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MAJOR GENERAL HARRY L. STEELE

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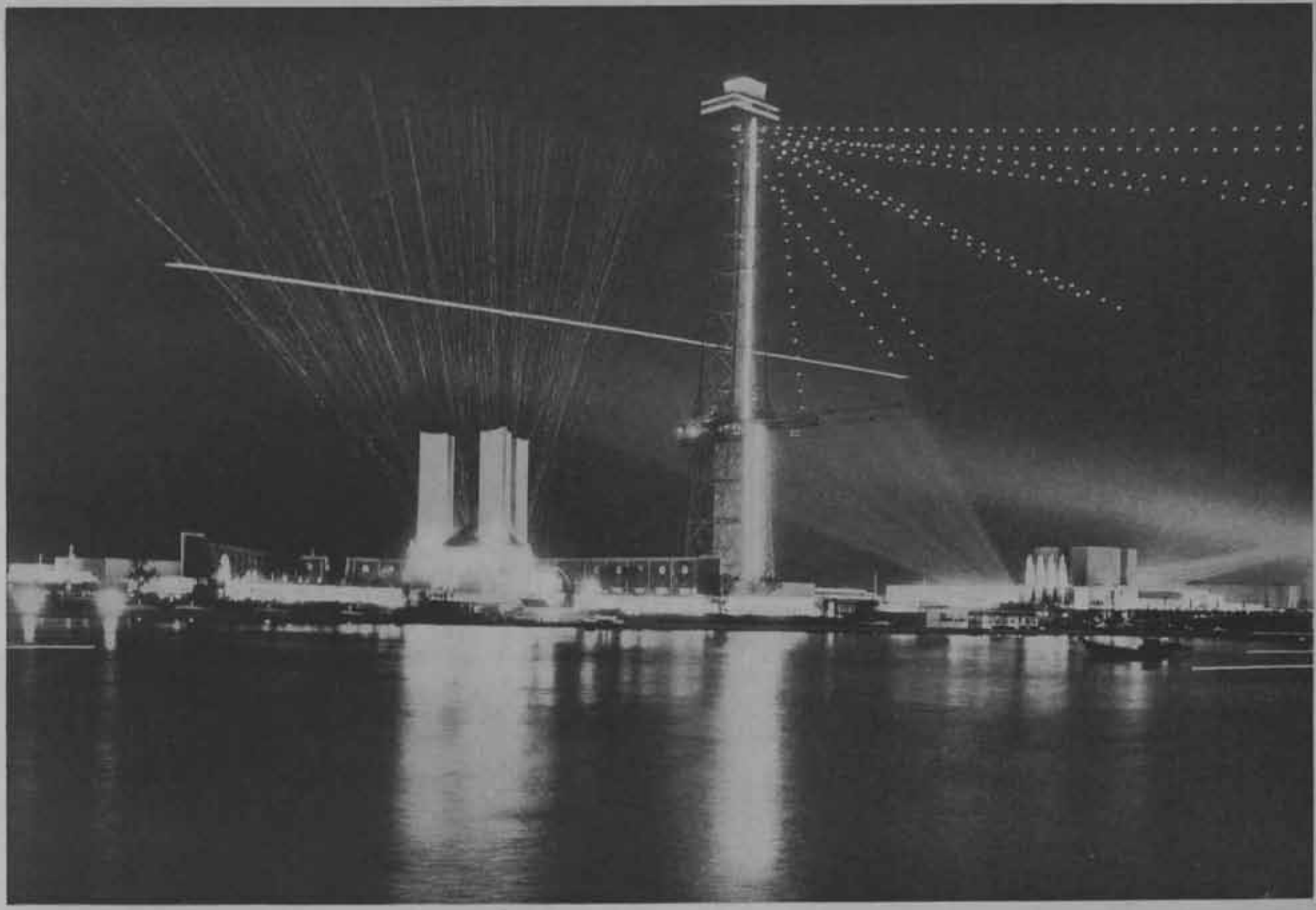
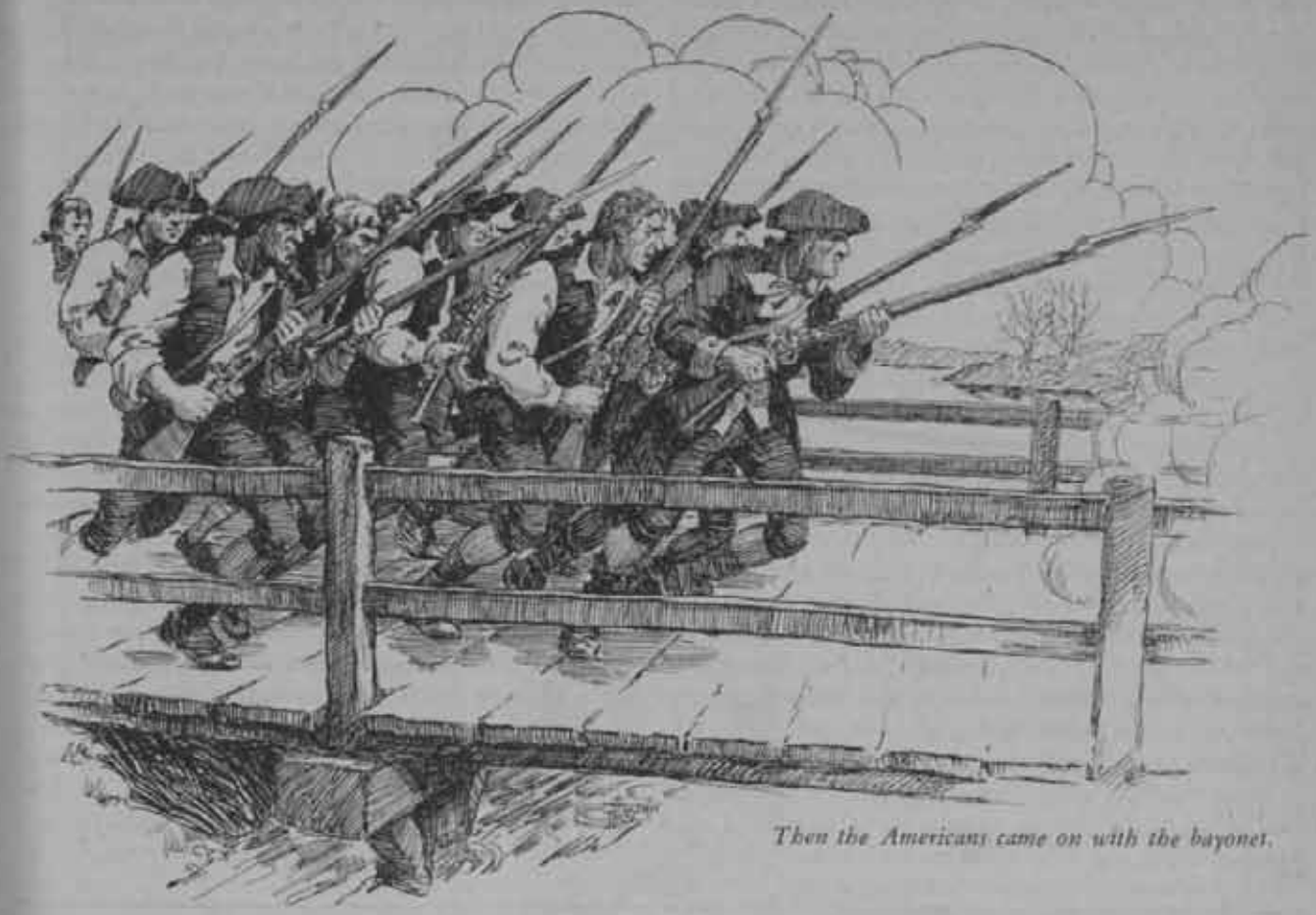


The 202nd C.A. (AA) at the Century of Progress Exposition. Night firing with machine guns, showing the trajectory of tracer bullets and the path of the target.



Then the Americans came on with the bayonet.

Lexington and Concord

By Major Fred M. Green,
C.A.C.

Of all actions in which American troops have participated, perhaps none has been more extensively misrepresented than those at Lexington and Concord. Surely none is more generally misunderstood by our people as a whole. As there is little tactical benefit from study of these operations, army officers have not interested themselves professionally in the matter and so are scarcely better informed than civilians. The fact is that we all carry forward the picturesque legend from our school-books presented to us at an impressionable age, quite unconscious of the fact that the real truth was obscured from the start by propaganda in the national interest, and afterwards further distorted by local rivalry for fame. The resultant garbled version has attained the momentum of a legend universally taught and accepted. But since this distorted impression has been exploited by opponents of preparedness, it seems worth while to present to military readers such of the real facts as are needed for an understanding of the actions essential. What follows is taken from the work of standard modern historians[1] who have reconstructed the events of the day from contemporaneous evidence, some of which has been but comparatively recently discovered.

British troops had been maintained in or near Boston from 1768 to 1775 due to the unruly conduct of the Colonists. There had been extreme friction between the troops and the townspeople, leading to affrays such as the "Boston Massacre." The attitude of both was far from

The so-called "Battle of Lexington" was not a battle—not even a skirmish.

[1] Bibliography
"The Nineteenth of April, 1775," Harold Murdock
"The Day of Concord and Lexington," Allen French
"Battle of April 19, 1775," F. W. Coburn
"The Old Boston Post Road," Stephen Jenkins
"History of the Siege of Boston," Richard Frothingham
"The Sabbath in Puritan New England," Alice Morse Earle

conciliatory, and presently all of eastern Massachusetts was in a state of revolt. Courts were intimidated or closed, loyal inhabitants were persecuted and abused by mobs, and the newspapers were openly incendiary. In every town the Provincials were drilling, and such gun-powder and other military stores as they could obtain were collected and stored at Concord. As the tension grew, until it became evident that armed insurrection amounting to actual revolution was impending, the British garrison of Boston was increased from two to eleven regiments.

Hoping to discourage, or at least to cripple the expected revolt, the British governor decided to seize and destroy those military stores which the Colonists had assembled at Concord. For this purpose, he organized a provisional force of about 700 men, consisting of the "light" company and the "grenadier" company from each of the infantry regiments in his command. To prevent any possible opposition by the Provincials, the very fact of a contemplated movement, as well as its destination and purpose, were carefully concealed. The men detailed to go were given no warning until they were individually awakened and told to dress. They were assembled without noise, marched quietly through unfrequented paths along the Common to the boats, and silently ferried across the Charles River to Cambridge (See Fig. 1). In addition to these efforts to attain secrecy, guards were placed on roads leaving the city to prevent the departure of any possible messenger. But all these efforts were in vain; by the time the British detachment started its march from Cambridge to Concord, the country was being alerted by couriers, and the alarm was being spread by the ringing of church bells and the firing of signal guns. It was clear that the hoped-for secrecy was lost. The detachment commander sent back a message that the farmers were being aroused, requested that he be reinforced, and then marched on Concord.

Meanwhile at Lexington, as elsewhere, the minutemen were assembling. Ordinarily they met for drill on the village green, and here they gathered at the alarm about 1:00 A.M. It was a cold night, and after waiting until about 2 o'clock and hearing nothing from the British, the men were allowed to fall out and go to nearby houses or to the tavern to rest. Several scouts had been sent down the road toward Boston to see if the British were approaching, but none of them returned. With simple trustfulness, the Provincials interpreted this to indicate that the British were not coming, actually, these scouts had all been captured, one after another, by leading elements of the British advance-guard. Not until the British detachment was close upon the town was its approach discovered. Then the drum was beaten and the church-bell rung as a signal for the minutemen to assemble.

It was now about 4 A.M.—nearly sunrise. The main body of the British detachment was moving silently up the road, preceded by a few mounted officers and an advance-guard of about 180 light-infantrymen under

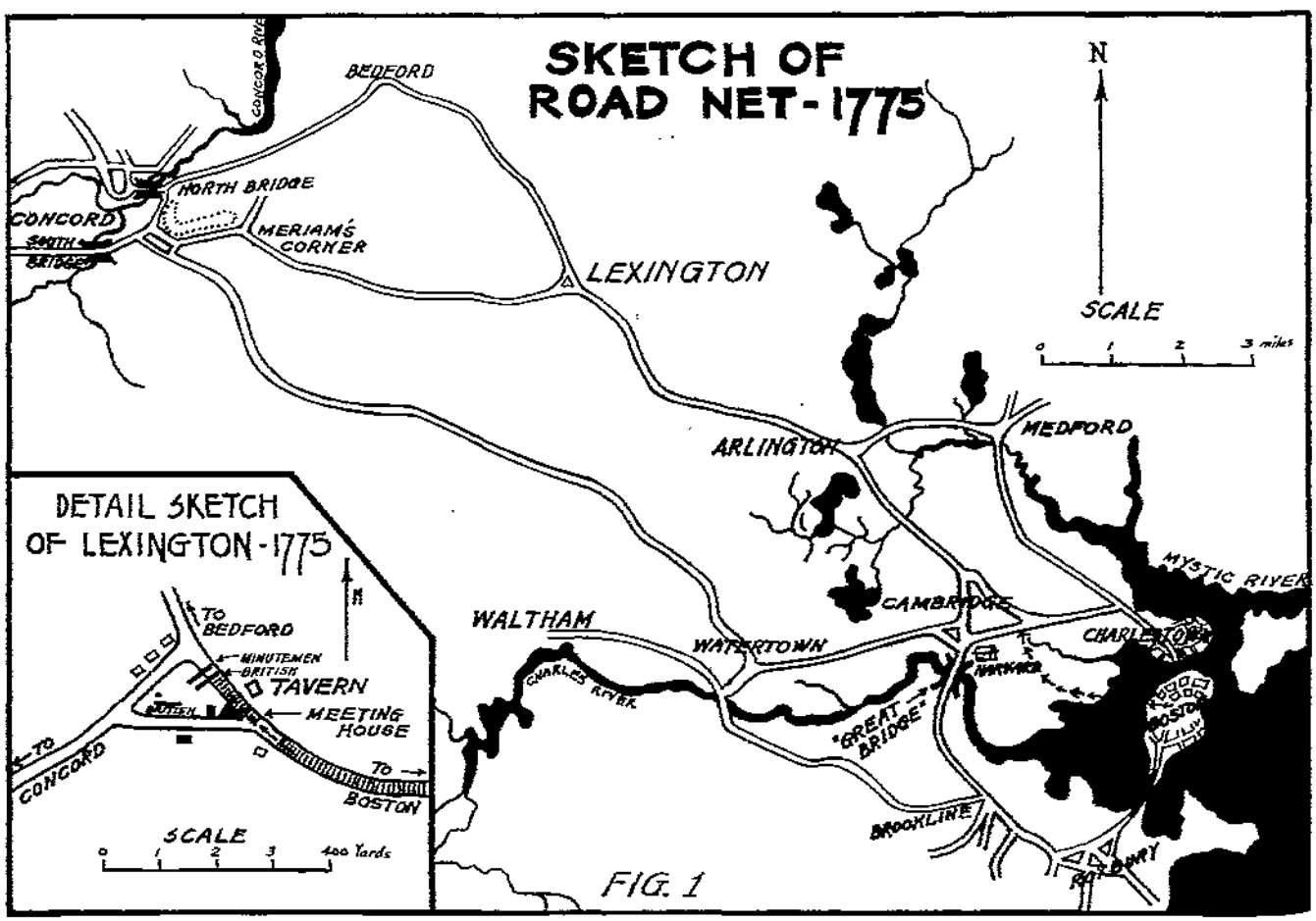


FIG. 1

Major Pitcairn of the Marines. Doubtless the capture of several countrymen, awake and on the roads at this unaccustomed hour, had convinced him that the country had been successfully alerted. Then a mounted officer (one of those who had captured Paul Revere) repeated to Major Pitcairn the story that Revere had told him: that 500 minutemen had assembled at Lexington, where they were waiting to oppose the British march. Next a mounted Provincial scout, challenged by the British, had wheeled his horse, shouted threats, and dashed back in the direction of the town; as he fled, he attempted to fire his pistol (either at the British, or as an alarm signal), but the piece "flashed in the pan" and failed to go off. And now there could be heard from the village ahead the sound of the Lexington drum, calling the minutemen to arms.

Obviously, there was much to show that forcible resistance might be encountered as the column entered the village. Major Pitcairn very naturally halted the advance-guard, ordered the men to load their pieces, and expressly directed that no man was to fire except upon his order. The advance-guard then entered the town, where some of the Lexington minutemen were assembling in considerable confusion. Of the 130 who had mustered at one o'clock, only about 60 or 70 were now in line; some had not yet returned from bed; others had run to the "meeting house" for ammunition* — an amusing sidelight on American procrastination as to preparedness! Possibly some of the missing 60 were AWOL with cold feet, for Captain Parker was heard to threaten those who, already in ranks, wished to run away and hide.

We know the mission of the British. If Captain Parker had orders for his minutemen, we do not know it; there is much to suggest that he had none. Historians have often assumed that his force was paraded to stop the British march, but this seems to me absurd. It must have been as clear to him as to us that against a force five to ten times as numerous, and far superior in equipment, training, and discipline, he could do but little. Even had a state of war existed, the best he could have hoped for would be to delay and harass the British on their march to Concord; to offer battle in the open spelled certain destruction. But a state of war did not exist; furthermore, the Colonists' leaders had repeatedly emphasized, and the minutemen had been carefully instructed, that as a matter of public policy the British must be allowed to fire first, so that the blame for any bloodshed would rest upon them. Why, then, did the Colonists stand there under arms, in plain sight of the British, in such a manner as surely must provoke a collision, under the circumstances most disadvantageous to them? Mr. Murdock thinks it possible that Captain Parker was ordered to do so, pursuant to a deliberate plan to bring on bloodshed, which would so excite the public spirit as to render war inevitable. Another possible explanation is found in the "guardhouse lawyer" attitude of many of the Provincials of the time; it may be that by standing thus, with their authorized arms, in the place where they were accustomed to drill, they felt that they were only exercising their rights as British colonists. Had the British threatened the sleeping women and children, or offered to burn the town, doubtless the Lexington men would have fought, whatever the odds, to defend their homes. It may be that they gathered with this thought in mind.

But to me the most convincing explanation of all is that of Mr. French. He points out that the place where they stood was their usual rendezvous—the place where they ordinarily met for drill. It was the place at which they had formed on the first alarm at 1 A.M. It was the place where they had waited, and from which they had finally been dismissed at 2 A.M. It was their "company parade," selected purely for convenience and with no tactical thought in mind. When the men were dismissed there at 2 o'clock it was dark, and a re-assembly would not have been visible from the road. At sunrise, however, when they were so hastily turned out, they found themselves painfully conspicuous. By the time half the minutemen had fallen in, the British were upon them. The colonists were surprised, they were bewildered; and what happened in the next few minutes took place before any decision to move to a less exposed spot could be carried into execution.

So here was the situation. As advance-guard commander, Major Pitcairn could not march on, leaving in his rear an armed and potentially hostile force, in a position from which they could pour a murderous fire into the main body of the British detachment. It was clearly his duty to disperse, and preferable also to disarm, these colonists. He wanted to do it quickly, for the march to Concord must not be delayed. He wanted to do it quietly, for he had no intention of further arousing the country

*In those days, New England churches were unheated. The cutting away of trees from around the building to protect it from forest fires, and the absence of any heating devices within the structure, made it the safest place in the community for the storage of explosives. The meeting-house was everywhere so used. No incongruity was seen in this by a people who opened and closed their military exercises on "training day" with prayer and psalm-singing, and to whom the sight of armed men at the aisle-end of each pew had been habitual during Indian days.

by any sound of musketry. He deployed his leading men, and with them he advanced on the minutemen, addressing them rather harshly as "rebels," and calling on them to lay down their arms and disperse. In a few more seconds, had the minutemen stood fast, they would doubtless have been surrounded by a ring of bayonets and disarmed.

All the evidence goes to show that Captain Parker, finding his men discovered by the enemy, hopelessly outnumbered, and caught by surprise in the open, had no thought of fighting. Naturally, though, he wanted his men to save their muskets from confiscation. He hastily gave orders for the men not to fire, but to disperse. Most of the minutemen scattered promptly; the crisis was almost averted. But now remember that the Provincials had long been deeply angered at the British, and that incendiary orators had fanned the flame. The British soldiers were no less exasperated with the Provincials, and with equally good reason. There was ample cause for genuine personal hatred on both sides; only a spark was needed to explode the mixture.

Just at this moment somebody fired a shot. Whether it was fired by British or by American hands has never been definitely established, for instantly a considerable number of shots were fired, some from each party. Only seven or eight of the minutemen fired at all; very likely most of these fired from cover after having run away from the immediate scene. A larger number of British soldiers fired, apparently individually, and not by order; certainly not by Major Pitcairn's order; the men were excited, exasperated, and considerably out of hand. As soon as the firing broke out, Major Pitcairn and his officers made every effort to check it. But the mischief was done; eight of the Americans were killed and ten wounded; on the British side one man and one horse had minor injuries.

It took the British officers some time to restore order in the ranks of their men. American accounts say that the British then "fired a volley of triumph;" but under the circumstances it seems to me much more probable that the soldiers were required to discharge their pieces (that being the only practicable way of emptying muzzle-loaders) to insure against any further unauthorized firing. Had the sanctimonious villagers heard what Major Pitcairn told the light infantrymen about themselves during this period, they would doubtless have felt that his somewhat hasty remark about "rebels" could be overlooked.

Apart from its sentimental and political significance, this entire incident was either comic or tragic, according to how you view it, but it is impossible to make a convincing story of a "battle" out of any such bungling affair, especially when both commanders were intent on preventing the firing of a single shot.

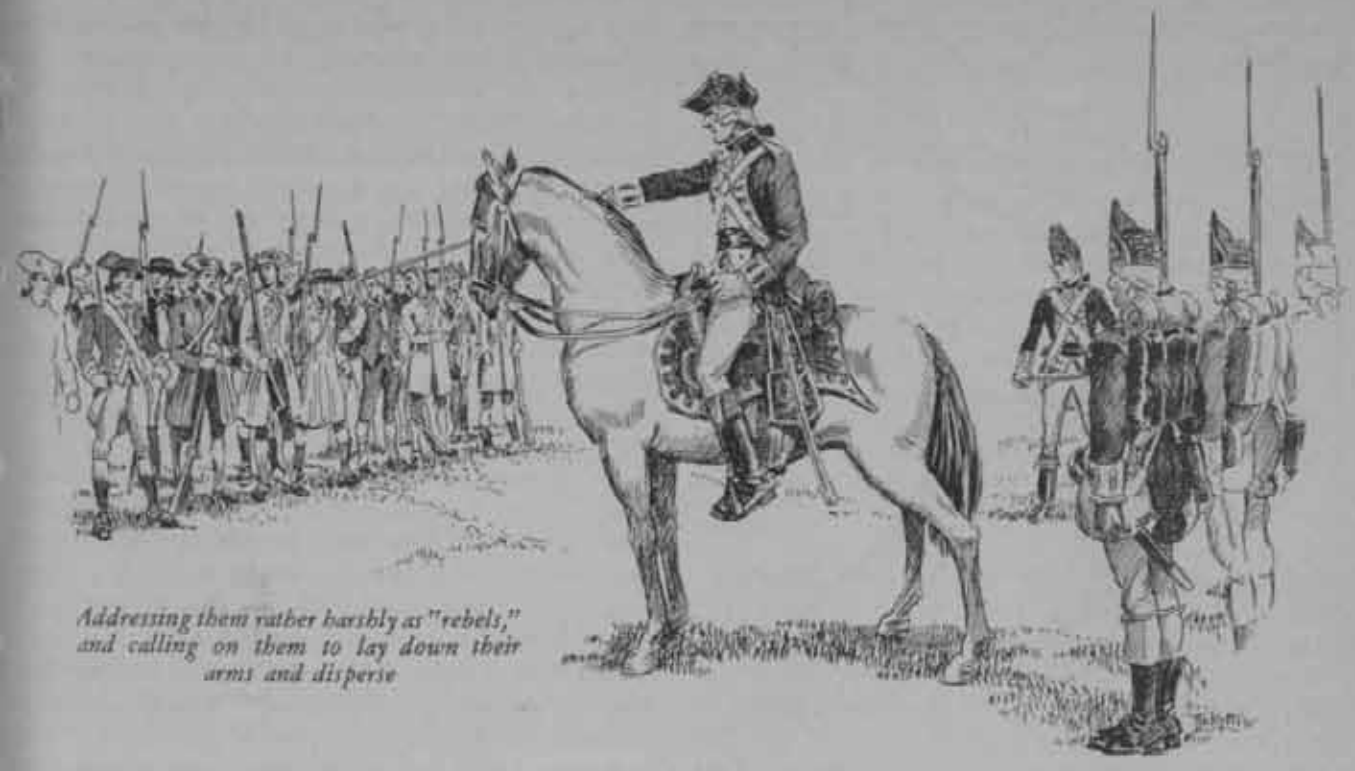
In any event, the minutemen had dispersed and the British column resumed its march. About 7:30 A.M. it approached Concord. Now it is strange that while the Concord minutemen had heard an eyewitness' account of the fighting at Lexington, they seemed skeptical about it. They could not fully realize that war had begun. A body of 150 Concord minutemen, who early had marched to a position east of the town to protect it, saw themselves outnumbered by the approaching enemy. They could easily have delayed the British by fire from successive positions, and thus allowed more of the military stores to be removed or hidden. But they were too much in doubt what to do; initiative was lacking; they were still obsessed with the thought that the British must be forced to fire first. So they did nothing which would really have been useful; instead, they retired through the town, and west across the river at the North Bridge (See Fig. 2), marching along tauntingly just out of range of the British, but making no effort to delay their advance.

The British entered the town without opposition, and set about the destruction of such military stores as they could find. To provide security while at this work, they sent out covering detachments to the bridges across the stream, which runs generally northeast just west of the town. This outpost consisted of about 30 men at the South Bridge, and about 100 at the North Bridge.

The Concord minutemen, who had retired to a hill northwest of the North Bridge, very soon joined there by additional minutemen from several of the nearby villages. Their strength thus mounted from 150 up to about 400 men, among whom there appear to have been a few natural leaders. About 9:30 A.M. these leaders saw the smoke from the miltiary supplies which were being burned by the British; they erroneously concluded that the British were setting fire to the town. Only 100 British soldiers were in sight—the picket at the North Bridge. The Americans decided to march into the village and save it from destruction.

Just what they proposed to do when they entered the town is not clear. Probably no definite plan existed. Certainly there was no promise of success in their declared object of preventing the burning of the houses, for the entire British force in and around Concord outnumbered the Colonists by three to two, and was better armed, equipped, and trained. But as against the British picket at the North Bridge, the Colonists had local superiority in numbers—about four to one. This advantage was largely offset by the strength of the British position, due to the peculiar nature of the ground in question.

In those days (see Fig. 2), the road from the North Bridge ran a little south of west for about 200 yards, along a causeway raised above the surrounding marshes. These marshes, and the river itself (30 to 40 yards wide, and not fordable) make an obstacle passable only along the causeway and across the North Bridge. As the American force, in column of twos, approached this bridge along the causeway from the west, the British light infantry was hastily formed in column, about 10 files front and 10 files deep, at the eastern end of the bridge. Why they did not deploy, to bring more muskets to bear upon the crossing, may be hard to understand. Mr. French ingeniously suggests that the British commander intended to employ what was then called "street firing": having the leading unit fire a volley, and then file off around each flank to a



Addressing them rather harshly as "rebels," and calling on them to lay down their arms and disperse

position in rear of the column; meanwhile the second unit, thus uncovered, would in turn deliver its fire, and file off, and so on. With the slow and clumsy flintlock of that age, this plan offered a satisfactory means for keeping up a sustained fire along the causeway and bridge—perhaps the best plan. But if this *was* what the British commander actually intended, he failed so to instruct his men; his junior officers and the British troops as a whole failed to grasp his idea.

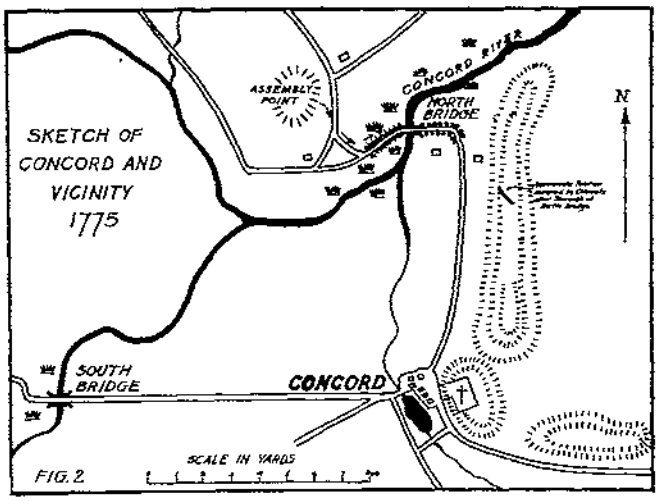
When the Americans had come within about 75 yards, the British opened fire upon them; this was answered by a ragged volley from the Provincials. Two were killed and two wounded on the American side, but there were three killed and eight wounded among the close-packed British. Then the Americans came on with the bayonet, and the British broke and fled. Why, with so small a loss, the British should have retreated from so strong a position as abruptly as they did, is a little hard to understand; it contrasts strangely with their conduct two months later at Bunker Hill, when they advanced unfalteringly in spite of terrific losses. It is more than probable that a momentary panic overcame the men. They were crowded together in a vulnerable formation, jammed into a narrow road where but few could find elbow-room to use their weapons, but where all could see the numerical superiority of the oncoming American force. We know that the British troops did not understand that "street-firing" was intended; possibly after the first volley the men in rear mistook the intended withdrawal of the leading unit for an enforced retreat. Perhaps, jammed together between stone walls, the leading unit could find no room in which to file to the rear, and so confusion resulted. Perhaps another factor in the panic was that many of the soldiers found themselves under officers strange to them,[4] and in whom they naturally had less confidence; furthermore, four out of the eight officers present happened to be wounded by the American volley. In any case, we know that the British broke and fled.

If I have seemed over critical in discussing events at Lexington, let me hasten to say that the capture of the North Bridge looks to me far more creditable to our arms than to the British. The Colonists withstood the British fire, returned it, charged, and drove their enemy from the bridge. So far, no word of criticism can be uttered.

But from this point on, leadership was sadly lacking on both sides. Although the Americans had captured the bridge, they failed to exploit its possession. The original intent to enter the town and to save it from destruction—the only object in capturing the bridge in the first place—was either forgotten, or the intent was abandoned. Within a few minutes, the victorious force had disintegrated. About half of the Colonists drifted back across the bridge which they had just captured, and disappeared from the picture. Some went to attend the wounded; others to remove the bodies of the dead; others straggled off in search of breakfast, or a drink of water; and some were doubtless overwhelmed at the enormity of having fired on the King's men, and remembered urgent personal business elsewhere. At any rate, about half the American force dissolved. The other half of the Americans simply moved to a concealed position in the woods on the high ground east of the bridge, and stayed there.

Meanwhile, a column of about 100 British grenadiers, which had been sent from Concord to reinforce the light

[4] In the assignment of officers in preparation for this expedition, little effort seems to have been made to continue company officers with their accustomed units, moreover, the entire picket was commanded by the senior company commander present, which naturally left his own unit to the command of a subaltern.



infantry at the bridge when the Americans first started their advance, made its tardy approach to the scene. Perhaps it was the sight of them coming that caused about 200 of the Americans to retreat west of the river, and the rest to hide in the woods on the hill. But the grenadiers never advanced to the bridge at all; they did not even come to within range of the colonists on the hill; they halted, and their officers were called to the front. Whatever the purpose of this conference, nothing came of it; the force remained idle on the road for a time, and then withdrew into the village.

Seemingly, the leaders on both sides were dazed by the sudden outbreak of war. For it was plainly the duty of the grenadiers to replace the picket which had been driven from the bridge, and to discover what Provincial forces, if any, were now east of the stream. They made no attempt to do either of these things. They stood around in the road, talked, and did nothing. Inertia is the curse of all armies.

American leadership was equally at fault; half their force had been allowed to melt away, and the remaining half wasted two precious hours hiding in the woods east of the bridge, accomplishing no useful purpose. This group did not pretend to guard the bridge; they did not even fire on those three other British companies which later returned across it from places west of the stream where they had been destroying stores. The bridge was no longer significant to the Colonists anyway. Instead of hiding in the woods with no plan (other than a futile intent to fire at the grenadiers in case they approached the bridge, which actually they never did), the American commander should have circled the town to the eastward and occupied a position across the road by which the British must return; he might thus have been instrumental in effecting the capture or destruction of the whole British detachment. Time was precious, but he wasted two whole hours without even arriving at any reasonable plan for action. In a military sense, those Colonists who had given their lives at the North Bridge died in vain, betrayed by the subsequent vacillation and inertia of their victorious comrades. It was probably not so much cowardice as sheer stupidity—the penalty of having untrained leaders and poor discipline.

About noon the British detachment, having completed the destruction of the stores they found in Concord, commenced their return march to Boston. For the first mile or so their withdrawal was unopposed, but near Meriam's Corner fire was opened on them, and for the next five miles the gathering minutemen inflicted heavier and heavier losses. The British sent out flankers on either side of the column, and dropped back a rear-guard, but the country was exceptionally favorable to the irregular style of fighting which came natural to the Americans. The British were hungry; they had had a sleepless night; they had marched 25 miles since midnight, the last five miles under a heavy fire; their losses were already serious and rapidly increasing; their ammunition was almost exhausted; they could not return the fire they were receiving, both because of lack of ammunition and because of the American practice of firing from cover—a practice which the British regarded as cowardly and treacherous assassination. Finally, the British believed that the Colonists scalped and tomahawked the wounded who fell out; why they believed this cannot be explained without recounting a long and dismal story of no military consequence, but believe it they did and not without good reason. It is not surprising that the last two hours had turned an orderly withdrawal into a rout—almost a panic flight. Some British officers even had to use their weapons against their own men, to restore order and enforce their commands, before Lexington was reached.

If only the entire British detachment could have been captured, the political effect would have been tremendous and the morale of the Colonists would have soared. And it could so easily have been done. As Mr. French points out, the withdrawal could have been brought to a standstill by crushing each flank patrol as soon as it left the British column, meanwhile obstructing the road by felling trees across it and keeping the obstacle under fire. Remembering how long the Colonists had awaited a British expedition, it would seem that forethought would have suggested such measures. But it is only too clear that the Provincials were lacking both in trained leadership and in combat discipline. Each successive band of minutemen, as it came on the field, disintegrated into a mob in which every man fought for himself with typical American military inefficiency. "The individual initiative of the American soldier," so often extolled by civilian writers, was bearing its first fruit. All were too flushed with their undreamed-of success to remember that "a stern chase is a long chase." And so the opportunity was lost.

It will be remembered that very early in the morning, finding that his secret march was no longer secret and that the country was being aroused, the commanding officer of the British detachment had sent back a request for reinforcement. The First Brigade, under Lord Percy, was five hours slow in responding, due to grotesquely bad staff work on the part of the British. After this needless delay they finally marched, about 9:00 A.M., via Roxbury,

Brookline, and Cambridge (See Fig. 1). At Lexington they met the original British detachment in full flight. Forming line of battle near Lexington, Percy's Brigade (about 1,000 men, with two field-guns), allowed the fugitive detachment to pass through their lines to a position in rear, where they could rest and reorganize. This was around 2:30 P.M., and about an hour later the consolidated British force took up the march for Boston, with the shattered detachment in the lead, and Percy's fresh units taking turns at forming flank-guards and rear guard for them.

From Lexington to Arlington the ever-increasing swarm of Colonial troops increased its pressure, but were held off by the activity of the flank-guards from Lord Percy's relatively fresh Brigade. There was still no attempt made to obstruct the road, and no organized encircling maneuver. The American pressure was mostly against the flanks and rear of the column, instead of being applied against its head. The leading elements (composed of the remains of the original detachment), were so demoralized, so exhausted, and so short of ammunition that stubborn resistance by even a small band of resolute men might have not only checked their march but even initiated a disastrous panic in the entire British column.

At Arlington about 1,800 fresh minutemen entered the fight; from here on the British were outnumbered two to one, and perhaps three to one, for all of the British were no longer effective, from the exhaustion of both the men and the ammunition supply. Really spirited fighting occurred for the next two miles; the Americans, from concealed positions in the houses, resisted stubbornly, but the British flank-guards fell on these unwary snipers from the rear, and bayoneted them. Most of the American losses of the day occurred in this region.

In his march out that morning, Lord Percy's force has crossed the "Great Bridge," so the Americans expected him to return across it; the Provincial General Heath, who had arrived on the scene, had the planking of this bridge torn up. Too late he realized that Percy could turn north, and return to Boston via Charlestown. Heath then assembled a small force to deny them that road, but a few shots from the British field-pieces scattered this party and the pursuit was over.

	Killed	Wounded	Missing	Total
British	73	174	26	273
American	49	39	5	93

That there were more Americans killed than there were wounded suggests very strongly that the British bayonet was employed more efficiently than the British bullet; also that most of these American casualties were inflicted by flankers rather than by fire from the main column. It is clear that these losses were due largely to their lack of training; also, that (considering the nature of the action) the American losses were needlessly high.

Summary

The so-called "Battle of Lexington" was *not* a battle—not even a skirmish. The commanders on both sides tried to prevent their men from firing at all. You may call it a riot, or a breach of discipline, or a massacre, or an unfortunate incident, or whatever you like, but certainly it was not a "battle."

At the North Bridge in Concord, things were very different. The British picket, although outnumbered four to one, was in a strong position; its flanks were secure; in its front it had a broad obstacle, passable only by a narrow road which could easily have been swept by its fire. The British commander had ample time to prepare his position for defense, but failed to avail himself of the opportunity. Unquestionably, both forces were very clumsily handled. But equally unquestionably, the action of the Colonists in charging this bridge was audacious in the extreme. Remember that the Concord men were not sure that a state of war actually existed. Under these conditions, a prisoner might not be a prisoner of war at all; he was likely to be taken to England, convicted of treason, and sentenced to be hanged, drawn, and quartered. This was before the days of modern penology, with its paroles, probations, and suspended sentences. When they said it, they meant it and they did it. I maintain that these Colonists who led the rush across the North Bridge were bold, hard men, who had the guts to face not only the British troops, but the British criminal courts as well.

Legend represents the 19th of April as an unseasonably muggy, sultry day. Actual records show that, while the spring was early that year, the 19th was a cool day with an east wind blowing. This difference is easily explained; that morning most of the able-bodied men in eastern Massachusetts were engaged in unaccustomed activities which involved exceptional physical exertion.

Our belief as to the personality of the opposing commanders at Lexington has been warped and distorted to serve partisan ends. As we learned it in school, for the sake of contrast with the fiendish, bloodthirsty British leader, Captain Parker was represented as almost inhumanly calm and collected, saying firmly: "Stand your ground. Don't fire unless fired upon, but if they mean to have war, let it begin here." However admirable the sentiment, there is no reliable evidence to prove that he ever said this and much to suggest that he did not. Captain Parker and his merry men, in the alarm and confusion of dawn, unexpectedly found themselves caught out in the open. The British light infantry were upon them before they could make up their minds what to do next. There was no time to deliver (much less to compose), any such epigram. I stress this point because Parker's legendary words have been so often cited as a model of the attitude we should observe in international relations.

Neither was Major Pitcairn the swashbuckling, bloodthirsty domineering figure which American historians have painted him. All the evidence goes to show that he was unusually esteemed and respected; a tactful man, of benevolent and human disposition. It is not impossible that he was selected, for these very reasons, to command the advance-guard. We cannot doubt that he did a little damning on Lexington green, but if today any major of

our own Marine Corps were confronted by a similar situation is it wholly impossible that the Third Commandment might not be violated? Major Pitcairn had nothing to gain and everything to lose by allowing any firing whatsoever; he did all he could to prevent it, and (after it had broken out) to check it. While this resonant "damn" has echoed down the corridors of time, and been viewed with hypocritical horror by generations of New England youth, Major Pitcairn doubtless cursed his own men even more heartily than he had the colonists, because the former had fired contrary to his orders, and gotten badly out of hand at a critical moment.

Mr. Murdock dryly remarks that the warmth of Pitcairn's language stands out more luridly by contrast, because the depositions of the Colonists ignore any instance of the use by them of a single word which might bring a blush of shame to the most modest cheek. To this, his legend of Timothy Brown furnishes a gratifying exception. Timothy was a man of Godly ways, and noted for his exemplary piety, but when he was marching to the attack on the North Bridge, and heard a bullet whistle past his ears, it drew from him the "unpremeditated and regrettable ejaculation": "God damn it, they are firing ball!" So perhaps, as we balance the tactical errors made on both sides, Timothy's fervent words may offset the heated remarks of Major Pitcairn. To some it may be a source of pride that even in profanity the American amateur should equal a British marine, from whom a certain professional eloquence was to be expected.

"God damn it, they are firing ball!"

Toward the peaceable inhabitants, the conduct of the British troops was generally humane and often kindly. The old tales of atrocities on the part of the British are singularly unconvincing. There was a little looting, and houses were sometimes burned by the soldiers, but as we know that much of the Provincial firing was done from houses, these facts are hardly surprising.

It is often implied that the alleged British defeat was explained by the extraordinary marksmanship of the minutemen. If you remember that there were over 3,750 "embattled farmers" engaged, and that the total British casualties (even including those captured unhurt) were only 273, it is plain that on the average, not one American out of a dozen even hit a "red coat"; the other eleven got nothing but misses all day. Even if we estimate that the average Colonist fired only sixteen shots from first to last, that makes a total of 60,000 rounds fired at the British; this works out to only one bullet hitting out of every 220 the Colonists fired. No bad, considering the average for other battles, but remembering how vulnerable and how conspicuous a target the minutemen had, and how much the close country favored their approach to within short range before firing, the results are nothing remarkable as far as marksmanship is concerned. It is only just to recall that the Colonists were not frontiersmen. Large game was nearly as rare in Massachusetts in 1775 as it is now; so such hunting as they had done was with birdshot, or buckshot, poured down the yawning barrel of the old muzzle-loader. Accurate rifle-shots are not developed that way.

