COAST ARTILLERY JOURNAL

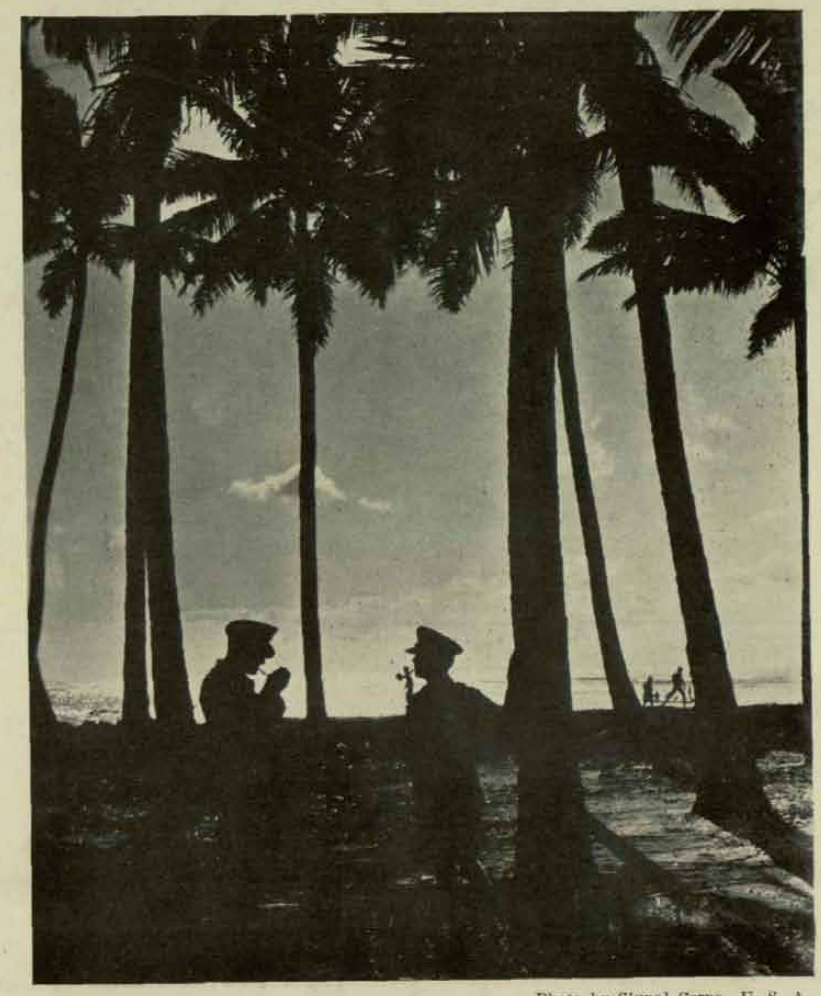


Photo by Signal Corps, U. S. A.

SUNSET IN HAWAII

September-October, 1933

Gunners' Instruction

THE COAST ARTILLERY JOURNAL announces that it has issued a complete series of new and thoroughly up-to-date GUNNERS' INSTRUCTION PAMPHLETS for all branches of the Coast Artillery, covering the requirements for qualification as set forth in Training Regulations 435-310 (Examination for Gunners.)

Following is a statement of the Pamphlets now available and on press

Number	GUNNERS' INSTRUCTION PAMPHLETS	Price
I.	2nd Class Gunner, Antiaircraft Artillery (Except Searchlight Btry.)	$0.75
II.	2nd Class Gunner, Antiaircraft Artillery (Searchlight Btry.)	0.50
III.	1st Class Gunner, Antiaircraft Artillery (Except Searchlight Btry.)	0.65
IV.	1st Class Gunner, Antiaircraft Artillery (Searchlight Btry.)	0.40
V.	2nd Class Gunner, Fixed Seacoast Artillery (All Units)	0.65
VI.	1st Class Gunner, Fixed Seacoast Artillery (All Units)	0.65
VII.	2nd Class Gunner, Mobile Seacoast Artillery (All Tractor-Drawn and Railway Units)	0.75
VIII.	1st Class Gunner, Mobile Seacoast Artillery (All Tractor-Drawn and Railway Units)	0.75
IX.	Expert Gunner, Antiaircraft Artillery	1.25
X.	Expert Gunner, Fixed Artillery (On Press)	1.00
XI.	Expert Gunner, Mobile Seacoast Artillery (On Press)	1.25
XII.	Submarine Mining	1.50

Ten Pamphlets are now available. These cover the instruction of all 2nd and 1st Class Gunners of Antiaircraft, Fixed and Mobile Artillery.

Numbers X and XI will soon be ready for distribution.

The above prices are retail (postpaid) for single copies. On orders for 10 or more copies we allow a discount of 10% (postpaid).

To ORGANIZATIONS of the military establishment a discount of 20% will be allowed on any order regardless of number. F.O.B. Washington, D.C.

THE COAST ARTILLERY JOURNAL

1115 17th St., N. W., Washington, D. C.

THIS IS NOT A PAID ADVERTISEMENT

THE COAST ARTILLERY JOURNAL

Member Affiliated Military Magazines

Published as the U. S. Artillery from 1892 to 1922

MAJOR E. E. Bennett, C.A.C., Editor

Volume 76 | September-October, 1933 | Number 5

Publication Date: October 1, 1933.

Contents

Notes of the Coast Artillery Association 322

Frontispiece 324
By Bob Gordon.

The Siege of Malta—A Coast Defence Epic 325
By Fletcher Pratt.

The R.O.T.C. at the University of Cincinnati 330
By Capt. Porter P. Lowry, C. A. C.

The Dispersion Slide Rule for Use in Fire Adjustment Problems with Simulated Fire 331
Prepared under Direction of Commandant, Coast Artillery School.

Armored Fighting Vehicles in Action 335
By Lieut. Robert J. Icks, Inf. (Tanks) Reserve.

Bootleg Maintenance 343
By Captain C. D. Hindle, C. A. C.

Recognition of Merits and Deficiencies 345
By Major Ralph E. Jones, Infantry.

The Grand Strategy of the World War 347
By Captain Gordon Gordon-Smith.

An Aid for the Instruction of Small Units 353
By 1st Lt. Herbert F. McG. Matthews, Inf.

Air Maneuvers on the West Coast 355
By Lt. Col. John D. Reardan, General Staff (AC).

News of Victory 362
By Thomas M. Johnson.

East of Suez—Colombo 369
By Maida Davis Turtle.

Organization and Operation of a Coast Artillery Maintenance Detachment 371
By Major R. T. Gibson, C. A. C.

News and Comment 373
Submarine Mine Manual Added to Gunners' Instruction Pamphlets—Coast Artillery Trophy—Meet the Army and Navy—New Policy Affecting Detail of Student Officers—Coast Artillery Student Officers.

Coast Artillery Activities 375
Hawaiian Separate Coast Artillery Brigade News Letter—Secretary of War Visits Fort MacArthur—Fort Barrancas Notes—Coast Artillery Activities in Panama—Fort H. G. Wright Holds an Impromptu Animal Transportation Show.

Coast Artillery Board Notes 382
Projects Completed Since the Last Issue of the JOURNAL—Projects Under Consideration.

The Foreign Military Press 386
Reviewed by Major Alexander L. P. Johnson, Inf.

National Guard Training Activities 391
Coast Artillery Activities at Fort Ontario—The 248th C. A., W. N. G., Wrecks Two Targets in One Practice—Details for Service School—Armory Drill Pay—Family Life in the 243rd C. A. (HD), R. I. N. G.—1933 Field Training of the 246th C. A. (HD), Florida National Guard.

National Guard Notes 395
Operations of National Guard—Carry State Flag—Guard-O-Grams—Getting Things Done in the O. R. C.—Coast Artillery Association Dance, San Francisco Chapter.

Coast Artillery Orders 397

Book Reviews 398

THE COAST ARTILLERY JOURNAL *is not responsible for opinions expressed in published contributions*

THE COAST ARTILLERY JOURNAL pays for original articles upon publication.

Published bi-monthly under the supervision of the United States Coast Artillery Association for the information of the Coast Artillery personnel of the Regular Army, National Guard and Organized Reserve.

Publication Offices, Telegraph Press Building, Cameron and Kelker Sts., Harrisburg, Pa.; Editorial Offices, 1115 17th Street, N. W., Washington, D. C.

Terms: $4 00 per year. (Coast Artillery Association members, $3.00 per year). Single copies, 75 cents.

Entered as second class matter at Harrisburg, Pa., Feb. 12, 1931, under the Act of March 3, 1879, for mailing at special rate of postage provided for in Section 412, Act of October 3, 1917.

Copyright, 1933, by the United States Coast Artillery Association.

Notes of the Coast Artillery Association

Trophy Awarded to Reserve Officers

THE July-August issue of the JOURNAL carried an announcement to the effect that a trophy would be awarded by the United States Coast Artillery Association to the Coast Artillery Reserve officer in each corps area who earned the greatest number of credit hours by means of extension school work during the past fiscal year. It was explained that this award had been made possible because of a generous, unselfish and patriotic donation by a former Coast Artillery Reserve officer of a sum of money, to be used by the Association in any manner deemed proper. After careful consideration the Association decided that a saber, with the winner's name etched on the blade, would be a suitable award. The name of the donor cannot be divulged but the results of his generosity will live on forever (we hope). The donation has been converted into an endowment, the proceeds of which will be used as previously explained. This will give Reserve officers an added incentive to complete the maximum number of extension course subjects during the year. Mercenary perhaps, but there is no denying the fact that a tangible prize, cash or its equivalent, is always the best possible stimulus to induce an individual to make the maximum exertion. This holds true whether the exertion is physical or mental.

The reaction to the proposed award was most gratifying. Corps area commanders were loud in their praise of the proposed scheme. Extracts from a few of the replies are as follows:

From Major General Frank Parker, Commanding Sixth Corps Area:

"It may interest you to know that in the Sixth Corps Area it is a basic requirement that a Reserve officer must have an average of 25 hours extension school work for each year in present grade to qualify for active duty training. Please express my thanks to the Coast Artillery Association for this fine trophy awarded to an officer of the Sixth Corps Area."

From Major General Paul B. Malone, Commanding Third Corps Area:

"I appreciate the effort of the Coast Artillery Association to increase the interest of Reserve officers in the Army Extension Courses as a medium of instruction."

From Major General Fox Conner, Commanding First Corps Area:

"I am very glad to assist you in your commendable effort to increase the interest of Coast Artillery Reserve officers in the Extension School work."

A tabulation of the winners showing all pertinent data connected therewith appears below. It is worthy of note that the officer who stands No. 1 on the list, Second Lieutenant Wilfred D. Darling, is a member of the regiment that won the Association trophy for the greatest average number of credit hours per student earned during the fiscal year ending June 30, 1932. The race for second place was exceedingly close with three officers grouped between 500 and 514 credit hours, but the red ribbon goes to Second Lieutenant Harold I. Strahn of the 975th Coast Artillery (AA). In addition to the credit hours earned by means of extension school work this officer acquired credit hours during the fiscal year as follows:

Troop School:	58 hours,
Field Exercises:	10 hours,
Active Duty Training:	100 hours;

a grand total for the year of 682 hours. We believe this is an "all time" record. If any officer can show proof to the contrary we will be glad to be corrected. In submitting the report pertaining to Lieutenant Strahn, the unit instructor stated as follows:

"It is not the policy of this office to discourage work but in this case the student was not given as much as he asked for during the past school year."

It is regretted that all corps area commanders did not furnish the names and records of the "runners up." However, we desire to give great credit and honorable mention to the following:

Name	Organization	Credit Hours
Capt. James S. Wall	917th C. A. (AA)	371
2d Lieut. Edwin L. Thomson	503rd C. A. (AA)	369
2d Lieut. J. C. Radnor	916th C. A. (AA)	279
Capt. Milo H. Brinkley	914th C. A. (AA)	265
Major Leon J. Meyung	510th C. A. (AA)	250
1st Lieut. Morris H. Mills	2nd C. A. (AA)	245
Lt. Col. Harry P. Newton	917th C. A. (AA)	247
Major Lloyd A. Corkan	523rd C. A. (AA)	230

All of the above named are in the Third Corps Area.

Now that Reserve officers are fully informed that annual awards for individual excellence will be made, we anticipate that the competition will be exceedingly keen. May the best man win. To the winners the President of the Coast Artillery Association has addressed the following letter which accompanied the trophy:

"On behalf of the United States Coast Artillery Association it gives me great pleasure to inform you that you are the winner of the trophy donated by the Association to the Coast Artillery Reserve officer in each corps area who earned, during the past fiscal year, the greatest number of credit hours by means of extension school work. The trophy, a saber with your name etched on the blade, is being forwarded to you this date.

'The record which you established clearly indicates that you are thoroughly imbued with enthusiasm in your avocation and with a high sense of duty to the Government which has honored you with a commission in the Army of the United States. Your interest in

the subjects of preparedness and National Defense is beyond question. The fact that you have given so freely of your spare time to better prepare yourself for the performance of the duties which fall to the lot of an officer in the event of mobilization is irrefutable evidence of the high ideals, patriotism and unselfish devotion to duty which marks you as an outstanding member of the Organized Reserves.

'Please accept my personal congratulations for the excellent and enviable record which you have established. I am sure it will prove an incentive to others to emulate your performance.

Sincerely,
JOHN W. GULICK,
MAJOR GENERAL,
President"

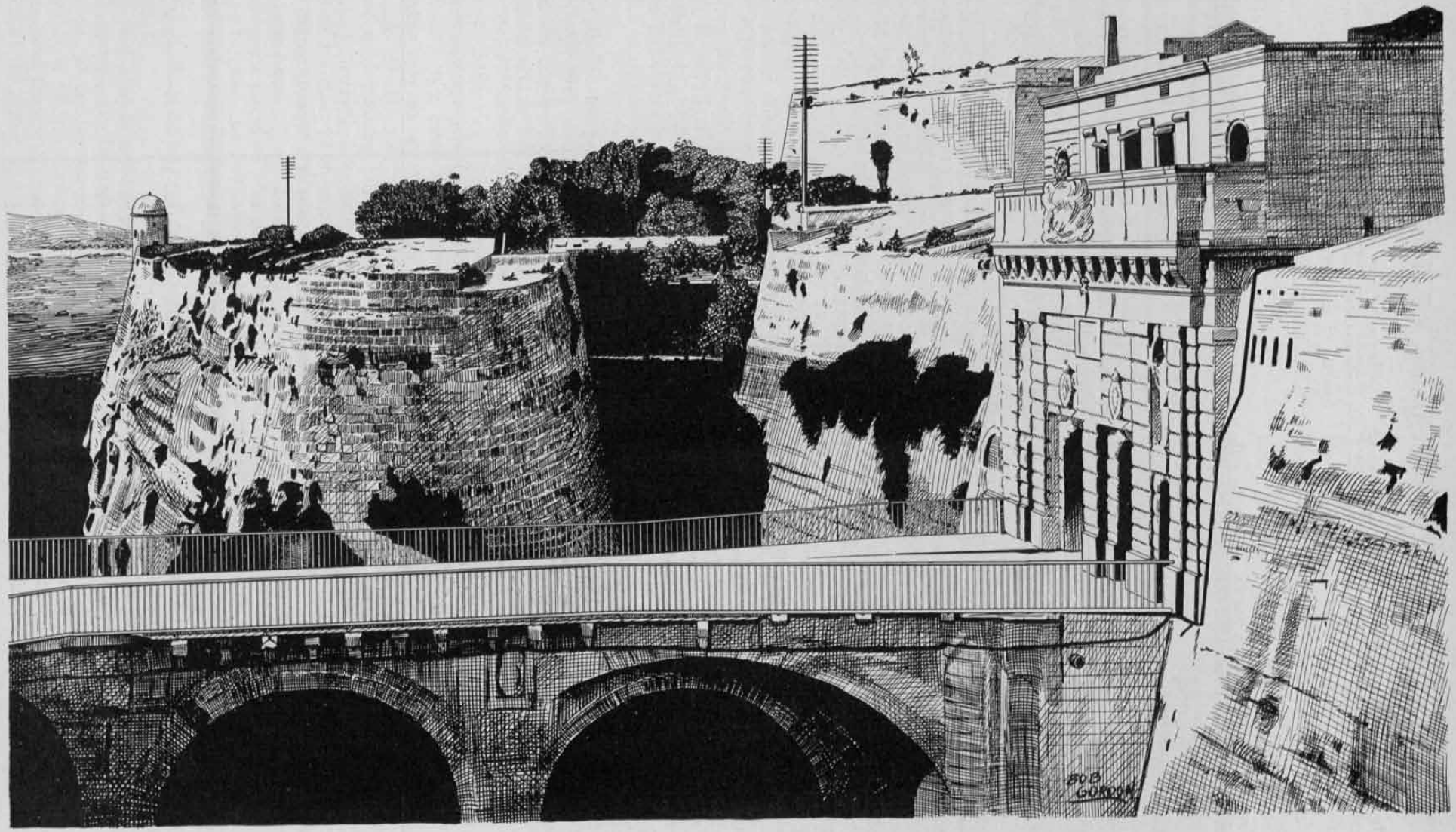
Corps Area	*Name*	*Grade*	*Organization*	*Address*	*Lessons*	*Sub-courses*	*Credit Hours*
First	Ralph A. Stevens, Jr.	Captain	615th	98 Pleasant Street, Fitchburg, Mass.	53	7	512
Second	Godfrey von Hofe	1st It.	908th	24 Colonial Ave. Forest Hills, N. Y.	192	27	479
Third	Robert R. Hendon	Lt. Col.	913th	Interstate Commerce Commission, Washington, D. C.	47	6	500
Fourth	James M. White	2nd Lt.	Inactive	Franklin Road Nashville, Tenn.	78	11	195
Fifth	John Lee Niesse	Major	535th	604 Big Four Bldg. Indianapolis, Ind.	20	3	180
Sixth	Harmon A. Brown	2nd Lt.	949th	1515 W. Monroe St. Chicago, Ill.	102	15	308
Seventh	Wilfred D. Darling	2nd Lt.	955th	513 2d St., S. W. Crosby, Minn.	242	32	611
Eighth	Carl T. Baer	1st Lt.	972nd	5615 Vanderbilt Ave. Dallas, Texas	89	9	249
Ninth	Harold I. Strahn	2nd Lt.	975th	4210½ W. 28th St. Los Angeles, Calif.	175	25	514

Introducing the High Scorer

TO 2nd Lieutenant Wilfred D. Darling of the 955th C. A. (AA), whose address is 513 Second Street, S. W., Crosby, Minnesota, goes the blue ribbon and all other associated honors which can be bestowed upon the Coast Artillery Reserve officer who accumulated the greatest number of credit hours by means of extension school work during the past fiscal year. He is not only the honor man in the Seventh Corps Area, but also is high scorer for the entire United States.

Lieutenant Darling graduated as a civil engineer from the University of Minnesota in June, 1932, and at the same time was commissioned in the Coast Artillery Reserve. Immediately thereafter he attended two weeks' active duty training at Fort Sheridan, Illinois. Enrolling in the extension school in October, 1932, he completed 32 subcourses by the end of the school year with a general average of 98.2%.

By virtue of his extension school work in that he stood in first place within his regiment for three consecutive months he has been given a six month's active duty assignment with the C. C. C. and is now stationed at Indian Diggins, California. His accomplishment should be an inspiration for others; it shows conclusively what can be done when there is a will to work.



The Gate to Valletta and the Bridge Over the Moat Add Modern Touches to the Ancient Fort of the Knights of Malta

The Siege of Malta—A Coast Defence Epic

By Fletcher Pratt

IN the whole of military history, there is no event which better illustrates every principle upon which the attack and defence of a coastal fortress is based than the famous siege of Malta. Thanks to the persistence and ingenuity shown on both sides, every device known to the military art was tried to the limit; and if one can neglect for a moment the fact that the guns in use had a limit range of about a mile and the fortifications were of the masonry castle type and look at the underlying principles one finds in this celebrated feat of arms an almost perfect example of how coast defence should be conducted and of the results a resolute defence can achieve.

In 1565 Malta was held by the Knights of St. John, whose business in life was making things uncomfortable for the Turks. Their ships had caused serious damage to Turkish commerce and when one of them captured a vessel that was carrying part of Sultan Soliman II's harem, that monarch decided to put an end to this state of affairs by capturing Malta as he had Rhodes some time before.

He began preparations at once on the receipt of the news, but they took time, and the Grand Master of the Knights, Jean de la Valette, was given a well-employed opportunity to prepare for a siege. He did this principally by laying in a stock of provisions and increasing the garrison. The island was always in a state of defence from a military standpoint.

His force consisted of the 700 chevaliers of the Order, men whose lifetime had been spent in military service, and who could be considered as an officers' corps. There were also 6500 soldiers. The fortifications of the island were in three main groups, centering around the harbor which was the only good anchorage. The little Fort St. Elmo stood on a point of land jutting out into the center of the harbor, with its guns covering both entrances. The city was to the east of this fort, behind two other points of land, and consisted of four groups of fortifications; Fort St. Angelo; a castle on a point, and Fort St. Michel, a companion piece on the next point, with the basin for the navy of the Order between them. Behind each of these castles was a land fortification. The Fort St. Angelo was covered by the Bourg, a ring-wall with towers inclosing the city; Fort St. Michel was backed by the Sangle, a work of the same character as its mate. All of these fortifications were provided with guns of the then-current type; culverins firing a sixty-pound ball for the most part. Their most formidable feature was the careful traversing work that had been done under Grand Master La Valette's direction (and of which the Turks were ignorant). The artillerists knew almost to an inch where every shot would fall; a thing quite exceptional in that age.

An essential element of the situation, as in the case of any coast defence, was the political background. Aid for the garrison could be expected from the Spanish Viceroy of Sicily, but only after a period of months and if the garrison succeeded in making a good defence, as the Viceroy would not willingly embroil his nation with a Turkish force that had been an easy victor. The case of the defenders, therefore, was the not uncommon one of having to hold out behind their fixed defences for a certain amount of time in order to give the mobile defences time to get into operation.

On the Turkish side, the commanders were the Pashas Kara Mustafa and Piali; the famous Algerine corsair Dragut Reis, and a renegade Greek named Candelissa, who had charge of the naval side of the expedition. They had some 35,000 men to start with, and the assurance of unlimited reinforcements, a fleet of overwhelming superiority, and all the artillery they were likely to need. The Turkish artillery service at that time was the best in the world.

The fleet of the attackers arrived at the island early in May, and the disembarkation was made north of the city on an open beach. The point was well chosen, and there were no defenders on hand and no fixed defences. Most commanders would have attempted to improvised a defence and dispute the landing, but La Valette had a sounder conception of the strategic value of surprise. Permitting the Turks to think their own surprise had won them an unimpeded landing by letting them severely alone during the first day, he concentrated a force of heavy cavalry behind some rolling ground. On the second day, while the Turks were fully occupied with landing their siege artillery, he charged suddenly into the midst of the operation, inflicted a loss of 1500 men, and got out and away before any serious force could be concentrated against him. Having dealt this one blow he then ceased to bother about the landing; and the heavy guards the Turks put out were useless. Quite a little classic of an operation in offensive-defensive.

Kara Mustafa, after getting things straightened out at the landing point, decided to attack Fort St. Elmo first. He had to have a safe anchorage for his ships and the possession of the central peninsula of the harbor would give him one. It was nearly a month, however, before he could get trenches run across the peninsula and a twelve-gun battery set up to hammer at the fort. The trenching was constantly interrupted by a galling enfilade fire from Fort St. Angelo and Fort St. Michel, both of them, thanks to La Valette's careful traversing, making excellent practice.

On May 28 a practicable breach was made in St. Elmo's walls and an assault was ordered, under cover of the fire of the fleet from the outside. It was a signal failure; the garrison in the fort had mounted two guns to sweep the breach and the ships of the Order came down to the harbor mouth and kept the Turkish fleet

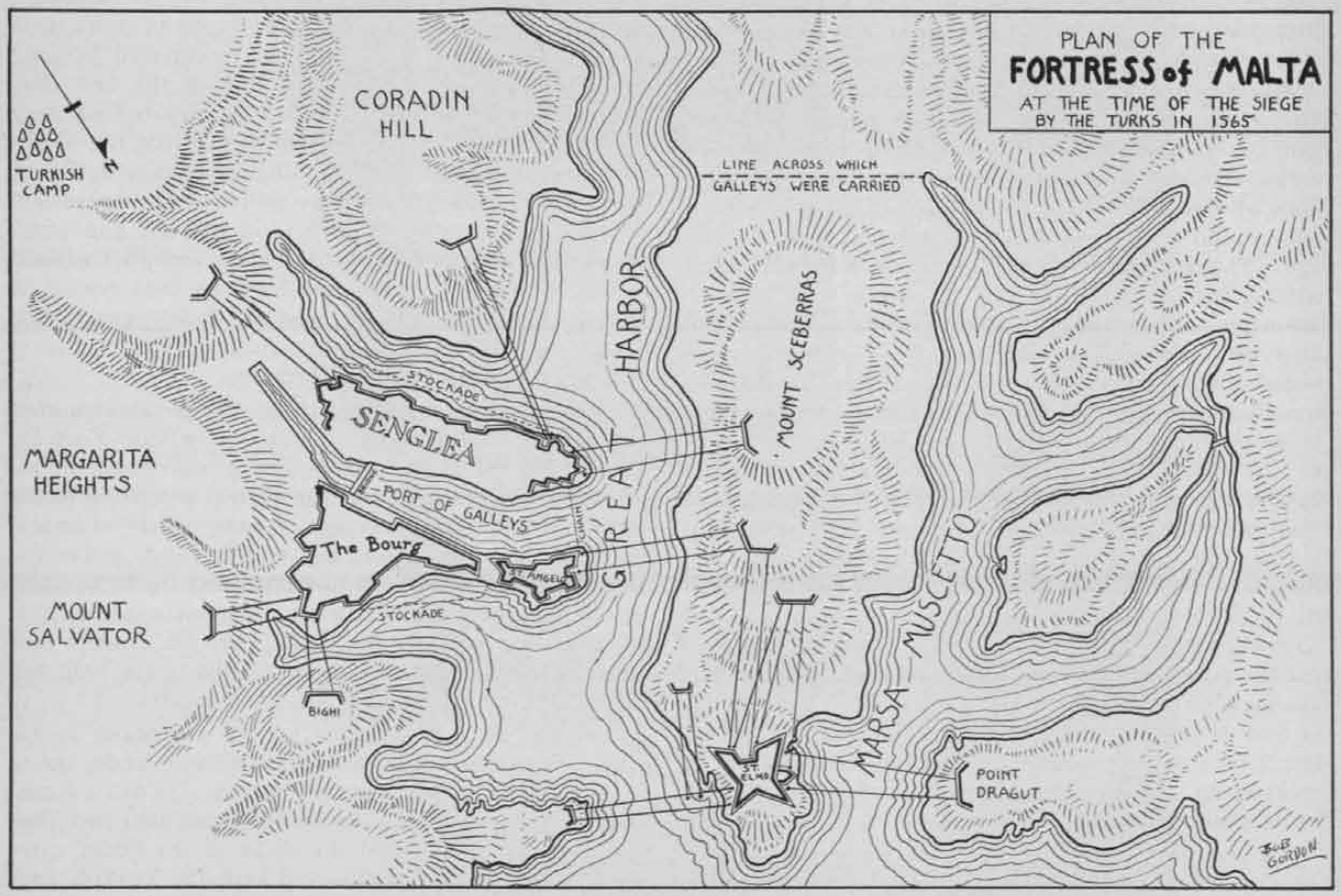
so busy that its fire was altogether ineffective. And finally, Mustafa's own artillerists in the trenches could not fire over the heads of the massed formation that tried the assault.

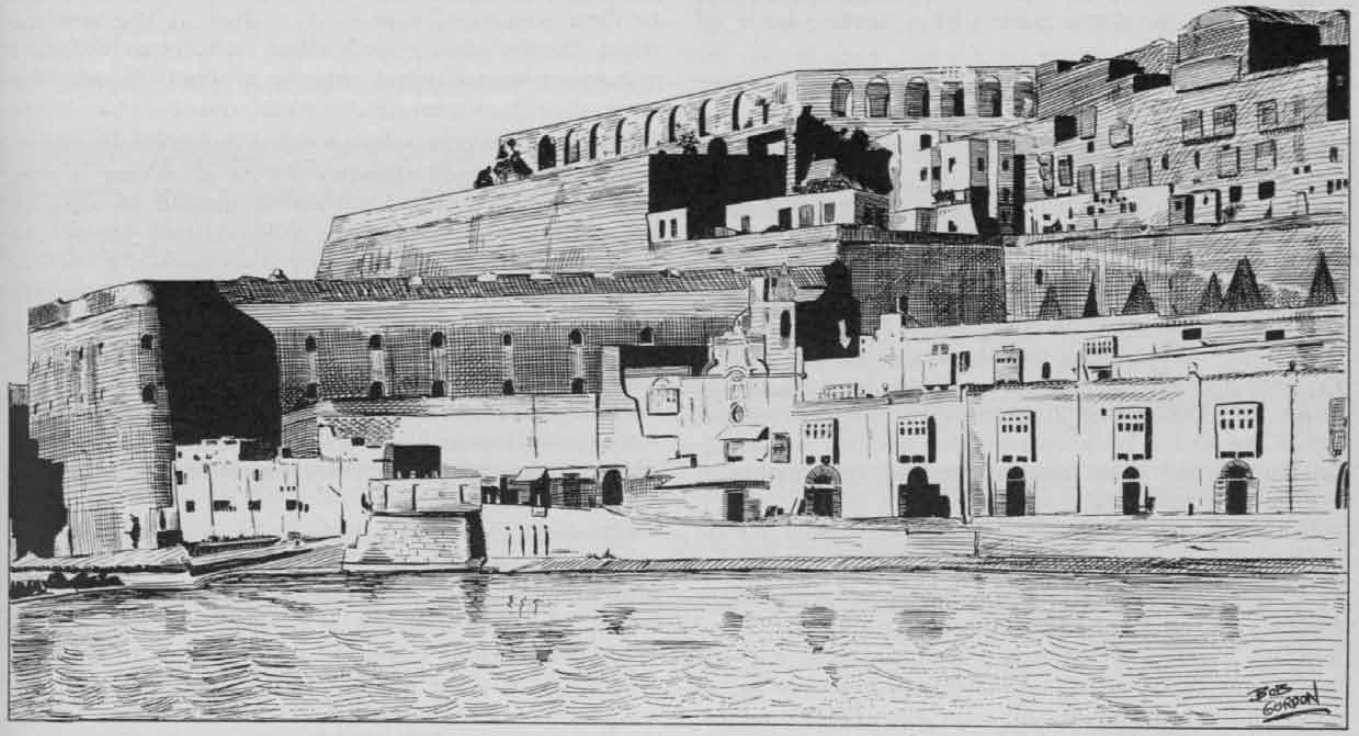
Mustafa had to have his anchorage however; and so he now tried to overwhelm St. Elmo by mere mass. Four heavy guns were mounted on Point Dragut where they could fire down into the fort. A several days' bombardment of incredible intensity for that age followed; the walls of the castle crumbled to powder under it and most of the fort's guns were dismounted. The place seemed absolutely beyond defence, and even the garrison begged the Grand Master to abandon it.

But La Valette had an eye for strategic values, especially for the strategic value of time, and a keen appreciation of the psychological factor. He realized that the Turks could not now give up the siege of Fort St. Elmo without a destructive effect on the morale of their troops, and that every day they spent on it was one taken away from the attack on the main fortress. Under his orders the fort was reinforced by boat from St. Angelo and the garrison dug themselves into trenches reinforced with the rubbish of their crumbled walls.

The next assault came on June 2; like the other it was an attack in mass, but this time under cover of the enfilading fire from Point Dragut. It ended in utter failure, with 5000 casualties for the attackers—over ten times the whole number of the defenders. The reason was largely that the defence achieved another surprise by springing a new and special weapon in large quantity. Working in secret they had manufactured a kind of flame-thrower. At the crisis of the attack, without any warning, the flame-projectors were turned loose wholesale against the massed column of attackers. Numbers of the Turks were burned to death, the rest fled. The knights charged them in retreat, inflicting terrific loss, and might even have burned out their works if the garrison had been larger. But they lacked the force fully to exploit the moral impression produced by their special weapons whose effect here, as always, is largely against the morale of the opponents and must be followed up by a physical blow of the hardest kind.

After this assault another period of bombarding the little castle set in, accompanied by mining operations. As St. Elmo was built on almost solid rock, the mines were not a success, but the artillery fire was continued with the same obstinacy and the same object as similar efforts during the World War—that of completely obliterating the defenders. It succeeded no better than the eight day bombardments along the Somme. The garrison was constantly reinforced by volunteers in boats, and picked off a good many of their opponents by musketry fire, the Grand Master still refusing resolutely to abandon the fort.





The Old Fortifications of St. Angelo Are Still a Prominent Part of the City of Valletta, Named in Honor of La Valette.

The next attack came on June 16, and was accompanied by two innovations from the Turkish side. It was covered not only by the enfilading artillery fire from Point Dragut, but by an intense infantry fire from 4000 archers and arquebusiers thrown out on the flanks of the assaulting column; and in a last effort at surprise a big boat containing 50 men was sent around to surprise the sea-side of the castle while the garrison was occupied with the storming column.

Like the others this assault failed. A single well-directed shot from St. Angelo demolished the boat of the surprise party and killed 28 of them, and the rest did not wait for another such shot. The storming column was turned back in savage hand-to-hand fighting which cost the knights the heaviest losses they had suffered to date. Realizing that the further tenure of so ruinous a place as St. Elmo depended on morale; the Grand Master had sent over an extraordinary number of the chevaliers, and the line of defence at the breach was composed of 25% officers during this attack.

After this third failure Mustafa began to realize that St. Elmo would hold out as long as there was anyone in it. The trenches of the defenders were constantly growing stronger in spite of the insistent bombardments and the wrecked appearance of the place. To cut off the reinforcements which were negativing his efforts, the siege lines were faced outward toward the harbor and a battery of heavy guns mounted in this direction to play on St. Angelo and keep the reinforcing boats quiet. After this piece of preparation and more bombardment a final and successful assault on St. Elmo was launched on June 20.

Possession of the place had cost the Turks over 8000 men in actual casualties, including Dragut, their ablest commander, not to speak of the loss of a month and a half of time and numerous ships that had been wrecked in the open anchorages for lack of a harbor. The order had lost about 1,000 soldiers and 300 chevaliers, but the gain was all on the side of the defenders; a perfect example of what useful results a "useless" small coast defence position can achieve.

With St. Elmo out of the way, and a safe harbor gained, Mustafa now opened operations against the main fortress and the town. Nine batteries, mounting 66 heavy guns (how diminutive these figures seem today!) were established and St. Michel, the Sangle and the Bourg were all bombarded at once. Mustafa planned to breach all three places, then use his enormous numerical superiority in a general assault, with the idea of using up all the defender's reserves so that any local success could be exploited into a complete victory. But La Valette, who was usually a jump or two ahead of his opponents in strategic ideas, had realized this would be the object, and pared down the garrisons in the various forts to barely enough men to work the guns and to protect them against surprise. The rest were installed as a general reserve in Fort St. Angelo, where they were protected both physically and morally from the effect of the fire.

Meanwhile, under Candelissa's direction, a number of light ships were hauled over the central peninsula into the harbor on rollers, and it was planned to deliver an assault on St. Michel from the water side at the same time as the land attack. But La Valette, who had been sowing a stream of spies into the Turkish camp under the guise of renegades, was fully aware of this intended surprise. The marine attack was

countered before it was made with a floating boom off the fort.

It was mid-July before the walls were breached enough for the long-planned general assault, which was delivered by the whole Turkish force all round the circle of fortifications. Even the naval attack was carried out, the boom being broken under heavy gunfire and in spite of severe loss. This operation came the nearest of any to success—Candelissa and the 4000 Algerines he led got a lodgement in a branch in Fort St. Michel and began to move along the wall in both directions. Only the opportune arrival of La Valette in person with the reserves, which he had moved down into the Bourg in preparation for the assault, saved the fort. With considerable tactical ingenuity, La Valette led these reserves around the outside of the fort and took the storming column in the rear instead of trying to make good the defence from the inside, and of the 4000 Algerines only 500 escaped.

At the Bourg the attack was beaten off without the reserves and at the Sangle there was no hand to hand fighting at all save when the knights made a sally, which was repulsed. No quarter was given on either side, and when the assault was over, in loving remembrance of the fact that the men captured in St. Elmo had been crucified, the Knights fired the heads of what Turkish prisoners they had on hand into Mustafa's camp from cannon. But perhaps it is not fair to cite this as a mere piece of warlike barbarity; all through the siege La Valette showed a singular ingenuity in irritating his opponents into doing the wrong thing.

At all events they did the wrong thing now. At a Turkish council of war it was decided to divide forces; each general was to be responsible only for his own part of future operations without reference to the others. Mustafa himself was to continue the attack on the Sangle and St. Michel, Piali that on the Bourg and Candelissa to conduct the sea blockade and any further boat operations that seemed hopeful.

One would think that the Turkish commanders would have learned by this time that the alternation of preparatory bombardment with massed infantry attack was not getting them anywhere, but this is one of the hardest of all military lessons to learn as the World War demonstrated, and it is very difficult for any commander to abandon a program he has once embarked upon. Moreover the thing had now gone so far as to become a matter of prestige. After an intense fire from all the guns in the siege-lines for two weeks more, another assault was delivered on St. Michel on August 2 and still another on August 7.

The second of these two was intelligently handled and came near to success. It was preceded by a covering attack on the Sangle, which drew most of the available forces thither and pinned them (thus preventing a repetition of La Valette's coup against the Algerines), was covered by an intense musketry fire and nourished by the device of continually feeding in new waves of assault, a procedure from which the Turks were enabled to draw the utmost benefit thanks to their numerical superiority. Just at the moment when the defence seemed about to collapse, wearied out by these continual attacks of fresh troops, the Turkish trumpets sounded a recall and the whole force retired.

The division of command in the attackers' forces had done its work. La Valette, instead of sending his reserve to the support of St. Michel across the harbor, had formed it up under protection of a hot fire from the guns of the Bourg, feinted at the Turkish trenches opposite him and then made a sudden sally into Mustafa's camp from the south end of the fortifications. He had gained possession of the Turkish hospital, massacred everybody in it, and was beginning to swallow up the attacking column from the tail, like a snake, when the Turk finally decided to pull out and face him.

After this there was relative quiet in the siege operations until August 16, while the Turks resorted to mining with indifferent success. Again, as with St. Elmo, they had reduced a part of the defenses to ruinous condition; it did not seem possible to hold the Bourg for another day, and the knights begged La Valette to abandon the place and concentrate in St. Angelo. He refused for the same reason he had refused to abandon the fort on the point. The Spaniards were known to be already moving in the rear, and every day gained worked powerfully for the defence. August 16th was marked by a particularly determined assault on the Bourg in which La Valette was forced to put the reserve in a frontal attack, and the knights employed flame-throwers for the second time, but without the good results that had attended them before; the moral effect of them as a surprise was gone; a fact worth remarking by all those who insist on the value of such weapons.

Four days later a night attack on St. Michel was tried but was not pushed in. The Turkish soldiers, who were beginning to show the effects of their repeated defeats and heavy losses, refused to advance.

Mustafa was not beaten yet, however. He contrived a kind of infernal machine; an enormous barrel, filled with powder and scrap iron and fitted with a fuse. Another assault on the breach in St. Michel was ordered, with the Janizaries, the flower of the Turkish army, at its head. The moment the storming column mounted the breach the infernal machine was pitched among the defenders by a kind of catapult. Unfortunately, the fuse was too long; the Knights ousted the smoking object and rolled it down the breach, where it exploded in the midst of the storming column. Its destructiveness was quite up to Mustafa's expectations, for it blew the whole head of the column to glory. The rest ran away.

