present a uniform appearance. The process has not been in use long enough to demonstrate its complete effectiveness, but the cost is such that the uniforms can be redyed where necessary. The experiments are being continued with a view to improving the results obtained.

REAL ESTATE

Disposals.—By sale. During the year 2,775.9 acres of land, buildings, etc., were sold for a total sum of \$2,827,481.99, the net proceeds to be deposited in the Treasury of the United States to the credit of the Military Post Construction Fund. 1133 buildings were salvaged and the material contained therein used for repairing other buildings at the posts and stations wherever possible. The majority of these buildings were temporary structures which had become unserviceable and no longer suitable for the purposes for which constructed.

By lease. There were in force at the close of the fiscal year 1183 revocable leases, licenses, etc., for the use of Government-owned property by private individuals, with an aggregate annual revenue of \$765,868.34. This is an increase of 226 leases at an annual rental of \$137,110.27 during the year.

Acquisition.—By purchase. During the year 30 parcels of land were purchased and title thereto passed to the United States. These parcels aggregate 3,514.95 acres at a total cost of \$92,978.50.

By lease. At the close of the fiscal year there were in effect 570 leases for the use of private property by the War Department, having an aggregate annual rental of \$421,111.56. This is a decrease during the year of 61 leases at an annual rental of \$122,568.13.

FROM REPORT OF THE CHIEF SIGNAL OFFICER

The operations of the Signal Corps during the past year have been interesting, useful and constructive. The results achieved have been useful not only to the Army but to the people of the country.

Probably the most outstanding achievement was the demonstration of the usefulness of the Signal Corps Radio Beam Beacon, which has given to the world a remarkable means of guiding airplanes on trans-oceanic and night flights. The use of two Signal Corps beacons in San Francisco and Hawaii was recently placed at the disposal of the participants in the Dole Flight to Hawaii whose airplanes were provided with suitable receivers.

Another achievement during the year was the release to commercial aviation of the use of a new radio set for aircraft, designed by the Signal Corps. This set, known as the SCR-134, is built to provide the use of both radio telegraphy and telephony. It proved so unique and useful that the Department of Commerce requested that the specifications and drawings be made available for the use of commercial aviation, thereby benefiting the people of the country. During the year another unique set embodying both telegraph and telephone usefulness, designed by Signal Corps engineers for communication between the ground and aircraft, was completed and put into production.

The Washington-Alaska Military Cable and Telegraph System was constructed primarily for military purposes; now its greatest use is commercial which is reflected in the growing receipts of the System. Since 1907 constant study has been given to the question of replacement of the extensive land telegraph lines, in that year consisting of approximately 1700 miles of pole line carrying approximately 3000 miles of telegraph wire. The replacement of the land lines by radio was initiated in 1908 by the installation of spark sets with which it was practicable to handle traffic during certain seasons only. Later, upon development of the vacuum tube, special Signal Corps sets were installed, for the smaller stations, those having a range of 300 miles, and for the larger stations, those capable of working with every station in the territory. The transfer of the Seward Station in 1926, from the Navy Department to the War Department, made it possible to do away with the last and final leg of land telegraph, *i. e.*, between Valdez and Fairbanks, Seward handling the traffic by radio. The land telegraph lines constructed by the Signal Corps and formerly used on the Richardson Trail have been transferred to the Alaska Road Commission and are being made use of by that Commission for communication purposes between its various parties. The System today is being operated at a less cost to the Government than ever before in its history and is turning into the Treasury from commercial receipts more than ever before. In 1923 the receipts were \$199,749.16, upon completion of the laying of the new cable in the latter part of 1924 the receipts increased to \$213,000 annually, and for the fiscal year 1927 the total was \$277,299.53. Further improvements are being made with a view to more efficient handling of traffic and the release of additional personnel by the installation at Ketchikan of modern cable relay equipment which will make it practicable for Seattle and Seward to work directly with each other thereby doing away with relaying at Ketchikan.

Development on the SCR-136 was completed during the year and the set is now in production. This is a portable ground radio set for working with airplanes and includes as its source of power a gas engine driven generator, thus making it independent of a supply of charged storage batteries. The SCR-136 is a more powerful set than the SCR-109-A, which is also used for the purpose of ground to air communication. Both of these sets are designed to communicate with the SCR-134 on a plane.

Development on the SCR-131 loop radio telegraph set has progressed to the point where two working models have been completed for test. This is a high frequency set intended for use in Infantry Brigade and Regimental Radio Nets. The set with its hand generator weighs approximately 50 pounds and combines portability and transmitting range to a degree which is a distinct advance over anything previously existing.

During the year the problem of spotting antiaircraft fire at airplane targets has been under study and progress made in the solution of this difficult problem by photographic means. A specially equipped motion picture camera has been devised for this purpose and will soon be completed by the Bausch and Lomb Optical Company for further experiments in the photography of air bursts and the towed sleeve target.

FROM THE REPORT OF THE CHIEF OF FIELD ARTILLERY

Safety Requirements in Firing Shell.—Since July 1, 1918, on the recommendation of the Chief of Field Artillery, all personnel of firing batteries have been required to take shelter while firing high explosive shell. Frequent criticism has been made of this requirement on the ground that it tends to make the personnel afraid of their weapons. On account of this criticism, I have caused an examination to be made of the records of premature explosions and the casualties caused by them.

From August 27, 1917, to July 1, 1918, during a period when no protection of personnel was required, five premature explosions caused six men to be killed and ten to be wounded. From July, 1918, to September, 1926, when protection of personnel was required, nineteen premature explosions caused no casualties. Assuming that the average of casualties per premature explosion during the first period would have been continued in the second period, the safety requirements first published July 1, 1918, have saved the lives of twenty-three men and prevented thirty-eight others from being wounded. Objectionable as

these safety requirements may be, they are clearly essential in peace-time training until an entirely bore-safe fuze for the high explosive shell is developed and issued.

Officers' Reserve Corps.—New regulations have recently been published governing examination and promotion of reserve officers. These regulations have occasioned considerable comment, both favorable and unfavorable. They have been in effect too short a time to permit me to comment on them intelligently and so all comment on the subject is withheld.

There is, however, a related subject on which I commented in my last Annual Report and which, so far as I know, has not been further considered. This is the equalization of promotion between regular and reserve officers. In my opinion, this equalization is desirable for maintaining the morale of both classes of officers, and is essential in order to provide a well balanced army in time of mobilization.

Shortage of Men in Field Artillery Units.—Substantial increase in the strength of the Field Artillery arm is urgently needed, in order that all units might be brought up to the strength provided in approved Tables of Organization. This strength is the minimum at which Field Artillery units can be properly trained.

Shortage of Field Artillery Organizations in the Army.—The amount of Field Artillery in the army should be based upon the amount of Infantry and Cavalry. The Field Artillery today has not its proper proportional strength, and the number of organizations in the Field Artillery should be increased.

Morale.—In spite of the many factors which adversely affect morale in the United States Army at the present time, the morale of the Field Artillery is high. It is a source of great satisfaction to me to observe the splendid spirit of all Field Artillery organizations. The fact that morale has been kept high under adverse conditions is a tribute to the inherent leadership of the officers of the United States Army.

MAXIM V

All wars should be governed by certain principles, for every war should have a definite object, and be conducted according to the rules of art. (A war should only be undertaken with forces proportioned to the obstacles to be overcome.)—Napoleon's Maxims of War.

Practical Gunnery

By CAPT. E. H. STILLMAN, C. A. C.

THIS article has to do with the details of the construction of a miniature range gun, which can be constructed at any Post, National Guard Armory, or R. O. T. C. institution.

The undersigned has now been stationed at the University of California for a little over two years and has availed himself of the opportunity of teaching almost all of the Coast Artillery courses in both basic and advanced work. Our basic freshman courses cover all subjects necessary to prepare students for the 2d class gunners' examination held at the end of their first year, including the school of the soldier and squad.

We have a well-equipped plotting room, including all boards and accessories necessary for sending corrected firing data to the guns. The room is also equipped with base end stations, moving target, bells, telephones, etc. By the end of the student's first six months of sophomore work he can fill any position of the range section and operate any of the instruments used, including the duties of the observers and readers. The final examination covers all the above subjects. He has not, however, up to the present time been able to see a real miniature gun fire at a moving target which neither the gun nor plotting room can see. This drawback has now been remedied, and as a final climax to the semester's work the students can fire at a moving target which may be invisible from the gun position. A special plotting board with gun-azimuth arc, graduated with reference to a known aiming point, has been constructed, simple to operate, and involving the same principles that any battery commander might have to resort to under emergency conditions in the field.

The last six months of the sophomore's work is taken up with the subject of antiaircraft firing, where at present I see no practical way of having a miniature range. The students are now eligible to take their 1st class gunners' examinations and many avail themselves of this privilege, though, to date, they have shown a weakness in the practical use of the panoramic sight, simple aiming and laying, and the gunner's quadrant.

Military training at the University of California is compulsory for the first two years only. So, after the completion of the study of antiaircraft firing, students registered in the Coast Artillery course have completed their military work.

Students who have become interested and who desire to continue their military training with a Reserve commission in view, take up in their advanced work various subjects, among which are Orientation; Aimng and Laying; The Law of Probabilities; and the Laws of the Adjustment of Fire at both Fixed and Moving Targets.

So far, in the time allowed, Black Board Firing and a limited amount of Puff Board Firing has been the only means of practical instruction in the observation and adjustment of fire. Students going to summer camp seem to have but little conception of the duties of the Battery Commander in the actual ordering of a gun, invisible to him, to fire a round of ammunition. Blackboard firing, using the Hit Bag, is of great importance as preliminary instruction in fire adjustment,

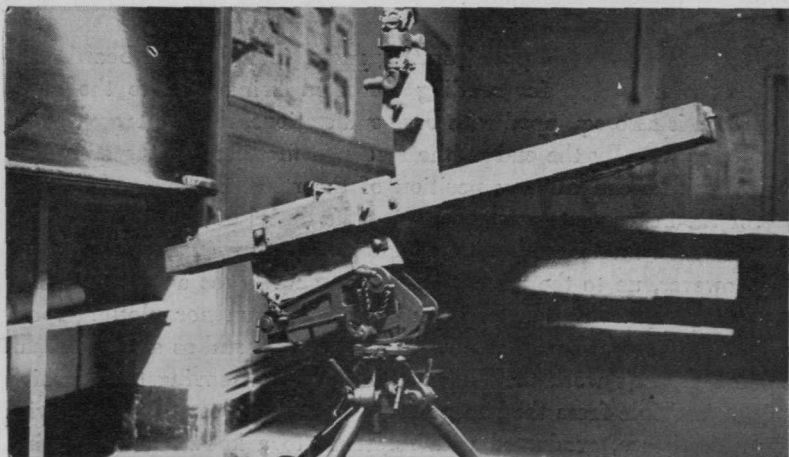


FIG. 1—MINIATURE RANGE GUN

but a good miniature range is far better than any puff board. An actual burst in sand is a "puff" in itself. The students can fire any type of problem.

With the miniature range, the B. C. telephones his actual firing orders and data to the gun in another larger room, at the other end of which is a large sand table at least 8 ft. x 14 ft. The gun fires $\frac{1}{4}$ -inch steel ball bearings, which make excellent "bursts" in the sand. These can be observed by any method of observation the instructor may devise. The observations are plotted, and the results phoned to the B. C. who gives, in a military manner, the necessary instructions to the gun crew to fire subsequent rounds, including in his firing data corrections based on the observation of fire. This sort of training, I have found, gives marvelous results. Those of the student's classmates

who are not otherwise engaged prove to be severe critics of his commands, of the functioning of the gun crew and of the spotters. The instructor himself obtains great benefit by supervising these problems.

The range room can be laid out to represent any scale, dependent upon its length. Ours, about 50 feet long, represents any terrain, scale 2 inches on the floor= 100 yards in the field. The ceiling of the room is laid out in rectangular coordinates to this scale in colored crayon, 1000 -yard squares, and numbered with reference to some fictitious remote origins, both "X" and "Y". A portion of any map can easily be prepared with grids to conform to those in the room (in this case 1 inch= 1000 yards). By means of a plumb-bob, then, any portion of this map can be reproduced on the sand table. The gun and aiming point coordinates are similarly found. In fact, the instructor, in a

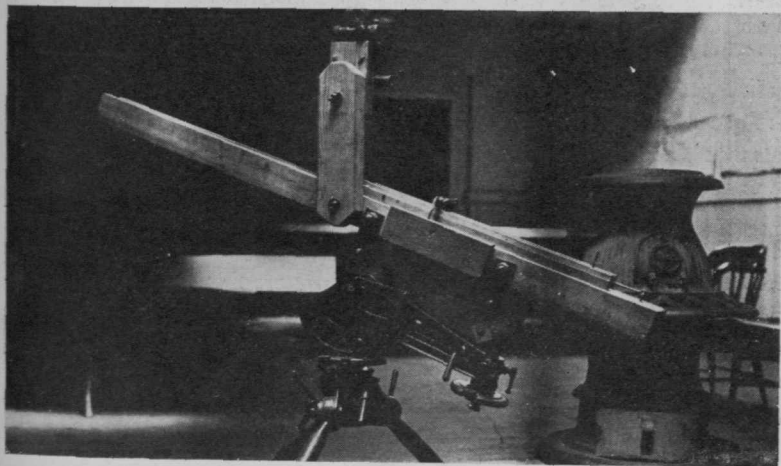


FIG. 2—MINIATURE RANGE GUN

few moments, can prepare any problem. When the gun itself is completed and set up and the sand table completed, the range table is made by proof firing the gun. This range table can and does contain most of the data found in a real one. The room, as laid out, can be next reproduced on a firing board (Scale 1 inch= 1000 yards). Similarly, base end stations can be established and a simple but efficient plotting board constructed (scale 1 inch= 1000 yards), containing a gun arm azimuth arc, graduated in mils with reference to any known aiming point. Direct or indirect firing can now be conducted at a moving target. The target, a wooden ship of proper size (about 2 inches long) can be towed through level sand in too simple a manner to describe. All the above details have been installed at this institution.

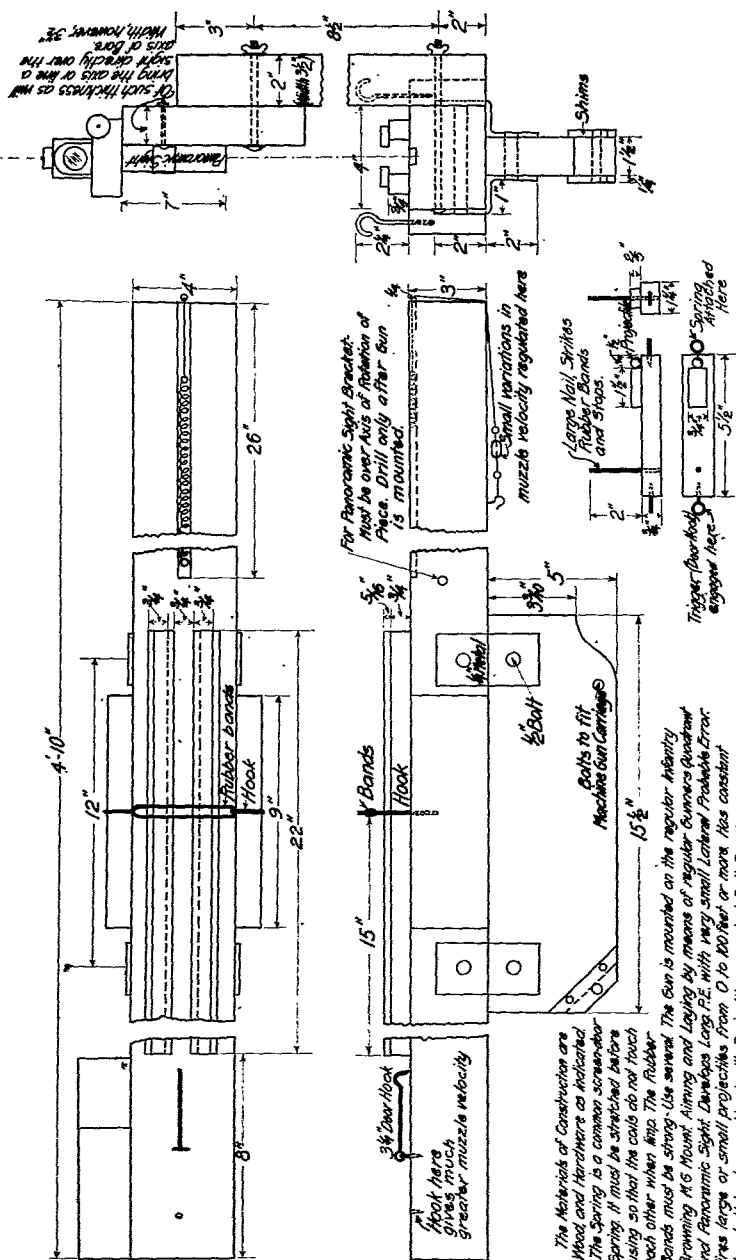


Fig. 3—Plan showing specifications for construction of miniature range (1 in.)

The mechanical prerequisites of such a gun should be as follows:

1. It must be suitable for indoor work, capable of firing from forty to one hundred feet or more, dependent upon the height of the ceiling and length of room.