The staff work of the British was exceedingly poor, except their intelligence work in preparing for the expedition. Throughout the day, the Americans suffered from a total absence of command and staff service.

Except around the North Bridge, the tactical leadership of the British seems to have been good. Lord Percy's leadership, in extricating his force from every effort of an enemy more than twice as numerous, speaks for itself.

Except for a few moments in the attacks on the North Bridge, which was but an affair of outposts, without effect on the general issue of events, tactical leadership on the American side was practically non-existent. Even that momentary leadership was bad, for it wasted men's lives in a scheme sure to fail.

Doubtless most of the Colonists were individually brave, enthusiastic, and enterprising, but they fought not as an army, but as a mob. They had no coherent plan, their efforts were not intelligently directed, they were not effective in proportion to their strength, and their losses were unnecessarily large. Lacking trained leaders and the discipline to follow them, their attempts to stop the British withdrawal were always ineffective. The minutemen were dismayed and disorganized by defeat; they were amazed and disorganized where they had been successful. This is not carping criticisms: the nation was not born until that day, and the obligation "to provide for the common defense" had not yet been written. We cannot blame them that they fought as an untrained rabble, wasting their lives, and unable to exploit more fully a situation singularly favorable to themselves. But it is interesting to note that the same lack of planning, the same dilatory spirit in preparing, the same shortage of trained leaders, the same absence of subordination, the same willful individualism, all of which have so detracted from our success, so needlessly wasted life and treasure, and so uselessly prolonged every war in which we have since engaged, were repeatedly shown on the first day of the first way which we fought as a nation.

The Umpire System of the G.H.Q.—C.P.X., 1934

By Brigadier General E. H. Humphrey, *U. S. Army*

EARLY in the Spring of 1934, the War Department began the development of a problem as the basis for the conduct of a G.H.Q.—C.P.X. in September of that year.

The purpose of the exercises and the development of the problem was to afford training in the details of organizing and operating a theater of operations and the training of G.H.Q., G.H.Q. Air Force, Army, Corps and Division Commanders and their staffs in the conduct of operations in the field.

The problem consisted of a series of situations depicting the invasion of the United States by a large hostile force, and the plans, directives, administrative arrangements for the organization of a theater of operations including the concentration therein (under the "Four Army Plan"), of two field armies. From time to time, as the problem developed, the Air Force, Army, Corps and Division Commanders and Staffs concerned furnished the necessary contingent plans and orders covering the mobilization and concentration of their respective units in the theater of operations. The Army War College furnished information concerning the approach, landing and subsequent activities of the hostile force.

The Commandant of the Army War College was designated Chief Umpire and directed to utilize the 1934-1935 War College class, supplemented by some officers from the War Department, to umpire the exercises.

Situation

On August 18, 1934, Purple declared war against Blue. Immediately after the declaration of war Blue G.H.Q. ordered the Blue Third and Fourth Armies to mobilize and concentrate for the defense of the Pacific coast, and the Blue First and Second Armies and G.H.Q. reserve units to mobilize in their respective Corps Areas in strategic reserve. At this time the Blue Fleet was concentrated in the vicinity of the Hawaiian Islands and the Blue G.H.Q. Air Force was concentrated in California.

On August 22, Black suddenly declared war against Blue and began landing troops and supplies on the New Jersey coast. (Plate 1.)

Blue G.H.Q. established and assumed command of the North Atlantic Theater on August 25 and ordered the Blue G.H.Q. Air Force, First Army, Second Army and G.H.Q. reserve units to concentrate in that theater under cover of the 1st Division and the 16th Brigade. By August 29, Black forces in considerable strength had advanced inland from 15 to 20 miles and a Black detachment had landed in Delaware. (Plate 2.)

In the meantime Blue G.H.Q. had estimated the Black forces to consist of the Black First Army, based on Barnegat Bay, Manasquan and Long Branch, the Black Fourth Army, based on Port Norris, Cape May and Atlantic City, and a Black G.H.Q. Air Force. The apparent immediate intention of Black G.H.Q. was to secure the Wilmington-Philadelphia area with the Black Fourth Army and the Trenton-New York area with the Black First Army. Consequently Blue G.H.Q., on August 27, had issued a letter of instructions covering the Blue plan. This plan contemplated a coördinated attack by both Blue armies with the object to driving the Black armies apart and defeating them in detail, the Blue First Army operating against the Black Fourth Army was to make the main effort. (Plate 3.)

By noon of September 2, the Black Fourth Army had reached the high ground overlooking Wilmington and Philadelphia where it was in close contact with the deployed Blue First Army. The Black First Army, with its right a few miles west of Sandy Hook and its left on line with the Black Fourth Army, was in contact with the Blue Second Army which had not yet completed its concentration.

There was a gap of about 15 miles between the Black armies. A Blue provisional cavalry corps, including a mechanized brigade, was moving up on the right of the Blue Second Army. The Blue G.H.Q. Air Force was ready for operations. (Plate 4.)

At 4:00 P.M. September 2, Blue G.H.Q. ordered the Blue armies to attack in accordance with the following plan:

The Blue First Army, reinforced by a regiment of tanks, to conduct the principal operation, making its main effort against the Black Fourth Army with its left. The Blue Second Army, with the Blue Provisional Cavalry Corps and the 52nd C.A. (Ry) attached, to continue delaying the Black First Army, while completing its concentration, with a view to assuming the offensive when ordered by Blue G.H.Q., making its main effort with its right. The Blue Provisional Cavalry Corps to assume the offensive with the Blue First Army and operate against the left and rear of the Black First Army with a view to interrupting Black communications. The Blue G.H.Q. Air Force to begin operating at daylight September 3 against Black transports and Black G.H.Q. Air Force, and to be prepared to support the attack of the Blue First Army.

Maps courtesy *The Quartermaster Review*.

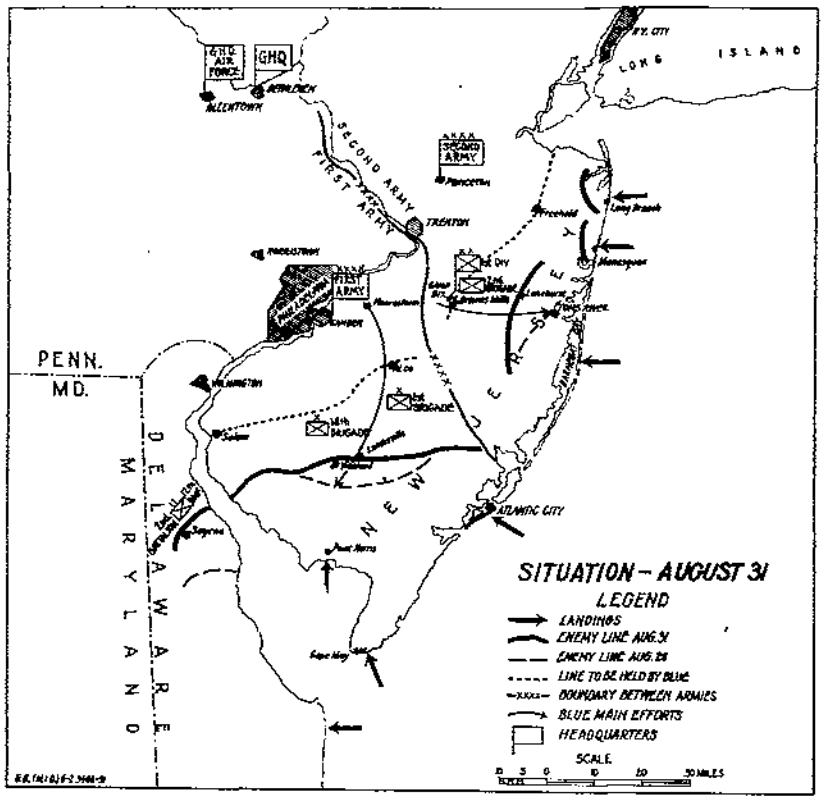


Plate I

Command Posts

By noon September 2, 1934, command posts and signal communications for the G.H.Q.—C.P.X. were organized and ready to operate as follows:

Raritan, N. J.: G.H.Q., Headquarters, G.H.Q. Air Force and the headquarters of its 3 air corps wings and 2 air crops groups.

Camp Dix, N. J.: Headquarters, First Army and the headquarters of its 3 army corps and 9 divisions.

Fort Monmouth, N. J.: Headquarters, Second Army, the headquarters of its 2 army corps and 6 divisions, and the headquarters of the attached provisional cavalry corps, its 2 cavalry divisions and a mechanized brigade.

The associated umpire groups were located in the vicinity of the headquarters with which they were to function.

Scheme of Umpiring

A scheme of umpiring was devised at the Army War College with the following objects in view:

Control and coördination, in order that the Chief Umpire could insure the play of the exercise in accordance with the terms of the problem and other known factors such as troops and supplies available, fire power, terrain, weather, losses and so forth.

Realism, in order that the actions and reactions of commanders and staffs might approximate those which they would experience under war conditions.

Flexibility, in order that the umpire system could function, promptly, to execute commanders' plans and orders and to portray the operations resulting therefrom.

Briefly, this scheme differed from that generally used in command post exercises in that situations were not preconceived and "canned messages" were not used. The primary purpose of the umpire system was to execute the plans and orders of the Blue commanders, to operate the Black forces and to furnish Blue commanders and staffs with pertinent information concerning the strategical, tactical, supply and evacuation situation, from time to time.

The umpire force comprized 77 officers and 64 enlisted men organized as shown in the diagram below.

Training the Umpires

The umpires were assembled at the Army War College August 6 for a three weeks' intensive course of training under a definite plan. This plan included the organization of the umpires into the groups or teams, the preparation and execution of operation and administrative plans for playing the Blue and Black sides of the C.P.X., and the preparation of data, forms for reports, journals and so forth. During this period the procedure and technique for carrying out the scheme of umpiring was perfected. The training culminated with a reconnaissance by each umpire group of the terrain with which it was concerned.

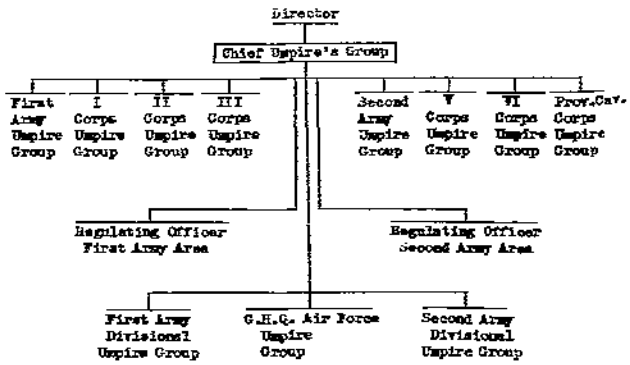
Organization and Procedure of the Umpire Groups

General

The umpire system functioned to simulate operations in the field which resulted from the execution of the plans and orders of the Blues and Black forces, and to initiate, when necessary, problems pertaining to the conduct of war for solution by commanders and staffs.

In so far as the Blue forces were concerned the umpires represented subordinate commanders, tactical organizations, administrative and technical staff officers, who were not represented in a headquarters, supply, transportation, evacuation organizations and installations, in so far as was necessary to execute the plans and orders of commanders and staffs and to furnish them with essential information.

Information which was obtained through operations of the Blue forces, or their information procurement agen-



cies, was furnished to the headquarters concerned by the umpires simulating procedure in the field. For example, all information regarding the combat operations of a division was furnished to the division headquarters by the division umpire (a member of the army divisional umpire group) and thereafter reached corps and army through command channels.

Each umpire group checked the plans and orders of the headquarters with which it was associated for completeness, coördination, feasibility and so forth, and recorded its observations for use in the critique and in the Chief Umpire's report.

Decisions as to the results of combat were made in the G.H.Q. Air Force Umpire Group and in the Army Divisional Umpire Groups, only. The former dealing with Blue and Black air force combat operations and the latter with Blue and Black ground troops' combat operations. These decisions were subject to review only by the Chief Umpire.

All umpire groups maintained close liaison with each other and informed the Chief Umpire of the progress of operations from time to time.

Each umpire kept a journal of his activities, in which events were entered chronologically. The journal was closed daily with a summary of the day's operations and such comments and recommendations concerning the conduct of the exercise and the functioning of the umpire system, which the umpire desired to make. In some umpire groups the keeping of a group journal was authorized.

The senior umpire of each group prepared a report, at the conclusion of the exercise, of the activities of his group together with his comments and recommendations concerning the conduct of the exercise. This report, accompanied by the journals, documents and messages sent and received, data, charts and so forth, was forwarded to the Chief Umpire at the conclusion of the exercise.

The umpire groups were kept informed of the plans, orders and actions of the headquarters (command posts) with which they were concerned through copies of plans, etc., which were furnished them by the headquarters in accordance with a plan of distribution and through personal visits of umpires to headquarters.

Time tables, arranged to show 10 hours actual (playing) time as corresponding to 24 hours maneuver time, were used in the conduct of the exercise. The purpose of these tables was to simulate war conditions by providing for continuity in the development of situations resulting from Blue and Black operations, while actually playing the C.P.X. 10 hours a day only, that is from 6:00 A.M. to 4:00 P.M. In these tables one hour actual time corresponded to one hour maneuver time during that part of the maneuver time day when division headquarters were expected to be most active, that was from 8:00 A.M. to 1:00 P.M. maneuver time. During other parts of the maneuver time day, one hour actual time corresponded to two or more hours of maneuver time.

Chief Umpire's Group

The Chief Umpire's Group comprized seven officers and seven enlisted men. The Chief Umpire and his assistants represented the War Department, Corps Area and Department commanders, others governmental agencies, and the supply and evacuation installation which were operating under G.H.Q. orders. Through telegrams, letters, etc. (signed by the Chief Umpire) to G. H.Q. it was given essential information concerning its establishments, important problems were initiated for it to solve, and its attention was directed to civil and military matters with which it would be concerned in the conduct of a war on two or more fronts.

The Chief Umpire was also the commander in chief of the Black forces, and as such controlled their operations as well as the arrival of Black troops and supplies in the theater of operations. He controlled and coördinated the progress of the strategical and tactical operations, during the exercise, through the G.H.Q. Air Force Umpire Groups and the Army Divisional Umpire Groups, which operated both Blue and Black forces, and the Regulating Officers (umpires).

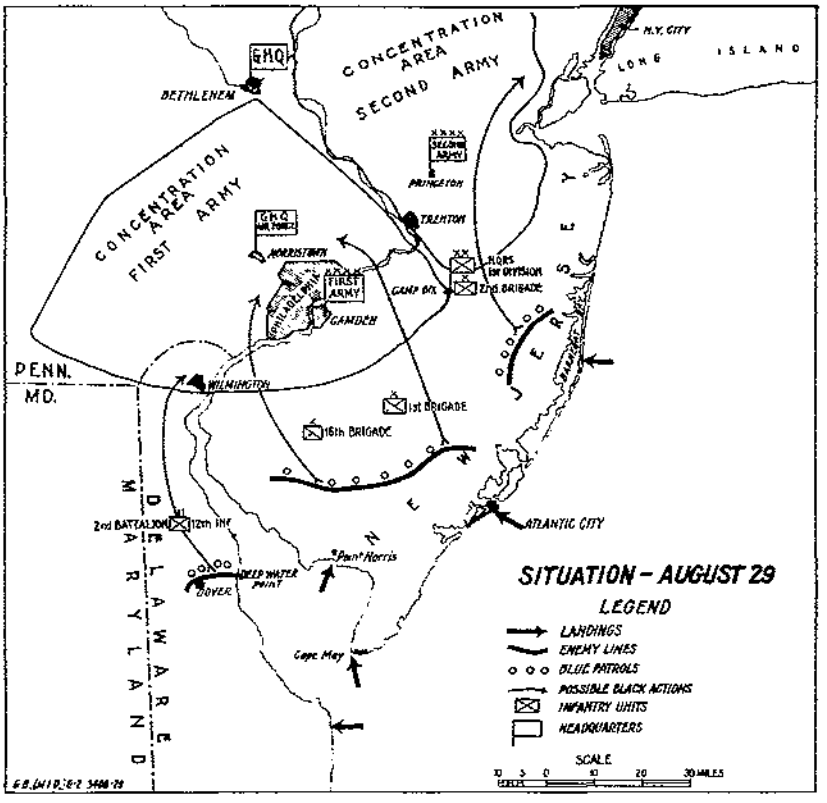


Plate II

G.H.Q. Air Force Umpire Group

The G.H.Q. Air Force Umpire Group comprized a senior umpire, five assistant umpires and five enlisted men. It represented the units, services and installations of the Blue G.H.Q. Air Force and operated them in accordance with the orders the air wings and groups concerned. It also operated the Black G.H.Q. Air Force and decided the results of combat between the opposing air forces.

The following brief description of the method of handling combat aviation will illustrate the procedure used. Air force observation aviation was handled similarly.

The senior umpire prepared a plan of action for the operation of the Black air force for each day's operations. Based on this plan the assistant umpire who operated the Black air wings recorded, on a prepared form, a description of each mission, including the unit involved, its location, routes or areas covered, number of airplanes, number and size of bombs carried, time of take off, altitude of flight, time of attack and return to airdrome, and, when determined, the results obtained. Assuming that this was an attack against ground troops, installations, bridges, railway centers, etc., the results of the attack were determined after conference with the umpire group in whose zone of action the attack had taken place. In determining results various factors were considered such as visibility, altitude of flight, antiaircraft fires, weight of bombs, number of airplanes, etc. The G.H.Q. Air Force Umpire Group transmitted a report of the results of the attack to the umpire group concerned which in turn informed its associated headquarters. Similar procedure was followed in the case of Blue combat aviation except reports of results of missions, including losses of men and matériel, were made to the air force wing or group concerned.

During the exercise actual weather conditions were played.

Army and Corps Umpire Groups

Each army umpire group comprised a senior umpire, four asistant umpires and three enlisted men. Each corps umpire group comprised a senior umpire, two assistant umpires and two enlisted men. The army umpire group was the larger because of the supply functions of the army. These groups functioned similarly, therefore a description of the functioning of an army umpire group will suffice.

The army umpire group was organized on general staff lines. One member of the group was designated as the "Regulating officer" for the army. The umpire group operated army troops and installations under the orders of army headquarters. As commanders of these units and

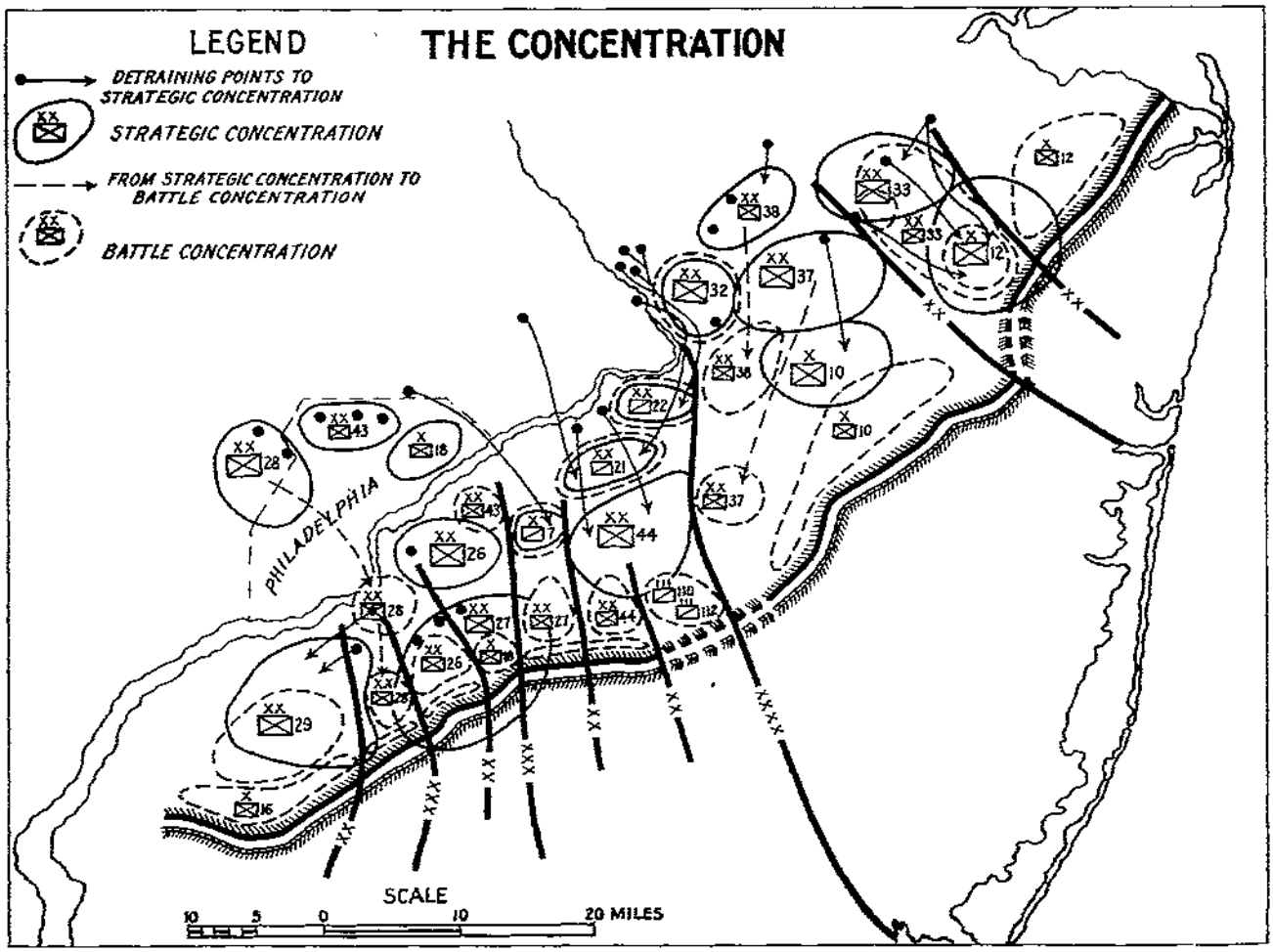


Plate III

establishments, the umpires reported the results of operations to army headquarters and forwarded thereto requests for supplies, replacements, etc., and initiated problems for solution by army headquarters.

The umpire who was assigned to operate army observation aviation, reported the results of observation missions in his rôle as observation squadron commander. These results were ascertained from the army divisional umpire group after informing it of the time of take off, altitude of flight and routes followed. Weather, visibility, Black air and antiaircraft defense, and the Black ground situation at the time the mission was flown were factors considered in determining results of missions.

The G-4 umpire cleared all messages and reports from the corps and divisional umpire groups, concerning supply and evacuation, before they were sent by the corps and divisional umpire groups to their respective corps and division headquarters. This procedure was necessary in order to insure conformity with the supply and evacuation situation as portrayed to army headquarters by the G-4 umpire and the regulating officer.

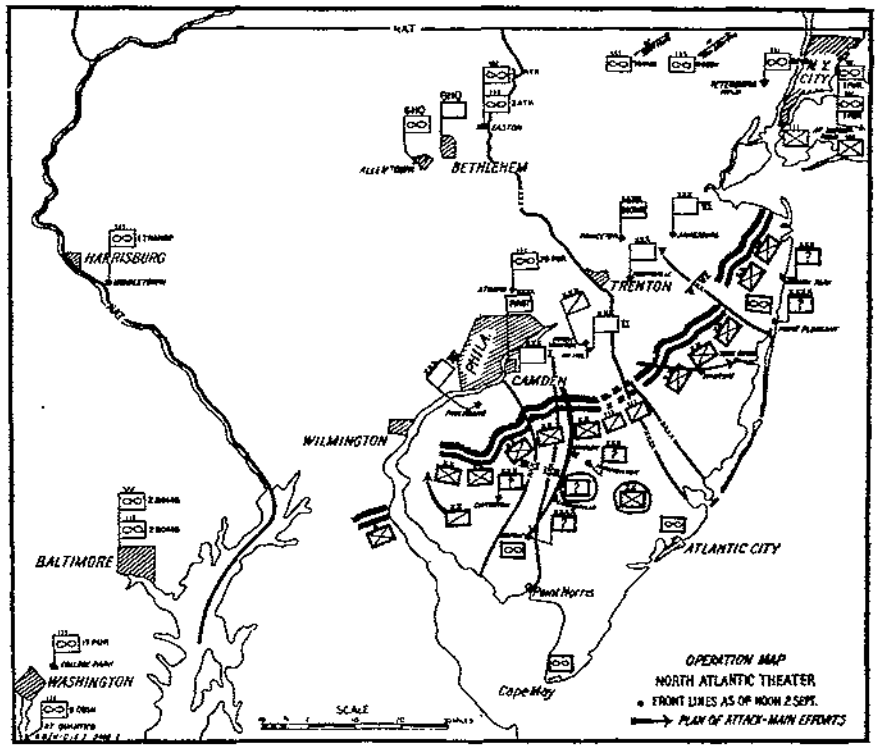


Plate IV

The "Regulating officer" regulated the flow of men and supplies into the army area and evacuation therefrom in accordance with G.H.Q. instructions and kept G.H.Q. and the army informed of the supply and evacuation situation. In his rôle as umpire he insured observation of the terms of the problem regarding the availability of men and supplies, the current traffic conditions, density of traffic on the railroads, and kept the Chief Umpire and umpire groups concerned informed about the supply and evacuation situation. His decisions were subject to review by the Chief Umpire only.

Army Divisional Umpire Groups

The Army Divisional Umpire Groups were the hubs of the umpire system. Through their operations impetus was given to, and continuity was maintained in the development of the maneuver. There were some differences in organization and assignment of duties in the two groups. However these differences were not important, therefore, the following description of the organization and procedure of the First Army Divisional Umpire Group will be sufficient to show how they were organized and functioned.

The First Army Divisional Umpire Group comprised 19 officers and 11 enlisted men. It was organized as follows:

One senior umpire who coördinated the activities of the group and acted as the Black Fourth Army commander.

One Blue executive assistant umpire who coördinated and supervised the work of the Blue division umpires and maintained liaison with corps umpire groups.

One Black executive assistant umpire who coördinated and supervised the work of the Black corps and division umpires; organized and operated the Black Fourth Army supply and transportation system, including the arrival and departure of shipping from base ports; informed the umpire groups concerned of the results of Blue observation missions and of Blue attack missions against Black ground troops, installations and shipping; and the results of observed Blue army and corps artillery.

Ten Blue assistant umpires, one each for nine Blue divisions and one for Blue army cavalry and miscellaneous detachments.

Six Black assistant umpires, one each for three Black corps and their divisions, one for the Black Fourth Army supply, transportation and evacuation system; one for Black army troops and miscellaneous duties, and one for the Black mechanized cavalry division.

Procedure

The Black Fourth Army combat zone and the Black communications zone were organized for supply, transportation and evacuation. These arrangements included scheduled arrivals of transports with men and supplies at base ports and schedules for the movement of troops and supplies from base ports to destination.

The senior umpire in his rôle as the Black Fourth Army commander, basing his operations on Black G.H.Q. (Chief Umpire) orders and his own estimate of the situation, issued a plan of action daily as the basis for the

preparation of Black corps and divisions operations orders by the Black assistant umpires.

In order to promote realism in conducting Black operations and to maintain the interest of the umpires, Black operations orders were issued prior to the receipt of the corresponding Blue division operations orders and strictly adhered to unless otherwise directed by the Chief Umpire.

The results of front line combat operations of the opposing Blue and Black forces were determined in this umpire group and transmitted to those concerned. In arriving at these decisions the following procedure was used: On the night preceding each day's operations, a Master Power Chart was prepared which showed the front line or line of contact of the opposing combat troops, the distribution of the opposing forces by battalions and squadrons and fire power in frontage and depth, and the boundaries between divisions and corps. Based on the operations and administrative orders of the opposing Blue and Black Divisions for the following day, the Umpires operating these respective organizations, in consultation with each other, made estimates or forecasts of the results of the contemplated operations within their respective zones of action. In arriving at decisions on results of operations, all the factors involved, such as plans of maneuver, terrain, defensive works, fire power, combat efficiency, time, space, etc., were considered. These estimates or forecasts were then approved or modified by the Senior Umpire. Using the Master Power Chart and the estimated results of the operations of the Blue and Black divisions, the Senior Umpire prepared an estimate or forecast of results of the contemplated operations including the location of front lines from time to time during the day and end of the day's operations. This estimate was forwarded to the Chief Umpire for his approval or modification. It usually reached the Chief Umpire by courier between 10:00 P.M. and midnight on the day preceding the contemplated operations.

The approved forecast of the final line of contact for the day served as a guide for the Divisional Umpires in directing and portraying the progress of operations during the day. However, due to unforeseen action taken during the day by the Blue Command and Staff Groups concerned, such as employment of reserves, counter attack, air attack, increased artillery support, etc., the forecasted results might, and at times did not agree with the results obtained during the day's play.

During the play of the day's operations, the opposing Blue Division and Blue Detachment Umpires, and the Black Umpires operated their respective organizations, consulted together, and determined the progress of the operations and incidents of the combat of the Blue Divisions and Detachments. Thus decisions were constantly being made by the Army Divisional Umpire Group. When the opposing umpires could not agree on results, the Senior Umpire made the decision.

Reports were made from time to time by the Blue Division Umpire, in his rôle as Brigade Commander, to his Division Command and Staff Group, giving it information on the situation, incidents of the combat, casualties, captures, supply situations, morale of the troops, etc. In a similar way the Blue Division Umpire, in his rôle as a subordinate commander or administrative and technical division staff officer, reported the need for replacements, the disorganization of the troops, the necessity for support or reinforcement or supplies, etc. In the case of a detachment, for example a Blue Army Cavalry Brigade, the umpire operating it made his reports to the Army Command and Staff Group.

In determining the results of operations, incidents of combat, etc., opposing Blue and Black umpires considered: plans of maneuver; orders when and as issued; relative strength; fire power; terrain; supply; time factor; use of reserves; etc.

The Black Executive Assistant Umpire performed the following duties: Chief of Staff, Black Fourth Army; commanded and operated Black communications zone in rear of the army and the Black army troops; coördinated and supervised the work of the Black corps umpires.

He organized and operated the Black army supply, transportation and evacuation system. In the performance of these duties he was required to compile and keep up to date the following data:

The status of supply, evacuation, and troop movement in and through base ports.

The status of shipping, including cargoes, in base ports and arriving at or departing from base ports.

Locations of installations.

Status of supply in the army area and in the communications zone.

Record of railroads, refilling points and distribution points.

A rail, truck, and animal-drawn transportation movement table and graph which showed location of trains at any given time.

From these data he kept the Senior Umpire informed of the Black supply situation and furnished essential information to Umpire Groups concerned, as for example: results of Blue air corps observation missions, Blue air attack missions against ground targets, and effects of Blue long range artillery fires.

The Blue Executive Assistant Umpire performed the following duties: Coördinated and supervised the work of the Blue Division Umpires; maintained liaison with the Army and Corps Umpire Groups and furnished them with information of the situation and kept the Senior Umpire informed on the progress of the Blue operations.

Suggested problems in G-1, G-2, G-3, and G-4 matters for transmission by Blue division umpires, in their rôles as subordinate commanders and staff officers, to their respective division headquarters.

Supervised the keeping of the umpire journals and prepared a running story of the Blue operations for the day.

Umpire Signal Communications

The Signal Corps installed and operated a signal communication system for the combined use of the Command and Staff Groups and the Umpire Groups. No separate communication system was installed for the exclusive use of umpires.

The signal communication system consisted of:

Message centers at General Headquarters and at each Army and Corps Headquarters.

A courier service between General Headquarters, First Army Headquarters and Second Army Headquarters.

A telephone system connecting all Command and Staff Groups and Umpire Groups. In addition, the Blue Umpires of the First Army Divisional Umpire Group were directly connected with their respective Command and Staff Group by independent field telephone circuits.

Telegraph and teletype circuits between General Headquarters and each Army Headquarters.

Special measures were taken to insure secrecy of inter-umpire communications such as marking all umpire messages intended for umpires only with the phrase "Umpire Message—Secret," and special instructions to the Signal Corps personnel on handling such messages. Umpire messages were given priority in transmission, and through special marking of switchboard drops they were given priority over telephone circuits.

Comments

The scheme for umpiring and the organization and technique of the Umpire System which was developed at the Army War College, for this exercise, proved to be sound in principle and practicable in operation. This system is also suitable for a two-sided maneuver.

The importance of training the umpires for their work, including preliminary reconnaissance of the theater of operations and war gaming of the exercise, cannot be overemphasized. The smoothness, certainty and speed with which the umpire system functioned in the conduct of the General Headquarters Command Post Exercise, 1934, was due largely to the preliminary training of the Umpires.

The organization of the Umpire System, including the number of umpires assigned to each umpire group, and their special qualifications for their individual assignments, was the minimum essential for the conduct of this exercise. It is believed that the efficiency of each Umpire Group, particularly with respect to its functions in connection with supply, evacuation and transportation, can be increased by the addition of officers (Umpires) of the various service branches who have been trained in the technique of service branch supply, evacuation and transportation.

In addition to divisions, each separate organization, which engages in active combat operations in contact with the enemy such as a brigade of Army cavalry operating on the flank of an army, a brigade of tanks, etc., should have a commander and staff in the headquarters under which it is operating, and an Umpire in the proper Army Divisional Umpire Group to portray its operations.

The personnel of the various Umpire Groups, which operate troops of various arms and branches, should be diversified in so far as practicable, as regards arm and branch of service, in order that the maximum amount of technical knowledge may be at the disposal of the Umpire Group.

Adequate consideration of the supply and evacuation problems of the division is necessary, not only for the instruction of the Division Command and Staff Group, but also to furnish essential data and information for more comprehensive play of the supply and evacuation problems of the army. For these reasons it is believed that each Division Command and Staff Group should include at least the four G's and essential administrative and technical staff officers. For the same reasons the General Headquarters Air Force Command and Staff Group should be similarly organized.

The discussion of maneuver time tables is beyond the scope of the article. However the consensus of opinion was that a G.H.Q.—C.P.X. should be played continually throughout, actual time and maneuver time coinciding. This is the ideal method from the viewpoint of realism and maximum consideration of strategy, tactics, supply, evacuation and transportation.

The signal communications system functioned smoothly, efficiently and secretly. The combined use of the system by the Command and Staff Groups and the Umpire Groups was entirely satisfactory in so far as the umpires were concerned.

The arrangement of connecting Blue Division Umpires with their respective division headquarters by direct telephone circuit was very satisfactory. It had the advantage of relieving the load on the main switchboard and furnishing rapid communication with minimum delay. During active combat operations the volume of telephone message between the Army Divisional Umpire Groups and the Division Command and Staff Groups exceeded considerably that of other Umpire Groups with their respective Command and Staff Groups.

The Regulating Officers and the performance of their functions in the dual capacity of G.H.Q. staff officers and as umpires, under the control of the Chief Umpire, were important features of the umpire system.

This C.P.X. was conducted as a free maneuver in so far as the Blue forces were concerned. In no instance did the Chief Umpire force the development of pre-determined situations although he had the power and means to do so.

In conclusion it may be said that the successful conduct of a G.H.Q. or Army C.P.X. will depend largely on the umpire system; the training of the umpires; the familiarity of commanders and staffs with the scheme of umpiring; efficient signal communications; and finally on the intelligence, imagination, energy and good judgment of the umpires.

Humanitarian Aspects of Chemical Warfare

By Captain Robert E. Sadtler
396th Infantry

Chemical warfare, compared with older methods, must be commended instead of being condemned.

CHEMICAL warfare is the product of the evolution of man from savagery upward. The use of chemicals for direct chemical action in war was just as logical, just as certain to come, as that gunpowder, first used by the Chinese in celebrations and noise making, was certain to be used as a weapon of war. If its use on a large scale had not been started in the World War, it would have been in the next, which we feel will come unless we are so prepared that even the most violent greed and envy will fear to unleash the dogs of war upon us. An axiom of war is that "no powerful weapon or material of war has ever been abandoned so long as it remained efficient." In his final report to the Secretary of War as his message to the nation on the subject of chemical warfare, General Pershing stated, "Whether or not gas will be employed in future war is a matter of conjecture, but the effect is so deadly to the unprepared that we can never afford to neglect the question."

Today chemical warfare is branded as inhumane and an improper method of waging war by pseudo-scientist and misinformed reformer. Let us investigate this subject without prejudice, and contrast the butchery of previous wars with the casualties of the World War, especially those produced by so-called "poisonous" gases. The percentage of deaths and permanently injured to the total number of casualties is the measure of humanity in war. Methods of waging war must change and develop. Such progress is inevitable. Furthermore, it is desirable, for the trend of all developments in warfare has been to reduce the ratio of killed to wounded. This is particularly true of chemical warfare, as is proven conclusively by incontrovertible official records.

The rate of dead to wounded has constantly fallen from the days of Roman butchery to the present. In our Civil War, the death rate was higher in proportion to the wounded rate than in the World War, notwithstanding the great use in the World War of high explosive shell, which literally blew to pieces thousands of our soldiers. Nothing conceived by man is more horrible or more terrible than men disemboweled by high explosives, by bayoners, and by bullets; than men with arms blown away, legs torn off, eyes gouged out and faces so torn as to no longer resemble humanity. Gas does none of these. Almost every power has buried an unknown, unidentified soldier with appropriate ceremonies in remembrance of the thousands who make up the list of unknown dead. Gas caused none of these.

When we consider gas we find the most effective of modern weapons to have been absolutely the most humane, whether we consider the total number of deaths per hundred, the suffering, or the total disabled among those who did not die. In each case, the ratio for Americans in the World War was about twelve to one in favor of chemical warfare. During the World War there were 72,552 casualties from gas in our Army. Of this number 200 died on the field of battle and 1,221 died in the hospitals from the effects of gas exposure, giving a mortality of 2 per cent. There were 187,586 casualties from weapons other than gas. Of this number 46,519 or 24 per cent died, making twelve times as many deaths from these weapons as there were from gas. There were 754 men blinded in one or both eyes from war weapons during the war. Of this number gas was responsible for 29 or 3.8 per cent, other weapons being responsible for 725 or 96.2 per cent. War weapons other than gas were responsible for 9,147 permanently crippled soldiers. Gas was responsible for no permanently crippled. The official report of the Surgeon General of the Army for the year 1920 states that there were one and a half times as many cases of tuberculosis per thousand occurring among soldiers who were not gassed in France as there were among those gassed, apparently indicating that gas acted as a preventive against tuberculosis. Over 3,500 experienced physicians in this country and Europe have stated that they were of the opinion that there were no after effects resulting from exposure to warfare gases.

An eminent physician who treated thousands of gassed cases during the World War says, "In a great majority of instances persons suffering from exposure to lethal concentrations of gases show no permanent resulting pathological lesions."

The people of the United States look to the efficiency of their Army and Navy for protection in time of war. There can be no doubt that chemical warfare aggressively pursued is an astoundingly efficient casualty producing agency. When it is realized that deaths from gas are at least lower than one to ten as compared with other war weapons, that permanent disabilities are practically negligible, and that after effects are of no moment, it must be appreciated that chemical warfare as a method of waging war, compared with older methods, must be commended instead of being condemned.

The 202nd CA (AA) at the Century of Progress Exposition

By Colonel Charles C. Dawes, C.A.N.G.

OUR present Army is woefully inadequate. We who are well aware of this fact are alarmed by the thinness of its ranks and the ever increasing magnitude of the task awaiting these meager forces should an emergency arise. It is possible that if the American people could be brought to a full realization of the true situation as it exists today, corrective measures would be taken.

Our people are proud of their first-class Navy. No one seems to think that a common sense defense policy in this direction is acting in any way against world peace. On the contrary, there is a general feeling that our large Navy helps to maintain this peace, and there is no doubt that it does. Judging from the publicity ordinarily accorded the Army, one would think that its motives were different. Pacifistic utterances decry our very existence, and well-paid lobbyists in Washington have done much to destroy the effectiveness of our National Defense Act.

However, there is one branch of the service that these pacifists are having trouble in subduing; that is the Air Corps. The idea of flying soldiers has caught the public's fancy, and with this backing a stronger air force is inevitable. Not that the public knows very much about it, but the average citizen, while generally indifferent to the Army, is strongly in favor of a large air force.

One well-known widely-read columnist has even gone so far in his enthusiasm as to express a doubt as to the desirability of having any armed forces other than those in the air. If anyone thinks such advocates are entirely without a following, let him talk to his Congressman who undoubtedly can show him many letters received from his constituents urging him to act at once for a stronger air force. We *should* have a stronger air force. There are many sound reasons for it, but I am enough sold on the effectiveness of modern antiaircraft to believe that if many of our citizens knew the facts, our congressmen would be receiving more requests for the strengthening of antiaircraft defences. There is a lack of understanding as to what we can accomplish, and, unfortunately, this lack of understanding is not confined to the public but exists throughout the Army to a surprising extent. I have talked to many officers of other branches of the Regular Army, National Guard and Reserves, and I have found that a general ignorance of our work is the rule, not the exception.

Almost everyone is prepared to make the wildest sort of statements as to what may be expected of airplanes in the next war in the way of destroying cities, blowing up battleships, and depopulating whole countrysides. All of this to be accomplished by bombs: all bull's-eyes, dropped from ships flown from the other side of the world and appearing everywhere all at once with little or no warning. This sort of talk is even taken up in the press and radio to such an extent that, due to the absence of any effective statement to the contrary, the public has accepted these dreams as facts.

The 202d Coast Artillery (AA), functioning as a National Guard unit, as citizen soldiers of the State of Illinois, has welcomed opportunities to acquaint the public with the workings of modern antiaircraft. The success of our night-firing at Pensacola, Florida, in 1932, and the many naïve comments made by the spectators on that occasion, excited our ambition to advertise. In 1933, when we fired at Fort Sheridan, Illinois, we gave a demonstration of night firing at high and low altitudes before a capacity crowd of over 5,000 people. The exhibition resulted in the securement of an "EXCELLENT" rating for both of the batteries firing, and a partial realization at least on the part of many of the spectators that if enemy airplanes crossed the oceans to destroy our cities, antiaircraft defense would not be totally ineffective. The Chicago papers carried favorable news comment.