As though this demonstration of the futility of ingenious military tricks were not enough Piali had to try another one the next day. The trenches were only a few yards from the wall at one point. During the night his men quickly ran up a heavy wooden tower against the wall, and out of range of the defense artillery. Musketeers on the top of the tower spent a

very satisfactory day picking off the defenders from above, and an assault on the nearby breach was only repulsed by the use of the last reserves.

But that same night, the Knights tunnelled through their own wall, muffling the sound of their operation with cloths; then tunnelled through the side of the tower in the same manner and carried it with a rush. Braced and barricaded with stone, it was made an integral part of the defensive system and with its dominating height, it made further attacks on the breach at the Bourg hopeless.

It was now the first of September and every device of the besiegers from solid hammering to ingenious inventions had been tried in vain. Moreover Mustafa received with dismay the news that there were only 25 days' provisions left in his camp, and that a Spanish fleet, with the Viceroy of Sicily's army was already at sea. If he met them on the water, the undamaged ships of the Knights would certainly rush out and take him in the rear. He determined to meet the Spaniards where he was, and made preparations to receive them with a hot fire from Fort St. Elmo and Point Dragut, where the works were put in order, as he assumed that they would seek the anchorage of the port. Meanwhile mining operations were pushed against the Bourg as the only remaining hope.

The Spaniards, no bad strategists themselves, instead of attacking the port entrance, made a complete circuit of the island and landed unexpectedly on the other side. They put a force of light cavalry ashore first, and before Mustafa had even heard of their presence, these horsemen raided his camp. Something like a panic took place among the Turks, and with the troops that still remained steady, Mustafa was forced to cover his retreat to the west side of the harbor.

Even here the indefatigable La Valette would give him no peace. The moment the Turkish retreat began the Grand Master drew out his whole force, effected a junction with the advancing Spaniards, and covered their right wing in a pitched battle at the harbor which resulted in the utter rout of the Turkish forces.

To set the capstone on this epic defence, La Valette's men immediately demolished the siege-works and set about rebuilding their ruined walls, with special attention to St. Elmo. And as a final exhibition of strategic foresight, La Valette had sent his spies to embark with the Turkish fleet with certain definite instructions. When that fleet arrived at Constantinople; these spies managed to set fire to it and burn out the whole business—thus insuring the Knights plenty of time to repair all damages before another attack could take place. But there was no other attack. Even Sultan Soliman had had enough of a coast defence that had cost him 25,000 men and nearly the whole of his navy, to inflict a loss of 5,000 men on his opponents.

.....It is hardly worth while commenting on the special lessons to be drawn from this siege, as most of them are so evident as to be in no need of comment. Perhaps the most prominent point of all is that illustrated by the defence of St. Elmo and later of the Bourg; that the most apparently hopeless of defences is worth carrying on, not merely for the time it gains, but also for the excellent moral effect it produces. No coast defence is a separate mechanism; it is one element in the whole defensive system of the state, and needs to be considered in relation to the whole.

A second striking characteristic is the amount of offensive action La Valette managed to take in a situation that would seem to be limited to purely passive defensive measures. His attack on the Turkish landing; the raid on Mustafa's camp, the reinforcing of St. Elmo and the capture of the tower, were all examples of offensives, which though momentary and local, produced a great effect.

Special weapons were demonstrated as something of purely moral value and extreme untrustworthiness. The flame-throwers produced one victory for the Knights; after that they were of very little use. All the Turkish attempts to use new and special weapons failed flatly, either through failure to use them in quantity or through mishandling.

And finally, the fact that one ounce of surprise is worth any amount of bull-dog hammering, even in static warfare, was most convincingly demonstrated. But that is a lesson that any warfare teaches.

★

THE ART AND SCIENCE OF FORTIFICATION, *field and permanent, far from suffering from the advent of the tank, are on the contrary restored to their historic significance as the guardians of supply and the means of creating bases of mobile attack.*—GOFORTH.

The R. O. T. C. at the University of Cincinnati

By Captain Porter P. Lowry, CAC

WOULD a re-organization of the present R. O. T. C. plan, including a possible re-assignment of units to institutions, tend to promote the efficiency of the R. O. T. C. and the O. R. C.? Much thought has been given to this question by Dr. Herman Schneider, President of the University of Cincinnati, and he has expressed to the War Department his ideas with regard to improvements which could be effected at his institution. His basic hypotheses are of such a character that they might well be made applicable to the R. O. T. C. question in general.

Some of Dr. Schneider's ideas are as follows: R. O. T. C. units of the various arms and services should be installed only in institutions where students are taking academic work which will have the greatest parallelism with their R. O. T. C. work, and students should be assigned to R. O. T. C. units the instruction in which most closely approaches that of their academic courses. For example, only units of certain arms and services should be allotted to technical institutions and these units should be of such character as to lend themselves to mating with the various academic departments of the technical institutions. There should be, for example, a unit of the Signal Corps for the students of Electrical Engineering Department, an Ordnance Department unit for those who are enrolled in the Mechanical Engineering Department, a unit of the Chemical Warfare Service for students of Chemical Engineering, one of the Corps of Engineers for students of Civil Engineering, a unit of the Finance Department or the Quartermaster Corps for Students of Commercial Engineering, etc.

With such an allotment of units, Dr. Schneider then proposes to incorporate semi-military subjects in the academic courses, giving both academic and R. O. T. C. credit for the successful completion of such courses, and making necessary a relatively small force of Army personnel for the administration of the units and for carrying on instruction in purely military subjects. He would, for example, incorporate in the academic work of Electrical Engineering students a study of Army radio requirements, equipment, and procedure; in the Mechanical Engineering course he would substitute Ordnance design for ordinary machine design; for Chemical Engineering students a course in the chemistry of warfare; and for students of Commercial Engineering courses in property and money accounting, procurement, and the like. He would, in general, have the academic courses throughout his College of Engineering and Commerce altered so as to include all possible semi-military instruction.

With such a scheme of allotment of units to certain selected technical institutions throughout the country, Dr. Schneider believes that the requirements in the number of reserve officers of the more technical arms and services could be more adequately met; that the graduates would be better reserve officers since their vocations and their military avocations would be more nearly alike and their post-graduation interest in military matters less likely to wane; and that the R. O. T. C. courses would be undertaken by practically every student since much of the R. O. T. C. instruction would be incorporated in his academic courses.

Students of general college courses should be given the opportunity of enrolling in non-technical R. O. T. C. units, or, to put it in other words, units of non-technical arms and services should be installed in certain selected institutions where the courses of instruction are more general and non-technical in nature.

I believe that there is much to be said for Dr. Schneider's ideas for the improvement of the R. O. T. C. I know of Coast Artillery units, for example, many of whose students are taking courses to prepare them for vocations such as Pharmacists, Landscape Architects, Interior Decorators, and Ceramic Designers. When informed that in accordance with the altimetric roof principle H equals b divided by cotangent ϕ_1 minus cotangent ϕ_2 they are completely bewildered, and a mere glance at Captain Lewis' universal trial shot chart makes them prone to flee as from a plague.

How many of these students will continue to manifest interest as Coast Artillery reserve officers after graduation? Probably a very small portion. Yet, under the present scheme of allotment of units to institutions, it appears necessary to enroll such students in order to maintain a figure of enrollment necessary for the retention of the unit in the institution.

I am told that it is discouraging to officers on duty with the Organized Reserves to note the number of R. O. T. C. graduates who lose interest in the reserves each year—and in many cases I can understand why they do lose interest. If I were a graduate of a school of pharmacy and engaged in that occupation, I too would probably soon lose interest in my commission as a Coast Artillery reserve officer; my vocation and my avocation would not be allied and my avocation would naturally suffer. On the other hand, even though the units of the R. O. T. C. allotted to the College of Engineering and Commerce of the University of Cincinnati are not as numerous as desired by Dr. Schneider, I am informed unofficially that the bulk of our graduates do carry on in the reserves and I believe it is because most of the R. O. T. C. graduates of this institution find their vocations and military avocations more nearly in step with each other.

Anything which will improve the efficiency of the R. O. T. C. in creating the required number of reserve officers who will continue to maintain active interest in the organized reserves after graduation is worthy of deep consideration. Dr. Schneider's ideas are worthy of much thought. They are suitable to a general application in a scheme of re-allotment of units to institutions and a revision of the entire scheme of R. O. T. C. instruction.

The Dispersion Slide Rule for Use in Fire Adjustment Problems with Simulated Fire

Prepared under the Direction of the Commandant, Coast Artillery School

1. Opportunities to practice the application of the principles of adjustment of fire during actual firing are comparatively rare. If the officer is to become proficient in this art, he should be given the opportunity to practice the use of the rules involved by means of simulated fire. The value of such practice is enhanced if it is given under conditions which are similar to actual firing conditions. The firing itself will of necessity be simulated. The dispersion slide rule and auxiliary devices described herein afford the means of simulating fire and determining the effect of adjustment corrections on the position of the dispersion zone with reference to the target.

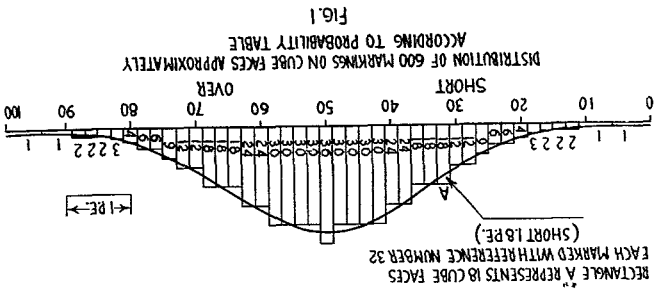


FIG. 1

2. The dispersion which occurs during actual firing is discussed in Section IX, TR 435-280. It is necessary in simulating fire to provide means for obtaining dispersion similar to that accompanying actual firing. This may be accomplished by the use of "hit" (or dispersion) bags or by means of dice. The use of the hit bag to simulate dispersion of shots is of long standing. A table for the use of 100 cubes in the hit bag is given in The Coast Artillery Field Manual, Vol. I, paragraph 284. The same paragraph gives a table for the use of the sums of the spots on three dice. As a result of experience in the use of these and other methods, a variation of the hit bag is described below, as well as a reprint of the table for the use of three dice. To facilitate the use of these methods of simulating dispersion of shots, a description is given of the dispersion slide rule constructed for this purpose.

a. A hit bag may be made as follows: A canvas bag is made sufficiently large to contain 100 wooden cubes with ample space for them to be mixed so that the drawing of any one with any face uppermost will be equally probable on each draw. The cubes may be made of hard wood, 5/8″ on a side. They are marked on each face to indicate errors or distances from the center of the zone of dispersion. The most convenient unit in which to tabulate errors for his purpose is the probable error. The cubes may be marked directly in terms of errors according to the values in the table but it will be found much more convenient for the actual operation of simulating fire to use a system of reference numbers. In any case it should be kept in mind that the markings are such that the number of times any error, or the corresponding reference number, appears on the faces of cubes in the bag is chosen to give distribution according to the theory of probability. The face of the cube which is uppermost when drawn from the bag is read. The following table gives the number of cube faces which should be marked to indicate each error and a system of reference numbers which may be used. A graphical representation of this distribution is given in Figure 1. In the table the minus sign indicates "short of the center of the zone of dispersion" and the plus sign indicates "over the center of the zone of dispersion."

Table 1.

Armament Error Indicated (in PEs)	No. of Cube Faces Marked Alike	Reference Number	Armament Error Indicated (in PEs)	No. of Cube Faces Marked Alike	Reference Number
—4.6	1	4	+0.2	30	52
—4.2	1	8	+0.4	30	54
—3.8	2	12	+0.6	30	56
—3.6	2	14	+0.8	30	58
—3.4	2	16	+1.0	24	60
—3.2	3	18	+1.2	24	62
—3.0	4	20	+1.4	18	64
—2.8	6	22	+1.6	18	66
—2.6	6	24	+1.8	18	68
—2.4	9	26	+2.0	12	70
—2.2	12	28	+2.2	12	72
—2.0	12	30	+2.4	9	74
—1.8	18	32	+2.6	6	76
—1.6	18	34	+2.8	6	78
—1.4	18	36	+3.0	4	80
—1.2	24	38	+3.2	3	82
—1.0	24	40	+3.4	2	84
—0.8	30	42	+3.6	2	86
—0.6	30	44	+3.8	2	88
—0.4	30	46	+4.2	1	92
—0.2	30	48	+4.6	1	96
0	36	50	....	....	....

b. Dice also may be used to show dispersion. The use of dice obviates the necessity for hit bags, they are superior to hit bags in that they may be used

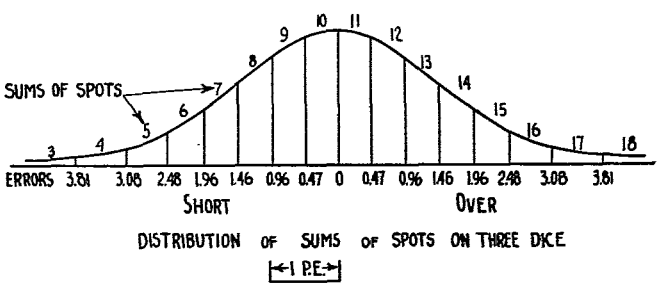
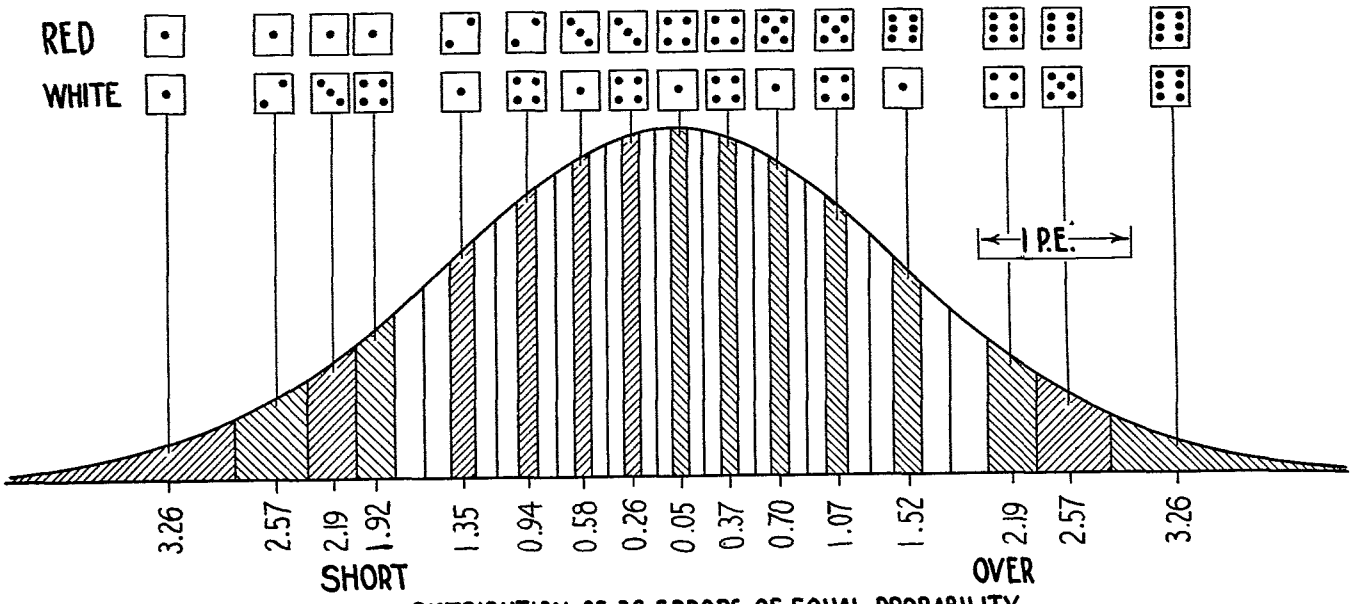


FIG. 2



DISTRIBUTION OF 36 ERRORS OF EQUAL PROBABILITY

FIG. 3

with greater rapidity. By varying the combination of dice different systems of simulating dispersion may be evolved. The first method described requires three dice. The error of each impact may be indicated by throwing three dice simultaneously and letting the sum of the spots on the three faces exposed represent a certain error as given in Table 2. The total possible combinations of the three exposed faces is 216; of these 216 totals there will be one each of 3 and 18; three each of 4 and 17; six each of 5 and 16; ten each of 6 and 15; fifteen each of 7 and 14; twenty-one each of 8 and 13; twenty-five each of 9 and 12; and twenty-seven each of 10 and 11. The distribution is represented graphically in Figure 2.

Table 2.

Sum of spots	Error	Sum of spots	Error
3	—3.7	11	+0.2
4	—3.2	12	+0.7
5	—2.7	13	+1.2
6	—2.2	14	+1.7
7	—1.7	15	+2.2
8	—1.2	16	+2.7
9	—0.7	17	+3.2
10	—0.2	18	+3.7

c. Another method which is very convenient to use employs two dice of different colors. On throwing these dice together any one of the thirty-six possible combinations is equally likely to occur. By reading the same color first each time each of these color-number combinations is represented by a different number of two digits. These combinations may be assigned places on a dispersion scale in any convenient arrangement, provided the places are chosen so as to indicate equal probabilities. In Figure 3 the area under the distribution curve has been divided into thirty-six equal parts; therefore, each part will represent the probability of throwing one of the combinations of the two dice. The error which corresponds to any combination is proportional to the distance between the vertical line bisecting the area under the distribution curve and the vertical line bisecting the subarea assigned to that combination. Table 3 gives the data for the arrangement shown in Figure 3 and used in constructing the scale described in paragraph 4c.

Table 3

Spots on Red	Spots on White	Armament Error Indicated in PEs	Spots on Red	Spots on White	Armament Error Indicated in PEs
1	1	—3.26	4	1	+0.05
1	2	—2.57	4	2	+0.15
1	3	—2.19	4	3	+0.26
1	4	—1.92	4	4	+0.37
1	5	—1.71	4	5	+0.47
1	6	—1.52	4	6	+0.58
2	1	—1.35	5	1	+0.70
2	2	—1.20	5	2	+0.81
2	3	—1.07	5	3	+0.94
2	4	—0.94	5	4	+1.07
2	5	—0.81	5	5	+1.20
2	6	—0.70	5	6	+1.35
3	1	—0.58	6	1	+1.52
3	2	—0.47	6	2	+1.71
3	3	—0.37	6	3	+1.92
3	4	—0.26	6	4	+2.19
3	5	—0.15	6	5	+2.57
3	6	—0.05	6	6	+3.26

3. The tabulations given in paragraph 2 are not in convenient form for use in problems in adjustment of simulated fire. However, dispersion scales may be constructed to represent each of these tabulations. The construction of these scales is described in paragraph 4. They are combined with two other scales on a slide rule which provides means for:

a. Displacing the center of the zone of dispersion an arbitrary distance from the target but permitting the operator always to read deviations with reference to the target (this simulates lack of initial adjustment);

b. The application of adjustment corrections as determined from the fire adjustment board, or the bracketing adjustment chart;

c. The simulation of a shifting center of the zone of dispersion;

d. Determining the effect of adjustment corrections upon the position of the zone of dispersion.

4. The slide rule used should be about 6 inches x 26 inches as represented in Figure 4. The slide should be about 4 inches x 26 inches. Scales A and B may be graduated in yards of range, in terms of elevation or in reference numbers which represent percentages of range. Figure 4 shows Scales A and B graduated with the standard range reference numbers representing percentages of range. The scale is one inch equals one per cent of the range. The least reading of these two scales is 0.2 per cent. Scale A, the deviation scale, is graduated as increasing from left to right in reference numbers with the midpoint marked 300, representing the position of the target. Scale B, the correction scale, is graduated to increase from right to left in reference numbers, with the mid-point marked 300, representing the center of the zone of dispersion. Scale A is fixed permanently to the board and Scale B is fixed permanently to the slide. Separate removable Scales C may be constructed for each of the tables given in par. 2. Any value of the probable error may be assumed. In this description the probable error is assumed to be one per cent of the range.

a. Scale C for use with the hit bag (Figures 4 and 5) is ten inches long and is graduated from left to right, ten units to the inch. It is a reproduction of the graduations at the base of the distribution diagram shown in Figure 1. It may be advisable, for purposes of instruction, to reproduce the distribution diagram shown in that figure on this scale so that the idea of dispersion may be more closely linked with the operation of the hit bag. The center of this scale, marked 50, represents the center of the zone of dispersion and must be in vertical alignment with the center of Scale B. If it is desired to use only this method of simulating dispersion, Scale C may be fixed permanently to the slide. If it is desired to change to other methods, thumb tacks may be used to fasten the scale temporarily in place.

b. Scale C for use with the three dice (Figure 5) is 7.4 inches between extreme graduations for the scale of one probable error equals one inch. The center of this scale, which represents the center of the zone of dispersion, carries no number. Graduations are placed on the scale according to Table 2, the graduation 0.2 inch to the left of the center being marked 10 to indicate that this position represents the error for a throw of the dice with ten as the sum of the spots; the graduation 0.2 of an inch to the right of the center, being marked 11; the graduation 0.7 of an inch to the left of the center marked 9 and so forth until the graduations 3.7 inches to the left and the right of the center are marked 3 and 18 respectively.

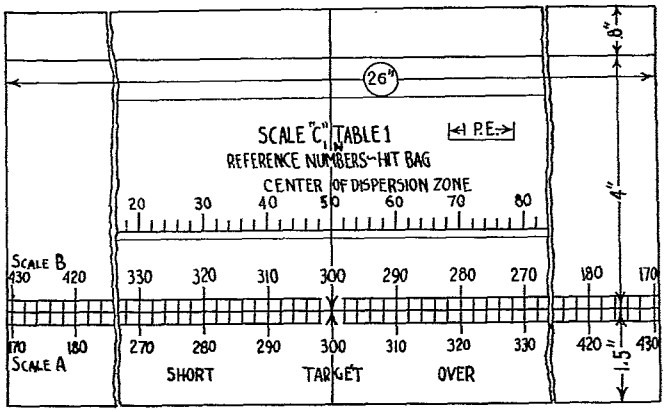


FIG. 4

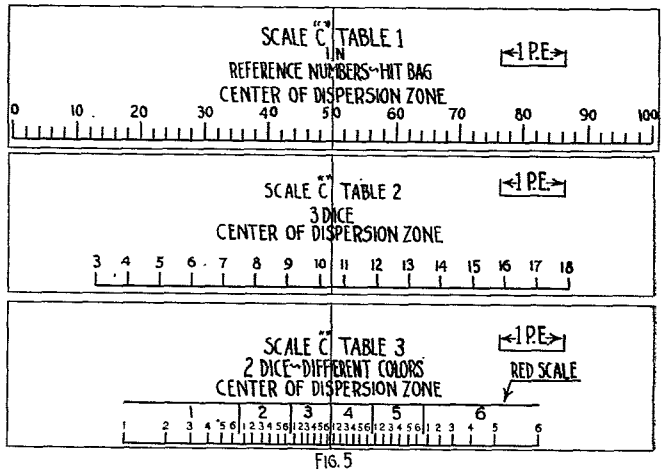


FIG. 5

As with the scale for the hit bag, the distribution diagram in Figure 2 may be reproduced on the scale, if desired.

c. Scale C for use with two dice of different colors (Figure 5) is graduated according to Table 3. For a scale of one inch equals one probable error the extreme graduations are 3.26 inches on either side of the center. The graduation 3.26 inches on the "short" side of the scale is marked "11" (red 1 and white 1); the graduation 3.26 inches on the "over" side of the scale is marked "66" (red 6 and white 6). As examples of other graduations, that "over" 0.70 of an inch is marked for a red 5 and a white 1. The center of the scale, corresponding to the center of the zone of dispersion, is marked by a vertical line for convenience in use but does not correspond to any throw of the dice. The nearest graduations are 0.05 of an inch on either side of the center and correspond to a red 3 and white 6 and a red 4 and white 1, respectively. If a distribution curve is desired on this scale, one similar to that shown in Figure 3 should be used.

5. The operation of the dispersion slide rule, in conducting problems in the adjustment of fire, is described below. These instructions may be typed, mounted on card board and turned over the personnel operating the rule. It will be found convenient to have at least two operators on the slide rule.

Operation of the Dispersion Slide Rule

Scale: 1 inch = 0.01 x range

Assumed probable error = 0.01 x range

Fasten Dispersion Scale C to be used on slide with its center opposite the normal (300) on Correction Scale (Scale B).

Move center of the zone of dispersion (center of Scales B and C) to any desired distance from the target.

Determine error of shot by dispersion bag or dice.

Mark this error on the Dispersion Scale (Scale C) with a pin (pin No. 1). Read deviation to battery commander from Deviation Scale (Scale A) opposite pin No. 1. Continue this process until the required number of shots have been fired. When using dispersion bag, draw one cube at a time for each shot; replace this cube in the bag and stir cubes before making the draw for the next shot.

The battery commander uses any method desired to determine his adjustment correction. When the battery commander orders a correction, place a pin (pin No. 2) in Scale A opposite 300 on Scale B; then move slide until the correction, which is read in Scale B, is opposite pin No. 2.

Do not move pin No. 2 until problem is completed unless a shifting center of the zone of dispersion is being simulated. If a shifting center of the zone of dispersion is being simulated pin No. 2 must be shifted the same direction and amount as each shift of the dispersion zone assumed, in order that the correction ordered may still be indicated on the slide rule.

In reporting deviations by sense only, report as "HITS" deviations within the danger space that has been agreed upon at the beginning of the problem.

6. Except for such preliminary instruction as may be necessary, all problems should be conducted with the same timing as would be required during the firing of an actual practice. No deviation should be reported to the battery commander until the end of the period required for the time of flight and for reporting the spot. Care must be taken not to report deviations of shots which were fired before a correction was ordered as if they had been fired with that correction applied. With a long time of flight, this mistake may easily be made by moving the slide to indicate the new correction before the deviations of all shots fired up to that time have been determined. Errors may be determined from lists made up in advance. In fact, in conducting problems during battery drill the group commander will find it to his advantage to take the errors to be applied from such a list. The columns in such a list may be read up as well as down, or the lines may be read across the page in either direction, or any other method may be followed which will result in a chance distribution of errors. In this way several problems may be conducted with the same list. Another method of making up a list of deviations for simulated practice is to go to the records of past practices for the battery and list the deviations stripped of personnel errors and battery commander's corrections. In this case Scale C should be constructed for a value of the probable error approximating that developed by the battery, as described in the next paragraph.

7. For use in problems conducted during and coordinated with battery drill a smaller slide rule may be constructed or one may be improvised from a sheet of cross-section paper cut in two and having the deviations scale marked on one piece and the correction and dispersion scales marked on the other. The two parts of the paper may be kept in the proper relation by paper clips so that the shifts representing the application of corrections may be made. Deviations should be reported to the man adjusting fire through the regular spotting detail. If it is desired to use a value of the probable error more nearly approaching that developed by the battery in use, all that is necessary is to construct Scale C to the proper scale. For example, if the probable error to be used is 0.007 of the range, 40 to 60 on Scale C for use with the hit bag will be 0.7 of an inch left and right of the center of the scale.

★

CAUGHT WITH A MERE SEMBLANCE *of an army in 1917, our available forces had to be increased by an hundredfold, with no trained men to fill our ranks, and with resources still further unready. We were placed in a most discouraging dilemma. Our officials scarcely knew which way to turn. There was no plan to meet the problem and confusion reigned supreme. After a waste of six months, masses of men were herded together in a few quickly and expensively constructed cantonments, where they were sorted into units and their training conducted under the greatest difficulty. A year and more passed before any one of our units took its place beside the Allies. This is no criticism of anyone; it was inevitable under the circumstances. The very same thing will occur again unless we plan otherwise. How any sane person today, in the light of these facts, can stand up and oppose any sort of preliminary preparation for training is truly beyond my comprehension.*—PERSHING.

Armored Fighting Vehicles in Action

By Lieutenant Robert J. Icks, Infantry (Tanks) Reserve

MANY extravagant claims have been made by extremists regarding the use of armored fighting vehicles in open warfare. For that reason it is refreshing to examine some open warfare actions of the past in which these vehicles played a part.

The following historical examples were of interest to the writer in studying mechanization and motorization. In the belief that they might be of interest to others they have been summarized for readers of the INFANTRY JOURNAL. Both large and small engagements are included, as well as the employment of armored and motorized forces.

Bir Azizia, March 14, 1916. Considerable trouble had been experienced in Egypt and Libya by the British as a result of Turco-German activities among the native Arab tribes. These tribes were trained, armed, and led by Turk and German officers and were a constant threat requiring the maintenance of a considerable force of British troops in Egypt. Among these troops was a squadron of Royal Naval Air Force armored cars under the command of the Duke of Westminster. The squadron was of considerable use in pursuing the highly mobile Arabs and, on one occasion, operated independently as an armored force.

The British were advancing during February and March, 1916, toward Sollum, Egypt, which is on the Mediterranean near the boundary of Italian Tripoli. The Senussi Arabs, armed with rifles, machine guns, and mountain artillery evacuated Sollum, but were still at large. There were no roads in the Libyan Desert and no water except at a few oases. On the morning of March 14, 1916, two Senussi had been captured and the Duke of Westminster learned of the movements of the enemy. Without waiting for instructions, he left one car to heliograph the column commander and pushed on with his squadron, which consisted of nine Rolls-Royce armored cars, one Ford and one Rolls-Royce touring car, all armed with machine guns, and 32 officers and men, to pursue an army of several thousands well armed.

A road was finally struck and, after proceeding for a time, the enemy camp was sighted. The Arabs hastily prepared a defense and their artillery opened fire on the cars, while the balance of their force prepared to march. The defense position was on flat ground but between the cars and the position was a stretch of hummocks formed by sand gathered at the roots of desert shrubs. Once through in column the cars formed in line and charged. The Arabs were caught at a disadvantage since the cars were quickly into the gun positions. The gun crews were shot down and the cars moved into the columns preparing to march. Many camels were loaded, some infantry had already begun to move, and some of the mountain guns had been packed. The armored cars charged again and again until the enemy were completely demoralized and dispersed. Most of the equipment was captured. The only British casualty was one officer slightly wounded.

Late in the afternoon all but three of the cars returned to Bir Azizia and thence to old Fort Sollum. The three cars remained on patrol duty.

A few weeks later the armored cars assisted the British main force in striking at the other tribal forces concentrated about oases in central Libya. These were dispersed, forming the foundation for the complete subjugation of Libya.

Corcy, June 2, 1918 (See Map 1.) Early in June 1918 the Germans were exploiting their break-through at the Chemin des Dames toward the valley of the Oise. The French were falling back on the Forêt du Retz.

On June 2, 1918 the French counter-attacked south of Corcy, endeavoring to regain the wooded slopes west of the Savières River and occupying Javage and St. Paul Farms. One company of light tanks was available but only one platoon was assigned to assist the infantry counter attack. The mission of the tanks was to clear the plateau south of Corcy for the infantry, who were to occupy the ravine from Javage to St. Paul, after which the tanks were to withdraw. The point of deployment for the tanks was the edge of the woods southeast of Cornillards. One company of infantry took part in this small action.

At 2:10 A.M. the tank platoon left Cornillards. At 4:00 A.M. they left the edge of the woods and deployed. One almost immediately fell into a shellhole. The others preceded the infantry. A German advanced post on the high ground on the Corcy-Vauty Road was quickly taken but the advance was held up southwest of St. Paul Farm by numerous machine guns

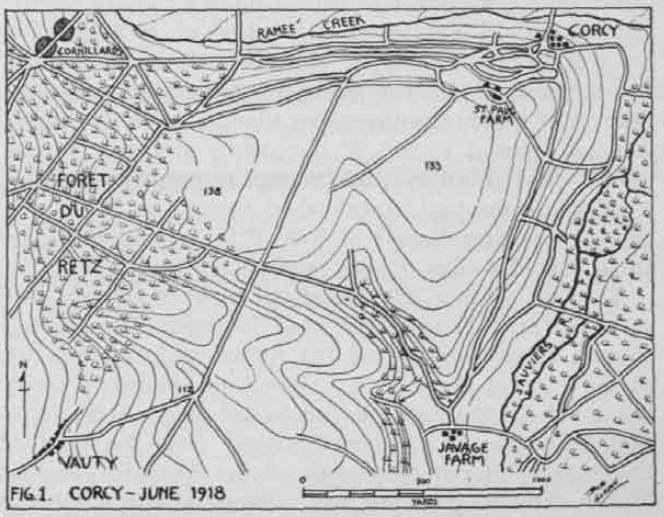


FIG. 1. CORCY - JUNE 1918

hidden in a rye field. The tanks went on but could not locate the machine guns. The infantry were driven to the ground and refused to attempt any further advance unless the machine guns could be neutralized by the tanks. The entire force retired and the Germans again moved forward.

However, on the following day the French again counter-attacked, this time using three tank platoons. On this occasion the Germans were pushed back from the edge of the woods to the banks of the Savières River.

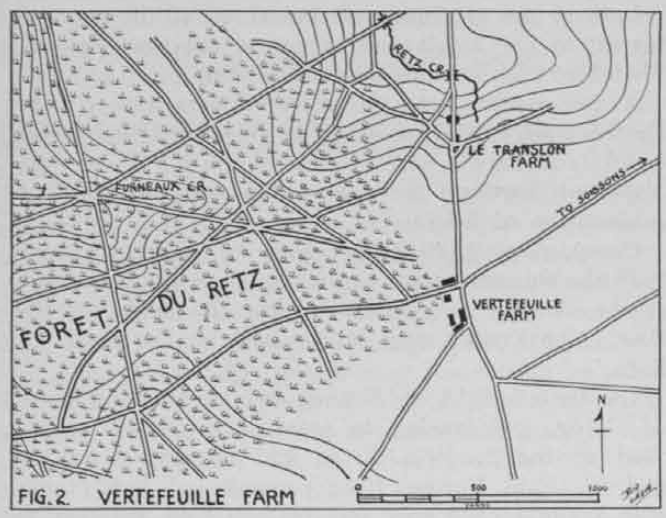


FIG. 2. VERTEFEUILLE FARM

Vertefeuille Farm, June 3, 1918 (See Map 2). In marked contrast to the preceding action is one that took place on June 3 north of Corcy in another part of the Forêt du Retz, at Vertefeuille Farm.

One battalion of a light tank regiment was placed at the disposal of the French 8th Infantry Regiment which was holding the approaches of the forest near Vertefeuille Farm, seven miles northeast of Villers-Cotterets on the Soissons Road. The tank companies under cover of the woods were capable of almost immediate action.

On June 3rd at 11 o'clock the Germans were approaching the farm from north, south, and east, and at 5:30 P.M. it was taken by a battalion with supporting troops. The Germans thus secured a footing astride the Soissons-Villers-Cotterets Road which would permit infiltration into the forest. The French decided to use the tanks to drive the Germans back with only one platoon of infantry supporting them. One tank platoon was to proceed south of the farm, and one to the north. The infantry platoon was to occupy the farm itself while the tanks established themselves 250 yards beyond. Orders issued at 6:00 P.M. and at 6:30 the tanks left the edge of the woods.

The first platoon arrived at the farm in column just west of farm, crossed the road in pairs, but formed column again because of the heavy undergrowth up to the edge of the woods. Here they deployed, striking south of the farm as far as the triple road junction. The second platoon deployed from the road at the edge of the woods north of the farm in echelon. Heavy machine gun fire was reduced at the northerly farm buildings and the platoon continued east to the Soissons Road, enfilading many machine guns along the road. Contact with the first platoon was established, the infantry platoon occupied the farm and the tanks retired in column to the point of departure in the woods at Fourneaux Cr.

Two platoons of another tank company with another infantry platoon made a simultaneous attack in the forest to the southeast west of the farm. Their orders were to drive the enemy to the edge of the forest and they did not pursue further. The double envelopment and large portion of tanks to infantry were unexpected by the Germans who were almost immediately put to flight. The action opened at 6:30 P.M., at 7 P.M. the objectives had been gained, and at 7:30 the tanks returned. In this action the only casualties were two tank personnel wounded.

Advance on Aleppo, September-October, 1918 (See Map 3). The British 5th Cavalry Division was operating against the Turks in Asia Minor, and, on October 17, 1918, was concentrated northwest of Homs. The division had assigned to it a column of Rolls-Royce armored cars and Ford patrol cars organized into six self-contained batteries of four cars and accompanying motor transport each. The divisional commander accompanied the armored column.

A reconnaissance by armored cars reported that a body of Turks previously at Er Rastan had left but had blown up the bridge over the Orontes River. On the 19th one cavalry brigade and a squadron of engineers left with bridging material in trucks. The bridge was repaired by the evening of October 20th and two more cavalry brigades moved out on the 21st with the armored cars. Friendly Arab cavalry advanced on the line of the railroad.

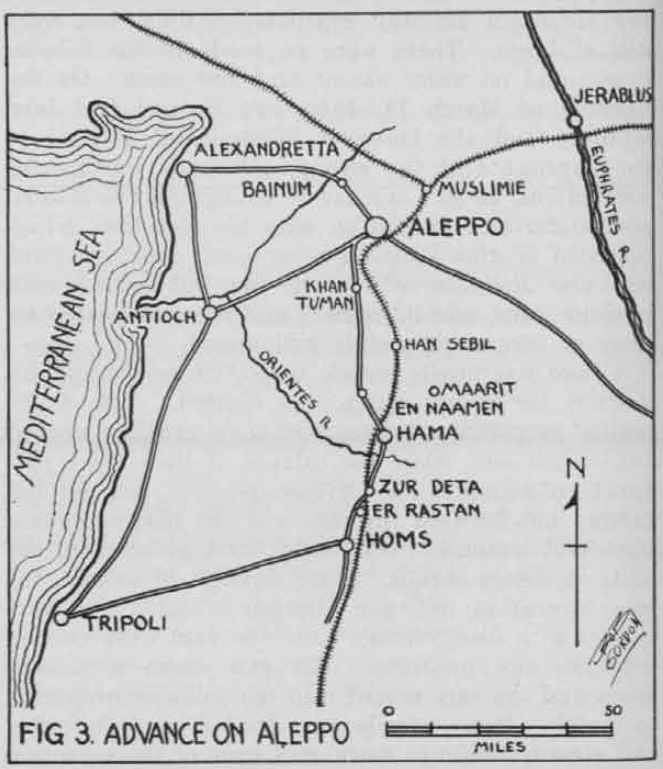


FIG 3. ADVANCE ON ALEPPO

After leaving Hama the armored car column operated independently with the object of reconnaissance, harassing, and, if possible, to take Aleppo and capture the Turkish commander. Airplanes reported Turks at Khan Sebil but the Turks had seen the advance of the armored cars from a distance and withdrew in six trucks convoyed by one armored car. British cars pursued this group, capturing the armored car less than a mile from the village. The first truck was captured four miles further on by a patrol car and the pursuit continued for fifteen more miles until darkness set in.

Early on the 23rd the armored car column moved northward. On reaching Khan Tuman Turkish cavalry were seen leaving but they left the road on being pursued. Reconnaissance was then made of the hilly country north of there into the plain south of Aleppo to within five miles of the town. This and air reconnaissance showed the Turks holding short trenches three miles south of Aleppo across the road to Hama. Over 2,000 Turks occupied the ridges running southwest from the town, while 7,000 more were reported in Aleppo.

After encounters with Turkish cavalry patrols, the cars withdrew south of Khan Tuman for the night in a position allowing for car maneuver in case of attack. On the 24th the column moved forward to reconnoiter, finding the Turks in the same position with cavalry patrols pushed into the hills north of Khan Tuman. On the 25th the positions were again reconnoitered in force and, as before, drew considerable rifle and artillery fire. Late on the 25th the first cavalry brigade came up, relieving the armored cars which then moved into outpost support.

The road was very rocky but improved a little south of Khan Tuman. The cavalry and armored cars lived partly off the country but in the main were supplied from the rear by trucks. On the 25th the friendly Arab troops moved to the east of Aleppo to attack in flank on the 26th. Entrance to the city was gained by them on the night of the 25th after considerable fighting.