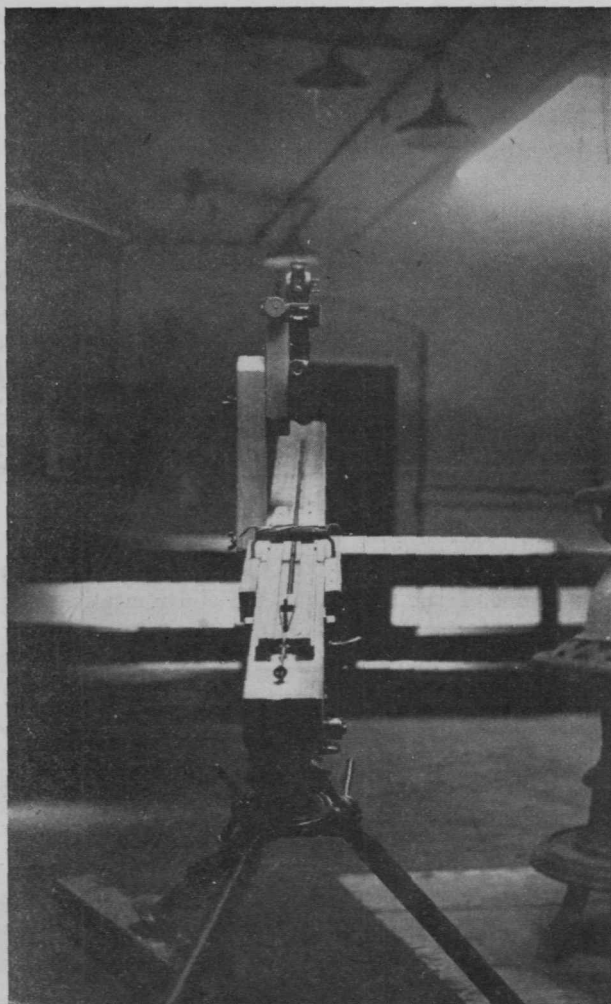


FIG. 4—MINIATURE RANGE GUN

2. Should have a muzzle velocity variable at will, but otherwise stable.
3. Should have a definite, appreciable longitudinal probable error at any particular range.

PROPERTY OF U. S.

4. Should have a lateral probable error which is very small in comparison to the longitudinal P. E., as is the case in most gun fire.

5. Must be practically "fool proof."

6. Should have no breakable parts.

7. Should be equipped with a panoramic sight mounted over the pintle center of the gun upon a bracket which is adjustable so that the sight can be kept there when the gun is elevated, depressed, or traversed,

8. It must fire a projectile of uniform characteristics, capable of making a "burst" or "splash" which can be observed in sand or water. The "crater" itself must not be a great long groove, but resemble, fairly to scale, that of an actual projectile fired at that range.

9. The gun must be given elevation by means of, first, inspection of the range table, and second, by use of the regular gunner's quadrant, thus teaching the student gunners in an extremely practical way the use of the instruments used in gun firings at summer camps.

10. The gun should fire with a trajectory similar to that of a gun at long range. At short range, howitzer fire should be assumed, the M. V. varied accordingly, and a new range table prepared.

11. The gun must be very cheap to construct. The one described herein did not cost more than \$1.50.

The miniature range gun was designed by the undersigned after a year of extensive experimenting with other mechanical devices which had to be discarded one after the other, due to their failure to come up to the qualifications of one or more of the above mentioned prerequisites. This gun has all the necessary qualifications. Do not vary its construction. Much credit is due Sergeant Arthur R. Tucker, CAC, D. E. M. L., and Cadet Officers Harold O. Sjobert and Thomas A. Rogers of this institution, who assisted in many ways, devoting considerable of their own time to the project.

EDITORIAL

Dress Uniforms

DURING the past year there has been considerable discussion of the question of a return to a dress uniform similar to that of pre-war days. It is interesting to note that we have not been alone in such an agitation.

In England there is a strong sentiment favoring a restoration of the brighter uniforms of a decade ago. So far as the enlisted men are concerned, decision has been postponed in the interests of economy. Presumably the subject will be reopened when the strain upon the finances of the country, induced by the war, has been somewhat lessened. In the meantime, the officers are, in general, supplying themselves with full dress uniforms for ceremonial occasions.

In France, also, there is evident a desire to return to the brilliant uniforms that the troops wore before the war. The drab colors of war-time uniforms do not appeal to the Latin temperament, and the officers of some of the French forces—notably, the Spahis, Zouaves, and Chasseurs d' Afrique—are already wearing the old full dress.

It seems safe to predict a revival of brightly colored uniforms in all the older armies in the not-distant future, for man, however much he may repress his natural inclinations, delights in colors and will wear them whenever he has what he considers a legitimate excuse.

Army Progress

The army and its leaders are waking up. Recent reports of orders for the complete motorization of one entire regiment, recent news of new tanks, new guns, new rifles, and new tactical experiments with mechanized forces are evidences of a fresh progressive spirit.

It means, advocates of adequate preparedness will hope, the beginning of a new era in American military policy. Commendable as has been the practice of army schools to teach the lessons of past wars, such a system, as shown by the results, blinded, to a considerable extent, the military leaders of 1914-'17 and 1917-'18 to the progress in their own profession. It trained a type of mind which neglected tanks and gas and resisted trucks, machine guns, and modern artillery.

Now, however, ten years after the commencement of the war for the United States, come these signs of a renaissance. But is this movement for a modern military defense to be encouraged until it attains a tangible goal, or is it to be met by public apathy and official ob-

struction? What, in particular, is congress going to do about it?

At the Aberdeen proving grounds the Army Ordnance Association's annual demonstration took place. Why must seekers go to a proving ground to see the latest military equipment in action? Because there is none with the troops in actual service.

The ordnance department has built guns so far outclassing those of the world war period and those in the hands of the troops that there is no comparison between them. It has built and is building new types of tanks. Of the guns, the new 75s have been declared standard, but only six of them have been built.

A private corporation would laugh at such a policy. A motor car manufacturer, after testing and perfecting a new design, places it in the hands of the public. The public reaction is the ultimate test. With ordnance material the troops are the public and the only means of fully testing a gun or a tank design is to manufacture the gun or the tank in sufficient quantity to place it in the hands of troops to be tried under actual and varied conditions.

Only by such tests can a design be perfected, and only by some measure of quantity production can a design be tested for its suitability to the quantity production necessary in time of war. No matter how skilled an ordnance engineer may be, he cannot create an article for quantity production by producing a half dozen articles by shop craft methods.

Were war declared next week the country could not turn out the new guns and the new tanks and get them into the hands of the troops in war time number short of six months or perhaps a year. Nor would there be any real assurance that they would function properly under service conditions. Not only would our first line troops be pitifully few in number, but they would be forced to use for at least six months arms some of which are patterned on designs thirty years old. It was fortunate, as concerning the immediate issue, that our allies in the world war were able to supply our troops with guns, with machine guns, gas masks, airplanes, grenades, automatic rifles, and tanks. But it was unfortunate in that it kept America from comprehending the terrible predicament of a country so abjectly unprepared for war as we were.

It is the country and its representatives in congress which must be made to understand the present need of the army for a preparedness in war material. Army men learned their lesson in the war. The new spirit we spoke of is their answer. But they cannot carry on without popular support and without the appropriation of sufficient funds by congress. It takes money to manufacture guns and tanks in the num-

ber needed. It takes money to experiment and test and perfect. It takes more money to put the perfected weapons into the hands of the troops. And behind the money must be a national will to see this country adequately prepared for defense.

Without money, without the support of the people, the new spirit which is pushing our military leaders on to new progress will dwindle away and die and our army will once more slump into the same rut it occupied in 1917.—*Chicago Daily Tribune*.

Moving Cavalry by Truck

Retired cavalrymen of the old school, especially those who saw service in the Southwest, will have cause to rub their eyes when they read the latest news from Texas. Completely equipped and horsed for active service, Troop F of the Fifth Cavalry made a journey from Marfa to Fort Clarke, a distance of 300 miles over rough country, in thirty-six hours, and at the end of the journey horses and men were in good physical shape for any kind of military duty they might have been called upon to perform.

This does not mean however, that a new breed of horses has been perfected to stand such an ordeal without wearing out. The trip was made, horse and man, by trucks. Fourteen of these were employed, including one tank. The route lay over graded dirt or gravel roads and one stretch of seventy-five miles was hilly. On the first day the troop covered 160 miles; the remaining 140 miles were made before dark of the second day. Little mechanical difficulty was experienced. An official report says that the troop "was completely horsed and equipped at all times, ready for such mounted tactical missions as might be assigned at any time during or upon the completion of the journey."

The importance of this demonstration is scarcely to be exaggerated. What was done in the case of one troop can be done in the case of much larger commands. By means of properly organized systems of motor transport cavalry units will not only be able to multiply their powers but they will be able either to mobilize or to extend their lines at a rate hitherto unimaginable.

The problem of patrolling a frontier or an international boundary line can be greatly simplified. With airplanes for observation, wireless for communication and trucks for rapid and efficient transportation it should be possible for a comparatively small force of cavalry to protect hundreds and even thousands of miles of territory. To fortify a border against attack it would be necessary only to perfect a sys-

tem of comparatively inexpensive roads. The beauty of this is that those same roads would be invaluable for the uses of peacetime commerce.—*New York Sun*.

New Antiaircraft Fire

Ordnance is getting nastier and nastier in its uncanny efficiency, the latest advance being the manufacture of guns that point themselves and fire with unerring certainty even at a moving target. This progress is due to that ever more marvelous power—the radio. The special purpose of the new gun is to make the air unsafe for attacking airmen in case of war. A microphone does, first, the detecting of the plane and then, swinging the gun to a positive lay on even an invisible flying machine, it turns loose a volley of bullets that do not give the attackers a factory girl's chance to escape. This very remarkable weapon has recently been on exhibition to those attending the recent ninth annual convention of the Army Ordnance Association at Aberdeen Proving Ground, Md. Army experts declare the exhibition the most remarkable and spectacular ever held. It seems to us, however, rather astonishing that a device so potent as the self-pointing gun should be on display there where any foreign scientists might inspect it.—*Times Picayune*.

Secretary Davis is Right, as All our History Proves

In a current magazine Secretary of War Davis gives the costs of some of the wars this country has fought. His figures follow:

War of Independence, \$50,000,000.

War of 1812, \$200,000,000 to \$300,000,000.

Civil War, \$3,000,000,000.

World war, \$34,000,000,000.

All our wars, \$40,000,000,000.

Were they worth what they cost? The first brought independence and nationality. It laid the foundations on which this has become the richest and most powerful nation.

The War of 1812 maintained independence, achieved freedom of the seas, established the northern borders, defended commercial rights and "nailed down, as against British desire to wrest that domain from us," our title to the Louisiana Purchase.

The war with Mexico brought us an empire in the West and Southwest.

The civil war saved and consolidated the nation.

The Spanish-American war expanded our domain, convinced the

world that the Monroe Doctrine meant what it said, and gave America a new place in the world.

The world war saved our political ideals, our republican institutions, perhaps our very civilization. Surely that made it worth the sacrifice. But in addition, the end of the first decade following peace finds the national wealth and prosperity and prestige increased to an extent that no stretch of the imagination could have anticipated.

In short, spiritual and sentimental results have in each case vastly exceeded the cost, while mere sordid material gains have at least fully justified the cost.

To say these things is not to laud war as an institution. It is altogether the worst that a Christian civilization has allowed to survive. Secretary Davis' point is that if there had been reasonable preparedness, most of our wars might have been avoided without losing either the spiritual and intangible benefits, or the material and tangible ones. He quotes General Wood as saying that if the nation had had a real Army of 50,000 men, the civil war "would not have lasted ninety days." And as to the world war Secretary Davis says:

"It is quite possible that if we had spent \$1,000,000,000 getting our Army ready for eventualities, after the world caught fire in 1914, we would never have been drawn into the world war."

There is the complete justification for effective preparedness. Whoever will read Secretary Davis' analysis, in the light of even the most rudimentary knowledge of the country's history, must recognize that he is completely correct.—*Washington Herald*.

Facts for Pacifists

A statement by Secretary of War Davis regarding American military expenditures is interpreted as an answer to pacifists propoganda directed at Congress. Whatever its purpose, the public should know the facts. Such oft-quoted assertions as that the Nation is spending sixty, or seventy, or eighty per cent of its income on the army and navy, accepted as "official" by the unthinking, are shown by Mr. Davis to be greatly exaggerated. Even including pensions, adjusted compensation and the Government's contributions to the war-insurance fund, only about thirty per cent of the total income is applied to purposes that can be called military. War Department expenditures constitute thirteen per cent of the Government's outgo, and they include many items of a nonmilitary nature. There is little danger that Congress will "run wild" on appropriations for national defense. The most serious attacks on the Treasury are threatened from quite different quarters.—*Philadelphia Public Ledger*.

Mechanizing the Art of War

Mechanized armies and navies are not dreams but realities. The art of the lathe and the drill, the jig and the gauge—in particular the art of building the internal combustion engine—has revolutionized the art of war.

In Venice a British officer, flying a 1000 horse-power motor with a propeller and some wings and pontoons attached to it, won the Schneider trophy with an average speed of more than 281 miles an hour. Sixty minutes from Chicago to Detroit!

In this country—less spectacular but telling—a battery of field guns was moved 700 miles by truck. An automatic antiaircraft gun was tested and gave gratifying results. All over the world of trained armies such evidences of the new military method are visible.

What an incentive it should give this country, where the craft of mechanizing ordinary life has been perfected as nowhere else in the world. What an advantage in preparedness over other countries without our great resources and our magnificent industrial system.

America must keep the pace. This country, where business experts have staggered conservative foreigners by their ruthless discard of the obsolete and adoption of the modern, cannot afford to be less alert when it is a question of keeping the military machinery up to date.

We must have our 281 mile an hour planes—perhaps we have in that of Lieut. Alford Williams. Such a development may logically start all over again the controversy of battleship versus airplane. Suppose new advances in the art of aviation permit the construction of a 281 mile an hour plane carrying a torpedo. Where would a battleship be if it were attacked by half a dozen such planes at once.

This is no time for the study of Hannibal's tactics or of Napoleon's strategy. Enough militarists are familiar with the classics already. It is the time for a stock taking, an audit, for efficiency experts, and a new beginning—with the junk thrown out—on a progressive policy in keeping with the mechanization of warfare.—*Chicago Tribune*.

Improved Guns

It is encouraging to learn that the Government is taking steps in the direction of national preparedness which should assist to prevent repetition of sad incidents during the former trials of national exigency.

New rifles far superior to those used by our soldiers in the late war have been developed, it is said, by the War Department. These weapons will have increased range, possess greater mobility and carry heavier projectiles.

This is sense. England and some other European countries have out-distanced us in the mechanization of fighting equipment, in the development of rifles and new artillery weapons. The equipment of the United States defensive forces should be at least on a parity with those of any country.

The new American rifles are said to be adequate for any emergency and will function efficiently on the battlefield.

These weapons have been developed by the ordnance branch of the War Department. They include a 75-millimeter gun and the 75-millimeter pack howitzer. There will be a new 155-millimeter, or six-inch, field gun and the 75-millimeter pack split trail, an improved 37-millimeter infantry weapon, a new trench mortar, two new three-inch antiaircraft guns and a fourteen-inch howitzer.

The American 75 will have a greater range and a wider field of fire than the famous French 75 used so efficiently during the war.

These guns are said to be easy of transportation. The antiaircraft weapon is especially looked upon with confidence, and it is said that the new howitzer not only equals in range the French weapons, but is so light in weight that it can be easily transported through mountainous or hilly country.

If Congress is sensible it will contribute immeasurably to an improving defensive situation by encouraging and developing to the fullest possible extent the country's naval and aviation units—especially the aviation unit. The Panama Canal Zone, the Phillipines and, above all, Hawaii, should be defended by adequate air equipment—fleets of airships about which there could be no manner of doubt concerning their efficient fighting force and ability.—*Cincinnati Enquirer*.

It Speaks Well for the Little Old Regular Army

It is pleasing to read in an official report that during the last three years more than one-half of the enlisted men discharged from the regular army re-enlisted within three months. The exact figures are 48,125 men or 57.8 per cent of those whose term of enlistment expired.

The American people have tucked away in the corner of their heart a very warm spot for the regular army. The part this little force played in blazing the way for civilization across a savage continent, its uncanny reliability in time of emergency, its resourcefulness in

supplying military education to hurriedly assembled millions of raw American recruits in the World War, and its heroic effectiveness in those early divisions first thrown into the fighting line in France, are a record to command, affection, and admiration.

And now the re-enlistments tell a story of affection of the men themselves for the service. It bespeaks the high character of the army in peace as well as in war. After all that is a very trying test. But it is the army's splendid qualities in peace that have made it so effective in time of trouble.—*San Francisco Chronicle*.

The Army too Small

Major General Charles P. Summerall, Chief of Staff of the United States Army, continuously is demonstrating to the American public that he is a right man in the right place. He is an intensive, competent, persistent and patriotic advocate and apostle of rational, efficient national preparedness. The country is fortunate in having this clear-headed thinker and forceful soldier citizen in a position where his enlightened judgment and personal activity must result in tremendous good for the well-being of the United States.