Last summer the 33rd Division and Attached Troops trained together at Camp Grant, near Rockford, Illinois, where they remained for one week and then marched to Chicago. In connection with this maneuver, it was decided to attempt an exhibition of antiaircraft firing for the benefit of the troops who were to be encamped on the Lake shore and for the several hundred thousand visitors expected at the World's Fair for the celebration of "Illinois Day." Aside from having to move the regiment into Chicago, which in itself was no small problem with our 17-year-old trucks, there was the problem of the location of the guns, coördination with airplanes and Coast Guard, laying wire for lights and flank stations, the installation of radio communications, and the arrangement of all of the many details connected with an exercise of this kind.

It was as near a simulation of a war problem as anything that could be imagined. We were ordered to move into Chicago and to be ready, within a relatively few hours, to open fire.

If anything, ordinary war conditions would have made our problems easier, for among other deficiencies, we had no allowance for ammunition, we did not have enough lights, we did not know whether the guns firing within the Century of Progress grounds would create general havoc, and of course we did not know what kind of cooperation we could hope for from the Coast Guard. We were to be firing over a very busy sector of the Lake. We were told that nothing like this had even been attempted

before. But we thought of the success we had had during the previous two summers and hoped that our luck would continue.

A telephone call from our Commanding General, Roy D. Keehn, to Major General George E. Leach in Washington, and the latter's enthusiastic endorsement of our plan, resulted in the procurement of the necessary ammunition. The 61st Coast Artillery at Fort Sheridan, under the command of our good friend, Lieutenant Colonel Charles B. Myer, agreed to send us extra lights and other necessary equipment. Lieutenant Commander E. A. Coffin, commanding the United States Coast Guard in this district, assured us of his willingness to coöperate and of the feasibility of our safety plans, which necessitated restraint of Lake vessels from entering our field of fire for a period of at least one hour.

A reconnaissance of the Fair Grounds indicated that the only available spot for the location of the batteries was on that part of the Exposition occupied by Camp Franklin D. Roosevelt. Here was stationed a detachment of soldiers, sailors, and marines, under the command of Colonel Morris T. Keck. Incidentally, Colonel Keck makes the interesting statement that as far as he knows, this is the only time in the history of this government that armed forces from all three of its fighting contingents have been under one command on land.

Our plan contemplated a one hour show from 9:00 to 10:00 P.M. with both machine gun and 3-inch gun fire. It was thought that a night show would be more spectacular because of searchlights and tracer bullets, than one given in the daylight hours. We contemplated the use by the machine guns of tracer bullets entirely and made a reconnaissance of the Sky Ride towers with the idea of placing machine guns at various levels. As the towers are over 600 feet high, no doubt this would have been an interesting spectacle, but necessary safety precautions prohibited this attempt; therefore we had to place the machine guns and 3-inch guns together in the same crowded space at Camp Roosevelt.

One of the problems presented by such crowded quarters was the time element involved. In order to keep the interest of the crowds, and since this was the primary object of the exercise, it was deemed essential to keep the show moving. The plan was to fire first the machine guns and then, after quickly dismounting them, immediately open fire with the 3-inch guns.

On Wednesday, August 15th, this regiment proceeded in a drenching rain from its bivouac just outside of Rockford, Illinois, to its home station, the 202d Coast Artillery Armory in Chicago. On the next day the entire regiment made camp in Grant Park in the heart of the City. The 33rd Division and attached troops were camped in this area in preparation for the review to be held on the following afternoon as a part of the "Illinois Day" ceremonies. Captain Sweeney, "A" Battery; Captain Vavrinek, "B" Battery, and Captain Pulham, "F" Battery, proceeded to the Exposition Grounds to make a final and detailed reconnaissance. Captain Emmanuel commanding the Combat Train immediately proceeded with the installation of a radio communications net.

Communication was necessary between the battery positions and the planes and also between the Safety Officer and the Coast Guard boats. There was installed a connection with the Bell Telephone System, which furnished communication with the Airport and with telephone booths at or near various searchlight positions. Radio communication with the Coast Guard was necessarily in only one direction, since there was no sending apparatus on these small patrol boats. As a special precaution in case of the breakdown of our radio net, a system of signalling between the message center and the boats was agreed upon and lights and flares were supplied. A radio station already installed at the Century of Progress agreed to come to our aid if necessary.

We were not so fearful of the larger steamships getting into our field of fire as we were of the small commercial and pleasure craft which crowded the waters near the Century of Progress every evening. Therefore we were particularly observant of every safety precaution. For fear that both radio and visual communication might fail, a speedboat to be used as a courier was anchored a short distance from the message center.

The plot of ground available at Camp Roosevelt for our battery positions was approximately 50 x 110 feet. This was located in rear of the Camp and south of the east anchor of the Sky Ride. In this small space were placed four machine guns, three 3-inch antiaircraft guns M3, 1 Director M2, a stereoscopic height finder (loaned by the 61st C.A.) and a BC telescope.

As soon as the gun battery was located, its Chief of Section proceeded to lay telephone lines to the flank station which was to be located at the south gates of the Exposition Grounds, 4,000 yards away. The telephone line to this flank station wound its way along the east side of the island, across the Swift Bridge and again south along the east shore of the mainland. It was more than five miles long. A straight line measurement between the two stations (4,000 yards) was less than half of this. The wire was laid over jagged rocks, forming the breakwater for the grounds, around villages, around balloon and seaplane landing areas, before finally reaching its destination. A great part could not be laid with a reel cart. Men climbed across the rocky breakwaters, a coil of wire over their shoulders, spliced a new section when the coil gave out, and climbed on. Across the Swift Bridge the wire had to be laid by boats furnished by the Coast Guard.

Similar lines for the searchlights were put down. These lines ran to 51st Street on the south and to the Adler Planetarium on the north—a wire distance as laid of almost ten miles.

Attempts to orient the gun battery proved very difficult since no oriented datum points were available. Orientation by compass from the battery position was impossible due to the deflection of the compass needle by the large amount of steel in the east anchor of the Sky Ride. However these obstacles were overcome, and by the time the

gun battery's executive officer arrived with the firing sections and the director, sufficient data and suitable datum points were located to permit the instant emplacement of guns and director.

The director was the first to be emplaced. Because of the very limited area it was moved into a small space between two buildings. The ground was of clay overlying a rock base, and its surface had become soaked by the preceding day's rain. The early morning sun had dried a thin film and the ground looked hard, but it proved so much putty to the 6½ ton director. The area was too small to permit the use of tractor or prime mover and man power was all that could be employed to emplace the instrument and later the guns.

From a map furnished by the Coast Guard Station all points liable to come within the maximum impact range of the 3" guns were charted and the probable field of fire determined. This area lay between a line from the battery position to the Hyde Park Crib to the southeast, and a line from the battery position to the Four Mile Crib to the east. After the necessary 1,000 yard safety-strip had been subtracted from each side, the total field of fire was not more than 900 mils. For the machine guns this became a specially restricted area since our plan contemplated the use of tracer bullets exclusively. Special allowance had to be made for the erratic characteristics of tracer ammunition.

On Friday morning, Illinois Day, the sky was hazy. In order to familiarize ourselves as much as possible with every angle of the problem we had requested that the planes fly both the low and the high course during the day. The courses had been marked on maps and given to the fliers, and by radio communication with them during the morning we were able to put them exactly on the courses. It was too foggy to see the high plane clearly. These planes were furnished by the 33rd Division Aviation commanded by Major Merrill D. Mann, and they gave us marvelous coöperation. We were promised that both planes would be in the air on their course at 9 o'clock that night, and that another would be standing by at the airport in reserve, ready to fly at a minute's notice.

The Coast Guard were again instructed as to the field of fire and as to the time that the firing would begin and cease. Lake shipping had been warned and nine Coast Guard boats were assigned to keep the area clear. Small radio sets were placed in three of these boats and rechecked with our radio station.

The guns had been placed in position not more than 30 feet from the mess halls of Camp Roosevelt and directly in line with them. It was with considerable misgiving that the first lanyard was pulled. Everyone was afraid of what might happen from the concussion, and no one seemed to know whether it would destroy the Sky Ride, break all the windows on the Fair Grounds, or only blow away the mess halls. We took the precaution to insure that the windows in all adjacent buildings were open, and with Colonel Keck's permission and full authority from the officials of the Fair, we fired our settling shots at about 11:00 A.M. Friday. The concussion from the guns was so slight that the lightly constructed buildings only a few feet away were not visibly affected.

Captain Vavrinek had checked the orientation of the gun battery by bore sighting on the sun, and when the settling shots were fired their closeness was observed. Due to the lack of a surplus of ammunition (we had received 100 rounds), it was decided not to fire any calibration shots.

Battery "A," Captain Sweeney commanding, had laid out seven searchlight positions. Two of the lights were to be used as beacons. No. 1 light was at the Adler Planetarium and its beam was set on the Four Mile Crib. No. 7 light was at 51st Street and was set on the Hyde Park Crib to the south and east.

Everything had been made ready and checked by Friday noon. It cleared a little in the afternoon and all of us gained confidence. It began to look as though we would have a bright night. Practically all of the afternoon was taken up with the review, and it was not until after 5:00 P.M. that the officers and men who were to participate in the demonstration left for their positions.

Evening finally came and found every man at his post eager to do his part to make the firing a success. Behind them were 10,000 men of the Illinois National Guard waiting to see the skill of their comrades in arms. Immediately surrounding them were the picked troops of the Army, Navy, and Marine Corps, and last, but not least, the visitors to the Century of Progress. In fact, the show was to be seen from many vantage points all over the City. Newspapers had announced that the demonstration would take place, so we found ourselves very much on the spot.

At 8:30 Captain Vavrinek fired his first trial shot. He selected a position approximately in the center of the field of fire. Due to the absence of meteorological data, all unknown non-standard atmospheric conditions were blamed on muzzle velocity and corrected for accordingly. The trial shots were fired just prior to the machine gun demonstration so that corrections could be applied and the battery made ready to open fire immediately upon completion of this demonstration. All seven lights were on the trial shots and communications checked and found to be in working order.

At 8:55 both planes were on their courses. Promptly at 9:00 the machine gun battery opened fire. The effect of our seven lights thrilled the crowds. The .30 caliber machine guns had been equipped with .50 caliber springs and this accelerated the rapidity of fire. Firing tracer bullets entirely, Captain Pulham's battery put on a very spectacular show. Six courses were flown and at 9:20 the target was dropped at the machine gun position. A later check on the sleeve indicated that an excellent score had been made. As soon as the target was dropped in front of the machine gun position, all searchlights were ordered in action on the sleeve towed on the high plane. It

seemed but a fraction of a second before the Range Officer called out "Rates O.K." which indicated that the tracking was smooth and that correct data was going to the guns. The Lake was clear and as the target crossed the limits of the field of fire, Captain Vavrinek gave the command "commence firing." Simultaneously three shells were on the way, the first to get there burst right in the canvas, the others just a few yards short. Eighteen shots were fired on this course, the average slant range being about 4,000 yards. All shots were "on" in both range and deflection. On the second course, fire was opened at approximately 3,600 yards slant range. The lights were tracking perfectly and the cheers of the crowds indicated their genuine enthusiasm. The tenth shot on this course, (the twenty-eighth fired) burst in the nose of the sleeve and shattered the connection. Followed by the beams from all of our lights, the target slowly descended. Its descent was accompanied by the thankful prayers of one regimental commander and a wave of pride in the heart of every member of this command.

We felt that our show had been a success and we were pleased. Several hundred thousand people saw us knock that target down and saw us singe it with the other 27 shots. But any demonstration to truly exhibit the present workings of anti-aircraft necessitates the use of more than three guns.

On the whole, though, I think that our object was accomplished and that our show aided the cause of the antiaircraft. If nothing else, it certainly afforded us some excellent training.

A Mechanical Miniature Range

AA Machine Guns

By Captain A. K. Chambers, C.A.C.

IN no phase of Coast Artillery Training is greater reliance placed on the individual than in antiaircraft machine gun firing. The battery commander can control the duration of the firing but for its accuracy he must depend entirely on his machine gunner. It is therefore of the utmost importance that the preliminary training of the gunner be so conducted that he has a clear mental picture of what he may expect when he engages in actual firing. The appearance of the tracer stream is deceptive and if one is permitted to open fire on a towed target before he has been taught what to expect he will waste ammunition and gain false impressions as to the capabilities of his weapon. If ammunition allowances be limited, it is imperative that the correct method of tracer fire control be taught during the preliminary stage of the training.

To enable the instructor to present a clear picture of the appearance of the tracer stream in relation to a towed target, and to demonstrate the proper method of applying tracer fire control, Lieutenant Byron L. Paige of Battery "B" 55th Coast Artillery, constructed a device which, for want of a better name, he calls a Mechanical Miniature Range. This device is exceedingly simple but it accomplishes the purpose for which it was designed.

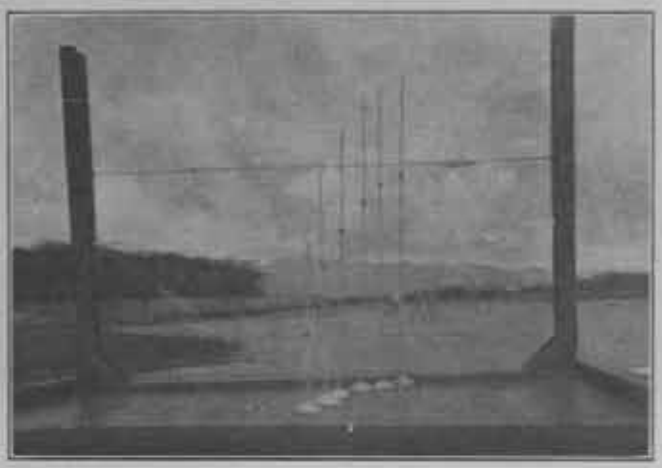


Figure 1

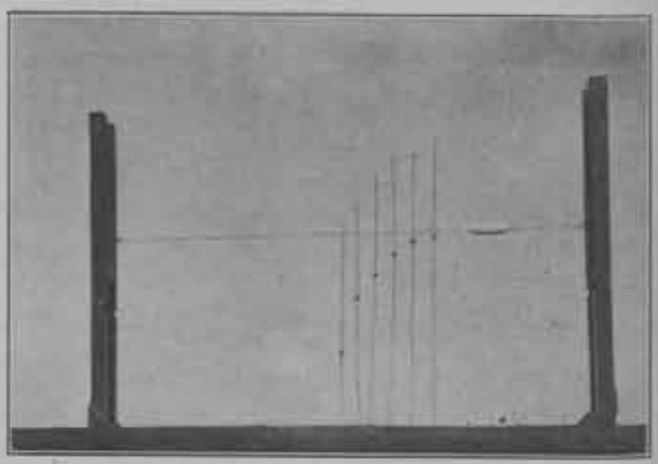


Figure 2

All elements of the device are shown in the accompanying photograph (Figure 1). It consists of a wooden base 3 feet by 5 feet with two wooden uprights sliding along the short sides of the base. The uprights carry wooden blocks which slide vertically. Stretched between these two blocks is a taut wire along which slides a miniature representation of a sleeve target. Movable upright wires on lead bases carry sliding beads to represent individual tracer bullets.

Figure 2 is a photograph showing the appearance of the trajectory from a gun position located in the center of one of the long edges of the base. The illusion of the curved trajectory is clearly shown. By the use of trajectory and time charts the beads representing tracers may be positioned to scale if desired. Practically any type of course can be set up in miniature with this device.

State Uses of the National Guard

DURING the last six months of 1934 the governors of 21 states called to arms a total of over 28,000 National Guard troops to uphold the constitutions of the states and to maintain and defend their laws. From June 30, 1930, to December 31, 1934, practically every state in the Union has had occasion to call upon its citizen soldiery: the total number of occasions of which any record is available for this period is 232, or an average of once a week, involving some 1,000,000 man-days. Fully one-half (116) of these cases involve minor aid to the civil power, while service in industrial disputes (66) and relief in disaster (50) account for the other half.

In duty of this kind the National Guard of today is incomparably more effective than it ever was in the days before the passage of the National Defense Act; and enjoys certain definite advantages over troops of the Regular Army. It is one mission for which the National Guard is specifically trained and in which it has a longer and wider experience. The officers know the local situation and the terrain. They often know personally the civil authorities and others with whom they have to deal. The result has been that it was able during the latter part of 1934 to deal effectively with a series of grave situations in such a way as to settle them in almost every case without inflicting casualties; to gain the good will of both sides; and sometimes even to prevent the growth of a serious situation. After the general strike in California, Major General David Prescott Barrows, who is a distinguished authority on government as well as Commanding General of the 40th Division, stated:

> Again the American principle that the state government is capable of dealing with a local emergency has been proved sound.
>
> Without resort to martial law, order has been restored and the innate American respect for civil authority has been renewed in every citizen.

During the period 1933-34 the following cases may illustrate how the National Guard is normally used by the states:

When an earthquake struck Southern California the radio of the 251st Coast Artillery sent out word when other means of communication failed. The adjutant general mobilized 500 troops. They guarded the stricken areas, prevented looting, rescued and treated the injured, sheltered and fed the homeless and found the lost. Medical officers even delivered babies in the Long Beach armory. About 17,000 people were fed daily from National Guard kitchens, serving as many as 70,000 meals a day.

In Nashville, Tennessee, a severe cyclone struck the city, and 250 National Guardsmen were rushed to the scene and served for three days. These troops declined the pay offered by the state for services rendered to friends and neighbors.

In the same year a hurricane swept over Puerto Rico. The National Guard mustered in 800 men, some serving as long as two months to assist the local authorities and the Red Cross in giving aid to the injured, distributing supplies and helping rebuild houses and reconstruct stricken towns.

"Again the American principle that the state government is capable of dealing with a local emergency has been proved sound."

Meanwhile, 13 states had called out the National Guard to prevent violence during industrial disputes, such as the milk strike in Wisconsin and mine strikes in Ohio and Illinois. The Vermont National Guard handled a very trying situation at Barre, and brought order in a prompt and efficient manner without bloodshed or undue injury to any. In 11 other states troops were used to maintain order at trials, to capture escaped criminals, to preserve the sanctity of the ballot, to prevent lynchings, and on similar duties.

Eighteen states employed the military in 1933-34 to suppress riots in prisons, to prevent lynchings, to capture bank robbers and outlaws, and for services of a similar nature. Public disasters in nine states called on the National Guard for succor to the needy and assistance to the distressed. Eleven states found occasion to utilize their military forces in the protection of life and property, in preserving the peace and in preventing violence in industrial disputes.

It was in July, 1933, that a battalion of the 112th Infantry, Pennsylvania National Guard, was dispatched to the bituminous coal fields of Fayette County. One hundred thousand workers were concerned; yet this small body of troops maintained order without a single shot being fired. Throughout the entire operation the population was cordial and many people expressed their appreciation of the manner in which the duty was performed.

Approximately 1,000 troops saw service when rioting got out of control in Toledo. Units of the Ohio National Guard rescued 1,500 persons from the plant of the Electric Auto-Lite Company who were besieged by a mob outside the plant, and successfully established order after several days of serious rioting.

During the latter half of 1934 the state troops in every part of the United States received an intensive test. In almost every case order was restored without the use of violence. The two important exceptions were the case of the rioting in Saylesville, Rhode Island, and the attempted lynching in Shelbyville, Tennessee. Illinois had no occasion to call out large bodies of troops, not because the situation was not serious, but because National Guard officers sent to the seat of imminent trouble to investigate, prevented violence by acting as impartial mediators or

First-aid to a Guardsman injured in the Saylesville, R. I., rioting.

conciliators. In some cases neither party to the dispute could agree on any arbitrator except an officer of the National Guard. Similarly, the way in which the Indiana National Guard was handled during disturbances in the coal-mining area in August led to a radical change in the attitude of the unions. One union afterwards invited the officer who had charge of the troops to speak before a large meeting of union miners. In Connecticut, after the textile strike in that state, union officials as well as public officials joined the manufacturers' association in writing letters of appreciation.

In the Southern States relations between the troops and the strikers were soon on a friendly basis, especially in Georgia, where, at Rockmart, the workers who refused to walk out turned on the pickets and assaulted them. The strikers appealed to the adjutant general for troops to protect them. As the directive to the National Guard was to protect workers in their rights to work and equally to protect strikers in their right to strike, the unusual spectacle was seen of strikers going about their peaceful picketing under the protection of troops.

Apart from the ability to prevent violence arising from the citizen character of the National Guard, the outstanding lesson was the uniformly effective strategical and tactical handling of the troops. In almost every case sufficient numbers were sent in the beginning to secure and maintain control, and the troops were mobilized and moved with astonishing smoothness and rapidity. Distribution and tactical use conformed well to the needs of the special situation. Although the process of motorization was incomplete and the possession of motors introduced a new factor, new methods were devised based on this new element.

In the Southern States the disturbances were scattered because of the wide distribution of factories in small towns. Here the state was divided into sectors, control was decentralized, motorized patrols were organized, and a mobile reserve was centrally located. In Minnesota the disturbance was confined to one area. Rhode Island and California presented intermediate and special problems. The method used in the South was described in the January-February (1935) issue of the INFANTRY JOURNAL. The methods used in Rhode Island, Minnesota, and in California will be described in detail.

Rhode Island

Disorders occurred early in the textile strike in Rhode Island and the mobilization of the National Guard took place in at atmosphere charged with tense emotions. On the seventh day of the strike (September 10) local authorities sought the aid of the National Guard after the situation had exhausted local and state police. Rioting

250th Coast Artillery, California National Guard, en route to the San Francisco waterfront.

was taking place in Saylesville and Bristol, two widely separated points.

Specially trained riot detachments consisting of about one-third of each organization in the state were mustered in and those from the 103d Field Artillery and 243d Coast Artillery regiments were ordered to the Saylesville area. The mob of 2,500 or more urged on by hoodlums and radicals was absorbing more and more of the unruly element of the community under the assumption that the soldiers would not fire, which the troops were reluctant to do as their instructions were to do so only as a last resort.

For 14 hours the rioters sent over a barrage of stones, bottles, potatoes with safety-razor blades in them, and other missiles. The troops, using only sticks and such gas as was available, steadfastly stood their ground, but the situation was becoming critical. The remainder of the Rhode Island National Guard, 2,000 strong, was mobilized and sent to Saylesville, only one battalion in reserve in Providence.

Meanwhile trouble was brewing at Woonsocket, 15 miles away, and there were rumors of impending violence elsewhere. Rioting had gotten out of hand in Woonsocket and came to a climax when lawless elements began the destruction of property and wholesale looting of stores. The mobs were growing in size and were becoming more

menacing. The National Guard, tied down in Saylesville, had to be free to function whenever it was needed. The crisis was at hand. After all other means of controlling the situation had been exhausted a volley was fired.

From that moment on the troops were in complete control and free to operate elsewhere. The 118th Engineers were sent to restore order at Woonsocket. After several acute and tense situations had been weathered, other minor disturbances were handled thereafter with little difficulty.

In accordance with a prearranged plan, all units had been organized into a provisional brigade under command of Brigadier General Herbert R. Dean. By this time the 68th Field Artillery Brigade staff was functioning like a veteran headquarters. A continual flow of information was coming in from intelligence agencies on the ground, and changes in disposition of troops were quickly made to checkmate any further uprising. The motorized 103d Field Artillery was organized into riot detachments and was held as a mobile reserve. The state was divided into sectors each of which was patrolled by mobile units, and crowds were forbidden to form. As a result, the control of the National Guard was such that no further violence occurred.

The National Guard of this state had lived up to the best tradition of the service. Their excellent discipline and training were proven under the most trying circumstances. The Providence *Evening Bulletin* expressed this editorial opinion:

Guardsmen on duty at Embarcadero.

Greater forbearance in the face of deliberate provocation could hardly be shown than that exhibited by the National Guardsmen on duty * * * during the fourteen terrible hours from 4 o'clock Tuesday afternoon to 6 o'clock yesterday morning.

During the night the mobsters destroyed every street light in the district, to aid them in harrying the Guardsmen. They employed rocks, iron pipes, fence pickets, sling-shots and every kind of missile they could lay their hands on. They waged guerrilla warfare from every vantage point in the area. They injured seven Guardsmen so severely that they had to be withdrawn from the lines, while more than a score of others were given first-aid treatment for minor hurts received at the hands of the attackers.

But the Guard steadfastly confined its defense and its counter attacks to the use of tear gas, clubs, and a mere show of bayonets.

For what they went through and for the manner in which they went through it during that period, those men deserve the admiration and the thanks of the people of Rhode Island.

There comes a time, however, when forbearance as a policy fails in the objective which the Governor has proclaimed—the preservation of the public peace. Regret at the firing by the Guardsmen yesterday afternoon and last night must be coupled with a sober realization of the fact that law must be maintained and order must be enforced.

Minnesota

When the city of Minneapolis awoke on the morning of July 17, 1934, it was facing for the second time in two months a complete paralysis of its commercial automotive transportation. Memories of the May strike with its pitched battles between the police and a determined mob of several thousand, in which one was killed and 29 wounded, were fresh in the minds of the citizens. Fortunately the authorities recalled how the swift concentration of 3,000 state troops had brought violence to an end and hastened a settlement. Therefore, the local authorities early in the morning of the 17th requested military aid and the governor immediately authorized the adjutant general to order into the service of the state such forces as in his judgment were necessary to maintain order.

The 92d Infantry Brigade at Camp Ripley, 100 miles away, engaged in its annual field training, was ordered to hold itself in readiness and a provisional mobile battalion was organized from the 151st Field Artillery and held in the Minneapolis armory. The troops were to be used only in case of serious disturbances beyond the power of the civil authorities to control.

It was not until July 20 that the troops were needed. On that day trucks under police escort left the wholesale district. At 2:00 P.M. a convoyed truck was leaving the point of loading when suddenly a large truck filled with strikers swung into the street and rammed it. Heedless

Dock barricades at San Francisco waterfront.

of the demands of the police that they disperse, rioters swarmed over the helpless vehicle. Shots fired into the air had no effect. The police then fired into the mob. Several hundred strikers and sympathizers who had gathered a block away rushed forward to support their comrades. Heedless of orders to halt, reckless of volleys fired over their heads, they charged forward. Riot guns spoke. After a battle lasting ten minutes the mob broke and ran. Two rioters were killed; 67 were wounded.

When the affair became serious a call was sent to the provisional battalion of the 151st Field Artillery. Within fifteen minutes a battery was detrucking a block from the scene of action. Already the mob was reforming at the other end of the block. Training and discipline now bore fruit. Promptly and in silence the troops leaped from their trucks and fell in, taking up a riot formation in two waves 15 yards apart, each wave extending from building to building. Near each flank of the first wave was a veteran noncommissioned officer armed with a sub-machine gun. In the center of the second wave was a gas squad. Twenty yards behind, with a few yards interval between them, stood two 1½-ton trucks upon which machine guns were mounted pointing to the rear. A squad formed on line with these trucks constituted a rear guard as well as a guard for the trucks. Behind the center of the first wave was the battery commander.

"Raise pistols! Forward, MARCH!"

The purpose of the troop leader was not to stampede the mob, but to give it time for the situation to sink in. Slowly, deliberately, inexorably the lines of soldiers moved forward. Confronted by this show of firmness and resolution, faced with this display of disciplined force coming steadily on, those in the front of the mob began to waver. The whole mass began to surge slowly backward and the mob began to dissolve.

Just as the first battery began its advance, a second arrived. It joined with the police in clearing sidestreets of loiterers. One hour and a half after the call had come the troops were back in the armory.

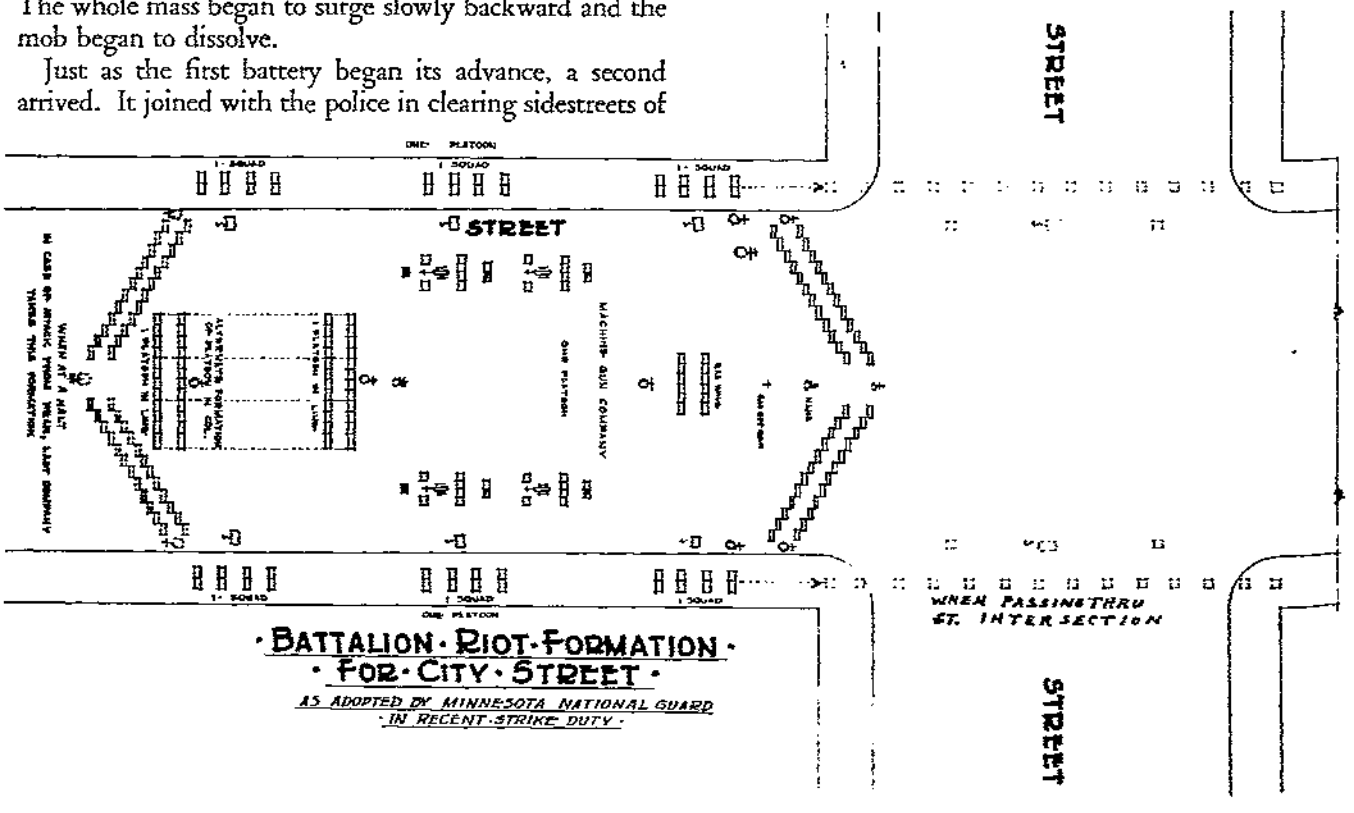
The fighting and bloodshed brought on a crisis. Charges and counter charges were made in attempts to fix responsibility. There was talk of a general strike. Governor Olsen issued an ultimatum: Unless employers and strikers settled their differences within a few days he would place the military in control and make Minneapolis "as quiet as a Sunday school."

Accordingly the 92d Infantry Brigade was moved to the State Fair grounds, six miles from the center of Minneapolis. By 8:00 o'clock the next morning, July 21, 3,400 troops were concentrated close to the city and were being specially organized and trained for action.

Howitzer companies had been equipped and trained for using chemicals. Battalions with one platoon of howitzer company attached were to be used as assault units.

By Thursday noon Governor Olsen's time limit expired. Negotiations were still at a deadlock. Martial law was proclaimed. Brigadier General E. A. Walsh, the Adjutant General of Minnesota, commanding all troops, issued a proclamation making provisions for the government of the disturbed area and enjoining full compliance with all military orders. Troops in 1½-ton trucks patrolled the streets. As more and more commercial trucks began to operate under military permits, some were attacked. This defiance of military orders was promptly dealt with. Those arrested were confined in a stockade at the State Fair grounds. So effective was this control that by July 29 the strength of the military was reduced to 1,800.

On Tuesday, July 31, in defiance of the order that no more than 100 persons should congregate together with-



BATTALION · RIOT · FORMATION · FOR · CITY · STREET ·

AS ADOPTED BY MINNESOTA NATIONAL GUARD IN RECENT STRIKE DUTY

National Guard troops of Georgia on duty during textile strike.

out permission, a mass meeting was held in which speakers sought to organize mass picketing to begin at 4:00 A.M. the next day. The troops made no attempt to break up this meeting at the time; but at dawn, as the strikers were assembling to start their mass picketing, columns, each a battalion strong, converged on the meeting place from three directions. The Provost Marshal, Colonel Elmer W. McDevitt, entered the building and announced that he was taking charge.

Taken wholly by surprise, those who had defied martial rule offered no resistance. Some arrests were made. Almost two score automobiles were impounded. The back of the revolt was broken. Mob action thereafter was confined to the damaging of trucks and cargoes and beating of the drivers by raiding bands of strikers, and these activities steadily decreased.

An attempt made to nullify by injunction the Governor's order of martial rule was denied by the United States district court. As the days passed, while federal mediators were laboring to bring peace, disturbances became fewer and less important. The number of troops was reduced to 900 by August 20. A settlement of the strike was made on August 22. The last troops were demobilized on the morning of August 23 to the joy of the citizen-soldiers. They had accomplished their mission with credit. Such was their armament, their training their discipline, that they had no need to shed blood. From the moment they showed up rioting ceased. One wonders what might have happened had there been no National Guard in Minnesota.

California

The International Longshoremen's strike culminating in the general strike in San Francisco on July 16, 1934, caused one of the largest peace-time mobilizations of troops that has ever occurred in the United States. Five thousand men, or practically the entire 40th Division and one regiment of Coast Artillery, were concentrated in the San Francisco area at the height of the disturbances.

The longshoremen had tied up all shipping in all ports north of Los Angeles since early in May. In San Francisco alone millions of dollars worth of cargo had accumulated on the docks. The first attempts to move these supplies on July 3 resulted in a pitched battle between the police and 3,000 strikers, in which 26 men were injured. Rioting again occurred on July 5. Two men were killed and more than a score were wounded when the police fired into a charging mob of 2,000.

The situation was now out of hand, cars on the state-owned Belt Line Railway were burned, crews were driven from their trains, and the radical elements were trying to assume command. The National Guard was ordered out.

As early as April steps had been taken by the division commander to perfect general training in riot duty and in the use of gas; to organize, equip and train special riot duty detachments, and special intelligence units, and to review mobilization plans and their adaptibility to a call for active state service. The adjutant general had kept in constant touch with the situation and had formulated plans for the use of troops for this particular area.

It was at 1:00 P.M. on July 5 that a telephone call came to headquarters of the 40th Division at Berkeley, from Adjutant General Seth E. Howard, saying that the Governor had decided to call out a portion of the National Guard to preserve order and protect state property on the Embarcadero where all docks, piers, buildings and other waterfront facilities including the railroad are owned and operated by the state of California. Wisely it was decided to send enough troops to gain immediate control of the Embarcadero and to maintain that control. General Howard authorized the mobilization of the 159th Infantry, Companies D, K and M, 184th Infantry, and the 40th Signal Company and a headquarters detachment, all of the 40th Division. In addition he advised that he was himself ordering the mobilization of the 250th Coast Artillery of San Francisco.

Less than two hours later the Division Commander, Major General Barrows, was able to report mobilization well under way. By 6:00 P.M. all troops in the San Francisco Bay region were mobilized and assembled, and a few minutes later units had reported from San Jose and Salinas—the latter over 100 miles away. By 7:30 the 159th Infantry (less 3d Battalion stationed in San Francisco) had messed in the Oakland armory and was on its way in full field equipment to San Francisco. By midnight some 2,000 steel-helmeted soldiers of California stood guard with bayonets fixed over the state-owned Embarcadero, and others from more distant points were in reserve in Berkeley where they had arrived some two hours earlier. There, before midnight, a young man in civilian clothes tried to get past the sentry. He had heard of the call after his unit had left Salinas, and had hitchhiked 100 miles to join it.

So prompt was the troop movement, so strong was the force sent, and so firm and business-like was the attitude of the Guardemen, that all violence ceased. The edge of the sidewalk across the Embarcadero from the piers was set up as a deadline and none walked even near it. Strong motorized patrols were organized, which proved of great value later when they were called upon to cover troop movements, convoy supply trucks, reconnoiter or patrol outside the occupied area, and make demonstrations at critical points. A complete intelligence service was operating. At the same time, to patrol the Embarcadero against fast motor launches, a "navy" was organized. The state patrol boat *Albacore* was equipped with 37-mm. guns from a howitzer company and manned by Guardsmen with automatic rifles.

From July 6 to July 14 comparative quiet reigned. It was the calm before the storm. Plans were being made for a general strike and citizens circulated petitions asking that martial law be declared. From July 14 to 16 the situation was tense. The teamsters walked out. Other unions followed. Violence increased. The highways leading to the bay cities were picketed and supplies held up. Filling stations closed for want of gasoline. The general strike was called for 8:00 A.M. July 16.

Meantime, the 185th Infantry and the 143d Field Artillery had gone to their usual annual camp at San Luis Obispo, 250 miles away. The 160th Infantry and the 184th Infantry, less about one battalion, were at their home stations.

About 2:00 P.M., Sunday, July 15, orders reached San Luis Obispo to move all troops except a camp guard to San Francisco. At 6:30 P.M. the first troop train left the entraining point and the tail lights of the last disappeared by 9:00 P.M. With lights out these troop trains roared through the night at 65 miles an hour. The newly motorized 143d Field Artillery moved out of camp at 6:40 P.M. and ran in convoy formation at speeds as high as 45 miles an hour. By 3:15 A.M. the 185th Infantry had arrived. It had struck camp, packed, entrained, traveled 250 miles and detrained in about 13 hours. The artillery arrived at 6:40 A.M. and the 184th Infantry about the same time. Meanwhile the 160th Infantry, alerted at 10:30 P.M. on the 15th, had mobolized, entrained at 9:00 A.M., traveled 450 miles, and detrained at 10:30 P.M.—just 24 hours later.

By this time some 3,000 additional troops, including the 40th Tank Company, were on duty, and had extended their grip to include all the bay cities and the port of Stockton, some 60 miles away.

The dramatic swiftness of this concentration, the soldierly attitude of the troops, the "stand no nonsense" attitude of the commanders, and the outraged and threatening attitude of the general public brought about a complete collapse of the general strike, beginning with July 19. By the 21st warning orders had been issued for the demobilization of the first echelon of troops. On that afternoon a review was held on the Embarcadero. When the band of the 160th Infantry struck up the "Sambre-et-Meuse," and battalion after battalion of steel-helmeted ranks swept by in masses with shining bayonets, a lasting impression of the power of the armed forces of California sank into the minds of the citizens of San Francisco. They recalled that few disorders and no fatalities had occurred after the arrival of the troops. The press, public officials, and union officials combined to praise the conduct of their citizen-soldiery. A typical letter is quoted below:

SAILORS' UNION OF THE PACIFIC
57 Clay Street, San Francisco
Headquarters Branch, July 23, 1934

Dear Col. Mittelstaedt:

This is a little note of thanks for the very friendly courtesies extended by yourself and Col. Allen to me during your occupation of San Francisco.

Full well do I understand the broadmindedness and the patience required by leaders on both sides of a situation such as has confronted us in the past; and for your broad understanding and your immediate sympathy, I want to thank you from the bottom of my heart.

Sincerely hoping that we may meet again under less troublous times, I remain.

Gratefully yours,
R. J. EVANS,
Chairman, I.S.U. of A.
Strike Committee.

All God's Chillun Ain't Got Wings

By Arcades Ambo

Belshazzer's Feast

No other military problem of today is comparable in importance with that of getting the ablest men to the top in time of peace.

THE outstanding problem in the military service is promotion. Everywhere the times are out of joint. Organized knowledge in the field of the physical sciences has so outstripped the slow advance of the social sciences that the control of society has become difficult. The same is true in the armed forces. Material preparedness has progressed at the expense of intellectual preparedness. Somehow the art of war must be brought into harmony with the science of war.

Still punch-drunk from the past great conflict, civilized society sees another war casting its ominous shadow before. The Old Worlds are seething with baffled purposes. Statesmen are straining to stave off temporarily what is once more being spoken of as "inevitable war." Thoughtful men in responsible positions have expressed serious doubts whether our present level of civilization can survive another great blood-letting.

We are in the midst of economic difficulties which themselves are grave enough. Even discounting the more fantastic imaginings of alarmists, the destructive powers it is possible to unleash in war have greatly increased. There is reason to fear in all soberness that their misuse may spell catastrophe.

This has happened before. Critics have demonstrated that the military systems tested in the recent great war were barren of all except deadly fruits. They have diagnosed the malady to be a constitutional deficiency of brain-power. The armies of the world are therefore faced with a crucial problem and an awful responsibility. Unless we can find a way to mobilize and utilize the best brain-power in armies more effectively, another general conflict will indeed be fraught with danger to civilization.

A *little* more brains will not serve. The destructiveness of war has become too dangerous and the problems of war too complicated. We must have the fullest possible service from the best brains that we can muster. Nor will it do to wait until the blast of war blows in the ears: then it will be too late.

Under modern conditions of fast transport and rapid movement an initial decision may come with headlong quickness—and it may be final. If the original Schlieffen plan had been adhered to in 1914, France might well have been smashed to a bleeding pulp within three months, as was expected. But at that time regular use of motor transport had not yet lent to armies the speed of movement away from railways which is now possible. Full use of the gasoline engine has since made it far more probable that opening engagements will be decisive. As a corollary we can no longer safely rely upon learning the way to victory after war has begun. The fate of nations has thus come to depend preëminently upon (1) intelligent preparation of war and (2) intellectual preparedness for the conduct of war. This means that no other military problem of today is comparable in importance with that of getting the ablest men to the top in time of peace.