On the 26th the cavalry brigade moved off to clear the hills west of the Homs-Aleppo Road and to get astride the Alexandretta Road. Armored cars entered Aleppo at 10:00 A.M. The cavalry brigade found a regiment of Turkish infantry, some cavalry, machine guns, and several batteries of field artillery across the Alexandretta Road. Indian cavalry charged the position unsuccessfully. The brigade then took up a position opposite the Turks, another brigade was ordered up in support, and the third was to move to Aleppo. During the night the Turks withdrew, their rear guard holding a position on a ridge north of Bianum, blowing up a bridge over the river. On the 28th they concontinued to retire. The friendly Arabs occupied Muslimie, which was later taken over by a cavalry brigade.

The Turks continued to retreat and on the 31st news of the armistice with the Turkish government was received by wireless and hostilities concluded.

Le Cateau, October, 1918 (See Map 4). Nine Austin armored cars of the British 17th Tank Battalion (Armored Cars) were used in the fourth phase of the Battle of Cambrai-St. Quentin, assigned to the British 3rd Cavalry Division for the attack on Le Cateau. This attack was for the purpose of converting the German retreat into a rout. Three cars were assigned to the 6th Cavalry Brigade, four to the 7th, and two were left in the division reserve.

The first three cars started at 9:00 A.M. on October 9, 1918, from a point south of Serain to secure information on the situation at Maretz. A large crater

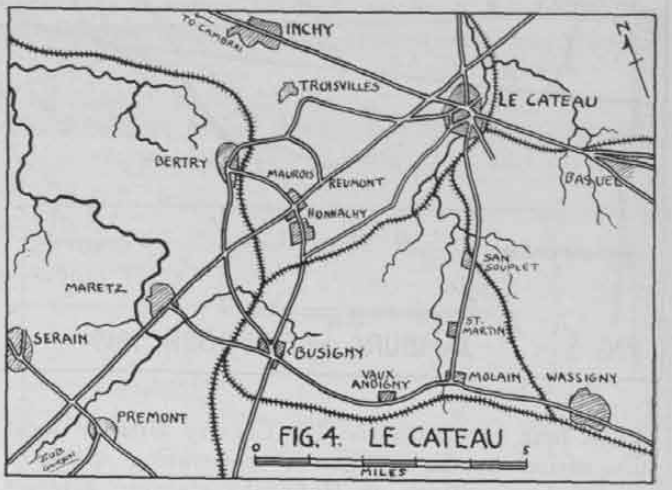


FIG. 4. LE CATEAU

blown in the crossroads between Serain and Premont forced the crews to manhandle the cars cross country. One car bent an axle and was left behind but the other two went on two miles beyond Maretz where they found a company of infantry held up by Germans with machine guns and trench mortars along the north side of the main road just beyond the crossroads between Bertry and Busigny. The armored cars ran through the fire and took the Germans from the flank causing them to flee leaving behind several machine guns and trench mortars.

The cars then dashed for the railroad bridge before Maurois. One car crossed but the Germans immediately blew up the bridge and the other car was left behind. The one car proceeded into Honnachy while the other patrolled the road. There were many German troops in Honnachy and the car engaged these with machine gun fire. By mistake the car turned south but continued after its location was determined because there was a possibility of saving the bridge where the road from Honnachy to Busigny runs under the railroad. The crew's previous experience caused them to advance cautiously around a corner with all guns trained on the spot where it was expected the German demolition squad would be. These tactics were successful and the bridge was saved.

Returning through Busigny a German trench mortar battery was taken in rear and the car then returned to the main road picking up the car which had been left behind. Both then returned to report. A single armored car had penetrated the enemy lines, moved through country filled with enemy troops, saved an important bridge and returned to headquarters from another direction with a valuable report.

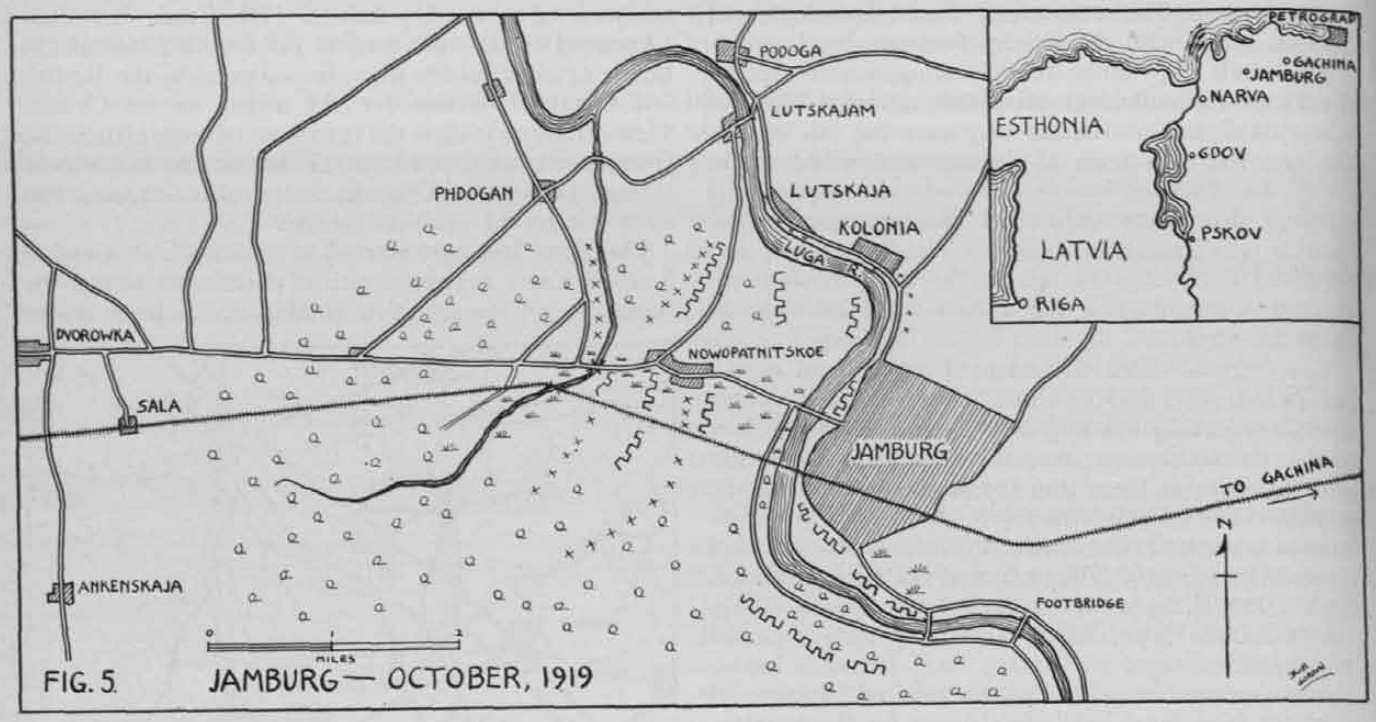


FIG. 5. JAMBURG — OCTOBER, 1919

The four cars with the 7th Cavalry Brigade went into action in the afternoon, cooperating with the cavalry in an attack on Honnachy station. Contact with the cavalry was made at the railroad bridge saved in the morning after the cars had operated more or less independently. The attack was successful. One car was sent back to report to division headquarters, while the other three held the bridge for an hour as a mobile strong point until the arrival of an infantry battalion. In the meantime the cavalry had gone forward.

The two cars in reserve went on a reconnaissance about noon toward Bertry where their counter fire against enemy machine guns assisted some infantry in their advance against the Germans holding the railway cut on the right of the road.

The following day the armored cars headquartered at Troisvilles but the two reserve cars reconnoitered Le Cateau from which the last of the Germans were being driven by the cavalry and infantry.

The Battle of Jamburg, October 11, 1919 (See Map 5). Several Mark V Composite tanks, commanded by British officers, were a part of the Esthonian force fighting the Bolsheviks in 1919. In October, preparations were made by the Esthonians for an advance to Petrograd and the key to the advance was the town of Jamburg. Only a few men could be spared to take this city because of the great need for troops on the right operating to the northeast of Gdov, and yet it was essential to take the position without prolonged fighting. Esthonian and Swedish troops, with three tanks and one armored car, made up the force finally decided upon.

The attack was to begin at 5:30 A.M. on October 11th, the tanks to move out ten minutes before the infantry in order to be abreast of them at H hour. The tanks were brought up by rail to Sala on the 10th and detrained at a ramp at the curve in the railroad due south of Phdogan at 6:00 P.M. The weather was bitterly cold.

One tank was to make for the main bridge opposite Jamburg, another was to follow at 150 yards and then turn to the right and make for the footbridge; the third was to follow in reserve and await instructions just east of Nowopatnitskoe. The first infantry wave was to follow the second tank, the main portion to go with it to the main bridge and a few to follow toward the footbridge. At 5:15 A.M. the tanks moved off at full speed. The White artillery opened up at 5:30 A.M. and the Reds replied immediately, most of their fire falling on the main road south of Phdogan which the tanks just missed. Red rifle fire was high. A well placed Red machine gun delayed the advance slightly on the right until the rapid advance of the tanks forced its withdrawal. The tanks were soon far in advance of the infantry and so failed to see that the infantry was being held up north of Nowopatnitskoe. Because of the wooded character of the terrain as well as swampy ground on either side of the main road, the tanks were held to the road. A trench cut in the road west of Nowopatnitskoe held up the armored car but the tanks moved around the obstacle. The reserve tank was ordered up to the main bridge because of mechanical difficulty experienced by the first tank.

A stiff fire fight had been conducted by the infantry with a group of Reds who were well intrenched across the Luga River and the two remaining tanks cruised up and down shelling the position. After three-quarters of an hour the Whites rushed the main bridge and crossed into Jamburg but the tanks were unable to cross. Reds were still located at the river

bend just north of Jamburg on the west side of the river but were silenced by one tank. The reserve tank assisted the infantry who were being held up west of Lutskaja Kolonia at 10:00 A.M. and the Reds fled across the river in boats. Tank fire into Lutskajam silenced Red fire from there.

The second tank moved southward as planned but halted because of engine trouble. Some infantry caught up and passed the tank but after the trouble was rectified the tank again passed the infantry and shelled a group of Reds who fled across the two southerly bridges and into the woods west of the river. Four machine guns were destroyed and a number of prisoners taken. The infantry crossed the river but the tanks remained on the west side.

Several days were spent searching for a suitable ford but it was necessary finally to strengthen the wooden bridges. The tanks crossed on October 15th and entrained but no railroad engine was available until one was captured by the advancing infantry. The tank train did not leave Jamburg until the night of October 17th for Gachina, fifteen miles toward Petrograd, which had been taken by the infantry on that day.

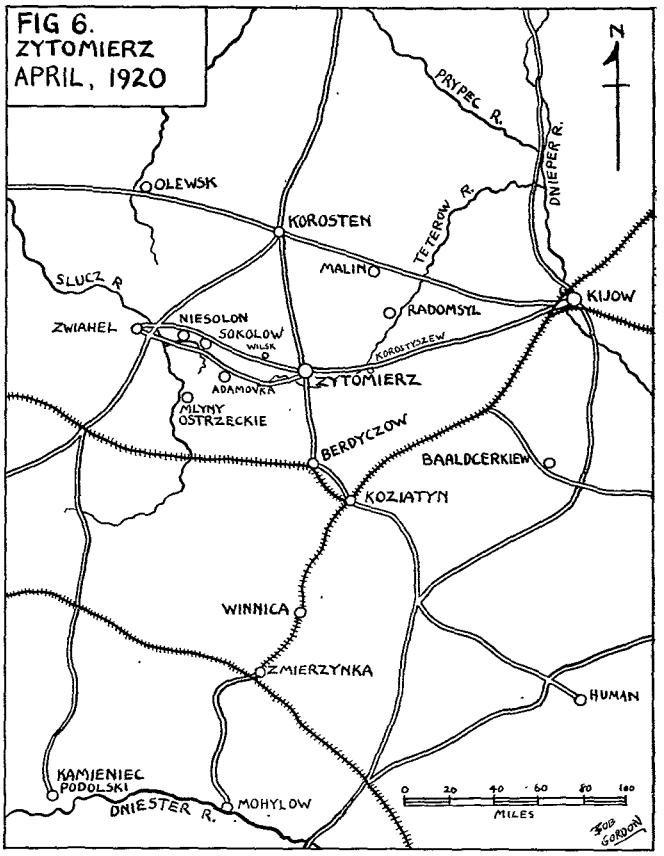
Zytomierz, April 25, 1920 (See Map 6). A classic example of the first use of motorized infantry in open warfare took place during the Russo-Polish War in 1920 and is a distinct credit to the generalship of the Polish commander, Marshal Pilsudski.

After the breakdown of the Whites in southern Russia and the withdrawal of Allied troops from various points in Russia, the Reds were free to carry on an untrammeled offensive against Poland in the south. Good terrain was presented there, success would shorten the Red front, and the Ukraine would be liberated. The Poles decided to meet the Red concentration with an offensive.

The Reds were concentrated weakly about Korosten and strongly about Zytomierz-Berdyczow and about Winnica-Zmierzynka. On April 25th the front extended roughly on the line Prypec River, 25 miles east of Olewsk, 20 miles east of Zwiahel-Slucz River-Dniester River, 40 miles southeast of Mohylow. In order to break the Red front it was decided to capture the railroad junction of Koziatyn and Zmierzynka.

On April 25th the offensive began with an infantry attack over the entire front with the strongest effort east of Zwiahel. Niesolon, which was defended by some Red dismounted cavalry, was taken, the Reds retreating and setting fire to the bridge over the Tynia, a small branch of the Slucz River. This bridge was quickly repaired by the Poles. Another strong infantry push was made south of the main road Zwiahel-Zytomierz, and simultaneously other infantry opened a breach at Mlyny Ostrzeckie for a cavalry division to advance rapidly on Koziatyn. Another cavalry division broke through from the Polish left flank and adanced due south against Malin.

After the Reds were pushed out of Niesolon, a motor column of one infantry regiment in Packard trucks and Fiat half-track vehicles (40 cars in all) started according to plan toward Zytomierz, not on the main road but on a by-road paralleling the main road where such an advance would be unexpected. The advance guard was composed of two Ford armored cars and two infantry companies with heavy machine guns; the main body of the remaining six infantry companies and one motor battery; the rear guard of another Ford armored car and a platoon of cavalry. This group moved out at 4:30 A.M. followed by another battalion of infantry on foot under forced march. South of Niesolon the column began to move through the advancing line and at 6:40 A.M. the armored cars routed a squadron of Red cavalry a few miles west of Sokolow. Swift pursuit of the enemy was hindered by the sandy road and by damaged bridges. The half-track vehicles advanced more rapidly than did the Packards under these conditions. At 7:30 A.M. the advance guard took Sokolow from Red cavalry.



At 3:00 P.M. the column surprised a regiment of Red infantry and a squadron of cavalry at Wilsk. They recovered and launched two counter attacks, forcing the Polish infantry to dismount. The trucks were then sent back to pick up the battalion of infantry which had been following on foot. These were brought to Wilsk by evening. During the night the Reds fell back on Zytomierz.

Meanwhile the infantry in the main attack had reached a point midway between Zwiahel and Zytomierz. In order to follow up the advantage gained by taking Wilsk, the motorized units set out at midnight to attack Zytomierz from the north with a feint from the west. After a night's heavy fighting the

Poles reached the outskirts of Zytomierz. Two Red light tanks were captured by the two Ford armored cars, after several encounters between them. Late in the morning the attack was supported by troops of the main body of infantry who had reached the city and who had met and overcome determined resistance near Adamovka. The Reds retreated with heavy losses in casualties, prisoners, and matériel.

At 3:00 P.M. two companies of infantry in trucks and other infantry on foot were sent toward Kijow. The Soviet rear guard was driven out of Korostyszew by the motorized section with two armored cars and the Poles then established a bridgehead at the Teterow River.

The entire action was successful, the objectives being taken according to plan.

Raid on Kowel, September 9, 1920 (See Map 7). After the Battle of Warsaw in August 1920, the Poles pushed the Bolsheviks back to the River Bug. The front occupied the line Brescwlodawa—East of River Bug—Chelm to Kowel railroad—West of River Bug. On September 10th the Poles attacked to the east. Two infantry divisions and a cavalry corps advanced on Luck to push the Bolsheviks toward Sarny, and two infantry divisions and a mixed group advanced toward Kowel, the object of the attack being to surprise the Bolsheviks who were preparing for an offensive intended for September 12th. It was planned to use an armored force to make a flank raid on Kowel and, in preparation for this, Polish infantry advanced rapidly against Mokrany on September 9th, taking it on September 11th. The armored force was organized at Wlodawa on September 10th and consisted of 11 armored cars (8 Fords, 2 Whites, and 1 Packard), two batteries of field artillery drawn by trucks, and two battalions of infantry carried in trucks. Kowel was to be raided via Wlodawa-Mokrany simultaneously with the infantry attack.

The Bolsheviks believed the taking of Matoryta and Mokrany to be only local, threatening Kobryn, and threw in their last reserves northwest of these points, leaving the Bresc-Kowel Road open.

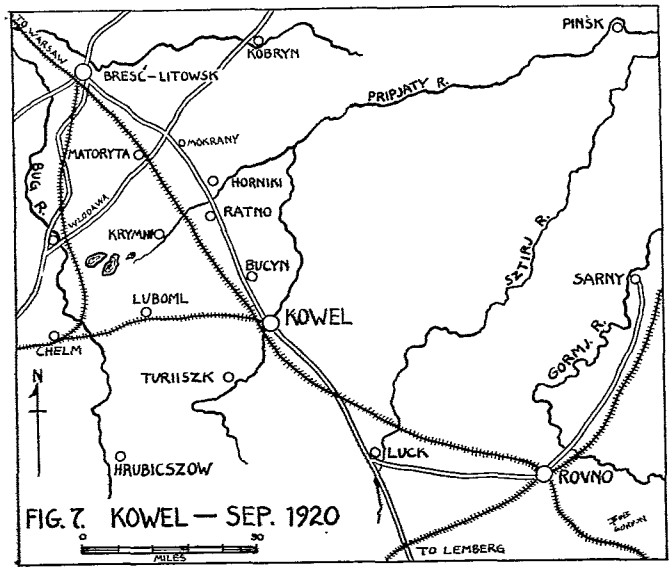


FIG. 7. KOWEL — SEP. 1920

At 10:00 A.M. the armored force set out for Mokrany with an advance guard consisting of three Ford and one White armored cars, half a battalion of infantry, and a half battery of field artillery; two Ford armored cars a mile in rear as connecting files; then the main body of one and a half battalions of infantry, and a half battery of field artillery and the supply trucks and a rear guard of two Ford and one White armored cars. By evening a distance of forty miles had been traversed. After a halt the column resumed the march at 1:00 A.M. on September 12. At 2:00 A.M. Horniki was captured by the advance guard and shortly afterward stiff resistance was overcome at Ratno where the Reds set fire to a bridge which collapsed just after the last car had crossed. At Bucyn a Red battery astride the road attempted to stop the advance but machine gun fire from the cars scattered the gunners. The advance guard then continued full speed into Kowel.

In the meantime the main body of the armored force had been delayed because of an artillery engagement between the field artillery batteries and three Bolshevik armored trains which had moved from Bresc and Chelm toward Kowel. Several armored cars and trucks were damaged. One train finally withdrew to Kowel and the other two retreated to the northwest. The main body then continued on Kowel, reaching the city at 4:00 P.M. The appearance of armored cars in numbers quickly disorganized the Reds and two of their infantry divisions retreated in considerable disorder. The infantry and artillery of the armored force (using captured guns as well) occupied defensive positions east and west of the town while the armored cars patrolled the roads all night long. The Reds counterattacked once during the night unsuccessfully.

At 10:00 A.M. on September 13th the advance guard of the infantry advancing along the railroad from Chelm entered Kowel, the Reds retreated eastward to either side of the city, toward Sarny. Much matériel was captured as well as all of the Red 12th Army Headquarters documents, and the strength and morale of the Bolsheviks were appreciably weakened as results of this action.

Bou Ganous, September 26-27, 1925 (See Map 8). During the campaign against the Riffs in 1925 an action took place which was characteristic of this campaign. There were many French blockhouses or advanced posts requiring relief from time to time and the affair at Bou Ganous Blockhouse is an example of the tactics involved in such a relief. The Riffs were elusive and mobile and this action was one of the few where tank crews could actually see their targets and deliver close range and effective fire.

The post of Bou Ganous was part of the front and was garrisoned by a battalion of infantry. The principle employed was to skirt the post to be relieved or to pass it, preventing by fire, infiltration or attack while the relief was being carried out. When completed, the tanks protected the withdrawal of the relieved infantry.

In the relief of Bou Ganous, two tank platoons advanced through Hammar, a native village, swinging

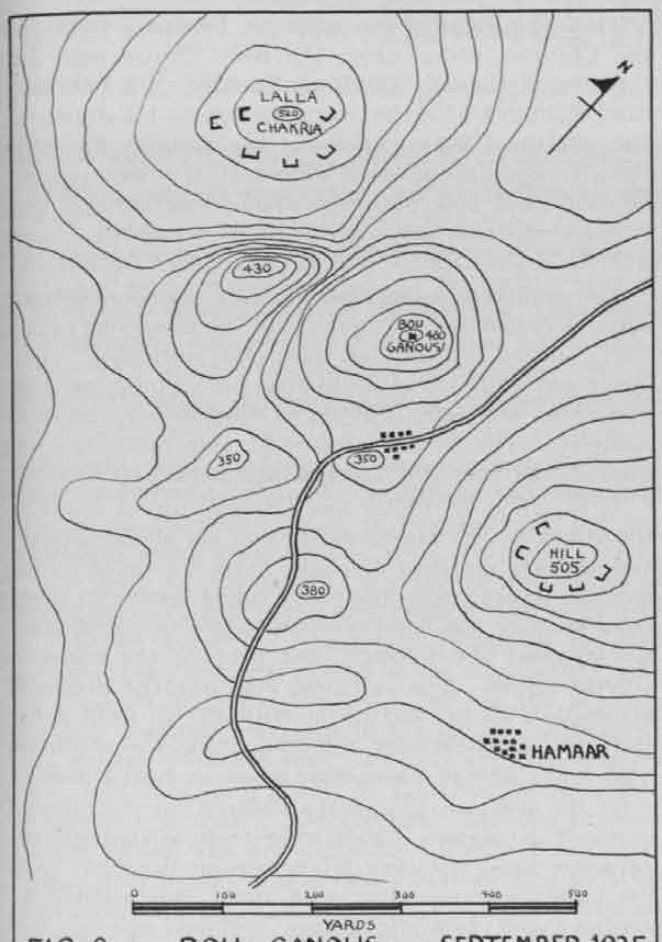


FIG. 8. BOU GANOUS SEPTEMBER 1925

north and then west to the crest of Hill 505 where the Riffs had defensive positions. One tank company on the left flank advanced northwest and then due north on Lalla Chakria. One platoon advanced toward Bou Ganous with orders to exploit beyond the blockhouse. The relieving infantry battalion occupied the center of the line advancing toward Bou Ganous. The general line of departure corresponded roughly with the lower edge of the sketch map. In this action, as in the others in this campaign, the French tank platoons consisted of three tanks instead of the customary five.

The tanks left the line of departure a half hour ahead of the infantry in order to reach their objectives well ahead of them. Observation from a captive balloon and from commanding heights had been carried out well in advance and the relief was well timetabled and prepared. The relief was carried out, the tanks assisting for a day and a night with no losses in spite of the presence of over a thousand Riffs.

Datta Khel, May 1930 (See Map 9). Another example of frontier warfare against semi-civilized tribes has been selected from a number of similar affairs in British India.

After two months of unrest, native tribesmen invested two British posts on the northwest frontier, one at Datta Khel, northwest of Razani, and one at Boya, north of Razani. The attackers were driven off at Boya but Datta Khel was hard pressed and other tribesmen were preparing to join the rebels. An infantry relief column moved out from Razmak to Razani on its way to Datta Khel on May 14th. The road through Razmak Pass branches off at Razani and it was necessary, in order to get to Datta Khel, to follow the rough stream bed from that point to Datta Khel. Because of this the first day's rations were carried by trucks for issue at Razani and two days' more were carried by mule carts for the following days. Since the road from Razani to Datta Khel is impassable to motor vehicles they were used only for the first step in the journey.

British armored car companies consist of four sections of four cars each. One armored car company (less one section) assisted the advance guard. Two Carden Loyd machine gun carriers had been sent to Razmak for experimental purposes and could have made the entire journey to Datta Khel but the Brigade Commander was unwilling to use experimental vehicles for the purpose, although their use in the rear guard was recommended by the commander of the armored car company.

Two sections of armored cars preceded the advance guard to the top of Razmak Pass. They then took up commanding positions on road bends overlooking coulees and arroyos while the two machine gun carriers climbed and remained in observation on two commanding ridges. The advance through the pass was without incident and the armored vehicles regained their positions at the head of the column. On emerging from the pass, one infantry company of the advance guard picketed Pariat Hill. An infantry platoon, across the river between the road and Zur Kot, covered their withdrawal. The flanks of both infantry groups and their withdrawal were covered by the Carden Loyds stationed on the two knolls south of Zur Kot. This move caused about 50 tribesmen to disperse to their villages.

One section of armored cars moved on with the advance guard to Razani where the rations on trucks were distributed. One section and the Carden Loyds remained in observation at the bottom of the pass while the main body passed through them. After this they followed the rear guard. The Carden Loyds moved across country parallel with the rear guard and 200 yards to the left, observing the Khaisora Valley. When the armored cars could no longer follow they returned and convoyed the trucks back to Razmak.

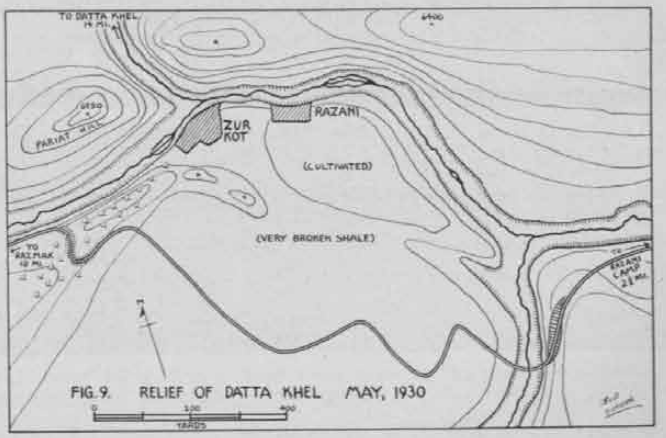


FIG. 9. RELIEF OF DATTA KHEL MAY, 1930

After the relief of Datta Khel, the column returned and was met at Razani by a supply train accompanied by the armored vehicles on May 17th. Two mountain batteries covered the rear guard withdrawing into Razmak Pass, while the Carden Loyds formed flank protection for the artillery.

Had more tracked vehicles been available, the pressure on Datta Khel might have been relieved the same day or they could have operated from a supply base at Razani, without giving the tribesmen a day's warning of a punitive column as occurred here. However, they were not available and the infantry and mountain artillery were required to complete the most dangerous part of the relief without any aid from armored vehicles.

Kiangwan, February 20-29, 1932 (See Map 10). The most recent action in which tanks took part and about which some details are available, was the Battle of Kiangwan, near Shanghai, China, in February, 1932.

The Japanese had made considerable use of armored

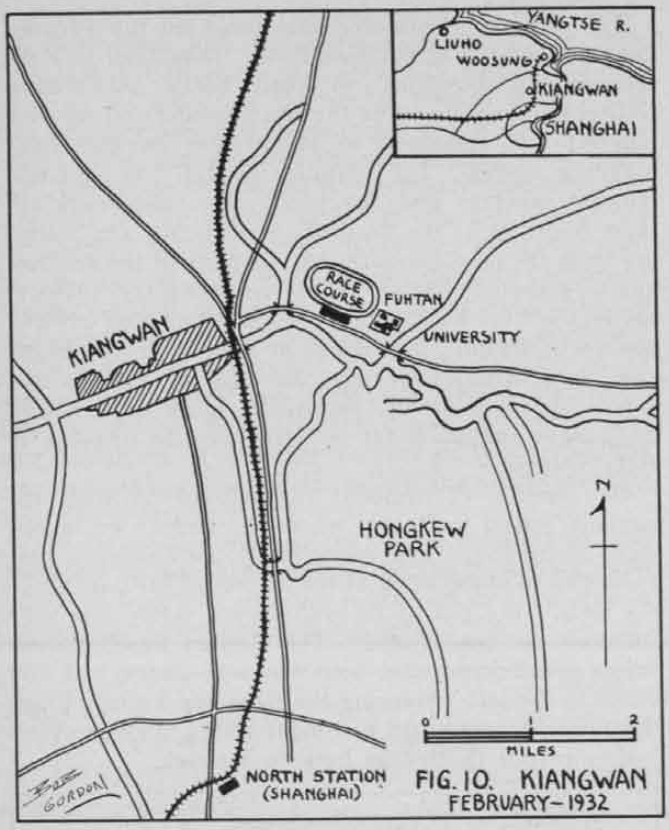


FIG. 10. KIANGWAN FEBRUARY-1932

cars in the street fighting in the Hongkew and Chapei sections of Shanghai but with poor general effect. The scene of action shifted from Shanghai to the right flank of the line extending from Shanghai to Woosung, where a determined attack was made by the Japanese. Here too, unexpected resistance was met. With the landing of additional troops, the Japanese decided on a center penetration opposite Kiangwan.

The initial attack was made on February 20th and the Chinese retired from the Race Course area but the ground changed hands continually. On February 21st, Fuhtan University was occupied by the Japanese, but not until heavy artillery was brought up could the envelopment of the Chinese at the Race Course be completed, although the Japanese advanced a considerable distance north and south of Kiangwan. About 5:00 P.M. the Chinese retired to Kiangwan proper.

The ground was flat and normally suitable for tank activity except for the canals and the numerous graves which dotted the country like small haycocks. These latter gave admirable shelter to the Chinese machine gun crews and were difficult to neutralize by tanks or artillery. The weather was cold and rainy and the ground was poor for tanks at this particular time.

A battalion of tanks was brought up to assist in the attack on the 21st, consisting of six Medium Osaka and sixteen modified Renault NCM 27 tanks. The medium tanks were used as mobile artillery firing from more or less fixed positions while the light tanks accompanied the infantry but held to the roads to a great extent. The Japanese 7th Infantry Regiment attacked from the northwest with twelve light tanks and the 5th Regiment attacked from the southeast with four, three of which were upset by road mines.

On the night of the 21st the Chinese line was pierced north of Kiangwan. Following their advantage, the Japanese again attacked Kiangwan on the 22nd from the northwest and south with tanks and assisted by artillery and bombing planes without gaining any ground. Another attack just before dawn on the 24th failed. The tanks, much the worse for wear, had been withdrawn before this attack. The Chinese immediately counter-attacked but were halted by artillery fire. Kiangwan now formed a deep salient as the Chinese had retired about two miles both north and south of the city.

The ground about the city was fought over listlessly for a day or two longer until the landing of another Japanese infantry brigade at Liu Ho and another determined attack on Kiangwan forced the capitulation of the Chinese troops on the 29th. Woosung fell a day or two later and the Chinese then retired beyond the 12 mile limit established by the Japanese.

Mud, canals, and the many graves made the use of tanks difficult. Japanese morale seemed low in all branches of their service and correspondingly high in the Chinese Army.

Armored and other motor vehicles are of great value but only when properly used. Infantry officers in particular should study their limitations as well as their possibilities in order that such vehicles may be employed to greatest advantage. This is perhaps the outstanding lesson in the study of any action in which fighting motor transportation has played a part.

Bootleg Maintenance

By *Captain* C. D. *Hindle*, C. A. C.

WITH Army appropriations pared to the bone, it seemed that some one charged with the preparation of official publications on maintenance work has a keen sense of humor, with perhaps a dash of sarcasm, for we read: "The employment of labor-saving devices such as paint-sprays, sand-blasting machines, motor-driven wire brushes for cleaning metal and similar equipment, is strongly recommended." Since the buying of only a few such devices would sorely deplete a maintenance fund, some substitute must be found. Much equipment of the type recommended can be acquired, and strangely enough, for nothing; that is, for nothing but the trouble of going after it.

The Area Coordinator usually has an assortment of electric motors and other apparatus which he is glad to donate. Moreover, if he does not have the required articles, the Coordinator may know where they may be obtained by self-service. In fact, in the procurement of material described in this article, self-service was the only kind accorded, for the owner had stepped out—just one jump ahead of the prohibition agents, it seems—and hasn't returned yet. But the presence of the owner was not necessary. In his stead there was a drowsy officer who had remained to guard the premises until all confiscated property had been removed. He was only too glad to be relieved of his "booty."

Inside the newly seized "still," a mammoth barn ten miles from nowhere, was all the paraphernalia of the bootlegger's art—motors, pumps, wiring gauges, pipes, vats made of flawless lumber, copper stills, which unsoldered roll out into big sheets suitable for lining damp magazines and as flashing for roof-gutters, and a miscellany of hardware, including tools which the owner was good enough to leave behind for use in dismantling the place. Dismantling a still is always full of suspense and hope—hope that the prohibition agents have failed to find the main cache.

What We Did With the Salvaged Materiel

The following description is of an improvised portable lathe for handling projectiles. This lathe has been made out of equipment gleaned, for the most part, from the sources just described. The truck was one of those things "not on paper," and a piece or two of steel was donated by the Ordnance. Only an emery wheel was bought. The remaining articles can be classed as one of the few benefits derived from the Eighteenth Amendment.

Figure 1 gives a general view of the lathe and truck, the latter having a 51-inch wheelbase and a 3′ by 7′ platform, which widened in front to 4′2″, receives the foundation of the motor-driven pump unit shown in Figure 2. A pair of Z beams are bolted to the rear and overhang the opposite side of the platform by 18 inches (see Figure 3). The apparatus hence can operate in a gallery having a width just more than 5′8″.

Two heavy straps spanning the top flanges of the Z beams support the axle bearings of the lathe itself. To one of these straps is fastened a roller bearing-post tall enough to allow its racer to engage the rim of the projectile. A third strap bolted to the lower flanges carries a detachable stop which, with the bearing-post, prevents the projectile from creeping axially during rotation.

Drive and idler wheels are spaced to support the projectile at points just behind the bourrelet and rotating band. A variable spacing to suit projectiles of different lengths may be attained by means of adjustable wheels, one on either axle. These, together with the bearing strap, are moved in or out to effect the desired adjustment.

Set-screws are used to fasten the idlers to their axle, but because of the high starting torque, both keys and set-screws are necessary to secure the drivers. The drive axle projects beyond the platform to receive a 12-inch pulley-wheel secured with a key.

Tool-rests pivot on brackets bolted to the top flange of the rearmost Z beam. For 700-lb. projectiles and

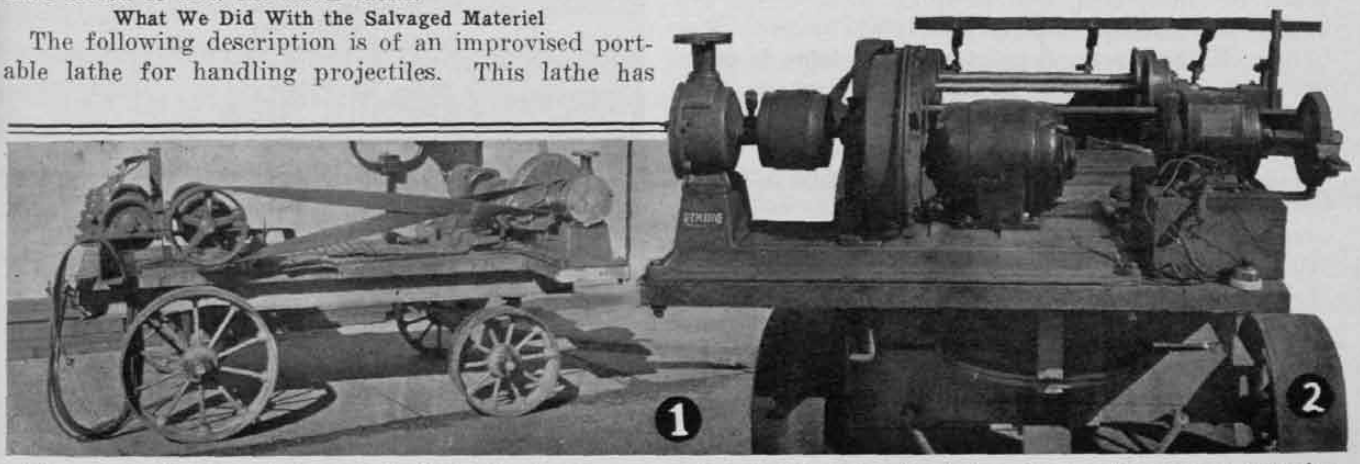
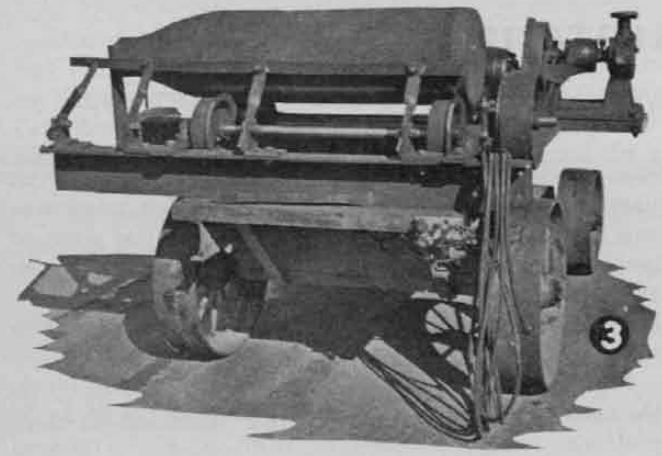


Fig. 1 is a side view of the portable lathe, showing the general layout. Fig. 2 is a front view, showing the platform extension for the motor pump unit. The emery wheel motor with its accessories is on the block at the right.



Rear view, showing a 1046-lb. projectile held in position between the bearing-post at the right and the "stop" at the left. The tool-rests are in the working position. Lead-in wire, fuzes, and operating switch of drive motor are shown at the right.

lighter a single rest is provided, but for heavier projectiles there are dual rests, one facing the body of the projectile, the other the ogive. A one-sixteenth inch clearance eliminates any tendency of the operator to tilt the scrapers unduly. Both types of rest may be thrown back for convenience in serving and unloading the lathe, their forward and backward movements being limited by studs in the brackets. In working position the tool-rests are forward, and 42 inches above the floor.

Motive power is derived from a single-phase, 60-cycle, 110-220-volt AC repulsion motor of one horsepower. This motor is an element of a Viking pump unit from which unnecessary parts have been stripped, certain of the remainder being faced with wooden plates to keep out dirt. Between the pump and the gear housing a 6-inch pulley is keyed to the drive shaft. The whole unit is offset to give a correct alignment for a belt drive.

Through appropriate combinations of gear and pulley-wheel ratios a motor speed of 1750 RPM has been reduced to 175 RPM at the lathe, the lesser speed yielding a safety factor of 7.4 against arming the fuze.

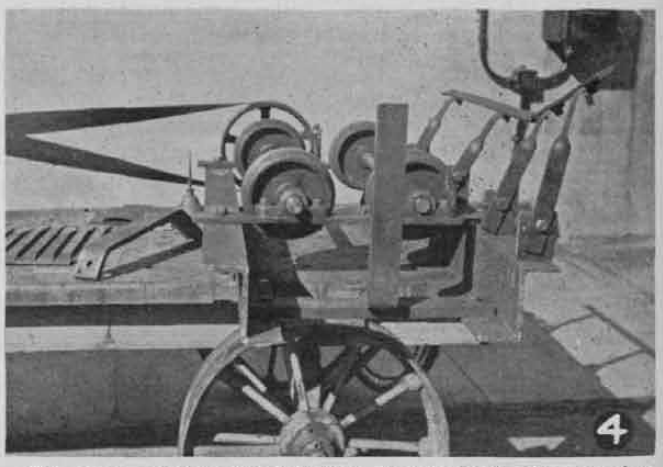
A motor of one-half horsepower drives an emery wheel for sharpening and scraping tools, which are double-ended tempered steel flats, 1¾″ by 18″. For lifting off the layers of paint a square edge is preferable to one beveled. An adjustable tool-rest supported on a bracket arm in front of the wheel facilitates grinding.