Speaking a few days ago at Chicago, General Summerall told the Association of Commerce of that city that military preparedness is a constructive agency, and not the destructive force it so often is pictured.

This is a truth that should be hammered into the mindless pacifists who maintain that a prayer and a palm branch should constitute the only defensive weapons needed by the modern nations of the world—especially by this nation.

But the prosperity, the bank account, the material expectancy of this country and the dividends it continuously pays in happiness to more than one hundred millions of people constitute a trust too great and sacred to be buttressed only by prayer, prophecy and the perversions of irrational pacifism. And this is not said in any sense of disparagement of real prayer or honest principles of sane pacifism.

When the American citizen—or any other citizen in the world—is prepared to see his neighbor's hogs or chickens, or both, in his garden patch working their will on it, or realizes that some one has hit him in his face, and is able to say, "Thank the Lord for these blessings," then we may begin to understand that humanity has been regenerated—that men will no longer fight.

Until such time we should be wise to keep men like General Summerall at the head of military affairs and to supply them with efficient armies—armies at least competent in every way to drive out international hogs and all other invaders from the national truck patch.

General Summerall pointed out that we are governed by civilians until there arises an international emergency beyond their powers to meet. Then the military forces must take charge until peace is established.

This being so, he argued that the whole United States should prepare itself with the same spirit that actuates the soldier, plans must be ready at all times for industrial and commercial organization just as well as for military campaigns. In such case the late Mr. Bryan's million men could leap at once to arms and be able to give a good account of themselves.

The General told his hearers that our present military forces are "very, very small and totally inadequate."

Who should better know the situation than he? And he further declared that a total of 3,000,000 men under arms is the first objective of the War Department in the event of major hostilities. Shall we not be wise enough to have them ready and well equipped?—*Cincinnati Enquirer*.

Unready—But Why Not Get Ready?

We should like to believe that the chief of our army staff, General Summerall was pessimistic when he said to the men of the War College:

"We have never fought a war with trained or equipped troops, and we never shall do so. It is inconsistent with our form of government and the psychology of our people to maintain adequate military preparedness. They would rather pay the price that has followed every war than spend a part of the amount in preserving peace."

General Summerall is not, however, a pessimist but a realist. He judges the future by the past.

Yet all the more necessary is it that those who can learn from experience should try to spread its lesson.—*New York American*.

Country's Wealth: A Comparison

Some measure of the growth of wealth in the United States can be found in a recent statement by the *Wall Street Journal*, analyzing the reports of many business concerns for the year 1926. The cash and investment holdings of 120 concerns analyzed totaled two and a quarter billion dollars, and the significant fact is that this was an increase of nearly \$300,000,000 over the year 1925. The working capital of the same concerns increased a little over \$450,000,000 during the same period.

The list was headed by the United States Steel Corporation with

the Standard Oil of New Jersey coming second, the General Electric third and the General Motors fourth. There were eleven companies in the list with aggregate cash and security holdings approximating a billion dollars in each case.

And the wealth of the smaller concerns in America and of individuals from the highest to the lowest is increasing proportionately. One has only to visualize the number of new business and office and public buildings, of comfortable new homes in every city and town and of the endless procession of new automobiles to know that this is true.

And the Pittsburgh *Chronicle-Telegraph* makes a point when it declares that, "Naturally, this great wealth is envied by people of other countries which have not been so prosperous. Some of these people would be quite willing to compel the Americans to give up part of their possessions. Force has often been used for purposes of this sort. This is one of the greatest reasons for maintaining a protective army and navy, adequate to keep our possessions at home and in our own care."

Americans are against any war of aggression but will defend their country to the last man and the last dollar. And the man who opposes adequate military insurance is too short-sighted to be a good American in the best sense of the word, no matter how well meaning he may be."—*Arizona Republican*.

Money for Defense

It has already been disclosed that the weapons now in the hands of the army are ancient designs so far outmatched by modern equipment that our soldiers would be helpless in the face of a properly armed enemy, and that the new tanks and guns and rifles made so much of exist only as models and in insignificant number. Now it is disclosed that the army's ammunition reserve is so small that it would last an army of a million men—the number we should raise immediately in case of a major war—only an hour.

One hour's supply of ammunition for antiquated weapons. It is a spectacle that should rejoice the hearts of the supine pacifists and make advocates of preparedness in the most potentially powerful nation on earth rush to the support of their army.

It is the plan of the ordnance department, first, to be able to manufacture enough of any particular type of weapon so that it may be placed in the hands of the troops for actual service test; second, to be able to manufacture enough of the tools necessary in making the tested and perfected weapon so that at least two private manufacturers for

each weapon will be able to commence an immediate output of the weapon in case of emergency.

There is so much common sense in the plan that it cannot be refused. New weapons are useless unless they have been tested under realistic conditions and they might as well not exist if they cannot be manufactured in quantity when the need for them comes.

When criminals began to use automobiles we gave our policemen automobiles. When criminals began to use automatics and machine guns we gave our policemen repeaters and machine guns and tear gas bombs. But our army we permit to go along with what they have while the rest of the world modernizes its defense. Are we to treat our policemen more fairly than we do our soldiers? Are we to protect our homes and property and lives, but leave our nation, our national property, and our life as a nation without defense?—*Chicago Tribune*.

Vigilance Still the Price of Liberty

Every sane American hopes and trusts that this Nation will never be involved in another war. The great majority of these, no doubt, feel confident that this Nation will never be involved in another war; confident that the Government and those governments with which it has dealings will so conduct themselves as never to give cause or occasion for another war. But all this hope and trust and confidence does not guarantee there will never be another war. Nor does it protect us from the needless waste of lives that will result, if another war catches us unprepared.

After several decades of peace had followed the Revolution, the public thought there never would be another war. So the emergency of 1812 caught the Nation unprepared. After the War of 1812, a similar feeling of security led to lack of adequate preparation for the Mexican War. The costly lesson of the Civil War needs no comment here. Even in the relatively small War with Spain, lamentable unpreparedness inflicted needless losses.

The cost of American unpreparedness in 1917-1918 should still be fresh in the public mind. But evidently it is not. For among us there are many advocates of a new period of unpreparedness while the next war may be brewing. There are the out-and-out pacifists, convinced that peace may be had for the wishing, willing that their Country expose both cheeks to whatever smittings the rest of the world may care to pile on.

Then there are the pseudo-statesmen who pooh-pooh the need of adequate National defense, while, at the same time, going out of their

way to insult and offend this Country's powerful neighbors. These pseudo-statesmen want Uncle Sam to walk unarmed through an armed world with a chip perpetually balanced on his shoulder, to throw away his gun then make offensive remarks to the two-gun folks living next door.

The American Legion, which has been through one war, sees this question of peace and armaments in its true light. The American Legion's members, from now on, will, as individuals, be exerting a growing influence on this Country's politics and policies. Which is lucky for the Country.—*Minneapolis Journal*.

Peace and Preparedness

Peace is the most necessary condition for the world today. Another war like the Great War would probably result in the extinction of Western culture. Every intelligent man knows this. Above all, those who took part in the fighting between 1914 and 1918 know what modern warfare means, and know only too well that the next war will, as Marshal Foch has said, be a war against civilian populations.

But there is no use losing our heads about the matter. There is no use introducing childish resolutions like that introduced before the World Federation of Education Associations, at Toronto. The abolition of military training in all civil educational institutions is not an essential step in the cause of world peace. Because men are trained to keep discipline and respect order and to carry on with their work, no matter how disagreeable, it does not necessarily mean that they will henceforth go about the world seeking whom they may devour.

Military training, as taught in civil establishments, does not make soldiers in these days. It makes good citizens, for anybody who has been taught to do his job is a better citizen than the man who shirks it; and man for man, those who went to the war are better men than those who could have gone and did not go. But the sort of drill which is given in schools does not make fighting men today. In happier days, when cannon balls could be dodged, and battles were won by the infantry which were more than a match for the opposing infantry in muscular development and quickness of movement, the simple manoeuvres of the parade ground were no doubt of practical use. But nowadays when the whole army is being mechanicalized, and it is possible to serve through a long campaign without ever seeing a live enemy, it is nonsense to talk as if a training in discipline were the same as military training. The gentlemen of the World Federation of Education Associations are talking too much by the book and too little from experience.—*Montreal Star*.

PROFESSIONAL NOTES

Private First Class Christopher Crowley

HEADQUARTERS FORT AMADOR, C. Z.,

OFFICE OF THE COMMANDING OFFICER,

Fort Amador, Canal Zone.

October 27, 1927.

GENERAL ORDERS

NUMBER 29.

1. On October 17, 1927, a party of observers was sent to Bruja Point. In a high sea, with heavy surf and a strong undertow, the skiff carrying the party was overturned. Private First Class COLGROVE, Battery "D", 4th Coast Artillery, started to swim ashore but sank. Private First Class CHRISTOPHER CROWLEY, 6777035, Battery "D", 4th Coast Artillery, immediately went to his rescue and at the risk of his own life succeeded in getting Private Colgrove ashore.

2. The Commanding Officer considers this act of heroism on the part of Private First Class CROWLEY as worthy of especial commendation and as a splendid example of that loyalty and devotion to duty which characterizes this command.

3. This order will be read to all units of the command at the next suitable formation.

BY ORDER OF COLONEL JEWELL:

C. W. BUNDY,
Captain, 4th C. A.,
Adjutant.

OFFICIAL:

C. W. BUNDY,
Captain, 4th C. A.,
Adjutant.

The Third Coast Artillery (Harbor Defense)

The Coat of Arms of the 3rd Coast Artillery was approved by the War Department on November 1, 1924; and its blazonry is as follows:

Shield: Or (gold), on a chevron *gules* (red), above an imperial Chinese dragon of the like (red), armed *azure* (blue), three mullets *argent* (silver); on a chief of the second (red) two pallets of the fourth (silver) an arrow in fess counterchanged.

Crest: Out of a mural crown or (gold) masoned *gules* (red), a garland, the dexter branch cactus, the sinister palm, proper (in natural colors), encircling a sun in splendor *argent* (silver).

Motto: *Non Cedo Firio* (I yield not, I strike).

The old 3rd Regiment of Artillery was formed in 1821 by the segregation of existing independent companies into a regimental organization, which consisted then of nine companies lettered from A to I. Company K was added in 1833, L

and M in 1847, and N and O in 1899. Of these organizations eight are incorporated in the present 3rd Coast Artillery. Four batteries participated in the war of 1812 and also took part in the Seminole Indian War in Florida from 1835 to 1841, which is attested by fifteen engagements during the conflict. Battery B was part of the command which was nearly annihilated near the Withlacoochie River, Florida, on December 28, 1835, familiarly known as Dade's Massacre. Eleven officers of the Third died in Florida during that war; of these, three fell in action and one died of wounds. Forty-five enlisted men were killed by the Indians, and one hundred and thirteen died of disease. Nearly every officer of the Third was in the field. Ten were brevetted for gallantry in specific actions.

The Mexican War brought the Third into the field again, Companies A and I were present when the opening gun of the war was fired at Palo Alto, May 8, 1846. Company E, now Battery E, was at Beuna Vista on February 22-23, 1847. Theo. F. Rodenbough, in *The Army of the United States*, says: ,

The American Army being divided, left Taylor with only 4,000 men. Santa Anna, whether by instinct or accident, determined to act upon the correct military principle and beat the widely separated parts in detail. Hence resulted the Battle of Beuna Vista, which shed an unfading lustre on the American arms. On our left, the volunteers at first fled ingloriously. The torrent of defeat was stemmed by the light artillery, O'Brien of the 4th Artillery losing his pieces, his horses being killed and the infantry supports gone. This was the supreme moment. Santa Anna launched his reserves on our center, at first with irresistible force. Everything gave back before the enemy's masses, but E was there, and, although compelled to recede, did so only by the recoil of its splendidly served guns. Bragg with C [now Battery E, 3rd Field Artillery] had gone to the left to assist righting matters, but seeing the movement against the center, hurried as fast as his jaded horses could travel to meet it.

What followed is best described in the language of General Taylor's report. "Captain Bragg, who had just arrived from the left was ordered into battery. Without infantry to support him, and at the imminent risk of losing his guns, he came rapidly into action, the Mexican lines being but a few yards from the muzzle of his pieces. The first discharge of cannister caused the enemy to hesitate; the second and third drove him back in disorder and saved the day." In his official report General Wool stated that, "without our artillery, we could not have maintained our position a single hour." The heavy artillery companies all fought as infantry during this conflict, and did excellent fighting.

In 1849 Companies B and D were again sent to Florida to help fight the Seminole Indians.

Batteries A, D, and I were part of the troops of the old 3rd Artillery ordered to proceed to California by way of Cape Horn in 1848, but the ship on which the troops had embarked suffered shipwreck and about 150 soldiers perished. The rest were rescued by two American vessels and a British ship which carried her survivors to Liverpool, England. In 1854, Batteries B, D, and I were again ordered to the Pacific Coast, this time by way of the Isthmus of Panama. Batteries M [F, 3rd C. A.], D, B, and A saw service in the Pitt River expedition in 1850 and Indian Wars in Oregon and Washington in 1855 to 1858. In 1859, Batteries A, B, and D joined the other troops at Camp Pickett at San Juan Island, Washington. This event is known as the San Juan imbroglio, and was occasioned by a dispute over the boundary line and who should own San Juan and which seemed likely

to precipitate war with Great Britain. Batteries E and M [F, 3rd C. A.] only, took an active part in the Civil War. Batteries A, B, D, and I were stationed on the Pacific Coast and they rendered valuable services to their country. In 1901 Batteries A, D, I (C, 3rd C. A.), and O (Hdqrs. Bat. 3rd C. A.) saw service in China during the Boxer troubles, and in 1901 to 1903 had active fighting in the Philippines.

The battle honors of the regiment given by the Army Register and embroidered on streamers and carried on the regimental colors are:

War of 1812; Indian War; Seminole and Washington, 1858; Mexican War; Palo Alto; Resaca de la Palma, Monterey, Vera Cruz, Cerro Gordo, Churubusco, Molino del Rey, and Chapultepec; Civil War; China Relief Expedition; and Philippine Insurrection.

The red chief with two white lines is the color of the battle streamer of the War of 1812 in which four batteries of the 3rd participated. The arrow recalls the Indian fighting of the regiment. Yellow was the color of the facings of the artillery in 1812 and the color of the regimental flag from 1834 to 1887; therefore the gold suggests this period of the organization. The chevron stands for the Civil War service and the three stars for the number of the regiment, while the dragon recalls the China Campaign in 1900. The dragon's claws and teeth are blue indicating that the units served as Infantry in the Expedition. In the crest, the mural crown signifies the participation of the regiment in the capture of cities and towns in the Mexican War and Philippine Insurrection, days when laurels were won by the regiment, the days being symbolized by the sun in his glory, and the Mexican and the Philippine Insurrection being indicated by the chaplet of cactus and palm.

The designation of these units has been so often changed that a list of them may be of interest.

Headquarters Battery, 3rd Coast Artillery, was organized in 1899 as Battery O, 3rd Regiment of Artillery, at the Presidio of San Francisco; designated 36th Company, Coast Artillery in 1901; became 5th Company, Fort Mills, P. I., in 1916, and 5th Company, Coast Defenses of Manila and Subic Bays, in 1917; redesignated the 36th Company, Coast Artillery Corps, in 1922; and Headquarters Battery, 3rd Coast Artillery, in 1924. This battery was stationed in Alaska from 1898 to 1899.

Battery A, 3rd Coast Artillery, was organized in 1812 by Captain Roger Jones. During this period the company was always named after the captain who commanded it. If another officer took command the name was changed accordingly, until 1816 when a definite designation was assigned to each unit. This organization then became Company F, 3rd Battalion, Northern Division, Corps of Artillery. In 1821 it became Company A, 3rd Regiment of Artillery (the artillery units were called batteries after 1861); designated 25th Company, Coast Artillery, in 1901; became 2d Company, Fort Miley, California, in 1916, and 19th Company, Coast Defenses of San Francisco, in 1917; Battery C, 18th Artillery, Coast Artillery Corps, in October, 1918; after the war again became the 19th Company, Coast Defenses of San Francisco; and in 1922 was redesignated 25th Company, Coast Artillery Corps; Battery A, 3rd Coast Artillery, in 1924.

Battery B, 3rd Coast Artillery, was organized by Captain Michael Kalteisen in 1794, as his company, and was assigned to the Corps of Artillerists and Engineers. In 1799 a company of the Regiment of Artillerists and Engineers; became a company of the 1st Regiment of Artillerists in 1802; a company of the

1st Regiment of Artillery in 1812; and a company of the Corps of Artillery in 1814. In 1816 it was designated Company B, 2d Battalion Southern Division; became Battery B, 3rd Regiment of Artillery, in 1821; designated 26th Company, Coast Artillery in 1901; became 1st Company, Fort Flagler, Washington, in 1916, and 13th Company, Coast Defenses of Puget Sound, in 1907; Redesignated 26th Company, Coast Artillery Corps, in 1922, and became Battery B, 3rd Coast Artillery, in 1924.