The story of 1914 should haunt us. It is a story of what happens when the preparation and conduct of war is left to mediocrities. It is a story of divine obliviousness to the implications of technological progress and of ideas on war long disassociated from realities. Above all there is the artistic tragedy of the Schlieffen plan, conceived by a first-rate intelligence and thoroughly botched by the tinkering and fiddling of mere journeymen soldiers.

The importance of methods of promotion to success in war is illustrated by another story: that of 1870. The world has long since taken the measure of the French generals who repeatedly led a veteran professional soldiery of premier quality down to ignominious defeat and futile death. Armies of lions were led by asses, while the great genius of an Ardant du Picq was allowed to fall at the head of a mere regiment. This came to pass because the French army was saddled with a system of promotion by seniority and favoritism which almost guaranteed that exceptional ability should never attain the higher grades. The War of 1870-71 was lost to the French by the provisions governing advancement in the law of March 16, 1838!

From across the Rhine came the half-amateur army of Prussia, led by a military genius, and seconded by a whole constellation of able men. Its preparation for war was far superior in organization, efficiency, plans, tactics, training of officers, and some of its weapons. Its higher commanders and staff officers were thoroughly prepared intellectually for the conduct of war. The superb troops of France were rolled back and rolled under, while the world gasped.

In seeking to account for the phenomenal victory of Prussia, soldier-men have ascribed great importance to her general staff institution and her army's possession of the philosophy of Clausewitz. They have missed the main point. France had the philosophy of Bourcet, Guibert, and Jomini to draw upon. In the *Dépôt de la Guerre* she had an institution corresponding far more closely to the Great General Staff than has been realized. In the *corps d'état-major* she had an equivalent of the *Generalstab der Armee*. There was only one vital difference: the Prussian staff had a system of selection and promotion which drew out the last ounce of brain-power in the Prussian army under the inspired direction of a man who was

himself, in part, only a product of the system. The brain-power of the staff made itself felt in every department. *The greatness of the Prussian army under Moltke thus rested upon its method of sifting out ability.*

The incubus which weighs upon the military systems of today is promotion by seniority. Seniority alone can never hope to get brains to the top. If by a happy chance a man of brains should climb the weary files to high command, by the time he has passed all the milestones of the years his energy and enthusiasm will almost certainly have been dissipated along the road and his creative genius long since have flowered—and gone to seed. Youth has an important place in high command. Fuller in his *Generalship: Its Diseases and Their Cure* presents the extreme view of this subject, the importance of which was recognized by Onosander 2,500 years ago. Today promotion is hopelessly handicapped in the race with senile decay. The ability which springs from long experience is too often counteracted by an increased ossification of mental habits. Nature may be wise and kindly to the generals in not allowing them to recognize these limitations in themselves—but that does not make it any easier on the Army. Today we have an almost ironclad guarantee that our generals will be a generation behind in their thinking. They reach their rank at a time when it is more natural to look backward to find perfection than forward where youth instinctively casts its eyes.

When he first read a volume of Jomini's works Napoleon nearly had an apoplectic stroke:

"How did Fouché ever let this book be published?" he demanded. "It will give away all my secrets."

Then, upon second thought, he said:

"After all, it doesn't matter. The young men who read it will never command against me—and the old ones will never read it."

Napoleon knew that the vices of seniority in the armies of his enemies were fighting on his side; that interminable imprisonment in the lower grades had dwarfed the imagination and sterilized the brains of his opponents so that he could tell just what they could and would do. The advantages of flexibility and of surprise were all on his side.

Seniority is a fetish which for purposes of promotion can show no more solid proofs of virtue than the time-honored use of spunk-water and dead cats at midnight as a cure for warts.

Why does this archaic device survive in modern days? Is it because of military conservatism and inertia? Is it because army officers have as their chief concern the acquisition of "property" in higher grades by a sort of compound interest and regard their calling as a semi-private business guild engaged in haggling with the state and within itself over the "spoils of peace" in the spirit of the old *condottieri?* Or is it because every system of selection which has yet been tried has proven vicious and raised an outcry?

Probably something of all these factors comes into play in varying degree according to individual characteristics. Military men in their tactical studies make a great to-do about elaborate and complete "estimates of the situation," assessing pertinent facts in the light of their "mission"; but in the conduct of routine affairs they make momentous decisions without taking account of these systematic safeguards, and with much the same combination of rationalized feeling and instinctive, cold self-interest as a romantic young woman casting an appraising eye over an unconscious candidate for her hand. Promotion is discussed on the basis of how to get rid of the "hump" so as to improve morale, prevent stagnation in grade, and let the lowly move toward the Promised Land. This Promised Land is more often envisaged as though it were a sort of transcendental Old Soldiers' Home for the Faithful rather than a busy workshop for the turning out of a superlative instrument for the winning of victory in war.

While it seems to be true that our volunteer and conscript veterans have been willing to lay down their lives for the welfare of the country but not to give up their bonus, something better can be said for our professional soldiers. As a rule they live by a code of ethics whose roots lie deep in the soil of sacrifice for the public weal. It is necessary only to state the problem clearly to know how they will answer. They will submit readily to any method of selection that will do what it is supposed to do, that can be shown to be in the true public interest, and that does not by creating rancor and mistrust destroy the very breath of an army—its morale. Officers care as much for the future of their families as any normal human beings. Promotion by seniority does give a certain guarantee of future security as comforting to the soul as to lie in a hammock in the shade with book and pipe and glass, listening idly to the clank of an oil well pumping one up a black fortune out of the ground. But the demands of war are harsh. The soldier is as much vowed to sacrifice and service as a member of a monastic order. His cannot be a life of ease. Epic deeds such as he must be ready to perform are not spawned in security and comfort but in uncertainty, straining effort, and mastery of confusion in flux. Like the sharp notes of "First Call" on a bitter morning the realization must come that the conditions of war have so changed that continued reliance upon promotion by seniority as the principal method of advancement is now madness. The only question is how a satisfactory method of selection can be divided. We must find an answer, for it is a decree of Nature: "Adapt or Die!"

Mene, Mene, Tekel Upharsin

The crucial problem of getting brains to the top of armies has been examined by Liddell Hart in his *Remaking of Modern Armies* (pp. 196-8), but for all his acumen he has not been able to offer any really new suggestions. All the old schemes have been tried and found wanting. No one will hold a brief for election. No competitive examinations yet devised by man can get at the qualities it is necessary to evaluate. Promotion by seniority is an evil to be escaped. Some sort of selection alone remains.

The really serious objection to this method is not to be found in the injustices that result. It is to be found in the fact that the systems of selection which have been tried cannot be relied upon to *deliver the goods*. If they do not, then the injustice is flagrant and serious. It has no justification in results and has a serious effect upon the morale of the army.

The Moltkian system of personal selection offers no general solution because it inexorably calls for a very great man to do the selecting. It can be applied effectively only within the limits of a small establishment such as a general staff, for it requires close and prolonged personal contact. Under other than these conditions personal selection will become pure favoritism without being effective. If this favoritism be frivolous, if the system be ill-devised, rigid, and not subject to change in the light of trial and error, there is likely to be an inverse or freakish selection. Some years ago a distinguished scholar was asked why at that time so many weird theories were being put forth by German professors. He replied that the University of Berlin, once upon a time decided to encourage originality and had taken pains to select men of greater originality to the faculty; and that the result had been that the most original professors had selected the most original pupils until in time there had been raised up a faculty of crack-pots.

One of the difficulties with selection in the past has been that it has been done by boards. The esteem in which boards are held may be judged from the common definition: "Long, narrow, and wooden." The evils of a council of war are proverbial. A board is a council of peace and shares many of the disadvantages of a council of war and has in addition many peculiarities of its own. If the sad tales now going around about "Class B" boards are only ten per cent true, the board as a means of selection stands condemned.

After the Franco-Prussian War French officers were re-classified by a board upon which sat none other than Marshals MacMahon and Canrobert. This board was thoroughly imbued with the spirit of the Second Empire and derided as "Cossacks" any officers who studied their profession. Before this board came the name of a certain Lafourge. It was recorded that this officer of his own free will and at great personal sacrifice had long occupied himself with the study of geology. "Peuh!" said one member of the board, "An officer who occupies himself with geology!" Another member of the august commission remarked dreamily, "But who rides a horse like a centaur!" Thereupon promotion was promptly accorded. Such is the way of boards. They may be as capricious as a coquette.

If boards rely upon opinions of members who have had some contact with particular officers—as fair-minded boards are prone to do— they do not really take corporate action but engage in a sort of "log-rolling." The alternative is to fall back upon an officer's "record." For many reasons this is an inadequate basis for selection. One reason is decisive: An officer's record is one of accomplishment rather than of ability. What goes into that record depends largely upon chance, or favor—*upon the opportunities given him to demonstrate ability*.

An officer brilliantly saves the day. He is suitably recognized. But what of the officer, perhaps of far greater ability, who never got to the front but loyally did his drudgery far from the sound of battle? A military attaché reports a foreign war with great insight. He must be rewarded. But does that prove him better than those stuck in some hole at home? Another officer brings a laggardly outfit to a high level of efficiency. It is proper to recognize this fact. But does it prove him any abler than that officer who has inherited a unit at an exceptional level of efficiency and maintains it there? In time of peace the opportunity to demonstrate ability depends preëminently upon assignment. Assignment is a matter of preferment. Who gets first crack at the service schools? Is it not in many cases those who have been "dog-robbers" on Olympus? Soldiers are human beings and subject to human failings. To judge an officer wholly on his record merely removes favoritism to the level of assignment and makes selection on that basis a mockery.

It is a natural human failing to honor accomplishment without taking into account opportunity. General Pershing did a good job. That does not prove that he was a better man than others who did not have his opportunities. Lacking any other measure of ability, a conscientious board is almost certain to follow this failing blindly. Too many aides-de-camp promoted, too many promotions for actions of *éclat* in Algeria, contributed largely to bring France to Sedan.

Where selection is practiced it is inequality of opportunity that rankles in the souls of the less fortunate. If reasonable equality of opportunity could be assured no true soldier would grumble over errors of judgment. He can always prove his case by trying harder. It is being doomed to helplessness that makes men bitter. Sportsmanship will concede another a better man if the trial be in a free and fair competition; but no one takes his defeat with good grace if he knows that the deck was stacked.

Great ability is so rare that all defer to it and the entire army must be combed to find it. If it is to be recognized everywhere, it must be allowed to identify itself everywhere. It can be made to grow. That is another reason why we must find some means to identify it and stimulate it wherever it can be found. Napoleon knew his hegemonics when he said that each of his soldiers carried a marshal's baton in his knapsack. To stimulate the general growth of ability there must be an approximately equal opportunity to win reward. Such stimulus acts not only upon the cream of the crop but indirectly upon the whole corps of officers. The prospect of winning to the top works to endow the whole army with an almost epic spirit. This was the secret of Napoleon and of von Moltke.

The Review of the Wooden Soldiers

"I divide my officers into four classes as follows: The clever, the industrious, the lazy, and the stupid. Each officer always possesses two of these qualities. Those who are clever and industrious I appoint to the General Staff. Use can under certain circumstances be made of those who are stupid and lazy. The man who is clever and lazy qualifies for the highest leadership posts. He has the requisite nerves and the mental clarity for difficult decisions. But whoever is stupid and industrious must be got rid of, for he is too dangerous."

—General Freiherr von Hammerstein-Equord, former head of German War Department, Chief of Army Direction.

The problem of promotion is complicated by the need for more than one type in the leadership of armies.* The idea that all officers should be standardized and interchangeable parts in a military machine needs only to be looked at to be known for what it is: an imbecility and a fraud. We deny the thesis when we commission officers in various arms and services although this is largely an artificial differentiation; and yet we fail to recognize important and natural differences. Blois during the World War was a madhouse peopled by round pegs who had been thrust into square holes and by square pegs who had been forced into round holes. Officers who would have been invaluable elsewhere were wrenched savagely out of jobs to which they were unsuited, to the injury of their reputations and without benefit to the Service. It was a cruel and a brutal system based upon the stupidity of this assumption that every officer should be able to fill any job in the army. Some day, perhaps, our equally absurd and stupid subservience to the gross superstition of "appropriate command" will exact its penalty also.

The basic fallacy in all previous and existing systems of selection has been "blind" selection with no clear idea of what one must select for. Napoleon would have been no more than General Bonaparte had it not been for Carnot and Berthier. Alexander owed his army to his father, Philip of Macedon; Cæsar his to Marius; and Grant owed his army to McClellan. More than one type of officer is needed to win a war.

We may distinguish five types of necessary ability, with essential characteristics substantially as follows:

1. The "Staff Brain Truster" or Jomini Type

Grasp, or power of comprehending the essential nature of problems or situations.

Originality and profusion of ideas, stemming from great imaginative powers.

Foresight, stemming from great imaginative powers and a strong sense of realities.

2. The "Balance-Wheel" or Blücher Type

Suggestibility, or readiness to consider the ideas of others before deciding.

Sound judgment of values and of risks.

Decision: promptness in deciding and resolution in adhering to plans once made.

Coolness and steady, unshakeable confidence.

3. The "Staff Executive" of Berthier Type

Refined technical skill in elaborating details of directives according to a system.

Unfailing precision and reliability.

Systematic providence: systematic forethought in the provision of information and dispositions necessary to a proper state of readiness for any conceivable eventuality.

4. The "Sub-Commander" or Napoleonic Marshal Type

Orientation, or a supreme sense for the necessity for a particular mission.

Intellectual discipline and fortitude in pursuit of that mission.

Leadership, or the capacity to get the utmost effort and teamwork out of men.

5. The "Organizer of Victory" or Carnot Type

Driving energy that overrides all obstacles and "red-tape" to get maximum results at maximum speed.

Systematic capacity that can improvise order in any confusion.

"Hand over your money or I'll blow out your brains!" said the highwayman to the New Yorker. "Blow away," said the New Yorker. "You can live in New York without brains, but you can't without money." The same is true (to the same extent) about brains in command of an army: You can command an army without brains, but you can't without character. In all except one type of officer character and skill are predominant. "Brains" is the necessary characteristic only of the Jomini type. Thomas Conway and Charles Lee were both the superiors of George Washington as technically trained soldiers. Both failed utterly in the command of troops and had to be court-martialed. Washington is enrolled among the great military leaders of all times. Both character and skill are based upon ingrained habit; and the more such habit is reduced to the level of highly ingrained reflex action the greater the ability. But habit is developed at the expense of brain-power. It achieves speed and efficiency by dispensing with any necessity for constant recourse to fresh reasoning and so weakens the higher reasoning powers. It must be so. The last four types are "brainless" in their purity. They are the types of the "Wooden Soldiers." It is the first type alone that is endowed with the peculiar *problem-solving capacity* now peculiarly required. It is the only type that can hope to deal effectively with problems *of a new kind* not adequately provided for by stereotyped reactions. It is the only type that can hope to deal effectively with problems *whose elements are highly uncertain or largely unknown.*

The present military system has demonstrated that it can produce plenty of excellent Wooden Soldiers. It is sadly deficient in its production of "Bright Idea" Soldiers. This may be due in part to our theory that all officers should be standardized and interchangeable, and in part to the influence of the General Service Schools which teach how to make omelets without breaking eggs. It is necessary to put a special premium on "brains." This

*"There are three kinds of brains: the first can learn by itself; the second can appreciate what others have learned; the third can neither learn of itself nor from others."—Machiavelli, *The Prince*. XXII.

does not mean that a premium should not be placed on exceptional ability in other types. It would be folly to entrust the conduct of war to a mere Book Soldier. A combination of all abilities is necessary. We should search high and low for combinations in particular men, for it is they who are the Marlboroughs, the Napoleons, and the von Moltkes. Failing such, we must resort to teams. For these the best of the Wooden Soldiers should be selected up. But only the very best; for the officers of any healthy army are on the average of high standard Wooden Soldiers. They are the backbone of any army, and for precisely that reason ought not to be the head. It is the "Brain-trusters" that are hard to find. Wherever found, "brains" should be selected up rapidly to the level where they are most needed. *This will not be the highest level unless "brains" is combined with other types of ability.* It will be the general staff level. In the lack of combinations, high command must go to the "Hindenburg," the "Blücher," the "Joffre" and the "Napoleonic Marshal" types of ability, with staffs of Ludendorffs, Scharnhorsts, and Jominis.

The two commander types do not need to be selected up as rapidly as brains. They are hardy plants that can thrive and grow under present system. The Hindenburg-Blücher type may reach full bloom in advanced years; the other in middle age. But "brains" must be gotten up before they settle into a rut. They must be plucked before they wither and go to seed. Here, then, one principle suggests itself. Mere "Bright Idea" *soldiers should be selected up fast to the middle grades to stay there; the commander types should be selected up fast from the middle grades to the highest.* This principle would let the rare *combination types* go up fast all the way, but only such combination types.

The crux of the problem lies in equalization of opportunity to demonstrate ability. The problem of equalization is not the same for all types of ability. The commander types depend largely upon strength of character. Character can manifest itself to a high degree under almost any conditions. It already has a considerable measure of equal opportunity. If rapid advancement be left to take place in the higher grades, it becomes possible to rely more upon a sort of personal selection. There are fewer officers to consider, and they are known better by their long service. In the middle grades the opportunity to demonstrate ability is much larger no matter what the assignment. The distribution of opportunity is somewhat more equitable. It is doubtful if any premium should be put upon these types in the lower grades. There is every reason to encourage the "wooden" types to develop into other types of ability as well.

The Berthier and Carnot types of ability can manifest themselves pretty well in executive positions and to a less extent in all administrative activity, at which every officer gets plenty of chance. If proper account be taken of opportunity, an officer's achievement may be a valueless clue to ability in these types. It is not enough, but it should not be difficult to arrange for a closer approach to equality of opportunity in this field by means of greater system in assignment. *The whole business of assignment should be redesigned so as to aim at giving every officer approximately equal chance to show these types of ability.* The greater possibilities which lie in the use of assignment for the systematic testing of the officer corps are not adequately exploited.

"Brains" gets little chance to demonstrate itself in ordinary military duties. The problem of equal opportunity is here a serious one. It is said that General Summerall as commander of the Hawaiian Division called upon each officer annually to report what progress he had made in his profession during the year: what he regarded as his outstanding achievement. Here is an attempt to get at the bottom of the business. It has not been unknown for officers to win recognition and preferment for achievements made on their own initiative above or outside of line of duty. Here is a field for study with a view to finding a basis for systematic selection for promotion.

There is one ideal of advancement in the world today which has never been prospected thoroughly for military use, but which comes in here with peculiar relevance. It is that of the "brain trust" *par excellence* of civilization: the academic ideal of advancement for scholars and scientists. These form a loosely organized army fighting a leisurely and bloodless but endless battle on the frontier of knowledge. They have their hierarchy, both of grades and commands; and hence a problem of advancement. But their problem differs from that of armies in that it knows no two distinct phases of war and peace.

Armies, in the occasional intense conflicts of actual war, are forced to fall back in greater or less degree upon arbitraty selection. They can do so with confidence at such times because the test of actual war measures ability as nothing else can. But in time of peace measurement of military ability becomes a baffling problem. The elements of such ability are so various, so intangible, and so uncertain that, unlike the forces of mechanics, their presence can be detected with accuracy only through results. But results *in war* cannot be produced in time of peace, nor can war be simulated in even a hundredth part of its condition.

The sciences are always at war, in a sense. They can measure ability by results achieved in their war. In another sense they are always in a state of peace. Results can be achieved, but they do not have to be achieved at any particular time or place. The sciences have therefore hit upon a scheme of advancement in which prospective candidates are given the responsibility of demonstrating amply their ability by achieving results on their own initiative and at such time and in such manner as they see fit. It is somewhat as though candidates for high command were allowed to take an army and go conquer whatever smaller country might strike their fancy in order to demonstrate their ability to command in war.

The ability that it is vitally necessary to draw out of armies is not merely ability to conduct war, but also ability to prepare for war. We need not only great war-com-

manders but men who can recognize and develop such commanders and equip them with the best military machine that it is possible to build. We need not only virtuosos but composers and impresarios. The ability of the latter can be measured with certainty only through ultimate results in war, but there are also certain peacetime results capable of some evaluation. Armies might take a cue from the academic world by taking as a criteron for special advancement *distinguished or significant contributions to material or intellectual preparedness above and beyond the call of duty.*

Napoleons, Front and Center!

Let us try to sketch a system of advancement that embraces routine promotion for the main body of officers by seniority and exceptional advancement for a percentage of officers *in such a manner that there would be no retarding of promotion by seniority.* The last would be achieved by retiring field officers at the top to make room for exceptional promotions, thus stimulating the flow of the best ability toward the top while still young.

The essential element in this scheme is an adaptation of the system of cumulative "honor points" used at the Military Academy to determine military as distinct from academic standing. "Honor points" would be given for achievement under four heads:

(1) Exceptional knowledge of subjects, or exceptional proficiency in techniques, of patent or probable military utility, acquired other than in line of duty by notable voluntary effort;
(2) Significant contributions to material or intellectual preparedness for war made out of line of duty, or in line of duty in notable excess of reasonable expectations;
(3) Demonstration of the capacity to get results from plans, in the conduct of war-time or similar operations, in notable excess of what might reasonably be expected and as a consequence of exceptional force of character;
(4) Exceptional skill and efficiency in the performance of regular military duties (other than war-time conduct of operations) or non-military functions of related nature.

The purpose of the system of "honor points" is to get away from any judgment of officers by boards and to decentralize the process of judgment. Any particular award of points would be only contributory to determining an officer's standing. The more one increases the number of these "infinitesimal" judgments, the more one reduces the likelihood of any large error and approaches true evaluation as a limit. There would be, not a single judgment based upon a record, but a series of judgments by superiors, boards, or examiners, made as a result of direct knowledge or investigation *at the time*. The whole army would judge, not a single board.

"Skill and efficiency" points would be given upon approved recommendation of appropriate commanders who would be required to give consideration to written estimates by intermediate commanders. The company officers would be graded by the regimental commander with the written estimates from his field officers. Any large discrepancy between these ratings would call for inquiry before final approval.

"Contribution points" would be given by special corps area boards upon presentation of substantial facts and competent testimonials on the value of the contributions made, either by the officer himself, or by his commander, and after such investigations by the board as may seem fitting. An officer invents a gadget to improve fire power or makes a striking advance in methods of communications: let the facts be determined, the value of the device assessed, and let points be set to his credit.

"Command-ability" points would be given by citing for achievements under conditions calling for command ability, as actual or simulated warlike operations or emergencies of all sorts. Whenever a soldier distinguishes himself in a crisis of any kind, at a fire, in an earthquake, or other disaster, by his coolness and energy, it should be set down to his everlasting credit and noted in his record as an indication of his capacity to handle himself and others under stress. In this connection it might be advisable to study the use of psychological tests, such as are used in the Air Corps to test such things as reaction times and sense of balance, or as are being developed to test ability to handle an automobile in an emergency. It might be possible to develop a type of war exercise to test character and resistance to fatigue, confusion, uncertainty, surprise, and breathless speed. The fruits of science are at our service. The rewards offered are great.

"Education points" would be given by the same or a like board upon examination or application by the officer concerned supported by the testimony of a superior officer or civilian expert. An officer who compiles a useful manual, who learns a foreign language or translates a useful book; or one who masters a fresh field of knowledge, writes the history of some campaign, or proposes a practical application of some new knowledge to military uses should be remembered by credits against the Judgment Day of selection. These boards might have the power to indorse applications for exceptional leaves of absence on two-thirds or three-quarters pay to study at civilian institutions or for foreign travel with a specific purpose, and give credit for such fruits as may be garnered.

At the end of each biennium exceptional promotion would be accorded to a number of officers in *each* grade below that of lieutenant colonel equal to, say, two per cent of the total number of officers in the army. At the present time this would mean about 240 promotions from each of these grades. The promotions would be given, in order, to the officers who had accumulated the highest number of "honor points," provided that such officers had served at least two years in grade. At the same time a number of lieutenant colonels equal to, say, ten per cent of the number of colonels would be promoted on a similar basis. In order to make room for these, an identical number of colonels having the *lowest* number of "honor points" after one year of service in grade would be retired. After the exceptional promotions of lieutenant colonels

room would be made for the promotion of 240 majors by retiring some 190 lieutenant colonels with the lowest number of honor points. One half of these exceptional promotions might be given first without regard to arm or service, and the remaining half divided among the various arms and services, or made in whatever manner might be necessary to preserve a proper and equitable balance.

The flexibility of this method could be insured by adjusting from time to time the premiums set upon the various types of ability.

Under this system it would be theoretically possible for a very exceptional officer to reach the grade of lieutenant colonel after some eight years of commissioned service or at about the age of thirty. In practice, close competition would tend to raise this age considerably—and at the same time raise the general standard of efficiency enormously. Brigadier generals of forty years are conceivable. Most of the seniority men would retire as majors or lieutenant colonels. Colonels would be drawn overwhelmingly from "honors" men of greater youth. The newer generals would be younger men too. But since general officers would continue to serve until normal retirement age, a plentiful supply of "wise old heads" would be preserved. The long service and wide experience of the men at the top would be all to the good. Yet it would still be possible in theory and could happen in practice that we might get a commander-in-chief in time of war of only 45 years of age. Since Napoleon was only 27 at the beginning of his first Italian campaign, this is not exactly radical.

A further advantage of this system is that it would mark men for the particular type of work for which they were best fitted by segregating honor points under the four heads mentioned. That officer who had a preponderance of points for extraordinary knowledge and few for efficiency would be the last man to use as a chief of staff or G-4, but might be singularly useful as a G-2. The officer who has been prolific in invention or the development of methods might be the last man to trust with important operations. That is no reason to turn him adrift. Here we have a method for fitting round pegs into round holes and square pegs into square holes.

The proposal herein does not offer a full-fledged system to be set up by spontaneous creation: it offers a suggestion toward the development through evolution and adaptation of a working hypothesis capable of being tested progressively by trial and error so as to work gradually toward perfection with both feet firmly planted on the ground. The authors hold that it is a conception worthy of systematic study and experiment because of the number and importance of the advantages it offers. Colin in France and Spenser Wilkinson in England have illuminated for us the various factors which went into the making of military genius of Napoleon. If the General Staff is not equipped to study how to create or how to discover and advance the best brains of the army, some other agency should be set up to analyze the factors which go into the making of great leaders and to study our military system and its methods in detail from the broadest possible point of view. Such an agency might seek to determine whether it is necessary or desirable to join together in holy wedlock rank and appropriate command, or rank and pay. In view of the evidence of history showing an apparent relationship between a period of separation from military routine, the G.S. might study the advisability of retiring, on half pay for one or two years, at their own request or involuntarily, a certain proportion of officers, filling their places meanwhile with junior officers of the Organized Reserves or National Guard called into active service for training as contemplated in the National Defense Act. All questions of rank, promotion, command, and the like, might advantageously be examined afresh on their own merits, on a broader national basis, and in the light of realities rather than of outworn theories.

We have maintained that the promotion problem is the fundamental problem of modern armies. We have suggested certain lines along which it might be attacked. The General Staff is the proper agency to elaborate any detailed plan. It has many important duties; but it has none more important than this and none that offers greater rewards in the task of perfecting the National Defense.

THE RESPONSIBILITY *resting upon an officer in war is great. Mistakes are paid for in blood. To seek a command in war beyond his capabilities is no less criminal than for a man with no knowledge of a locomotive or railroading to attempt to run an engine of an express on a busy line.*—MAJ. GEN. JOHN F. MORRISON.

Keeping Two Jumps Ahead

By Lieutenant Joseph I. Greene
24th Infantry

"The future is a world limited by ourselves."
—Maeterlinck.

"It is possible that the progress in design of antitank weapons may render the development of fighting vehicles short lived." —Martel*

Some two or three years ago, Major General J. F. C. Fuller, in *Lectures on F. S. R. III*, recommended that an army have two sets of Field Service Regulations, one containing the latest doctrine applicable to the army as it is now organized and equipped, and the other comprising the equivalent doctrine for tomorrow's army. He argued that it would be of tremendous advantage to have on hand a complete set of regulations based on the most probable and desirable changes of the near future. Then, if war came, and with it a number of the probable changes, there would be something concrete and well-considered to go on.

The virtue of such a project lies in giving probabilities, and even possibilities, official recognition. We give them recognition now, it is true, but only by weighing them in our extremely sensitive scales of experimentation, which take a long time to settle, and all too often have to be read over and over.

Careful experimentation is undoubtedly of utmost importance, but when war comes we are always in the middle of a number of changes. The World War, for example, found us on the point of deciding that machine guns had importance. The final jump had to be taken flat-footed and was a tremendous effort. We had to decide on a weapon, and then write regulations for it, almost overnight. The small group of officers who knew anything at all about the experimental types of machine guns that had been studied for several years, had to be assembled at Camp Benning, and had to do their work under tremendous pressure. That work might well have been accomplished—much of it during the preceding years, while experiments were under way.

"Here is a new thing (or a new idea). It looks good. But we can't be sure that it *is* good until we've given it a lot of study. On the supposition that it will be found practicable, what use can we make of it? How would it affect our present doctrine and methods? What changes in regulations would be necessary?"

This sequence of thought today is largely individual. An occasional enthusiast for a new point of view or piece of equipment lets his mind travel ahead but he seldoms goes the whole distance. An official analysis of the new departure accompanied by a set of changes for regulations is rare indeed. In the usual case, we spend several years experimenting, and several more deciding upon the alterations in doctrine. It is only necessary to point to the 15 years we have spent in approaching some definite conclusions on mechanization and motorization to prove the point.

And for the past five years we have had before us a possibility—fast becoming a probability—that upsets every doctrine we have half-decided upon with regard to armored vehicles. I refer to the high-speed small-arms bullet. Five years ago, when it was first definitely known that a man had held a rifle to his shoulder and blasted a big hole through an inch and more of armor-plate—then was the time to formulate tentative changes in our current tank doctrine, such as it was. An improvement that bade fair to make every known type of tank a brother to a Swiss cheese as soon as it ventured on the battlefield—and still does—deserved the immediate consideration of a group of open-minded officers who could spend their whole time on the subject, but to date, nothing but hushes surround the subject. A few bold minds have asked: "What kind of tanks shall we build now?" or, more to the point, "What kind of tanks *can* we build? Can they carry the extra armor? And if they can carry it, where shall we put it?"

The real question we face is: "If armies get the high-speed bullet before we get the tank that can stop it, then what do we do with our tanks if war pops up? There should be some group whose business it is to reply: "Here is what you can do, if *this* proves true," and "Here is something you can go by if *that* proves true."

I suggest, therefore, that the Infantry Board be doubled in size and that the additional members be formed as a twin board whose sole duty would be to keep two jumps ahead of the game. I suggest that this parallel board be required to view every new possibility of importance as if it were already practicable and available, and evolve at least an outline of the changes in doctrine it would bring about.

Much of such work, no doubt, would never be of actual use. On the other hand, when a new development did prove out, the work of the "futurist" board would constitute a well-thought-out line of departure for the changes to be made. And in the event of war, its studies would be "something to go by" until experience found a better way.

*Article on *Tanks:* Encyclopedia Britannica, 14th Ed.

Will It Happen Again?

By Major Leonard R. Boyd,
Infantry

Part III

July 20. The Third Day

ORDERS to attack were received during the otherwise uneventful night. The company formed with the rest of the battalion at daybreak, and, led by Lieutenant Colonel Craig, we moved along the high ground overlooking the Chazelle ravine. Company D was now the right assault company and had little to do except to keep its formation under well observed artillery fire. German airplanes were overhead most of the time and their interest in us was usually followed by a flock of shells in our midst. We had not seen Allied airplanes since the opening hours of the attack and many bitter remarks were passed relative to our air service enjoying itself in Paris.

The battalion was halted just west of the Bois de Maurée, which shielded us from direct observation across the valley to the east. We found a company of Algerian negroes in the western edge of the woods. I tried to find out from the officers where they intended to go but, as far as I could ascertain, they were not particularly interested in going anywhere and knew nothing about the Germans or their own troops. Two German airplanes flew by during this conversation, circled a few times and disappeared to the east. I was not surprised to hear the vanguard of approaching shells follow the airplane visit. Three or four batteries seemed to know the exact position we were in and were wasting little time between shots. I moved to company at "double time" down through the woods with the barrage at our heels. We reached the bottom of the slope and halted, under cover of the railroad fill, where we waited for further orders. The artillery now switched back to the top of the woods and began a prolonged bombardment. I expected the negro troops would move forward and join us soon after the shelling started, but they did not. A few hours later an officer arriving at the position told of seeing a company of negro soldiers, most of them dead and scattered around the ground, and even hanging on the low branches of the trees. I could not understand why the officers had not moved when their location was so definitely known to the Germans.

We had rested at the railroad cut but a few minutes when Lieutenant Colonel Craig arrived with Companies B and C. Officers stated that Company A was still in the woods and was badly cut up by shell fire. Lieutenant Colonel Craig ordered Companies C and D to move to the front and take up a defensive position east and southeast of Visigneux. The two companies started from the fill with Company D on the right. Scattered machine-gun fire greeted us but no casualties occurred. I found in forming for this movement that a great many more men were missing than had been killed or wounded. Most of this trouble was found in platoons and squads which had lost their leaders. It happened this way: The company, halted under fire, sought the protection of any shell-holes or depressions, and individuals, either through design or accident, were left behind. I was worried over this matter until I found that all the company commanders were having the same losses.

Affected by hunger, thirst and fatigue.

In our advance to the town of Visigneux we passed a spring of cold water bubbling out of the ground. Men turned to see if I had noticed it and I knew from my own feeling that a halt would be most welcome. I signalled to Company C that we were going to halt and stopped about fifty yards beyond the spring. Then I sent back a squad at a time with the platoon canteens.

We passed to the right of Visigneux, which was filled with units from the French Foreign Legion. As we

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Morale and loyalty are not inexhaustible, and the destruction of these forces seriously impairs the fighting power of the entire command.

reached a sunken road, leading south from the town. American shells began to fall in the field directly to our front. We did not expect any artillery assistance to be furnished us and were forced to halt. One gun was shooting quite short, the shells frequently falling in rear of us, while the rest fell within a few score yards of our front. Machine-gun bullets were zipping overhead, apparently sweeping the open field north and west of the Bois Gerard. German shells searched on both sides of the sunken road.

A battalion of the Foreign Legion moved north on the road and stopped near our position. I found that the Commandant spoke English and told him of my plan to take the company through the woods to our right and work back to a point in front of our present position. He stated that he had tried it a few minutes before and that there were so many machine guns there that he had withdrawn and asked for artillery fire on the woods. He advised me to wait for the artillery fire to do its job, then, if I desired, the two units could advance through the woods. This was agreed upon and a message sent to Lieutenant Colonel Craig informing him of my plans. The American barrage began to put most of its shells close to the road and the Commandant asked if I could have the range increased. I was nonplussed as our military apparently had few observers out and no liaison details, and as we had no Very pistols, we had to depend on their observation to keep the fire off the front line. I explained our shortage of equipment and the Commandant had several six-star rockets sent up. The "shorts" continued. More rockets were sent up and still the shells fell short. The Commandant, smiled, shrugged his shoulders and remarked, "C'est la Guerre!"

My men, kneeling, had excellent targets.

I returned to the company and waited for the American barrage to cease and the French to start. In a few minutes the French batteries opened a heavy fire on the woods where I had planned to lead the company. It would have fallen either on us or to our rear had the movement been started. A French machine-gun cart, passing by our position, drew machine-gun fire from the ridge to our left rear, where the 26th Infantry had been reported. It was hard to understand why the 26th Infantry, from their commanding position, had not seen the two companies advance, but we were more concerned with danger from our rear than the front. The Commandant passed by and told me he was taking his unit to the rear until the American artillery and machine guns lifted their fire. He then hastened to assure me, with true French politeness, that he had observed the work of the 16th Infantry that day and that it was worthy of veterans. The French column drew more fire from the 26th Infantry, but their range was short and we were endangered only by ricochet bullets. The French having passed from view, left us as the next target and bullets began to smack into the side of the road where the company was sheltered. An officer of the company stood on a stump and waved a handkerchief toward the machine gunners in hope that they would cease firing. This figure gave the gunners a good aiming point and their fire concentrated on him, whereupon all attempts to signal were promptly abandoned. I decided it was unnecessary to subject our troops to this firing and ordered the company to move to the rear—and at a walk. I emphasized this last part of the order and all knew what was meant.

I halted the company in a grove of willows 300 yards southwest of Visigneux and hoped that the 26th Infantry had not observed our movements. The trees were small and I cautioned the men not to expose themselves to view from the 26th Infantry position. All was quiet while the company was being formed in two lines among the trees and I was congratulating myself on our good fortune when the observant machine gunners to our left rear opened fire. A stray German shell dropped in our midst. I felt that we might get artillery fire anywhere, but the continual machine-gun fire from American positions was quite demoralizing, even though we had received no casualties from it. I decided that the machine guns would soon find human targets and gave the order to move to the woods east of the railroad near the fill and to our rear. Scattered machine-gun fire followed us to the woods but, fortunately, no casualties resulted.

I placed two platoons around the edge of the woods and kept two in support near the railroad tracks. I then reported to Lieutenant Colonel Craig and was instructed to remain in the present position until further orders. Concentrated shell fire had been falling on the railroad but none had fallen in the woods in which Company D was situated. I felt that fortune had smiled on us again in that we had gained our position without being observed, but this pleasant thought was shattered when the German artillery concentration lifted from the railroad fill to the woods where we were rather closely assembled. Shells of light and medium caliber ranged back and forth over the area and I again heard the calls of the wounded. Many shells detonated by the branches of the trees burst overhead and sprayed steel missiles over the entire area. The commander of Company D was knocked out by one shell and was carried to a dugout west of the railroad. The company drifted back to the railroad cut and dugouts, bringing the wounded with them. During the night the company commander was evacuated to the battalion aid station in the town of Chazelle and the command of the company fell to the lieutenant who had failed to join with his platoon on the morning of July 19. The company

was badly cut up and less than 100 men remained for duty.

The entire battalion, dug in on the railroad fill, was startled during the late afternoon to hear the American barrage fall to its rear and to watch it move forward, straight toward the fill. The barrage was perfect, all guns with the same range, and shells evenly spaced over a 200-yard front—only it was going to pass directly over us. All crouched low in their fox-holes and the shells whined and burst around us—then after a sickening, long halt on us moved past to the east. Strange to say, not a man was wounded, as no shells fell directly on the fill, and those falling short exploded in the soft earth and threw their fragments high into the air. We wondered what had happened to the artillery liaison officer who had visited us at the railroad fill some hours previously.

July 21. The Fourth Day

The operations of Company D, 16th Infantry, on July 21 and 22, were primarily those of a composite company, formed of four platoons of which Company D acted as one, with Companies A, B and C as the remaining units. The heavy casualties of the ensuing days resulted in a consolidation of the remaining officers and men into platoons in which the company identity was lost. The following account deals with the 1st Battalion, 16th Infantry, which, as explained above, will include the operations of Company D, 16th Infantry:

The attack started at 6:00 A.M. The battalion formed in two waves and moved across the open fields south of Visigneux. Lieutenant Colonel Craig was killed by machine-gun fire shortly after passing this town. This was a serious loss to the battalion for this officer radiated confidence, and, by his actions, inspired the entire command to deeds of valor. He was sadly missed during the next few minutes, for the battalion encountered heavy machine-gun resistance in the Bois Gerard and the support wave merged with the assault line. After emerging from the woods a machine-gun nest divided the line and the left half of it lost contact with the remainder of the battalion. Later in the day the two forces joined again, after

Firing without using their sights.

The tension of days of combat interferes with digestion.

the left half had been surrounded several times and had fought its way back toward the right portion of the division sector. During this movement heavy casualties were inflicted on it and eight men, some of whom were wounded, were captured by the Germans.

The right half of the battalion reduced one machine-gun nest after another and, in conjunction with elements of the 18th Infantry on its right, passed through the grounds of the Château Buzancy, and stopped in the wheat fields near the unimproved road 400 yards north of the town of Buzancy. The point reached by this force marked the deepest advance of the division in the operation. The line had now been reduced to a small portion of its strength when leaving the railroad. The excitement of continued combat with German riflemen and machine gunners now died down and the halt in the wheat field found the few survivors nervous and depressed. The line withdrew to within the walls of the château and were fired upon from the château. The next few minutes were busy ones—the château was surrounded—and the combined 16th and 18th Infantry forces captured over 200 prisoners, including a German major, and sent them to the rear under escort of several men with minor wounds. French troops were present on the right of the combined American forces, and assisted in the fighting around the château.

Small groups of Germans were observed moving to the left and toward the rear of this composite force. The officers conferred and decided to withdraw from the château grounds and deploy on a line further to the rear, from which counter attacks could be more efficiently resisted. One of the officers taking part in this action describes the operation as follows: "The troops of both regiments moved to the rear with a view of deployment. No element of our withdrawing troops made any effort immediately to withhold the counter attack. The Germans were rapidly filtering through the wheat toward us in groups of two and three men each. In order to delay their progress and give the remainder of our troops an opportunity to reorganize and deploy I took some twenty men and deployed to the left from the château. Our line extended with the right resting near the château, and joined a small group of

French soldiers who were stubbornly resisting the advance. The Germans were coming through the wheat on the forward slope of the rising ground under the cover of machine-gun fire which caused me heavy casualties. However, my men, kneeling, had excellent targets, at 300 to 500 yards, as the Germans emerged from the wheat fields and attempted to cross the road. We withheld the counter attack until I was forced to withdraw with only three men remaining, two of whom were lost before we met other American troops."

Bandages had to be improvised from undershirts and the like.

The composite battalion of the 1st Brigade reorganized in the sunken road 500 yards west of the château. Here it was joined in the afternoon by the 3d Battalion, 16th Infantry, which had received heavy casualties in reaching this position. Elements of the 1st Engineers also joined this force in the sunken road during the afternoon. The remainder of the day was spent in repulsing several counter attacks and in keeping under cover from artillery and trench mortar shells.