The wiring system of the truck is complete in itself, so that to operate the lathe it is only necessary to plug in the lead wire to battery power at any convenient outlet. Furthermore, the motors operate independently through separate switches. Twenty-ampere fuzes afford ample protection against overloads in both truck and battery circuits.

A manning detail of six is ample. In general, one man operates a pair of shot-tongs working on an overhead trolley and grinds tools, another operates another pair of shot-tongs and helps to paint, two men wearing welder's masks manipulate the scrapers, and two are painters. All help to stack.

For maximum output the work must be laid out to make the direction of progress continuous from start to finish, intermediate steps being completed without any doubling back. Proper coordination of effort is also necessary. Separate shot-tongs for serving and unloading eliminate interference among operators and reduce dead time to a minimum, through the simultaneous performance of more than one task. Likewise, a judicious apportionment of projectile surface between the two scrapers permits burnishing and scraping to be completed practically simultaneously. Thus, a projectile having two coats of paint may be stripped completely and burnished in as little as two and one-half minutes. Others may require from six to eight minutes, if they have been painted on top until lopsided (for inspections) over a period of years.

Burnishing, accomplished by applying sandpaper to the rotating projectile, removes rust patches and leaves a bright, clean surface ready for painting. The paint is applied as the projectile is rolled along skids in rear of the truck. The skids are beaded with half-inch strips to diminish the area of contact between the projectiles and the skid. Stenciling and stacking completes the process of renovation.



Side view showing the tool-rests thrown back for removing the old projectile and receiving the new. To adjust the lathe to a given length of projectile the nearer wheels are moved along their axles. The nearer strap is also slid along the top flanges to a new position and there bolted. On the platform is a "stop" for a 1070-lb. projectile.

★

GET YOUR PRINCIPLES RIGHT, *the rest is only a matter of detail.*—NAPOLEON.

Recognition of Merits and Deficiencies

By Major Ralph E. Jones, Infantry

INSPECTIONS, competitions, prizes, decorations, pennants, citations, rewards, commendation, bawlings out, and punishments are matters with which we army officers are very much concerned in connection with our daily work with soldiers. These matters comprise the application of practical psychology in the work that the government is paying us to do. In all of this there is essentially but one purpose—to spur the soldier on to his best efforts. The *underlying* purpose is to improve the appearance and efficiency of our organizations. Since all of this has but a single purpose, a careful consideration of how that purpose can be achieved to the highest degree and most easily, is worthy of some time and thought.

The degree of desire in the mind of the soldier to respond to our will is the crux of the matter. To what extent will "this or that" action on our part engender in his mind a desire to do our bidding or to what extent will it influence him reversely? This all sounds very theoretical but, in reality, it is of the highest practical importance. If our mental conception in this field is deficient and we are, in consequence, not able to answer correctly in our minds the various types of specific questions suggested by the above general question, we shall be much less able and efficient as leaders and officers.

Although it is true that not all soldiers respond alike to the various types of stimuli, the great majority of them react pretty much the same. The reaction of the majority is, therefore, our most important and first consideration. In the discussion that follows, it is to be understood that we are dealing with one of the majority; not with an outstandingly exceptional case.

The primary motives that actuate the soldier in striving to do that which he ought to do are hope, pride, affection, and fear. The chief factors hindering such endeavor are lack of motive, lack of self-confidence, resentment, and fear or likelihood of personal sacrifice. These barren primary motives require elaboration. To put it more clearly, they are:

1. Hope of favorable reputation.
2. Hope of practical reward.
3. Pride of workmanship.
4. Pride of favorable reputation.
5. Affection for leader, comrades, unit, army, country.
6. Fear of unfavorable reputation.
7. Fear of practical punishment.

The ignorant leader, the psychological monstrosity, who thinks that the outstanding motive of the soldier is the seventh and that the only other is the second, is sadly in need of enlightenment.

Men are to be treated as men, not as babies, yet he who ruthlessly or ignorantly destroys affection, hope, and self-confidence, and inspires resentment by unfair treatment, can never build a thoroughly efficient organization through fear of practical punishment. He can never inspire personal loyalty. However brilliant he may be otherwise, he can never be successful as a leader.

The foregoing paragraphs furnish the basis for our practical psychology of leadership. The deductions that give us rules for procedure are relatively simple and obvious.

The arch-enemies of leadership are psychological; indifference, unfairness, and an overbalanced excess of fault-finding with a corresponding rarity of recognition of merit. There is no need for the leader to rant and rave about the errors that he notices. It is true that in many or most cases they should not be ignored. But it is usually sufficient to indicate them clearly, briefly and in a kindly manner. On the other hand, any outstanding excellence should *never* be passed by in apparent blindness. To recognize merit, though ever so briefly, is to inspire loyalty and increased efforts. To ignore merit is to discourage, and create indifference.

It is difficult to go about, day after day, making corrections here and there in a kindly way and commending for this and that. Moreover, the fair-minded recognition of merits and deficiencies (especially merits) brings about greater psychological results if put up on a pedestal, so to speak. A little prominence and publicity brings potently into the picture hope and pride in relation to favorable reputation. In consequence of these considerations, the desired results are easily brought about in a large measure when action that brings merits into publicity can be taken in a practicable way, with fairness, without destroying hope, and without serious objection due to other considerations. This leads us to the subject of competitions, the worthiness of which, in a general way, is widely recognized.

To compete is to strive to equal or excel the attainments of others who have the same or a like objective. Competitions may be divided into two important classes. In the one form, there can be but one real winner—the one that excels all others. In the other form, there can be a number of winners, all of equally recognized merit, provided all such reach a determined standard. To win the selection as orderly for the commanding officer exemplifies the first form; to "make" expert rifleman exemplifies the second. These forms of competition might be termed uniwinner and multiwinner. Often the conditions are such that only one form is suitable. In other situations the form is open to choice. Wherever it can be satisfactorily applied, it is believed that the multiwinner competition is psychologically much superior to and more effective than the uniwinner. One of the chief reasons for this is the lesser degree of discouragement involved. In the

multiwinner case, the competitors generally feel that they can achieve the honor of full success if they will determinedly put forth their best efforts. If they strive diligently, they are not likely to be disappointed, if they do not strive, they know that they cannot reasonably expect success. On the other hand, in the uniwinner case, a competitor may strive his utmost and put forth a very superior performance only to find that he has lost all recognition due to a trival fractional margin possessed by one of his rivals.

If competitions are overdone, they can easily lose their merit and become detrimental. This is especially true of those of the uniwinner class that are organizational or not wholly fair. When a competition causes men to put forth a degree of effort out of all proportion to the needs of the situation or causes them to expend considerable sums of personal funds for unwarranted purposes, the competition has gone beyond its proper limits. The ideal military competition has for its objective the attainment of a wholly desirable military purpose and it simply encourages the necessary effort to reach the objective, with a minimum element of discouragement and a minimum possibility of unfairness.

On two occasions during the past ten years, I have instituted in different units at different stations a form of multiwinner competition that astonished me with its high degree of practical success. The procedure was substantially the same in both cases. I shall try to describe it briefly.

The competitors were the companies of a battalion. As battalion commander, I was the inspector and judge. With frequency and regularity and always on Saturday, but not each week for a particular company, I made thorough inspections of the several companies. A small mimeographed form was used for recording the grades pertaining to a company. The scope of the inspection was divided into several items. *Men in ranks* was one; it included the condition and appearance of the men, their clothing, arms, and equipment. *Kitchen, mess hall and garbage cans* constituted another item. All parts of the barracks and outside police were included somewhere. In the barrack items, some one noncommissioned officer or soldier was in charge of each. The various items had different weights assigned for the determination of the company score. *Men in ranks* counted much more heavily than *Outside police.* The grade awarded each item was either *Excellent, Very good,* or no grade. *Excellent* counted twice as much as *Very good.* In the front hall of the company barrack was a large wooden special bulletin board upon which were painted the name of the items, and opposite each item were hooks upon which could be hung a small lettered metal plate. After the inspection of a company, Es and VGs were hung upon the special bulletin board. If any item was less than VG, there was no award to the company as a whole. If all items were VG or better and the total weighted score was closer to a perfect score than to a straight VG score, the company was awarded a large white E. If an E was won for every item, the company was awarded a large gold E. There was a place over the main front doorway of the barrack, on the outside, prepared for the hanging of a large painted wooden plaque, the regimental coat of arms. A white or gold metal E, as the case might be, was superimposed upon the plaque. If no large letter was won, the coat of arms was kept in the storeroom. The grade awarded remained until the next inspection of that company. When a gold E was won, the next graded inspection of that company was omitted and the company had a holiday.

I have said that I was astonished by the success of this system. It required a minimum of effort by the company commanders. There was a pronounced spirit of confidence and determination throughout among the men. At the first inspection most companies failed to win a white E. The improvement in appearance was rapid and continuous. In less than three months, each company had a gold E, fairly won. An entirely different standard of appearance was established, seemingly with a considerable degree of permanence.

The excellent results achieved with this particular system is perhaps of slight importance to officers generally, but the principle illustrated is of great importance. *Merit should be recognized—fairly, sensibly, with adequate frequency, and with such prominence as may be appropriate.* It is thus that efficient organizations are perfected, and thus that men in authority succeed as leaders.

★

IT IS OF THE UTMOST IMPORTANCE *to educate and retain a body of officers sufficient for all the labors preparatory to war, capable of forming soldiers, of supplying them, and putting them in motion in the event of war.*—EATON.

The Grand Strategy of the World War

From the Point of View of an "Easterner"

*By Captain Gordon Gordon-Smith**

PART I

MUCH has been written about the causes of the World War and the aims and objects of the various belligerent powers. The war literature is indeed so vast that it has become a sort of jungle in which the searcher after truth wanders aimlessly. So many "red herrings" have been drawn across the trails that it is almost impossible to follow any given one to its definite and logical conclusion.

One of the chief sources of error is the fact that most of the studies of the political and military factors of the war have been written by "Westerners," that is to say, writers hypnotised by the war on the French and Russian fronts who have refused to study the real origin, the *causa causans* of the conflict. I am, however, an impenitent "Easterner"; I believe the World War began in the Balkans, for the Balkans, and ended in the Balkans, and that there can be no complete comprehension of the great struggle which is not based on this as its *point de depart*.

In order to realize the real origin of the war we must go back a matter of seventy years, to the early 'sixties, when the greatest German statesman of the nineteenth century, Otto von Bismarck, embarked on his life-work, the creation and the consolidation of the German Empire. At that time the ruling power in the loose confederation of German States was the Austrian Empire, Bismarck, the "strong man" of Prussia, saw that the German confederation could only be welded into an empire under Prussian hegemony after the expulsion of Austria-Hungary from the combination.

The first step toward this was an alliance of Prussia and Austria-Hungary to wrest the provinces of Schleswig and Holstein from Denmark. The real object of this inglorious campaign was to furnish Bismarck with an excuse for a conflict with the Vienna government such as would excite patriotic enthusiasm in Prussia.

The war against Denmark of 1864 was hardly at an end before differences with Austria regarding the sharing of the war plunder, which Bismarck had foreseen and, in fact, counted upon, became acute and two years later led to the Austro-Prussian War of 1866 in which Austria, on the battlefield of Sadowa, went down to defeat and was driven from the leadership of the German States. It was on the occasion of this victory that Bismarck showed his greatness as a statesman. Von Moltke and the military leaders, intoxicated with their victory, wished to push on to Vienna and dictate the terms of peace in the Austrian capital. This Bismarck resisted. He had accomplished his purpose of driving Austria from the leadership of the German States, but he had no intention of inflicting such a humiliation on the defeated empire as would preclude its future friendship and even alliance.

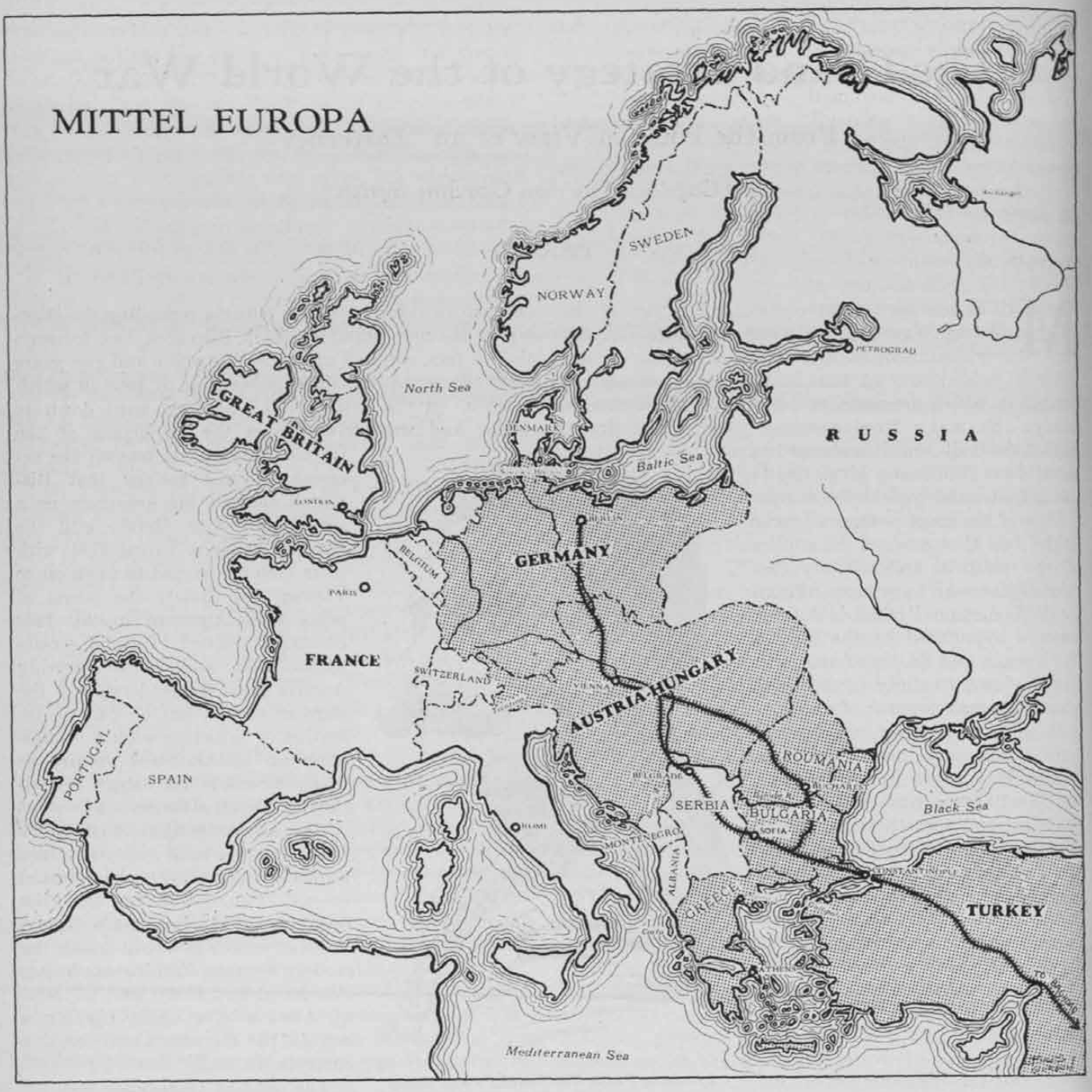
Archduke Franz Ferdinand, whose assassination precipitated the World War.

As a result, thanks to Bismarck's insistance, the most generous peace terms were accorded to the defeated enemy. Four years later came the final phase of Bismarck's policy, the war with France, in which the modern German Empire was forged "in blood and iron" and all hope of Austria ever again playing a role in the German Confederation came to an end.

The German Chancellor then began to reap the fruits of his statesmanship. Berlin and Vienna were drawn closer together and the modern balance of power in Europe took shape. Bismarck saw that in order to extinguish the last remnants of ill-will on the part of Austria that power should be encouraged to find some other outlet for its energies and ambitions, such as would wipe out the memory of its defeat at Sadowa. This was found in the Near East. The Wilhelmstrasse encouraged the Ballplatz in this policy and the famous "Drang nach Osten" began. Austria made no secret of her intention to drive down the Balkan Peninsula and occupy Salonica, as soon as the disintegration of the Turkish Empire should justify the effort.

This was the new orientation of Austrian policy

* Author of *Through the Serbian Campaign*, Hutchinson & Sons, London, 1916 and *From Serbia to Jugoslavia*, Putnam, 1919.



which laid the seeds of conflict which culminated in the World War of 1914. But such a culmination was not in the plans of Prince Bismarck. He had no intention of allowing Germany to be drawn by Austria into any conflict in the Near East. The world remembers his famous declaration, "The whole Balkan question is not worth the bones of a single Pomeranian grenadier," and as long as he was in power he set his face against any active aid in the realization of Austrian ambitions.

But unfortunately for Germany and the world, Bismarck could not remain in power forever. In 1888 came the death of the Emperor Frederick and the accession of the Kaiser William II. A few short months later came the inevitable conflict between the Iron Chancellor and his autocratic sovereign and Bismarck left Berlin forever.

Then came a complete *volte-face* in German policy. The Kaiser, and with him the whole German people, from the humblest peasant to the "captains of industry," began to dream a great dream. This was the creation of a great Teutonic Empire, to which its partisans gave the name of "Mittel Europa." This was to include Germany, Austria-Hungary, the Balkan Peninsula and Turkey. When this was created the Kaiser's *fiat* would run from Koenigsberg-in-Preussen, on the Baltic, to Coveit, on the Persian Gulf. Europe would be cut clean in two down the center and Russia completely separated from the rest of Europe.

The first step in this great combination was to estab-

lish such close relations with Austria-Hungary as would assure the supremacy of the Kaiser's will. These two states had entered into an offensive and defensive alliance in 1879. This was renewed in 1892 and 1902 and the bonds finally drawn so tight that the Austrian Foreign Office, in matters of international policy, ended by practically accepting the orders of the Wilhelmstrasse, while the great general staff in Vienna became a mere department of the great general staff in Berlin.

This is clear to anyone who has read the memoirs of Field Marshal Conrad von Hoetzendorf, the Austrian chief of staff, who sent dispatch upon dispatch to Berlin asking permission to loose the Austrian forces against the Kingdom of Serbia years before the World War.

Austria-Hungary being thus reduced to the position of a German satrapy, the next field of German action was the Balkan Peninsula. Roumania's adhesion to the "Mittel Europa" scheme was assured by the presence of a cousin of the Kaiser, Carl von Hohenzollern, on the throne of that country. Roumania entered into an offensive and defensive alliance with Austria-Hungary in 1902 and this treaty was renewed in 1910 and was still in force (it only expired in 1915) when the World War begun.

The support of Bulgaria was assured by placing Ferdinand of Saxe-Coburg-Gotha, a German prince, on the throne of that country. Greece was won over by the Kaiser giving his sister Sophie in marriage to the Crown Prince Constantine. The latter was brought to Potsdam where he served for two years as an officer of the Prussian corps of guards and was thoroughly embued with the invincibility of German arms.

After the wedding festivities at Athens in October, 1889, the Kaiser pushed on to Constantinople where, with the Sultan Abdul Hamid, he laid the foundations of the Turko-German alliance which played such an important role in the World War. Behind the Kaiser came the German captains of industry; the concession of the Berlin-Baghdad railway, the backbone of the "Mittel Europa" scheme, was obtained and the active construction of that line begun. General von der Golz and some scores of German staff officers were sent to Constantinople to reorganize the Turkish army, rearmed with Mauser rifles and Krupp guns.

"Mittel Europa," with the exception of one link, was thus complete. That link was Serbia. That kingdom had the good fortune of having at the head of its government the late Nicolas Pashitch, one of the greatest European statesmen of the nineteenth century. M. Pashitch saw the danger of the "Mittel Europa" scheme. He realized that if it was accepted by Serbia the king of that country would become a mere vassal of the German Kaiser. For thirty long years he, therefore, resisted all the efforts of the Vienna government to draw Serbia into the orbit of Austro-German policy. Nothing was left untried to break Serbian resistance. Threats and persuasion were tried in turn. A hostile tariff was erected to ruin Serbian commerce, but all in vain. The nation was determined to uphold its freedom and independence to the last.

Since diplomatic means had failed it became clear that the Central Powers would have recourse to force. All that was needed was a pretext. This was found on June 28, 1914. On that day the Archduke Franz Ferdinand, the heir to the Austrian throne, and his consort, the Duchess of Hohenburg, were assassinated in the Bosnian town of Sarajevo by a seventeen-year-old schoolboy named Gabriel Prinzip. On the pretext that he was a Serb (how could it be otherwise in an Austrian province inhabited entirely by Serbs?) the Belgrade government was accused of complicity in the crime and on July 25 Baron Giesl von Gieslingen, the Austro-Hungarian Minister to Belgrade, presented the famous ultimatum, probably the most insolent diplomatic document ever penned, giving the Serbian government 48 hours to satisfy the Austrian demands.

King Peter I of Serbia

It was not intended to be accepted. The Central Powers had decided that the moment had come for the creation of "Mittel Europa," of which the crushing of Serbia was a necessary preliminary. In the interest of the maintenance of peace Serbia, in her reply, went to the utmost limit in her concessions to the Austrian demands. All these were accepted except two which, it was pointed out, would require special legislation by the Serbian parliament. In addition the Belgrade government offered to submit the whole dispute to the International Arbitration Court at The Hague and to abide by its decision. But all in vain. Forty-eight hours later Austria-Hungary declared war on Serbia. Within a few days Germany, Russia, France and Great Britain were involved and the World War had begun.

An Austrian army of about half a million men, under the command of Field Marshal von Potiorek, was given the mission of crushing Serbia. The remainder of the Austro-Hungarian army and the entire military forces of Germany were mobilized. Their mission should have been to prevent any interference on the part of France or Russia with the designs of the Central Powers in the Balkan Peninsula. The war on the part of the latter, therefore, should have been an *offensive* one in the Balkans and a *defensive* one against France and Russia.

The Central Powers counted on overrunning Serbia in the first four weeks of the war and on bringing in on their side Roumania, Bulgaria, Greece and Turkey. "Mittel Europa" would be at once realized and Russia completely isolated from her French and British allies.

All the Central Powers would have to do would be to hold back Russia and France until the armed strength of Roumania, Bulgaria, Greece and Turkey, over a million men, with twice as many reserves, could be mobilized and thrown into the scale. With these tremendous forces hurled against her, France, it was confidently expected in Berlin and Vienna, would go down to defeat long before Great Britain could mobilize and train an army to come to her assistance. Once France was disposed of, the whole of this tremendous military power would be turned against Russia and that empire defeated in her turn. The Central Powers would then be masters of continental Europe. Then it would be the turn of Great Britain and the Kaiser would achieve supreme power.

That this was not accomplished was due only to two factors, one the courage and bravery of the Serbian army and the other the error, due to Prussian arrogance, that Germany made in not remaining on the strict defensive till the victory in the Balkans was assured. Instead of doing so her armies pushed on to the Battlefield of the Marne.

For things on the Balkan front had not gone according to program. Field Marshal von Potiorek's invasion of Serbia had been a complete fiasco and in four weeks his armies were hurled back across the Drina in hopeless rout. Twice again the Austrians returned to the attack but without avail and in the third attempt, the battle of the Kolubara, the disaster became complete. Von Potiorek's army fled back across the Drina, a routed rabble. Tens of thousands of prisoners were taken and enough war material captured to equip three army corps.

The Kaiser, however, could only look on helplessly as all his hopes of the immediate realization of "Mittel Europa" went a-glimmering. On the battlefield of the Marne he had "got a wolf by the ear" and did not dare let go. His army had "to dig itself in" and go on the defensive. The Serbian successes had convinced the Italian government that the interest of Italy lay in joining forces with the Entente Powers and the attack on Austria on the Adige front began.

Trench warfare became the order of the day. A line of trenches, such as the world had never seen, ran from the North Sea to the Swiss frontier. Switzerland, to maintain her neutrality, had mobilized her small but extremely efficient army and created a line of strong defenses all along her frontiers. On the other side of Switzerland the Italian trenches began and continued to the Adriatic. On the other side of that sea the Serbian front ran its trenches right up to the frontier of Roumania. Roumania, like Switzerland, had mobilized her forces to defend her neutrality.

On the other side of Roumania the Russian trenches began and continued right up to the Baltic. The British, French and Italian fleets assured the blockade by sea. The Central Powers had now become a besieged fortress and were, slowly but surely, being strangled to death. They replied, however, by making Russia a besieged fortress in her turn. Turkey was brought into the war and the Dardanelles were closed, while the German fleet closed the entrance to the Baltic. Russia was, therefore, completely isolated from her allies. Archangel and Vladivostok became the only ports by which supplies and war material could reach her.

The Entente Powers accordingly resolved to break the strangle hold the Central Powers had thus established on Russia and a Franco-British force invaded the Gallipoli Peninsula. This plan was strategically sound but its tactical realization proved more difficult than had been expected. There was one thing, however, in favor of the Entente Powers. Turkey had no means of manufacturing ammunition and was completely dependent on Germany for her supplies. These were sent *via* Roumania and the Black Sea.

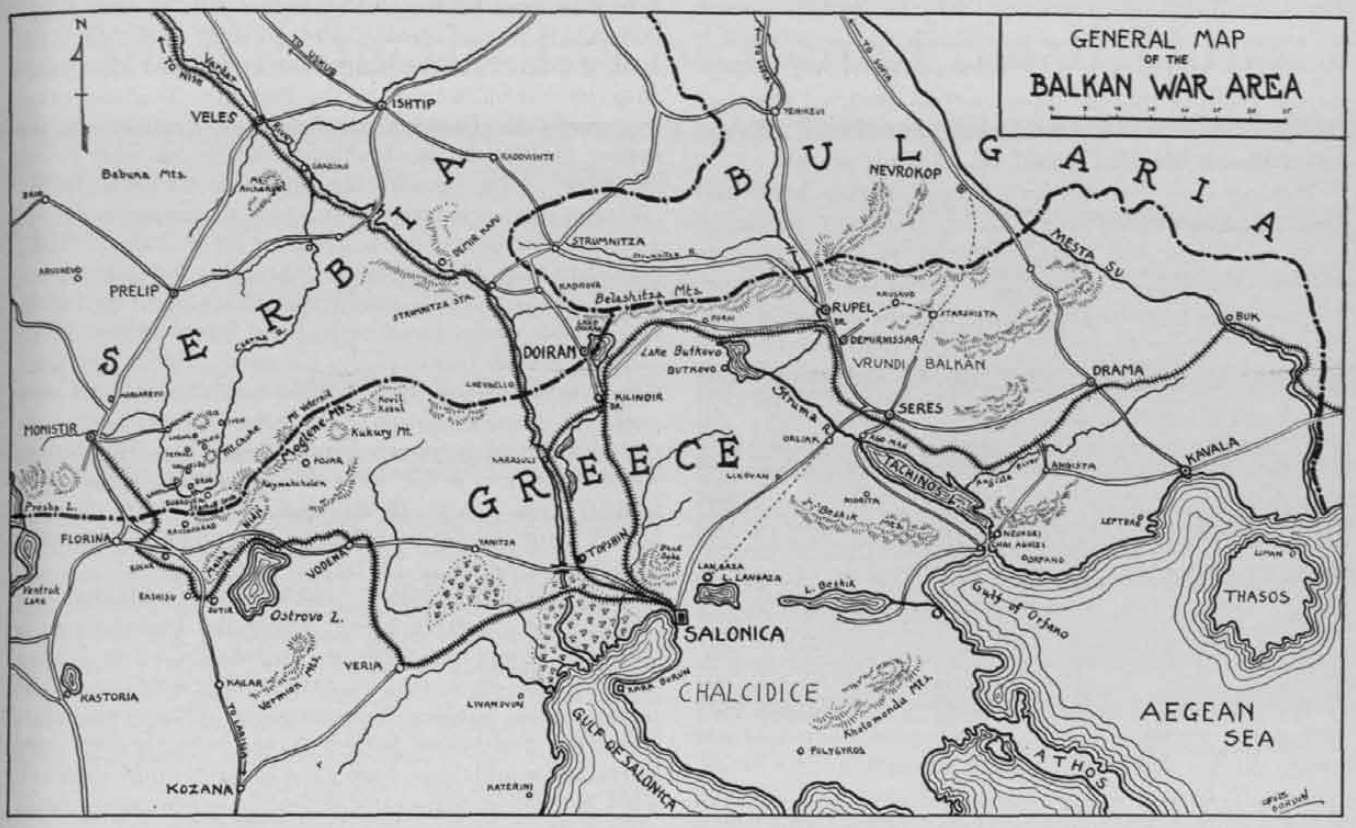
When then, in the spring of 1915, the Entente Powers brought such pressure to bear on Roumania that she closed her frontiers to the transport of war material to Turkey, the position of that country became critical in the extreme. If Turkey could be put out of business and the strangle hold maintained on the Central Powers the end of the war was in sight.

It was, therefore, clear to the meanest intelligence that it was a question of life and death for Germany to drive down to Constantinople and come to the rescue of her Turkish ally. In the preceding months Germany had, to a certain extent, recovered her liberty of action, and could now spare enough troops to carry out what Field Marshal von Potiorek had so ingloriously failed to do. Orders were given to assemble an army of 300,000 men on the plains of Hungary for the invasion of Serbia. The command of this army was entrusted to Field Marshal von Mackensen, one of the most brilliant German commanders.

In the month of July, 1915, the French aviation attached to the Serbian army reported the commencement of this concentration. The Belgrade government saw the danger. The military position of Serbia, in spite of the fact that every instant of the six months respite from actual fighting had been utilized to rest and recruit the army, to call out and train the new "classes," to fill the depleted arsenals and to accumulate food stuffs and war stores of all kinds, was a critical one.

When, therefore, it became evident that the country was threatened with a fresh attack and that this time the Austrian army was to be reinforced by German troops, the Serbian government was of opinion that it could no longer resist the new aggression single-handed. It, therefore, appealed to the Allies for help.

It was from this moment that the latter made their greatest military and diplomatic failure. Instead of themselves sending the military aid demanded by the Serbs, the British, French and Russian governments declared they would obtain this from Bulgaria. This reply caused consternation in Belgrade. It was in vain, however, that M. Pashitch and his colleagues pointed out that Bulgaria was their worst enemy, that she had in 1913, at the instigation of Germany and Austria, neutralized the effects of the victorious war against Turkey by abandoning her Greek and Serbian allies, and had treacherously tried to stab them in the back; these objections were brushed aside and the Allies began negotiating with the government at Sofia. Serbia



was to be left to defend the Danube front against the coming Austro-German invasion, while Bulgaria was to be induced to march on Constantinople as the ally of the Entente Powers. The fate of Europe was thus placed in the hands of Bulgaria's German-born king.

In order to get Bulgaria to do this the Allies offered to obtain for her, from the Bucharest government, the retrocession of the Dobrudja Province, wrested from her after her defeat by Serbia and Greece two years before; from Serbia a large part of Macedonia and from Greece the cession of the towns of Drama, Cavalla and Seres. If the Allies, who were thus disposing of property which did not belong to them, had deliberately desired to cool all enthusiasm for their cause in these states they would not have proceeded otherwise.

M. Radoslavoff, the astute Bulgarian Premier, acting on orders from Berlin, pretended that a basis of agreement might be found on these lines and embarked on a series of deliberately long drawn-out negotiations. The truth was that Bulgaria was already pledged to the Central Powers and had been assured of a war chest of 200,000,000 gold marks. Germany further forced Turkey to cede to Bulgaria the port of Dedeagatch, on the Ægean and a strip of Thracian territory running up to it.

M. Pashitch, the Serbian Premier, and M. Venizelos, the head of the Greek government, sent dispatch after dispatch to the Entente Powers, warning them that Bulgaria was going to betray them. But to all these warnings the Entente Powers turned a deaf ear and declared that the Sofia government was one of the most loyal and upright in the world and was, beyond all doubt, coming in on the side of the Entente Powers and would march her armies on Constantinople. All these pretended negotiations on the part of Bulgaria were, of course, carried out in order to throw dust in the eyes of the Entente Powers and gain time for Germany and Austria to assemble their armies on the plains of Hungary.

Then came the moment when, the Austro-German armies, having completed their concentration, Bulgaria threw off the mask and mobilized her army. And then came the crowning error of the Allies. Field Marshal Putnik, the Chief of Staff of the Serbian army, telegraphed to London, Paris and Petrograd, asking permission to march the Serbian army across the frontier and attack the Bulgarians before they had completed their concentration. He declared that the Serbian army would be in Sofia in five days. Bulgaria being thus disposed of the Serbs could turn their full strength against the Austrian and German armies on the Danube front.

But not only was this permission refused but the Entente Powers declared that if Serbia broke the Balkan peace the Allies would leave her to her fate. Sir Edward Grey, the British Foreign Minister, sent for M. Boahkivitch, the Serbian Minister in London, and informed him that the Bulgarian mobilization was not directed against Serbia. When M. Pashitch was informed of this extraordinary communication he was completely puzzled, for all the information in his hands went to show that the attack by Bulgaria was only a matter of hours. He concluded that there must be some secret understanding between Bulgaria and the Entente Powers of which he had not been informed.

He accordingly gave orders that the Serbian army, to avoid all danger of a Serb-Bulgarian "incident," should be withdrawn five kilometers from the Bulgarian frontier and at the same time declared that any Serbian officer, whatever his rank, who should provoke any frontier incident would be pitilessly shot.

Having thus tied the unfortunate Serbia hand and foot the Allies could only look on helplessly while the Central Powers and their Bulgarian ally proceeded to cut her throat.

Four days later came the inevitable crash, when 300,000 Austro-German troops began a tremendous attack upon the Danube front while 400,000 Bulgarians were hurled across the western frontier. Field Marshal Putnik with his 250,000 men performed prodigies of valor. For two long months he faced overwhelming odds. Cut off from all communication with the outside world, the Serbs fought with the courage of despair. The British and French began hastily landing troops at Salonica but they came too late. As far as saving Serbia was concerned the expedition was foredoomed to failure from the first. It was *la moutarde aprés le diner* as our French friends would say.

Slowly, foot by foot, the Serbian armies fell back under the pressure of an enemy outnumbering them nearly three to one. But human strength has its limits, and on November 24, 1915, all that remained of King Peter's gallant army left Serbian territory and began its fateful march across the snow-clad mountains into Albania. The triumphant invaders were masters of Serbia. Their armies poured down to Constantinople and also proceeded to invest the entrenched camp on the Salonica front, established by the Army of the Orient, under the command of General Sarrail.

Thousands of tons of ammunition were rushed to Constantinople to reprovision the Turkish armies. The first result of this was the abandonment by the British and French of the now hopeless enterprise on the Gallipoli Peninsula. The Danube had been the front line of that force and once these were gone nothing was left but to evacuate. A month later Montenegro was occupied, Albania was invaded and the remnants of the Serbian army forced to take refuge in Corfu. Such was the disastrous result of the error, political and military, made by the Entente Powers.

But it is when we consider what would have happened if the Allies had listened to the counsels of the Balkan governments that the colossal nature of the errors committed becomes apparent. As far back as July, 1915, when the Austro-German menace first became apparent, the Serbian government urged the Allies to send 250,000 men to the Danube front. If this had been done the Austro-German armies would have found themselves opposed by half a million men (250,000 Anglo-French troops and 250,000 Serbs). With such a guarantee Roumania would at once have come into the war on the side of the Entente. This assurance was given M. Pashitch, the Serbian Premier, in the spring of 1915 by M. Bratiano, the Roumanian Prime Minister. This would have meant an additional 600,000 men at the disposal of the Allies, making a total of 1,100,000 bayonets on the Danube front. Under these circumstances M. Venizelos, who was then in power, would have forced King Constantine's hand and 300,000 Greeks would have swelled the forces of the Allies.

If this had taken place Bulgaria would not have dared to move, or, if she had, would have been disposed of at short notice. The result would have been the creation of a fourth front for the Central Powers which they would not have defended with less than a million men. *And these million men they did not have.* Then would have followed the march across the Hungarian *pusta* to Budapest.

Once the Allies were in possession of the Hungarian capital, the Austrian army facing the Italians in the Trentino would have become untenable. The Italian army would have poured across into Austrian territory. With Vienna thus menaced from two sides, Austrian resistance would have been broken and Germany would have been face to face, single-handed, with Europe in arms, and defeat in a few weeks or at most a few months would have been certain.

That this result was not achieved is due to the fact that the diplomats of the Allies allowed themselves to be deceived by an astute politician like M. Radoslavoff and his unscrupulous German-born sovereign. The French at once drew the logical conclusion from the errors committed. M. Delcassé, the French Foreign Minister resigned. But this did not satisfy the French Parliament and the Viviani Ministry, as the result of the errors of its Balkan policy, was driven from power.

The Germans had thus realized their aim. "Mittel Europa" had become a *fiait accompli* but is was not the "Mittel Europa" of the Kaiser's dreams. As long as the Salonica front menaced the Berlin-Constantinople railway the German hold was a precarious one. The struggle on the French and Russian fronts had called for too great an effort on the part of the Central Powers; there had been nowhere such a clean-cut, decisive victory as would force the Entente Powers to bow to the decision of arms and make peace on German terms. Though successful the Central Powers no longer had the "knock out punch" such as was required to impose their will on their adversaries and so the struggle continued.

(To Be Continued)

★

IT IS NOT ENOUGH *to put an army into the field; it must be well trained to be effective.*—MITCHELL.

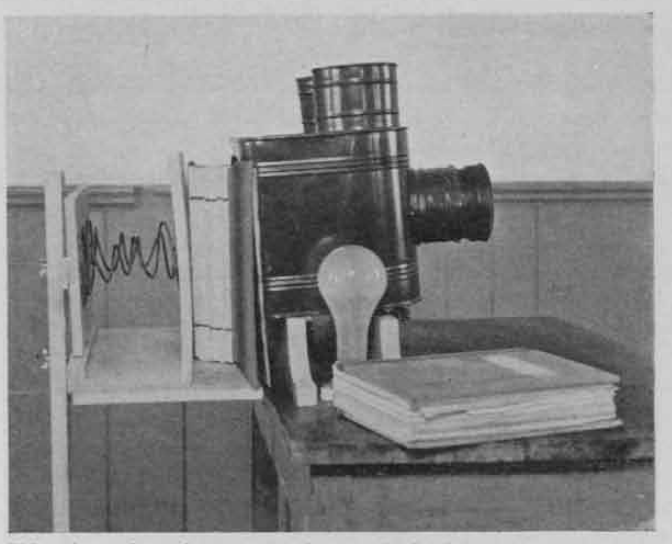
An Aid for the Instruction of Small Units

By 1st Lieutenant Herbert F. McG. Matthews, Infantry

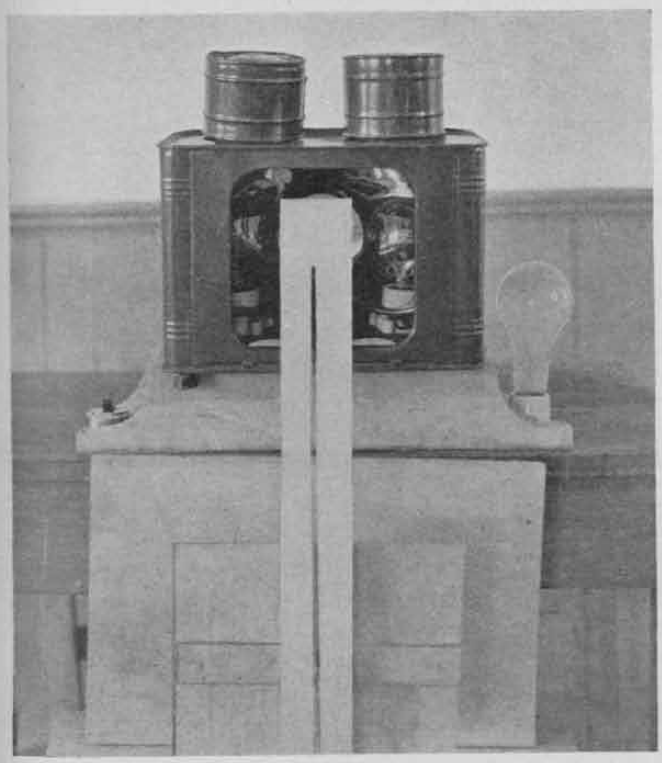
COMPANY and platoon commanders in the instruction of their units frequently find it convenient, and sometimes necessary, to aid that instruction by the use of charts and pictures. It seems to be the tendency to call more and more on pictorial presentation to help get our ideas over. This is particularly true in the teaching of soldiers, and a lecture in conjunction with well prepared charts and vital pictures will not only make the work more interesting but will result in more thorough and, therefore, better instruction.