Battery C, 3rd Coast Artillery, was organized in 1812 by Captain George A. Russell and became a part of the 2d Regiment of Artillery. It became a company of the Corps of Artillery in 1814, and Company O, 2d Battalion, Southern Division, in 1816; then Company I, 3rd Regiment of Artillery, in 1821; was designated 31st Company, Coast Artillery, in 1901; became 2d Company, Fort Caswell, North Carolina, in 1916, and Battery L, 8th Provisional Regiment, Coast Artillery Corps, in 1917; then Battery L, 53rd Artillery, Coast Artillery Corps, in February, 1918, and Battery E, 53rd Artillery, Coast Artillery Corps, in July, 1918; received the additional designation, 31st Company, Coast Artillery Corps, in 1922; and became Battery C, 3rd Coast Artillery, in 1924.

Battery D, 3rd Coast Artillery, was organized by Captain Donald G. Mitchell in 1794, and was assigned to the Corps of Artillerists and Engineers. A company of the Regiment of Artillerists and Engineers in 1799; a company of the 1st Regiment of Artillerists in 1802; a company of the 1st Regiment of Artillery in 1812; and a unit of the Corps of Artillery in 1814; was designated Company K, 2d Battalion, Southern Division, in 1816, and Company D, 3rd Regiment of Artillery, in 1821; designated 27th Company, Coast Artillery, in 1901; became 7th Company, Fort Winfield Scott, California, in 1916, and 7th Company, Coast Defenses of San Francisco, in 1917; then 4th Separate Antiaircraft Battery in 1917; demobilized at Fort Totten, New York, in 1919; reconstituted and consolidated in 1922, with the 3rd Company, Coast Defenses of Los Angeles, which had been organized in 1918; and designated the 27th Company, Coast Artillery Corps; became Battery D, 3rd Coast Artillery, in 1924.

Battery E, 3rd Coast Artillery, was organized in 1821 by Captain H. Craig as Company E, 3rd Regiment of Artillery; designated 28th Company, Coast Artillery, in 1901; became 1st Company, Fort Rosecrans, California, in 1916, and 1st Company, Coast Defenses of San Diego, in 1917; was redesignated 28th Company, Coast Artillery Corps, in 1922 and became Battery E, 3rd Coast Artillery, in 1924.

Battery F, 3rd Coast Artillery, was organized in 1847 as Company M, 3rd Regiment of Artillery; designated 34th Company, Coast Artillery, in 1901; became 1st Company, Fort Stevens, Oregon, in 1916, and 1st Company, Coast Defenses of Columbia, in 1917; was again designated 34th Company, Coast Artillery Corps, in 1922; and became Battery F, 3rd Coast Artillery, in 1924.

Battery G, 3rd Coast Artillery, was organized in 1899 as Battery N, 3rd Regiment of Artillery; designated the 35th Company, Coast Artillery, in 1901; became 1st Company, Fort Monroe, Virginia, in 1916, and 1st Company, Coast Defenses of Chesapeake Bay, in 1917; redesignated 35th Company, Coast Artillery Corps, in 1922; and became Battery G, 3rd Coast Artillery, in 1924.

The personnel of the organization wear the crest and motto of its coat of arms as a distinctive regimental badge on their uniforms.

U. S. Aircraft Carriers

The United States aircraft carrier *Saratoga* was commissioned on October 31 for trials. She will be followed about the end of the year by the *Lexington*. With the entry into service of these two ex-battle cruisers next year, the United States will have the largest and heaviest aircraft carriers of any Power. The Washington Conference, to maintain the *status quo*, allowed Great Britain to build two new battleships, and so we now lead the world with the *Nelson* and *Rodney*. By allowing the United States and Japan to convert two battle cruisers each, it gave them a similar preference in aircraft carriers. The two *Lexingtons*, and the *Akagi* and *Kaga*, mount 8-inch guns, as against 6-inch or 5.5-inch in the British carriers. The American ships are of 33,000 tons, and the Japanese of 26,900, against the 22,600 tons of the *Eagle*, the largest of the British ships. The length of the *Saratoga* is 880 feet, of the *Akagi* 763 feet, and the *Eagle* 667 feet.

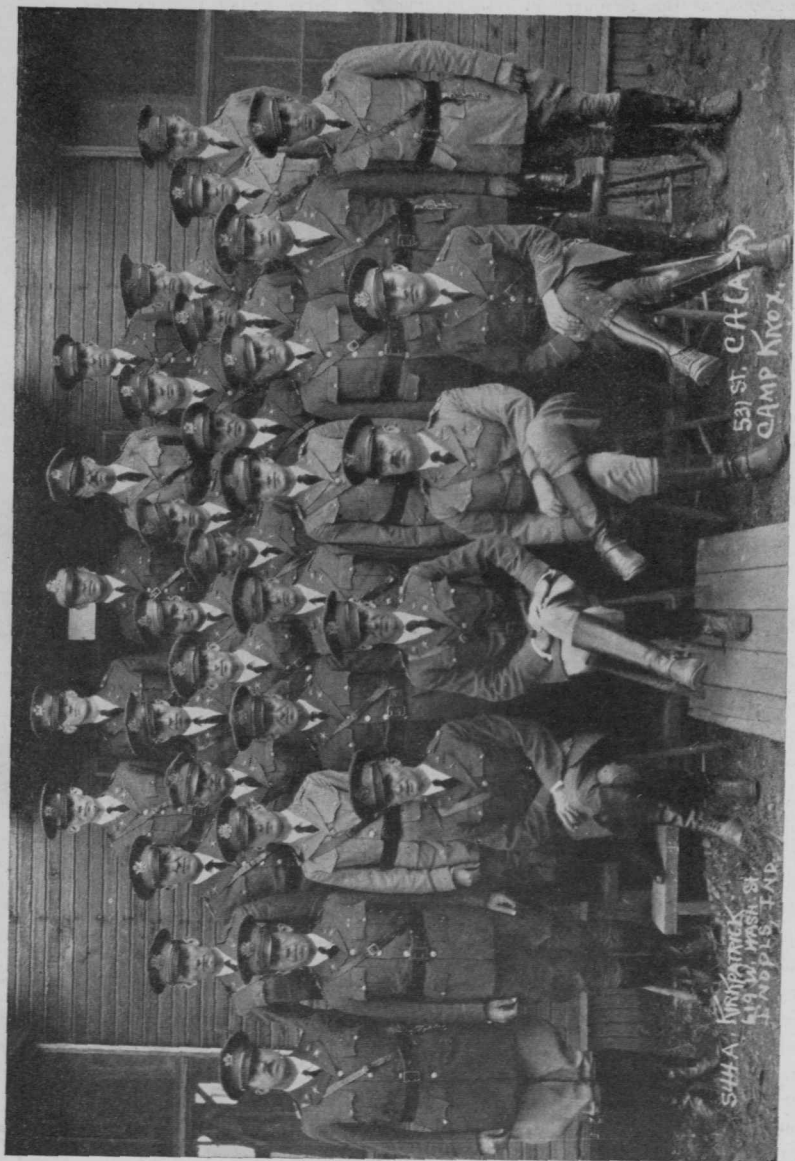
The *Lexington* and *Saratoga* were launched in 1925, and the following particulars are extracted from those given by Mr. C. D. Wilbur, Secretary of the Navy, when the *Saratoga* was put afloat. She will carry 72 aeroplanes, of which 31 will be bombing machines. Her total cost, with all equipment, will be about 45 million dollars. To propel her at the designed speed of 33.9 knots, 180,000 horsepower must be applied to the four shafts. Steam to produce this power will be generated in 16 boilers, each 11,250 h. p. Steam is produced at a pressure of 295 lbs. per square inch. At full power the boilers will burn 2,000 tons of oil per day. The oil capacity is sufficient for the vessel to cross the Atlantic at full speed in less than four days. All the light, heat and power for a city of 700,000 people could be supplied from the power plant in the ship.

In addition to the main propelling equipment, there are six 750-k. w. turbo-generators, which furnish electricity for lighting the vessel and for numerous other services. Over a thousand motors are installed, varying in size from the 125 h. p. motor driven fans which supply air to the wind tunnel, down to the tiny motors in the fire-control system which develop less than a 2000th part of one h. p. It has been well said that mortal mind has conceived and put into execution nothing which embodies more of the accumulation of human knowledge, particularly in regard to the application of electricity, than these United States aircraft carriers. Although each ship will carry 72 aeroplanes, in practice they can operate only half that number. Of the complement of 190 officers, 130 will be borne for flying duties.—*The Army, Navy and Air Force Gazette*.

The 531st Coast Artillery (Antiaircraft)

The 531st Coast Artillery (Antiaircraft), is one of the reserve regiments organized since the war under authority of the National Defense Act, Section 3A. It is assigned as G. H. Q. Reserve troops and is allocated to the Chicago, Illinois, district.

The regiment was organized May 4, 1922, the first officers being assigned by Paragraph 3, Special Orders 104, Headquarters Sixth Corps Area, May 4, 1922. This order assigned forty-nine officers, thirteen of whom, including the present regimental commander, Lieut. Colonel Howard W. Hodgkins, are still with the regiment. During the more than five years since the regiment was organized,



531ST COAST ARTILLERY, (A-A) AND ATTACHED OFFICERS, CAMP KNOX, KENTUCKY, AUGUST 2-15, 1927.

Front Row: MAJ. A. H. DOW, C. A. C., Acting Executive Officer; MAJ. S. E. CHURCH; COL. H. W. HODGKINS, Commanding; MAJ. H. P. NEWTON, B. A. C., att.; Second Row: CAPT. W. N. SCHAEFF, CAPT. L. S. MORRILL; 1st Lt. M. G. HINCKLEY; 1st Lt. O. C. WOOD; 2d Lt. I. D. A. KELLY, 532d C. A., att.; 2d Lt. F. F. HARTMAN; 1st Lt. F. J. DAWLEY; 1st Lt. A. M. WIRTZ; CAPT. H. H. MAYNARD, Third Row: 2d Lt. R. J. DOWNNEY; CAPT. C. A. ROWLEY; 2d Lt. H. G. JOHNSON; 1st Lt. L. G. JOHNSON; 1st Lt. E. F. BRANSON; 2d Lt. H. J. HARRIS; CAPT. R. E. HUBERT; 1st Lt. J. B. YLACK; CAPT. H. C. SHAEFF; 1st Lt. A. B. JUELL; 2d Lt. H. L. FREER; 1st Lt. O. R. LUNDECK; 2d Lt. R. E. BERTON; CAPT. W. A. MEARES, Top Row: 2d Lt. C. W. TOENES; 1st Lt. J. S. WOJCIECHOWSKI; 2d Lt. R. B. SCHAEFF; 1st Lt. E. J. PATTON; CAPT. E. C. BLANK, 532d C. A., att.

a large number of officers have had their names on the regimental roster for varying periods, as the turn-over in reserve officers is large owing to their frequent change in location, particularly among the junior officers. The regiment now has seventy-eight Coast Artillery Reserve officers assigned and attached, the officers being well distributed through the various ranks.

The original regimental commander was Major Kenneth C. Ives and the Executive Officer who organized the regiment was Captain Delbert H. Ausmus, C. A. C. It is very largely due to the energy and interest of Capt. Ausmus that the regiment got away to a good start. During the summer of 1922, twelve of the officers of the regiment were ordered to fifteen days active duty at Camp Custer, Michigan, and this service constitutes the first time the regiment may be said to have been on active duty.

During the winter of 1922-1923 a number of dinner meetings of the regiment were held and the officers became acquainted with each other and began the study of antiaircraft artillery, which was new to practically every officers in the organization. During 1923, Capt. Ausmus was relieved as executive, and Colonel A. P. Watts, Infantry, took over these duties together with similar duties in connection with a large number of non-divisional units.

About the middle of 1924, Captain James L. Guion, Ordnance, became executive officer, and the regular monthly dinner meetings were resumed in the fall of the year. On January 4, 1925, Lieutenant Colonel Hodgkins, the present regimental commander, assumed command of the organization and there was a general resassignment of officers to the units within the regiment. Major Carl N. Wolf assumed command of the first battalion and Major Sanford E. Church of the second battalion.

In addition to the regular monthly meetings, during the spring of 1925 a number of trips were made to the armory of the 202d Coast Artillery, Illinois National Guard, for instruction upon the material of that organization. Colonel C. F. Kraft, commanding the 202d Coast Artillery, and his officers cooperated in this training, which was of great assistance in the instruction of the regiment.

During the summer of 1925 the regiment was ordered out for fifteen days active duty training at Camp Sparta, Wisconsin. This training was with the 202d National Guard regiment and the officers of the 531st Coast Artillery were superposed on the National Guard organization, the officers of each unit of the 531st working with the officers of the corresponding unit of the 202d. During this training the First battalion was in charge of Major Samuel T. Phillips, CA-Res. The instruction was under the direction of Major Oliver L. Spiller, C. A. C., and a team of regular army antiaircraft officers, assisted by a detachment of enlisted men. Twenty-four of the coast artillery officers of the regiment and the regimental surgeon, Lieutenant Colonel Carl L. Barnes, attended this training.

In the fall of 1925, Captain Thomas R. Bartlett, C. A. C., became the executive officer of the regiment. The regular monthly dinner meetings were resumed and in addition a group school holding a separate monthly meeting was started and run throughout the winter season. A number of the officers passed the required examinations and were promoted. Due to its location at Chicago, the regiment was fortunate in being able to secure a number of interesting and instructive speakers for its various meetings. These included Colonel Robert E. Wyllie, G. S., the Chief of Staff of the Sixth Corps Area, who came to that position from the command of the 64th Coast Artillery (Antiaircraft) in Hawaii,

and Lieutenant Colonel Jay P. Hopkins, C. A. C., who was chief of Antiaircraft Artillery, A. E. F.

Colonel Wyllie designed for the regiment its coat of arms which was approved by the War Department on March 21, 1925. The shield is *gules* with a pairle *ermine*, over all a winged round of antiaircraft ammunition or. The shield is red for artillery, the pairle appears in the arms of the city of Chicago, to which district the regiment is allocated, and the winged round of fixed ammunition indicates the service of the regiment. The regimental motto is, "We will." The regimental insignia were secured and worn at camp in the summer of 1925.

In the fall of 1926, First Lieutenant Charles M. Wolff became the regimental executive officer, and the monthly regimental dinner meetings and group school meeting were held regularly throughout the season of 1926-1927, there being two meetings each month, one of each kind. In the early spring of 1927, the regiment lost Lieutenant Wolff, and since that time regimental affairs have been handled directly through the office of Colonel Henry L. Newbold, F. A., the Chief of Staff of the Artillery Group. Colonel Newbold has taken an active personal interest in the affairs of the regiment and has regularly attended the regimental meetings.

During the spring of 1927 advantage was again taken of the opportunity to use the materiel of the 202d Coast Artillery, and a number of instruction periods were held at their armory in anticipation of summer active duty training.

The regiment was ordered to Camp Knox, Kentucky, for training from August 2 to 15, 1927. Arrangements were made for two special cars, and the officers arrived together and in uniform at Camp Knox on the morning of August 2. The regiment was commanded by Lieutenant Colonel H. W. Hodgkins, the first battalion by Captain Walter N. Scharff, and the second Battalion by Major Sanford E. Church. The regimental surgeon, Major Theodore Burstein, Med. Res., accompanied the regiment. Thirty-two Coast Artillery reserve officers of the regiment were present at the camp and three additional officers were attached to the regiment for training during the camp.

This camp was a joint Coast Artillery Reserve Camp for the Fifth, Sixth and Seventh Corps Areas and was attended by one hundred and thirty-five officers. Those from the Sixth Corps Area included groups from the 526th and 536th Regiments, as well as the 531st Coast Artillery. The Sixth Corps Area officers were grouped to form one battery and those from the Fifth and Seventh Corps Areas together formed a second battery. There was considerable rivalry between the two batteries, which added to the interest taken in the camp.

Each battery functioned alternately as a gun battery and as a machine-gun battery, and all officers were also given considerable instruction on the searchlight. ~~Major~~ A. H. Doig, C. A. C., acted as the executive officer of the regiment during the period of the camp. The Sixth Corps Area gun battery was commanded by Captain Walter N. Scharff, and was commanded by Major Sanford E. Church when it functioned as a machine-gun battery, both of these officers being from the 531st Coast Artillery.

The Camp was commanded by Lieutenant Colonel J. R. Musgrave, C. A. C., with Major L. L. Pendleton, C. A. C., as Camp Executive. The materiel used was furnished by the 62d Coast Artillery (A-A) and included the three-inch guns on trailer mounts. The instruction on the material and the firings were largely under the supervision of Captain J. T. Lewis, 62d C. A., and Second Lieutenant

F. A. Mitchell, 62d C. A., who were assisted by a detail of enlisted men from that regiment.

Airplanes towed targets for both machine-gun and gun target practices. Practice at balloons was also had by the machine guns. Some preliminary firing was had the first week of camp and the record practices were held the second week of camp.

The 531st Coast Artillery had two record practices, each of which was ended by, "Target shot down." In the first practice, seventy-eight rounds were fired at an average slant range of 4,400 yards and average altitude of 1,500 yards, at a target towed seventy-five miles per hour. Eight hits were recorded, giving a percentage of hits of 10.2 and a score of 40. Two guns were used and the time was not especially fast, as there was considerable difficulty with the traversing mechanism of one of the guns. The fire was at the rate of 38.4 shots and 3.6 hits per four-gun battery per minute.