Word was received from the arriving units that relief by English troops would be made that night and all were happy. Later a runner arrived from regimental headquarters with the depressing news that the relief would be made during the following night and not the night of July 21-22. No reasons were given for this change and the confidence of the officers and men in the higher command was again shaken.

An officer going back to regimental headquarters found a salvage detail engaged in saving equipment while scores of wounded remained untended. This officer states: "I walked over several miles of the area we had just fought over and I shall never forget the wails of both Germans and Americans as they lay wounded and the fear of darkness was added to the pain of wounds. I helped some of them as best I could and then ran across an engineer officer in charge of a salvage crew. I personally had a word battle with this salvage captain who was picking up material on the field when there were wounded not five thousand yards ahead of him. I had the pleasure of telling him that his detail was out of order and getting him and his men to go forward to start the much needed work."

Water was scarce and no food reached the men until morning. The mess sergeant could not find out the location of the battalion from regimental headquarters but determined to find them if he could. He loaded a ration cart full of beef and jam sandwiches and drove on the heavily shelled roads during total darkness—crossed the Soissons-Paris railroad—kept on and always directed further to the front, finally reached an open field. He stopped, but could hear nothing and see nothing in the darkness. A machine gun crackled to the front and bullets whistled overhead. The mess sergeant knew that he was near the front line so unhitched his mules and left the ration cart in the middle of the field. Daylight showed the cart midway between the German and American lines, and in plain view of both. Hunger overcame caution and foraging details crept through the wheat, then jumped up, grabbed as many sandwiches as they could with one movement and dived for the wheat. This procedure was repeated until the cart was empty, even though a German machine gun was trained at the spot and fired at each fleeting target.

July 22. The Fifth Day

No advance was made on July 22. The men were exhausted and there was little inclination for them to push forward while the gap on their left was filled with German gunners and riflemen. The knowledge that relief was due that night—that they had risked their lives for four days and nights and that they had penetrated the farthest into the German position—all contributed to their inertia.

Colonel F. E. Bamford, the commander of the 16th In-

fantry, visited this composite unit during the late ... noon and gave directions for the relief that night. Se... officers left before dark to act as guides for the incoming units, and after leading the most advanced elements of the 15th Scottish Division to the vicinity of the sunken road joined the composite group for the rearward march. Then the march to the Cutry ravine! The few score men marched along the trails and heavily shelled roads calling out in the darkness, "16th Infantry this way," and the size of the column grew all the way back to the kitchen. Forty-eight men reported in to the kitchen of Company D where a hot meal was waiting for them. Twenty more men joined by daylight, some of whom were probably malingerers, while many had been fighting with other organizations.

The moral effect of having a bayonet fixed to the rifle.

The following statistical report gives the most accurate information as to the casualties suffered by Company D, 16th Infantry:

	Enlisted	Officers
Number on Company Rolls	238	6
Number at Jump-off	218	6
Non-Casualties	68	1
Casualties:	150—69%	5—83%
Killed	28—13%	3—50%
Wounded	97—44%	2—33%
Missing (including 9 captured)	25—12%	0

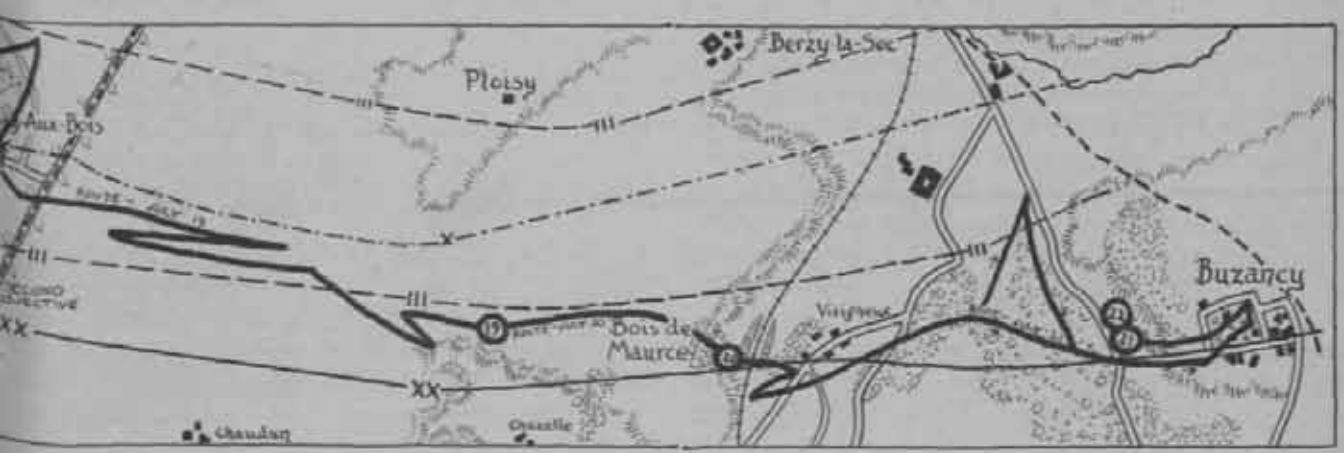
Analysis and Criticisms

The individual conduct of the officers and men of Company D, 16th Infantry, when analyzed in the cold light of technique, leaves much to be desired. Yet the training of this rifle company was certainly superior to, and its experience far greater than that of most of the companies which participated in the action. Moreover it is most likely that should the United States Army engage in future war, no unit will enter its first offensive engagement as well qualified to carry out combat missions as was this company.

A great deal of the essential combat training of the company was learned on the battlefield. The manner in which machine-gun nests might be reduced had formed a very minor part of their previous training. Battalion, regimental and higher unit maneuvers occupied much of the training period, and, while these could not have been neglected, the training of the squad, platoon and company in tactical exercises had been sadly neglected. The officers and noncommissioned officers had had little opportunity to make decisions for their respective units under assumed combat conditions. It was exceptional for such a unit commander to exercise command of the next higher unit, even under drill conditions. Then came combat—a large percentage of officers and noncommissioned officers were wounded in the early stages. Privates, first class, assumed command of squads (and frequently platoons) which they had never commanded even in close order drill. All along the upward scale of units new and untrained leaders stepped into command and for the first time were required to develop leadership under the most trying conditions.

It is well known that the last stages of combat are by far the most exacting, yet here we find the physical and mental state of the unit at its lowest ebb and most of the leaders are new except for their battlefield training. When we consider the above conditions it is hard to explain why even more mistakes were not made. Too much credit cannot be given to the noncommissioned officers and privates who, by their initiative, bravery, and loyalty, assumed command and led their men onward for five exhausting days. It is true that many grumbled at the hardships and it was hard for them to realize the necessity for the continuous forward push when the numbers in their ranks were so few.

Many men became separated from the company, either through accident or design, yet in no case did I see any



hesitation when the commander was willing to lead them forward—even though they knew it meant probable death.

The decision of the high command to withhold the artillery barrage and its reprisal fire from the enemy until H hour, met with the hearty approval of the officers of Company D. The advance to the jump-off was beset with enough difficulties, natural and human, so that little time elapsed between our arrival and the jump-off time. Most of the assault units probably would not have reached the jump-off line by 4:35 on July 18 had their advance been further hindered by artillery fire.

The decision of the company commander of Company D to continue in the sector of the 26th Infantry and partially fill the 800-yard gap between the 16th and 26th Infantry was basically sound. A gap of this size between brigades might have been proven disastrous had the front been normally garrisoned; and, as far as the commander of this unit was concerned, enemy reserves might have been encountered at any moment.

The actions of the commander of this company in requiring perfect lines to be kept during those portions of the advance when the enemy was not in contact, except by long-range machine-gun and artillery fire, followed sound troop leading methods. The psychological effect was as follows: the mental effort of the men to keep in alignment, while they were under heavy fire, and the secret amusement of the individual at his leader's idiosyncracies, made the element of personal danger of secondary importance.

The actions of the individuals of the companies, and the officers, in taking no prisoners in the initial stages of combat is difficult to explain. Such occurrences might be attributed to the dominance of animal instinct under these conditions, yet this battle action was characterized by movement against machine guns rather than against personnel. The appearance of the individuals serving these guns was anything but savage. There was a scattering of middle-aged men and pink-cheeked boys among them; yet the men of the company killed without the excitement of hand-to-hand combat — killed, apparently, for the pleasure of killing.

The rifle fire of this company, especially during the first few hours of assault, was very ineffective. A variety of causes may be advanced to explain this; the ranges estimated may have been greatly in error, due to inability to calculate space under combat conditions, with the accuracy of peace-time practice. Many men failed to set their sights properly and this may be laid directly to combat excitement. Finally, many men were observed firing without using their sights—jerking the trigger—or shutting both eyes before pulling the trigger. The rifle fire during the fourth and fifth day's advance was in direct contrast to that of the first day's. Ranges were shorter and the high-strung nerves had relaxed under fatigue from several days of excitement. In addition, the combat was essentially personal during the last phase of the advance, and the men knew that their lives depended on who got in the first well-aimed shot.

The breakdown of the medical service, both in respect to first-aid assistance and evacuation, placed additional responsibility on the company commander. The medical training of the company commander of this unit, although above average, was inadequate in many cases where men had lost limbs and bandages had to be improvised from undershirts and the like. The construction of emergency litters and splints and the application of the latter fell to this company commander during the numerous halts in the advance.

The unfamiliarity of this company commander with tanks and combined infantry-tank tactics resulted in these valuable aids being used only to a partial extent of their capabilities. The error of the captain on July 19 in mistaking the appearance of friendly tanks resulted in a disgraceful route and the shaking of the morale of the entire battalion.

The German defense of the first three days was characterized by echeloned machine guns. The method of the company commander, and later, Lieutenant Colonel Craig, in reducing these defense groups by patrols, was correct in that the patrols accomplished as much as the entire company could have done, and with much smaller number of casualties.

Lieutenant Colonel Craig was justified, as battalion commander, in personally leading patrols because it raised the morale of a shaken unit. During the first day's advance, when Company D was acting alone, combat patrols were commanded by noncommissioned officers, rather than by the company officers. This is believed to have been the correct action as the company was well under control and all officers were needed in the conduct of the attack of the company as a whole.

It is interesting to study the panic and route of the company and battalion on July 19, when the French tanks were mistaken for enemy tanks. Company D held its position until units in the rear began running away from the front. The movement, starting in the center of the battalion position, swept all in the rear into a fleeing mob. The sight of hundreds of men running, and the awesome words "German tanks" passing along the line, besides

Battle is an unending series of waits.

shells exploding and bullets cracking overhead, pulled everyone into the current of this stream and made them insensible to reason and deaf to commands. The knowledge that the battalion was powerless against tanks probably played a major part in the quick change of high-spirited veterans into frightened mob members. Officers who are in advanced positions when a unit breaks into panic are powerless to check it. If they remain in one position their sphere of influence is very limited; if they attempt to run to either flank or to the rear—such running seems to indicate to the men, who have held fast so far, that the officer is joining in the route and they too are engulfed in the movement. A group in rear of such a retreat is usually not actuated by the mob feeling of the fleeing band, and can readily check such a movement by forming a line upon which the unit can be rallied.

A diet of hard bread, cold canned beef, and water, is far superior to nothing at all, yet a steady diet of this type, over a period of five days, will not keep men in proper physical shape. The tension of days of combat interferes with digestion and the same unpalatable food, eaten meal after meal, soon loses all appeal—but is chewed up and swallowed to allay the empty feeling around one's waistline.

The liaison between the artillery and front-line troops was uniformly poor throughout the five days' fighting. One artillery observer spent about three hours with the battalion and then left. Several hours after his departure the American barrage fell several hundred yards to our rear and passed directly over our position. Apparently the forward observation posts were not close enough to the front to see the targets which were being fired at, as repeated "shorts" were not corrected. There was a general lack of confidence among the front-line troops in our own artillery. This feeling had developed during our trench warfare operations because of several unfortunate incidents, and no effort had been made to let the man in the assault wave know that the artillery was primarily interested in assisting him in his advance. Most of the men, and many of the officers, viewed the artillery as an allied arm, such as the Air Service, which had an independent mission. True, all knew that our artillery had a mission of helping the advance of the division, as a whole, but there was no feeling that the gun crews were trying to help the individual doughboy in the front line. (NOTE: This lack of coöperation and mutual appreciation was entirely remedied by the splendid support given by our artillery in later engagements.)

The moral effect of having a bayonet fixed on the rifle and ready to use, and the confidence of the individual in his ability to use it against any German, played a big part in the willingness of the assault line to close with German troops. The bayonet was used at various times throughout the operation, yet the writer has yet to unearth a single combat incident of bayonet use in which an aimed shot would not have been surer of results and of less danger to the individual.

The activity of salvage details in collecting arms and equipment before the wounded were removed from the battlefield is not creditable, either to the agency initiating such work, or to the details which used so little judgment when such conditions were apparent. The story of the activities of these salvage details was repeated and the facts enlarged upon with the result that many individuals came to believe that the higher headquarters valued equipment more than human lives. The effect of such tales on morale is not hard to imagine.

The tales which drifted to the front lines, of men lying where they fell—remaining there through the hot days and cold nights without food, water, or medical attention, and, perhaps worst of all, being alone and helpless through pain-filled hours—certainly did not inspire men to expose themselves to similar fates. The individual soldier cannot be expected to disregard these stark, ugly facts, because some link in the higher headquarters is not functioning properly. As soon as the individual soldier arrives at the belief that his officers—all the way up to and including the division commander—are no longer interested in whether he, personally, is hungry or not, whether his wounded comrades are worth caring for, then does his sense of loyalty to his higher command die and his fighting spirit take wings.

The surviving members of Company D were a silent lot. Any glamour of war, which might have been present, had been dispelled by their experiences. They were distrustful of all those who were in echelons of command in rear of actual combat areas. And the reasonableness of such a feeling can only be understood by those who underwent similar physical exhaustion and the ensuing mental depression of mortal combat.

LESSONS

The lessons to be learned from this company operation are mainly those dealing with troop leading. It is true that most, if not all, of the "recognized principles of war" were illustrated, either by their observance or violation, yet the successes and failures of this company were influenced more by the element of troop leading than by any other. Company, platoon and squad commanders, in the great majority of cases, had their missions assigned, or these missions were so apparent that no necessity for resolving them into their tactical possibilities were required. The principles of war may be used as a basis for discussion of certain tactical, troop-leading and psychological incidents. and several will be discussed under these classifications.

Movement. Tactically, there were no outstanding examples of the violation or observance of this principle.

In the troop-leading aspect, movement, as applied to a unit, means a certain loss of control by the company commander. The company commander must control his four platoons through their leaders and cannot hope to exercise direct control over a deployed company while it is under fire. Direction is difficult to maintain on terrain such as the Soissons area, where much of the advance was over broad fields of wheat. The company commander must physically lead the advance to be reasonably sure that

major errors are not being made and, too often, he finds that direction is still not maintained.

Movement, applied to individuals, will quite frequently afford a tense and apprehensive man a physical means to "let off steam." Personal danger is readily forgotten if the man is required to perform heavy labor. When an individual is inactive and shells are exploding near him he cannot push back the recurring waves of fear; he crouches and waits, and battle is an unending series of "waits," while the soldier is unoccupied.

Objective. The idea of reaching the company objective was firmly fixed in the minds of the entire company and this was often remembered at the expense of coöperating with neighboring units. The acceptance of the idea of the objective was due, primarily, to the desire of the men to get the allotted job done as quickly as possible, and they soon realized that by so doing they stood a better chance of living. Divisional, and other objectives, mean little to the soldier, for he seldom knows that the halting place of the company is an objective, unless he has been told that when a certain line is reached he will be through for the day, or for the engagement.

Simplicity. Most enlisted men, and officers too, cannot remember and execute any but a very simple order when in actual contact with an enemy force, or with enemy fire. A complicated plan for capturing a machine-gun nest will probably fail because someone is almost sure to forget part of the instructions when actually under fire. Plans which are models of simplicity and which give groups or individuals a concise and definite mission frequently fail for various reasons, but the liability of failure is greatly decreased when simplicity of plan and orders is observed.

Loyalty. The commanders of regiments and higher units cannot be expected to think of death and pain when committing troops to action. They realize that combat will result in the partial or total wrecking of a complex human machine, assembled through countless hours of drill, and they must experience sadness at the necessity for this damage. The commanders, referred to above, know the external appearance of the fighting machine, but do not always realize that its component parts are individuals —all cast in different mental and physical molds—each having an individual reaction to battlefield stimuli. These, as well as all commanders, should realize that morale and loyalty are not inexhaustible, and that the destruction of these forces seriously impairs the fighting power of the entire command. The officer who understands the fears of the newest private, who knows how he is affected by hunger, thirst and fatigue, who knows that the private soldier is not fighting for glory but is merely doing what he is told to do as best he can—that officer will know how much the soldier has to give. And the soldier, knowing he is understood, will gladly give all he has—even his life. Such is Loyalty.

Stupidity of the Military

By Colonel A. D. Chaffin,
Infantry

Mr. H. A. DeWeerd would probably have found a more prolific source for his denunciation of the "stupidity of the military" in the December number of the *American Mercury* if he had looked into some of our present practices in personnel matters, rather than denounce the faulty construction of 1914 British Naval armament. His criticism was nevertheless just.

We could remove much of it at the source, if we did not cling so faithfully to our rotation of duty detail system. For a more liberal policy would most certainly make for increased efficiency.

We now carefully select specially qualified officers for courses of instruction at engineering schools, other civil educational institutions, the Army Signal School, the tank and automotive course at The Infantry School, the Ecole de Guerre, and many another. All very reasonable, indeed! But at the termination of such courses we assign these officers to rifle or machine-gun units, or as post exchange officers, assistants to the adjutant, atheletic officers, or what not. And the government gets no return whatsoever from the specialty which took a year or more for them to acquire. Furthermore, they continue on these perfunctory details until they have forgotten their specialties, or lost all interest in them. This is all too often the result of our rotation detail system.

Why not make even more specialists but use them as such instead of wasting them? Why not be guided by the experiences of civil agencies? In short, why not give more concrete thought to the advisability of making fewer "jacks-of-all trades," and more really valuable specialists, qualified to render efficient service to the Army in at least one capacity?

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There is nothing *in this world as extravagant as an inefficient military establishment. There is no economy in a third-rate army. It should be first-class, or we shouldn't attempt a national defense scheme at all.*—Rep. James W. Wadsworth.

A Reconnaissance Car Kitchen and A Mess Kit Sterilizer

By Major Walter W. Burns, C.A.C., D.C.N.G.

"WHEN DO WE EAT?" This question has been asked by soldiers since the creation of armies. Next in importance to the men and more often of more importance to the staff is the question, "Where do we go from here?"

Since the World War, steady progress has been made by the automobile and truck manufacturers in improving both passenger and freight transportation. The army is now reaping the benefits of this development in the new trucks being provided. While the transportation has been improved, as to maintenance, ease of riding and speed, the question of "When do we eat—and how?" has become more important than ever, because means for feeding the men are hardly out of the horse-and-buggy age.

The writer, with his organization, the 260th Coast Artillery (AA), or with details therefrom, has covered over 5,000 miles of convoy training during the past ten years. Various means of cooking have been used, from the open fire to the kitchen trailer. Between trips the methods have been studied. With none of the methods provided by the Army has a satisfactory solution been found for providing a hot midday meal to a large number of men. This is particularly true where movement is contemplated in the afternoon, or where troops are scattered as the result of road breakdowns, or where antiaircraft equipment is put in position covering a large area.

In designing the kitchen described in this article, we profited by the experiences with the kitchen trucks made by the Q.M.C. for the Mechanized Force and those made by the 62nd C.A. (AA) and the 213th C.A. (AA), Penn.N.G. An attempt has been made to give the cooks (while on the road) all the comforts of home.

We have been collecting material for the kitchen for more than five years, mostly from salvage. The vehicle chosen was the White reconnaissance car because of the reliability of the motor and chassis and because the top makes a good covering for the kitchen.

The rear section of the reconnaissance car body was disconnected from the chassis and discarded. After overhauling the motor and transmission, a thin sheet-iron floor was laid from the rear of the forward two-seat unit to the position of the forward edge of the stove. Two 10-inch channel irons, 8 feet long, were then bolted on the frame so that the forward ends extended to the forward edge of the sheet-iron floor. A short piece of 10-inch channel iron closes the rear.

A standard trailer kitchen stove (1) was used. This particular one had to have several major operations performed by a drill, sheet iron and bolts, to prevent loss of the asbestos insulation between its outer and inner walls. A sheet of asbestos was bolted to the bottom of the fire box. The stove, when placed upon the channel irons, was reversed from its normal position, the smoke pipe being placed at the rear. The reconnaissance-car top was raised about 14 inches above its normal position, and a sheet metal plate connected to the forward edge was attached to the top of the windshield.

The stove was placed so that the smoke pipe would pass through the rear visor of the top, a portion of the canvas being replaced by sheet metal. New channel-iron uprights (1" x 2") were provided for the top and the same brackets used forward. The rear supports are bolted to the stove.

At the rear of the stove and supported by the overhanging portions of the 10-inch channels, a warming cabinet (2) was constructed of sheet metal and 1-inch angle irons. On the channel irons a floor of sheet iron forms the bottom of the warming cabinet and supports a 50-gallon hot water tank having a coil extending into the fire box of the stove. The top of the warming cabinet is sloped toward the rear, the forward edge being connected to the rear edge of the top, thus insuring stability of the top. Within the cabinet and at each side of the smoke pipe of the stove are two shelves which do not extend either to the middle of the cabinet or to the sides. This insures a proper circulation of warm air and uniform temperature throughout the cabinet. In Figure 2, at (3), one of the cabinet doors is shown in the open position and two field range boilers are in place. This keeps the food warm. The space is sufficient to hold four boilers or large bake pans, which keeps food warm indefinitely.

Forward of the stove and level with the top of the 10-inch channel irons is a metal floor that extends out over the rear wheels and along the sides of the stove and warming cabinet to form fenders for the rear wheels. Removable sections in the floor provide access to the oil burners which extend into the firebox.

On the right side of the vehicle, to the rear of the side door, is a kitchen-tool cabinet (4) constructed of wood and having condiment cabinets above and below. These provide storage space for materials necessary during the march. When open, the door (5) of the tool cabinet forms a bread-board, as shown in Figure 2.

The two oil burners are of the torch type, independently connected to a feed pipe from the pressure tank (6). Pressure in this tank is maintained by a pump which is a part of the tank construction. A release valve conveniently located to the driver's seat permits him to cut off pressure

Figure 1

to the burners in an emergency. The fuel may be any grade, from gasoline to heavy fuel oil. Kerosene and gasoline have been used with success.

The kitchen is provided with hot and cold running water with a direct feed to any container in the stove without the use of a bucket.

Connected to the trailer tank (7) is a rubber hose (8) which connects with a pipe on the truck. This pipe leads directly to a cold water faucet and has a branch leading to the hand pump (9). The outlet from this pump is connected through one branch of a Y-valve to the hot water tank filling pipe and through the other branch to a pipe leading up along the central top support to a short section of rubber hose conveniently stored, when not in use, in the top. By operation of the pump handle, cold water may be forced into the hot water tank or to the hose, depending upon the setting of the Y-valve. The end of the hose is placed in the kettle in which water is desired, and no water is spilled on the floor or on the stove.

A line runs from the hot water tank to a faucet adjacent to the cold water faucet already described. These faucets are shown (10) in Figure 2. An additional hot water faucet is provided on the outside of the truck for use in camp. The water pump was once part of the equipment of a horse-drawn water cart.

The ice chest, having a capacity of about five cubic feet, is located immediately in rear of the driver's seat; the top of this chest forms a convenient and satisfactory seat for the kitchen personnel.

Two lights are attached to the top for illumination of the kitchen. These receive gas from Prestolite tanks attached to the underside of the body on the right side.

As a safety precaution and protection for the cooks, the edges of the sheet metal floor are provided with a 1-inch angle iron and a safety strap (11), Figure 2, is attached to the top supports.

At the rear of the 10-inch channel frame, is installed a complete towing device assembly from a standard "B" truck. To this is connected the lunette of the standard 300-gallon water trailer.

It was found that the solid tires of the trailer were not adapted for the speed desired. To avoid this difficulty, four front wheels from a 1918 G.M.C. ¾-ton truck were substituted. These wheels make a very easy riding vehicle and cure, to a large extent, the weaving tendency of this type of vehicle.

A frame of 2" x 6" lumber covered by 1" boards was built to support the added equipment. An iron frame over the tank, with longitudinal slats, carries the spare tire (20) the tent fly (21), and the tent poles (22). Next to the uprights of the iron frame are carried two folding tables (23), each three feet wide and eight feet long. Three standard bread boxes (24) from the kitchen trailer are placed on one side of the platform while on the other side, the fourth bread box and the kitchen tool box are installed. In place of the seat is a rack for supporting two fireless cookers from the kitchen trailer. Forward of the fireless cookers and supported by steel rails and held in place by steel straps, are two of a new type mess-kit sterilizer; these have proved very successful and are described in detail in the following article.

On the rear of the warming cabinet are brackets for a shovel and an ax, the latter being useful in cutting wood for the sterilizer fire. There is space for carrying several boxes of canned goods on the trailer platform.

On the road with this equipment, a full hot meal may be ready for serving within 10 minutes after stopping. A truck which accompanies the kitchen carries a detail of men who set up the tables for use of the cooks in serving. Four 1" x 12" x 8' boards are also carried by the trailer frame and are used with the bread boxes as additional tables when needed. The K.P. detail draws hot water from the tank into the mess-kit sterilizers; in ten minutes this is boiling ready for mess-kits sterilization.

With a cold stove, all kettles half full of water can be brought to a boil in less than half an hour. After the stove is hot, one burner is sufficeint for continuous operation.

During travel there is plenty of room for two cooks to function in the kitchen compartments and in addition one or two K.P's can be employed in peeling potatoes. Side curtains are provided but are not shown in the illustration. Due to the fact that the stove is at the rear, a maximum amount of cool air is provided during travel. During cold or rainy weather the curtains completely enclose the interior of the truck, the heat from the stove keeping it warm and comfortable.

In case a stop is made in rainy weather, the trailer can be quickly placed in a position so that the tent fly may be stretched between the two for rain protection.

Due to the great overhang of the truck, the trailer will

safely turn any corner which can be turned by the truck.

From the nature of the material used, this truck kitchen is more or less of a makeshift, it has fully demonstrated the practicability of a truck kitchen having hot and cold running water. It admirably fulfills the kitchen needs of an organization of 350 officers and men, and is particularly useful in feeding men who may be scattered in groups over a large area.

A New Mess-Kit Sterilizer

The summer training period of the 260th Coast Artillery (AA) in July, 1934, was spent on the road. A march was made from Washington to Charlottesville, over the mountain pass at Afton, up the Shenandoah Valley, through a part of West Virginia and Maryland, and return to Washington. Included in the trip was a two-night stop (July 3-4) at Charlottesville, a two-night stop at Shenandoah Caverns, and a three-night stop in the George Washington Forest for tactical exercises. A new camp was made on an average of 1½ days during the training period.

For some time prior to this there was much discussion of methods to safeguard the health of the command, not the least being the matter of proper sterilization of mess kits while frequently changing camp sites. We were all familiar with the fire trench with its G.I. can of water that sometimes boiled, and also with the cans of boiling water put out at the end of each meal to cool and collect the germs for transmission to successive mess kits as the men passed down the line.

The regimental medical officer maintained that only boiling water could be considered a proper sterilizing agent and insisted that this be provided. After much discussion and many suggestions the sterilizer herein described came into being. That it served well its purpose is attested by the fact that the personnel was free from those disorders usually found where mess kits are not properly sterilized.

In the illustration are shown two sterilizers, one completely assembled for use and the other showing the component parts. A fifty-gallon oil drum was converted into a stove. At the bottom a square section was removed to serve as a fire door. Above the lower ridge, or rib, three iron rods were installed through the drum to support the water can, which consisted of a discarded grease can (100 lbs.) of the usual type with one end removed.

The top end of the drum is cut away on the side opposite the fire door leaving a section at the front of the drum to protect the hands and arms of the men from the hot gasses. The water can when in place extends about two inches above the upper end of the drum. Holes near the top of the water can serve as receptacles for lifting hooks and also as escapes for any grease which may collect on the water. Two rods were extended through the drum about two inches from the bottom end, to support the fire.

The above is a brief description of the sterilizer as first used. However it was found that occasionally a mess kit was dropped in the water can. While these mess kits were well sterilized, it was necessary for the men to be present when the can was emptied to retrieve their lost property.

To avoid this difficulty, an expanded metal waste basket was provided. These baskets (cost $.35) have a sheet metal bottom that was perforated to permit ready escape of the water when the basket is raised. With the basket in the water can, as shown at the right of the illustration, it is only necessary to lift the basket by its chain to recover articles of mess gear.

Three of these sterilizers were used for about 300 men. They were arranged in a line spaced at a convenient distance. One K.P. was detailed to attend the fires and to add water when necessary. The first sterilizer is filled with soapy water and the other two with clear water.

Since gasses surround the sides of the water can as well as contact the bottom, the water may be brought to the boiling point in about 15 minutes. By drawing hot water from the tank on the truck kitchen, the time of producing boiling water in the sterilizer is reduced to a few minutes.

Standing orders require that all mess kits be sterilized on the way to mess as well as thoroughly washed after the meal. In this way, if it becomes necessary to feed widely scattered groups in the middle of the day, we are able to have all mess kits sterile prior to the evening meal. This before-meal sterilization of mess kits is made possible by the fact that the entire surface of the water can is exposed to the heat of the fire, and the time necessary to bring the

Figure 2

Figure 3
A New Mess Kit Sterilizer

water to the boiling point being reduced by starting with hot water from the truck kitchen.

Aside from its efficiency, the great advantage of this sterilizer is that it cost so little. The oil drums and the grease cans are available at any garage or salvage plant. While rods were used to support the water can, half or three-quarter inch pipe may be used. The only real cost is the basket and this may be made of scrap material if desired.

In later models not so much of the end of the oil drum is cut away, and in the latest model the water can is moved close to one side of the drum and a stove pipe installed on the opposite side. Whether these will stand up under service conditions is not yet known. However, the type illustrated does perform very well and solves one of the serious problems of mess management during field service.

Officers and Service Schools

By Major R. T. Pendleton, C.A.C.

THERE was a time when most officers worried little about going to schools. A few of the ambitious may have made special efforts to get to all of the service schools as soon as possible, but the vast majority went as a matter of course when they received the detail. Things are vastly different now. A very large number of officers appear to be in a constant turmoil about getting to some school. The younger lieutenants are worrying about a detail to the Coast Artillery School; another group of first lieutenants, captains, and majors who have not been to the Command and General Staff School are in a stew about going at the first opportunity; and the graduates of the Command and General Staff School are doing everything possible to get to the Army War College. It may be a most commendable thirst for knowledge. It may be only a desire to be on the General Staff Eligible List and have the notation in the Army Register that the officer is a graduate of this, that, and the other school. The existence of the "eligible list," and the fact that graduation from the schools is demanded for certain details (and helps greatly in obtaining many others), are rather compelling reasons for desiring to go to the schools. A brief discussion of the situation facing aspiring Coast Artillery Officers today may be of interest to many.

First, let us take a look at the Coast Artillery School. The "Advanced Course" and the "Battery Officers' Course" were combined at the beginning of the present academic year, due to decrease in the number of officers allowed to attend special service schools. Some ten years ago, when the writer was in the Advanced Class, that class consisted of 35 students, while 46 were in the Battery Officers' Class and several in the Advanced Engineering and Gunnery Classes. At present we are allotted a quota of only 38 students at special service schools. Students at civilian educational institutions, at the special service schools of other arms, and in the Advanced Technical course come out of this quota. There are now 33 students in the Regular Course, two in the Advanced Technical Course, one at the Air Corps Tactical School, and two at universities.

There is at this time a group of 239 officers, below the grade of major, who have not pursued a course at the Coast Artillery School. This is the group from which officers are selected for detail as students in the regular course. This group includes all second lieutenants, a number of first lieutenants, and only a very few captains. It is decreased annually by approximately 33 (the present authorized number of students), and it is augmented by 30 or more officers commissioned in the Corps. It is evident that under existing conditions the status quo will be maintained. We can send every officer to the school, and the chances are that it will be between his sixth and tenth year of service. Selection is not on a competitive basis. Every officer is supposed to go to this school. In making selections, preference is given to the higher ranking officers as they become available. An officer well up on the list of first lieutenants who has not been to the school may expect to go when he is due for a change of station. Foreign service and the mileage involved in details to the school are factors which must be considered. For instance, provided other factors were equal, an officer serving at Fort Monroe might be selected in preference to another serving elsewhere in order to save an extra move.

The situation in regard to the Command and General Staff School and the Army War College is vastly different. Direct supervision and control of these schools are vested in the Secretary of War, such supervision and control being exercised through the Chief of Staff and the

agencies at his command. He issues directives to the chiefs of branches prescribing annual quotas for the various arms and services and qualifications which must be met by prospective students. In accordance with these directives, the Chiefs submit their selections to The Adjutant General. The records of these officers are then most carefully checked by The Adjutant General and the Assistant Chief of Staff, G-1. Records of all other officers who have expressed a desire to attend these schools are also checked, and changes in lists submitted by chiefs of branches are not infrequent. The list finally approved by G-1 is at last submitted to the Chief of Staff. He may make additional changes before final approval. It should be emphasized that all this work is most carefully and conscientiously done with a view to selecting those officers whose records indicate that they are best fitted to pursue the courses.

From 1920 to 1928, selection for the Command and General Staff School was not on the competitive basis it is today. The one year course was in effect during a large part of this time and the Coast Artillery had a large quota, reaching a maximum of 41. Practically everyone with a good record could be reasonably sure of going at the proper time. Then the situation changed abruptly. The course was changed to two years and the Coast Artillery quota of students was cut to ten or eleven. Worst of all, the large group of officers commissioned during the World War, the so-called "hump," was just reaching the age and grade to qualify for the C. and G. S. School. The result is that we have at this time a group of 501 officers (43 majors, 185 captains, 273 first lieutenants) who fulfill all the requirements of the last War Department directive prescribing the qualifications of students. Many of these officers are approaching the maximum age limit of 48. Furthermore, the group is constantly increased by new blood coming in from the bottom. With the existing quota, not more than approximately 25 per cent of the officers in this group would ever get to Leavenworth. But the picture has a bright side. The class to enter the school at Leavenworth in September, 1935, will have a one year course. In June, 1936, two classes will graduate; the two year class of 1934-36, and the one year class of 1935-36. Then in 1936, a large one year class will enter. Our quota will be doubled, and so will each individual's chance of being selected as a student.

Now for the Army War College. There are 36 lieutenant colonels, 79 majors, and 22 captains who fulfill the requirements of the last directive which prescribes qualifications for students. The lieutenant colonels and many of the majors are rapidly approaching the maximum age limit of 52 years. About 75 per cent of the entire group are more than 44, and the directive prescribes that at least half of those selected must be under that age. Our quota for the next class was first fixed as seven, the same as it had been for the previous two years, and was later raised to nine. It is quite evident that many must be left out in the cold permanently, for remorseless time overtakes them, and each year the list of eligibles is increased by the names of those officers who graduate from Leavenworth and are put on the General Staff Eligible List.

It may be of interest to know just how the list for the next War College class was prepared in the Office of the Chief of Coast Artillery. (Incidentally, the Leavenworth list was made up in exactly the same way.) When the directive was received from The Adjutant General's Office, a list was made up in the personnel office containing the names of all officers who fulfilled the requirements. Then the names of all officers on foreign service and not due to return prior to the opening of the War College were crossed off. The next step was to divide the names into two groups, those who would be between 44 and 52 years of age on September 1, 1935, and those under 44. Efficiency records were then examined, and the names of those whose records were clearly not among the best were crossed out. The Chief himself passed on all names so eliminated. By this process of elimination a group of about 25 names was selected for final consideration. For each of these officers, a card was made up containing an abstract of his entire efficiency record. The cards did not disclose any names, merely a key number for identification. These cards were submitted to a committee of three officers on duty in the office with instructions that each officer would arrange the cards in each group in order of merit. The top five in the group above 44 and the top four in the other group were those finally selected. In most cases, the opinion of the committee was unanimous as to which records were best. In one or two cases, there was some disagreement between members of the committee, but final decision was not very difficult. This certainly constituted a sincere attempt to make the selection impartially. No one is able to say that the best men finally were chosen, but it can be said that those chosen had the best War Department records.

One last thought occurs to me. Every year the War Department receives many official requests from officers to be designated as students at the General Service Schools. Many letters of recommendation from general officers, congressmen, and even cabinet officers are also received. I have been frequently asked whether such letters do any good. Certainly they do no harm, but I do not believe that they help. If you are good enough to make the grade, you will make it anyhow. If you have any chance, you may be sure your name will be considered. If your record stacks up with the best, you get the detail; if it does not you should not expect to beat out someone else who has a better record. So why worry?

Training for the Trophy

By Captain Lewis A. Hudgins, C.A.C.

If you expect to go places, set yourself a definite objective. This statement may seem trite, a self evident truth usually is, but its importance in National Guard training cannot be minimized.

Three years ago the 198th Coast Artillery (AA) set for its objective the winning of the Coast Artillery Association Trophy.* The value and desirability of such an objective is readily apparent from the conditions surrounding the award; its attainment insures a high standard of proficiency in every phase of training.

The elements which enter into the award of the Trophy are so varied that it is not possible to say that one factor is of supreme importance unless it be that of coöperation. Since this is an intangible thing, no attempt will be made to enlarge on this statement.

Attendance at armory drills has a direct bearing on the award of the Trophy, but of even greater importance is the fact that you cannot train men unless they are present at drills. The problem of stimulating and maintaining a high average of drill attendance has been given constant attention by all the officers of the Regiment. A competitive spirit has proved helpful, and this is encouraged by the monthly award of a trophy to the organization having the highest percentage of attendance. One of the provisions governing this award is that no organization may receive it for two consecutive months. A separate cup is awarded the organization having the highest attendance for the year.

Individual attendance is rewarded by the presentation of a bronze medal to each man who has perfect attendance during the calendar year. For each succeeding year of perfect attendance a bar is awarded. Since the inauguration of this award in 1931, 83 medals were presented the first year; in 1932 the presentations numbered 124 medals and bars; in 1933 the total increased to 135, mounting to 170 in the year just ended. Thirty-three members of the organization have perfect attendance records for the entire four years.

We now come to the actual training methods employed. No spectacular ideas will be set forth; nothing has been done that is not believed to be fundamentally sound. If there is any formula here it can best be exemplified by the term "thoroughness." Since each National Guard organization has different local problems, an attempt will be made to outline training phases and methods which should have general application.

The first step was a thorough analysis of the requirements, and the allotment of time to the various phases of training. The Corps Area and Coast Artillery District Training Directives were studied in detail, and from this analysis a Regimental Training Program was evolved. This program is sufficiently comprehensive to make clear the requirements for all subordinate units; it avoids those details which very properly should be left to the initiative of subordinate commanders.

The regimental program covers the entire training year and is published to the command about 60 days before the start of the period. Based on the regimental program, the battalion commanders and the officer designated to supervise Headquarters and Service Batteries each draw up a program, which are necessarily more detailed than the regimental program.

Battery schedules are drawn up monthly and are submitted 20 days before the beginning of the period covered. This permits a careful check and any revision that may be required.

The National Guard training year divides itself naturally into four periods. In the first of these, attention is devoted largely to general military subjects, including the instruction of second-class gunners. The second period is concerned largely with preparation for Federal inspection. During this time unit instruction is emphasized and group instruction in artillery subjects is undertaken. The third period has for its main objective the preparation for camp. During this time the maximum effort is devoted to artillery training and the development of the battery in teamwork is stressed. The culmination of the training year is the annual field training period.

The requirements for each of the periods outlined must be carefully studied and concisely set forth. The ultimate schedules based on the programs described above must be well thought out, and adherence to them must be exacted through constant and intelligent supervision.

Because of the more varied demands in the training of gun batteries, certain special phases of that training will be discussed first.

Individual instruction in basic subjects is the principal feature of the first period. Thoroughness is insisted upon at this time, and is assured by constant supervision.

During the second period individuals are assigned and trained in specialized artillery duties. Every effort is made to have recruiting completed before this phase is reached. The first problem is the selection of the men for the key positions in range sections and gun crews. Alternates are selected at the same time, as unforeseen changes in personnel are sure to occur. During this period, men who are obviously unsuited for the selected positions are eliminated. Each man is given as much personal attention as possible. The greatest care is taken to see that no man gets into the habit of performing any operation incorrectly, since bad habits are difficult to overcome.

Frequent changes are made on the accuracy of setting and reading elements of data, and where voice transmission is used special attention is given to the ability to transmit and receive accurately.

With the completion of the second period, begins the

*The 198th Coast Artillery (AA), Delaware National Guard has attained its objective.

active preparation for camp. Now the development of the artillery team is given primary consideration. Not all the time is devoted to artillery, of course, but every available moment is utilized in this way. Careful planning is necessary to avoid monotony; each officer and noncommissioned officer is required to be thoroughly prepared in advance, and well grounded in a subject before undertaking to instruct others.

The visual spotting section, with the necessary recorders, is made up from Headquarters Battery. This serves a double purpose; it gives the organization a place in the artillery team, and it releases needed men for service in the gun batteries. The training of this section has been facilitated by the construction of a simple spotting device. On a piece of wall board about three feet wide and four feet long, is painted a representation of the antiaircraft tow target. Nine flashlight bulbs are mounted on this frame and so wired that any one may be illuminated at will. With the spotting instrument directed on the target different lights are flashed briefly, the readers call out the observed deviations which the recorders enter on the proper forms. The accuracy of these readings may be checked by the officer in charge. Variations in readings are effected by changing the distance of the board from the instrument.