The various service schools offer an excel'ent course in the preparation of charts and maps, and when one has the opportunity to make them they should be used. The average company officer, however, has not the time necessary to draw and prepare these charts. It is to make available the pictures and diagrams of training regulations and other publications without someone drawing them that the following system, which has been successfully used, is discussed.

The first thing to suggest itself was a cheap "Magic Lantern" or post card projector. After looking over several available models, one was selected with two lights and adjustable lenses, at a cost of eight dollars. Following a little experimenting with this machine, which, by the way, is operated on the regular 110-volt circuit, it was found that, while the enlargement was sufficient, the opening in the rear of the projector had to be increased in order to permit the use of a training regulation or a large book. This was done by mounting the machine on the very edge of a small table, taking the back off the projector and building an adjustable book support behind it. This book support is raised or lowered—depending upon the size of the book and the portion of the picture or chart to be shown—by means of a wing nut moved up or down in a vertical slot. The book or training regulation is kept close to the back of the projector by means of two mattress (or automobile seat) springs attached between two boards, each about 8″ x 12″, the rear board having a wing nut, which fits in the same vertical slot as the wing nut of the book support.



Side view of projector, showing method of keeping picture or training regulations in place.

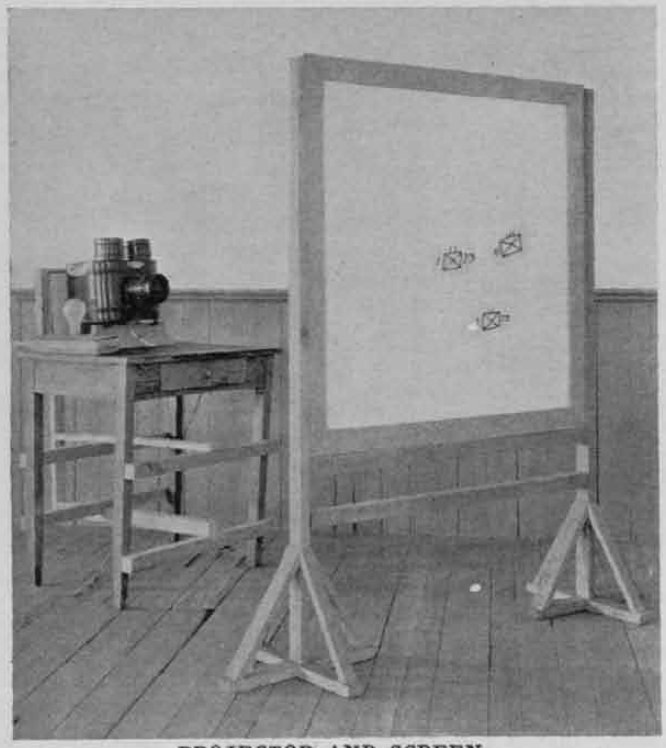


Rear view of projector, showing switch, vertical slot with wing-nut in same, book support and lamp.

After making the book secure against the back of the projector, the next problem was the lighting system. Two Westinghouse "Spotlight" 100-watt lamps were placed in the light sockets, a snap switch was installed on the table on the left of the projector and an ordinary 60-watt light, connected in multiple, was placed on the right. These, with about twenty feet of extension cord, completed the electrical arrangement. The closed switch was used because of the danger of placing the hand in the dark on an exposed type of switch, and it was placed on the *left* of the machine because the right hand of the operator is usually busy putting the pictures or charts in place. The 60-watt light was installed on the right in order to give the operator an opportunity to arrange the books and charts from time to time. A closed switch may be used with this light if it is desired, although screwing the bulb in and out was found satisfactory.

Trouble was experienced because of the great amount of heat given off by the projector lights. Al-

though two ventilators were installed in the top of the machine and several holes had been punched in the bottom, still, the heat was so great that if a book or chart remained in position very long it was likely to be scorched. In order to prevent this, a sheet of clear glass, about 9″ x 7″, was placed in the rear of



PROJECTOR AND SCREEN.
The audience sits in front of the screen. The conventional signs are placed on the glass of the screen and can be moved at will.

the projector, where it would protect the book from the heat. The glass did this but its reflection of the two lights threw two large white spots on the image and the glass had to be taken out. Later a 12″ x 7″ board, with clips to hold the picture or chart, was substituted for the two boards and springs. By the use of this smaller board the operator was able to show various parts of the picture and could move it out of position from time to time to prevent scorching.

The screen was made by using a clear piece of glass, 36″ x 36″, set in a wood frame made from 2¼″ x ¼″ stock, with cloth stretched tightly across the rear and tacked in place. This frame was then mounted on two wood supports and provided a screen 35¼″ square, the lowest part of which was 24″ from the floor. The glass used on the front to prevent injury to the cloth from use of a pointer, also provides a means for placing and moving conventional signs so necessary in the use of map problems. Moistened paper, adhesive paper or tape, or rubber vacuum cups (which may be purchased at any ten cent store) are quite satisfactory for attaching these signs.

The projector is operated from in front of the audience, the screen being placed between the machine and the students. For those sitting directly in front of the screen the lights of the projector immediately behind it destroyed the picture, so it was necessary to tilt the machine slightly and raise the screen a bit in order to get the "line of site" of the projector a little above the audience.

The distance from the screen to the projector varies from five to eight feet, depending upon the picture you are showing and just how much you desire it enlarged. Due to the fact that the room is darkened, the movements of the operator do not tend to become an interest-destroying factor. This same setup, however, has been used successfully in a lighted room,—in the Medical School at the Mt. Alto Veterans' Hospital,—where a hood of dark cloth covers the beam from the projector to the screen. By adding wings to this hood, at the machine, all movements of the operator could be concealed from the audience; or, if space is available and two rooms are handy for the purpose, the projector could be installed in one, the audience seated in the other, and the screen inserted in the partition.

While this project is a long way from being complete and there are yet many details to be worked out, this information is presented for those who have need for an outfit of this type. From the few tests actually made, much interest has been shown by the students and much time has been saved on the part of the instructor. This is one means of showing—without the laborious task of copying—the many excellent pictures and diagrams so profusely distributed through our training regulations. The only real cost is the lantern itself and that can be obtained for a few dollars. The glass, wire, switches and lights can be wangled from the quartermaster and the average company mechanic can put it together in a few hours.

For those company commanders whose funds can stand it, if they care to go into the matter further, the writer will be glad to supply the name of a civilian concern which makes an excellent air-cooled projector for around one hundred dollars. This machine is used extensively in schools and colleges.

The outfit described in detail above or the more costly air-cooled projector would prove an excellent addition to the instructional equipment of any unit.

★

IN TIME OF PEACE, *prepare for war.*—WASHINGTON.

Air Maneuvers on the West Coast

By Lieutenant Colonel John D. Reardan, General Staff (Air Corps)

MARCH FIELD, ten miles southeast of Riverside, California, was the base for the maneuvers, officially designated the Air Corps Command and Staff Exercises. All the units involved, except those permanently stationed at March Field, were required to concentrate by air in accordance with a march table covering the dates from May 3d to May 6th, inclusive.

The 2d Bombardment Group and 8th Pursuit Group, forming the 2d Bombardment Wing, went from Langley Field, Va. The 3d Attack Group from Fort Crockett, Texas, and the 20th Pursuit Group from Shreveport, La., went organized as the 3d Attack Wing. The 12th Observation Group was despatched from Brooks Field, Texas. The 19th Bombardment Group was sent from Rockwell Field, Calif. Five airplanes from the 9th Observation Group went from Mitchel Field, N. Y. The Air Corps Tactical School from Maxwell Field, Ala., also participated.

Altogether a total of 224 planes were flown from the East to March Field for the maneuvers, which together with those at March Field and Rockwell Field, gave a total of about 330 planes available for the Exercises. Five airplanes that started were damaged en route and were unable to reach their destination. Due to bad flying weather the concentration was completed on May 7th, one day later than planned.

The exercises scheduled during the maneuvers were designed to secure training for the Air Force. Part simulated a defense of a coastal area with the United States Fleet absent; and part of the exercises involved air force action against a land-based enemy air force.

On May 8th the squadron and group commanders reconnoitered areas assigned by Air Force Headquarters to select squadron airdromes for occupation on the following day, with a view to securing a dispersion of the Air Force that would afford protection from air bombing.

The Air Force headquarters ordered certain changes in airdromes selected for May 9th in order to compare

Official photograph, U. S. Army Air Corps

The Air Force concentrated at March Field during maneuvers.

the relative advantages of placing pursuit in rear of bombardment (away from the coast) with the reverse of this arrangement. The 1st Bombardment Wing had its pursuit squadrons at Grand Central, (Glendale), Griffith Park (Glendale) and Burbank airports and its bombardment squadrons at San Gabriel, Fontana and San Bernardino airports. The 2d Bombardment Wing for this date only had its bombardment squadrons at Fullerton, Seal Beach and Long Beach airports, while its pursuit squadrons were away from the coast at Arlington, Santa Ana and Elsinore airports.

It was the consensus of opinion at the critique which was held following the exercise that the pursuit should be closest to the coast with the bombardment in rear.

The 3d Attack Wing also occupied dispersed airdromes with the attack squadrons on the Los Angeles and Compton airports and the pursuit squadrons on the Los Angeles and Dycer airports. Wing headquarters was at Mines Field.

The 12th Observation Group kept a prescribed land area under observation, reporting all airplane movement within the area. Similarly the long-range observation amphibians patrolled a sea area of about 2,500 square miles, reporting all air and surface vessel traffic therein.

All wings tested the use of radio to assemble their groups, to rendezvous the wing, and to control movements of units in the air. The radio functioned very well, although it was decided that too much talking was done. Two squadrons, one in the 2d Bombardment Wing and one in the 3d Attack Wing could not be reached on the ground by radio and had to be sent into the air by visual signal from a plane in the air. The 3d Attack Wing simulated an attack on Redondo Beach under radio control from the air.

On Thursday, May 11th, the exercises were extended from the rendezvous of wings to include the rendezvous of the whole Air Force. All squadrons were on their dispersed airdromes for the assembly of the groups. The 2d Bombardment Wing was guide unit in the rendezvous and leading formation of the Air Force in subsequent movements which simulated an attack by the Air Force against vessels lying in San Pedro Bay.

The Air Force commander issued the orders for the Air Force rendezvous and its subsequent movements by radio from his plane in the air. The 2nd Wing rendezvoused over Long Beach with bombers at 3,000 feet. The Wing then proceeded by radio orders to Mines Field—the Air Force rendezvous point—where the bombers reached an altitude of 7,000 feet, as directed by the Air Force Commander. The 1st Bombardment Wing and the 3rd Attack Wing completed the rendezvous by forming with their respective pursuit in column with the pursuit of the 2d Bombardment Wing, at approximately 10,000 feet altitude. The 1st Bombardment Wing formed in rear of the bombers of the 2d Bombardment Wing and the Attack Group of the 3d Attack Wing formed under the bombardment at 2,000 feet altitude.

As soon as the rendezvous was completed, which required about 15 minutes, the whole Air Force, in the above formation moved out over the vessels of the Fleet lying in San Pedro Bay. No attack maneuvers were executed. The Air Force then broke formation on radio orders from the Force Commander and returned to March Field by groups.

On Friday, May 12th, the problem was to locate and follow to their "carrier" six hostile bombers reported as attacking the Los Angeles area. The "carrier" was the land airdrome at Fillmore. Two observation planes of the six from the 12th Observation Group, assigned for this exercise, located and followed the hostile bombers to the Fillmore airport. Their reports were received by the Air Force Commander at about 11:00 A.M. when all squadrons except those of the 7th Bombardment Group were on dispersed airdromes. Orders to rendezvous the Air Force (less 7th Bombardment Group) for an attack on the "carrier" were promptly given by radio from the air.

The 2d Bombardment Wing commander did not acknowledge receipt of order until 11:25—reporting then that his wing could make the rendezvous at Mines Field by 11:30. Rendezvous was made at 11:30 and the Air Force proceeded to the attack. Pursuit units ran short of gas and were sent back to March Field shortly after this. Later dangerous cloud formations near Fillmore caused the Air Force Commander to order all units home. However, due to delay in transmission of orders the 2d Bombardment Group reached the objective.

On Monday May 15th, the exercise was an interception problem for pursuit to attack enemy bombardment.

All pursuit groups were organized into a wing under command of Major B. Q. Jones, with squadrons on their dispersed airdromes. The 12th Observation Group patrolled the area Oceanside—Escondido—Ramona—Henshaw Lake (all inclusive).

The 2d and 7th Bombardment Groups under command of Major McNarney went to Rockwell Field, landed and at 9:15 A.M. opened sealed orders directing an attack on March Field and Riverside and containing information that pursuit in that area were defending against the attack.

The bombing groups were first observed in the patrolled area at 9:45 A.M. at a point about 15 miles northeast of Oceanside. Two observation planes of the 12th Group sighted the bombers—one at 9:47 A.M. and the other at 9:52 A.M. Both sent in several reports, and followed the bombers for twenty miles. First information of the bombers was received by the pursuit wing commander at 10:01. He immediately gave orders for his squadrons to take the air and assemble by groups and for wing to rendezvous over the enemy bombardment. The squadrons were all in the air by 10:21 and the first group reached the line of interception at 10:39 A.M., four minutes after the bombardment had passed. The bombardment made their attack without molestation.

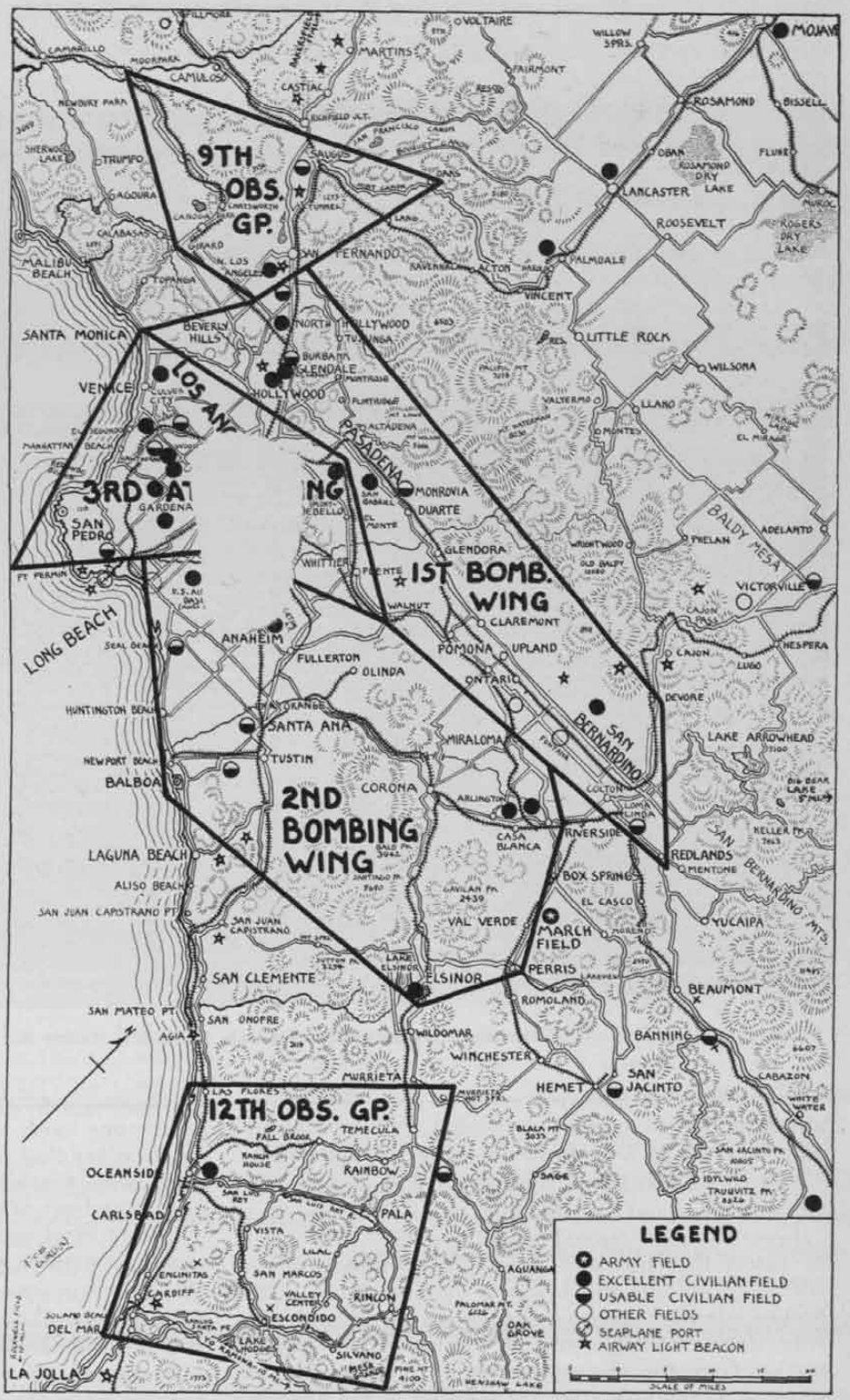
The opinion at the critique was that the line of

observation (Oceanside — Escondido—Ramona) being only 55 to 65 miles from the objective of the bombers, did not afford sufficient time for pursuit on the ground to make interception, even though the information of the enemy was promptly received. The differential in speed of the bombers and pursuit was about 40 m.p.h. The pursuit were not disposed directly across the line of approach of the bombers but one group was required to fly thirty miles to reach that line, gaining altitude at the same time. This and other similar exercises showed that it requires 20 minutes to get orders through, to get motors started and to get squadrons assembled above take-off field.

The operation on May 16th was a meeting engagement between the two bombardment wings. The 1st Wing with 20th Pursuit Group and a flight of 12th Observation Group attached went to Bakersfield and opened sealed instructions there at 2:30 P.M. The 2d Bombardment Wing with the 3d Attack Group and a flight of the 12th Observation Group attached opened sealed orders at March Field at 2:30 P.M. Each commander was informed that the enemy had been discovered, in one case near March Field and in the other near Bakersfield, and directed to attack.

The 2nd Bombardment Wing took off from March Field at 2:40 P.M. and took the route through Cajon Pass, and along the southern edge of the Mojave Desert.

At 3:43 P.M. the Air Force Headquarters asked and was informed by 2d Bombardment Wing Commander that 1st Bombardment Wing had not yet been seen. He was then directed to return to March Field if 1st Bombardment Wing was not sighted by 3:45 P.M. At 3:45 Colonel Culver (2d Bombardment Wing Commander) gave the order to execute a left turn preparatory to returning to March Field. At 3:48, while making this turn, the 1st Bombardment Wing was sighted about three miles to the west. The bombardment planes of the 2d Wing continued on their course. The pursuit of both sides made feint attacks against the bombardment of the opposing side.



Map of the Los Angeles District of California,
Scene of the 1933 Air Maneuvers

The method of employment of the observation planes by the respective sides is of interest. Each side had five observation planes. The 1st Bombardment Wing sent their five planes out 40 miles ahead of the wing, two on the Saugus route and three on the Cajon Pass

Official photograph, U. S. Army Air Corps

Bombing Planes over Long Beach, California, during Air Maneuvers.

route. No information was received from these planes although the three going through Cajon Pass should have seen the 2d Bombardment Wing without trouble.

The 2d Bombardment Wing ordered their five observation planes out on the line Santa Monica—Glendale—Glendora—Cajon Pass—Victorville, with orders to patrol that line and report the approach of the enemy. This line was too long for five planes in the broken country involved and it was considerably in rear of the meeting point of the two forces. Information from the observation planes on this line was received 33 minutes after the meeting of the opposing forces in the vicinity of Palmdale, forty miles in advance of the line of observation.

It is believed each side could have improved on its method of providing for the service of information, neither side could fully cover the requirements with the five observation planes made available to it, and each side had available pursuit planes to act as scouts and to supplement the work of the observation planes but did not so employ them. In general either method of the two used should secure results provided that, on the one hand, all available routes are covered and on the other that the line of observation is moved forward with the advance of the main body so as to keep it at least fifty miles ahead.

On May 17th the 20th Pursuit Group went on radio alert at 9:15 A.M. prepared to defend the area Pomona—San Bernardino—Perris against the 8th Pursuit Group operating from south of this area. The 20th Pursuit Group had five observation planes which they disposed on the line Cardiff—Mesa Grande to report by radio the approach of the enemy.

Only one of these five planes sighted the 8th Pursuit Group, and reported the group at the coast six miles south of Cardiff, altitude 2,000 feet, headed north. This plane sent two more messages before losing contact, the last one seven minutes after the first message. These three messages covering seven minutes of the enemy's progress toward his area was all the information received by the commander of the 20th Pursuit Group.

The result was that the 8th Pursuit Group, which both changed direction and increased its altitude to 12,000 feet passed over the 20th Pursuit Group without being seen.

In addition the time factor afforded by an observation line from Cardiff to Mesa Grande, which varied between 55 and 65 miles in distance from March Field—the center of the defended area; did not permit interception outside the area. In fact the 8th Pursuit Group penetrated to March Field before the 20th Group could have attacked.

The critique developed that the observation line should have been at least 25 miles farther south and the defense should have used pursuit scouts to maintain contact with the enemy and keep the defense informed of their progress.

At 6:45 P.M., May 17th, a night exercise was held. The 2d Bombardment Group, 90th Attack and one Group Pursuit (represented by eight planes) attached, had the mission of attacking an airplane carrier at sea. The task force went on the alert at 6:00 P.M. At 6:45 P.M. one of two observation planes searching the sea area where the carrier should be if course and speed at last report (furnished by control) were maintained, reported the location, course and speed of the carrier. The Carrier was represented by Army Mine Planter "Armistead."

The force commander ordered pursuit to take the air and protect the take-off and assembly of the bombers. The bombers and then the attack took off, following the pursuit.

The pursuit was to support the bombardment until dark and then return to airdrome. The attack was to rendezvous with the bombardment at Huntington Beach and to precede bombardment by two minutes in making attack on carrier. The carrier was to the northwest of Catalina Island about six miles.

As the bombardment left the coast at Huntingdon Beach it was at an altitude of about 6,000 feet with the Attack slightly to the right front below at an altitude of 3,500 feet. (The Attack would have been at several hundred feet altitude under actual war conditions.)

It was almost completely dark at the time the force left the coast, being about 25 minutes after sundown at the altitude of the Attack (3,500 feet). The pursuit left the force at this point and returned to March Field.

Bombers and Attack planes proceeded to the attack and passed over carrier with the Attack Squardon about two minutes in advance of the bombardment.

It developed at the critique that the bombardment group commander was out of touch with the attack planes during the period of the actual attack. Also due largely to the observation amphibians operating under Air Force headquarters the commander of the task force could not maintain communication with them on account of exchanges of messages between the amphibians and Air Force headquarters. It was doubted whether the observation planes could locate a carrier on a dark night, especially at slow speed, unless its position were known within fairly close limits.

At 3:30 o'clock the next morning the 7th Bombardment Group with 13th Attack Squadron and 8 pursuit planes attached, repeated the problem with practically identical results.

On the 19th the 3d Attack Wing went to Rockwell Field and there opened sealed orders which reported enemy pursuit on airdromes in the March Field—Colton—Corona area (points exclusive) and directed an attack upon them.

There were four airdromes in the area. Riverside area was occupied by six camouflaged planes placed partly under trees along the sides of the flying field.

The Arlington airdrome had six uncamouflaged planes in the open field.

The Attack Wing used six pursuit planes as scouts and they reported the planes at Arlington and also reported that there were no planes at Riverside Airport—having missed them flying over at an altitude of 2,000 feet.

The Attack Group used three smoke planes and smoked the Arlington Airport and then made an attack against the planes on the ground.

The Attack Wing commander having directed his scouts to examine the other airdromes and suitable open fields in the area and not receiving any further reports of airplanes on the ground, ordered his wings to return to March Field.

The 20th Pursuit Group was in support of the attack at an altitude of about 7,000 feet.

It was thought that observation planes should be included in a task force for an attack mission such as this. Trained observers in the rear cockpits have a better chance of picking up camouflaged airplanes hidden on dispersed airdromes, than a pilot in a fast pursuit plane who, besides not being especially trained in this type of observation work, has the duty of flying the plane. The camouflaged planes partly hidden under trees were very difficult to see from the air.

On Monday, May 22d, there was an assembly and rendezvous exercise for the whole air force, with a simulated attack against March Field, followed by a review. The attack consisted simply of flying over March Field in close formation, with the attack at low, bombardment at intermediate and pursuit at high altitude.

On Tuesday, May 23d, the Mineplanter "Armistead" towed two targets of 25 foot square base separated on the towline by 100 feet. These targets represented an enemy carrier for actual bombing with practice bombs.

Six planes of the 12th Observation Group searched the area, which, for control purposes, was reduced to about 2,000 square miles. Two planes promptly discovered and reported the "carrier."

The 8th and 20th Pursuit Groups were formed into a provisional pursuit wing to support the attack.

The 2d and 7th Bombardment Groups formed a provisional bombardment wing and each plane carried two 100-lb. practice bombs. Each plane of the Attack Group carried two 50-lb. practice bombs.

The attack was made by the whole task force. Due to the fact that the head winds encountered by the Attack Group at its lower altitude prevented them from completing their attack before the arrival of the bombers, as the plan called for, the bombers were compelled to go on past the target, circle and make their attack headed toward the shore.

The bombing was controlled for each three planes by the leading plane of each flight, due to shortage of personnel to man the bomb sights on all planes.

The accuracy of the bombing would undoubtedly have been better had opportunity for practice been afforded. The nearest salvo from the bombardment planes centered about 100 feet from the targets. Due to the burden of staff work in carrying on the March Field and Fort Knox maneuvers simultaneously, there was a shortage of trained bombing personnel which prevented securing any real practice for two-thirds of the bombing planes engaged.

The exercises on May 24th involved pursuit interception of bombardment. The 2d Bombardment Group, with 13th Attack Squadron and two observation planes of 12th Observation Group attached, formed one task force. The 7th Bombardment Group with 90th Attack Squadron and two airplanes of 12th Observation Group attached formed another task force—both being directed to attack against an area defended by a pursuit task force comprising the 8th and 20th Pursuit Groups and the 22d Observation Squadron.

The area Pomona—San Bernardino—Perris—Fullerton was defended.

Both bombardment task forces took off and proceeded to Oceanside, arriving at 8:40 A.M. Here, under control, each force moved by prescribed routes, the 2d Bombardment Group force on San Bernardino and the 17th Bombardment Group force on Pomona.

An assumed ground intelligence net furnished the pursuit commander with reports of the progress of the two task forces. When the pursuit commander, at 8:17 received a report stating these forces were at Imperial Beach and at 8:27 a report that they were at Pacific Beach he directed the 20th Pursuit Group, one squadron of which was at Riverside and one at March Field, to assemble over Santa Ana Cañyon. At 8:47 he was informed of the split in the force at Oceanside and thereupon directed the 8th Pursuit Group, two squadrons at Arlington and one at March Field, to assemble over March Field and await further orders.

At 9:09 A.M. the pursuit commander directed the 8th Pursuit Group to intercept and attack the bombers headed toward Perris and the 20th Group to intercept and attack the bombers headed toward Fullerton.

The 8th Pursuit Group made interception south of Colton. The 20th Pursuit Group failed to find its target until after Pomona had been bombed.

The eastern attacking force penetrated the defended area to a distance of 18 miles before being intercepted. It could, therefore, have bombed any one of several objectives in the area penetrated. The fact that this attack did not reach San Bernardino, therefore, does not mean that the defensive was successful.

Similarly, the western attack force also penetrated the defensive area about the same distance before being found, notwithstanding the fact that the pursuit here was over Santa Ana Cañyon, on the southern border of the area defended, prior to the time the bombers reached this boundary.

It was considered that the pursuit commander's orders to the 20th Pursuit Group were faulty when, at 8:30 A.M. he directed that group to assemble over Santa Ana Cañyon. This commander had the mission of defending a certain area. He had a report that a large enemy force (two bombardment groups) was approaching that area. He knew that two groups were all the bombardment the enemy possessed. Two reports showed the hostile force to be moving toward the area he was charged with defending, with a probability that the enemy bombers would reach the southern boundary of the area about 9:20 A.M.

With a requirement of about twenty minutes to get orders to the units and get them in the air and twenty minutes flying time to reach, at proper altitude, the southwestern corner of the defensive area—which was the nearest point for the approaching enemy—it was believed the defense should have dispatched its entire force to a rendezvous over Fullerton at 8:30 A.M. To have done so would have given a margin of only ten minutes over the time when the attackers could enter the area at that point.

Had the pursuit commander taken such action, he would have found his two groups assembled in the air, one over March Field and the other over Arlington, when he received and digested the information that the enemy force had split and one group was going northeast and the other continuing northward.

He could then have directed the 8th Group to intercept the eastern and the 20th Group the western bombers and have gained nineteen minutes over the time actually secured for the 8th Pursuit Group under the orders as issued.

This nineteen minutes would have enabled interception at the southern border of the area for the 8th Pursuit Group and would have increased the probability of the 20th Pursuit Group effecting interception, by enabling them to approach directly toward their objective, rather than to attempt to cut the line of enemy advance from a position over Santa Ana Cañyon.

On May 25th the 3d Attack Wing, with the 8th Pursuit Group and the 12th Observation Group attached, proceeded to Rockwell Field, landed and serviced the airplanes. They were given a restriction that no plane would leave the ground until two hours after landing.

The 2d and 7th Bombardment Groups, under Major McNarney, attacked Rockwell Field, the time of attack allowing them a five-minute get-away time prior to the defenders being allowed to take the air under the restriction imposed.

The bombardment commander instructed his groups to split into squadrons and then into flights of three planes after attack was made, in order to reduce the chances of being picked up by pursuers.

The commander of the Rockwell Field force dispatched his observation and attack planes after the bombers, with pursuit in general support, with the expectation of overtaking the bombers and following them to their airdromes and bombing them on the ground. Six pursuit planes with radio were used as scouts and did excellent work in reporting the routes taken by bombardment flights.

Banning, Indio, Palm Springs, Big Bear Lake and Baldy Mesa were the airdromes selected by the bombers. Three of these were attacked. Big Bear Lake and Baldy Mesa were not discovered. In addition the 20th Pursuit Group attacked three planes of the 7th Bombardment Group in the air. The reports showed that 24 out of 51 bombers were attacked on the ground and three were attacked in the air.

Under this situation it is believed the time factor permitted the pursuit at Rockwell to overtake the bombers and attack them in the air and the chances of this were so good that the take-off of the pursuit in advance of the attack and observation might have been justified. This would still permit attack on the ground if the bombers landed within cruising range of the attack planes and would have secured some results in case they did not.

The exercise on May 26th was a test of the efficiency of operations with the major units regrouped for the exercise.

The 2d and 7th Bombardment Groups formed one bombardment group of four squadrons of nine planes each, designated 7th Bombardment Group.

The 8th and 20th Pursuit Groups formed one pursuit group of four squadrons of 18 planes each, designated the 8th Pursuit Group.

The 3d Attack Group acted as two-seater fighters.

One force, comprising the 7th Bombardment Group (as reorganized) the 3d Attack Group (two-seater fighters) and the 12th Observation Group, was directed to make a simulated attack on the San Pedro docks.

The 8th Pursuit Group (as reorganized) was ordered to attack the bombing force between Corona and San Pedro.

A limitation imposed on the pursuit of not approaching nearer than 500 feet in making dive attacks, combined with the use of attack as defensive two-seater pursuit, served to render the execution of this exercise somewhat artificial. The sense of the critique was that two-seater fighters might prove a valuable defense to bombardment formations. In this exercise they greatly impeded the diving attacks of the pursuit on the bombers. One pursuit leader stated informally, that this was due more to ignorance than ability; that the attack, not having worked much against pursuit diving tactics, did not know how dangerous it was to barge around through the air as they did in this exercise.

This exercise was followed by a review of the whole force at March Field, directed by the air force commander from the air by radio. This review closed the exercises at March Field, except for the general critique immediately following, which covered all the exercises of the maneuvers.

These air force exercises were conducted under the command of Brigadier General Oscar Westover, Air Corps, acting as commander of G.H.Q. Air Force. Lieutenant Colonel H. H. Arnold, A. C., was chief of staff; Major A. N. Krogstad, A. C., G-1; Major C. L. Tinker, A. C., G-2; Major Ralph Royce, G. S. C. (A. C.), G-3; and Major J. H. Rudolph, A. C., G-4. To the painstaking work of these officers in preparing and supervising the exercises may be attributed much of the success attained.

The maneuvers afforded this selected group of officers and their assistants an opportunity to divorce their minds from any prejudice, favorable or otherwise, they may have possessed for a particular class of aviation and to focus their interest upon the functioning of the whole air force as a team. Their objective, it was clearly demonstrated, stood forth more clearly as the maneuvers progressed as being the combining of the different classes of units into task forces which could most efficiently execute a given mission.

The unit commander, also, worked enthusiastically long hours each day to insure the high type of tactical performance attained and the pilots and whole force demonstrated a high degree of training and efficiency. Only the commanders of the higher units can be mentioned here. Colonel C. C. Culver, A. C., commanded the 2d Bombardment Wing; Major Carl Spatz the 1st Bombardment Wing; Major M. F. Harmon, Jr., A. C., the 3d Attack Wing; Major F. D. Lackland the 12th Observation Group, and Captain H. M. McClellan, A. C,. the 19th Bombardment Group, which included the squadron of observation amphibians which did excellent work in over-water scouting. Major B. Q. Jones, A. C., commanded the 8th Pursuit Group and a provisional pursuit wing during several of the exercises. Major J. T. McNarney, A. C., commanded the 7th Bombardment Group and a combined force which included both bombardment groups for several exercises.

There was no actual ground intelligence service and, in order to permit the completion of the large program of exercises within the time available, much of the work of the observation planes was eliminated through "control information" given to them and to higher unit commander. This course of procedure made it possible to increase greatly the amount of data obtained upon the question of operating an air force. At the same time it left a gap in the conclusions drawn as to the possibilities of securing sufficient information that requires us to look to a subsequent air force maneuver to fill.

During the week following the above exercises the air force commander, with his staff, the group commanders and some of their staff officers, and certain of the squadron commanders carried out similar command and staff exercises in the Puget Sound area and returned to the east by air over the Cheyenne air route.

News of Victory

The Turning Point, July, 1918*

By Thomas M. Johnson

IN four summer days in 1918, the world ceased to fear German domination, and turned its eyes toward victory.

There were no seers then, to divine that victory would come in four months. There were only many anxious, hoping men and women who read with deep thankfulness that the last great German attack had failed, then that the first great Allied counter attack had succeeded.

They could know little of how such news of victory was gathered, written, sifted through the censorship, finally cabled home for them to read. That is one of the few stories of the A.E.F. still untold. Told now, from the viewpoint of the newspaper correspondents who wrote the news, who had "box seats" at the climax of the great drama, it may help in seeing more clearly how the tide turned. Here it is, as it happened from day to day.

An old friend of ours, a major in the general staff, stopped at Meaux on the afternoon of July 14, 1918, and was given the best entertainment the Hotel de la Sirene afforded. He left in rosy good humor.

"Better come and see us," he said. "Our new Corps P.C.'s up north in the Forest of Villers-Cotterets. You'd be interested."

That night, despatches written and the last Paris courier gone, we thought it over. Was the major "tipping us off" to something, and if so, what? Then there struck upon the night a sound that banished speculation.

"Thump - thump - thump - ump - ump. Thump-ump ump! Thump-thump!"

For two weeks we had been straining our ears for it—the simultaneous crash of four thousand cannon preparing the way for the great German "Friedenssturm," the "Peace Drive" that was to end the war with a peace of Deutschland über Alles.

Would the Germans succeed? It seemed terribly possible in the tense days of early July, 1918. They had been attacking since March, and twice had almost broken through. This would be their supreme effort. Had the Allies reserves of men and strength left to withstand another sledgehammer blow? Could they hold on until the Americans could at last make themselves felt? Were our new divisions coming fast enough?

Paris was what the Germans were after—their ultimate objective. Little over a month before, they had reached Château-Thierry, only forty miles from the French capital, and now the apex of the Marne salient formed in that successful drive. Expecting a renewal of the attack, French and Americans had prepared for a strong defense the southern and eastern faces of the Marne salient and the Champagne front, beyond Rheims. On each flank, at Château-Thierry and in Champagne, an American division held the front line. Other American troops were in close reserve, though most of the line was held by the French. The blow would fall soon, that we knew.

Across the Atlantic, 110,000,000 people waited, knowing that their own flesh and blood must be in the path of the Friedenssturm. Many had already left Paris, and many of those who remained were packed up, ready for flight. In Meaux, on the Paris road just behind the front, we newspaper correspondents attached to the A.E.F. waited to tell the world the outcome. We had all sent to our papers, within the last few days, despatches based upon the reports of the American and Allied intelligence services, and reading somewhat like this:

"All signs point to an early resumption of the German offensive, in which, as the number of American troops in France increases, Americans have a steadily increasing interest. For this same reason time becomes increasingly important to the Germans. If they have rebuilt their worn-out divisions at the usual rate, following the battles of a month ago, they should be ready to renew their attack with fifty divisions (five to six hundred thousand men) some time within the next fortnight."

And now that time had come. That was the only meaning of the drumming roar we heard, of the great white light in the pitch black sky toward Château-Thierry—the flashes from many gun muzzles. We felt a creeping at the hair-roots. We looked at our watches.

"Eleven-thirty," someone said, huskily. "It's tomorrow all right."

Next morning, July 15, 1918, began early with German long range shells exploding in Meaux, and the rumble of smashed stone falling. Along the Rue Nicolas, shopkeepers began putting down iron shutters and packing up. The black eyes of little Napoleon popped almost out of his head as he served breakfast in the dining room of the Sirene, deserted by all but ourselves, but Napoleon would stick. "Ils ne passeront pas," he said.

There was hubbub in the Censor's office as the press association men struggled to get off hurriedly written "flashes" by the early courier to Paris, whose motorcycle chugged impatiently below in the cobbled courtyard. A voice arose:

"Why can't I say the Germans are shelling Meaux,

* By permission of the Century Company.

Captain? My God, don't you suppose *they* know it?"

One of our number carefully stowed his Corona in the car, explaining;

"Can't tell where we'll finish up tonight. War correspondent without a typewriter wouldn't be much use."

Our nearest source of news was some fifteen miles along the Château-Thierry road, in La Ferte-sous-Jouarre where the First American Corps had its headquarters. There we found the Chief of Intelligence, Colonel Williams, red-eyed and pale-faced from lack of sleep,—as indeed, everyone was those days and nights.

"What is it, and how's it going?" we asked, as breathlessly as professional pride permitted. "We heard their barrage at 11:20 last night—"

"Eleven twenty?" The Colonel shot back. "That was *our* barrage. Theirs started at midnight. We knew what was coming, and had the jump. Everything's going fine. Notebooks ready?"

Then he told us. Early that morning, following their great barrage, most of the heavily reinforced Seventh and First German armies had attacked Americans and French on the southern and eastern faces of the Marne salient, and in the Champagne, a front of fifty miles. The immediate objectives were the encirclement of Rheims and the capture of Chalons and Epernay, the ultimate objective, Paris. But Marshal Foch had been well prepared for this "Friedenssturm."