In the second practice a better record was made as there were five hits out of eight shots, the eighth shot knocking down the target. There were two more shots in the air at the time, which were not recorded but burst practically upon the position of the target. The average slant range was 3,800 yards, average altitude 1470 yards and ground speed of plane 75 miles per hour. The percentage of hits was 62.5, elapsed time 0.65 minutes, hits per four-gun battery per minute 15.2. The score was 158.

The battery from the Fifth and Seventh Corps Areas also had two record practices and in each of them shot down the target.

Instruction in a variety of other subjects was also had at the camp. The record pistol practice was had by all officers and quite a large number qualified as marksmen or better. The officers were quartered in war-time barracks which had been renovated, however, and put in very good shape, and proved very satisfactory. The weather was excellent and the visibility was good on most of the firing days. The officers in control of Camp Knox and of the Coast Artillery Camp did everything possible to insure a pleasant and instructive camp.

The Coast Artillery Reserve officers of the regiment who attended the camp were Lieutenant Colonel H. W. Hodgkins; Major S. E. Church; Captains R. E. Hubert, H. H. Maynard, W. A. Meares, L. S. Morrill, C. A. Rowley, W. N. Scharff, and H. C. Sharpe; First Lieutenants E. P. Brannon, F. J. Dawley, M. G. Hinckley, L. G. Johnson, O. R. Lundbeck, E. J. Patton, J. B. Vlack, A. M. Wirtz, J. S. Wojciechowski, O. C. Wood, and Second Lieutenants R. E. Button, R. J. Downey, H. L. Freer, G. W. Hampe, H. J. Harris, P. F. Hartman, H. G. Johnson, A. B. Juell, M. G. Markle, R. B. Scharff, L. H. Schutte, and C. W. Toenes.

Covering Cards With Celluloid

By LIEUT. W. B. SHORT, C. A. C.

The writer has often been confronted with the problem of covering charts, scales, circulars, speed plates, pass cards, etc., with a flexible transparent covering, and although resort to the usual method of coating with shellac, lacquer, and the like, or inserting the paper or card between sheets of celluloid, the edges of which were sewed, has been made, no satisfactory solution was found until recently.

For the benefit of those who have the same problem to contend with, "our approved solution" is offered.

The apparatus required consists of a large blotter; a small squirt can—the can that accompanies a sewing machine will do provided that it is cleaned of the oil; a pair of shears or photo cutting board.

The material other than the cards or papers to be covered consists of thin sheets of celluloid as found in the engineers chest or sketching cases; a bottle of acetone; a paper of pins.

Taking a pass card to be covered as an example, the procedure is as follows:

Place the card on the blotter, which has been placed on a flat surface, as a table top. Cut a piece of celluloid larger than the card so that the card will be covered entirely with the celluloid projecting around the card forming a border—one-quarter inch will do. Pin one end of the celluloid down but do not let the pins pass through the card. Take the squirt can, which has been previously filled with acetone, in one hand, and with the other hand carefully raise the celluloid until the card is fully exposed. Holding the edge of the celluloid with the thumb, press the celluloid until it comes into contact with the edge of the card. Squirt the acetone between the card and celluloid being careful to press the celluloid *quickly* to the card as the acetone covers it. The acetone from the squirt can in this way is moved across the face of the card, being followed by the celluloid which is pressed down evenly by the hand. One side of the card is now completed. Remove the pins and turn the celluloid over. Place the other piece of celluloid over the card so that it will match up with the first piece. Pin the end down, apply the acetone and press down as before. Remove the pins and trim the border as desired with the shears. It is advisable to use a clean dry place for each "pasting."

If this is properly done the card will be completely sealed and alterations will be difficult and easy to detect. It will be waterproof to a great extent. Charts, photographs, scales, etc., can be treated likewise and their life increased. If celluloid which has one side "frosted" is used, use the frosted side next to the card as the acetone will clear it up. It is recommended that the reader experiment with a card that is not valuable for the first trial, as there is quite an art in following up the action of the acetone on the celluloid. A supply of celluloid can be obtained by stripping film. The (photo) film is placed in a pan of lye solution and allowed to remain until the emulsion is soft enough to be removed with a soft brush or rag. Wash the film and allow it to dry. The stripped film is very clear and thin.

Credit is due to Staff Sergeant (Master Gunner) H. A. Smith, 64 C. A., for his help and ideas in making the process successful.

Old Army Customs

By LIEUTENANT COLONEL A. WILSON, D. S. O.

Extracts from an Article in the *Journal of the Society of Army Historical Research*, London, England

"In early days, the company was the infantry unit, and when several companies served together under one officer, they were spoken of as 'Companies under Colonel So-and-so's regiment,' or rule, which expression was soon abbreviated into 'Colonel So-and-so's regiment.' The Colonel still remained a company-officer, but in

practice his company was commanded by the next senior, who thus got the title of Lieutenant-Colonel.

"At drill and exercise, all movements were made under the control of the Sergeant-major, who performed the duties now undertaken by the Adjutant. He was a commissioned officer, and was the only one who remained on his horse in action, for he constantly had to be moving about with orders, or seeing to the formation of the companies. After a time, his title was cut down to Major. Thus it is that a Major-General is now junior to a Lieutenant-General, for he was originally called Sergeant-Major-General, and naturally was under the Lieutenant-General.

"The Drum was probably introduced as a military instrument at the time of the Crusaders, for it is of a peculiarly Oriental nature, as is the trumpet, and from the combination of these two arose our military bands. They were used to mark the rallying point in a battle and to stimulate the courage of the warriors, as have been the Highland bagpipes from time immemorial. The Swiss were the first troops to march in step to the sound of the drum.

"The three volleys fired over a soldier's grave can be traced back to the Germans, for when a man had been sentenced to run the gauntlet to death, after he was dead his comrades knelt and prayed for his soul and then fired three volleys in the air, in the name of the Holy Trinity. This at any rate is a more reasonable supposition for their origin than that the volleys were fired to scare away devils.

"The salute is of still greater antiquity, probably dating from the Crusades, when European Swords had cross hilts. Before going into action, or on coming into the presence of a superior, the sword was raised to kiss the Cross and then lowered as a sign of humility. It is not stretching the imagination very far to believe that the salute on the march was making the whole sign of the Cross, before lowering the sword. The salute with the hand corresponded, at one time, exactly with the Arab salam of shading the eyes from the dazzling countenance of the person saluted, later, the palm of the hand was opened to the front, to show that no missile or weapon was held. The Turkish soldier still shades his eyes and keeps his hand up the whole time he is in the presence of his superior. The "present arms" with the rifle is a relic of holding out the weapon, with which the man was armed (pike, bow, or musket) in such a position that it could not be used.

"There are a good many terms in every-day use, which are traceable to the army. 'Mufti,' signifying civilian clothes as opposed to uniform, must certainly date from the Crusades, as it is an Arabic or Saracen term for ordinary dress as distinguished from that worn on a ceremonial or official occasion. So does in all probability the word 'barrack' or 'park,' one being a corruption of the other, for this is the Arabic term for the formation of camels, when collected together for the night, as guns are parked, or soldiers collected in barracks. 'As plain as a pike staff' comes from the sergeants holding up their pikes to show the men the point on which to form. 'To drink a bumper'—Bumper was the name for a leather jack or flagon, which was called after the bombard, an early form of cannon, made of leather, reinforced with iron hoops. 'Stock, lock and barrel,' indicating completeness, arises from the fact that the different parts of the musket were accounted for separately on different pages of the equipment ledger. 'Hoist with his own petard'—the petard was a sort of bomb, for blowing in the gate of a fortress, which in the days of uncertain fuses must often have done more harm to its users than to the object they wished to destroy."—D. M.

The Rhineland Occupation

According to a statement made by the Government to the Occupied Territories Committee in the Reichstag, on October 19, much progress has been made in regard to the reduction in the Allied Armies of Occupation agreed upon by the Conference of Ambassadors. The suspicions of the Nationalists that the French were not loyally carrying out the agreement would seem, therefore, to be groundless.

It was stated that the Government had been informed officially that on October 25 about 6500 French, 1050 British, and 800 Belgian troops would be withdrawn. The future strength of the Allied Armies would be 60,000. The balance of the French reductions—about 1650—would be found by the non-replacement of men on leave or sick and by a reduction in the number of recruits sent to units in the Rhineland.

These reductions will mean the evacuation of Geilenkirchen (Belgian zone) and Idstein (British zone). In the usual course of reliefs two British battalions, the 1st Battalion The Oxfordshire and Buckinghamshire Light Infantry and the 2d Battalion The King's Shropshire Light Infantry, have left the Rhineland and the 1st Battalion The Manchester Regiment will leave early in November. Two battalions only will be sent out in their place. Over 400 details of ancillary units returned to England last week.—*The Army, Navy and Air Force Gazette*.

Revised Policies Governing Promotion and Reappointment in the Officers' Reserve Corps

Reprinted from *Bulletin, Third Coast Artillery District*

HOURS OF CREDIT

Under date of October 4, 1927, the War Department issued revised policies governing the allowances of hours of credit for various classes of active and inactive duty training. It should be clearly understood by all Reserve officers that a minimum of 200 hours of credit is required for reappointment in the grade and branch, and that 300 hours of credit is required for promotion to the next higher grade. As an alternate means of obtaining promotion, officers may take the written examination and practical test required for a certificate of capacity. If this has been obtained, promotion may be made without further reference to hours of credit. However, at least one 15 day period of active duty is required before a certificate of capacity can be issued.

In establishing the 200 or 300 hours above referred to, credit may be given for all training and other forms of instruction received by the officer during *current appointment*.

If an officer has not received training or instruction prior to January 1, 1927, in considering his eligibility for reappointment, only the pro-rata number of hours of credit corresponding to elapsed time since January 1, 1927 will be counted. For example, assume a case where a Reserve officer has had no training or instruction, but is due for reappointment on January 2, 1929. He would be required to have established $\frac{2}{5}$ of 200 hours, or 80 hours of credit. On the other hand, if this officer had received active duty training in 1926, he will be permitted to count this, but in so doing the pro-rata provision *can not be invoked*, and he will be required to have established the full 200 hours.

If an officer has not built up any hours of credit, it remains possible for him to be reappointed or promoted by obtaining a certificate of capacity, but this must be completely earned during the current appointment period. For example, assume the case of an officer who is eligible for reappointment on June 15, 1928, and assume that he has no hours of credit. He may be reappointed by obtaining a certificate of capacity, but all of the requirements necessary therefor must be completely fulfilled prior to the termination of his current appointment.

The following number of hours of credit have been authorized for the various classes of training and instruction:

SUBJECT	HOURS OF CREDIT
(a) Correspondence School Courses.	As announced in War Department orders for each subcourse upon satisfactory completion of examination.
(b) Conference Courses. Attendance on an inactive status at classes, and the written solution of problems in connection therewith.	As prescribed by the Corps Area Commander, the time actually spent in the conference room and in the solution of the problem to be counted; provided (1) that not to exceed 2 hours credit may be given for attendance at any one class, and not to exceed a total of 4 hours credit for attendance at classes in any one day; and (2) that the total credit for any subject or course by the conference method shall not exceed the credits allowed for the same or similar subjects covered by the Army Correspondence Courses.
(c) Inactive duty training with regular Army troops.	Not to exceed 7 hours per day for each full day of duty. The same to be certified to by the commanding officer of the troops.
(d) Each full day of active duty as a Reserve officer.	7 hours.
(e) Inactive duty training with National Guard Troops.	Actual hours not to exceed 7 hours per day, to be certified to by the commanding officer of the National Guard unit.
(f) Administrative work as a member of a court or board convened by orders of the Corps Area Commander.	As prescribed by Corps Area Commander, but not to exceed 7 hours per day.
(g) Reserve officers acting as instructors at unit schools.	Twice the credit given to the student but not to exceed 7 hours per day.
(h) Medical officer conducting physical examination or equivalent professional work in the preparation of military personnel for active duty training or service.	One-half hour per examination or service but not to exceed 7 hours per day.
(i) Practical test for Certificate of Capacity when not earned in the same appointment period as the other requirements for Certificates of Capacity.	Actual hours consumed in conduct of practical test.

Notes from the Foreign Military Press

Russian Antitank Tactics. The Russians are practicing combined exercises with tanks and accompanying heavy machine gun squads. The heavy machine guns are intended to relieve the tank crews from the feeling of isolation and to protect the tanks from enemy antitank guns. The leader of the heavy machine gun company is with the leader of the tank company. A heavy machine gun section is assigned to each tank section and three heavy machine gun men are detailed to each tank. The heavy machine gun squad follows the tank and is carried with it, the men being attached to the tank on the outside with straps and thus keeping up with the tank even though its speed may be much greater than that of a man on foot. As soon as proximity of an enemy antitank gun has become known the heavy machine gun is handed out through an opening in the side of the tank and fire is opened by its service squad with armor piercing bullets.

Poland's Military Equipment by France. France utilized a part of its surplus military supplies left over after the war by deliveries to Poland in the Spring of 1920. Figures are given of such deliveries as follows: rifles and carbines, 327,500; machine guns, 2,800; rifle cartridges, 518,000,000; revolvers, 48,000; artillery pieces 1,494, of calibers 75, 105, 120 and 155-mm. shells, 10,123,000; air craft, 290; motor power wagons, 150; locomotives, 800; railway cars, 4,500; overcoats, 400,000; uniform coats, 655,000; trousers, 540,000; pairs of shoes, 780,000; shirts, 830,000; pairs drawers, 1,588,000; blankets, 226,000; knapsacks, 292,000; and a number of complete field hospitals. In addition 40,000,000 francs were transferred to the Warsaw government.

An Appeal to Inventors in the Line of Improvements in Power Motor Vehicles. Solution of the power motor vehicle problem, which appears to be of great importance to the English military establishment in connection with improvements in motorization of the British army, has led to an attempt of the British war department to stimulate interest in this question. It has issued an open appeal to inventors for solution of questions pertaining to the following subjects:

1. Capable and efficient cylinder coolers with readily removable covers. They must admit of quick repair and easy cleansing.
2. Three-point suspension for light freight wagons: this to be accomplished by attaching to the front axle only in the middle. Neither freedom of contact with the ground nor wheel drive is to be influenced thereby. Neither must the front axle be placed further forward nor the wheel base increased.
3. A bullet-proof air case tire that will not be affected by severe cold or heat and will furnish the same degree of elasticity as does the normal casing with any specified ground pressure.
4. An appliance for removal of sand and foreign bodies from the motor case lubrication: (a) when filling; (b) when machinery is in motion. Wire netting not admissible.
5. A method by means of which power-providing substances (fuel) rendered useless or diluted oil of minor value by dilution and incomplete combustion shall be automatically removed from the crank axle casing or the oil shall be restored to its former condition.
6. An improved differential motor traction that will transfer power to another wheel when one wheel slips or will prevent wheels from slipping at starting.

7. A braking arrangement that will enable the driver to handle brakes on a trailer to the drive vehicle.
8. A substitute for glass. It must be light, pliable, strong, and transparent.
9. A kind of rubber of long endurance and that will bear a tropical climate.
10. A starting machine for motor power vehicles using coal in any form instead of oil for fuel.

Fixing the Identity of a Heroic German Artillery Officer Killed in Action at Cambrai, November 20, 1917. Engineer Major Heigel, author of the German work *Taschenbuch der Tanks*, in discussing in his book the subject of antitank tactics of the Germans in the world war, alludes, in illustration of his argument, to an incident that occurred at the battle of Cambrai which was first given publicity by the English military authorities and has been the subject of frequent press comment since then. It appears that at that battle a stubborn defense was made by German machine guns and by a battery of artillery against a mass of attacking tanks. The German battery was finally overcome and completely annihilated by English machine-gun and artillery fire. When all the men serving the battery except the officer in command had been killed or helplessly wounded the officer took hold of the only serviceable gun remaining and continued to fire it until he himself was killed. The English, in recognition of his heroism, took away his body and gave it burial with full military honors. When the German government took cognizance of the case with a view to establishing the identity of the officer, there came into it an element of uncertainty because the English had reported that the officer killed and whose remains they had buried was a major by rank. The German records showed that their 108th regiment of field artillery was engaged in the battle in question and that a company of that regiment was commanded by a Lieutenant Mueller of the German Artillery Reserves and that he was the only officer of artillery who had been killed on that day. This naturally led to the conclusion, that Lieutenant Mueller was the officer whom the English took for a major, being misled by a hasty examination of his shoulder insignia which bore some resemblance to those of a major in the English army. This is Major Heigel's belief: that the German officer was, without doubt, Lieutenant Mueller and in further evidence of his belief he contends that all doubt is removed by the kind and very courteous statement of an English officer who took part in the engagement. He gives the English officer's statement, which is as follows:

The historic episode of the German officer at Flesquières is a fact of which I have personal knowledge. On November 20, 1917, my battalion of the Argyll and Southerland Highlanders was in the first assault wave and my company (I commanded A company) and D company pushed forward up to the railway encampment in front of Flesquières. We dug ourselves in at a short distance from the railway embankment. The 6th Seaforth Highlanders advanced through us and attacked the village. But they were held up until evening by an extraordinarily violent machine gun fire and by the fire of a battery of artillery commanded by a single officer. This officer was the one who shot up our tanks. He was killed but how or by what means I do not know. The 6th Seaforth Highlanders suffered severely in the attack, so severely that I was ordered to place my company at their disposal and to cooperate with them in the capture of the village. When we moved forward the next day I passed through Flesquières. I saw the damage that had been done by the German battery but the body of the German officer had already been taken away; at any rate, I did not see it but it was reported that his rank was that

of Major. We saw tanks he had shot up; there were three or four as nearly as I can remember. I recall especially one of them. It had been shot through and through and its entire serving crew was dead. According to all accounts the German officer served his guns himself when all his people were dead or wounded and until he was himself shot down.