Care of matériel has played an important part in the success attained in target practice. Where M-1918 guns and R.A. Correctors are used, matériel failures are to be considered the rule rather than the exception. Although an Ordnance machinist is usually present at camp, it is by no means certain that he will be intimately familiar with the particular matériel being used, and it is most unlikely that all necessary spare parts will be at hand. As an instance of this, it may be mentioned that all three R.A. Correctors assigned to this organization went out of commission on one morning. Two could not be repaired as they had broken ribbons and no spare parts were available. The third instrument required a major operation and it was necessary to complete all record firings with only one instrument.

The preparation of the camp schedule is of the utmost importance. It was devised to take full advantage of the time allotted and still be sufficiently flexible to permit changes necessitated by adverse weather conditions or other delays. Emphasis was placed on artillery training in accordance with the regimental commander's policy.

All possible preparations were made in advance of the arrival of the regiment in camp. Gun positions were selected and prepared; the base line was surveyed and instrument positions marked out. Each officer and noncommissioned officer in charge of a detail knew what was required of him and could go ahead without supervision.

The most favorable utilization of the limited supply of ammunition was a problem for the battalion staff and was worked out prior to camp. Simulated drills and drills with dummy ammunition do not take the place of actual firing. Preliminary firings were of short duration, these furnished excellent opportunity to discover and correct errors, both matériel and personnel. As a matter of routine procedure all guns were checked each morning for accuracy of levelling and were then carefully boresighted. Breech and firing mechanisms, recoil cylinders and elevating and traversing mechanisms, were checked daily before firing. Prior to record firing, the orientation of each gun was carefully checked to prevent errors due to slight displacement.

Daily critiques were held during rest periods and at the conclusion of drills, to point out errors and to emphasize the importance of attention to detail.

No special equipment was used except in the data transmission system. The lateral, vertical and fuze readers, were provided with breast transmitters, leaving both hands free. The phones and communication lines were supervised by the Combat Train and the best comment on their work is that no appreciable delay was experienced at any time due to faulty lines or phones.

No special methods were used in fire control or adjustment. Where courses were long enough, full corrections were made on the lateral and vertical speedometers of the R.A. Corrector. Adjustment in range was also made on the R.A. Corrector in units of 50 yards. In general, the preparation of fire was found to be good and few corrections were ordered.

Records of preliminary firings were kept in the same manner as for record firings, and these were turned in each day for analysis. The possession by this Regiment of a complete and very practical set of plotting equipment, as reported in the COAST ARTILLERY JOURNAL of January-February, 1933, contributed greatly to its success in target practice.

The complete analyses of record firings were made by the officers of the firing batteries and it is felt that this procedure is of great benefit to the officers concerned. The lessons which had been learned in previous years through analysis of practices were very helpful in making clear the best methods to improve the practices last year.

The problem of the machine gun battalion differs very much from that in the gun battalion. During the armory training period every effort is made to give each man an intimate knowledge of the machine gun, but of course nothing can take the place of actual firing.

As in the case with the 3" guns, great care is taken to see that matériel is in the best possible condition. The guns issued to this regiment have, with few exceptions, been in use since 1922. As a consequence they show signs of wear, and only the most careful adjustment makes it possible to maintain the prescribed rate of fire.

Stoppages, even though promptly corrected, have a disastrous effect on the score, since they not only reduce the rate of fire, but result in loss of hits while the gunner gets back on the target. To eliminate this trouble as far as possible, every round is carefully examined by hand and all defective or doubtful rounds are rejected. The importance of this inspection cannot be over emphasized.

No unusual method of fire control was used for machine guns, adjustment having been made by individual

tracer control. While this method is subject to much and sometimes heated debate, it appears at the moment to be the most reliable method for training of the National Guard. This is particularly true where full advantage is taken of preliminary firings to select gunners showing the greatest proficiency.

Ground firing is used to familarize the individual with the actual functioning of the gun, its adjustment and the correction of stoppages. The maximum possible use is made of balloon firings, as it is believed that through such firings individuals of special ability may be selected. In addition the gunner gets the "feel" of the gun on the antiaircraft tripod, and becomes mechanically proficient in the reduction of stoppages and resumption of fire at a moving target. It is also believed that balloon firing is of more value than is sometimes conceded in training the gunners to direct their tracers at the desired point.

A series of careful tests were made on discarded tow targets, to determine the best method of painting bullets. After trying various paints, it was found that ordinary printer's ink gave the best results. The colors used were red, blue, green, yellow and brown. These inks are about the consistency of axle grease and are best applied by using the fingers and coloring the tip of the bullet to a point just in front of the bourrelet. By the use of painted bullets it was possible to have five gunners fire on each target and to select those showing the greatest proficiency.

Of special benefit to the conduct of training was the selection of gun and machine gun positions, so located that firing at towed targets could be accomplished simultaneously from both points.

As was the case in the gun battalion, the analyses of the practices were accomplished by the officers of the firing batteries. It is believed that this proved very helpful in making clear the various terms of the scoring formula and in pointing out the way to better results. The fact cannot be disregarded that where scores are computed according to a formula, the firing must be conducted with this formula clearly in mind if the best results are to be obtained.

An example of this may be found in considering the 'h' factor. It will readily be seen that a better score will result from 100 hits in 2,000 rounds than from 150 hits in 3,000 rounds. Further study will show that if 100 hits are distributed uniformly over five courses the score will be better than such a distribution say, as 5, 10, 20, 30 and 35. While other factors will influence the distribution of hits, it is readily apparent that an equal distribution of rounds per course is the one most likely to give the best score. It follows from this that guns must be in the best possible condition so that the battery commander can be sure he will get in the minimum number of rounds prescribed while dividing his fire equally among five courses.

Of course the ideal conditions were never attained in any practice, but working with these points in mind undoubtedly contributed to the excellent scores obtained.

Although it was impossible to hold a searchlight practice, the training of this organization was not neglected, and it is confidently believed that if the opportunity for a practice arises, it will be carried out as creditably as were those of the guns and machine guns.

The special units, Headquarters Battery, Service Battery, Combat Train and Battalion Headquarters Detachment of the Machine Gun Battalion, performed their appropriate duties in a manner that was in keeping with the showing made by the firing batteries. In addition to furnishing a spotting detail, Headquarters Battery also supplied a well trained panel section and operated a Regimental Message Center and a radio station. The Service Section of Service Battery handled and distributed supplies in a very commendable manner. The Band Section was a great help in maintaining a high state of morale. The Combat Train handled all Gun Battalion communications details and handled and supervised ammunition distribution. Headquarters Detachment, Machine Gun Battalion, operated the Battalion Message Center, furnished timekeepers and recorders, and determined and recorded ranges for use in analysis of practices.

Too often neglected in accrediting successful target practice results are the officers and men of the Air Corps. It is desired to say here that no other factor contributed more largely to the fine results than the highly efficient coöperation of a detachment of the 119th Observation Squadron, New Jersey National Guard.

Capably commanded by the late Captain John A. Carr, no task was too onerous for them to perform cheerfully, and through long hours and under adverse conditions, they carried out every desired mission. It was found to be of particular advantage to have two towing planes flying different courses at the same time. This permitted concurrent firing by the 3" guns and the machine guns.

Among the general factors which have proved important in furthering training, has been the conduct of schools for officers and noncommissioned officers. The situation which places the entire gun battalion in one town, has made it possible to hold regular school sessions, and it is felt that much progress has been made through this medium. A separate school is held for staff officers and particular stress is placed on their specialized duties.

For officers of the machine gun battalion, it has been necessary to rely largely on correspondence courses, and while this is held to be less desirable than the conference type of instruction, its benefit should not be minimized.

A full realization of the peculiar difficulties incident to a plan of training for any National Guard unit should be kept constantly in mind by the Regular Army Instructor on duty with the organization. Both instructors now on duty with this Regiment served with it previously when it was first organized as an antiaircraft unit. As a consequence they have avoided setting objectives for the Regiment which were not within the limitations of time matériel and personnel.

Three years ago the 198th Coast Artillery (AA), Delaware National Guard, set for its objective the winning of the Coast Artillery Association Trophy. The objective has been attained.

Antiaircraft Records

By Lieutenant H. F. Townsend, C.A.C.

THIS discussion deals solely with the visual system of obtaining records for AA firings. If camera records are to be used, this same detail would probably function in addition to the camera detail, due to the limitations of the camera under unfavorable weather conditions. If the firings are very important both systems undoubtedly would be used. To work the system properly the following detail is necessary:

1 Officer in Charge.
3 Observers.
  Two at the battery (0′), (one for high and lows, one for rights and lefts).
  One at the flank (0″), (for overs and shorts).
3 Trackers.
  Two at the battery.
  One at the flank.
10 Recorders.
  Four for the readers.
  Three for the observers.
  Three for the chronograph.
2 Telephone Operators.
  One at the battery.
  One at the flank.
1 Crank turner for the chronograph.
1 Time-keeper at the battery.
4 Readers.
  (2 angular height), (one at battery, one at flank).
  (2 azimuth), (one at battery, one at flank).

Total 25

This detail will handle the following equipment:

3 BC (AA) telescopes.
3 Stop watches.
1 Chronograph, home made.
11 Telephones, with wire for proper connections.
Flashlights (at night) for all recorders.
Pencils, blank forms, board (equipped with rubber bands or thumb tacks) for all recorders and for the officer in charge..

The Officer in Charge of the records section is directly responsible that the proper records are taken for all antiaircraft target practices (guns, machine guns, and searchlights). He must familiarize himself thoroughly with the regulations pertaining to antiaircraft firing (TR 435-55). He should see that all members of his detail are trained, properly equipped and in their places at the proper time. He should obtain the orienting data for his detail. He should maintain close liaison with all organizations for which he will record and must remember that he is to aid the firing troops in every way possible. He must remember that his section writes the history of the work performed by the firing outfits in peace time and that their labor and ammunition are virtually wasted unless he obtains accurate records. Before any firing takes place he should see that the data obtained from an actual plane in flight are plotted in order to test the accuracy of his detail. After the firing he must collect all records of the firing and check them while the details are present. This latter is very important as many irregularities in the records, such as a mix-up in courses, wrong time intervals, incorrect headings, etc., can be corrected easily on the spot while it would take hours of labor later (if it would be possible at all) to rectify these mistakes.

The observers must be of the highest caliber obtainable. It is more satisfactory to have officers than enlisted men on this detail. If one or two guns are firing, enlisted men generally can handle the job very well; but with three or four guns firing it is doubtful if one enlisted man out of a hundred has the mental qualities necessary for the position. Training is the all-important factor. Pick the best man available and *train him thoroughly*. A well-trained enlisted man is better than the average officer without training.

The observer must be trained to spot the projectile the instant it bursts, since the relative positions of the burst and the target are changing so rapidly that a fraction of a second's delay in spotting will make several mils error in the spot. The rule in all antiaircraft spotting is to catch the flash of the flame in the bursting charge and not the smoke.

The flank spotter should be in charge of the flank detail. He maintains discipline, sees that the tracker's instrument is properly set up and oriented, and enforces orders of the Officer in Charge of the records section.

The three trackers operate the BC instruments. In many cases the regular BC instruments are not available and improvised instruments must be substituted. Accurate work can be done with the latter, but experience indicates that more accurate work, with fewer personnel errors, results from the use of BC insttuments. The trackers set up, level, and orient their instruments on the data furnished by the Officer in Charge, reporting to him when ready for drill. During the tracking period they keep their instruments on the target unless the command "Cease Tracking" is given. The men manning these instruments must possess considerable manual dexterity to become good trackers.

The four readers take the angular height and azimuth of the target from the flank and the battery, one reading of each being taken from each position.

No special requirements are needed for the recorders except the ability to write legibly and quickly as data comes regularly at five second intervals, and in the case of spotting, much faster than this.

Any men with reasonable preliminary training are satisfactory as telephone operators. The operator at the flank should be able to handle a stop watch in addition to his telephone.

The crank turner on the chronograph is the one man of the detail who needs no especial qualifications. An electric motor will do the job more satisfactorily than a

man, but since any man can handle it, the trouble and expense of making a mechanical device to turn the chronograph is not warranted.

The time keeper is not essential to the detail, but experience indicates that things run more smoothly if he is used. This man merely calls out the time intervals to the telephone operator and the details at the battery. The telephone operator could run the stop watch at O', but if he raises his voice sufficiently for the detail at O' to hear, the telephone operator at O" has difficulty in understanding him.

The Records Section should be drilled daily for a considerable period prior to taking the field in order to insure smooth and orderly team work.

When using men who are entirely unfamiliar with the instruments and the duties of the records section, it is believed they should be trained for at least a month in order to insure good team work and smooth functioning under the stress of target practice. An hour a day, four days a week probably is the best way to utilize this month.

The first training period should be used to explain to the men the idea of the whole set-up, the reason for the records section, the instruments used, what data is obtained and how, which men do what jobs, and so on. It appears to the writer that if the men fully recognize the importance of the work they are to perform, a much better job will be done than if they do not know what it is all about.

After the first period, a miniature plane should be mounted on an overhead track, so that the trackers can get the feel of their instruments and become manually dexterous in the use of them. At the same time the observers, if enlisted men, should be training on some sort of a home-made affair to pick up quickly and call out spots. A blackboard ruled like the markings seen in the field of an observing instrument, and a stick with a white spot on the end of it, which can be held against the board to represent bursts, is a satisfactoty set-up. Probably the best training for the spotters is to observe through an instrument at a horizontally moving vertical strip of paper with dots on it to represent bursts. The paper is moved from under a strip of board or metal whose edge is serrated so that the observer cannot tell where the bursts will appear.

The fixed board or metal strip has a target painted upon it, at which the cross hair intersection of the observing instrument is pointed. The whole device is set at a fixed distance from the observing telescope and a record made of the spots as they appear so that the observer can be accurately checked. An arrangement such as described above, if correctly made, will approximate closely the conditions seen by the observer during anti-aircraft gun target practices.

The trackers and observers, if the latter are enlisted men, should be thoroughly drilled in their duties. If the observers are officers, they should be trained until they can spot confidently and accurately for the firing of a four-gun battery.

During this period the trackers should be carefully schooled in the proper method of orientation. Probably by this time the orienting data have been computed for the particular set-up to be used, so that the data can be written in pencil on the telescopes of the various instruments. These pencilled data are frequently very valuable since they are seen at the place where they will be used and there is no danger of losing the record.

The readers should be trained an hour a day during the last two weeks of the training period. They should be trained until they can read accurately and instantly.

During the last two days of the training period, all members of the detail should be present and perform their assigned duties. The trackers should track on the miniature plane, spotters should call out fictitious spots, recorders make the proper records, time-keeper give the proper times, officer in charge of the detail start the time as he will in actual firing, chronograph detail make the proper entries from the fictitious spots, and so on.

Upon taking the field, the detail should have at least two drill periods before any firing is done. These periods need not be more than half or three-quarters of an hour long, after the men and instruments are in position.

The first period should be devoted to testing all telephone equipment, checking orientation points, and orienting the instruments. If possible, the officer in charge should go to all instruments of the section and personally see that they are properly oriented, set up, and in working order.

The second period should be devoted to actually tracking a plane with the observers calling out fictitious spots. This drill should be conducted as though the battery were actually firing.

As soon as the second period ends, the officer in charge should collect and check all records. The records of the path of the plane should then be checked either with Lewis charts or by plotting to test correct functioning of the detail. This is the only real check that can be made before any firing takes place. The writer believes it is better to use a plot of the track of the plane than to use the Lewis charts to check on the detail, as it is easier to pick out errors in orientation, errors in time, and mistakes in decimal points from a graph than from a series of numbers. At this point, the battery commander who is to do the firing probably will want a check on his altemetric system, which data can easily be taken off the plot or from the data obtained with the charts.

If the data obtained from the charts or the plot are logical and smooth, the records section probably is ready for the firing. However, if the altitude varies a great deal when the plane was obviously on a horizontal course, or the speed of the plane is not approximately correct, or the time intervals are off, it would be advisable to hold another drill with a plane before starting to record for firing. It should be easy to correct mistakes with data obtained from the previous day's tracking.

When the target is on its course and the battery is ready to fire, the officer in charge of the records section

assigns the target to his detail in advance of the time when the target is assigned to the battery. This gives the trackers time to get on the target and track smoothly before experiencing the distraction due to a battery going into action. Care must be exercised by the officer in charge not to start the tracking so long in advance of the firing that the men become unduly fatigued before it takes place. However, they should be well settled in their duties by that time. When the battery is on the target and is about ready to commence firing, the officer in charge starts the record section taking data. The regulations prescribe that he will command "STAND BY FOR TIME ZERO, READY, TAKE." This is very satisfactory when using a detail of men from an antiaircraft regiment. However, when using men from a seacoast regiment it has been found more satisfactory to command, "NEXT TIME, TIME ZERO, READY, TAKE."

At the command "TAKE" the officer in charge and the time-keeper who is near the telephone operator at O′ start their stop watches. The telephone operator repeats the command over the telephone to O″, who in turn repeats it to the members of the detail at O″ and starts his watch. This latter stop watch is not absolutely necessary, but it serves to keep O′ and O″ synchronized in case the "time" line between the two should go out during the firing. At ZERO time no reading is taken, but at the time FIVE (five seconds later than ZERO) the azimuth readers at both O′ and O″ read the azimuths, as do likewise the two angular height readers. The figures announced by the readers are copied by the recorders in the proper space, one recorder standing beside each reader. From this time until "CEASE TRACKING" is given *by the officer in charge of the records section,* the readers read and the data are recorded each five seconds. The command to read ("READY, TAKE") being taken at O′ from the time keeper and at O″ from the telephone operator.

As soon as the first shot is fired, the officer in charge watches the target and when the shot bursts he records the time of this burst. For this purpose he should have a stop watch with two hands, so that one hand can be stopped at the first burst and the other hand stopped at the last burst of the course or series of shots. This latter time is recorded, and with the time of the first burst becomes part of the permanent records.

As the shots burst, the spotters are watching for them and immediately call out their sense and magnitude. One spotter takes highs and lows, one rights and lefts, and the third (from the flank) overs and shorts. The highs and lows, rights and lefts of course are spotted from the battery (O′). Each spotter holds a telephone in his hand and calls the spots loud enough to be heard over the phone as well as by his recorder who is standing beside him. It is important that a recorder stand beside each spotter and record for him, even though the chronograph detail takes the same data. Telephone communication is not always reliable and data may be misunderstood over the line; consequently it is far safer to have a recorder standing beside the spotter. In case of any doubt as to the correctness of a spot, the record of the man standing beside the spotter is apt to be more reliable than the data at the chronograph.

The chronograph should be located at some sheltered spot away from the noise of the battery firing. It has three telephones running to it with a man on each phone. At the first shot the crank operator starts turning the crank slowly and as the data comes in, the three recorders (one for highs and lows, one for rights and lefts, one for overs and shorts) put it down *as it comes in,* each recorder writing his data down the instant he hears it regardless of the other two recorders. Since the paper is moving these data give a record of the shots that enables the person analyzing the practice to tie together the various spots telling which right or left goes with which high and low, and so forth. Thus if one of the spotters loses one shot the chronograph immediately shows to which spot the lost shot belongs. Some chronographs are arranged with a scale to represent the magnitude of the spot, but it is considered better practice to use numerals for recording magnitude while the sense is indicated by placing such numerals to the right or left of a center line, thus showing graphically whether the shot is right or left, high or low, or over or short.

After each course, it is advisable for the officer in charge to check the time intervals recorded at O′ and O″. Frequently they are off and sometimes this can be adjusted if handled promptly, while ten minutes later it would be impossible to straighten it out.

Just as soon as the practice is over, the officer in charge must collect and check all records and see that they are properly executed. He must require the recorders to sign them and assure himself that the form headings are properly designated. Failure to do this before the detail is dismissed is very apt to result in the loss of important data.

As soon as the records are checked, the officer in charge should go to the chronograph, while the detail is still at the machine, and take the data from it. The chronograph operators could do this, but there is less chance of error and more likelihood of getting the proper coördination of data respecting each shot if the officer does this personally.

At the conclusion of the practice all records are assembled and the officer computes or causes to be computed, the data on forms AA-4 and AA-11; verifies and signs all forms, and turns them over to the battery commander.

In case of a machine-gun practice, the system is the same except no spotters, no chronograph, and only two BC instruments are required, thereby simplifying the telephone and personnel problems. The officer in charge takes the time of the first and last shots fired instead of the bursts. Furthermore, the problem of computing or plotting the data is much simpler, since only a plot of the course (or data for same from the Lewis Chart), showing the speed of the target and the portion of the course fired upon, is required by the battery commander.

With searchlights, the same procedure is followed, except that the initial illumination or flick of the target is timed instead of bursts.

COAST ARTILLERY BOARD NOTES

Any individual, whether or not he is a member of the service, is invited to submit constructive suggestions relating to problems under study by the Coast Artillery Board, or to present any new problems that properly may be considered by the Board. Communications should be addressed to the President, Coast Artillery Board, Fort Monroe, Virginia.

THE COAST ARTILLERY BOARD

COLONEL A. H. SUNDERLAND, C.A.C., *President*
MAJOR IRA A. CRUMP, O.D.
MAJOR A. F. ENGLEHART, C.A.C.
MAJOR C. E. COTTER, C.A.C.
CAPTAIN S. L. MCCROSKEY, C.A.C.
CAPTAIN E. T. CONWAY, C.A.C.
CAPTAIN L. L. DAVIS, C.A.C.
1st LIEUT. WALTER J. WOLFE, C.A.C.

SECTION I

Projects Completed Since Last Issue of the Journal

PROJECT NO. 1005—SHOE-FITTING OUTFIT.—From the results of service test in the local recruit reception unit, it was found that the new shoe-fitting device required more time for operation and gave no better results than the standard Resco machine, now in use. The Coast Artillery Board, therefore, did not recommend adoption of the new shoe-fitting outfit. It was brought out during the tests that, judging from the shoe sizes actually fitted, neither the Resco nor its proposed successor gave 100 per cent perfect readings, and neither device was sufficiently accurate to materially decrease the amount of time required for trying on shoes.

PROJECT NO. 1016—"STOP RUST" COMPOUND.—After use of "Stop Rust" for about one month in lieu of cosmoline at a battery in maintenance Class C, the bright surfaces had become seriously rusted wherever exposed to moisture. Accordingly the test was closed and a recommendation against adoption of "Stop Rust" for military use was submitted.

SECTION II

Projects Under Consideration

PROJECT NO. 953—RADIO-CONTROLLED HIGH SPEED TARGET.—Progress in the construction of radio control features has been slow because the construction crew was necessarily assigned for a time to other and more pressing work. It is expected that it will be several months before the high-speed target will be ready for a service test.

PROJECT NO. 964—TEST OF RUBBER JACKETED SUBMARINE MINE CABLE.—A favorable report on this type of cable has been received from the Panama Canal Department. The service test at other places has not been completed.

PROJECT NO. 990—TEST OF DULUX, NON-OXITE AND OTHER PAINTS.—About eight months ago four fixed antiaircraft guns and mounts were painted with these paints, a different kind of paint for each gun. All four of the paints are still serviceable in the sense that they provide a protective coating for the metal. So far as appearance and presentability are concerned, all the paints under test are unsatisfactory. The standard O.D. paint has faded and lost its luster. The varnish covered O.D. paint has retained more of its luster but the varnish has discolored. The non-oxite paint has faded to a very light gray and is crystalline in appearance. The Dulux has retained its color and smoothness of surface better than any others.

PROJECT NO. 1010—REPEATERS AND LOADING COILS FOR FIELD WIRE LINES.—There is nothing to report on this project since the materials for test have not arrived. The project was described in the November-December issue of the COAST ARTILLERY JOURNAL.

PROJECT NO. 1012—ANTIAIRCRAFT MACHINE GUN FIRE CONTROL, METHODS AND EQUIPMENT.—A partial report on this project was submitted during January. That report covered machine gun mounts, stabilizers, and certain modifications for the M1921 machine gun. It is expected that a considerable number of the modified machine guns will be procured from fiscal year 1935 funds and that the improved matériel will soon be in the hands of troops. Preparation of the remainder of the report, which will be concerned largely with fire control equipment, is in progress.

PROJECT NO. 1017—STEREOSCOPIC TRAINER T5, AND PROJECT NO. 1018—OPHTHALMIC TELEBINOCULARS (STEREOSCOPE).—Service test of these devices has been under way for about two months. From the results so far secured, it seems that the telebinocular, because of simplicity in design and ease of use, is more suitable for general issue than the T5 trainer. On the other hand, once its use is learned, the T5 trainer has advantages because of the greater precision in construction and because of its wide repertory of training schemes.

PROJECT NO. 1019—SCOUT CAR T7.—This vehicle is expected to arrive at Ft. Monroe during March. Meanwhile a study has been made to determine the military characteristics desired in a reconnaissance car for Coast Artillery use. The consensus of local opinion seems to be in favor of a commercial type of five-passenger car for a

reconnaissance vehicle. However, the usual five-passenger car has insufficient space for carrying the personal equipment of five persons and has too little clearance for travelling on muddy roads or across country. The Coast Artillery Board invites JOURNAL readers to submit suggestions as to the kind of a scout or reconnaissance car to be used by the captains and the colonels in the next war.

PROJECT NO. 1022—TEST OF TRAILER T7.—This trailer, which was intended for carrying the director, power plant and other fire control equipment of an antiaircraft gun battery, was given a number of tests to determine not only the suitability of the T7 trailer but also the general characteristics needed in a fire-control trailer. The T7 is much too small for its task, both in platform area and weight-carrying capacity. Because of the fragile nature of the director and the height finder, economy of space in loading is difficult to achieve except when a specially built vehicle is used. The length of the height finder in its carrying case is too great for most commercial vehicles. The total weight of the fire-control equipment of a battery is nearly three tons, hence a trailer of sufficient strength would be very heavy and would require a correspondingly large and heavy towing vehicle. Accordingly, experiments were conducted to determine whether several light trucks would be more practical than heavy trucks with trailers. It was decided by the Board, but not yet approved by higher authority, that four 1½ ton trucks would afford the most convenient means of transporting both personnel and matériel of the range detail of the operations section of an antiaircraft gun battery. Two of these trucks should have extra length bodies so that either of them could accommodate the height finder. For the peacetime strength operations section only three trucks would be needed. The Board, when considering this project, saw no reason to recommend changes in the transportation afforded the other elements of the operations section.

PROJECT NO. 1023—PORTABLE KITCHEN, GASOLINE-BURNING.—This project is necessarily inactive, awaiting receipt of the matériel for test.

PROJECT NO. 1024—COAST ARTILLERY MEMORANDUM NUMBER 15.—All National Guard target practice reports for 1934 have been reviewed and checked. The classification of the practices according to excellence has been completed and the ratings submitted to the Chief of National Guard Bureau for approval. Over 40 per cent of the practices were rated excellent; and one regiment had 100 per cent excellent ratings. The increased width of the target for seacoast batteries aided materially in raising some scores. However, the antiaircraft gun and machine gun batteries managed to secure ratings equally as high as the seacoast batteries without the benefit of any change in target size.

PROJECT NO. 1025—SHIRTS, FLANNEL, OLIVE DRAB.—Fifty of these shirts were sent to the Board for service test. After several weeks of wear they continue to present a good appearance despite the intentional employment of nonregulation methods of laundering.

PROJECT NO. 1026—ASBESTOS MITTENS.—These mittens, which are intended to facilitate handling of hot machine guns, have long been authorized in tables of basic allowances for issue to antiaircraft machine-gun batteries. Apparently they are seldom, if ever, used in the Coast Artillery, although the infantryman who must be ready to change gun position frequently and hastily does have considerable use for them. The mittens for the present test are said to be of more durable construction than the previous type.

PROJECT NO. 1027—TABLES, MESS.—The Quartermaster General has shipped four improved mess tables to the Coast Artillery Board for test. The new type of table differs from the old in having a hardwood top with varnished surface, silent castors and somewhat more rigid bracing for the legs. These tables are now undergoing a one-year service test in the mess halls of organizations at Fort Monroe.

SECTION III

Miscellaneous

FIELD USE OF GARRISON TYPE SHOES.—The Quartermaster General made inquiry whether the Coast Artillery desired to continue the supply of two types of shoe, one for service, the other for garrison, or whether a combination field and garrison shoe should be developed. Extensive tests made by the Infantry Board had resulted in a recommendation in favor of a combination shoe which would have about the characteristics of the present garrison shoe except for a bellows tongue and a slightly increased height of upper. The Coast Artillery Board was of the opinion that under most conditions the Coast Artillery would not requite any other than the garrison shoe. However, it was recommended that provision for supply of two types of shoe be continued but that the modified garrison shoe be given a service test.

CHANGE OF AZIMUTH REFERENCE PLANE.—Computation of orientation data and locations of triangulation points in accordance with standard grid system have been completed for the Harbor Defenses of Chesapeake Bay. In order to get the maximum of benefit from these data, endeavor was made to secure for regraduating the azimuth circles of fixed guns and certain position-finding devices so that zero azimuth would coincide with grid south. It was found that the expense of effecting these changes would be considerable and would be practically as great as the expense of making zero azimuth coincide with grid north. Since there would be many obvious advantages in having Coast Artillery azimuths for fixed armament measured from north instead of south, the Coast Artillery Board recommended that the change to north be made, provided sufficient funds could be made available to make the change in all harbor defenses simultaneously. Under the ordinary budget restrictions it would be unlikely that the necessary hundred thousand dollars could ever be

spared for such a purpose; nevertheless there is a possibility that out of the great appropriations now pending it may yet be possible to move the Coast Artillery azimuth zero from south to north.

DISTANT CONTROL FOR ANTIAIRCRAFT SEARCHLIGHTS.—In order to decrease the expense and get away from the procurement difficulties incident to the present type of comparator, Major A. M. Jackson devised a visual data transmission system by which the searchlight can be controlled direct from the sound locator, thus eliminating the comparator entirely or, if use of a comparator is continued, eliminating all cables, data transmission motors and control motors. Essentially the data transmission is effected by a rotatable reticule in a telescope through which the pointer matcher observes the movement of large data indicating dials on either the sound locator or the comparator. A pointer on the reticule is kept parallel to the pointer on the transmitter dial by a handwheel and gearing which also traverses or elevates the searchlight. The Coast Artillery Board recommended construction and test of a pilot model.

TUNGAR RECTIFIER.—The question of where and how to charge the miscellaneous assortment of storage batteries comprised in the equipment of mobile Coast Artillery units is one usually left to local ingenuity. Although gasoline motor-driven storage battery charging sets are furnished, such sets are expensive in operation and maintenance. Acting upon the suggestion of a regimental commander, the Coast Artillery Board recommended that a tungar charging set, operatable from the post alternating current supply, be issued to certain mobile units of seacoast and antiaircraft artillery.

NIGHT GLASSES FOR SEARCHLIGHT BATTERIES.—It was recently suggested that the image brightness obtainable in night glasses could be greatly improved by omitting the reversing lens or prism. This expedient would cause the observer to see the image inverted though with greater brightness. Since it appeared that the inversion of the image would not cause serious difficulty in tracking, the Coast Artillery Board recommended that an experimental model of such a night glass be made and tested.

NICHOLSON FIELD JACKET.—Past experience indicates that for actual field service, the regulation uniform coat is lacking in comfort and does not give efficient protection against cold and wet weather. On the other hand, either the raincoat or the overcoat impedes considerably the activity of the wearer. In an effort to secure a more generally useful garment for field service, Technical Sergeant L. F. Nicholson of the Headquarters Company, 16th Infantry Brigade, designed a field jacket which resembles somewhat the commercial type of leather jacket except that it has a turn-down collar similar to that of the O.D. shirt and is made of cloth; not leather. The jacket gave very favorable results in a test by the Infantry Board. The Coast Artillery Board agreed that such a garment would be a desirable article of equipment and recommended that after certain modifications a further test be made.

MEGGERS FOR THE MINE COMMAND.—Although the publication of TR 1160-15, Repair and Test of Submarine Mine Cable, authorized the use of bridge-meggers for testing submarine mine cable, no provision existed for issuing such devices to mine organizations. Accordingly several types of meggers were examined and tested at the Submarine Mine Depot. One variety was selected as being the best type commercially obtainable and given a service test. The Coast Artillery Board recommended that a megger of the selected type be authorized for issue on the basis of one to each mine casemate. Supply of this item, when made, will obviate any necessity of borrowing Signal Corps meggers for testing submarine mine equipment and will insure that a proper type instrument is available where needed.

IN THE STUDY AND OPINION *so fully bandied about these days on the functions of an army in the event of war, few commentators know enough about their subject to really appreciate the most fundamental principle of defense*—TIME. *Always precious, time in war is the most valuable of all assets. By the same token, time squandered at the beginning of an emergency is a loss that may mean countless lives and millions of treasure tossed ruthlessly away.*—ARMY ORDNANCE.

COAST ARTILLERY ACTIVITIES

Office of Chief of Coast Artillery

Chief of Coast Artillery
MAJOR GENERAL HARRY L. STEELE

Executive
LIEUT. COL. HENRY T. BURGIN

Personnel Section
MAJOR R. T. PENDLETON

Matériel and Finance Section
MAJOR R. E. HAINES
MAJOR O. L. SPILLER
MAJOR C. W. BUNDY

Organization and Training Section
LIEUT. COL. E. E. BENNETT
LIEUT. COL. F. P. HARDAWAY

Plans and Projects Section
LIEUT. COL. G. A. WILDRICK
MAJOR C. M. S. SKENE

Panama Canal Department News Letter

Department Artillery Officer
COLONEL FREDERICK H. SMITH, G.S.C. (CAC)

Fort Amador
COLONEL EARLE D'A. PEARCE
4th C.A. (AA).

Fort Sherman
COLONEL WILLIAM L. COLVIN,
1st C.A.

Fort Randolph
LIEUTENANT COLONEL JAMES S. DUSENBURY
1st C.A.

THE dry season has rolled around again in Panama, and with its arrival the Coast Artillery is laying aside the crossed cannons and breaking out full field equipment with a view to becoming doughboys again. We're attacking, defending, advancing, retiring and pitching shelter tents once more. This all started in December and is going stronger each day through Sector maneuvers in February and Department maneuvers in March.

This year the 4th C.A. (AA) has been fortunate in securing the services of Major J. W. Crissy, Infantry, of the Pacific Sector Staff, to supervise its infantry training.

The month of December also included the completion of the 1934 target practices for both Coast Artillery Regiments; Captain McCarthy completing his searchlight practice at Fort Randolph and Bill Lawton a mine practice at Fort Amador. This mine practice was conducted without the facilities of a mine dock, since the Department Engineer and the P.W.A. are still reconstructing the dock. However, the practice was an "excellent" one and Battery "D" is in line for congratulations, particularly, in view of the handicaps under which it was conducted.

The outstanding militaty event in the past two months on the Pacific side of the Canal was a review of the Pacific Sector Troops held at Fort Clayton on January 4. This was General Gulick's first opportunity to assemble his command since assuming command of the Sector. Despite the fact that the dry season was officially ordered for December 15, the weather man excepted the field at Fort Clayton and the main event was run in mud ankle deep, and perhaps somewhat deeper, when any unfortunates stepped in mud holes. In spite of this, the reviewing officer, Major General Fiske, expressed himself as very much pleased with the appearance of the command.

By way of diversion the Pacific Sector ordered a Harbor Defense Alert at Fort Amador on January 7 and 8 with a test of all communications and searchlight drill. The Alert also afforded the observers an introduction to Vern Walbridge's new Amador navy, namely, the *L-41*, the Junior Mine Planter *Schumm*, and the *K-3*, which boats have recently been assigned to the Harbor Defenses of Balboa to augment the existing fleet.

On January 29 and 30 an antiaircraft Alert was conducted by the 4th Coast Artillery under the supervision of the Sector Commander.

Recent arrivals at Fort Amador include Lieutenant Colonel Sanford W. French, M.C., who takes station at Quarry Heights as assistant Department Surgeon; Captain Leon C. Dennis, C.A.C., assigned to command Battery "A"; Captain James L. Craig, C.A.C., assigned to command Battery "B"; Captain Oren A. Mulkey, Infantry, assigned to Headquarters Company Pacific Sector; and Lieutenant Norman A. Congdon who joins Battery "C."

Brigadier General John W. Gulick

Lieutenant Colonel James S. Dusenbury has been transferred to Fort Randolph to assume command of that Post upon departure of Colonel Richard I. McKenney for the United States. Major Harry R. Pierce was transferred from Fort Randolph to Fort Amador at the same time, and has been assigned to command of the third battalion.

First Lieutenant William B. Hawthorne and Second Lieutenant Emory C. Hackman have joined the Fort Sherman garrison and are assigned to Batteries "F" and "H" respectively. Captain Edward G. Cowen has reported for duty at Fort Randolph and has been assigned to command Battery "E."

Interest in athletics has shifted from boxing to baseball. The Post championship teams have been decided and the Sector series are in progress in both Sectors. At the present writing, Randolph and Sherman are battling for first place in the Atlantic Sector, and Amador's prospects for winning the Pacific Sector are excellent.

There has been a general reversion to the days of the covered wagon in Panama since December 31, when all post-war motor transportation was taken out of circulation. New trucks are gradually appearing as transports and commercial shipments arrive on the Isthmus, but the transportation problem is still the all important one. We are now able to give service shoes a very thorough test as well as to solve logistic problems in ways not taught at the Service Schools. But we're hoping for bigger and better and newer motor vehicles by the time we send in the next News Letter, that is, if we're able to send in one after the jungle warfare that's probably being planned for us.

Fort Monroe News Letter

BRIGADIER GENERAL JOS. P. TRACY, U. S. ARMY,
Commanding.

COLONEL RUSSELL P. REEDER, 2d C.A.
Commanding Harbor Defenses of Chesapeake Bay

LIEUTENANT COLONEL JOS. F. COTTRELL,
Commanding 1st Bn., 2d C. A.

MAJOR FRANKLIN KEMBLE,
Commanding 3d Bn., 52d C. A.

MAJOR JOSHUA D. POWERS,
Commanding 1st Bn., 51st C. A.

By Major J. D. Powers, C.A.C.

ON January 7th we were honored with a visit by the Secretary of War and Mrs. George H. Dern. The Secretary stated that he came to Fort Monroe for a quiet week-end, but he was given the usual honors and the 51st C.A. escorted him from the Chamberlin Hotel to his car, preparatory to a visit to the Yorktown battlefields. He complimented the regiment on its appearance, and stated that he hoped to visit us again this summer.

The post is in the midst of a beautification drive, to replace the trees and shrubs destroyed in the well-known tornado of 1933. We have received 15,000 trees which are being set out around the post—if a small part of them survive to mature treehood, the post will be well concealed in a forest and will have nothing to fear from enemy air service. Captain Cochran, who is an ardent Californian, grew homesick for the California poppy, and wrote to the Los Angeles Chamber of Commerce for free seed; they not only sent him poppy seed, but also a sack of assorted California wild flower seed. These seeds will be planted on the parapet of the old fort, which, in due time, should resemble the flame-like hills of California if Mother Nature does her work. The first sergeants are already moaning about the difficulty of cutting the grass without cutting the wild flowers; and the Battery Commanders want to buy some four-footed, self-operating lawn mowers to keep the lawns trimmed—if sheep are good enough for the White House lawn, why not for Fort Monroe?

A new system of intensive training has been introduced in the Harbor Defenses since the arrival of Colonel Reeder. From 8:00 to 9:00 A.M., five mornings a week, all but the irreducible minimum of men are turned out for training. Three mornings this training is on the artil-

lery assignments, and two mornings it consists of 30 minutes close order drill under the battery commanders, then 15 minutes drill by battalions, ending up with a review of the regiment. Not only the artillery batteries are turned out, but the Quartermaster, Medical, and Ordnance Detachments each furnish a company; these are combined into a service battalion. The improvement in the drill appearance of troops, and discipline are already noticeable; and to the surprise of many, the administration and post fatigue go on just as well as when special duty men and fatigue details reported at 7:30 A.M.

We have had several new arrivals since our last letter: Captain Richard K. Le Brou, Finance Department, late of the Air Corps at Rockwell Field, is now property auditor. Second Lieutenant Robert J. Wood ('30) arrived the last day of 1934 and after a short tour with Battery "A," of the 51st, is now commanding Headquarters Battery, 51st C.A. until Captain Kelly's return. Second Lieutenants James T. Darrah and Grant E. Hill (both Class of '30) returned from foreign service the first of the year. Both are doing duty with the 52d C.A. and Lieutenant Darrah, in addition, is Assistant Post Exchange Officer. Our losses include First Lieutenant A. G. Franklin, Jr., who left for Fort Banks on January 8th, and Captain Henry D. Cassard, who went on leave January 8th, but who likes Monroe so well that he remained here until February 8th, just in time to catch the transport for Hawaii. The 51st C.A. turned out in a farewell review for Captain Cassard, who has done so much for the regiment, and for the first time the regiment appeared in its new ceremonial turnout—helmets, rifles with fixed bayonets, polished leather belts, and high laced boots.

Early in January Captain Roy T. Barrett, who had been supervisor of Subdistrict Number 20 of the CCC, was taken ill, and after a short stay in the station hospital, was sent to Walter Reed. His successor is Captain Howard H. Newman, who had been in command of Battery "F," 52d C.A. Apparently command of "F" of the 52d has been equivalent to a transportation request: Captain Gower left the Battery for Panama; Captain Hohenthal was ordered to Rio Janeiro, Brazil; Captain "Running" Waters went to Georgia Tech. at Atlanta, and then Captain Newman, after a short tour with the battery, went to the CCC. First Lieutenant O. J. Levin now has the battery and we hope that he will break the jinx.

Major Horace L. Whittaker, QMC (formerly CAC) was on the post as a visitor for a couple of weeks during January and February, after leaving Fort Totten and before sailing for Hawaii. He was ready to tell us all about the advantages of service with the QMC, but somehow when we started to talk about the AA machine guns and the tactics of antiaircraft searchlights, he would get warmly into the discussion, and one wonders if he does not regret leaving the Coast.