German prisoners taken the day before had told that the German artillery preparations was to start exactly at midnight, so the French and American artillery—some of the latter fresh from the training camps and firing their first shots at the front—had opened a counter-preparation forty minutes before. Nevertheless, the German infantry had come forward at times varying from 3:30 to 4:15 in the morning. It was too soon yet to say that the "Friedenssturm" was broken, but it seemed to be checked. The German losses had been terrific. This was the news that was reaching the Corps from various points along the line.

On the right, in the Champagne, the French and the 42nd American Division, the Rainbow, had evacuated the advanced positions. Immediately the Germans entered the abandoned ground they had been struck by a terrible artillery fire that had withered them. General Gouraud's "elastic defence" had worked.

In the center, near Epernay, some ground had been lost, but nothing vital. On the left and nearest us the fighting had been and still was desperate. The Third American Division, on the Marne just east of Château-Thierry, had been forced to give some ground. There was the place for the "hot news" that morning.

As we crossed the Marne beyond La Ferté, there came over us the battlefield mood, exaltation striving with depression, and repressed excitement yet apprehension that sharpened some faculties, blunted others. The bridge was strongly guarded and one of its spans charged, ready to be blown up if the Germans got too close. Over it, toward the front, rumbled wagon trains, and coming back, ambulances. The sound of the guns, always louder, meant that we were nearing the front of the front.

After the bridge, we drove through troops moving in the same direction as ourselves, in their faces the taut, hard look of the front. In some woods arose clouds of smoke, and branches and leaves were tossed into the air as shells burst.

We reached Chateau la Doultre, southeast of Chateau Thierry, Third Division headquarters, in the middle of a staff conference. Col. Kelton, Chief of Staff, had traced upon the map the situation since the first shock of the German attack had, apparently, dislodged a part of the division from its advanced position. The French 125th Division on the Third's right had been forced to give more ground and the French Corps, commanding both units, had ordered them to withdraw somewhat to a stronger prepared position. General Dickman, the division commander, leaned forward, steel helmet tilted over his nose, lower jaw thrust forward, his whole powerful figure denoting pugnacity. He glared through his thick glasses, as if he actually saw those Germans in his frontline.

"Well, damn it, let's get 'em out of there," he said. Then the door closed.

That was a special, vivid bit of history. It meant the launching of an American counter-attack, first of the day on the Allied side, and the sending to the French higher command of this now famous letter;

> "We regret being unable on this occasion to follow the counsels of our masters the French, but the American flag has been forced to retire. This is unendurable and none of our soldiers would understand their not being asked to do whatever is necessary to re-establish the situation. At present it is humiliating to us and unacceptable to our country's honor. We are going to counterattack."

French G.H.Q. seized upon the letter as propaganda to prove that the new American troops not only would fight, but preferred to. Published in American newspapers, it aroused great enthusiasm. But the writer's name was not given, and authorship has been attributed to this day to almost everyone but General Dickman. The mere fact that the Americans had counter attacked was hailed by London newspapers as "the best feature of the day's news."

The defence of the Marne against the Friedenssturm on July 15 was one of the most cleanly successful and heroic exploits of American troops in France. The Third Division held the southern bank of the river from the eastern edge of Chateau Thierry for some seven miles to beyond Mezy, where the smaller Surmelin flowed from the south, into a northward loop of the Marne. This was the nearest point on the battlefront to Paris forty miles away.

The division's inexperienced artillery, some of which had got into position only that night, began its counter-preparation a half-hour before the German barrage came down. After that, when the horses were killed, the men time after time drew up by hand through intense shellfire limbers loaded with shells to feed the guns. After the German barrage, came the gas, then dense clouds of smoke. The German infantry had been badly cut up by the fire of our green artillery, but they came on.

They came in boats, or at a shallow place, wading and swimming, or across pontoon bridges. The scene suggested the Styx—the darkness, the oily smoke clouds, the boats filled with gray men like gnomes in their gas masks and scuttle-shaped steel helmets.

Along the river bank and behind the railway embankment waited the advanced posts of the 4th, 7th, 30th and 38th Infantry, all old regular regiments. They were "filled up with rookies" but they were profanely certain that their rifles could stop the whole German army—so straight did they shoot.

They threw hand grenades into some boats, and blew them up. They picked off the crews of some—the non-coms calmly calling out distance and windage—so that the boats drifted full of corpses. But at Mezy two pontoon bridges were rapidly built and crossed by troops of the Tenth and Thirty-sixth German divisions—both shock units. They attacked south and southwest. The attack southwestward was held after a slight withdrawal by the Thirtieth and Seventh Infantry along the Fossoy-Crezancy road about a mile south of the Marne. But the Thirtieth didn't inform the Thirty-eight of its withdrawal, so when the 125th French Division on its right and east was forced back also the Thirty-eighth found itself, around ten o'clock in the morning, in about as tight a box as could be imagined.

The regiment defended with some 3,000 men eight miles of trenches facing three directions, west, north and east, with the east or right flank nearly six miles long! Luckily Colonel Ulysses Grant McAlexander—expecting "to fight it out on that line"—had ordered a few nights before that trenches be dug along the western heights of the Surmelin, facing east. It was this foresight, and the bravery of the troops, that made possible successful defence against the two German divisions that now attack the regiment on the right and left.

Again the rifle came into its own. Firing coolly aimed shots, these "rookie regulars" beat back the attacking columns seeking to surround them. Artillery and machine-guns helped, but of the five thousand German dead that were buried later on the Third Division's front, many had the single round hole that the Springfield bullet makes.

Censorship rules at the time and long afterward prevented the regiment or its commander being named in news despatches, though this was one of the finest feats of arms in American military history.

General Dickman didn't like the French order to withdraw. He proposed to get the Germans out of the part of his original front line that they still held. He ordered a counter-attack. The infantry of the Third Division went forward as if fresh and untouched by battle. They found some of the American advanced posts still holding out along the Marne, surrounded by heaps of German dead. By nightfall the only Germans south of the Marne in the division sector were prisoners, wounded, and dead. Then the French order to withdraw was obeyed. So the Friedenssturm ended—so far as the Third was concerned. Not another German crossed the Marne on their front.

But long before night came we were on our way back toward Meaux, for the news of the early day must be sent as soon as might be. We passed Pennsylvania Guardsmen of "Daddy" Muir's 28th Division coming up in support—they did fine work later—and the ambulances were fewer.

The censor's office was a battlefield too. Correspondents, full of their "story," strove to get it on the wires as quickly as possible, in all its import of hope and cheer. The Meaux telegraph wire was, as usual, choked with military messages. Motorcycle couriers to Paris were our only reliance.

Early in the morning the censorship had been tight, but as more and more good news came in, it had relaxed somewhat. We were now permitted to say that "the first stage" of the Friedenssturm "appeared to have been checked" or something similarly cautious and safe.

Men came in from the Champagne front, a hundred miles away, dust-covered and dog-tired, but aglow with what had happened there. Their facts came largely from Colonel Douglas McArthur, dashing Chief of Staff of the Rainbow Division, who was accurate and dependable but never spoiled a good story and so was called "the correspondents' friend."

The Rainbow, with New York Irish and "Alabams" in the front line, had endured hours of hellish shellfire on the "intermediate position" awaiting the German infantry. Little knots of men in blue came drifting back. They were of the new "Polish army," they said in fair English, being mostly Polish-American volunteers.

"The hell ye are the Polish Army," the Irish replied. "Ye're Americans, like us. Stay here with us, and fight."

And they did.

Finally the Germans got through the advanced zone of ruined trenches and barbed wire that the French had evacuated, and then shelled to bits. They were shaken and decimated, but discipline held and they came on. They had tanks and cavalry, but the 75's blew up the one and the machine guns cut to pieces the other. The gray-clad infantry attacked again and again. They never penetrated the Rainbow position. The division interpreter had translated General Gouraud's famous order before the battle to read; "It will be a beautiful day." It was—in one sense.

Next morning the early news was still good, and it got better during the day. The Paris newspapers—"Dyly Myle! Cheeckago!"—were very optimistic, but not yet would the French censor let them speak of "La Victoire" which means much more to a Frenchman than does "Victory" to an Englishman or Americans. A quick trip to La Ferté gave the news that there had been no more German attacks, since the previous evening.

Now, in the meantime, a short, jaunty man in a blue-gray uniform, with a keen eye, who has been described as the greatest military thinker of modern times, Marshal Ferdinand Foch, wrote a telegram to General Mangin, a stocky, iron-jawed Colonial brought from retirement because Marshal Foch thought, as

Lincoln said of Grant; "I can't spare this man; he fights."

If we had known of that telegram on the morning of July 16th, perhaps we should not have been talking to the Intelligence officers of the French 38th Corps, asking them the results of their systematic interrogation of German prisoners taken on the Marne—yet what they told us was well worth hearing.

"He is not the same Boche at all! they exclaimed with shining eyes. "He loses his morale! Regardez!"

Diaries, letters, postcards taken from prisoners, stenographic reports of conversations with them, told almost the same story—discouragement, disbelief in eventual victory, occasionally even distrust of their officers. The most precious story of all was how the Kaiser, assured that the "Friedenssturm" would succeed, had watched the vain assault from an observation post on the northern heights of the Marne.

Later the German attacks were resumed, but they were weaker. Slowly they were obliged to give back some of the scanty strip of ground taken from the Allies in the first rush. Not only had the Friedenssturm failed, but the German Seventh and First Armies were in a worse position than when the "Peace Drive" started, troops and supplies crowded down in the Marne salient, with none too many road communications.

At the close of still another day, checking over our notes and planning our "stories" as we rode along, we ran into a long train of trucks filled with American troops, their eyes ringed with dust. At the main crossroads in La Ferté, they left us. Later Wood said, he of the long nose for news:

"Say, those troops turned *north.*"

Now, from La Ferté the battle front of the Friedenssturm was not north but east, toward Chateau Thierry and the Marne, Rheims and the Champagne. But the trucks had taken the northern road. Our maps showed that it ran to the Forest of Villers-Cotterets, and Soissons. Why was that? They were going away from the battle.

Our chauffeur remarked:

"Them was Marines—Second Division."

The Second was at that time the only battle-experienced American Division.

That evening someone sauntered in to "swap dope" and said:

"What are kilted troops—Scotch—doing around here? I saw some today, headed north."

The natural reply was: "Forget it, you can't write it, anyway." Troop movements were, of course, taboo in despatches. But it set one thinking again—troops going north, toward the Forest of Villers Cotterets, away from the battle.

Late that night there was a telephone call from French G.H.Q., which delighted to move in ways mysterious to Americans, when it concerned news. Early next morning came a bang on the door and the brief announcement:

"Cars start early today—something doing!"

It was a perfect morning, the 18th of July, the sky blue, the sun bright, but there was dark mystery in the censor's office.

"Drive north," was all they would tell us, "north, to the Forest of Villers-Cotterets."

That was where the Second Division had been going in their trucks, whither the kilted troops were headed, where the new Third Corps headquarters were stationed, where our friend the Major had said we'd be interested. It was some thirty miles from us, on the *western* face of the Marne salient, not the southern or the eastern where the Friedenssturm had been stopped.

When finally our cars slid into the forest, the noise of a great artillery fire was in our ears, and we saw that up here a new and great battle had commenced. The forest was filled with a new army, French, Americans, British, Moroccans, Algerians, that had struck the Germans at dawn that morning. Its guns were crashing amid the trees, its supplies going forward along the forest roads.

With a sudden flood of relief, it came over us that here was the full answer to the fears and anxieties of the Allied world. The Allies had the strength still not only to smash into defeat the great German drive, but to turn the tables, to catch the Germans in their moment of confusion,—to counter-attack! And the Americans were in it, playing at last a grand role.

Down woodland paths, dappled with filtered sunshine, came bandaged men in olive drab.

"Second Division," they said. "Twenty-third Infantry. Ninth Infantry and the Marines are a little farther ahead. It's a big show, I guess. Surprise attack—French and 'Marocs' and us and the First Division and a lotta tanks. Dunno about the others, but we got where they told us to go. Got a cigarette?"

They had the cocky look of the "walking wounded" of a victorious army, proud of having done their part.

Familiar faces were at a thronging crossroads where Second Division headquarters had been not long before. It had moved ahead now.

"General Harbord is up farther front," they told us. "The Division's kind of balled up, just got here in time for a running jump-off, but we're going ahead. We sure are! Two or three miles already! General Bullard's in Taillefontaine, right ahead, big chateau. He's commanding a new Corps, the Third.

Our friend the Major stood on the steps of that chateau, grinning broadly.

"Told you you'd be interested up here," he said.

General Robert Lee Bullard, by correspondents best beloved of Pershing's Generals, who knew how to give out news, greeted us in his high Southern drawl:

"Well, gentlemen, always on hand when there's trouble, I see. I'll tell you what I can—I know they won't let you write it all."

"This is a big thing, nothing puny about it," he went on. "It's Marshal Foch's doing. We are a part of the Tenth French Army commanded by General Mangin, attacking the right flank of the Seventh German army on the western face of the Marne salient from here near Soissons south to Chateau Thierry—that's more than 25 miles—while its center and left

"Ah, nach Paris, eh?"

flank on the Marne and near Rheims are all tangled up with what's left of their Friedenssturm. It looks as if we had caught them off their balance, or at least not expecting us, struck them in a weak place.

"We may, I say we *may*, gobble up a couple of hundred thousand Germans in the Marne salient, if we can cut it off quickly.

"We'll give the old Boche a good licking, anyway. Our advance has gone far enough already so that our artillery can heavily shell Soissons, which is his main road center, and the Soissons-Chateau Thierry highway which is his main road, in the salient. He'll have to give up the Marne salient and retreat to the Vesle, a long way from Paris.

"Now here is what, I suppose, is the American 'human interest' ", General Bullard continued, smiling mischievously. "The spearhead of the attack is right here between the Aisne and the Ourcq with the First Moroccan Division, supposedly the best French shock division, in the center, and on the left and right, the First and Second American. The Fourth and 26th American are in it, too, but farther south. If this attack succeeds, it will change the course of the war. We and the 'Marocs' feel that we have the post of honor. Is that what you wanted to know?"

The General was bombarded with questions. When did the attack start? How was it going?

"It is going well. If it is going according to the plans of the High Command, the French cavalry has gone through and is near Fere-en-Tardenois," he said.

Fere-en-Tardenois—ten miles beyond the front!

"Is it a breakthrough?" We spoke the word almost in whispers.

"We don't know yet. Of course we hope it may be."

With such big news as this, there was no time to lose. We must get farther front for details and "color," then "step on it" all the way back to Meaux and typewriters and cables.

First Division headquarters was in a cave near the gray stone and red-tiled village of Coeuvres et Valsery, which had been on the edge of the front line at 4:35 that morning when the infantry "jumped off." Now, the howitzers of the Fifth Field Artillery were firing with uptilted barrels, almost at the cave entrance. Lying on the ground in a hollow were the reserve infantry asleep, oblivious of the noise or, if awake, making appropriate remarks to knots of grayclad German prisoners. The supreme touch was given by an ancient French poilu who greeted a file of Boches: "Ah, nach Paris, eh?"

The cave, dimly lighted by stubs of candles, was a busy place. In an odor of earth and humanity, a sound of buzzing field telephones, clicking equipment and hurried bits of conversation in French and English sometimes drowned by the blasts of the howitzers, the picked First Division staff strove to keep the rapid advance under control. From Campbell King, unruffled always, George Marshall, one of the A.E.F.'s ablest staff officers, and Bill Sherman, with the German army at his finger-tips, we got a precious harvest of facts.

"Go easy on the breakthrough stuff," they advised. "We haven't been counter-attacked yet, but we may be at any time. We've had no reports from our advanced units in some time. Last we heard they were going according to schedule. There are all sorts of rumors about how far the French cavalry have advanced, but they're only rumors."

The Allied counter-offensive of the 18th of July, 1918 was the most audacious and spectacular on the western front since 1914—and the most decisive. Consummate generalship outwitted, outmaneuvered the German General Staff which believed the Allies had no general reserve left and the Americans were not yet fit for a big battle.

That attack was the fulfilment of Marshal Foch's wish, cherished ever since he had become Allied Generalissimo in April—to strike back at the Germans. He had begun a month before to concentrate troops and supplies in the Forest of Villers-Cotterets. Following the suggestions of both Pershing and Mangin, he and General Petain had decided on July 13th and 14th, to use them to counter attack the moment the "Friedenssturm" was stopped.

But on the morning of the 15th, Petain, always cautious, had a mild attack of "cold feet." He was afraid of the German progress across the Marne, to the east of the American Third Division. He did not want to risk it, after all. Marshal Foch saw that the German progress there would be halted by the defence of the Americans. He insisted that the counter attack be launched as planned, as quickly as possible, upon the exposed German right flank. He commenced that morning to concentrate with lightning like rapidity, largely by truck trains, almost his last available reserves. He believed he had sized up the situation correctly—was willing to gamble on it.

On July 10, General Pershing had assured him that some American divisions were ready for big things, so he now took the First and Second Divisions, the most experienced. Sir Douglas Haig sent him two and later four, British divisions, one of which, the 15th Scottish, were our "kilted troops." He had almost stripped the Paris army of troops. He had a large force of cavalry. In three days and nights there were assembled in and around the Forest of Villers-Cotterets and south of it, 300,000 to 400,000 men. On the morning of July 18 this force was hurled on the western flank of the vulnerable Marne salient, which was jammed full of German troops and supplies, for the most part moving southward and eastward.

Never was a stroke prepared more secretly. Moving usually under cover of darkness, men, even most of the officers, did not know where they were going. The Forest on the night before the attack was a scene unforgetable to those who were there. Troops, tanks, guns and supplies moved forward to the jump-off line along the few roads, amid a downpour of rain, their only light the lightning, while thunderclaps hid from German ears the noise of their approach.

Absolute surprise had been attained. General Summerall, skilled artilleryman, told how this time there had been practically no artillery preparation to warn the Germans, just one or two minutes concentrated fire upon their front line and batteries, then a barrage of shellbursts striding in hundred-yard strides ahead of the infantry. That and many tanks were all there was that day.

A big reason for the attack's success was that it was kept secret. Even American G.H.Q. knew but a short time before, and as for the American correspondents, it was thanks only to a few good friends, such as the Major, and a certain ability to "smell a story," that we were not as surprised as the Germans. It certainly was not Marshal Foch's fault we were not. Our official notification came but a few hours before the jumpoff.

And if we wanted all the news, we must go forward to get it. In the villages of Coeuvres and Cutry, on the edge of the battlefield, there was a feel of victory. The atmosphere was filled with smoke and gray stone dust that exploding shells made. The concussions jarred the air. Through the narrow, roughly paved streets pushed the supply trains, trucks, limbers, ration and water carts, drivers cursing in a dozen languages and dialects. And there was the purple-stained Pinard wagon that the poilus said, really won the war. No Frenchman could fight without his wine.

Ambulances came through, singly and in convoys. Most of them seemed bound for the emergency hospital center at Pierrefonds, but many wounded lay upon stretchers and the sun beat down upon them, and the cobblestones slowly turned dark red. The gray dust fell upon the faces gray as dust.

They wanted water as much as cigarettes, but when it was offered, many said: "Give it to that guy over there—he's got it worse'n me.

Between Coeuvres and Cutry we passed French cavalry, dragoons, big men in light blue and silver and black, carrying blue steel lances. They trotted past the long double line of men and guns and wagons that pressed forward along the road as a similar stream pressed forward on every eastward road for twenty-five miles.

Beyond Cutry were the wheatfields of unreaped, brown wheat that our men had crossed in their first rush, a few hours before—the now famous wheatfields of Soissons. The old No Man's Land had been wide enough for a few Boche machine gunners to start their work. Here and there in the wheat lay the first of our men. Every one had fallen facing forward.

The helmets of parties of the First Engineers just showed over the rims of shellholes they were converting, with pick and shovel, into shelters. It is called "consolidating the position."

We came upon infantry, dirty, weary, sweating, at the edge of a ravine whence echoed the drumming of machine guns. Black shrapnel clouds cracked overhead, but the weary doughboys lay in the ditch beside the road, or in little hastily dug foxholes, most of them asleep after hours of fighting on top of sleepless days and nights. We got our news in fragments, from officers and men.

"We're held up just now—enfilade fire on the left. Goin' to try again soon's they clean out that ravine.

Some of our officers are gone—machine guns. We turned some of their seventy-sevens on the Heinies over there. Do they fight? Well, some do, some don't. We caught some asleep at first. Machine-gunners are the worst, of course. Say, here's a story for you—Y.M.C.A. guy got hit, named Bartlett—bringing in wounded. Seen any artillery? We need 'em."

A little farther along, more infantry, remnant of a company. Their attack had gone well, they said, though "them Goddam machine gunners" mostly fought their guns until they were killed on them, often with the bayonet. They had sent back a lot of prisoners—"them that behaved."

On the way back we went into the ditch to let some artillery pass. They were a picture of open warfare, horses at the gallop, riders plying the whip, gunners clinging to limbers. A moment later the sharp reports of the 75's were stabbing the air, shells screaming into the ravine.

A prisoners' cage of the Twentieth French Corps, under whose tactical direction the First and Second American were, was already filling rapidly with men in gray, of all ages, shapes and sizes, many in clean uniforms, caught fast asleep in their shelters. Those American divisions had taken around 2,000 each, it appeared. Before the battle ended some days later their total was 6,500 prisoners and 134 guns, meaning that the casualties inflicted by them alone may have totalled 25,000. The two divisions had 13,500 killed and wounded.

More stops and more questioning as we drove back southward through the still thronging forest gave us more information to add to our store. The Second Division had, as always, made a splendid, dashing attack with great success. The Fourth, we heard, had done well.

The west side of the Marne salient had been crushed in. The Germans were, as a French staff officer told us, 'bouleverse,' upset. It was a great day for the Allies, the turning point of the crucial campaign of 1918. Even though we did not cut off and gobble up a whole German army, even though the cavalry did not reach Fere-en-Tardenois, even though there was no big breakthrough—all of which were battlefield rumors of the day; the Germans were dealt a paralyzing blow. The course of the war was changed.

On that day the Allies won the initiative from the Germans. A week later, with the enemy in retreat to the Vesle, Marshal Foch could tell General Pershing, Sir Douglas Haig and General Petain that he proposed from then on to attack, always to attack. At last the Allies could do it, he said. The American reserves—arriving 250,000 a month—had tipped the scale. The tide had turned. Four months later, the war was won.

But no correspondent could write all even that he knew on July 18, much less what he guessed and hoped for the future. The "story" that day was a serious responsibility for correspondents and censors alike. The bigger the news, the more carefully it must be written and censored, and this was very big news indeed. Initial success, while it must be told of fully and without diminishing its message of cheer to the Allied world, must not be exaggerated. The public must not be lifted up, only to be dashed down again by disappointment. We must not, of course, name troop units or quote anyone, general or private. Above all, we must not reveal what we knew of troop movements behind the lines or plans or objectives.

When we reached the censor's office in Meaux, we found some special instructions.

"No names of towns captured until after the French communique gives them," said Captain Morgan. Don't give the impression we are fighting the war all alone—remember most of the troops engaged are French."

Some of the newly arrived unbuckled Sam Brownes and unhooked collars, and unlimbered typewriters. Others talked over the "story" while awaiting the late French communique. The press association bulletins that the counter-attack was launched and American troops were in it must have been printed, in New York, we thought, in the midday editions of that day's evening papers. A fuller story had been sent off by motorcycle courier leaving Meaux at two in the afternoon for Paris.

Those despatches reached the central telegraph office in the Paris Bourse between three and four in the afternoon so, allowing five hours time difference between New York and Paris, they made the late afternoon editions—the Gods and the French operators being kind, and the single P.Q. cable working, a rare combination then blessedly attained. The urgent rate at which much of this news was sent, was 75 cents a word.

"I may cost my outfit a couple thousand dollars cable tolls before I finish up tonight," one press association man remarked, "but I guess it's worth it."

Probably American newspapers paid from $25,000 up for news of that day's battle, from American press headquarters alone. What more they paid for the flood of other despatches about it from different sources, can only be guessed.

Nerve-wracked censors worked rapidly with blue pencils, by the light of oil lamps and candles, explaining why this or that couldn't go, as nerve-wracked writers, keyed up by the emotional tension of the day, and struggling against its fatigue, complained at changes the censors made in their dispatches. A group gathered about the big battle map on the wall, awaiting the French communique. The telephone rang, and Captain Hartzell took the receiver.

"Allo! Allo!" he called. "C'est le Censeur Americaine qui parle!" Then;

"Hey, it's the French communique. Stand by to mark the new front line on the map, someone! Last courier ready?"

So you got the news that, after all, it was a victory.

East of Suez—Colombo

(The Impressions of an American Woman)

By Maida Davis Turtle

MY FIRST impression of Colombo was coal—coal to the right of us, coal to the left of us, coal all in front of us and coal-dust over all. How Singapore ever gained the nickname "the coalhole of the East" with Colombo in the running is beyond me.

Wide, clean and well-paved streets with sidewalks and office buildings just like any other place make the business part of the city awfully disappointing and unforeign. But if you for one moment imagine yourself on your native heath, the inhabitants quickly dispel the idea. Maybe they are afraid that the stranger within their gates will be lonely or feel the lack of hospitality—anyway, from the moment a sampan (yes, sampans extend as far as Colombo) lands you at the feet of the coal, so to speak, some native has you in tow. The first one to attach himself to us was an agent of Thomas Cook & Son, and all we heard until we turned into that accommodating office in self-defense was his soft, monotonous voice giving minute details as to the best and quickest route to his headquarters—soft, but very, very persistent.

As soon as we were rid of him we were besieged by dozens of others, rickshaw men, beggars, automobile drivers, guides and shop-rustlers in an unending stream. These last were most objectionable. They can spot a tourist as far as the eye can reach and from that moment peace, for the unhappy tourist, ends. They offer marvelous bargains, unusual opportunities in quite good English and seem never to grow discouraged or tired. We had one follow us from the landing until we escaped into the hotel for lunch two hours later. Verily the postage stamp could take lessons from a Ceylonese shopkeeper.

And even when you mount into a rickshaw you are far from safe. Little boys run after you with tiny bunches of flowers,—flowers that certainly do not tempt the beholder—and press them upon you. Little does it matter how emphatically you shake your head in denial, the unwelcome blossoms are dropped in your lap and a small brown hand is thrust palm upward under your nose.

Then by and by you are inveigled into a shop—which is far, far easier than the departure therefrom. Heaven knows the wares are tempting enough to cause the most strong-minded to linger, but added to this legitimate attraction is an even stronger-minded proprietor, aided and abetted by his family, than which there is no larger, and all his assistants. The woman does not live who ever left such a shop in the first bold attempt—nor the second or third. Each time the way of escape is blocked by a most ingratiating merchant. Will madam not look at this exceptional comb of the finest tortoise—or this exquisite opal—or this most unusual bit of brass? Madam rather not, perhaps; but nine times out of ten madam does, and if the good old pocketbook isn't absolutely flat, the chances are that madam becomes the owner.

And why not? Where else can one find such tortoise-shell at such absurdly low prices—high Spanish combs that one has dreamed of possessing all one's days—to be had for a few rupees. Where else are there such pearls and turquoises and opals and aquamarines? It is my private opinion that the average shop-keeper expends far more energy than necessary to make the average sale.

However broad and unromantic the main thoroughfares may be, the native quarter is all that can be wished, the streets are narrow and dirty and crowded with picturesque bullock-carts. The shops are unbelievably tiny, hardly a yard across and maybe twice as long—just room for one small person to be very still behind the counter, which is directly on the narrow street. Most of these microscopic shops sell jewelry, gaudy silver bracelets made of genuine tin and some of baser metal gilded a bright yellow to represent gold.

As long as you keep moving in this wildly native quarter all goes well, but just pause a bit in an un-

guarded moment and you are so absolutely surrounded with curious brown people that it is difficult to gather sufficient momentum to move on. All sorts of natives they are—old half-blind men, younger ones dressed only in a shock of long black hair and a gee-string, women with so many and such heavy earrings that their lobes almost reach the shoulders, the ears disfigured by holes sometimes an inch in diameter. They crowd closely, too closely for comfort, to examine minutely every detail of clothing. And just start to take a picture and see what happens! They tumble over each other to see the kodak, stampede to be in the picture and scramble to get paid for having the goodness to pose.

There are almost as many mosques in Colombo as there are pagodas in Rangoon, and it was there that we almost entered one. Almost, but not quite, for even Mohammedan women may not enter the holy of holies —a big pavillion-like room without furniture, images or pictures. We were allowed in the outer court where the men wash their feet, face, arms and mouth (inside as well as out) at a fountain, or rather a big stone basin, before going in to pray. The guide who took us in, whom we had not solicited and did not need, proudly announced that he was a Christian, a Roman Catholic; but upon being told that we were neither, he laughed rather sheepishly and said, "Not me too, I no Catholic, me I all time Mohammedan but white people no like so I be Christian."

After we had tipped our chameleon guide and he had quarrelled because of its smallness (which is inevitable) and upon seeing that we were adamant thanked us profusely for its largeness (the same size, mind you, also inevitable) we went back to a main street where our rickshaws waited. And there, coming down that street toward us was one of the wildest figures I've yet encountered. A powerful young native with a big can of something, garbage I think, on his shoulder, his long black hair standing out in all directions and a dangerous-looking knife thrust through his loin-cloth, was dancing with fine abandon and howling some weird sound at the top of his lungs. Every now and then he would pause in his on-rush and dance even more madly, making horrible grimaces. Whether he had gone suddenly insane or had only had an unusually long drink of hashish I shall probably never know, but I do know that without waste of time for inquiry we hastily mounted our rickshaws—the better to see, of course.

A drive from the native quarter through the residential section and the parks proves that Colombo is a city of vivid contrasts. Along the broad boulevard on the water-front into Cinnamon Gardens with its comfortable club-houses and spacious homes set in beautiful grounds, through the soft green coolness of Victoria Park out to the road again for several miles with tea and cinnamon plantations on each side, until the bay is again in sight and there, on a tiny hill, is a big rambling hotel called Mount Lavinia. At its feet is the bathing beach and on its high terrace overlooking the bay are rustic tables and deep comfortable chairs—an ideal place to watch the sun set in glory and paint the still waters orange and red and gold—an ideal place in which to watch the moon rise.

And after that the ideal thing to do is to dine at that most famous of all Oriental hotels, the Galle Face. Coffee will be served in the court at the water's edge and the soft grass under foot and the moon over head will weave a spell. And if you are going on west, as we were, it will be the last really tropical moon to be seen from terra firma, so it should be treated with proper respect.

★

IT IS INTERESTING *to compare the populations and the strengths of the regular armies of some of the countries "disarmed" by provisions of the Peace Treaty with that of Canada:*

	Population	Regular Army
Austria	*6,720,000*	*22,778*
Bulgaria	*6,000,000*	*19,956*
Hungary	*8,684,000*	*35,000*
Canada	*9,935,000*	*3,623*

—CANADIAN DEFENSE QUARTERLY.

Organization and Operation of a Coast Artillery Maintenance Detachment

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

AFTER about a decade of preserving seacoast armament, the caretaking detachment of H. D. of Charleston, Battery D, 13th C. A., believes that it has arrived at a workable solution to the problem. Although this solution applies only to these defenses, it may be of assistance to those in charge of maintenance work in other places. The best criterion of results is the reaction of inspecting officers, and as these harbor defenses have had an average of one inspection a month from Corps Area or higher headquarters, tactical or technical, with no violent repercussions, it is thought that the system must have some merit.

The detachment is stationed at Fort Moultrie, S. C., where nearly all the armament is located. It is also charged with the care of the armament at Fort Sumpter (where a major caliber battery is installed) and the H. D. of Savannah at Fort Screven, Georgia. The Harbor Defense also claims the personnel of the Ordnance and Signal Corps detachments and the civilian employees of the Engineer Corps at the port, as their work is geared to ours. As the 8th Infantry (less 1st and 3rd Bns.) forms the majority of troops on the post, the Artillery is relieved of nearly all duties of post administration.

In the table showing authorized recruiting strength, issued by Headquarters, 4th Corps Area, the strength of the caretaking detachment for these defenses is fixed at 32 enlisted men of the Coast Artillery and one private of Ordnance. This detachment included one officer and twelve men for the H. D. of Savannah. Actually, the following personnel is present:

Coast Artillery

1 Major
1 1st Lieutenant
2 Master Sergeants
3 Staff Sergeants
2 Sergeants
3 Corporals
8 Privates 1cl.
17 Privates

Signal Corps

1 Staff Sergeant
1 Corporal

Ordnance Department

1 Master Sergeant
2 Technical Sergeants
3 Privates
2 Ordnance Machinists (Civ.)
1 Laborer (Civ.)
1 Caretaker for N. G. Materiel (Civ.)

Engineer Corps

1 Foreman (Civ.)
1 Handy Man (Civ.)
7 Laborers

This number is considered a minimum with which to carry on the work, and is still short of desired needs. There exists a gravitational pull to get men away from the maintenance detachments and back to the regiments. This must be minimized by increased activities of the detachments.

A manning table, arranged in chart form, showing the location and duty of each key man, was found highly satisfactory for responsibility and interest in the work. The balance of the personnel, about a squad, forms a mobile reserve which moves about to perform the heavy jobs. This manning table shows two categories that may not be found at other stations: a civilian engineer gang, inherited from the U. S. District Engineer, and a civilian caretaker for National Guard matériel stored at the post. The chart is reproduced here, except as to names:

HARBOR DEFENSES OF CHARLESTON
Fort Moultrie, S. C.
MANNING TABLE
Commanding Officer Harbor Defenses
1 Major
Executive Officer and Adjutant
1 1st Lieutenant

HQ. H. D. OF CHARLESTON	ARTY. ENG. OFFICE	ORD. OFFICE	SIG. OFFICE	ENGINEER OFFICE
1 Major 1 1st Lt. 1 Stf. Sgt. 1 Pfc.	1 Major 1 Mr. Sgt. 1 Pfc.	1 1st Lt 1 Mr. Sgt. 1 Tech. Sgt. 3 Pvts.	1 Major Maintenance 1 Stf. Sgt. Accounts 1 Cpl.	1 Major 1 Foreman (Civ) 1 Clerk (Civ)

HQ. BTRY. "D" 13TH C. A.	F. C. SYSTEM	NG MATERIEL	POST TEL.	ENG. FORCE
1 1st. Lt. 1 Stf. Sgt.	1 Stf. Sgt. 1 Pvt.	1 Tech. Sgt Ord. Det. 1 Caretaker (Civ)	1 Stf. Sgt. 3 Pvts. CA.	1 Handy Man 6 Laborers (Civ)

CARETAKING DET.	POWER PLANTS & SCHLTS.	MACHINE SHOP	RADIO STATION
Btry "D" 13th C. A. (Less Dets.) Incl. Ft. Screven, Ga.	1 Mr. Sgt. 1 Pfc.	2 Ord. Mach. 1 Laborer (Civ)	1 Stf. Sgt.

CARETAKERS FT. SUMPTER	METEO. STATION	
1 Cpl. 5 Pfcs. 2 Pvts. Overseers and N. G. Instrs. 2 Sgts. 2 Cpls. 1 Pvt.	1 Pfc.	
	SIGNAL STA. TIDE STA. 1 Pvt.	

The duties of maintenance detachments are well defined in a letter issued by the A. G. O. in December, 1930, subject: Instructions for Preservation of Seacoast Armament in the Hands of Maintenance Detachments. This letter is supplemented and elaborated by a pamphlet issued by the C. A. School in February, 1931, labeled, "Caretaking."

These instructions, together with Training Regulations and Ordnance pamphlets, form a mass of information that must be reduced to a routine suitable to the size of the maintenance detachment. Other requirements are that the detachment be instructed in hygiene, interior guard duty, and gunners' instruction. Also it must present a creditable appearance at ceremonies and inspections. It has been found essen-

OLD FORT MOULTRIE.
This view shows Osceola's grave in the foreground. The old quarters will be removed to restore the original appearance of the enclosed fort.

tial in these defenses to devote Friday mornings to artillery inspection and Saturday mornings to infantry inspection, close order drill, and all other instruction.

Emergency duties are the gravest threat that an otherwise routine existence may encounter. The maintenance detachment may be called upon for any duty to include taking over and operating the entire post. This has occurred twice during the past year, first when the 8th Infantry was absent for six weeks while division maneuvers were being held at Fort Benning, Ga.

Other major projects accomplished in the past year include—the unloading and storing of 32 tons of powder from a barge, digging up and salvaging 1,700 feet of 30-pair cable, packing and shipping 60 tons of submarine mine materiel, laying telephone cable, dedicating battlefield memorials, leveling base rings, renovating ammunition, packing and shipping excess matériel, etc.

The work of the local maintenance detachment is pointed toward the four weeks of National Guard Camps during the summer. While regulations do not require detachments to furnish instructors, nevertheless they are called upon for qualified gun commanders and observers, meteorological and signal men. It was found beneficial for the maintenance detachment to hold drills during June on the armament to be used by the National Guard. In this manner all matériel deficiencies were located and repaired. The detachment also emplaced the six 155 mm. GPF's belonging to the North Carolina regiment in order that no time would be lost in commencing drills. For the above duties, as well as for emergency jobs, all men were taken from normal assignments to form a proper-sized detail.

Cooperation and understanding are, of course, necessary for successful operation. At this station nine branches have representatives—Infantry, Coast Artillery, Medical, Quartermaster, Ordnance, Signal Corps, Finance Department, Veterinary and Chaplain. The first two represent the line, and unless Infantry personnel are acquainted with the nature of the duties of caretaking, friction is apt to result. This can best be offset by keeping the post commander fully informed as to what the maintenance detachment is required to do and what projects are contemplated. At intervals he should be invited to inspect the armament and accessories, barracks and quarters. A full presentation of the problem will usually insure his support. It is believed that personally conducted tours of the battery reservations for newly arrived officers would enlist their cooperation.

Most of the development work is construction by Engineers, which in the past has been sufficient to furnish steady work to a civilian foreman and eight or more laborers, under the Harbor Defense Commander. This work consists of replacing the wooden battery commander's stations by concrete ones, the construction of new concrete base end stations, the installation of additional searchlight towers, the installing of danger lights on signal and radio towers, enlarging plotting rooms, construction of reservation fences with concrete posts and hurricane wire, and many other smaller jobs. Such work at any harbor defense serves not only to improve the fortification, but to maintain the interest and enthusiasm of the caretaking detachment.

At this post it is essential that the artillery personnel perform some post duties even when the Infantry garrison is present. The enlisted men on special duty consist of one man in charge of quarters and latrine orderly, one man as kitchen police in the mess of Co. H, 8th Infantry, where the battery eats, and three men as operators on the post telephone switchboard. This latter duty is believed essential to artillery training. The senior artillery officer present is the post signal officer, president of a court-martial, and shares with a field officer of Infantry the duties of summary court, investigating officer, boards, surveys, auditing of funds and various committee work. The junior Artillery officer is the battery commander, post ordnance officer, a member of the general court, boards and committees. During the National Guard camps he acts as instructor for the battery officers' class. These duties are not considered arduous, and serve to promote good feeling between the branches.

OSCEOLA'S GUARD.
The maintenance detachment, complete, grouped about the entrance to Osceola's cell, Fort Moultrie, S. C.

News and Comment

Submarine Mine Manual Added to Gunners' Instruction Pamphlets

THE COAST ARTILLERY JOURNAL has recently added a new text to its list of Gunners' Instruction pamphlets. This is the *Submarine Mine Manual.* Heretofore the subjects covered in the instruction of second-class, first-class and expert gunners of mine batteries was found in many different War Department publications and training regulations. The new manual is the result of much painstaking labor in consolidating and correlating all of the instructional data necessary for the proper instruction of the enlisted personnel of a mine battery or detachment. Junior officers who desire to familiarize themselves with this phase of artillery work will find it invaluable.

The book was prepared under the direction of the Commandant of the Coast Artillery School and is up to date and authoritative in every respect. It contains 172 pages, with hundreds of diagrams and illustrations.