Reduction of Time of Enlisted Service

A writer whose article is published in the July 25 number of the *Militär-Wochenblatt* expresses views on the above subject that are well worthy of the attention of any one who has given thought to the movement of shortening the time of service of the enlisted soldier which, from financial reasons mainly, has been agitated by the governments of every military nation in Europe and has had its reaction here to some extent. A translation of the salient features of the German writer's views is here given:

"After the world war which demanded from all powers engaged in it, and especially from the German nation in arms, unheard of exactions of endurance and discipline, there is manifestation of a most remarkable contest on the part of all powers to shorten the period of active service of the soldier in the ranks. There appears to be no opposition to this movement, even on part of military circles except, perhaps, because all measures in this direction are regarded as a *dira necessitas* that admits of no question and the reasons for which pertain exclusively to economic premises.

"Who ever participated in the war with a full understanding of the psyche of the enlisted man can, in my estimation, arrive at no other conclusion than this: that drill was, without question, the strongest cement holding together the army that gave evidence of achievements that exceeded our most ardent expectations. When using the word 'drill' I have not in mind, as would have many disciples of the old school, the specially rigid exactness of the individual in all military motions and manipulations, but thorough pervasion of the troop, and incidentally of the larger circle of the population through him, with the spirit of obedience, punctuality, order, and cleanliness to such a degree that these standards have become impregnated in the flesh and blood of the individual, as they were in the earlier period of the war in the German army. This training, this permeation of the population, with the genuine military spirit, is the only foundation that can survive severe and enduring trials. Even the most ardent pacifist will be obliged to admit that this very system of education has borne golden fruits in the non-military life of our people. Very many vicious manifestations of the after-war era, especially those displayed by youths who had not been brought up in this spirit, are convincing evidence of the correctness of my assertions.

"Cheerful and thoughtful obedience is the part of the soldier. But he does not acquire this in the early and rigid part of his preparatory training, but only when, after having gone through the first trials, pains, and miseries, he has gained a clear perception of their necessities; when he recognizes that having been physically hardened he has overcome difficulties and, having become a member of the troop he admits, in the course of major exercises, the expediency, in his own person, of the training he has fought through. Whoever took pains to impress upon recruits in their preliminary training the end and purpose of their work has found his task lightened. For reasons stated, a two-year period of service is the minimum; one year for education, one year for fruitful work, of thorough training. If financial or social reasons do not permit this the time will have to be abbreviated, but it

must be clear to anyone that this shortening of time is a necessary evil that must be especially regretted in view of the increased difficulties incident to modern fighting methods and the progressive development of armament and equipment, because proper training cannot be fully assured in less time. Our later replacements in the war were, for this reason, wanting in military spirit and in actual knowledge.

"Who has not, with happy pride, realized the wonderful self-consciousness with which the German soldier endured all irksome toils and dangers? That was the fruit of years of ante-war training in the sense above referred to, for which there was no equivalent.

"Modern fighting direction places the man much more than ever before dependent upon himself in all arms. The early dispersions of troops necessitated by air operations and modern fire effect demand from the soldier especially thoughtful obedience and conspicuous discipline because eye, arm, and voice of the leader can no longer reach him when the troop has been deployed. Close order formations will very seldom have place, even with the cavalry, and the individual will miss the 'touch of elbow' which always had an educational effect, because the man did not want to let himself go and give way when in touch with his comrade. Even the artillery has ceased to use the 'locked guns' in close order positions; the gun also has its individuality. How can things work out well under such conditions without the self-conscious military spirit? The several unit formations are extended, especially in the defensive, due to strong and expansive fire effect, to heretofore unanticipated fronts and depths; subordinate leaders are, especially by incidental casualties, confronted with responsible problems. The individual infantryman or small group, as well as single guns, are called upon to solve problems and, depending upon themselves alone, act for the general effect, on account of deficient or wholly lacking means of communication. We are coming more and more from the 'order' technique to the 'command' technique, and that demands copious schooling that cannot be supplied in a shortened period of service, and for the very reason that this shortened period of service is wholly taken up with preliminary training, no time is left for after training. Emphasis is also very justly placed on the necessity of exercises in the tactics of combined arms, of co-operation, of understanding mutual assistance, all of which was so frequently found wanting in the war. One is justified in maintaining that there is now a mixture of all the different arms, that all troops must be trained in engineer technics, that the infantryman must also be able to serve a gun and each one must be in position to take over the drive of a motor vehicle. It may be required today that every leader shall be capable of replacing a disabled chauffeur when such are with troops, and bring his vehicle safely home. Details from one arm to another are becoming necessary in greater range and all this under conditions of short time service.

"The era of technique is accompanied by the fact that arms are becoming more and more complicated instead of being simplified, that only he can use them without jamming who is thoroughly conversant with their construction and character. That requires time. One need not raise the point that modern armies will possibly be supplied by industrial development with an adequate number of specialists. That would be a misjudgment and underestimate of military affairs. The day of declarations of war is past or it is followed directly by the first warlike events, and he only who has an adequately schooled and trained army to put into action at once will have an advantage that cannot be neutralized. That is well known to our

peace loving (?) neighbors, hence their deaf ears to all calls for reduction of armaments. And even though they have gone over to reduced service and smaller contingents and are compelled to that course by internal causes and not by pseudo humanitarianism.—G. R.

Signs of Disarmament in Europe

(From *Militär-Wochenblatt*, July 25, 1927). The deliberations of our former enemies—more particularly England and France—on matters pertaining to army estimates furnish evidence of the sincerity (?) of those countries in regard to their inclinations and intentions for disarmament.

France gives proof, by acceptance of the proposed law for reorganization of its army, that it places great value on the equipment of its army with modern fighting means. Among other changes advocated there is to be a greater number of tank than of corps and army troops. The army budget alone provides for 22 tank battalions and 18 companies of armored power-driven road wagons.

From the English budget proposals that have been submitted for consideration it appears that there is a determined intention to proceed with motorization of the army with all available means. The war minister has stated that 238,000 pounds are to be expended for that purpose alone. It is intended to motorize all the medium artillery, only one brigade having heretofore been motorized. Motorization of the field artillery is, as yet, in an experimental state, but its fulfillment will not be greatly delayed. There is an intention of reducing the number of cavalry units and to set up in their places motorized machine-gun and infantry units. For the present the initiative to this measure is to be the establishment of an experimental detachment at Todworth and 125,000 pounds are to be made available for carrying out these experiments. Mechanization of the army is to be extended finally to the intelligence and communication troops and possibly also to the infantry.

It is hardly necessary to direct further attention to this to give point to the intentions of both the countries referred to. While they are talking in Geneva about disarmament one is at home engaged in increasing armaments. While the treaty of Versailles prescribes to us every button on our uniforms and careful provision is made to have inspectors see that the prescribed number is not exceeded, foreign armies are ever increasing their equipments. But still this is the era of disarmament in which we are living! May it be an effective lesson to certain circles in our own country, who are still in doubt about the facts of army motorization. We must follow this development with our eyes open and fix our military thoughts upon it lest our ideas become antiquated and obsolete.

French Army Expense

France is spending just about half as much as Germany on the maintenance of an army and has accomplished more than any other power towards disarmament, it was declared in the chamber of deputies by several speakers in the course of discussion of the budget.

The speakers laid special stress on their declaration as it is hoped that an echo therefrom will reach the halls of the league headquarters at Geneva, where the security committee of the preparatory disarmament conference met.

Minister of War Painleve admitted his department was asking for a billion francs (approximately \$40,000,000) more than last year, explaining that the in-

crease was largely due to the increased pay of various functionaries and officers and the reorganization of the army in order to reduce the period of obligatory service.

The communists, socialists and radicals tried in vain to defeat an appropriation for calling up the reservists for their period of training next year, but the government was victorious in the vote. This problem is likely to be an important issue in the forthcoming legislative elections.

France, Germany and Russia alone of the great powers have reduced their gold output for the maintenance of armies and navies since 1914, M. Bouilloux-Lafont, reporting for the finance committee, told the chamber. The United States, he said, has increased its military and naval expenses by 98 per cent in gold cost since 1914, England, 45; Japan, 145; Italy, 55; and Spain, 128. France, he said, had achieved the most of any nation in showing a reduction in military expenses. Estimating that under the new army plan the French army would be reduced from its 900,000 in 1914 to 580,000 in 1928, he declared that this represented the greatest proportional reduction in standing armies.—*Washington Post*.

Ocean Flights—The Reverse of the Medal

A writer in the August, 1927, issue of the *Militär-Wochenblatt* takes up this subject in an article well worthy of attention of the military as well as the lay reader. He says:

"The recently accomplished ocean flights have attracted well justified attention everywhere. As was not otherwise to be expected they challenge, to a certain extent, further participation by professional and sport circles. We hear and read that numerous suitable preparations are being made and that the problem of American-European flight will certainly be the order of the day for some time to come and will be promoted in every direction and with eventual success by means of lighter-than-air ships as well as by land and naval planes.

"A brief retrospect will suffice to show the degree of further development of airplane traffic that may certainly be counted on. Only 18 years have passed since the Frenchman Louis Bleriot was the first to cross the English channel from Dover to Calais on July 25, 1909, and accomplished thereby an achievement that attracted no less surprise than does today the recent flight across the Atlantic. At that time there were also loud rejoicings on the part of two entente states whose secret threads were even then being more securely intertwined than we Germans, in our feeling of inoffensiveness, surmised. Still, let us cast a look back upon and note the world events that have taken place since that memorable 25th July, 1909, and we will perceive the great change to which the until then world domineering and world encircling English imperium has been subjected. But that change can be attributed, in its greatest range, in first line, to the far reaching conquest of the air achieved by technic industry since then. That has brought along with it, above all else, the fact that England was forestalled from recovering universal liberty of trade after the close of the war and failed to garner full fruition of the victory. There are certain other accompanying momentous events such as flow of gold to the United States, strivings for independence on the part of the dominions and their industrialization, as consequences of the war. But the reason why England was not in a situation to acquire for itself an adequate measure of elbow room and take timely steps for effective counter aggression was that it had forfeited its "splendid isolation" as a wave-washed and thereby protected land

relative to the European continent and was now exposed in a disadvantageous degree to the potential hostile war effect by the militarily powerful France by the mechanical development air flight of today.

"As a consequence of the causes cited the very foundation of British world empire falls away, for it was based, in first instance, on the inviolability of the mother land which was, as is well known, fully conceded, up to 1914, by reason of its geographical situation and adequate naval strength. But the measure by which world conditions have, in the meantime, been changed is best shown by the circumstance that the heretofore world dominating Albion was obliged to submit to a navy reduction conference forced upon it by another power.

"It is now no longer a secret that the United States of America regards itself, and justly so, as the real victor of the world war, even though it may not be on the basis of war achievements but on account of its material increase of power and of political, military, and industrial standing; it has even today assumed the English inheritance in extensive measure in respect to world appreciation and it is without question the contention of the nation across the pond to increase this inheritance in time to come. Occurrences in the Far East, international negotiations of all kinds, show conclusively that, as far as America takes a hand in the game, its intentions and not those of England, turn the scale; it was otherwise formerly and that is due, in large part, to the fact that America now, by reason of its geographical position, which is further increased by economic independence, takes the place in world estimation that once belonged to England.

"England has forfeited that position as a result of man's conquest of the air while America still holds it today because Atlantic and Pacific as yet protect its boundaries from air war and its forcible sea power protects it from hostile naval action. But this picture may take a different aspect in a detrimental direction in time to come, especially when development of flying technique progresses further at the rate it has been progressing since the war, evidence of which progress has been abundantly shown by the so greatly applauded recent achievements of Lindbergh and Chamberlain. One need not protest that there is still time for this and that oceans will remain oceans because such views can be readily neutralized by allusions to the English channel incident; that channel also served to protect the English islands since time out of mind and permitted, as we have seen, the building up of the British imperium; then came the record Bleriot flight, the U boats followed as did long range guns and, militarily considered, England has today, *ceased to be an island*. This entire transformation has come about within a decennium. Who will tell us what will be the outlook within a century in respect to technical progress? From the historical point of view a century is not so great a period of time and we do not hesitate to assert that the rapidly living time of today, which is continually placing before us newly *solved* problems of all kinds, will not, in the sense above alluded to, require a century, yea, not even a half century, and that the aspect of possible practicable possibilities of bridging the oceans may be materially different within a few decenniums from what it is today.

"In contradistinction to a fleet of former times whose efficiency was restricted to the range of naval guns and therefore applicable to coast action only, we must not fail to take into reckoning a fleet of the future whose principal parts consist of airplane carriers which, on their part, may be equipped with bomb carriers with a radius of action—New York—London.

"This much is settled not only in respect to trade technics but in far higher measure to its military political relations; that by the Lindbergh record crossing a step has been taken that may in time possibly materially fortify the position of the old Europe in its military relation to the new world and that in this connection there may be justification for the view that America's jubilation of today may give way to a realization of bitter experience because *everything* has two sides.

"How much this point of view is justified may be well perceived when the bold pilot Lindbergh has already taken occasion to point out with earnest words that by the progress in flying that may well be anticipated America will have occasion, more than ever before, to give special attention to its armed forces. His words give expression to the idea that land and sea power need the same fostering care and that both were to be supported and strengthened by additions of flying fighting craft and that New York had become a sensitive point of attack.

"The United States are slowly but surely losing, from military point of view, their unassailable position of isolation of today and this fact signifies the '*reverse of the medal*' to the now still vociferously rejoicing America."—G. R.

Fort Clinch

The old Fort Clinch Military Reservation, located on Amelia Island, Florida, which has played a role of intermittent importance in American affairs since 1736, has been offered for sale by the Quartermaster General.

Previously known as Fort San Carlos under Spanish occupation, the reservation was fortified first by the English in 1736, at which time James Oglethorpe, then governor of Georgia, built defenses there to guard the entrance to St. Mary's River.

Early in the 19th century, the island fell again under Spanish rule. They held it as a port of entry to Florida, and erected on the site a fortification known as Fort Fernandino. On March 17, 1812, the Spaniards, under Don Jose Lopez, surrendered the island to Colonel Ashley of the United States forces. He garrisoned the fort with approximately 300 men and held possession for a year—until May, 1813, when it again reverted to the Spanish authorities.

The United States, however, soon took measures to regain the island, which they effected in 1818. At that time, the reservation was, of course, more or less an important post of defense, held within the borders of alien territory, as Spain still owned Florida.

In the following year, however,—1819—the territory of Florida was ceded by the Spanish crown to the United States. When the country became more settled, and the necessity for outlying defenses to the south passed, the fort was abandoned—some time prior to 1842. In the latter year, its name was changed to its present designation, "Fort Clinch Military Reservation," so named in honor of Colonel D. L. Clinch who had distinguished himself in the Seminole War of 1835.

At the outbreak of the Civil War, the old fortification again became a point of strategic importance, and was at once seized by the Confederate forces. The Stars and Bars waved over it until March 2, 1862, when it was captured by Brigadier General H. G. Wright and garrisoned with troops of the North. It was continuously occupied until 1869, when it was again abandoned as a post, and left in charge of a single Ordnance Sergeant. Thus it remained until 1884, when even the sergeant was withdrawn.

With the coming of the Spanish American War of 1898, Fort Clinch was again garrisoned for a short period. This conflict of short duration over, however, occupied fortifications at that point again seemed unnecessary, and the post was abandoned. In November, 1922, it was declared surplus and turned over to the Quartermaster General for Disposal.—*Recruiting News*.

Fort Jackson Sold

The Fort Jackson military reservation, situated on the right bank of the Mississippi River, about 73 miles south of the city of New Orleans, has been sold to Herbert J. Harvey of that city for \$20,204.

Fort Jackson was established in 1814 as a defense against the British, who had invaded Louisiana from the Gulf and were attempting to capture New Orleans. the land comprising this reservation, amounting to approximately 740 acres, was reserved from public domain for military purposes by executive orders of February 9, 1842, and October 26, 1847.—*Army and Navy Register*.

Two Old Forts

Fort Washington and Fort Hunt, 20 miles down the Potomac from Washington and 105 miles from the mouth of the river, are no longer to be maintained as harbor defense posts, for the reason that "money for their maintenance as harbor defense posts can better be utilized at more important stations," according to an announcement from the War Department. This, however, does not mean that the historic old forts are made available for the extension of the parking system of the National Capital. They are still to be retained as stations "for units of the mobile army," and it is probable that they will be garrisoned by infantry instead of artillery.