Captain Paul B. "Little Mike" Kelly has celebrated his promotion by taking a two months' cruise on the *Wyoming* to the West Indies and Panama. The Fleet Marine Force, part of which trained at Fort Monroe last summer, is practicing landings with G.P.F.'s on open beaches at Culebra, and Captain Kelly accompanied Lieutenant Colonel Sherman Miles of the General Staff as an observer for the Army.

Since the Christmas holidays, the 51st C.A. has been conducting battery problems. By using the officers and men of both gun batteries, one full strength battery is assembled, and by much pleading with the M.T.O. the necessary number of trucks may on occasions be procured. A convoy problem, with heavy and light columns, is worked out, this phase terminating with the arrival of the battery in the area to be occupied. The battalion commander issues his order, the B.C. makes his reconnaissance, and issues his order. The reconnaissance officer runs in the base line, and computes coördinates of directing point, and OP's. The communication officer lays all the necessary wire, and connects up the field phones. The AA machine guns are placed in position to furnish protection from low-flying aircraft. When the heavy column arrives, the guns go into position, are oriented and prepared for firing. The plotting trailer is connected with base ends and the battery prepared for firing. The only simulated feature of the problem is the placing of ammunition at the guns—all other details are carried out. When the battery is reported as "ready for action" the tug is started on its course, and is assigned as a target; the problem ends with an actual track and plot of the course. The B.C. check sheet gives a check on the accuracy of the orientation, plotting, data transmissions, and setting of the data on the guns. To date, a problem involving a battery going into position at night has not been held, but that is next on the program. After that, it is hoped to take the entire battalion to Grand View, putting the gun batteries into position on the beach, and having the battalion spend the night under canvas before returning to Fort Monroe.

The batteries of the battalion also have been turned out in full field equipment, together with all battery property which would be taken into the field, under the assumption that they were being ordered out for duty in connection with a domestic disturbance.

On January 19th the Old Virginia Fox Hunt was held from the Sinclair farm near Hampton. These hunts have become a feature of peninsula life, and are held annually soon after the new year. Major and Mrs. Caperton assisted in the preparations, and Mrs. Caperton took charge of a number of girl scouts who attended the hunt. About 20 officers and ladies of the post turned out, in spite of the cold rain, and about 80 civilians rode in the hunt. For several years foxes were scarce, but this year three were started, showing that the depression is over. Two of the foxes got away; Mr. Jefferson Phillips was in at the kill and secured the brush of one. He gallantly presented it to Mrs. Caperton, who had done so much to make the meet a success. A hunt breakfast was served at the Sinclair farm after the chase.

Recently two delegations of Chinese Officers have visited Fort Monroe. Brigadier General T. O. Chiang

accompanied by three Artillery Officers arrived January 21st, and made an intensive investigation of the railway artillery, and also inspected the C.A. School. These officers have been in Europe securing data for the Chinese Government, with reference to the expansion of the Chinese railway artillery and the establishment of a school for Artillery Officers. They were very much surprised at the amount of information we gave them and stated that it was in great contrast with the European custom, where they were able to obtain very little information. They were particularly impressed with the railway mortars, and after looking them over asked to see the fixed mortar batteries. General Chiang's Aide could not understand why the mortars were all pointed toward Mill Creek, when obviously their targets would be in the direction of Chesapeake Bay. It took much talking in Chinese by the General and the Interpreter to convince him that these mortars had all-around traverse. After that we decided that aides were the same in the Chinese Army as in our own.

Colonel P. T. Mow and a delegation of Chinese Air Corps Officers arrived February 11th and looked over our antiaircraft artillery. Later on they went to Langley Field, where they spent a day with the Air Corps. Both of these groups of officers expressed their wish that some day they might have the privilege of showing us the Chinese armament. Perhaps during our next tour at Corregidor we may be able to go to China and give them the opportunity.

On February 2d, Second Lieutenants David B. Routh and Joseph S. Piram (both Class of 1934) departed for a three-month course at the Chemical Warfare School at Edegwood Arsenal. It is rumored that Lieutenant Routh's department broke up a budding romance—perhaps it is just as well, as the strain of buying wedding presents is hard on all of us until we get back the last five per cent of the pay reduction.

The Field Artillery Board at Fort Bragg has on foot a project for rapid determination of orientation by having mobile searchlights set up on known points, with the beams elevated at 90 degrees, and then having the various stations shoot in their data on these searchlight beams. They called on the Engineer Board at Fort Humphreys for help, but the Engineers passed the request on the Chief of Coast Artillery, so as a result, Second Lieutenant H. F. Turner is taking a searchlight section to Fort Bragg to work out this project with the Field Artillery Board. For a long time our training programs have carried the mission "to assist the Coast Artillery Board in its experimental work and tests" but it looks as though we would have to add the Field Artillery to the long list of people for whom we work.

Corregidor News Letter

Brigadier General Charles E. Kilbourne, Commanding
Colonel William S. Bowen, C.A.C., Executive

Harbor Defenses of Manila and Subic Bays

THE recent departure of Brigadier General and Mrs. Stanley D. Embick has been the source of deep regret to the garrison; this is tempered by the knowledge that we are to have with us Brigadier General Charles E. Kilbourne. The two and a half years of command of General Embick have been particularly happy as well as a period of great professional activity and advancement. Plans initiated by his predecessor (and successor) have been fully carried out, and many new projects have been started. With his unusual knowledge of the defense needs of our most outlying possession he has left us better prepared to carry out our mission. General Embick (then a captain), first came to the Philippines in 1906 as a member of a board detailed to prepare plans for the fortifications to guard the entrance to Manila Bay. He returned here as a colonel in 1923. During this tour he commanded the 59th Coast Artillery and served as the Harbor Defense Executive. As Commanding General of the Harbor Defenses of Manila and Subic Bays he has now completed his third tour at Corregidor, the Gibraltar of the East, in which he has so long been interested. The despidida tea at the Corregidor Club was the formal occasion of farewell for General and Mrs. Embick. After the usual reception they were presented with a handsome silver tray inscribed, "Corregidor, 1932-1935."

The recent shortage of officers and men is rapidly being remedied. Because of the transfers necessary in changing to the two-year tour of duty, the U.S.A.T. *Grant* has been making the round trip to San Francisco in less than two months. Recent arrivals include Colonel W. S. Bowen, Lieutenant Colonels P. D. Bunker, Allen Kimberly and C. W. Baird, and Majors Charles Thomas-Stahle and Gooding Packard. Major L. S. Stuart has left for his new station at Fort Scott and Captain J. D. Moss for Fort Leavenworth.

The last typhoon signal of the year was finally lowered (without ceremonies) on December 7, and after a rainy season lasting almost seven months the cool season was ushered in. It is the memory of these cool seasons that cause old-timers to put their names on the volunteer foreign service roster after a few days of the heat of Virginia, the fog of California, or the chill of New England. A succession of clear days, often slightly overcast, cool nights, and the fresh monsoon breezes makes everyone forget the heat and rains that have passed or are to come.

The Noncommissioned Officers' Club is one of the most flourishing organizations on the post. It was started in 1924 as a result of the interest and advice of the then

Colonel Embick and was housed in a wooden barracks near the commissary. It prospered, and in 1932 the present clubhouse was completed on a site near the office of the Artillery Engineer at a cost of almost $10,000. All building costs have been paid and there are no debts. The clubhouse has a large assembly room, used for dancing, a bar in which draft and bottled beers are sold, and a restaurant run by a Chinese concessionaire. While the club is principally for the men, the ladies make use of it for afternoon parties, while evening dances and bridge parties are frequently held. The club has over 300 members. Sergeant R. R. Riley is President and Sergeant G. H. Coleman is Steward.

59th Coast Artillery

Lieutenant Colonel Allen Kimberly, Commanding

The regiment now has more nearly its complement of officers and all batteries have their full strength of men. Captain Ipock commands Headquarters Battery and Captains Bell, Myers, and Schmidt are with Batteries A, D, and F, respectively.

All firing batteries fired target practices during December, three with 155's, one from a six-inch battery, one from a ten-inch, and two from antiaircraft guns. These are mostly secondary assignments and gave excellent training for the firing of the regular practices early in the year. Two of the practices were particularly fine.

The first month of 1935 was spent in preparation for service practices and in miscellaneous training. Gas instruction has been stressed, and the regiment in gas masks, the regimental commander at the end of the column in like attire, has been trailing up and down the long hills. The going is easy down hill, but on the steep up-grades there was a great increase in the number adjusting the masks by inserting the finger under the side of the facepiece.

60th Coast Artillery (AA)

Lieutenant Colonel Howard K. Loughry, Commanding

This regiment gained by the misfortunes of others. The long rainy season reduced the firing in the seacoast regiments and the money was made available to increase the amount of antiaircraft ammunition. The machine-gun batteries had their full yearly allowances available, and the gun batteries had enough ammunition for two record practices each. All reports are not in, but the practices appeared to be most satisfactory.

A large detachment from the regiment, under command of Major Chesledon, spent a week in Manila participating in the Philippine Department Military Tournament, sponsored by the department commander, Major General Frank Parker. In coöperation with the Air Corps a most realistic demonstration was given of a raid by bombardment and attack aviation, and the defense by searchlights, antiaircraft guns and machine guns. Due to the use of a large number of airplanes and much blank ammunition the display attracted great interest.

91st Coast Artillery (PS)

Lieutenant Colonel Clair W. Baird, Commanding

In addition to a new commanding officer the last transport brought Major Thomas-Stahle, to command the 2d Battalion, Captain Cook, Battery A, Captain Goeppert, Battery B, and Captain Lamson, Battery E. This makes the third tour at Corregidor for Captain Goeppert, with this assignment he has served in all four of the regiments.

The regiment has been very busy with varied activities. Subcaliber firings and other preparations for the target practice season take first place, but gas instruction and training in infantry open-order formations take up their part of the days. A very heavy schedule of firing is ahead of the regiment.

92d Coast Artillery (PS)

This regiment staged the opening of the 1935 target season with two practices fired with 155-mm. guns. This was the first normal service firing in this regiment for two years, and after the "pouf" of the excaliber guns the roar of the G.P.F's is a welcome sound to the ears of the gunners. The practices, fired from two guns, were very successful.

Of the new arrivals Captain Gillette is adjutant, Captain Hesketh commands Battery C, and Lieutenant Howell, Battery D.

The Guard Battalion of this regiment guards about eight hundred civil prisoners from the Insular Prison at Bilidid. Their usual lot is labor, but during the holidays they had special dinners made possible by donations from all troops whose work they make easier. From their own numbers they got up a series of stunts and shows. These are open to the public and well attended.

Harbor Defenses of San Francisco

COLONEL H. E. CLOKE, *Commanding*
LIEUTENANT COLONEL L. L. PENDLETON, *Executive*

THE appearance of any major portion of the fleet in a harbor is always a signal for a tactical problem of some kind. The arrival of a part of the fleet in San Francisco Harbor on February 12 was no exception. All stations and batteries were manned so far as the limited personnel permitted. The exercise proved to be interesting and instructive in that it forcibly brought home to all those who participated the difficulties incident to and growing out of the simultaneous appearance of the number of targets at the entrance of a harbor.

Colonel H. E. Cloke bidding farewell to Colonel H. B. Grant after the review tendered Colonel Grant on his retirement from active service at Fort Scott, California.

In addition to their normal routine duties the troops at Ft. Scott are frequently called upon to participate in parades, reviews and demonstrations of various kinds. During the past month the troops of the harbor defenses participated in a farewell review to Colonel Homer B. Grant, C.A.C., who passes to the retired list after a long and distinguished career as a Coast Artilleryman. The best wishes of the command and the entire Corps were extended to Colonel Grant on this memorable occasion. It is with regret that the Army loses the services of such a capable commander. We wish that he may have many years in which to enjoy the blessings and freedom which go with a discontinuance of the trials and tribulations of active service. In the reviewing stand honoring Colonel Grant were Brigadier General and Mrs. Sherwood A. Cheney and Brigadier General and Mrs. William P. Jackson.

Another function participated in by the command was a review of a provisional brigade composed of the 30th Infantry and the 6th Coast Artillery. The scene of the review was the old Fair Grounds, now Crissy Field, and the occasion was in commemoration of Army Day. On February 22 the entire command participated in the National Defense Week Parade held in the City of San Francisco.

It is with pleasure that we note the assignment of Major Claire Armstrong as a member of the next class at the Command and General Service School, Ft. Leavenworth. This is a well merited recognition of his excellent work while a member of the 6th Coast Artillery and more recently with the C.C.C. as supervisor of the Medford District.

The Ninth Corps Area West Point Preparatory School, conducted at Ft. Scott, is continuing its excellent work. Preliminary reports indicate that four out of the first five appointments tendered to enlisted men of the regular army go to members of the graduating class of the school conducted at this post. The loss of the one place among the first five appointees is a blow to the pride of our able corps of instructors.

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Fort MacArthur Notes

By Lieutenant Eugene C. Smallwood, C.A.C.

ENROLLMENT for additional members in the C. C.C. was started at Fort MacArthur on January 2, with approximately 3,500 being enlisted in the two-weeks' period. From this station the new enrollees were assigned to the 37 camps throughout the Fort MacArthur District.

On January 5, the 63rd Coast Artillery made an overnight march to Van Nuys, Calif., where it participated in the American Legion parade and dedication ceremonies for the new American Legion Hall, returning to the Post on January 7th. The Van Nuys' newspapers praised highly the appearance and precision of the Regiment.

An S.E.R.A. project was begun at the Post on January 25, employing 50 men for a period of 60 days. The project calls for extensive changes to prevent soil erosion on the reservation and permit drainage of the lower flats.

First Lieutenant R. H. Kreuter, 3rd Coast Artillery, departed for San Francisco February 23, and sailed for the Philippine Department on February 26, to enter upon his new duties as Aide-de-camp to General Kilbourne. He is succeeded as Adjutant of the Harbor Defenses of Los Angeles by Captain D. M. Griggs.

First Lieutenant W. F. McKee has been appointed Adjutant, C.C.C. Headquarters, Fort MacArthur District. The C.C.C. now have a separate headquarters building, occupying the former home of Headquarters, 63rd Coast Artillery, which recently was moved to the second floor of headquarters building.

Newly arrived at Fort MacArthur are Second Lieutenant Peter Schmick from the Philippines, who has been assigned duty as Recruiting Officer and Post Exchange Officer; and Captain and Mrs. A. M. Lawrence, also from the Philippines, Captain Lawrence having been assigned as Commanding Officer, Headquarters Battery, 63rd Coast Artillery. First Lieutenant C. P. Young arrived from Hawaii, March 7, and Second Lieutenant M. M. Irvine is due from the Philippines on March 24.

An outdoor badminton court, of clay and decomposed granite, has been installed at the Officers' Club, and the game is enjoying quite a surge of popularity.

Joint Organization Day was observed February 12, by the 63rd and 3rd Coast Artillery units at Fort MacArthur. Short addresses on Regimental history were made by Lieutenant Colonel H. R. Oldfield, Lieutenant H. E. C. Breitung and Lieutenant R. H. Kreuter. A holiday was declared and the various messes prepared banquets in honor of the occasion.

NEWS AND COMMENT

The Troubles of an Editor

Such rage for fame attends both great and small,
Better to be damned than mentioned not at all.
—JOHN WOLCOTT.

SEVERAL issues ago the JOURNAL carried an editorial under the caption "Support Your Journal." This was intended to be facetious with a flavor of seriousness. Nothing could have been farther from the intentions of the author than to injure the super-sensitive feelings of anyone or tread upon a tender corn patch. If perchance we did step on any toes we offer our profound apologies and all the other amenities expected and required by the best social customs. We can do no more. We asked for criticisms of the JOURNAL; these we accept with sincere thanks and the best possible grace. Certainly we would be two-faced if we harbored any resentment or choler. The editorial policy is governed solely by what the readers want, and we hope that they will make their wants known. Constructive criticisms are always welcome.

Fragmentary bits of information reaching the editorial office lead us to conclude that many officers are laboring under a misapprehension. In the first place, the Chief of Coast Artillery has directed that a JOURNAL be published. It has been published continuously since 1892 and we believe that it will be published for many years to come. Proper authority having reached this decision, it seems to us that the only logical conclusion is for the members of the Corps to support it wholeheartedly. We believe that we are giving the subscriber more than value received for the small financial outlay. Figures for the past year shows that it cost 60.9 cents per copy to produce the JOURNAL. We are selling it for 50 cents per copy, or approximately eleven cents below cost.

At this point it may not be amiss to mention a question that is little known or understood by those who have not been confronted with the intricacies of the publishing game. For example, if the number of copies in each issue was reduced by 500 it would not materially lower the production cost; but if the number of subscribers could be increased by 500 the increase in cost of production would be less than $150.00 per year, while the revenue derived from the additional number of subscriptions would amount to $1,500.00 per year. In other words, the production cost varies only slightly regardless of the number of subscriptions. Because of this fact common sense points unmistakably to the desirability, if not the necessity, for increasing the number of subscribers; therefore, if those officers who are withholding their support would kick in with the small sum of $3.00 it would enable us to produce a better JOURNAL, another proof of the principle of concentration of force. The time-worn quotation, "In union there is strength," has particular application.

Officers who do not subscribe are unconsciously and unwittingly adding to the burden carried by others. We are confident that this condition is brought about by a lack of appreciation of the true state of affairs. This fact is significant when considered in connection with the conditions existing in the other service publications. We do not believe it proper to make comparisons, but we cannot resist the temptation to remark that the percentage of subscribers among the regular Coast Artillery officers was lower than the percentage of subscribers among the same group of officers of our sister arms. In other words, the Coast Artillery was at the foot of the class (a none too enviable position). We had carefully concealed this fact but it seems to be a propitious time to let it be known. If officers of the other combatant arms can find the wherewithal to subscribe to *their* service JOURNAL, is there any good reason why Coast Artillerymen should not do likewise? We know that they are not lacking in interest or *esprit de corps*. Is old Siwash slipping? Banish the thought.

Now for a word anent the editorial policy. One officer, in commenting on the contents of the JOURNAL, remarked that "The JOURNAL is what we make it." The Editor alone cannot possibly produce a magazine. His job is to select and arrange the best material available; for this he must depend upon the literary efforts contributed by others. If material of the desired kind cannot be obtained then he must have recourse to whatever is available. For some unknown reason Coast Artillery officers are reluctant to break into print. Why this is true we do not know. It should be regarded as an honor to have your name in a by-line. In addition to this there is always a check forthcoming; the amount may not be large but it will be as generous as budgetary limitations permit.

It should be kept in mind that the JOURNAL is compelled to cater to the finicky literary tastes of a wide variety of readers. This includes officers from the three components, civilians and the families of all of these. Perhaps the group is too large to be covered by one blanket; if so it cannot be avoided. All we can do is to counsel patience, forbearance and tolerance.

The most serious and devastating of all requirements is that imposed upon us by "secret and confidential" documents and projects. The uninitiated probably would marvel at the mass of material falling within these categories. The wealth of interesting and instructive subjects safely padlocked by a large rubber stamp bearing either, or both, of these two words would astonish those who wonder why there is a paucity of articles on the subject of strategy, artillery projects and developments. We have

no fault to find with this, it is a condition over which we have no control and must be accepted as it is. It is mentioned merely to show why many subjects about which we would like to disseminate information must be omitted. Several times the Editor almost has been "boiled in oil" for deviating the least bit from the straight, narrow and barren path. The Editor's job is to give the readers what they want, and no effort will be spared to do this within the limitations by which we are circumscribed, provided always that we can find out what the readers want and provided further that we can induce some scribe to furnish the manuscript. To sum up, we can say that the Editor's job consists of:

(*a*) Finding money to finance the publication of the JOURNAL,

(*b*) Obtaining suitable material to fill its pages,

(*c*) Catering to the professional and literary tastes of an unusually diversified clientele, and

(*d*) Trying to please everyone.

If anyone can offer an impeccable solution to this problem we will recommend that he be made a Chevalier of the Legion of "Valor," and give him a life membership in the Society of Brain Trusters.

Kansas City Officers Organize New Chapter

AS the JOURNAL goes to press we are in receipt of information that the Coast Artillery officers residing in Kansas City and vicinity have consummated the organization of a chapter of the U. S. Coast Artillery Association. This is the latest star to join the constellation, now numbering 21, with a total membership running up into the thousands. It is the consensus of opinion that the Association is performing a most useful function in consolidating and organizing representative citizens who understand and appreciate the needs for a system of National Defense. This group is in the best position to throw the weight of their influence toward the consummation of any project vitally affecting our national well-being. In addition to this they are committed to preserving the best traditions of the Army and the Coast Artillery. Without these chapters the National Association would be comparable to a tree without branches in that it would furnish neither inspiration nor shelter. In a very short time it would be dead timber only fit for firewood.

It is the hope of the Executive Council that a chapter will be organized in each center of population where a sufficient number of Coast Artillery officers reside to furnish a reasonable membership. We would like to visualize a flourishing organization whose membership reaches every city and town, and each member a booster for reasonable preparedness and an implacable enemy of the pacifist, communist and all others of like ilk. In these concepts lie the most fruitful fields for sowing the seed which will yield a bountiful harvest in the form of assurance that the Nation never again will be forced to squander both life and treasure to make good the deficiencies of peace-time preparation and at the same time expose and denounce those who would sap our strength at the root, thus rendering the Nation incapable of self-defense.

The charter membership of the Kansas City Chapter is composed largely of the personnel of the 538th C.A. (AA) and the 958th C.A. (AA). Lieutenant Colonel R. P. Glassburn, C.A.C. is the unit instructor. To him belongs most of the credit for the inception and consummation of the organization. In this he was ably assisted by the regimental commanders and other officers residing in Kansas City. At the initial meeting held during the early parts of February a constitution and by-laws were adopted and the following officers nominated and elected from the floor:

President, Major Gwynne G. McCaustland, CA-Res.

Vice-President, Second Lieutenant Karl F. Steinhauer, CA-Res.

Secretary-Treasurer, Second Lieutenant John R. Monnett, CA-Res.

In addition to the above mentioned the following officers were present and became charter members:

Captain Ezra E. Howard, CA-Res.
1st Lt. Freeman C. Bacon, CA-Res.
1st Lt. Clarence A. Johnson, CA-Res.
1st Lt. Arthur M. Clough, CA-Res.
1st Lt. Garcel K. Hays, CA-Res.
1t Lt. Wesley McK. Herrin, CA-Res.
2d Lt. William J. Justice, CA-Res.
2d Lt. Neville F. Hodson, CA-Res.
2d Lt. Van Amburgh Goodrich, CA-Res.
2d Lt. Clarence R. Sifers, CA-Res.
2d Lt. Myron H. Blotcky, CA-Res.
2d Lt. Glenn E. Decker, CA-Res.
2d Lt. William H. T. Gasaway, CA-Res.
2d Lt. Richard M. Torrance, CA-Res.

We welcome this newest child to the family council and wish for it a long and useful existence.

Cincinnati Chapter Very Active

By Lieutenant James W. Seltzer, CA-Reserve

THE Cincinnati Chapter of the Association which draws its members from the 230 Reserve Officers of the 39th Coast Artillery (AA) Brigade and the 505th and 938th Coast Artillery (AA) Regiments, has been engaged in an unusually active year. The Troop School, under the direction of Captain Parry W. Lewis, C.A.C. Senior Instructor has been well attended. Captain Lewis has introduced a comprehensive plan for the Extension Courses which provides for a steady and logical advancement through all the grades.

Nominations for the Executive Committee were made from the floor at a recent meeting and the election of members followed. The newly elected Executive Committee then elected a President, Vice-President, and Sec-

retary-Treasurer. The results of the elections are as follows:

President, Major E. H. Boeckh, 39th C.A. (AA) Brigade.

Vice-President, Major R. A. Anderegg, 938th C.A. (AA).

Secretary-Treasurer, First Lieutenant, F. R. Todd, 938th C.A. (AA).

Major F. R. Miller, 505th C.A. (AA).

Captain J. A. Berry, 505th C.A. (AA).

Second Lieutenant J. W. Seltzer, 938th C.A. (AA).

The success of the Association's informal dinner-dance held at the Swiss Gardens, one of Cincinnati's night clubs, was so well received by the officers that the Executive Committee decided to sponsor more of them in order to foster a better *esprit* among the officers and to instil in them a "Coast Artillery Consciousness." The second of these affairs, also an informal dinner-dance, was held at the Club Orpheum, and surpassed the first in both attendence and conviviality. At both of these dances the Senior Cadets and the Instructors of the University of Cincinnati R.O.T.C. unit were invited. It is the intention of the committee to hold one or two more of these parties and to end up the year with a picnic.

The inclusion of the R.O.T.C. cadets in these social affairs serves two purposes; first, it reciprocates for the several balls which are held each year by the Cadet Corps and to which the Reserves are invited, and secondly, the contacts which these cadets make, awakens an interest in Reserve activities which, one or two years hence, will result in more efficient units.

The monthly Group Schools, sponsored by the Cincinnati Chapter of the Reserve Officers' Association, have been exceptionally interesting and educational. The two most notable speakers were Major William E. Kempner, U. S. Air Corps, who in his talk, "Stratosphere Flying," described his experiences as commander of the recent stratosphere flight, and Brigadier General William K. Naylor, who gave an inspiring address on "The Development of American Military Art."

One of the absorbing extra-curricular activities of the 938th Regiment has been the formulation of a comprehensive mobilization plan under the guidance and direction of Captain Lewis. Most of the men in the unit have had some part in its preparation, and it is planned to have it studied and comprehended in its entirety by all members of the organization. The plan itself is quite detailed, and although conditions might arise which will make its application impracticable, its existence will serve as a base for future studies.

It is not possible to give too much credit to the reserve officers residing in this locality for their loyalty to and interest in the cause of National Defense. They give much of their spare time, without hope of reward or fanfare of trumpets to the end that they may be better prepared to serve the Nation if and when it becomes necessary. May that day never arrive.

The First Regiment

LAST year two of the three trophies awarded by the Coast Artillery Association found a new home on the shores of the Pacific Ocean, where we trust they will repose for many years as a reminder of the glory and prestige won by the recipients for outstanding performance and general excellence. This time it develops that the Association trophy is destined to grace the halls of one of the defenders of the Atlantic seaboard, thus proving that all of the talent and merit is not concentrated on the Pacific coast.

We take great pleasure in announcing that the trophy awarded annually to a National Guard regiment by the United States Coast Artillery Association for general excellence and outstanding performance goes to the 198th C.A. (AA), Del. N.G. The Commanding Officer of the regiment is Colonel George J. Schulz, while the unit instructor is Captain L. A. Hudgins, C.A.C. This regiment, whose coat of arms bears the motto "The First Regiment of the First State," boasts a distinguished history. Originally organized in 1861 as the First Delaware Volunteer Infantry, it was at once mustered into the federal service for active duty in the War between the States. During this bitter struggle it played a conspicuous rôle, taking part in eleven major battles and campaigns.

In 1898 the regiment was again called to the national colors, this time for service against the Spaniard, but constitutional provisions prevented it from serving beyond the continental limits of the United States.

In 1916 and 1917, still as the First Delaware Infantry, it served on the Mexican Border. Here it remained until August 5, 1917, when it was drafted for service overseas. On August 30, 1918, the regiment, now organized as the 59th Pioneer Infantry, arrived in France. One month later it was flung into the great Meuse-Argonne Offensive where it acquitted itself splendidly. In 1919 it returned to the United States, was demobilized, and again became the First Delaware Infantry, Delaware National Guard.

Two years later it was reorganized as the 198th Coast Artillery (AA). Since that time its efficiency with its new and unfamiliar arm has been constantly increasing. Last year with three other regiments it received honorable mention for the Coast Artillery Association's annual trophy which is awarded to that national guard regiment which demonstrates the greatest all round proficiency for the current training year.

The regiment to receive the trophy is recommended to the Association by the Chief of the National Guard Bureau, the recommendation is based upon evaluation of the following factors:

	Weight
1. Results attained in target practice	70
2. Per cent of batteries of the regiment rated satisfactory at the annual armory inspection	10
3. Attendance at drills during the twelve month period prior to the armory inspection	10

4. Per cent of units rated satisfactory at field inspection 10

In previous years the percentage of personnel qualified as gunners was one of the factors in determining the regimental standing. Inasmuch as information on qualification of gunners is no longer received in the National Guard Bureau it became necessary to omit this factor in computing the score. This resulted in increasing the weight assigned to the factor "attendance at drills" from five to ten. It is especially noteworthy that the 198th C.A. (AA) stood fifth in the classification for the training year ending June 30, 1933, with a score of 83.46. By moving into the premier position the regiment shows consistency and a high degree of training excellence.

The regiment consists of eight lettered batteries, including a searchlight battery. Owing to conditions beyond the control of anyone connected with the regiment it was impracticable to hold a searchlight record practice, therefore, in computing the score it was considered to be manifestly unfair to include the searchlight battery in the computation, and the final score is based upon the performance of the seven firing batteries, the final result being 98.20 out of a possible 100. This is a higher record than any previously established and one which it will be difficult for others to equal or excel. It is 2.18 higher than the score attained by the winner in the previous training year.

The Executive Council of the Association extends its sincerest congratulations to Colonel Schulz, the officers and enlisted personnel of the regiment for their demonstrated efficiency and ability in the conduct of antiaircraft artillery fire. Other organizations to which we desire to give honorable mention and all other attending honors are as follows:

249th C.A. (HD), Ore. N.G.	96.80
197th C.A. (AA), N.H.N.G.	94.78
252d C.A. (TD), N.C.N.G.	91.70
243d C.A. (HD), R.I.N.G.	91.42
263d C.A. (HD), S.C.N.G.	90.90

We are only sorry that it is not possible to award a trophy to each of these. Their outstanding performance merits the highest commendation. They have established a record which places them in the forefront of all National Guard Coast Artillery organizations. We hope that in subsequent years they will equal or exceed the performance of the past year and that at some future time the trophy will find a comfortable permanent home within their halls.

The Executive Council has directed the Secretary to send the following letter to the Commanding Officer of the 198th C.A. (AA):

My dear Colonel Schulz:

It is the established policy of the United States Coast Artillery Association to award annually a trophy to a regiment of the National Guard for outstanding performance and efficiency during the previous training year. The selection of the regiment to receive this distinction is made by the Chief of the National Guard Bureau; he has designated the 198th C.A. (AA) Del. N.G. as the winner for the training year ending June 30, 1934.

The Executive Council of the Association concurs in the recommendation of the Chief of the National Guard Bureau and accordingly has directed me to inform you of this action and to extend to you and the personnel of your regiment, sincere congratulations on the enviable record you have established. You have every reason to be proud of the accomplishment.

Colonel George J. Schulz
198th Coast Artillery (AA)
Delaware National Guard

Colonel George J. Schulz, 198th Coast Artillery (AA), Delaware National Guard, was born in Wilmington, Delaware, January 14, 1895. On June 24, 1916, he enlisted in Company F, 1st Delaware Infantry, and served with that organization on the Mexican Border. After holding various noncommissioned grades, he was appointed First Sergeant of Company L, 1st Delaware Infantry. This organization later became the Supply Company, 112th Field Artillery, 29th Division.

He attended the Reserve Officers Training School at Camp Dix, New Jersey, from January 2, 1918, to May 29, 1918, on which date he was commissioned First Lieutenant, and assigned to the 59th Pioneer Infantry. He served with this organization until discharged on July 9, 1919.

From August 31, 1918, until July 5, 1919, he served overseas, being credited with service in the Verdun Defensive Sector and the Meuse-Argonne offensive.

Upon the reorganization of the Delaware National Guard, he was appointed Captain, C.A.C., on January 26, 1921, and assigned to the 198th Coast Artillery (AA). He was promoted to Major on July 15, 1921, and assigned to command the First Battalion. His promotion to Lieutenant Colonel took place August 19, 1925, and to Colonel, February 6, 1932. He has commanded the regiment continuously since that date.

COAST ARTILLERY ORDERS

(Covering the period January 1 to February 28, 1935)

Colonel R. W. Collins, from the Philippines to Org. Reserves, 4th Corps Area, Knoxville. Previous orders amended.

Colonel H. B. Grant, retired, physical disability, February 28.

Colonel H. L. Steele appointed Chief of Coast Artillery with rank of Major General, effective January 21.

Colonel W. K .Wilson, from U. S. Military Academy, West Point, to Chief of Staff, 7th Corps Area, General Staff Corps, April 1.

Lieutenant Colonel F. Q. C. Gardner, from Hawaii, to Assistant Commandant, C. A. School, Ft. Monroe.

Lieutenant Colonel W. W. Hicks, from Hawaii, to instructor, New York National Guard, New York. Previous orders amended.

Lieutenant Colonel T. O. Humphreys to home and await retirement for the convenience of the Government.

Lieutenant Colonel W. R. McCleary, retired, physical disability, February 28.

Lieutenant Colonel C. D. Pierce, from the Philippines, to Org. Reserves, 6th Corps Area, Milwaukee.

Major W. K. Dunn promoted Lieutenant Colonel, January 1.

Major J. F. Kahle, from 2d. Ft. Monroe, to instructor, C. A. School, Ft. Monroe, July 1.

Major LeRoy Lutes, from student, Army War College, Washington, D. C., to National Guard Bureau, July 1.

Major O. G. Pitz, from Org. Reserves, 6th Corps Area, Milwaukee, to the Philippines, sailing New York, May 14.

Captain K. C. Bonney, from Hawaii, to 52d, Ft. Hancock. Previous orders amended.

Captain W. G. Brey, from Hawaii, to 14th, Ft. Worden.

Captain J. H. Gilbreth, from 62d, Ft. Totten, to 9th, Ft. Banks.

Captain W. E. Griffin, to the Philippines, sailing San Francisco, June 5. Previous orders amended.

Captain B. F. Harmon, from student, Air Corps Tactical School, Maxwell Field, Montgomery, to instructor, Air Corps Tactical School.

Captain C. S. Harris, from Coast Artillery Board, Ft. Monroe, to Hawaii, sailing New York, April 26.

Captain F. H. Hastings, from the Philippines, to 51st, Ft. Monroe.

Captain G. C. McFarland, from 11th, Ft. H. G. Wright, to instructor, California National Guard, San Diego, sailing New York, February 19.

Captain W. F. Putnam, Jr., from the Philippines, to 52d, Ft. Hancock.

Captain P. B. Taliaferro, from Panama, to Org. Reserves, 8th Corps Area, Denver.

Captain H. W. Ulmo, to president Army retiring board, Walter Reed General Hospital.

First Lieutenant G. M. Badger, promoted Captain, December 16.

First Lieutenant A. S. Baron, from the Philippines, to 2d Ft. Monroe.

First Lieutenant N. A. Burnell, 2d, from 2d, Ft. Monroe, to instructor, C. A. School, Ft. Monroe, August 1.

First Lieutenant C. C. Carter, from 62d, Ft. Totten, to 3d Corps Area, Baltimore, aide-de-camp to Major General R. E. Callan.

First Lieutenant F. J. Cunningham, promoted Captain, January 1.

First Lieutenant P. W. Edwards, from 11th, Ft. H. G. Wright, to Hawaii, sailing New York, April 26.

First Lieutenant B. F. Fellers, promoted Captain, December 3.

First Lieutenant J. H. Fonvielle, promoted Captain, February 1.

First Lieutenant C. C. Frank, from Panama, to 62d, Ft. Totten.

First Lieutenant A. G. Franklin, Jr., from 51st, Ft. Monroe, to 9th, Ft. Banks.

First Lieutenant P. L. Harter, from student, C. & G. S. School, Ft. Leavenworth, to Adjutant General's Dept., Washington, D. C., June 21.

First Lieutenant M. H. Harwell, from Hawaii, to 61st, Ft Sheridan.

First Lieutenant M. A. Hatch, promoted Captain, December 9.

First Lieutenant W. G. Holder, from 14th, Ft. Worden, to Hawaii, sailing San Francisco, May 17.

First Lieutenant L. S. Kirkpatrick, from Hawaii, to 8th, Ft. Preble.

First Lieutenant R. H. Kreuter, from 3d, Ft. MacArthur, to the Philippines, sailing San Francisco, February 26.

First Lieutenant J. D. Moss, promoted Captain, February 1.

First Lieutenant R. J. Moulton (CAC) Quartermaster Corps, to Ft. George G. Meade as assistant to quartermaster.

First Lieutenant T. W. Munford, promoted Captain, January 14.

First Lieutenant G. W. Trichel (OD), promoted Captain, January 7.

First Lieutenant J. L. Whelchel (Q MC), promoted Captain, January 21.

First Lieutenant W. L. Wright, from 62d, Ft. Totten, to the Philippines, sailing New York, May 14.

First Lieutenant H. J. Vandersluis, from Hawaii, to 14th, Ft. Worden.

Second Lieutenant J. G. Armstrong, transferred from Coast Artillery Corps to Air Corps, January 31.

Second Lieutenant G. F. Blunda, from Hawaii, to 62d, Ft. Totten.

Second Lieutenant W. A. Call, from the Philippines to Chairman, American Battle Monuments Commission, Washington, D. C., March 1.

Second Lieutenant E. F. Cook, from 52d, Ft. Hancock, to Signal Corps, Ft. Monmouth, June 10.

Second Lieutenant F. H. Fairchild, from Ft. Sheridan, to Hawaii, sailing New York, April 26.

Second Lieutenant R. G. Finkenaur, from 51st, Ft. Monroe, to Hawaii, sailing New York, April 26.

Second Lieutenant F. T. Folk, from Panama, to 11th, Ft. H. G. Wright.

Second Lieutenant T. A. Glass, from 61st, Ft. Sheridan, to Hawaii, sailing New York, April 26.

Second Lieutenant C. J. Hauck, Jr., from Hawaii, to 2d, Ft. Monroe.

Second Lieutenant P. W. Guiney, Jr., from 52d, Ft. Monroe, to Panama, sailing New York, April 4.

Second Lieutenant T. M. Hetherington, transferred from Coast Artillery Corps to Air Corps, January 31.

Second Lieutenant K. R. Kenerick, from Air Corps, Randolph Field, to Hawaii, sailing San Francisco, February 25.

Second Lieutenant Lafar Lipscomb, Jr., from 13th, Ft. Barrancas, to Hawaii, sailing New York, April 26.

Second Lieutenant W. B. Logan, from 51st, Ft. Monroe, to Hawaii, sailing New York, April 26.

Second Lieutenant R. W. Moore, from Hawaii, to 61st, Ft. Sheridan.

Second Lieutenant W. O. Senter, transferred from Coast Artillery Corps, to Air Corps, January 31.

Second Lieutenant F. H. Shepardson, from 14th, Ft. Worden, to Hawaii, sailing San Francisco, May 17.

Second Lieutenant T. V. Stayton, from Hawaii, to 11th, Ft. H. G. Wright.

Second Lieutenant D. B. Webber, from Hawaii, to 61st, Ft. Sheridan.

Master Sergeant, F. W. Hardsaw, 1st, Ft. Monroe, retired, February 28.

Master Sergeant W. F. C. Nagel, 6th, Ft. Winfield Scott, retired, February 28.

First Sergeant Calvin Baker, Ft. Monroe, retired, January 31.

First Sergeant Marcellise Shepard, 63d, Ft. MacArthur, retired, January 31.

First Sergeant W. H. Watkins, 63d, Ft. MacArthur, retired, February 28.

First Sergeant Grover Womack, 62d, Ft. Totten, retired, February 28.

Sergeant George Sehm, 9th, Ft. Banks, retired, February 28.

NOBODY WANTS WAR, *but everybody follows policies which make war inevitable.*—SIR NORMAN ANGELL.

THE FOREIGN MILITARY PRESS

Reviewed by Major Alexander L. P. Johnson, Infantry

AUSTRIA — *Militärwissenschaftliche Mitteilungen* — December, 1934.

MOLTKE-CONRAD. By Lieutenant Colonel Dettmer.

The author offers an interesting comparison between the Chief of Staff of the German Armies in 1914, and his Austro-Hungarian colleague, General Conrad von Hoetzendorff. Both leaders began offensive operations and each ended in a retreat, the Germans to the Aisne, the Austro-Hungarians to the San. Here, according to the author, all similarity ends. While the Austrian Generalissimo ordered his withdrawal of September 11, practically at the eleventh hour to save his armies from the crushing Russian steamroller, General von Moltke, the author points out, retreated from the Marne, September 9, at the very moment when victory seemed within the grasp of the German armies, Paris in sight of the victorious right, the French center pierced, and the situation on the German Left quite satisfactory. These basically different situations prompt the author to ask, what would have happened on the Western Front had the aggressive, tenacious Conrad been at the head of the German Armies in 1914 instead of the weak and vacillating von Moltke? The author is convinced that the German retreat from the Marne to the Aisne would not have occurred.

The author briefly summarizes the progress of the war during the early weeks. On the Eastern Front, the Austrians as well as the Russians launched an offensive, each seeking to envelop the other's left flank. The Austro-Hungarian First Army defeated the Russians at Krasnik but failed to reach Lublin. Fighting stubbornly, this army soon found itself in a critical situation. The Fourth Army likewise defeated the Russians near Zamosc-Komarov. The Third Army on the south, however, having a defensive mission, was overwhelmed by the Russians, and after days of hard fighting it was forced to withdraw. The defeat of the Third Army exposed the Fourth and First Armies to the danger of being rolled up. The author believes that had Moltke been in command of the Austro-Hungarian forces, he would have done just what he did on the Western Front: order a general retirement at this juncture. Not so Conrad. The Austro-Hungarian Chief of Staff still stuck to his guns and planned a renewal of the attack. He reconstituted his armies, boldly wheeled around the Fourth Army to its new attack position, and struck at the Russians once more. The ingenuity and boldness of this maneuver has been acknowledged by military experts. It was General Conrad's own plan, and the German High Command had no part in its conception or execution.

The author also points to the fact that General Conrad established his C.P. at Przemysl, close to the front, whence he could effectively control and influence the operations, unlike German G.H.Q. in Luxembourg, far from the theater of operations. Conrad was a man of great ability, the author writes; Austria-Hungary's outstanding general, and in spite of his ultimate failure, the foremost military leader of the World War.