In commenting on the manual the Chief of Coast Artillery expressed himself as follows:

"I have read with much interest the Gunners' Instruction Manual on Submarine Mining recently published by the Coast Artillery Journal. This manual was urgently required and will do much to promote the training of the Coast Artillery in this important activity. The manual represents much intelligent labor and a thorough understanding of the subject by the officers who participated in its preparation. I desire to commend each officer concerned for the excellent work performed in the preparation of this manual."

Coast Artillery Trophy

AT intervals there comes to the JOURNAL office a letter from a Reserve officer not written for publication and therefore all the more poignant and convincing, in that it shows beyond the possibility of a doubt that Reserve officers are imbued with a spirit which impels them to devote long hours, ofttimes with much personal sacrifice, to better prepare themselves for the duties, obligations and responsibilities which should accompany a commission in the Army of the United States. We can not but admire this spirit and we find it impossible to too highly commend the sacrifices, determination and perserverance of these individuals who, in spite of serious handicaps, almost reaching the proportions of insurmountable difficulties, have the pluck to carry on. Unfortunately, all Reserve officers do not manifest the same degree of perserverance and the same thirst after knowledge pertaining to Coast Artillery subjects. To these we suggest that they pause for a moment to consider what others are doing to better prepare themselves for the serious business which they must undertake in event of mobilization. A letter of this nature recently has been received. While we are not at liberty to divulge the writer's name, sufficient it is to say that he resides near Philadelphia and is a member of one of the Coast Artillery units whose headquarters is in that city. Extracts from the letter are as follows:

"I have read in the JOURNAL that there is a trophy awarded for credit hours earned. I have only 121 credit hours, but 117 of those hours were earned between 12:00 midnight until about 4:00 o'clock in the morning because at the time I was working and it took up all my time in the day and until 11:30 at night. Then I would come home and jump into my correspondence work. When I started on a lesson I did not stop until it was finished. Sometimes it was getting daylight when I quit, because I liked the work and I forgot to stop and go to bed. I am sure that other officers have more credit hours earned, but I hope not, for I would like to receive the saber."

The Coast Artillery Association regrets that only one saber can be awarded in each corps area. The writer of the letter above mentioned certainly should be high on the priority list—perhaps not judged by the amount of work accomplished but certainly by the demonstrated interest and willingness to work.

Meet the Army and Navy

An Editorial from the New York Sun, August 19, 1933

IN peace the British get out of their Army and Navy more inspiration and more fun than Americans do. Every summer the people are treated to carefully prepared shows in which soldiers, sailors and marines not only display their skill in drills, but present spectacles that amuse, interest and thrill great numbers of spectators. Thus August 5 saw at Tidworth the first presentation of a Tattoo opened by the massing of seventeen bands with drums and pipes, which introduced three impressive tableaux based on the wars in Flanders—Crecy and Waterloo and the Menin Gate, six centuries of history reviewed in a brief period in a manner to impress all. This was followed by the singing of an evening hymn by a choir of 2,000, above which on a hillside blazed a burning cross. The trooping of the colors was an impressive incident.

Not everything offered in these Tattoos is serious. There are exhibitions of fancy riding by cavalrymen and motorcycle men. At Tidworth the Hussars offered "Dick Turpin and the Motor Bandits," a combination of yesterday and today which won high commendation.

The Tidworth Tattoo is typical of others. Regulars and Territorials take part in the shows. And while the Army is thus engaged the Navy is also busy. At Chatham the blockade of Zeebrugge is reproduced in miniature, and a British cruiser is instrumental in quelling an insurrection against the King of Santa

Maria, an imaginary nation "somewhere between the Balkans and the Far East." At Plymouth there is a mock battle between a "Q" boat and a submarine, the spectators occupying the deck of an airplane carrier. Admiral of the Fleet, Lord Jellicoe, opened the observance of Navy Week at Portsmouth, speaking from the starboard cathead of Nelson's ship, the Victory. Divine service was held aboard the Victory, with holy communion in Nelson's cabin, and a reverent company which not only filled the ship but crowded the jetty attended.

Americans see their soldiers infrequently. Naturally, the forces cannot be expected to put on expensive shows free of charge for the benefit of civilians—they have not the time or, unfortunately, the money for such exhibitions. But it should be possible to adopt in this country, as is done in Great Britain, a system for promotion of neighborliness between the forces and civilians in time of peace.

New Policy Affecting Detail of Students to Special Service Schools

UNDER date of September 11, 1933, the War Department issued a new directive governing the detail of officers of the Regular Army at the special service schools. A new quota for the number of officers to be detailed to the Coast Artillery School was issued in August 1932, effective for the school year 1933-34. Under this quota the number of Coast Artillery officers now undergoing instruction at schools other than the General Service Schools, Army War College, Army Industrial College and the Naval War College, totals 38. It has been decided that this reduced quota renders it inadvisable for each officer to be given two full courses of instruction at the special service school of his arm.

The present scope and character of the instruction in the two courses was based upon the assumption that each officer, at some time during his service, would pursue both courses. This will no longer be possible under the reduced quota for the great majority of officers. It is, therefore, evident that the two courses should be merged into one. Also, it is quite evident that all of the instruction now included in the two courses cannot be incorporated into the revised one year's course. To circumvent this difficulty it will be necessary to require junior officers to cover some of the subjects formerly included in the battery officers' course by means of extension school work. This is provided for in Regulations 350-2600 "Troop Schools for Officers" (now in process of revision). While no definite pronouncement has been made it is believed that beginning with the school year of 1936-37 successful completion of certain extension school courses will be one of the factors governing the detail of officers to the Coast Artillery School.

The change in policy will become effective with the school year 1934-35. The course of instruction will be of ten months duration extending from approximately September 1st to approximately June 30th. Instruction in the tactics and technique of the arm will include the brigade. It will not exclude from the combined course, instruction on the tactics and technique of other arms provided such instruction is regarded as necessary and also provided the inclusion of the instruction on tactics and technique must not result in the exclusion of important subjects pertaining to the Coast Artillery Corps.

The new directive is of great importance to the majority of the battery officers. It marks a decided departure from the procedure which has been followed since the World War. With the development and improvement in extension schools courses which has been brought about within the last few years it is believed that these courses will prove beneficial to the junior officers and that the successful completion of the appropriate extension school courses will in a measure counteract the disadvantages which would result from the elimination of these subjects from the battery officers' course.

Coast Artillery Student Officers

THE following is a roster of Coast Artillery officers detailed as students at the various service and special schools:

Army War College

Lt. Col. Sanderford Jarman
Lt. Col. Allen Kimberly
Lt. Col. John S. Pratt
Major George F. Moore
Major Charles W. Bundy
Major John H. Lindt
Major Dale D. Hinman

Command and General Staff School

1932-1934 Class

Major Willis M. Chapin
Major Harold R. Jackson
Major Delmar S. Lenzner
Major Charles D. Y. Ostrom
Major Adam E. Potts
Major Gerald B. Robison
Captain William C. Braly, Jr.
Capt. Herbert F. E. Bultman
Captain Benjamin F. Harmon
Captain Robert N. Mackin
Captain Frank J. McSherry
Captain George W. Ricker

1933-1935 Class

Major Christian G. Foltz
Major Rollin L. Tilton
Capt. Wm. H. Donaldson, Jr.
Captain John T. Lewis
Captain Porter P. Lowry
Captain Bryan L. Milburn
Captain Everard F. Olsen
1st Lt. Bonner F. Fellers
1st Lt. Paul L. Harter
1st Lt. Walter L. Weible

Coast Artillery School

Advanced Course

Major James C. Hutson
Major Cedric F. Maguire
Captain F. R. Chamberlain, Jr.
Captain Roy T. Barrett
Captain Coburn L. Berry
Captain Henry D. Cassard
Captain Ralph E. Hill
Captain Hubert A. McMorrow
Captain Maurice Morgan
Captain George A. Patrick
Captain Paul W. Rutledge
Captain Willard W. Scott
Captain LeRoy A. Whittaker

Battery Officers Course

1st Lt. William V. Davis
1st Lt. Forrest J. French
1st Lt. Raleigh R. Hendrix
1st Lt. John J. Holst
1st Lt. Charles W. McGeehan
1st Lt. William L. McPherson
1st Lt. Harry E. Magnuson
1st Lt. John E. Mortimer
1st Lt. Robert J. Moulton
1st Lt. Paul B. Nelson
1st Lt. William F. Niethamer
1st Lt. Eugene C. Smallwood
1st Lt. George E. Young
1st Lt. Layton A. Zimmer
2d Lt. George R. Carey
2d Lt. E. B. Hempstead
2d Lt. George E. Keeler
2d Lt. M. B. Raymond
2d Lt. John A. Sawyer
2d Lt. William Vestal
2d Lt. Louis T. Vickers

Advanced Technical Course

1st Lt. L. W. Bartlett
1st Lt. P. W. Edwards

Naval War College

Lt. Col. C. W. Baird
Major Alden G. Strong

Ecole de Guerre

Major H. F. Loomis

Army Industrial College

Major J. F. Cottrell
Major J. S. Smylie

Q. M. Motor-Trans. School

1st Lt. V. C. Stevens

COAST ARTILLERY ACTIVITIES

Office of Chief of Coast Artillery

Chief of Coast Artillery
MAJOR GENERAL JOHN W. GULICK

Executive
COLONEL W. F. HASE

Personnel Section
MAJOR R. T. PENDLETON

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

Organization and Training Section
MAJOR E. E. BENNETT
MAJOR F. P. HARDAWAY

Plans and Projects Section
LT. COL. G. A. WILDRICK
MAJOR G. R. MEYER
MAJOR R. V. CRAMER

Hawaiian Separate Coast Artillery Brigade News Letter

Brig. Gen. R. S. Abernethy, Commanding
Chief of Staff—Colonel Arthur L. Fuller, CAC.
G-1 Lt. Col. W. V. Carter, A.G.D
G-2 Captain E. T. Conway, CAC.
G-3 Lt. Col. A. G. Campbell, CAC.
G-4 Major F. Mountford, CAC.

ALL is well with the Army in the Paradise of the Pacific. With prospects of target practice definitely eliminated for the next fiscal year, the personnel can perform many of the odd jobs that have been planned for years, in some cases, and which lack of time and personnel have, in the past, precluded. During the last two months, target practice, ceremonies, special fatigue details, and routine garrison maintenance have occupied our time.

Target Practices

All officers of the Coast Artillery will be interested to know how well the batteries in Hawaii fared in target practice during the last fiscal year.

3-inch A. A. Gun Batteries

Organization	Battery Commander	Score	Brigade Rating
B—64th C.A.	Capt. J. R. Townsend	Night 43.64	VG
		Day 42.10	VG
		Day 26.97	G
C—64th C.A.	Capt. C. G. Riggs	Day 32.85	VG
		Night 31.49	VG
		Day 24.02	G
*F—64th C.A.	Capt. R. C. Jones	Day 73.18	Ex
		Day 64.92	Ex
		Night 41.79	VG
*G—64th C.A.	Lieut. F. C. McConnell	Night 74.39	Ex
		Day 43.63	VG
		Day 31.02	VG
*K—64th C.A.	Capt. R. T. Barrett	Day 63.31	Ex
		Day 41.11	VG
		Night 40.21	VG
*L—64th C.A.	Capt. V. T. Wortman	Night 69.28	Ex
		Day 52.25	Ex
		Day 40.92	VG

Organization	Battery Commander	Score	Brigade Rating
	A. A. Machine Guns		
*I—64th C.A.	Capt. A. W. Waldron	Av. of 76.82 12 Practices	Ex
	A. A. Searchlights		
*A—64th C.A.	Capt. J. H. Wilson	126.3	Ex
		122.5	Ex
		118.9	Ex
*E—64th C.A.	Capt. K. C. Bonney	123.3	Ex
		116.4	Ex
		114.4	Ex

Organization	Battery Commander	Caliber	Score	Brigade Rating
*A—15th C.A.	Capt. LeRoy Lutes	155 mm Ex-	D 94.9	Ex
		caliber for 16″ gun	D 86.2	Ex
*B—15th C.A.	Capt. V. P. Foster	12″ DC	D 182.4	Ex
C—15th C.A	Lieut. C. P. Young	6″ DC	D 58.4	F
A—16th C.A.	Capt. R. C. Jones	6″ DC	D 81.6	VG
C—16th C.A.	Lieut. H. E. C. Breitung	12″ M	D 39.4	F
*D—16th C.A.	Capt. M. Bottoms	155 GPF	D 83.7	VG
			N 117.4	Ex
*A—55th C.A.	Capt. A. A. Allen	155 GPF	D 94.4	Ex
			N 116.8	Ex
*B—55th C.A.	Lieut. O. A. Nelson	155 GPF	D 94.8	Ex
			N 102.1	Ex
*C—55th C.A.	Capt. H. G. Archibald	155 GPF	D 78.4	VG
			N 103.1	Ex
*D—55th C.A.	Capt. P. W. Hardie	155 GPF	D 70.2	VG
			N 120.8	Ex
*E—55th C.A.	Capt. J. A. Ryan	155 GPF	D 93.2	Ex
			N 137.0	Ex
*F—55th C.A.	Capt. A. D. Amoroso	155 GPF	D 77.3	VG
			N 131.0	Ex
A—41st C.A.	Capt. F. H. Koerbel	12″ RY M	D 61.7	G
B—41st C.A.	Capt. E. H. Stillman	12″ RY M	D 64.8	G

*Those recommended for rating of "Excellent" by Brigade Commander.

The target practice scores during the past year have been very satisfactory. Of 23 organizations, 16 have been recommended for rating of "Excellent" by the Brigade Commander. It will be noted in the above summary that the scores are very consistent as to armament and whether it was a day or night practice. This indicates a uniform state of training in the batteries comprising the Brigade. Battery Commanders have cooperated well in discussing methods of conducting target practice. The Coast Artillery in Hawaii is fortunate in that they have such a large concentration of Coast Artillery Officers in an area about the size of 20 square miles.

Brigade Athletics

The summer athletic season in Hawaii is a very busy one. The Sector-Navy Baseball League is in full swing and the competition this year is somewhat keener than usual. There is a noticeable improvement in the caliber of baseball being played, probably due to the larger influx of high school and college athletes in the service in recent years. Following is the standing of the teams about the middle of July:

Team	Games	Won	Lost	Percentage
Submarine Base	8	6	2	.750
Luke Field	9	6	3	.667
Fort Kamehameha	8	5	3	.625
Fleet Air Base	9	5	4	.555
Fort Shafter	9	4	5	.444
Marines	8	3	5	.375
Harbor Defenses Honolulu	9	1	8	.111

The Fort Kamehameha team, coached by Chaplain G. Storaasli, has been playing a fine game all season. They are lacking in offensive power or they would be leading the league. Lieutenants "Sandy" Goodman and John Steele have had a fine club at Shafter with two of the best pitchers in the circuit on the staff. However, a bad slump and injuries have handicapped them much. Lieutenant Wayne Barker's Honolulu team have hit the horsehide hard and often all season but their defensive organization has been unstable and excitable, especially in the pinches. Occasionally they demonstrate their true strength by defeating a good club.

The tennis league is in full swing with Harbor Defenses of Honolulu, Department Headquarters, 64th Coast Artillery, Luke Field, and Fort Kamehameha competing. The Honolulu team which includes Staff Sergeant Edington, Captain John F. Bohlender, M. C., Lt. Col. William E. Shedd, Lieut. Harry B. Cooper, Lieut. Wayne Barker, Lieut. A. C. Cron, Sergeants Rogers and Castle, looks like the winning racqueteers to us. To date they have not lost a single set.

Zimmi, the Fish

The writer of this news letter has heard the fish story about Zimmi at the Waikiki Natatorium for months, but it sounded like the old snipe hunting gag. However, some friends came through Honolulu enroute to Manila on the Grant and they insisted on seeing Zimmi. The writer and his family went along properly equipped with meat balls to see the joke on the visitors, but much to our surprise, the story was true. The writer will absolutely vouch for the truth of the following remarks.

Zimmi, as he is known all over Honolulu and other parts, is a porcupine fish in one of the large water pools near the entrance to the Waikiki Natatorium. By taking a certain position and whistling, Zimmi will come out of hiding and perform certain marine acrobatics for which he expects to be rewarded with raw meat balls or bits of bread. When the tide is high, Zimmi will squirt water about twelve inches in the air at a certain whistled command by the attendant.

Zimmi is a very jealous fellow too. There happens to be another porcupine fish in the same pool slightly smaller which is called Joey. Joey has been trying to cut in on Zimmi's racket and several submarine battles have taken place. Both fish have small sharp teeth and Joey's tail is the worse for wear sometimes when he gets too fresh. Well, this is a good fish story but you don't have to believe it. Come and see for yourself.

Official Calls

Brigadier General R. S. Abernethy exchanged official calls recently with the Consul General of Japan, K. Okada. Mr. Okada proved to be a very pleasant person and his description of the Orient was most interesting. Battery D, 16th Coast Artillery, commanded by Lieutenant Willis Perry furnished the escort.

Rear Admiral Harry Yarnell, the new Commandant of the 14th Naval District, called at Brigade headquarters. Among other things he assured the Coast Artillery in Hawaii that our present pleasant relations, both officially and personally, would be continued. The Army and Navy in Hawaii have worked together in especially close harmony in recent years and much valuable information and training has been gained.

Artillery

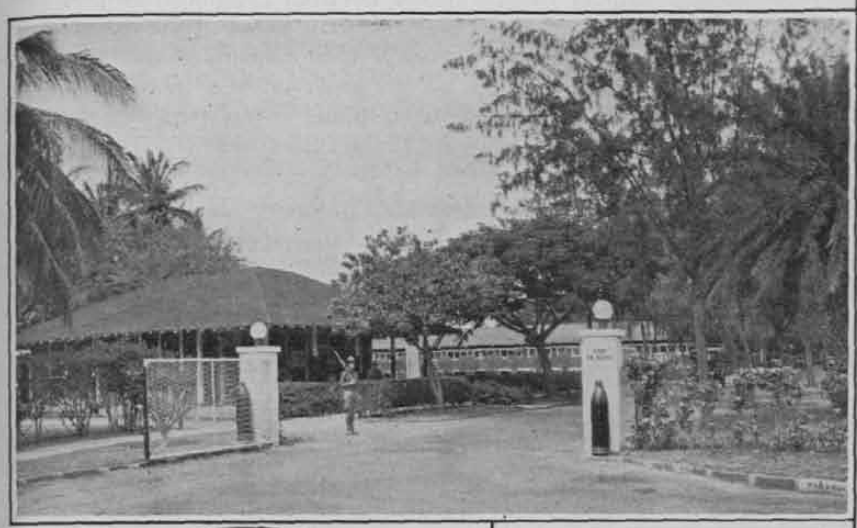
Captain LeRoy Lutes, commanding Battery A, 15th Coast Artillery, fired one round from number one gun of Battery Williston, the 16-inch battery on Oahu, on June 28th. The round was fired for the purpose of testing the recuperators and other parts for the Ordnance Department. The following pertinent data are submitted for the information of Coast Artillerymen:

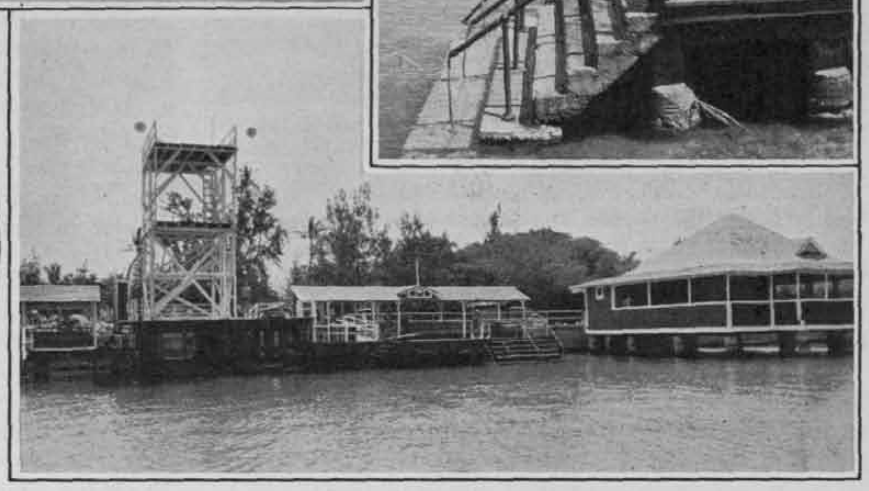
Uncorrected Range	42,000 yards
Uncorrected Azimuth	13 degrees
Corrected Range	40,300 yards
Corrected Azimuth	10.43 degrees
Time of Flight	83 seconds
Actual Time of Flight	85 seconds
Max. Ordinate	27,850 feet
Muzzle Velocity Used	2800 feet per second at 70°
Muzzle Velocity at 79°	2825 feet per second
Muzzle Velocity Developed	2822 feet per second
Results of Spotting:	
Deviation in Azimuth	Left .12° (89 yards)
Deviation in Range	Over 695 yards

The results of the firing were very satisfactory especially when consideration is given the fact that meteorological data was not obtainable above 12,000 feet. The matériel functioned perfectly.

Brigade Messes

Lieutenant Clarence J. Hauck, Mess Officer of Battery D, 16th Coast Artillery, has made an interesting study of the consumption of fresh meat, meat products





Photos by Signal Corps, U. S. Army.

Upper Left—Guard house and main entrance of Fort De Russy, T. H. Upper Right—Swimming towers at Fort De Russy, Waikiki, Hawaii. Lower Left—Battery D, 16th C.A., Lt. Willis A. Perry, Commanding. Lower Right—General view of swimming towers and Woman's Club pavilion, where ladies of the Army hold many pleasant social functions.

and dairy products during the past year. Curves computed on the basis of the consumption by pounds per day per man were constructed. Effective April 1st, when the new ration went into effect, there was a sharp decrease in the consumption of fresh meat and a very great rise in the consumption of dairy products. The meat products curve has remained fairly constant throughout the year. Apparently the new ration, when properly used by experienced officers and mess personnel, has had the desired effect. Here is an extract from Lieutenant Hauck's report:

"Consumption of fresh meat in May, 1933 was only 86.3% of that in May, 1932, or a decrease of 13.7%. Consumption of meat products in May, 1933 was only 65% of that in May, 1932, or a decrease of 35%. Dairy products consumed in May, 1932 were only 46.2% of those consumed in May, 1933; or an increase of 53.8%. Comparing the average consumption of the twelve months under the old ration and the two months under the new ration the following was found: Under the new ration consumption of fresh meat was 1.6% less than under the old ration; consumption of meat products was 19.6% less than under the old ration; and consumption of dairy products showed an increase of 67% over the old ration."

Antiaircraft Searchlights

The 41st Coast Artillery has just completed its annual antiaircraft searchlight target practices. No scores are available but the results have been excellent. A very complete system of listening posts was located along the south shore of Oahu with the lights defending the sector between the Waianae and Koolau mountains. Lieutenant Paul D. Peery, the Battalion Intelligence and Plotting Officer, had a fine system that worked well. When it is considered that the old 36 inch Mack Lights were used with antiquated listening devices, the results obtained were remarkable. The planes invariably failed to get into the Sector. A study of the scores made by the searchlight batteries of the 64th Coast Artillery will indicate that all searchlight batteries in Hawaii were extraordinarily successful this year.

Honolulu Sector Jamboree

This brigade, with Luke Field, (Air Corps station), and Fort Armstrong, the Quartermaster Depot, comprise an athletic organization known as the Honolulu Sector. Beginning July 17th, and continuing every Monday evening thereafter from 8:30 to 9:00 P. M., the Honolulu Sector will conduct a radio schedule over KGU, the most powerful radio station in Hawaii. Band music is very popular out here and local talent from each of the posts is to be used in the programs. General Abernethy was the principal speaker in the Inauguration program and he stated that the purposes of this new activity were to create more entertainment for the enlisted personnel, to create more interest in athletics and other wholesome recreation, to acquaint civilian friends with military activities, and to assure them they are welcome to attend our games and ceremonies. These programs are to be broadcast over the post broadcasting system at Schofield Barracks also. Lieutenant Joe Dillon, the Sector Athletic Officer, and a pep artist of the first water, has charge of the new activity. This radiocast is called the "Honolulu Sector Jamboree" and the theme song is the tune of "The Vagabond King."

Congratulations

To Major George F. Unmacht who was recently promoted to that grade and who was recently reelected the National Secretary-Treasurer of the National Sojourners, a Masonic body of over 10,000 Army and Navy officers of the United States.

To Lt. Col. Arthur G. Campbell who was recently elevated to that grade. Colonel Campbell diligently studies "The American Golfer" in an effort to improve his game. Anyone with any suggestions should communicate with him direct.

To Brigadier General R. S. Abernethy who was recently elected to the Committee of Thirty-Three, the governing body of the National Sojourners.

To Lieutenant and Mrs. Clarence J. Hauck on their recent arrival, a boy, Clarence J., Junior.

To Lieutenant and Mrs. William L. Johnson on their recent marriage.

Army Baseball Benefit Aids Vets

Civilian war veterans in Hawaii were in distress. Because of changes in federal compensation and pension laws, many veterans found their allowances decreased or stopped altogether pending resubmission and settlement of their claims. It was a serious situation and obviously community action was necessary to solve the problem.

The United States Army in Hawaii, through its department commander, Major General Briant H. Wells, offered to the war veterans the proceeds of the first game of the Hawaiian Department baseball championship series. The most colorful competition conducted in Hawaii, and held in the immense Honolulu Stadium, it was realized that a handsome sum could be made available to the United States Veterans Relief Council, an organization composed of representatives from the American Legion, Veterans of Foreign Wars, and Spanish War Veterans.

The 13th Field Artillery won the baseball championship of the Hawaiian Division League after a closely contested race, and the 64th Coast Artillery at Fort Shafter won the Army championship of the Honolulu sector. Because of the great interest in both leagues, there developed tremendous interest in the titular series, not only in the services but in civilian sport circles as well.

After an organized publicity campaign through press and radio, 15,000 fans crowded their way into the stadium on August 12th. Schofield Barracks being inconveniently located with reference to Honolulu, it fell to the staff of the Hawaiian Separate Coast Artillery Brigade to take charge of the contest and the opening ceremonies.

Corporal Daniel W Dielman of Battery G, 64th C. A., formerly with Ringling Brothers and Barnum and Bailey's Circus, kept the crowd in an uproar for twenty minutes with his acrobatic antics. The only mishap of the day occurred when the wind upset a 25-foot tower on which Dielman was performing his final act, and our clown suffered a broken bone in his ankle and heel. He retired without the audience realizing he was injured. The 64th Coast Artillery Band, followed by the colors and both baseball teams, paraded around the field and then stopped in spectacular formation in front of the grandstand. Chaplain Gynther Storassli eulogized our comrades who paid the supreme sacrifice on the field of battle. The entire audience arose and uncovered while the buglers played taps and the band the National Anthem.

Fort Shafter, playing an airtight defensive game behind the superb one-hit pitching of Johnny Mintus and Jesse James, plunged a gallant, hard fighting, 13th Field Artillery team down to a 6 to 1 defeat. Everyone who attended the show was well satisfied, and several thousand dollars were contributed to the Veterans Relief Council.

The second game of the series was played on August 16th, the 13th F. A. winning, score 6-0. The third and deciding game for the Hawaiian Championship was played a few days later before a large and enthusiastic audience. Eleven innings were necessary to decide this contest which resulted in a 3-2 victory for Fort Shafter and the 64th C. A. (AA).

Secretary of War Visits Fort MacArthur

ON JULY 29th the Honorable George H. Dern, Secretary of War, accompanied by a distinguished party, visited Fort MacArthur, where he was received with traditional ceremony, despite the fact that a long, hard CCC "campaign" was still in full sway.

As the Secretary's party rolled into the reservation, the regulation salute of 19 guns went off like clockwork. Twenty-four sentries lined the entry road, standing at salute.

Dismounting from his car, the Secretary was received by Col. C. H. Hilton, 3rd C.A., commanding the Harbor Defenses of Los Angeles, and Major

Homer R. Oldfield, commanding the 63rd Coast Artillery.

Inspection of a spick and span battalion guard of honor of the 63rd C.A. under the command of Captain Ben B. Blair drew words of praise for their "splendid appearance" from the Secretary.

Next on the program came an inspection of anti-aircraft equipment of the 63rd C.A., displayed on the parade ground.

The accompanying picture shows the deep interest which the Secretary displayed in everything he saw. Col. Hilton was kept busy answering his questions throughout the visit.

A display of CCC motor transportation of the Ft. MacArthur pool followed.

Next a visit to the railway gun park, where the two big 14" railway mount rifles were put through their paces.

When the Secretary completed his inspection of the artillery, CCC enrollees E. J. Roach of Los Angeles and B. J. Kintner of Wilmington presented him with a bound volume of *CCC News,* weekly newspaper of the Fort MacArthur District. Mr. Dern, smiling broadly, and thanking them for the memento, directed that this message be transmitted to the officers and men of the Fort MacArthur CCC District:

"I am very proud of the work the Army has done in connection with the CCC. It is the only organization which could have performed the huge task of mobilizing, equipping and conditioning the 300,000 men of the Corps within 60 days. I feel proud of the CCC men and the great work they are accomplishing."

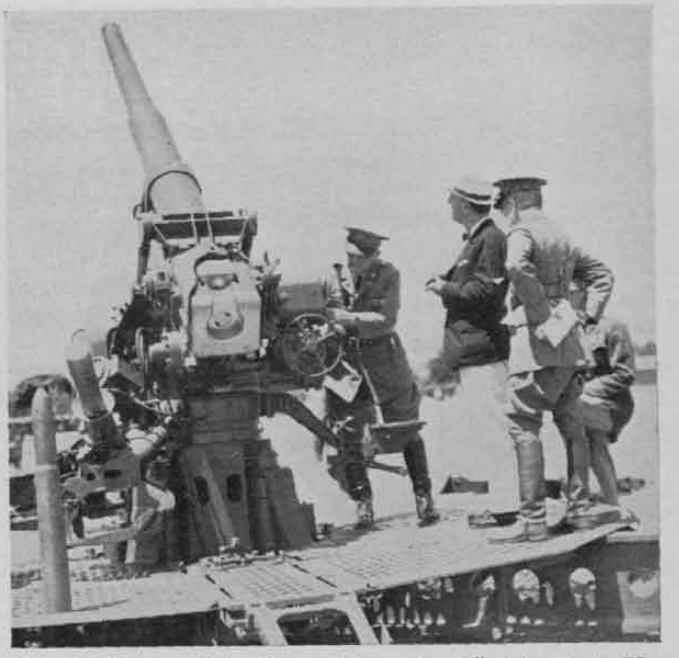
As the party left the lower reservation the 19-gun salute again roared out, while the guard of honor stood at "present."

The Secretary concluded his visit with an inspection of Battery Merriam (14" DC) and Batteries Barlow and Saxton (12" SCM). Several times during his inspection aides tried to hurry the Secretary, whose three-day visit to Los Angeles was, as elsewhere, extremely busy; but he was intensely interested and pleased with all he saw and would not be hurried, stretching out a scheduled visit of 30 minutes to more than three times that length.

On leaving, Mr. Dern expressed to Col. Hilton his appreciation for the opportunity of seeing Fort MacArthur and his gratification at the fine appearance of the troops and splendid condition of the armament inspected.

Accompanying the Secretary on his visit were: Mrs. Dern and their daughter, Miss Betsy Dern; Mayor Frank L. Shaw of Los Angeles; Col. H. E. Yates, Inf. (DOL); Col. E. A. Evans, CA (Res.); Lt. Col. William Niblett (Res.); and Capt. Liston Black (Res.), all of Los Angeles.

Owing to the absence of many officers and practically all key men on work connected with the CCC, regimental training of the 63rd CA (AA) is reduced to a minimum. However, all men now at the post are concentrating on one day a week of intensive artillery instruction. It is expected to extend this training and to have at least one battery each month make a short overnight march. This will afford an opportunity for all the local Reserve officers to participate if they so desire.



Colonel Hilton explains the workings of a 3" AA gun to Mr. Dern. Col. H. E. Yates, Inf., is beside him on the platform.

First Lieutenant Henry L. Schnoor, 63rd CA-Res., has completed 120 hours of extension school work. Second Lieutenant A. C. McMillan, 63rd CA-Res., hung up a record of 221 hours, 42 of which were earned by the extension school route, two hours of troop school, and 177 hours of inactive training with the regiment.

The Candidates' and Reserve Officers' School started September 11th. One-hour sessions will be held the second and fourth Mondays of each month. The place of meeting is at 751 South Figueroa Street, Los Angeles.

Fort Barrancas Notes

BARRANCAS events during the summer have been mostly in the shape of losses of personnel incident to the Civilian Conservation Corps or the transfer of officers to school. Major John H. Lindt left for the War College via the Century of Progress show in Chicago and his old home in Michigan. Lieutenant Mortimer left shortly afterward for Monroe, as did also Lieutenant Raymond. There have been gains also but few of them did more than bound off into the woods to the glory of the three "C's". Major Levy is amusing a company of veterans in West Florida. Captain Cochran has a company over in Mississippi, some eighteen miles from the nearest railroad, and with him he had Lieutenants McLamb and Spurgin, and just a mile away in a comfortable resort hotel was Mrs. Cochran. McLamb and Spurgin became losses to other camps but it is reported that Mrs. Cochran stood by, which may account for Cochran's report each week of "Morale—Excellent."

Barrancas, once the Queen of Gulf Harbor Defenses, is now the headquarters of Civilian Conservation Corps District "G" and, whereas our limit of interest was once the range of our guns, it now wanders at will over a four hundred and fifty-mile front along the gulf coast to the headquarters of sixteen camps and additional locations for a reenforcement of fourteen more when snow flies (where snow really does fly). Major Harold F. Nichols, District Executive and Adjutant, maintains a weather eye on his heterogeneous Army, Navy, Marine Corps, and Coast Guard officer personnel.

Major Chipman as District Recreation Officer keeps the foresters supplied with late releases on new bridge rules and in spare moments stirs up public relations one way or another, or watches over the armament of Fort Pickens. Captain George Brent graces the office of the Harbor Defense Adjutant. Over this entire jig-saw puzzle presides Lieut. Col. Clifford Jones as District and Harbor Defense Commander.

Old friends of Barrancas will shed a tear—or cheer, as the case may be—to learn that old Batteries Cullum, Sevier, and Pensacola have succumbed to the modern age and are now resting in heavy dope—out of service. All of a sudden somebody went modern and signed the death warrant, or should we say they decided to save money, and lay the old hands off. But no one knows the future. General Johnson may force the War Department to join the NRA and put these old employees back on the payroll again! Of course —at "less fifteen percent!"

Coast Artillery Activities in Panama

SINCE the announcement by the War Department that no ammunition will be expended during the present fiscal year, the activities of the Panama Canal Department seem to have increased, rather than to have decreased. I do not mean to say that they have not always been exciting! For those who have not served here within the past two or three years, a short resume of our set-up is given.

Each seacoast battery is assigned an antiaircraft battery as, shall we say, secondary armament, although the training circulars insist that the antiaircraft is of primary importance. We fire our AA's under the same conditions as the regular antiaircraft organizations. Recently, to even up matters, the antiaircraft batteries have been assigned seacoast batteries as their secondary mission. In addition to this, we must all try our hand at AA machine guns. Everyone realizes the importance of the antiaircraft defense of the Canal, and as a result, all combatant arms (Infantry, Engineers and Field Artillery) in the Department are trained in the use of antiaircraft weapons; in addition, each is given a war assignment to artillery materiel with caretaking responsibility.

As a reciprocal arrangement the Coast Artillery troops are equipped and trained to take the field as divisional infantry. During the past maneuver period all three phases were covered, i. e., seacoast, antiaircraft and infantry. During the past few weeks we have been having a taste of "rallies" or "alerts" to test the fitness of all concerned, to see how fast and how thoroughly we could change from one assignment to another. These alerts were called at odd hours—late at night, early in the morning, or during a drill period. They seem to have proved conclusively that Uncle Sam is getting full value received for his investment in the Panama Canal Department soldier.

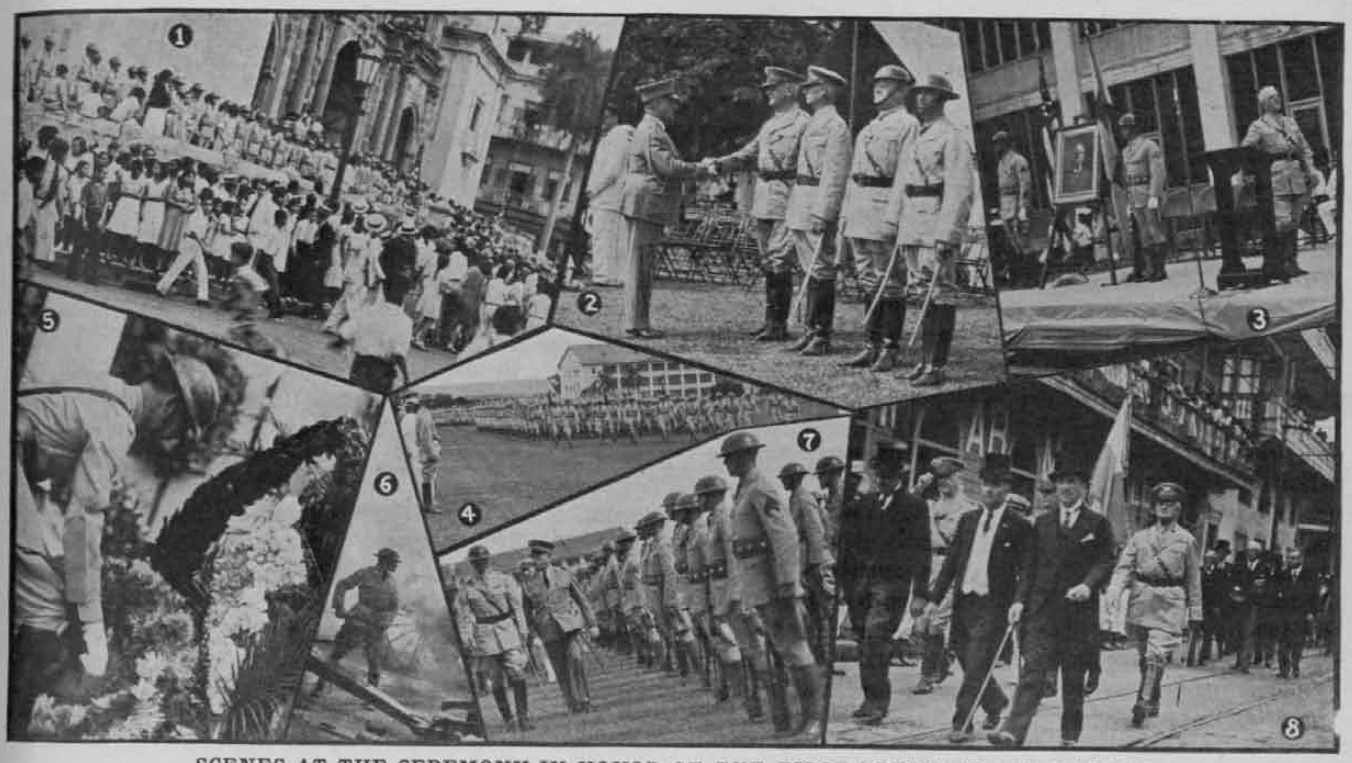
Several interesting reviews have been held recently for important personages. The outstanding ceremony was held at Fort Amador on June 30th in commemoration of the 100th anniversary of the birth of Dr. Manuel Amador Guerrero, the first president of the Republic of Panama and the patriot whose dreams of a canal were finally culminated through negotiations with Theodore Roosevelt. In the morning a ceremony was held at Cathedral Plaza, in Panama City, the military background for which was furnished by a battalion commanded by Major Enrique Benitez, 4th C. A. Besides President Harmodio Arias, his cabinet and high government officials, the ceremony was made more impressive by the presence of Major General Preston Brown, the Department Commander, Brigadier General Thomas W. Darrah, the Sector Commander, and Colonel Russell P. Reeder, 4th C. A., the Commanding Officer of Fort Amador.