Although Fort Washington has been a military post since 1808, when a water battery was first located there, it was a "military post" of the Potomack Indians long before that date. It was there that the Indian attack upon Lord Calvert was so fierce as to compel that first representative of the British crown in Maryland to seek another landing place for his settlement. He located in what is now St. Mary's County, some miles down the river.

The damage done to the enemy by the guns of Fort Washington, all told, during the 120 years of its existence as one of the "coast defenses," is scarcely equal to the damage done to its armament by its commander, one Captain Dyson, who in the War of 1812 deserted to the British after having spiked the guns of the fort.

Forts Washington and Hunt are most picturesque old reservations, occupying prominent points on opposite sides of the Potomac above Mount Vernon. They are useless for military purposes, but are natural parks of exquisite beauty. They should be turned over to the National Capital Park and Planning Commission, to be incorporated into the park system surrounding this Capital. Their ancient ramparts and obsolete guns should be kept intact, as memorials of the past.—*Washington Post*.

In the Yangtse

Further firing upon British and American vessels in the Yangtse River is reported. On October 22, it was announced that the *Curlaw*, Captain H. C. Allen (which vessel has been selected to remain at Hankow, during the winter months) was fired on with rifles and machine guns from a village on the north bank, 41 miles above Wuhu, and returned the fire.

On the same day, the United States destroyer *Truxton* found herself close to an action between the Nanking and Hankow armies, and some 40 rifle shots and five rounds from field guns were fired at her, but nobody on board was hit. As the positions of the Chinese guns could not be ascertained, fire could not be returned.

The British cruiser, *Vindictive*, Captain D. B. Le Mottée, proceeded to Chefoo on October 17 in view of a possible raid on the local branch of the Hongkong and Shanghai Bank, where the disposal of the considerable salt revenue is in dispute.

On October 21 the gunboat *Bee*, having hoisted the flag of Rear-Admiral H. J. Tweedie, C. B., as Senior Naval Officer, in succession to Rear-Admiral J. E. Cameron, C. B., left Shanghai for the Yangtse.—*The Army, Navy and Air Force Gazette*.

Taxation Falls on All

Showing how the burden of taxation falls upon everyone, rich and poor alike, Professor William B. Munro, Chairman of the Division of History, Government and Economics, at Harvard, says:

Everybody who pays rent pays taxes. The landlord is merely a middleman who collects the taxes from his tenants and passes the lump sum to the city collector.

Everybody who buys merchandise pays taxes. The retail merchant passes his burden along to his customers in the price of his goods. So with everyone who travels on a street car, or goes to the theater, or smokes a cigar. They all pay taxes, whether they realize it or not.

When the gas company or telephone company raises its rates, even slightly, there is a great hue and cry, with meetings of protest and fiery speeches. Every householder realizes who's who when it comes to paying gas or telephone bills. But when the city tax rate goes up, it leaves the great masses unmoved.

That is why we have so much extravagance in government. People condone this extravagance because they feel that their own pocketbooks are not affected by it in any way.

Extravagance and waste bear more heavily upon the poor than on the rich. If we can drive into the public mind this single, simple economic fact we shall make democracy compatible with economy—and we can accomplish it in no other way.

A Fast Moving World

The rapidity with which the world is gaining economic momentum was one of the encouraging aspects of the business outlook emphasized at the annual meeting of the Chamber of Commerce of the United States. It was the consensus of the meeting that pioneering processes have been speeded up infinitely over the slow, plodding experiences of America's pioneering days.

"Who will say," asked Henry D. Sharp, of Providence, chairman of the foreign commerce session, "that Brazil, Argentina, Venezuela, or Colombia must take the long, slow course of development that has marked the history of other comparable

areas? Who dares predict that Turkey, Russia, Poland, China, India, and Australia will have their natural resources lying dormant for hundreds of years more? Who can look at the recent material development of Belgian Congo in the heart of Africa, toward which new railroads are being built over long distances at unparalleled speed, without visualizing the possibilities of early, great expansion in the other large undeveloped areas? Who can witness the rapid extension of good highways in Cuba, in Colombia, in Chile and elsewhere, without getting the vision of early and substantial improvement of the well-being of the people, the capitalizing of natural resources, and the consequent increase of commerce? Truly we are living in a fast moving age. If only education and the creative imagination of men in the great undeveloped countries can be speeded up, we shall see development in the near future on a scale and at a rate that will surpass anything in the past."

Maneuvers

By TENEYCK VAN DEUSEN

The Stygian dark was stabbed with swords
Of living, flaming light!
The grey guns, couched, arose to speak,
Shatt'ring the silent night.
With blood red tongues of flaunting flame,
Searched they the rippling sea,
Where lifting, hissing past the ships—
The ships they could not see!
The warders of the great, grey guns,
In sleepless patience wait,
Until the guiders of the lights
Align their beams full straight,
On grey ghosts coursing through the waves,
To force the seaward gate.

March time.

With dum - my am - mu - ni - tion, We fire one round and then, With
 dum - my am - mu - ni - tion, we fire one round again; Just
 why we fire so many, We really just can't see, But
 that's the way we do it in the C. M. T. C. We
 track the darned old target, un - til it's out of sight, and
 then we clean the gun with all our might; But
 af - ter camp is o-ver, We hope they'll hear our plea-To
 Let us come back to old C. M. T. C.

Excerpt H. Thompson
 2nd Unit, 13th C. A.
 Key West, Fla.
 May 1907

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. W. E. COLB, Colonel, Coast Artillery Corps, President Coast Artillery Board.

New Projects Received and Initiated During the Month

Project No. 591, Probability of Hitting New Hypothetical Target, 3-inch A. A. Gun.—The Chief of Coast Artillery referred to the Coast Artillery Board for comment a set of "Probability of Hitting" curves based on the dimensions of the new hypothetical target and firing table probable errors for the 3-inch A. A. guns, models of 1917 and 1918. These curves indicate that the highest percentage of hits under average target practice conditions may be expected when the center of impact is approximately 40 yards short of the target.

Project No. 592, Experimental Fire Control Communication Installation, H. D. of Balboa.—The Chief of Coast Artillery referred to the Coast Artillery Board a description of the fire control communication system of the Harbor Defenses of Balboa for comment and recommendations as to the suitability of this type of communication system as a standard type for future installations. This experimental system provides jack panels, cords, and plugs in the fire control switchboard rooms and in important stations, permitting considerable flexibility in the assignment of stations, searchlights, and communication lines, as well as simplifying circuit tests. An auxiliary "intelligence" telephone switchboard is inserted into the system.

Project No. 593, Test of Three-Message System for Meteorological Data.—The practicability of the three-message system for meteorological data is to be determined by a test covering its use at Forts Monroe and Eustis for a period of one year. The three-message system is based on three weighting factor curves. The battery commander receives three ballistic wind messages and determines the appropriate one to use from a classification of gun chart furnished him. Under the three-message system a closer approximation can be made to the true ballistic wind than under the present standard system where only one weighting factor curve is used.

Project No. 594, Determination of Altitude (Trial Shot Problem).—Lieutenant F. A. Mitchell, 62d Coast Artillery (AA), has suggested and tried out a method of determining altitudes of bursts in trial shot firings. The system is to use azimuth-measuring instruments, a base line, and a large scale chart which has azimuth circles drawn about the two base end stations. The horizontal distance to the burst is measured on the chart and is used in proceeding with the trial shot solution as described in Bulletin OCCA, July, 1926. This is an effort to avoid the error in altitude reading occasioned when the single-station optical height finder is used. No objection is offered to the idea. Accurate measurement is most desirable, but the necessity of a base line is objectionable.

Project No. 595, Program for Test of Long-Range Depression Position Finder, MI.—By direction of the Chief of Coast Artillery, the Coast Artillery Board has prepared and submitted a program for the service test of the Long-Range Depression Position Finder, MI.

BOOK REVIEWS

The Campaign In Mesopotamia 1914-1918, Volume IV. Compiled by Brig. Gen. F. J. Moberly, C. B., C. S. I., D. S. O., p. s. c. His Majesty's Stationery Office, London. 1927. 5"x 8½". 447 pp. Ill. Maps. 15s.

This is the last volume of the British official history of the Mesopotamia campaign, the previous volumes of which have been reviewed in the JOURNAL during the past two years.

Perhaps nothing in this volume is more interesting than the preface. Here the statement is made that the services of 889,702 officers and men were utilized by the British in Mesopotamia and only about half that number by the enemy, and the following claimed in justification:

Our action destroyed German dreams of dominance which constituted a real menace to the security of our Indian Empire and to our sea communications east of the Red Sea; it brought about the defeat of Pan-Turkish ambitions in Caucasia, Persia and Central Asia; it assured the independence of Persia and Afghanistan; and it opened to Mesopotamia a prospect of prosperity which she had not known for hundreds of years.

The compiler admits there has been controversy as to the justification of so great an effort in an admittedly subsidiary obligation, "generally on the ground that the same results could have been obtained by action elsewhere with less expenditure of men and material, but he fails to give recognition to the fact that the use of this force here weakened the force available at the vital points so as to risk the loss not only of all the objectives of this campaign, but of all major objectives of the British and their Allies.

On the other hand, it may be said for the British Government that there was danger of the over-running of Asia by the German-led Turks, and of the achievement of the Pan-Islamic ideal at the expense of the Indian Empire, so that some British military action in Asia must have seemed necessary, while inadequate military effort, such as that originally contemplated in Mesopotamia might have been worse than none at all.

The Turkish objective and the political considerations affecting them are stated so clearly as to merit full quotation:

In 1914, the inner group of Turkish leaders saw in the war, which they were convinced would be won by Germany, an opportunity of attaining the fulfillment of their territorial ambitions; and it is said that the governing consideration which secured Turkish support for Germany was her pledge ensuring Turkey possession of Russian Armenia, North-West Persia, the Moslem provinces of Caucasia and the Trans-Caspian region. Neither Egypt nor the Arab provinces of Turkey—with the possible exception of Mosul and the area connecting it with North-West Persia—contained a Turkish population. Indeed, both regions, from geographical, ethnical and political causes, had in the past proved themselves a heavy liability and source of danger and weakness rather than of strength to the Ottoman Empire. They were therefore of little value in Pan-Turkish eyes. But in German eyes, Syria and Palestine offered the outstanding military advantage of enabling the Turks to carry out operations against the Suez Canal and Egypt, and Mesopotamia had always been essential for the fulfilment of German eastern ambitions. This conflict of

aims was evident throughout the war. It was apparently largely owing to German influence that the Turks undertook operations against the Suez Canal; and in 1917, when Enver insisted on the project for the recapture of Baghdad, he was serving German interests and at the same time appealing to the Pan-Turks through the recovery of the control of the main route into Persia.

By the beginning of 1918 Mustapha Kemal Pasha is said to have attained such a strong position in the Pan-Turkish party that he was able to dictate the policy to be followed. The Brest-Litovsk negotiations were in progress, any Russian military recovery was improbable, and the Tartar tribes of the Caucasus offered a great intact military reserve as a suitable Turkish instrument. Mustapha Kemal accordingly insisted that immediate steps should be taken to realize Pan-Turkish aspirations in the East. He considered that Germany was certain to lose the war and that if, by its conclusion, Turkey could place 100,000 troops in Trans-Caucasia, the exhausted Entente Powers would find it impossible to eject them. With this number of men available, Mustapha Kemal saw no limit to the possibilities of Turkish expansion eastward; and he considered that Turkey would thus obtain territorial gains far outweighing any losses which might occur elsewhere.

The military operations May, 1917—October, 1918, minor though they were, are described in detail and with commendable frankness. As a rule there was little of the blundering and mismanagement of the preceding years. Ordinarily no operation was undertaken except with proper organization and with sufficient force, transportation, and supplies. An exception was the unsuccessful first attack—July 11, 1917—on Ramadi.

It will be remembered that the Turkish Yilderim (meaning lightning or thunderbolt) project originated in June, 1917, as a result of a visit of the German General von Falkenhayn to the Mesopotamian front. The Yilderim force was to be organized into two Turkish armies stiffened with German officers and organizations and to be commanded by Falkenhayn with a preponderantly German staff, and the first objective was to be the recapture of Baghdad. The failure of this force to accomplish or even to undertake anything of importance in Mesopotamia must be attributed primarily to the effectiveness of Allenby's campaign in Palestine and in part to the fact that some of the most efficient Turkish divisions were employed with the German and Austrian armies in Rumania and elsewhere in Europe, as well as to the confusion of military and political objectives.

The British commanders, Lieutenant General Sir Stanley Maude (who died November 18th, 1917) and his successor Lieutenant General Sir W. R. Marshall, were in doubt until late in the spring of 1918 as to what might be expected of the Russians, and General Marshall was eventually compelled to attempt to extend his lines to the Caspian. He even sent a force to Baku but was compelled to withdraw it, and in September, 1918, that oil field center was taken by the Turks.

In January, 1918, Major General L. C. Dunsterville with a number of officers and a small force, mostly of armored automobiles, was sent into Persia in the hopes of organizing effective Persian resistance to the Turks. He was not remarkably successful but the Turks were too much occupied elsewhere to give serious attention to the penetration of Persia. It was General Dunsterville's force, later augmented, which entered Baku.

Some of the expeditions and combats described in this volume are of considerable military interest and nearly all worth close study. They are interestingly related and good sketch maps provided.

The following with reference to the death of General Maude may serve as a useful reminder to those readers who may rise to high command:

To those serving under him his loss was a great grief. His great care for all that concerned their well-being, his constant sympathy with their hardships, difficulties and dangers, and his ready and generous acknowledgement of their work had endeared him to all ranks in Mesopotamia; and they all recognised how much they owed to his initiative and energy. As soldiers they also realized how greatly his military capacity had contributed to the change from failure to victory. In fact, the force of his personality had so dominated the campaign that it was regarded generally as his individual effort to an extent that is unusual. In consequence of this feeling and of his well-known habit—disinterested and altruistic though it undoubtedly was—of personally controlling details generally left to subordinates and of seldom confiding his plans to others, some concern was expressed as to what would happen without his guiding brain and influence.—R. S. A.

History of the Great War. Vol. III. Military Operations, France and Belgium, Winter 1914-1915. By Brigadier General J. E. Edmonds and Captain G. C. Wynne. MacMillan and Co., Lt., London. 1927. 5½" x 8½". 433 pp. Maps. 12s. 6d.

This is the third volume of the British official history of the war which is being prepared by General Edmonds under the direction of the Historical Section of the Committee of Imperial Defence. The first two volumes carried the account of British operations on the Western Front through Messines and Ypres in October and November, 1914. This third volume continues the narrative through the critical winter of 1914-1915 to the close of the Battles of Ypres in May, 1915.

In the present volume General Edmonds continues to deserve the high praise which was bestowed upon his earlier work. Little can be added to what has already been said. There is necessarily much of detail in the volume, but the author's fine sense of proportion prevents the details from becoming obtrusive. The smaller units, in evidence in Vol. II, begin to be replaced by larger units, and the task of coordinating organizations becomes a trifle less difficult. The account is unusually easy to follow—so much so that the skill exercised in making the narrative smooth is not fully appreciated at first glance. The system of indicating armies, corps, divisions, and brigades is that in use in the United States; German organizations are indicated by italics; and the four-color sketches, prepared by Major A. F. Becke, are simple and clear. An important addition to this volume is a list of place names and their locations with respect to other places.

To a greater extent than in the first volumes, unofficial sources have been employed to complete the narrative. As the work progresses more private diaries, regimental narratives, and similar papers are becoming available, and while they make the task of compilation more difficult, the greater amount of detail makes coordination of the account more simple.

In reading the account one is likely to gain the impression that all action progressed smoothly according to a completely prepared plan. This was, of course, not the case. Subordinate units seldom knew the entire plan and frequently they did not know who their battle neighbors were. There were always a tremendous amount of confusion among front line troops. An account of an action is always better coordinated than the action itself; and, as the author points out, "it is quite impossible to describe on paper—as for instance the Battle of Waterloo can be described—the organized confusion of modern warfare."

Particularly valuable to the military student—although unnecessary to the general reader—are the maps (sold separately) accompanying this volume in a

map case. With these the situations may be followed in full detail. No one who possesses a military library—as every officer should—can feel that his library is at all complete if it does not contain this history being prepared by General Edmonds.

Bismarck: The Story of a Fighter. By Emil Ludwig. Little, Brown and Company. 1927. 6¼" x 9¼". 661 pp. Ill. \$5.00.

This man Ludwig is a great biographer. Through six hundred closely printed pages he analyses character and dissects political movements and situations, getting always to the meat of the thing and using the sequence and dates of his story only as background. It is the best of the modern school of biography, the school which explains men instead of retelling the dead stories of their lives. Paragraph after paragraph ends with such an incisive sentence as this: "That is why Bismarck was nothing more than the greatest statesman of his time; that is why he never became a seer."