BELGIUM—*Bulletin des Sciences Militaires*—

THE PRESENT STATE OF THE SOVIET ARMY

Voroshiloff, Soviet Peoples' Commissar for War, in a recent speech, reported in the February 4 issue of *Krasnaya Svyezda* (Red Star), official organ of the Red Army, outlined the present state of the Soviet military establishment. Accordingly, tanks are available in ample numbers and of latest type. The artillery is noted both for quantity and quality of its matériel. Soviet Russia now actually produces huge quantities of automatic weapons. The chemical industry is powerful but still inadequate. Signal matériel is being developed, but results obtained so far are not yet satisfactory. Bombardment aviation is well developed. Facilities exist for the production of airplane motors. Laboratories for scientific research have been set up. Fortifications along the frontiers and the coast lines have been completed and will present serious obstacles to whomsoever may venture to cross into Soviet territory. The navy is now being strengthened. Great progress has been made in marksmanship training, and it is the constant endeavor of Soviet Army authorities to improve methods of instruction as well as matériel.

The social composition of the Red Army is indicated by the following figures:

1930: workers 31.2%; peasants 57.9%; employees 10.9%
1934: workers 45.3%; peasants 42.5%; employees 11.7%

Voroshiloff also noted that railway transportation still is far from what it ought to be, and that condition constitutes a serious impediment to all phases of economic life. He attributes this condition to a lack of discipline and a tendency to haggle over orders.

FRANCE — *La Revue Militaire Francaise* — May and June, 1934.

STATISTICAL DATA CONCERNING THE ARMED FORCES OF FRANCE, 1914-1918. By Lieutenant Colonel Larcher.

The author presents an interesting statistical survey of the French military forces engaged during the World War. According to these figures, France had with the colors on the eve of the war 835,000 men, and 112,000 colonial troops. The author observes this total represents the maximum strength ever attained by the French Army in time of peace, and it was made possible by the intro-

duction of the three years active service standardized in 1913. In the course of the war France mobilized a total of 7,842,000 men. The author states that while Germany had completely exhausted her man-power, France did not commit to action her class of 1919, nor did she call to the colors the contingent of 1920.

At the outbreak of the war France had 211,000 men on duty overseas, leaving a covering force of 736,000 behind which the man-power of France mobilized and prepared to take the field. At first about 64 per cent of the drafted personnel was allotted to combatant arms. By the end of 1917 the ratio was approximately as follows: combatants 51 per cent; units and services of the interior 23 per cent, and public services and works 26 per cent.

The author supplies interesting data concerning the organization of major tactical commands. In 1914 the idea of Groups of Armies was quite new and indefinite. The Group of Armies of the Northeast came into being during the mobilization. It comprised the entire theater of war and hence was generally confused with French G.H.Q. As the operations gradually extended to the sea, the organization of the Group of Armies of the North became a necessity. The Groups of Armies of the East and the Center came into being in January and June, 1915, respectively. War experience thoroughly established the value of these high commands.

In 1914 France took the field with five armies. The following year their number had increased to nine. Each army operated within a natural well-defined geographic area. Army Corps increased from an initial 20 to 35 in 1915. There were two types of corps. Those within defensive sectors consisted of two divisions, while corps earmarked for offensive operations had four divisions. The battle of Verdun changed this set-up. Thenceforth the corps became essentially a tactical command consisting of a variable number of divisions from two to six. The author observes that the operations of 1918 clearly demonstrated the desirability of maintaining corps intact with divisions assigned permanently.

In 1914 France had 47 infantry divisions. By the end of 1915 their number had increased to 96 regular and 13 colonial divisions. By reducing the number of battalions in each division from twelve to nine, the number of divisions was increased in 1916 to 112, while at the same time the number of colonial divisions decreased to six. In 1917 the strength of the French division was reduced once more to a total of 12,000 men, permitting an increase in the number of divisions to 114; but the shortage in replacement decreased that number to 112 by the time of the Armistice.

As to the battle record of French divisions, the author shows that while records credit only 26 divisions with the defense of Verdun, there were actually 66 divisions engaged in that sector in course of the war, some of them in fact on two or more occasions. The battle record of 102 divisions for 1918 shows that each division participated on an average in four major engagements during that year, while for the entire war 57 divisions actually participated in ten or more engagements, three of them in as many as sixteen.

French casualties amounted to 4,015,000. Casualties among officers amounted to 18.9 per cent, among enlisted men 16.1 per cent. The infantry bore the brunt of the battle with a casualty list of 29 per cent for officers and 22.9 per cent for enlisted ranks. The corresponding percentages for the cavalry and artillery were 10.3 and 7.6 per cent, and 9.2 and 6 per cent respectively.

————*La Revue d'Infanterie*—September, 1934.

Training of Infantry Cadres. By Lieutenant Colonel Guigues.

The author discusses the problem presented by the necessity of training rapidly and effectively the annual contingent of rectuits, and the need of providing qualified, efficient instructors to carry on the work. The training of instructors provides the specific subject of this installment of the study. Preparation is important. Its object is, or ought to be: (1) thorough study and discussion of pertinent regulations, (2) fixation of basic doctrine, and (3) organization of actual training. The author describes a method of procedure which is thoroughly practical and meticulously methodical. It should produce capable instructors, and should assure uniformity of training and indoctrination. Theoretical instruction is followed by practical application. The author deplores slipshod methods in the conduct of tactical exercises. The injection into problems of artificial incidents which are inconsistent or incompatible with the general situation, he states, will create confusion, hence must be avoided. Directors of training must exercise the greatest care in planning the work, notably in fixing the exact limits of the subject matter to be taught.

GERMANY—*Militär Wochenblatt*—June 4, 1934.

Old Formalities. By No. 296.

The unnamed author voices his strong objection to the quaint old forms of speech used by polite society in Germany when addressing a lady or gentleman of breeding. He objects to those forms, which have no equivalent either in French or English, on the ground that they are obsolete and "contrary to the spirit of New Germany." To the average American the time-honored terms "wohlgeboren" (well-born) and "hochwohlgeboren" (high-well-born) seem rather meaningless and grotesque; and he will readily agree with the author's views. Similarly, there may be a good deal of sympathetic understanding for the author's aversion to the boresome formality of routine visits of courtesy which form part and parcel of the social life of every garrison the world over. in fact of well-bred society everywhere.

Significant as the author's views might be because of their bold opposition to age-old customs, even greater significance attaches to his third "peeve" voiced against the custom of mounted orderlies riding behind their officers as if to emphasize publicly the social gulf that sepa-

rates the enlisted man from the officer. In the author's opinion, officer and his orderly should ride side by side. This will not only encourage "chummy" conversation between the twain, but it will be conducive to the horses travelling more quietly.

The views expressed by the author are significant because of their strong resemblance to those in vogue in Bolshevik Russia in the heyday of the revolution. It is even more significant that a military publication of the importance and prestige of the *Militär Wochenblatt* should find space for their publication. It would be interesting to know to what extent these radical tendencies prevail among officers of the Reichswehr. At any rate, three officers voice dissenting opinions in the issue of June 25.

———————September 18, 1934.

NATIONALITIES OF THE SOVIET UNION AND THE RED ARMY. By Dr. Bruno Manrach.

Conscious of the powerful influence the army might exercise in the process of unification of the heterogeneous racial groups which make up the population of Russia, the Soviet authorities seriously endeavor to bring each citizen of the Union at least for a short space of time under the Army's influence. In this respect the Soviet policy differs sharply from the practice of the former Imperial Government which exempted from military service non-Russian elements in both European and Asiatic Russia. In keeping with the fundamental idea of the Soviet system, which is based upon class-rule rather than nationalism, the object of unification is not Russification of the non-Russian elements, but rather the integration of the entire population on a proletarian plane of class-solidarity. It is natural, therefore, that instead of disseminating and absorbing the "alien" elements in military units overwhelmingly "Russian" in nationality and speech, the Soviet authorities provide separate regiments for each racial group. In doing so, they take into full account racial peculiarities, aptitudes and qualities in the best interest of military efficiency. Thus racial groups are assigned to one arm or another in accordance with these special aptitudes. The Khirgiz, Turcoman and other Caucasian tribes, natural horsemen, supply personnel for cavalry organizations. Alpine regiments are recruited in the mountainous districts of the Soviet Union.

The project of organizing regiments along racial lines presents some serious difficulties. Several of the racial groups are on a low level of culture, and consequently there is a dirth of suitable "leader" material to fill what corresponds in the bolshevik nomenclature to commissioned and noncommissioned officers. The primitive state of some of the languages likewise presented serious difficulties by way of imparting military instruction along with a sound indoctrination along Marxian lines of political economy and social philosophy which are beyond the ken and mental horizon of some of these primitive wards of the masters of the Soviet Union, and whose languages are adapted only to the articulation of the most rudimentary needs of primitive existence.

The problem of subsistence likewise provides complex difficulties among various religious groups where religious doctrines or racial traditions proscribed certain staple articles of food. Although opposed to all religion *per se*, even the Soviet authorities found it convenient to cater to religious practices and prejudices where the doing so is patently in the interests of the established regime.

Although regiments recruited exclusively among Lettish nationals and the Chinese gave a good account of themselves during the civil wars of the counter-revolution, the author observes, we must remember that they were stimulated by a deep-seated hatred of their former oppressors who represented the White cause. In conclusion the author notes that while the Soviet regime does not oppress the national minorities, there is, nevertheless, a definite feeling among all classes of an abject dependency upon governmental tutelage. The peasantry, which constitutes about eighty per cent of the total population, supplies a large proportion of the Red Army personnel. This class, as is well known, is not particularly devoted to the Soviet regime. In the author's opinion, the moral worth of the Red Army is rather dubious. It is probably for this reason that the Soviet authorities maintain within the Red Army a body of special troops of about 70,000 men as the Prætorian Guard of the Soviet Union which, according to the authot, is particularly well-trained and equipped.

———————*Luftwehr*—November 1, 1934.

ACTIVE A.A. DEFENSE. By Captain Dr. Hans Brehm, Retired.

The first blow of an aggressive belligerent with a powerful air force, the author writes, will of necessity be directed against the enemy's air bases, air ports, flying fields, hangars, airplanes and installations which are essential to hostile offensive action. It follows that A.A. defense will have to function effectively from the very start of hostilities, in fact one's own offensive action is in a large measure dependent upon the efficiency and alertness of the A.A. defense system. The first objective of every belligerent will be the attainment of air superiority, as this alone will assure freedom of action to ground troops and force the enemy on a defensive. This situation, in the author's opinion, demands the establishment and maintenance of an effective constantly alert system of A.A. defense organized at great depth to support the offensive action of the Air Force even though the latter be numerically inferior to that of the enemy. Even a small and weak air force, the author believes, must endeavor to strike an early blow. In fact there is a compelling necessity for such action for the moral and material effect of the success of such an early blow. This assumption leads the author to a consideration of the question whether the A.A. ground defense could inflict sufficient injury upon a numerically superior enemy to bring about an equalization of relative air strength, and to maintain that bal-

ance until one's own air force can be expanded sufficiently to assume the initiative. It is in effect the problem which confronts Germany today.

In the author's opinion, the organization of the A.A. ground defense with great density both laterally and in depth will prevent hostile aircraft from avoiding these defenses by flying around them. Neither will flying at high altitudes help much with vertical effective ranges of modern A.A. artillery in excess of 21,000 feet. Moreover, the author believes, flying at high altitudes severely taxes the flyers, hence it is an undesirable recourse in the execution of air raids. The author concludes, therefore, that the neutralization of the hostile A.A. defense is a prerequisite to a successful air offensive else it will prove a very costly adventure. In his opinion, the necessity of an effectively organized A.A. defense is obvious. It includes an efficient network of air intelligence and communications, as well as pursuit aviation organized and ready for instantaneous action. The least avoidable delay in getting the ground defenses or pursuit aviation into action may prove fatal. The author points to the fact that American pursuit aviation required on an average 3 minutes to take off after receipt of the alarm. It will take 17 minutes more or less for pursuit aviation to climb to an attack altitude. During these 20 minutes the invader flying at 300 km.p.h. can actually cover 100 kilometers, and he will, therefore, be able to carry out his attack mission against any installation within that zone.

The author offers some very interesting estimates regarding personnel and matériel which, in his opinion will be necessary for an effectively organized system of A.A. defense. The organization of an area comprising the radius of action of a bomber, assured at 500 km., would require 1,850 signal stations manned by 30,000 men. This would provide signal stations at 10 km. intervals to a depth of 100 km., and at 15 km. intervals to a depth of 400 km. more. A similar density of A.A. artillery with two pieces for each position would represent 3,700 A.A. guns exclusive of machine guns. The operation of these guns and fire-control equipment would require a force of approximately 110,000 officers and men. The total garrison of the 500 km. defensive zone would run up to 150,000 officers and men. Such a defensive organization, in the author's opinion, would compel a hostile bombing expedition to run the gauntlet of the fire of 37 batteries coming and going. Assuming a probability of two per cent hits which, the author states, is fully justified with modern A.A. equipment, this would be equivalent to annihilation.

GREAT BRITAIN—*Journal of the Royal United Service Institution*—November, 1934.

A Defense of Close Order Drill. By Major M. K. Wardle, D.S.O., M.C.

The author replies to an article by "A Field Officer" on "Modern Infantry Discipline," published in the August number of the *Journal*, taking issue with several ideas advanced. Thus, he regards as fallacious the argument that "the best way of making a soldier the sort of a man who will excel in fighting singly or in pairs, is to give him no close order drill, but simply train him in the actual work that he will be called upon to do in battle." This, in the opinion of the author, presumes that the soldier trained both in close order drill and in open field work will cling to the one and fail in the other. He believes that the dispersion imposed by modern weapons, and the consequent lessened supervision, demand cohesion and team work far more than ever before, and it is "necessary to grind the spirit of unity in common effort into the very heart of the man."

In the author's opinion the object of good close-order drill is "to train men to place themselves in an attitude of the greatest physical and mental alertness, at the unlimited disposal of their commander, and by the skill and solidarity with which they execute his commands, develop a feeling of corporate endeavor and fellowship with their commander in the united effort to produce . . . a form of disciplined self-expression: a military work of art" in which all take equal pride. Close order drill, the author states, will produce more directly and more rapidly than any other means the pride in cohesion. Men of martial races know this instinctively, the author writes, and they love close order drill, "the thrill of corporate effort that is at the heart of all good soldiering."

The author takes issue with the attractive idea of the alleged superiority of the free-minded amateur over the hidebound trained soldier. Facts and reason, he states, are against it. On occasion "undrilled" troops indeed triumphed over "drilled" troops because of superior leadership, but the overwhelming experience is the other way around. Moreover, experience shows that the well-trained, well-disciplined pre-war regulars of all armies recovered from casualties, and were fit for action after a much shorter period than the purely "war-trained" replacements.

SPAIN—*Memorial de Infanteria*—June, 1934.

General Military Information.

Germany: The army adopted a new type light Minenwerfer of great precision and mobility. It weighs 375 kilograms, fires a 75-mm. projectile weighing approximately 12 lbs. with an initial velocity of 170 to 220 m/sec. It has a maximum range of 3,500 meters.

Japan: The Japanese inventor, Hositaro Shimizu, recently obtained a patent for a new model machine gun which, according to all reports, is more formidable and deadly than any other weapon of war. Tests conducted by Generals Tsigari and Hanagawa produced splendid results. In lieu of gunpowder the weapon employs centrifugal force as the propelling charge, hence it operates silently, firing at a rate of 1,200 rounds per minute. The gun weighs about 80 lbs. The initial velocity and penetrating power of the ammunition of this gun is said to be four times greater than that of the gunpowder-propelled ammunition.

NATIONAL GUARD NOTES

The Employment of Gas in Riot Duty

By Colonel Wayne R. Allen,
159th Infantry, California National Guard

THE need for regimental gas and riot detachments in the National Guard has been demonstrated during the operations in the maintenance of law and order throughout this past summer. Organization of such units cannot be left to chance, nor can they be organized after a call to duty or when the danger threatens. Officers and enlisted men who have received some instruction in gas or in gas and riot tactics, but who are not brought together for that kind of drill and functioning which makes a good operating unit, are not always the most suitable group for employment as a shock detachment.

In the study of the possible operations of a regiment in service in the aid of civil authority, or under martial law, it was believed necessary to have a regularly organized gas and riot detachment, to be trained as a unit.

Accordingly, a unit the size of a platoon, reinforced, was organized by detail from the officers and enlisted men of this regiment. The Commanding Officer was the regimental gas officer, the acting first sergeant was the technical sergeant of the Service Company assigned as a "gas sergeant" to the Plans and Training Section, the noncommissioned officers and privates were from the various companies of the regiment.

These officers and men functioned normally with their units; they met alternate weeks for drills in gas and in riot duty formations, and one Sunday per quarter for actual work in the field on the regiment's target range, where target firing while wearing gas masks, and maneuvering under conditions which required the wearing of the mask, were given them.

In this way the functioning of the regiment in the training for its primary mission, war, was not interfered with. There was no large group of men taken from their command for this purpose. In event of a disaster or emergency, the number of men taken from each unit was at a minimum. The strength of the detachment was 30 men.

Functioning

The Regimental Detachment remained under the instructions of the regimental commander. For all duties, it was to be in the regimental reserve, and to be used only when the necessity called for it, and then upon the orders of the regimental commander only, or, in his absence, the regimental executive.

Under the tactical plan, the detachment was to be used to accomplish some particular mission, i.e., in conjunction with troops to break up assemblages, to make arrests, to cover the arrival or departure of other troops, or to reinforce some company or smaller unit which might be in temporary difficulty where loss of life or unusual bloodshed was to be avoided.

All members of the detachment, except the demolition group of two, were to be armed with rifle or with the riot gun, and the bayonet was always to be fixed.

The unit was so organized that one squad, two squads, or the whole platoon, could go forth to render service. If for a mission, the whole platoon, if for reinforcement of a company or smaller unit in a given location, a squad. An officer would accompany the detail, of whatever size, either the regimental gas officer as the unit commander, or the lieutenant as the platoon commander.

In the recent civil disturbances in San Francisco, light, fast trucks were obtained, gas and other equipment placed in boxes, locked, and kept on the trucks at all times. One half of the detachment was alerted, ready for any call, half of the time, with the other half within alarming distance and ready as a reserve.

Actual operations of this detachment were all that could have been asked for. Use of the gas was merely to aid the rifle. Gas was never to be released except where men advanced through to make an arrest or to break up a crowd. Gas was to only be an assisting agent.

The gas was to be used in conjunction with the local tactical commander; that is in coöperation with the tactical dispositions and needs of that force at that time. Gas was never to be thrown by hand; wind was to carry the gas into the assemblage; gas guns and rifle grenades would cover the dispersion of the gas into the back or middle of such assemblages to assist the operation if such assistance was needed. Smoke was to be used first to gauge the direction of and velocity of the wind accurately, and gas fed into the smoke just as soon as possible.

Training in the actual use of the gas is essential in order to give confidence to the officers and men using it, and expenditure of a limited amount of gas of all kinds was made this year both before the recent disturbance as a part of the regular training of the 159th Infantry Detachment, and as a part of the functioning while on duty this year.

Notes on National Guard Training

Successful training with any system requires careful planning.

By Captain Louis H. Thompson
C.A.C. (DOL)

PRACTICALLY everyone agrees that charts, conscientiously kept, will be of great assistance in planning and executing a systematic training schedule. The difficulty with most charts is that they do not actually indicate the true status of training, but are kept merely as eye-wash for inspectors. The ratings found are usually the result of a rough estimate on the part of the organization commander or one of his subordinates, and do not accurately represent the proficiency of the soldier rated.

It is easy enough to get up a chart that covers all subjects outlined in a training program, but when it comes to getting an accurate rating of each individual soldier with which to fill in the chart, we have a much more difficult problem. It is obvious that a captain cannot personally make an accurate estimate of the knowledge and ability of each of his men in all subjects on the program. One person cannot accurately evaluate more than one squad; but if the unit commander permits his squad leaders to give the ratings he will have as many standards of proficiency as he has squad leaders.

The writer has found but one method whereby the desired information could be obtained with the limited time available, and this method requires considerable cooperation between the Regular Army instructor and the battery or company officers and noncommissioned officers. The plan is briefly as follows:

The instructor takes the annual training program of the regimental commander and for each subject which requires military knowledge (school of the squad for example) as distinguished from skill or ability to perform (such as manual of arms) and prepares an examination, with a mimeographed copy for each soldier, which would require from 20 to 30 minutes to complete. This examination may be of the true or false type, the type requiring blank spaces to be filled in with the proper words, the type where the soldier must cross out certain words in order for the statement to be correct, or the type where several numbered statements are made and the soldier puts the number of the statement which is correct in the blank space. The examination may be a combination of all of these.

The principal value of this system lies in its speed. Sixty men can be examined and each man given a rating which represents an exact comparison of him with all others in the organization in less time than it would take to examine one squad by oral examination. The officer in charge of the instruction can divide the papers among his noncommissioned officers giving each an approved solution by which to grade the others, or he can have the men switch papers and read the answers so the men can grade each other. If the latter method is followed it would be well for the officer to check the grading of a few papers selected at random and let the men know this is being done, and that any man who grades incorrectly will lose part of his own score. The name of the man doing the grading should be written on the paper.

Successful operation of this plan requires careful preparation on the part of the instructors. At the NCO school prior to the drill at which the instruction is to be given, the captain, or officer designated by him, should go over the entire subject with the noncommissioned officer instructors and be sure that each one understands thoroughly everything contained in the examination and the method of instruction to be followed. Where possible, all instruction should be demonstrated.

As an example of how the instruction will work out, suppose that we assume that three drill periods will be devoted to the school of the squad. Prior to the first drill scheduled the officers have gone over every detail of the drill with all of the noncommissioned officers, each one being required to pass the examination satisfactorily. The first drill night is taken up entirely with instruction and demonstration, the noncommissioned officers being sure that everything on the examination is thoroughly explained and demonstrated. On the second drill night the first 30 minutes will be taken up with a review of the instruction given on the preceding drill. The second period of 30 minutes will be devoted to the examination, and the last 30 minutes to grading papers. After the grades have been recorded on the training chart each squad leader is given all the papers of the men of his squad. He studies the errors made by each of his men, and on the third drill night points out their errors and devotes the remainder of the period to actual drill of his squad and the application of the theory and technique learned at the two preceding drills.

To avoid arguments as to the meaning of questions on the examination, it will be necessary for the instructor to exercise great care in its preparation, so that no statements are made which could be interpreted to have a different meaning from that intended. There should be only one correct answer. The examination should be arranged so that papers can be graded rapidly, and so that very little writing will be required of the men. The following examples illusttate the four methods of wording the examination:

(1) In executing squad right No. 1 of the front rank faces to the right in marching and takes the half step, taking up the full step on the 6th count.

TRUE FALSE

(2) In executing squad right No. 1 of the front rank faces to the right in marching and marks time, all men stepping off together on the ——— count.

(3) In executing squad right No. 1 of the front rank faces to the right in marching and marks time, takes the half step, all men stepping off together on the 6th count.

(4) In executing squad right No. 1 of the front rank faces to the right in marching and (1) takes up the half step (2) marks time (3) takes four half steps.

No. ———————

An examination in nomenclature of weapons can be given very quickly to a large group by having the instructor prepare a list of the parts to be named, each part being numbered on the list. He then gives each member of the class a list of the names of the parts, each part on the list having a blank space in front of its instead of a number. The list given to the class is arranged alphabetically. The instructor's list is not arranged alphabetically, but the numbers are in sequence. The instructor points out the parts and calls a number for each part. The student places the number in front of the name of the part on his list. After the papers are turned in the instructor prepares a correct solution. He can discover the errors in a paper very quickly by comparing with his solution. In an examination on the nomenclature of artillery weapons, one or more drawings may be made (by placing the stencil paper over the drawings in the book and tracing) and a list of numbered parts given below the drawing. The student is required to place the number of each part on the drawing at the proper place. Another method would be to place the numbers on the parts on the drawing and have the students place the numbers in front of the proper parts on the list.

In addition to the "military knowledge" ratings obtained from the written examinations, it is desirable that the captain should have some record of the "ability qualifications" of his men in subjects requiring skill. A rating of this kind is not exact, but depends upon the standard adopted by the instructor doing the rating. A system similar to that used in rifle marksmanship would be satisfactory. For example the soldier's ability to execute the movements in squad drill properly may be indicated as follows:

Fair: X; Good: X Very Good: X Excellent: X
X; X X
X; X X;

Excellent and has instructional ability: X X
X
X X.

Since the battery or company commander would have to depend upon his squad leaders to give these ratings he should provide each squad leader with a form showing the name of each member of the squad, with a square after each name for the rating. In order to obtain uniformity in method of rating it will be necessary to give the noncommissioned officers thorough instruction as to the meaning of each rating and the standard to be expected. The "ability rating" of each man should be placed on the training chart by the side of the "military knowledge" rating for each subject, so that a study of the chart will disclose whether a man's deficiency is due to lack of knowledge or merely to lack of skill in executing the drill. The "ability" ratings should not be given until after the examination on "military knowledge" qualifications. There will be many subjects for which an "ability" rating will be impracticable, for example: personal hygiene, military courtesy, etc.

Successful training with any system requires careful and thorough planning. The captain cannot wait until drill time to decide who his instructors are going to be. They must be designated at least a week before in order that they may have time to prepare themselves for the instruction. It would be much better if they were assigned subjects and provided with proper training regulations two weeks before the drill. They should be required to study the subject matter in the training regulations before it is taken up at the NCO school in order that points which are not clear can be taken up at that time. Each instructor should be given a list of the men he will have in his group before time for drill. As soon as a man is ready for examination in a subject he should be examined, and if found satisfactory he should be placed in another class on the next drill night. Lack of proper coördination will result in a great waste of time.

With this system of rating it is possible to award prizes to the men making the highest scores in a given subject or group of subjects, without the feeling of discrimination that will always exist in the minds of some men if the ratings are merely the estimate or personal opinion of someone else. This type of examination can be prepared so that the score is a definite value and will be the same regardless of who grades the papers. In the smaller towns, where the local newspaper is willing to publish the names of the prize winners, the publicity will add as much interest to the competition as the prize itself, as most young men take great pride in seeing their names in the paper, particularly if it is for outstanding performance.

The writer does not claim credit for developing the methods of conducting tests described herein. These methods have been in use for a long time and are now being adopted by many schools and colleges in order to eliminate the work of grading long examination papers and to cut down the time required in giving a test. It has been found that soldiers of the National Guard consider these tests much as they would a game, and not at all like a regular written examination. As soon as a test is completed they will usually form in small groups engaging in arguments as to which answer was correct for a certain question. After the solution has been read they will start "kidding" each other about missing certain questions. All of this helps to impress the correct answer upon their minds.

News of the New York Coast Artillery Brigade

Brigadier General John J. Byrne, Commanding

IT would require much more space than can be allotted for this purpose to record all of the activities of interest conducted by the several components of the New York Coast Artillery Brigade. Briefly some of the happenings are as follows:

The Brigade, less the 245th C.A., participated in the Army Day Parade in New York City. This is another example of the way in which National Guard organizations can coöperate with civic authorities. Such coöperation invariably leads to a better understanding and a more wholesome respect for the uniformed services.

Arrangements have been concluded whereby Battery A, 212th C.A. (AA) (searchlight) will hold its initial target practice at Fort Ontario, New York, in July, 1935. For this purpose a part of the equipment of Battery A of the 62d C.A. (AA) Ft. Totten, will be loaned to Battery A of the 212th. Heretofore searchlight training and target practice has been limited, if not entirely overlooked, because of lack of material and inability to obtain flying missions. This year it appears that these deficiencies will be corrected.

The officers of the 244th C.A. gave a most enjoyable dinner on February 26, honoring the promotion of Colonel Mills Miller to command the regiment. Colonel Miller was presented a handsome cocktail shaker by the officers.

After a lapse of 20 years the Noncommissioned Officer's Ball was revived by the old 13th, now the 245th C.A. of Brooklyn. Over 1,000 members of the regiment and their guests attended. The event proved to be one of the greatest social occasions of the year. For over 40 years, i.e., between 1875 and 1915, this ball was held annually; for some reason it fell into the discard, now that it has been revived we hope that it will again become an annual event.

The annual Veteran's Review by the 245th C.A. is scheduled to be held on April 23. The veterans of the regiment particularly enjoy this ceremony. It is the custom for them to present medals to individuals for attendance, and other trophies won by the regiment (or units thereof) during the training year.

A mock trial was held for the training and instruction of the officers of the 245th C.A. in court-martial procedure. This was attended by several distinguished visitors from division headquarters. As an additional means of instructing the officer personnel a maneuver had been worked out on the war game board of Long Island Sound. This proved very instructive. Captain William Pabst was the enemy naval commander. The problem was witnessed by Colonel Henry Fleet, senior instructor, N.Y.N.G. and Lieutenant Colonel Hampton Anderson, G-3 of the division. Time is an essential factor in these maneuvers. The rapidly changing situation accompanied by hostile fire, in the event of a serious attack on a harbor defense, can easily cause consternation and confusion with resulting mistakes, lost opportunities, garbled orders and what not; resulting in inefficient handling of batteries and possible disaster. To obviate this possibility much and careful training in fire control and fire direction is essential. The 345th armory is equipped with a complete Coast Artillery war-game board. The training and instruction on this has done much to facilitate a better understanding of the problems of Coast Artillery by all officers of the regiment.

Classification of National Guard Coast Artillery Batteries

IN an official communication the Chief of the National Guard Bureau has advised The Adjutant General of the Army that the following National Guard Coast Artillery batteries have been classified as excellent by the War Department for the training year 1934:

Btrys. B, C, E, F, G, H, 197th C.A. (AA), N.H. N.G.
Btrys. B, C, D, E, F, G, H, 198th C.A. (AA), Del. N.G.
Btrys. D, H, 206th C.A. (AA), Ark.N.G.
Btrys. C, D, 212th C.A. (AA), N.Y.N.G.
Btrys. B, C, D, G, H, 240th C.A. (HD), Maine N.G.
Btrys. B, C, D, F, G, H, I, M, 241st C.A. (HD), Mass.N.G.
Btrys. A, C, E, 242nd C.A. (HD), Conn.N.G.
Btrys. C, D, F, G, H, I, 243rd C.A. (HD), R.I.N.G.
Btry. D, 244th C.A. (TD), N.Y.N.G.
Btrys. A, B, D, E, F, I, K, 245th C.A. (HD), N.Y. N.G.
Btrys. B, C, 248th C.A. (HD), Wash.N.G.
Btrys. B, C, D, E, 249th C.A. (HD), Ore.N.G.
Btry. A, 251st C.A. (AA), Calif.N.G.
Btrys. B, C, D, E, 252nd C.A. (TD), N.C.N.G.
Btrys. D, E, 263rd C.A. (HD), S.C.N.G.

In commenting on the results of the National Guard Coast Artillery target practice the Acting Chief of Coast Artillery stated as follows:

> The target practices fired in 1934 show progressively better shooting on the part of National Guard Coast Artillery regiments and are indicative of the high standard of training attained by these organizations.

The Chief of the National Guard Bureau is gratified to note the marked increase in the number of batteries rated excellent from 45 in 1933 to 60 in 1934. He has commended all of the batteries for their fine work.

BOOK REVIEWS

ITALY'S PART IN WINNING THE WORLD WAR. By Girard Lindsley McEntee, Colonel, U.S.A. Princeton University Press. 1934.

Reviewed by Major General H. D. Todd, Jr., Retired

In the preface the author states that it has been his aim "to portray her (Italy's) military contribution as an ally and the effect of her effort on the united power of the Allies in winning the War." A study of the book will convince the reader that Colonel McEntee attained his objective in a clear and attractive manner.

In addition, the book is of value in that it affords English speaking people almost their only opportunity to learn what Italy really accomplished. Beginning with a short history of the unification of Italy, we then read of the causes of her alliance with Germany and with her hereditary enemy Austria, and also in reference to this Triple Alliance, the author calls attention to several facts that are not generally known. For example when in 1902 her treaty with Germany and Austria was being renewed. Italy had actually promised France to remain neutral even if France "as a result of direct provocation, should find herself compelled, in defense of her honor or her security, to take the initiative of a declaration of war." Then the sense of pronounced relief felt throughout Italy when her declaration of neutrality was published on August 3, 1914, was based on three premises. First, in Article I of the treaty of alliance it was provided that the three signatory powers should discuss with each other all economic and political questions that might arise concerning their mutual interests. This the Central Powers failed to do. Second, Austria's action against Serbia and occupation of Serbian territory had been without notice to (or consultation with) Italy, this in violation of Article VII of the treaty. Third, under the treaty of 1882 which had never been abrogated, Italy was not bound in the case of a war in which Austria would be opposed by Great Britain.

Owing to the painstaking care with which the author collected the facts upon which the book is based, the above statements can be considered correct and the impartial reader can therefore repudiate the continual references of the German Kaiser and his government to "faithless" Italy.

There is presented a concise and extremely clear discussion of the effect on the war of Italy's declaration of neutrality, also of the status of the war, when Italy joined the Allies by declaring war against Austria on May 23, 1915. Italy cannot rightly be accused of entering the war when the Allies were winning.

"In the spring of 1915, the Germans, with the use of gas, were successful at Ypres, the French offensive in Artois, launched May 8, secured meager results with very heavy losses. The Austro-German offensive against the Russians begun May 2 was a signal success. The Dardanelles operation was already doomed to failure. Rumania was still a very uncertain quantity. Bulgaria was preparing to throw in her lot with the Central Powers. The attitude of Greece, whose Queen is a sister of the Kaiser, was very uncertain. "Thus (writes the author) the situation was far from favorable to the Allied Powers and there was nothing to warrant the belief of a victory in the near future. It was at this point, when it had become clear what the cost of the War would mean in life and wealth to any nation entering it, that Italy declared war against Austria."

The text presents an excellent picture of the geographical and topographical features of the Austro-Italian frontier. From this description and from the photographs in the book the reader will agree with the author's statement that Italy's "tenacity in attacking the most difficult terrain ever attempted by an Army in history of warfare, during which almost impregnable positions were taken foot by foot, with insufficient means, and a staggering casualty list, was a remarkable accomplishment."

Colonel McEntee has the happy faculty of describing the operations of large forces in such a way that the reader, without any effort, can obtain and retain a clear picture. His maps on the pages with the text give no more details than are necessary and his account of a battle, instead of confusing the reader with a maze of movements of small units, is restricted to the operations of armies and corps.

In a few words, the author states the mission of an army and the objective of each corps, then he gives a brief description of the events and finally the results. Consequently, as the reader has before him a clear and simple map, he obtains accurate knowledge of a large movement with what can be described with the greatest ease.

Caporetto; this word stands out prominently in the mind of the average man when he thinks of Italy in the World War. He believes the battle of Caporetto resulted in a collossal defeat, if not the near destruction, of the entire Italian Army. It was undoubtedly a severe defeat and shook the Italian nation.

According to Colonel McEntee, the Central Powers formed for the spear-head in the attack, a composite Army, the 14th, made up of six Germans and seven Austrian divisions commanded by the German General Otto von Bulow. This Army composed of picked troops was carefully trained in tactics found so successful in the capture of Riga and entirely new to the Allies.

In addition the general morale of the Italian Army, due to a large number of factors, was not up to its previous standards. The Italian soldiers had suffered appalling

hardships in the mountainous front line, and their difficulties actually increased as they wrested territory foot by foot from the Austrians.

There were shortages of food and clothing not suffered on the Western Front, also the Central Powers conducted a "secret campaign which preached that peace might be had for the asking." The author believes that there is no question that the poison spread by the subversive elements infected certain parts of the Army but he adds, there was nothing which occurred in the Italian Army as serious as the mutiny in the French Army or in the Germany Navy."

Finally, if the orders issued by the Italian high command had been obeyed the resisting power of the troops would have been greatly increased. For some reason not explained these orders never were carried out.

The Italian 2nd Army bore the brunt of the attack and there was some weakening "units broke into crowds of disbanded men, apparently lacking discipline and some throwing away their arms."

But we also read, "practically the whole of the 3rd Army maintained a high order of discipline and was saved by the prompt and efficient action of its commander and his assistants." And again—"the other armies—5th, 1st and 4th—and the Carnic sector troops fell back in an orderly manner and saved Italy by holding fast where required." It has been assumed by many that the Italians did not stop the hostile advance until assisted by British and French troops but, according to the text—"in all, five British and six French divisions were sent to Italy before the end of the year. Two of the former and three of the latter were subsequently withdrawn. The problem was what to do with these forces. They were held well behind the lines and had no part in stopping the attack on the line of the Piave, although a month later an Anglo-French contingent did take over the eastern Grappa sector and the upper Piave, where desperate fighting was still to come." The Italian losses are given as killed 10,000; wounded 30,000; missing or prisoners 265,000. While the presence of the Allied troops "had a good moral effect, they did not engage the attackers."

"Twenty-nine Italian divisions had stopped the victors with their fifty-five divisions and an overwhelming amount of artillery and material of all kinds." Colonel McEntee is of the opinion that "the withdrawal, with all its confusion, its mistakes, its tragedies and even some misconduct, remains today an achievement which astonishes a careful student of military history."

The psychological effect of the battle is interesting. "The terrible shock of the losses of Caporetto had a remarkable effect on the Italian people. The calculations of the Central powers were that such a serious reverse would cause a breakdown in Italy. It had just the opposite effect.

Possibly owing to sharp criticisms of Italian operations by some of the Allies and also perhaps for the benefit of our English cousins, the author makes another comparison as follows:

"Von Hutier's Army broke through the British defense, west of St. Quentin, dislocated the 5th British Army and occasioned a very costly retreat. The British Army in its retreat swung its right flank back more than thirty miles. The 28th day of March marked the end of the 5th Army—it ceased to exist."

Then he adds "it was necessary that this dangerous opening should be closed and defended by the French. This the French did promptly and effectively." However, from this book, it is seen that when the Italian group of armies was forced back, no army ceased to exist and no foreign troops assisted in the defense.

In the history of the Italian naval operations against the Navy of Austria the author shows the importance of well fortified naval bases. On the eastern side of the Adriatic Sea, Austria had at least seven such bases, while Italy on the west side had but two, Venice on the extreme northern shore and Brindisi at the southern end. This strategical situation so greatly in favor of Austria more than compensated for her inferiority in tonnage which at the beginning of the war amounted to 237,600 tons including that of twenty capital ships, while Italy's tonnage was 319,500 tons with twenty-three capital ships.

By the end of the war Italy had lost 108,181 tons including 5 battleships, the Austrian losses being 89,075 tons including 3 battleships. The excess of Italian losses is attributed by the author not only to the strategical advantages possessed by the Austrian Navy as above described but to the fact that the Italian Navy was in general the aggressor. An important railroad runs along the entire eastern coast of Italy and at many points it is much exposed to attack from the water, most of the river bridges being within sight of the sea. This road was subjected to a number of naval raids. In one, carried out by a squadron made up of two battleships, four cruisers, and some eighteen destroyers, strongly supported by aircraft, the attack extended from Brindisi to Venice and yet, states the author, "the results of the raid were of meager value"—a statement of interest to the Coast Artilleryman. Under the heading, "Turn of the Tide," the book describes the battle of Vittorio Veneto. Here again is a clear concise statement of the missions of each of the four Italian armies, a description of their movements and the results.

We read—"during these twelve days of fighting the Italians had gained an overwhelming victory in spite of the tactical difficulties which faced them. The Austrians were strongly posted and in spite of all the handicaps, the Italian Army had definitely annihilated the Austro-Hungarian Army." Few people, that is, few Americans have any knowledge of this great battle. The Italians had 56 divisions to the Austrian 58 and yet "the operation brought Austria-Hungary to terms." Colonel McEntee informs us that "the British General Gathorne-Hardy in the British Army Quarterly of October 1921 (p.26) states that this was the most decisive battle in the history of the world."

Owing to there being but one American regiment (332d of the 83rd Div.) with the Italian Army while

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there were two million of our soldiers in France, our people have taken little interest in the Austro-Italian conflict. There has been a veritable deluge of books in the operations in France and Belgium including that mass of books written by those with water in their veins or germs in their brains on the degree of quiet or noise on the Western Front.

It is believed however that Colonel McEntee's book stands almost alone among those easily available to the American public. It is written by an educated soldier about soldiers whose exploits are such that one regrets that more American soldiers did not fight with their gallant Italian Allies.

THE KING OF BATTLES. By Major General Harry Gore Bishop, Chief of Field Artillery. Houghton Mifflin Company, Boston, 1935. $2.00.

The King of Battles, an exposition of the art and science of Field Artillery, written by the late Major General Harry Gore Bishop, Chief of Field Artillery, combines breezy treatment with brilliant and lucid explanations of subjects which too often prove stumbling blocks to those out of contact with the Field Artillery. The author's facile manner of imparting information prevents this book from becoming a text—it is far too interestingly written. A perusal of this book will not make a field artilleryman of the reader, but should help him along the road thereto.

AMERICAN MILITARISM. By Captain Elbridge Colby. The Society of American Military Engineers, Washington, D. C., 1934. 112 pages. $1.00.

In *American Militarism*, Captain Colby uses four battles of our wars to show the utter wastefulness in lives and money of our usual military policy, and two other battles to illustrate by contrast the results of employing well-trained and organized armies. Long Island, Bladensburg, First Bull Run, and Santiago, simply and clearly recounted, and devoid of the usual palliations and heroics of school book histories, from the first group; and Gettysburg and the Meuse-Argonne, the second.

The story an honest account of these battles tells is so plain that it hardly needs, for the military reader, as much comment as Captain Colby gives. Nevertheless, an old story well retold makes good reading; and certainly the full tale of our almost insane negligence of preparedness as first brought out in Major Ganoe's *History of the United States Army* can bear any amount of repetition until the lesson is learned.

Captain Colby moreover has addressed himself to the general reader and not particularly to the military. It is to be hoped that other serious historical studies come from this author, for he proves in this small book not only that a million men do not spring to arms overnight but also what we far too rarely find—that accounts of campaigns and battles can well form both stirring and interesting narratives without the least loss of accuracy in their telling.—Joseph I. Greene.