The *leit Motiv* running through the entire book is "pride, courage, and hate," the three outstanding characteristics of the Iron Chancellor. And what a Junker he is, as Ludwig paints him! Prussian to the core, autocratic, ruthless, vindictive, a bitter enemy of liberty and all forms of liberal or popular government, his passionate loyalty is devoted essentially to his Prussian king, whom he over-rides and often despises. For himself, he can tolerate no form of discipline or compulsion. Even as a vigorous young man he pleads imaginary muscular weakness in order to avoid his military service: "I shall never be able to get along with my superiors." His narrow Prussianism makes him for years an opponent of that unification of Germany which in the end he did so much to establish and which is today his great monument. "Pride, courage, and hate," an undisciplined and arrogant nature which keeps him constantly at strife with his superiors and his subordinates, allows him almost no friends and turns even his own Junker class against him in bitter hatred—with all these, how does this man manage to succeed? Ludwig gives the answer—by superior intelligence, consummate genius in foreign affairs, and an overmastering will. Bismarck, the Fighter!

His great failure, inherent in his nature, was his total inability to sympathize with, or even to understand the modern movement of liberalism and democracy. The true pathos of his lonely and isolated old age lay in his final reconciliation with the German people. When the young Kaiser's vindictive antagonism, which stooped to the lowest forms of meanness and pettiness, had made Bismarck almost a moral leper, the German people, the people whom the Chancellor had despised when he ruthlessly ruled them, were the first to defy the government in doing him honor.—S. M.

As They Passed Through the Port. By Major General David C. Shanks. The Carey Publishing Co., Washington, 1927. 5½" x 8". 351 pp. Ill. \$3.00.

It is probably not unfair to class this very enjoyable book as something of a hodge-podge. There is some history, some enjoyable personal reminiscence, a number—perhaps excessive—of personal tributes, and a great variety of anecdote from humorous to tragic.

General Shanks tells how he was detailed in charge of the Port of Embarkation when he had expected to be sent to France at once, but touches very

lightly on his own disappointment at being left in this country. There is a little about the organization of the Hoboken base and its branches, something of the troubles encountered, and not too much of the confusion that existed, just enough of each, in fact, to give a sketchy view of one of the truly gigantic war activities, which accomplished unbelievable results, but which made little noise and received more unmerited abuse than praise.

The author indicates his disapproval of the stringent precautions for secrecy in embarkation—later relaxed, and his approval of the embarkations with bands and cheering. The reviewer admits that the passage of transports from our harbors probably could not have been concealed completely from water-front espionage, that the morale of the troops may have suffered from the earlier precautions for secrecy, and that much inconvenience and some real sorrow was occasioned, but believes that the precautions were justified if they saved one transport or one life. However whole-heartedly the entire American people joined in the war preparations, however patriotic was the national spirit, it is true that the average man could not have been trusted to guard military secrets.

The chapters devoted to the welfare work are as interesting as historically valuable. Several amusing incidents demonstrate the devotion of wealthy and socially prominent Americans, notably that of the very wealthy New Yorker who enjoyed making himself useful to everyone and who received a twenty-five cent tip from a young lieutenant whose hand baggage he assisted in transporting.

It is astonishing to read that enough magazines were sent to the Base to overflow the piers, that a force of 70 officers and 1100 enlisted men was required to handle Christmas boxes and that more than twelve millions of letters and documents were received at Port Headquarters.

The fine soldierly spirit of General Shanks, his loyalty, cheerfulness, and willingness to assume responsibility, are revealed on every page. To those who have not the pleasure of knowing him, this book will portray something of his real character. Although the historical treatment is conspicuously lacking, the work is an important contribution to the history of our participation in the World War.—R. S. A.

The Outlawry of War. By Charles Clayton Morrison. Willett, Clark & Colby, Chicago. 5¼"x 7¼". 300 pp. \$3.00.

When the science of medicine was in its infancy, blood-letting was the great cure-all for human ills. There were many simple remedies for the more common diseases, but when he had an unusual case the physician resorted to blood-letting. That patients frequently survived was at first accepted as proof of the value of the treatment, but as the eighteenth century drew to a close the medical profession began to doubt the curative value of drawing blood. The practice continued, however, because the profession had no satisfactory substitute. Gradually proved remedies were developed for various ills, and as gradually blood-letting was discontinued. Today it persists only in a very few of the more isolated and inaccessible places of the world.

For centuries war has been the great cure-all for international ills. Nations have become great through war, and once-great nations have succumbed through war. The virility of nations has appeared to lie in their ability to make war, and we have therefore accepted war as a necessity—disagreeable, perhaps, like castor

oil, but essential to the vitality of a nation. We have no evidence to show that the birth, growth, and death of nations might not have followed much the same course had there never been any war, but we are beginning to suspect that the death—and possibly the birth—of some might have been unnecessary—that the world might have been better off had war never been discovered.

We are in much the same position as was the medical profession when it began to doubt the efficacy of blood-letting as a general practice. We have found, in the past couple of centuries, that war is not always inevitable in the cure of international ills. A number of simple remedies for minor ills have been developed and satisfactorily tested, and we are therefore led to doubt the efficacy of war and to look for a substitute, but we cannot yet discard war because we still lack the substitute.

Here is where the pacifist makes his mistake; he looks for a substitute—not for substitutes—and every pacifist finds a different means of eliminating war. It is very much to be doubted that all cases of international disputes can be settled by a single agency or by a common method of procedure. The result is that any one proposal advanced as a means of preventing war—however meritorious a measure it may be in itself—is bound to do violence to the common sense of the masses and is certain to be rejected.

Dr. Morrison's plan lies in the establishment of a world court of positive jurisdiction based on a code of international law and accompanied by pledges from all nations to abide by the decision of the court in all cases and to resort to war in no case. Obviously, many disputes not covered by the code could arise, and in such cases the author contemplates two possibilities: (1) the disputes may be settled by other means—arbitration, perhaps—or (2) they will remain unsettled.

The court differs from the two existing courts in that it is given a sound basis in the code (in which the laws of war do not appear) and in its authority to try defendant nations whether or not they appear before the court. It has no executive powers. For the enforcement of its decisions, it relies upon the good faith of the nations—in which the author places the greatest trust despite this age of suspicion and ill-will and a past record of international good faith based solely upon self-interest.

The book appears to be propaganda for the war outlawry resolution which was introduced in the Senate by Senator Borah in 1923 and which is still before that body. From that resolution and from the writings of S. O. Levinson, Dr. Morrison develops his theme. Few readers will follow him through to the end, because of the circumlocutory treatment. For example, in the nineteen pages of Chapter V, entitled "What Is War?" we find that war is an institution—that and nothing more. Sherman gave a more adequate definition in three words.

No proposal to abolish war should be lightly treated, but one should not argue over trifles. There are many debatable statements in Dr. Morrison's book, but there is only one primary objection to the plan he advocates. Unquestionably, codification of international law is becoming essential, and a permanent world court of positive jurisdiction (even without authority) would be of tremendous value in the international structure. With the law clearly stated and the court open, legal disputes could be expeditiously settled; *but purely legal disputes do not cause war*. With the law extended, more disputes would become legal and to that extent war would be avoided, but in itself the court will not be sufficient to abolish war.

There remains, then, only an international agreement to look upon war as a crime. This would involve unanimity of thought in some sixty nations and would also involve leaving savage and semi-civilized tribes strictly alone—to perpetuate the science of war among themselves. Granting the unanimity of present administrations, there is nothing to enforce peace among their successors except the existence of the agreement and public opinion, and public opinion has had little effect on recent wars. Such an agreement would certainly be a deterrent, but how could it entirely prevent war? This phase—which is the crux of the whole plan—is not sufficiently discussed.

Perhaps Genghis Khan had the best solution: "There is only one sun in the sky, and one strength of Heaven. Only one *Kha Khan* should be upon the earth."

The Study of War, for Statesmen and Citizens. Lectures delivered in the University of London during the years 1925-1926. Ed. by G. G. Aston, Longmans, Green & Company, New York. 1927. \$3.75.

It is perhaps indicative of the deep and lasting impression made on England by the World War that one of her great Universities should feel called upon to give such lectures as these, and that a leading publisher should put them in book form. It suggests a mental attitude curiously at variance with the smug supineness of the post-Boer-War period, when Kipling flayed his countrymen for being "idle—openly idle—in the lee of the forespent line."

For here is a most excellent series of lectures on war, written for laymen, and apparently a very keen and intelligent set of laymen if one may judge by the mental pabulum given them. The series is introduced by Viscount Grey of Fallodon, who says: "As we are governed not by soldiers and sailors but by civilians, civilians who are likely to play a part in the government in time of war should study the principles of war, and particularly the great mistakes which civilian governments have made in military and naval strategy in past history. You will find plenty of them in the last war, and I am sorry to say that I must take my share in the responsibility for some of them." A frank and authoritative statement!

There is a lecture on "The Study of War," by Major General Sir George Aston. He, it appears, is Lecturer on Military History in the University. In passing, it may be asked how many of our universities or colleges have given like employment to major generals, or found places in their curricula for anything like the "School of War Studies" now established in the University of London?

"A Defence of Military History" is followed by two lectures on Sea Warfare, two on Land Warfare, one on Air, and one on Chemical Warfare, all given by competent admirals and generals. They are of course written on broad lines, but they are by no means platitudinous or commonplace or dull.

The lectures on Sea Warfare, by Vice-Admiral Sir H. W. Richmond, give an excellent general conception of naval strategy, illustrated by many examples from Britain's long experience at sea.

Major General Sir Edmund Ironside's lectures on Land Warfare are notable for the emphasis he places on the future mechanisation of war, both in the air and on land. So may power and mobility be gained. "It appears to me," he says, "that any long period of static warfare is now most unlikely. . . . The odds seem to have turned very definitely in favor of the small, highly-trained army and against the half-trained horde."

In Air Vice-Marshal H. R. M. Brooke-Popham's lecture on Air Warfare occurs a plea for a keener "air sense of the nation" which is singularly reminiscent of things we sometimes hear on this side of the Atlantic. "We are not," he says, "taking kindly to the air as a people. America has over 2000 privately owned aeroplanes, we about two dozen."

General Hartley, speaking on Chemical Warfare, emphasizes its efficiency, but nevertheless sees "some reason" for thinking "that it is unlikely that new substances (chemicals) of much greater value than those we know today will be discovered." He also thinks that "the ultimate mechanisation of land forces" will lead to much greater "mobility, dispersion and concealment, all of which will make the use of gas more difficult. In fact the encounter battle of the future may offer few opportunities for its employment."

A book of interest to all military men.—S. M.

Tales of the Secret Service. By Harold C. Keyes. The Britton-Gardner Printing Company, Cleveland. 1927. 5"x 7½". 272 pp. Ill. \$2.50.

The author of this volume of Secret Service adventures once pursued life procaically as a Pullman conductor. Accident opened for him a career in the United States Secret Service during the World War, and he served therein as "K-4" during the administrations of Presidents Wilson, Harding, and Coolidge. Recently he left the Secret Service to accept the presidency of Keyes-Kavanagh, Incorporated, Bureau of Secret Service.

The book embraces a number of the author's experiences while in the Service, and goes far to show that the seeker after adventure can find plenty of action and much mystery in the Secret Service of the United States. The tales include German Spies, attempted assassination of President Wilson and of Marshal Foch, anarchists, various counterfeiting and note-raising operations, a bolshevist school, and incidental rum running.

The lover of adventure and crime stories will find these tales as thrilling as any fiction, notwithstanding the fact that no effort has been made to twist or distort the narrative in an effort to achieve "literary style." We recommend the book.

Mornings In Mexico. By D. H. Lawrence. Alfred A. Knopf, New York. 5½"x 8". 189 pp. \$2.50.

Mornings In Mexico is a collection of eight informal essays which have appeared from time to time in various magazines—vivid word pictures, charmingly painted, of life among the Mexicans and the Indians.

The first four essays have their setting in and about a little Mexican village "away South in the republic," where Mr. Lawrence, in his adobe house with the patio, the parrots, the dog, Corasmin, and Rosalino, the mozo, lived very close to the people. The beauty, the picturesqueness, and the loneliness of the land; the poverty, the helplessness, and the timidity of the peons, are drawn with startling clearness. Mr. Lawrence has looked deeply into the hearts of the humble Mexicans and what he has found there of ignorance, of resignation, of superstition, of fear, he tells in a way that is not only convincing but illuminating. We all know something of the leaders in the political and religious turmoil that is constantly

upsetting the stability of life in Mexico; but of the masses of the people who are the helpless actors in the struggle we know far too little. It is with the latter that Mr. Lawrence is entirely concerned.

A better title for Mr. Lawrence's book would have been "Mornings in Mexico, Old and New," for the remaining four essays of the book deal with the Pueblo Indians of New Mexico and Arizona, who live in a land of "pale, dry baked earth, that blows into dust of fine sand. Low hills of baked pale earth, sinking heavily, and speckled sparsely with dark dots of cedar bushes. A river on the plain of drought, just a cleft of dark, reddish-brown water, almost a flood. And over all, the blue, uneasy, alkaline sky."

In these informal essays dealing with the little-understood Pueblo Indian, Mr. Lawrence is equally graphic in his descriptions of the country and equally keen in his analysis of the mental reactions of the Indian mind. "It is almost impossible for the white people to approach the Indian without either sentimentality or dislike. . . . Both the reactions are due to the same feeling in the white men. The Indian is not in line with us. He's not coming our way. His whole being is going a different way from ours. And the minute you set your eyes on him you know it. . . . The Indian way of consciousness is different from and fatal to our way of consciousness. . . . The two ways, the two streams are never to be united. They are not even to be reconciled. There is no bridge, no canal of connection." Now when anyone who knows the Pueblo reads this quotation, he realizes that Mr. Lawrence has succeeded in getting under the surface of things as far as most white men can ever hope to get, and that what he has to say is worth listening to.

Mr. Lawrence describes the corn dance, the eagle dance, the snake dance, all with the understanding of the artist for color and grouping; but he is far more concerned with what each dance means to the Pueblo Indian than he is with the dance as a spectacle. As one reads, the conviction grows that Mr. Lawrence's interpretation of the religious philosophy of the Pueblo comes much nearer to the truth than the conclusions of men who claim more knowledge of the Indian.

Mornings in Mexico is not only worth reading; it is worth reading leisurely and thoughtfully.—E. L. B.

Dwellers in the Jungle. By Lieutenant Colonel Gordon Casserly. Frederick A. Stokes & Co., New York. 5½"x 8". 239 pp. Ill. \$2.50.

English army officers on outpost duty in Indian undoubtedly have unusual opportunities for first-hand observation. Some of these men have rendered invaluable service to their country by exploring and mapping remote areas; others have studied the customs of the people about them; but Lieut. Col. Casserly is a lover of animals and it was his pleasure to study the habits of the jungle beasts among whom he lived and to record their doings in *Dwellers of the Jungle*.

It was while commanding Buxa Duar, a thousand-year-old fortress on the Bhutan frontier, that Colonel Casserly wrote his book; for he was forty miles away from the nearest European and thrown entirely on his own resources for interest and occupation. Buxa Duar, perched on a rocky hill eight-hundred feet above the trees of the jungle, is in the heart of the great Terai Forest which lies "under the shadow of the long line of snow-topped mountains, surging like a sea up the barrier of the foot-hills, thrusting out into the flat plains of Bengal and threatening to swamp with its green waves the cultivated fields until dammed by human hands."

The Terai jungle "stretches through Assam and Eastern Bengal and harbors in its gloomy recesses those giants of the animal world, the elephant, rhinoceros, bison and buffalo." "It is a lovely land of deep valleys filled with tangled jungle, . . . of grassy uplands, of dark and gloomy ravines, where high above the rushing torrents roaring among the great boulders, hung iron chain suspension bridges built hundreds of years before by long-forgotten Chinese engineers." This is the back ground for Colonel Casserly's colorful tales of animal life. Butcha, "The Monkey Who Wouldn't Be Told;" the little jungle rooster who was "Cock-O'-The-Walk;" Kutta, the wild dog; Mr. Parker, the "Monkey Inquisitor;" Jahnsi, the run-away elephant; Bagh, the tiger;—brave, timid, cruel, or gentle, they all seem very human as they act their parts in the "Play of Life" in the Terai forest. "They cheered my solitude, and I loved them even when I slew them."

Colonel Casserly's vivid style of writing reminds one of Kipling's *Jungle Book*; and black and white drawings by Warwick Reynolds are most effective. *Dwellers In the Jungle* must, of course, appeal to the big game hunter and to the lover of animals; but the stories are told so simply and with such charm that the book would be an ideal addition to the library of any boy or girl.—E. L. B.

On Special Missions. By Charles Lucieto. Robert M. McBride & Company, New York. 1927. 280 pp. Ill. \$2.00.

A hodge-podge of old spy stories and new fairy tales. Some of the outstanding absurdities are the stories of the French submarine which was met every night, in all weather, five kilometers off the Dutch coast by a French agent, an "expert swimmer," carrying his reports in a bottle; of the German submarine which, in the presence of an Allied convoy, deliberately attacked a destroyer; of the French officers interned in Switzerland who assisted in the arrest of a German spy in Italy simply by putting on civilian clothes and crossing the frontier.—S. M.

MAXIM II

In forming the plan of a campaign, it is requisite to foresee everything the enemy may do, and to be prepared with the necessary means to counteract it.

Plans of campaign may be modified, ad infinitum, according to circumstances—the genius of the general, the character of the troops, and the topography of the theater of action.—Napoleon's Maxims of War.