After the ceremony was completed a procession moved to the Amador Cemetery. Here Lieutenant George R. Burgess, 4th C. A., placed a wreath of flowers on the grave of Panama's immortal hero.

In the afternoon the playing of the Panama National Anthem and the firing of a salute announced the arrival of President Arias and his party. At post Headquarters the presentation of the portrait of President Amador was made by Colonel J. A. Jimenez, Secretary of Government and Justice. Colonel R. P. Reeder accepted the portrait in the name of Fort Amador. Immediately after the portrait was formally accepted the Presidential party was escorted to the reviewing stand, where all the troops on the Pacific side passed in review.

On July 31st Colonel Colon Elroy Alfaro, Envoy Extraordinary and Minister Plenipotentiary from the Republic of Ecuador to the United States, was honored by a military review at Fort Amador in which all the troops of the Pacific side participated. The review was the occasion of the presentation of citations from the Ecuadorian Government to Major General Preston Brown, Brigadier General Thomas W. Darrah, Colonel Russell P. Reeder, 4th C. A., and Major Enrique Benitez, 4th C. A. Colonel Alfaro, who formerly wore the black, grey and gold of the United States Military Academy, was met at the entrance to the post by the Lancers of the 11th Engineers and was escorted to the reviewing stand, where the citations were made.

We are particularly fortunate at Fort Amador in having with us "Tony" Lazar, one the recent big shots of athletics at the Military Academy. Under his expert guidance and enthusiasm the teams from this post have shown that desirable military quality—élan, as well as the ability to win. There are three things that all good soldiers love to do—eat, sleep and



SCENES AT THE CEREMONY IN HONOR OF THE FIRST PRESIDENT OF PANAMA

1—Celebration at the Cathedral Plaza, Panama City. 2—Colonel Colon Elroy Alfaro congratulating Maj. Gen. Preston Brown, Brig. Gen. T. W. Darrah, Col. R. P. Reeder, and Maj. Enrique Benitez. 3—Colonel R. P. Reeder accepting the portrait of Panama's first president. 4—Review at Fort Amador. 5—Lieut. George R. Burgess placing the Fort Amador wreath on the Grave of Dr. Manuel Amador Guerrero, Panama's first president. 6—A salute for the president of Panama. 7—Colonel Alfaro inspecting the troops at Fort Amador. 8—Members of the Presidential party, Generals Brown, Darrah, and Colonel Reeder, marching to the grave of Panama's first president.

indulge in sports. Being very fortunate in having good soldiers, we find that they will indulge in sports and will give a good account of themselves.

As an appetizer they went out and in straight games won the Pacific Side Water Polo Championship. Then to show the Atlantic Side of the Isthmus that wasn't all, they stepped out to take the Department championship from the doughboys at Fort Davis. This is the second consecutive year that the Department Cup has been won by Fort Amador in this activity.

In basketball Phil Taliaferro's Battery I won the intra-post league and displayed a wonderful brand of basketball. The post basketball team is showing its greatness by winning from everyone in sight. In the Pacific League they have now won eight straight games. They look over the famous Hudson-Essex team 50-39; after that team had vanquished everything in the South Americas on a prolonged trip. It looks now like the Pacific Side Championship.

We would like to take the opportunity to congratulate our Junior Captain—Joseph S. Robinson—who has waited some fifteen years to add the weight of two bars to his shoulder straps. Our new arrivals are Major J. T. H. O'Rear, who has come to us from Fort Sherman; Captain Vernon W. Hall, who slipped over from Fort de Lesseps, and Captain Franklin E. Edgecomb, who arrived from that great seat of learning—Fort Leavenworth.

Fort H. G. Wright Holds an Impromptu Animal Transportation Show

AN impromptu Animal Transportation Show was held on the afternoon of August 28, 1933, at Fort H. G. Wright, the home of the 190th C. C. C. Supply Company. Colonel William H. Wilson, 11th Coast Artillery Corps, who is the Harbor Defense Commander of Long Island Sound and also Commander of the 5th C. C. C. District, was present together with several members of his staff. The Fifth C. C. C. District is comprised of men assigned to civilian conservation work in the State of Connecticut.

The Blue Ribbon went to a matched team of chestnut colored mules driven by Walter Robinson and assisted by Ardis Hill. Walter Robinson is from 38 Kennedy St., Hartford, Conn., and is a member of the 190th C. C. C. Supply Company. He arrived at Fort Wright from Hartford in April and has been assigned to the hauling of supplies since then. All supplies for the 3250 men located in the twelve work camps around Connecticut are furnished by Fort Wright. This man has moved his share without a murmur and is often found in the stables caring for his mules, after his day's work is done. Besides the Blue Ribbon, a prize which was awarded by a friend, also went to Robinson.

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 J. D. MCCAIN, C.A.C.
MAJOR A. F. ENGLEHART, C.A.C.
CAPTAIN H. C. MABBOTT, C.A.C.
CAPTAIN J. T. LEWIS, C.A.C.
CAPTAIN S. L. MCCROSKEY, C.A.C.
1ST LT. WALTER J. WOLFE, C.A.C.

Projects Completed Since the Last Issue of the Journal

SECTION I

No. 960. Draw Bar Pintle Check, 155 mm. Gun.—It has been found that in backing a 155 mm. gun with a 10-ton tractor that the pintle bar of the tractor rotates too far. This rotation also occurs if, for any reason, the gun runs up on the tractor. The rotation causes the pintle to jam and when the tractor starts ahead again, some part of the mechanism may break. Captain H. D. Cassard, 51st Coast Artillery, submitted a design of a heavy clip made of one-half inch steel which can be put over the rear pintle housing of the tractor to limit the amount of rotation of the pintle. A test of this device was made and a favorable report thereon was rendered. It was recommended that authority be granted for local authorities to construct these clips wherever needed provided the Chief of Ordnance could not supply the M-5, an improvised pintle. Further correspondence indicates that a few of the M-5 pintles are available for issue.

No. 945. Chamber Swabbing Sponge T-3, 12-Inch.—This swabbing sponge is a slight modification of the chamber sponge tested by the Coast Artillery Board several years ago and recommended for standardization. Both of these sponges are skeleton sponges so constructed as not to bind in the forcing cone. However, they are very heavy. The Coast Artillery Board recommended that certain parts be strengthened, that consideration be given to reducing the weight of the sponge and that, after such modification, the new form be adopted as standard.

No. 959. Weston Universal Exposure Meter, Model 617.—This is a device for measuring the light intensity of objects to be photographed. It can be used for either still or motion picture cameras. One of the most frequent failures in photography is caused by either over-exposure or under-exposure. The device tested is designed to indicate the proper setting for the camera as regards amount of exposure. It is thought that such a device would be particularly valuable in photographing, by the base end cameras, of antiaircraft shrapnel bursts and of seacoast splashes in target practice, in which cases "it is now or never," and any instrument that will reduce the percentage of failures will be of decided benefit to the service. The Board recommended that early steps be taken to standardize some such instrument and that the Chief Signal Officer be requested to carry on tests to determine the best instrument on the market.

No. 965. Test of L-T Seacoast Director E-1.—The letters "L-T" stand for "Lewis-Trichel." As stated in the July-August issue of the JOURNAL, the tests of this instrument were, in general, most satisfactory. The instrument is now at Frankford Arsenal where a pilot model thereof is being constructed under the direction of the Chief of Ordnance. A report submitted during August was merely an extension of the preliminary report issued before. There are several features, mostly mechanical, that seem open to improvement. These matters are being taken up by the Coast Artillery Board with the Commanding Officer, Frankford Arsenal. Captain Lewis finished his work on the director just in time to comply with his order to proceed to the Command and General Staff School, Fort Leavenworth, Kansas. Development work is being carried out with a view of extending the L-T principles and methods to the three-dimension problem.

No. 967. Test of Radio Set SCR-187.—The radio set, type SCR-187, is a commercially manufactured set of approximately 75 watts output, intended primarily for aircraft use. The set operates in certain frequency bands between 400-13,000 kilocycles. The changes for the various bands in both the receiver and the transmitter are accomplished by interchangeable tuning units. The transmitter was superior to any type of the same power yet tested by the Coast Artillery Board and was recommended for standardization. The power supply was also recommended for standardization. The receiver was superior to other sets for voice communication, but should be modified for code. The light weight of the component parts of the set make it a highly desirable replacement for the SCR-136 set now standard for the SCR-177 set recently tested. The Board recommended that containers for the various components be designed to permit easy installation in a radio truck or removal of the set from truck to field position. The SCR-187 gives much promise of being what is needed for about 95 per cent of the Coast Artillery radio requirements.

No. 972. Test of Plotting Room Trailers.—These are trailers intended to accommodate the plotting room matériel for mobile seacoast batteries. They are, in fact, vehicles originally built for use as heavy mobile ordnance repair shop trailers. Service test has indicated that these vehicles are not entirely satisfactory, and the question has arisen whether or not they should be modified. One of these trailers is hardly large enough to house all the standard equipment and permit the personnel to function properly. Should some seacoast director, say the T-5, be adopted as standard, and should it be deemed necessary to retain the present standard system as emergency equipment, the trailers as now made up would probably fail to meet the requirements. The Board, therefore, recommended that no modification of these trailers be made at this time, and that plans for future modification be delayed pending a decision on the standardization of a seacoast director.

No. 974. Emergency Gun Difference Device (Meadows).—This device was submitted by First Lieutenant John J. Meadows, CA-Res. It is designed to provide a solution, by mechanical means, of the gun parallax problem. Inasmuch as the standard Deflection Board M-1 corrects for azimuth parallax, and the Director T-5 corrects for range and azimuth parallax, the need for a device of this kind is not apparent. The Coast Artillery Board appreciates Lieutenant Meadows' efforts but recommended that no further action be taken in the matter.

Projects Under Consideration

SECTION II

The following projects are now under consideration by the Board:

No. 608-A. Duco Surfacing for Guns.—This is a long-continued test in an effort to get a paint or paints for both gun and carriage that will stand up and present a good appearance for long periods. A preliminary report has been submitted. It has been shown rather conclusively that ordinary automobile Duco is not suitable for gun carriages. The paint cracks off rough surfaces, and it also cracks at sharp angles. On the gun proper, where surfaces are smooth and well-rounded, the Duco seems, so far, to be very satisfactory. The surface of the gun under test has been "simonized," and now presents a very good appearance.

The test with the Dulux paint is not as yet conclusive, and it will be some time before the final report on this project can be submitted. Should this project, and No. 973 noted below, turn out to be successful searches, the life of a gun cleaner may be brightened considerably.

No. 929. Experimental Field Chronograph (Jackson).—This chronograph, designed by Captain Albert M. Jackson, C. A. C., is understood to be based on photography. The instrument, which is designed for field use, was constructed at Fort Totten, and it is being tested at Aberdeen Proving Ground. Preliminary reports seem to indicate that the instrument is accurate as compared to other chronographs. How quickly after the gun fires the instruments give the muzzle velocity, and how quickly the installation can be made at an emplacement, are features yet to be reported upon. The schedule of test includes a field test by the Coast Artillery Board at Fort Monroe, Va. C. C. C. activities have unsettled conditions in the Army to such an extent that it is not known when a report can be submitted on this instrument.

No. 937. Test of Submarine Mine Equipment.—This is a project of long standing which originally comprised several items. The only one not yet reported upon is the circuit closer designed by Mr. J. Kearsley M. Harrison, Philadelphia, Pa. The test of this circuit closer is to extend over a period of two years from December, 1932. It will also be used in tests under Project No. 971.

No. 947. Test of Oil Clothing for Use by Army Mine Planter Personnel.—As stated in the July-August issue of the JOURNAL, it is understood that the actual test is under way on the Cable Ship Joseph Henry. After report is made on the use of this clothing it is presumed that the Coast Artillery Board will be called upon to report on its suitability for standardization for the crews of Army Mine Planters.

No. 953. Radio Controlled High Speed Target.—The Coast Artillery Board has concluded that most organizations in the Coast Artillery have solved, to a fairly high degree of perfection, the problem of firing at towed targets. A review of the target practices for the target practice year 1933 indicates that the firing in that year reached a higher general standard than during any year for the last several years. The use of the towed target imposes many limitations on firing, some of them favoring the attainment of a good score. The Coast Artillery Board is striving to procure a radio-controlled high speed boat that can be made to simulate all the movements of a naval vessel in action. Actually firing on a 30-knot head-on target would cause a range section to undertake a problem that no range section in our service has as yet attempted, much less solved.

A commercial firm has indicated that such a target can be produced at reasonable expense, but the project has not yet been carried forward to a point where any definite statement can be made.

No. 956. Test of Compass, Lensatic, With Leather Case.—The instrument has not yet been submitted for test. This project has been before the Board for some time—for such a long time in fact, that each member of the Board has his curiosity aroused as to just what this instrument may be.

No. 958. Device for Checking Mobile Artillery Sight Mountings.—Mobile artillery sight mounts are designed to correct for the error in azimuth due to cant of the gun. If they are not properly adjusted they fail to do this. As stated in the May-June issue of the JOURNAL, the device, submitted by Captain J. T. Campbell, C. A. C., is designed to determine the amount of azimuth error due to improper adjustment of mobile artillery sight mounts, and to indicate the adjustments that should be made. Captain Campbell has been absent from the Post on C. C. C. duty, and the Board,

having plenty of other work to do, has delayed this test until Captain Campbell could return to assist therein. He is now on duty with the Coast Artillery School and it is hoped that an early report can be submitted on this instrument.

No. 961. Improvised Mounting, Telescopic Sight, 155 mm. Guns.—This device was submitted by Lieutenant Colonel J. B. Taylor, C. A. C., and is designed to accommodate a sight that will permit using a 155 mm. gun in Case II firing. The optical properties of the present sight issued with that gun make the sight unsuitable for Case II work. Colonel Taylor's scheme provides for attaching one of our old model telescopic sights to this model of gun. The project is under test, but the whole matter of telescopic sights seems to need revision. The test of the Lewis-Trichel director brought out some new problems in the matter of sights, and while no decision has been made on Colonel Taylor's device, it can be freely stated that the Board is reluctant to add one more improvised piece of mechanism to a system that might be characterized already as "patch work."

No. 963. Test of Stereoscopic Range Finder T-2.—As stated in the July-August issue of the JOURNAL, this is a very heavy 6-meter self-contained range finder especially designed for tractor artillery. The tests were completed some time ago but the compilation of data for the report is not yet complete. It is safe to state that this is the most accurate self-contained instrument the Board has ever tested. However, as stated, it is six meters long, the tube is not taken down to be put in its case, and when packed for traveling, one of the loads is about nineteen feet long and weighs over 2200 pounds. The pedestal and mounting, another load, weighs 1450 pounds. No figures are available as to its cost, but it must be very expensive. It is a stereoscopic instrument and as such requires a highly trained operator endowed with characteristics of eyesight differing from those of the average individual.

No. 964. Test of Rubber Jacketed Submarine Mine Cable.—This is a cable procured by the commanding officer of the Submarine Mine Depot. The essential difference between this cable and the present standard cable is that the former has a heavy rubber jacket outside of the metal armor. The new cable shows many indications of being very well suited for use with our present submarine mine system. All members of mine organizations are very familiar with the disagreeable features attendant upon the handling of the standard steel armored cable. It appears that this new cable, under ordinary handling conditions, does not kink and it can be handled without injury to the hands, which is not the case with the present standard armored cables. If it will withstand endurance and other analogous tests its standardization will be of great benefit to all who have to do with submarine mines. A limited amount of this cable is being purchased to be shipped to foreign possessions for extended service tests.

No. 966. Test of Circuit Closer, Model 1933.—Fifty of these circuit closers are now being manufactured at the Submarine Mine Depot. As previously stated, they will be sent out for test in various harbor defenses, but a few of them will be kept at Fort Monroe for the test which will soon be started under Project No. 971 (below).

No. 968. Preparation of Coast Artillery Memorandum Number 14.—This is a memorandum issued annually on the target practices of the previous year. This publication will assist a battery commander by giving him the advantage of the experiences of all battery commanders who fired during the previous year. As is well known, the publication also gives a general analysis of Coast Artillery target practices. Inasmuch as practically all target practice for the Regular Army has been suspended for the fiscal year 1934, it would appear that the necessity for this memorandum is not as great this year as it has been in the past. However, every effort will be made to prepare the report at an early date.

No. 969. Test of Fuze Setter M2 Modified.—In the use of the fuze setter M2 (3″ A. A.) inaccurate settings are sometimes made, due to seizing, during the operation of the setter. A clamp was introduced in the mechanism to prevent this trouble. The modified instrument was presented to the Board for test, but during the test the apparatus was broken and has now been returned to the Aberdeen Proving Ground for repair. The recent storm at Fort Monroe did considerable damage to Ordnance and other property. It is very possible that even when emergency repairs have been made, an actual firing test will be delayed for some time.

No. 970. Test of Firing Lock Mark I.—This firing device affords another step in the development of a firing mechanism that will simplify the problem of the effective firing of seacoast cannon by a combined electrical and percussion primer. A report on this particular device is in process of preparation, but it can be stated at this time that there is missing in the mechanism, as submitted, sufficient provision for safety.

No. 971. Comparative Test of Submarine Mine Systems.—It was found that certain modifications were necessary in the present standard single conductor submarine mine system. Modifications have been proposed that appear capable of remedying the defects in the matériel in service. At the same time there has been designed and made up systems that still retain the single conductor cable leading from the casemate, but which differ considerably from the original system. In addition, a commercial organization has submitted a design of a casemate apparatus and several minor features of a system. In fact, new devices are coming forward very rapidly, and it is becoming highly necessary that comparative test be made at an early date of materiel already on hand, and this project contemplates such a test. This test would be going on at this time had not the recent storm required the use of troops at Fort Monroe for salvage duty.

No. 973. Test of Lacquers and Varnishes for Use as Rust Preventatives.—A large part of Coast Artillery armament is out of service. As every Coast Artilleryman knows—to his sorrow, there are large areas on

every gun and carriage that cannot be painted, and that will rust almost over night if some rust preventative is not used. The problem of procuring a rust preventative that will, (first) prevent rust and, (second) be more or less permanent and, (third) will not present an unsightly appearance, is one that has never been solved to date. There are few things more unsightly than a gun slushed up with the dark colored greasy preparations now issued as rust preventatives, and many a gun which had really suffered no deterioration whatever from rust, has been severely criticised by such inspectors as judge by appearance only. Still more serious is the fact that a little warm weather will cause greasy components to melt and flow away, leaving bright surfaces exposed. The Commanding Officer of Rock Island Arsenal has carried on very extensive tests to determine a transparent but more or less permanent lacquer. Out of many preparations, he selected four that seem to merit service test. The Coast Artillery Board is prepared to proceed with such test, which is bound to be more or less slow. In the Arsenal test, the metals to be covered were dipped; the Board is faced with the problem of how to put these lacquers on the exposed surfaces; that is, whether it be put on by spraying or by brush. Also, there is yet to be determined how the lacquers can be removed.

SECTION III.

The following subjects were undertaken by the Board under various instructions, or without instructions. These have been selected from the files of the Board and are thought to be of interest to the Coast Artillery in general.

1. **Method of Rating Target Practices.**—The Chief of Coast Artillery classifies target practices as Excellent, Very Good, Good, Etc. At the present time the actual work of selecting batteries for given ratings is done by the Coast Artillery Board, subject to the action of the Chief of Coast Artillery. In an effort to make this classification mathematically correct, or as nearly so as possible, a scheme was worked out and approved by the Chief of Coast Artillery. This scheme is based on the theory of errors; for example, in the case of 6 inch batteries the scores for all practices fired in recent years by such batteries under the present scoring formula, were averaged. Taking this average as the center of impact, the variation of each practice in such period (from this average) was found and a probable error determined. Using this probable error as a measure, a dispersion ladder was made up with the steps therein marked as Excellent, Very Good, Good, etc. With the exception of the few batteries who were classified by the Chief of Coast Artillery before the adoption of this system, all the classifications for the target practice year 1933 have been made according to this scheme.

2. **Antiaircraft Machine Gun Fire Control.**—Major John G. Booton, Ordnance Department, submitted a letter direct to the Board describing a device designed to assist in spotting antiaircraft machine gun tracer firing. While Major Booton's device is unique, and included several very good ideas, it appeared somewhat limited in its application and could not well be applied to machine gun mounts in the present state of development.

3. **Antiaircraft Machine Gun Sighting Mechanism.**—Lieutenant C. W. Holcomb, C. A. C., stationed at West Point, New York, brought to Fort Monroe for demonstration to the Coast Artillery Board, a sighting mechanism to be attached to a machine gun which, like all sights, is designed to assist the gunner in hitting the target. The mechanism had many good points and, in the opinion of the Coast Artillery Board, comes nearer solving the problem than any device that has been submitted recently. Before Lieutenant Holcomb could complete his demonstration the hurricane came along, swept away machine gun emplacements, drenched his mechanism with salt water and covered it with sand. It was necessary for Lieutenant Holcomb to return to West Point without making further demonstrations. The Coast Artillery Board is endeavoring to make, in conjunction with Lieutenant Holcomb, a complete test of this mechanism when an opportunity presents itself.

4. **Trouble With Antiaircraft Spotting Cameras.**—Temperature changes were apparently responsible for throwing out of adjustment the finely balanced mechanism of the antiaircraft spotting cameras assigned to one regiment. A questionnaire sent out to all other regimental commanders indicates that the trouble was confined to one organization. The Coast Artillery Board recommended to the Chief of Coast Artillery that a change in the relative sizes of some of the pulleys controlling the film-winding mechanism be made.

5. **A New Unit of Angular Measurement.**—A feature of the L-T Director is the display of all range and azimuth readings on counters, similar to those showing mileage on an automobile speedometer. The design of the instrument is such that it made a display of this kind highly desirable. The principle on which these counters operate is based on the decimal system of numbers. Using either mils or degrees and sub-divisions thereof, causes the counter to fail when the zero point of the scale of angular measure is passed in moving either way. The only solution at the time appeared to be the adoption of a unit of angular measure which was 1/10, 1/100, 1/1000, or 1/10,000 of a complete circumference. The division into 10,000 parts seemed the best, although all concerned were reluctant to introduce another unit into a system that was already far from uniform as to angular units. The pilot model now being made at Frankford Arsenal is to use this yet-unnamed unit. Before the director is standardized it may be possible to devise a mechanism that will permit the use of counters with the degree or mil system of units.

6. **Test on Tracer Control.**—As has been stated recently, and quite often, the only method of fire control for antiaircraft machine guns is that making use of tracer ammunition to indicate where the machine gun bullets are passing with respect to the target. No method has been laid down to coordinate the training of machine gunners in this very important feature. The Coast Artillery Board has been directed to prepare

(Please turn to page 400)

THE FOREIGN MILITARY PRESS

Reviewed by Major Alexander L. P. Johnson, Infantry

CANADA—*Canadian Defense Quarterly*—July, 1933
"Europe; Great Britain and the United States;" editorial.

The editorial writer comments upon the "Roosevelt Offer" as expressed by Ambassador Davis, according to which the United States, subject to ratification by Congress, agreed to join with the League of Nations in any consultation in case of a breach or threatened breach of the Kellogg Pact, and that the United States would not enforce its neutral rights in the event the League resorted to sanctions under Article 16 of the Covenant provided the United States concurred in the judgment of the League as to the guilty party. The author does not discern any startling departure from the policies of the immediate past and he expresses the opinion that those who ascribe a deeper meaning and a definite commitment to the words of the President are doomed to disillusionment. As the author views the declaration, the American government not only does not promise to join the collective effort and suggests no positive action of its own, but reserves to itself the right to decide on the aggressor state. The author believes that the weakness of the declaration lies in the fact that it is directed "towards a mythical and nebulous objective * * * the strengthening of a collective system of security, which, in fact, has never existed."

In response to the American declaration, the author states, Great Britain promptly informed the other powers that she would assume no further obligations than she has already taken to protect them from war. The author states, that the British and American declarations have shown to the world "that the League's collective system of security is non-existent." The failure of the Anglo-Saxon countries to return to Europe, in the author's opinion, confronts France with the alternative of a preventive war against Germany or an agreement to consent to the territorial revision of frontiers with the consequent disappearance of her allies as factors in the political affairs of Europe. The author believes that Europe is facing a crisis comparable to that of 1914. The interests of Great Britain and the United States in Europe have since then become greater, hence, he believes, the conditions which have forced intervention in 1914 and 1917 are likely to return in the future. In order to avert such a contingency, the author believes, the United States and Great Britain must adopt and have in fact adopted a policy of consultation and cooperation without prior commitment.

CHILE—*Memorial del Ejercito de Chile*—June, 1933.
"German Tactics, French Tactics and Chilean Tactics," by Lieut. Col. Ernesto Salbach.

The author takes issue with the tendency of certain officers who advocate changes and innovations without adequate reason or justification. He analyzes the basic principles of French tactics in great detail to demonstrate their impracticability under conditions such as prevail in Chile. For similar reasons he rejects the German plan and concludes, that organization and indoctrination of the Chilean or any other army must be in strict accord with national character and national needs.

Colonel Salbach's comments upon the French organization and conception of tactics are particularly enlightening. He states, that the French system is predicated exclusively upon the defensive plan of action. This defensive attitude, he states, is reflected by French regulations, system of issuing orders, method of advance, grouping of artillery, etc., etc. The French march exclusively at night, the author states, until they arrive within a day's march from the enemy. After that the approach is undertaken during daylight hours. The division marches during this final stage with two regiments in the first line, the third regiment in the second echelon. Each front line regiment detaches one battalion as an advance guard. The two battalions of the main body march abreast followed directly by the supporting artillery. This deployed formation is taken at a distance of 25 km. from the enemy. The advance is made by bounds with half of the artillery always in position to give immediate support. The rate of march is 2-3 km. per hour, and may in practice be reduced to 1-2 km. before actually contacting the enemy. The total depth of the deployed command is 10 km. The author finds fault with this deployment at a time when it is impossible to foresee the kind of combat that may ensue, or whether the enemy will accept battle at all. In case of action, the author points out, the third regiment is so close to the front line that it will be involved in the action from the very beginning. The French, he states, insist on providing in advance for all possible contingencies, hence when anything unforeseen happens it is difficult to effect a change.

In order to illustrate the French conception of command, the author cites an interesting example. An army corps advancing with two divisions abreast, the advance guards contact the enemy in position along a ridge. Local advance guard actions may ensue, but the order to coordinate these actions must come from the corps commander. This, the author states, will result in the loss of valuable time during which the situation might completely change. Thus, the corps commander may decide upon a heavy artillery concentration on the hostile position to begin at a certain hour and continue for a certain length of time. Conceivably the enemy may have accomplished its momentary mission by the delay it caused and may actually commence withdrawal a few minutes before the artillery bombardment. Although front line units might

observe the action of the enemy, subordinate commanders could not take the initiative to ask for a suspension of the scheduled artillery bombardment with a view of taking up the pursuit or even to carry out their mission by seizing the ridge evacuated by the enemy. The time required to get the appropriate orders from the corps would cause such a delay that the enemy could get away and prepare his defense elsewhere under more favorable circumstances. The author believes that subordinate commanders should be allowed greater initiative. On the other hand he finds fault with the German system which, in his opinion, allows too much initiative on the ground, that in the case of an emergency there may be a serious shortage of sufficiently trained subaltern officers and N.C.O.'s capable of arriving at sound tactical decisions.

AUSTRIA — *Militärwissentschaftliche Mitteilungen* — January, 1933.

"Brussilov and His Cavalry In 1916," by Lieut. Col. J. Diakov.

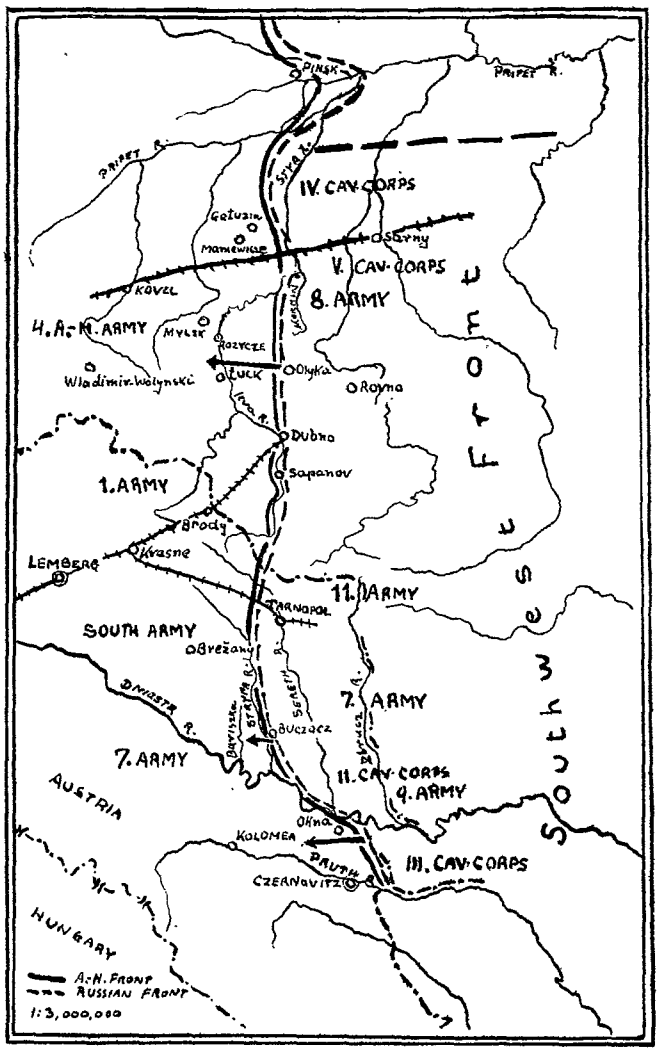
Brussilov prepared the plans of his offensive of June, 1916, with the most elaborate care, the author writes. Everything was prearranged to the minutest detail. The offensive was launched on June 4, between the Pripet and the Rumanian frontier. Six days later the Russian armies had penetrated the Austro-Hungarian front on both sides of the River Dniestre, and after months of position warfare, the Slavs were out in the open. For this campaign Brussilov had at his disposal a cavalry force of sixty-one regiments, a total of 60,000 sabres, organized into 16 cavalry divisions. The bulk of this cavalry was employed on the flanks. One cavalry division was held behind the center. Only the IV Cavalry Corps, under General Gillenschmidt, on the extreme right, was entrusted with a special mission. This corps was directed to penetrate the hostile front in conjunction with the infantry of the XLVI Corps, not later than June 5 or 6, and advancing along the Sarny-Kovel railroad, it was to harass the enemy's rear. Brussilov left the employment of the remainder of the cavalry to the army commanders within whose areas they happened to be.

General Kaledin, commander of the Eighth Army, himself a cavalryman, assigned the V Cavalry Corps to the trenches south of the Sarny-Kovel railroad, holding out the 12th Cavalry Division as a reserve prepared to take up the pursuit.

General Sacharov, commander of the Eleventh Army, likewise a cavalryman, directed the 3d Transamur Cavalry Division to take up the pursuit along the Brody-Krasne railroad as soon as the hostile front gave way. A special detachment was to take advantage of the first break in the hostile front to seek the capture of General Bothmer and his staff at Brzezany.

The Seventh Army held the 6th Don Cossack Division in readiness to support the main attack, while the 2d Cavalry Division took position in rear of the Army's left flank.

The commander of the Ninth Army left the III



The Brussilov Offensive, June, 1916.

Cavalry Corps of two divisions in defense positions along the River Pruth.

Thus only three cavalry divisions were actually in position and prepared to exploit the successes of the first day's operations. While the Eighth Army achieved splendid success, the IV Cavalry Corps suffered costly reverses in the Pripet marshes. The casualties of some of the cavalry regiments amounted to as much as 50 per cent. On June 10, Brussilov was compelled to suspend operations of the IV Cavalry Corps whose failure to a large extent was attributable to inadequate artillery support.

The author states, that even those cavalry divisions, which had been especially earmarked for pursuit missions, failed in their task. The 12th Cavalry division was late in arriving on the battlefield south of Luck, where it wasted two days without even attempting to cross the River Styr. It initiated the pursuit on June 9, in the direction of Wladimir-Wolynsky. The enemy promptly frustrated the attempt of the V Cavalry Corps, on June 12, to advance across the Styr near Rozyszcze.

Realizing its inability to score a success in its main attack along the line Tarnopol-Lemberg, the com-

mander of the Russian Eleventh Army directed his cavalry to try its luck on the right flank. Although some squadrons scored local successes against the Austrian infantry, the attempt, on the whole, proved a failure.

The three cavalry divisions of the Seventh Army, after some initial successes, were stopped in the angle of the rivers Dniestre-Baryszke, and there they remained inactive although favorable opportunities presented themselves on June 10, opposite the center, for cavalry operations. Only a single regiment was actually available for the pursuit.

On the front of the Russian Ninth Army the enemy held firmly until June 10. When the front gave way, one part of the Austrian forces retreated westward, the other southward. It was a favorable opportunity for aggressive cavalry action. Nevertheless, the bulk of the Russian cavalry in this sector remained inactive behind the Dniestre until June 12. When the Army commander finally decided to employ his cavalry, it was too late.

Although it possessed great numerical superiority, the Russian cavalry did not play that decisive part in the operations that it unquestionably should have. This is the more surprising because Brussilov was an experienced cavalry leader of enviable reputation, and it was he who planned the offensive with the greatest care and attention of details. Moreover, he had under his command some of Russia's ablest cavalry leaders. The troops were uniformly well trained, experienced veterans, first class horsemen and excellent fighters. The failure to employ the cavalry properly the author attributes to one factor: General Brussliov failed to anticipate the magnitude of his success, and the leaders under his command had no faith even in the possibility of success. As a consequence of this lack of foresight or confidence, the cavalry was left pinned to the ground in positions where it could not be utilized to advantage at the critical moment. This error, the author states, despite the initial successes of this offensive, deprived Russia of the real fruits of the victory.

—*Oesterreichische Wehrzeitung*—June 23, 1933.
"Franco-Italian Rivalry", by Anonymous.

The anonymous author undertakes to analyze the factors which tend to separate France and Italy. He finds, that Italy is the classic example of a country unable to support its numerous and rapidly growing population amounting now to 42 millions. The annual increment amounts to about half a million. Italy's territory is about one half of that of France. In the past the surplus population emigrated to America and Australia, or sought employment in neighboring countries. Now these means of disposing of the surplus are barred, and the gravity of the situation prompted Mussolini to exclaim that "Italy must either expand or explode." The author points out that Italian expansion primarily affects France, in part because of the adjacent French territory which already has a substantial Italian population (Savoy, Nice), in part because of French colonial possessions with large Italian populations (Tunis), and finally because of French influence in neighboring countries which are within the natural orbit of Italian expansion (Yugoslavia). French opposition to the Italian desire to expand aggravates the situation. The author cites as a notable example the French effort to assimilate the Italian population of Tunis in spite of promises to respect its nationality.

The author states, that Italy is unable to assume the costs of a military establishment equal to that of France, hence Italian efforts to bring about a reduction of armaments. Italian interests in the revision of peace treaties, the author states, are actuated by the same desire to enhance Italian prestige at the expense of France. Italian interests in Berlin, according to the author, do not go beyond the desire to use Germany as a check against France. Mussolini does not, however, wish to have Germany as a next-door neighbor. Both French and Italian policies, the author states, are influenced by the attitude of Great Britain which neither of them can afford to disregard. Since neither of these powers is in a position to risk war at present, the author concludes, Europe is able to establish a sort of equilibrium that might justly arouse the envy of a tight-rope dancer.

BELGIUM—*Bulletin Belge des Sciences Militaires*—August, 1933.
"Some Thoughts on the Active Defense Against Low Flying Airplanes", by Lieut. Gen. Van de Putte, Commander, A.A. Defense.

Recent development in the effectiveness of A. A. artillery of medium caliber compels aircraft to seek altitudes less vulnerable to artillery fire. The choice lies between high and low altitudes. At high altitudes the accuracy of the bomber diminishes rapidly. The high angle fire of modern A.A. guns would compel bombers to seek an altitude of 9-10. km. The alternative is flying 25-30 meters above the ground. The advantages of flying at such low altitudes are: surprize; the drone of the propeller is hardly perceptible at a distance in excess of 500 meters; the plane can easily be masked by accidents of the terrain; diminished vulnerability against hostile pursuit aviation; increased accuracy of the bomber; possibility of attacking terrestrial targets with machine guns and small caliber cannon, and above all, diminished vulnerability against the fire of A.A. artillery. As a matter of fact, the author states, A.A. artillery of medium caliber becomes practically useless against planes flying at altitudes of less than 500 meters or at horizontal distances of less than 1000-1500 meters.

The author states that the concensus of military opinion favors the use of small arms against low flying planes. Although this scheme possesses some advantages, he declines to accept it as the final solution. As a matter of fact, he observes, studies are actually being undertaken in many quarters to determine the desirability of creating a special force with special equipment for that very purpose. According to the author, tactical considerations favor such solution as the only one which would permit a judicious distribution of

A.A. equipment over the sensitive area. He points out that technical considerations likewise favor such a solution in that it is impossible to obtain satisfactory results with weapons primarily designed for purposes other than A.A. defense. Moreover personnel is not likely to have sufficient training to use its equipment effectively against aircraft.

The author states that defense against low-flying planes requires guns which can be manipulated with greater speed and facility than the present medium caliber A.A. equipment. On the other hand, he believes, it must be more powerful than our machine guns. Such equipment, in his opinion, must be served by a highly trained specialized personnel. As between time-fuze and percussion fuzes, the author prefers the latter for antiaircraft defense on the ground that its use requires less time for adjustment. However, he adds, the present equipment is not suited for the effective use of percussion shells. He advocates the adoption of machine guns firing explosive shells of 20-40 mm. caliber, containing 150-1000 grams of explosive charge.

CZECHOSLOVAKIA—*Vojenske Rozhledy*—March, 1933.
"Signal Communications for Antiaircraft Defense", by Major Karel Stransky.

Antiaircraft defense, the author writes, must necessarily be limited to the protection of sensitive points and areas. In order to make this defense really effective, and efficiently organized system of signal communications is indispensable. Moreover, the author believes, such signal communications net must be placed under the direct control of the antiaircraft defense commander. Its personnel must become thoroughly proficient in its use in time of peace, and should be thoroughly familiar with the air forces of neighboring nations, their insignia and location of their nearest landing fields. Meteorological observations must determine several times daily whether or not atmospheric conditions favor an aerial attack. Observers must keep on a constant lookout for approaching airplanes, identify them, determine their direction of flight and render prompt report. The efficacy of A.A. defense will largely depend upon the efficiency of observers and the rapidity with which the necessary data are transmitted to the guns. In any event, the author states emphatically, it is important to avoid false alarms, largely because of the paralyzing effect they have upon essential industries.

FRANCE—*La Revue D'Infanterie*—June, 1933.
"Replacements and Training of Reserve Officers in the Soviet Army", by Captain Lalaquet.

The decree of 1930 on compulsory service in Soviet Russia provides new measures for the recruitment and training of reserve officers. These are obtained from three sources: 1. the student body of colleges and universities; 2. the ranks of the army, and 3. officers and N.C.O.'s transferred from the active list to the reserves.

Military training is compulsory in all colleges and universities. Only the physically unfit are excused. Officers and N.C.O's of the army have charge of all military instruction. They may be assisted by reserve officers. Regional military commanders exercise general supervision over this training. Each school trains candidates for a specific arm or service. The training program covers 500 hours of theoretical instruction and three to four months of practical instruction in training camps. At the conclusion of the normal training cycle candidates are admitted to a rigorous examination for a commission as platoon leader.

Enlisted men of the army possessing the necessary secondary education are given a special course of instruction, and after serving with the colors for one year they may be admitted to examination for a commission in the reserves on the same terms as college and university men. Reserve officers of both categories may qualify for commissions in the regular army. Reserve officers of subaltern grade are subject to call until 40 years of age. General staff and general officers remain available until 45 and 50 years of age respectively. They are, as a rule, assigned to territorial organizations and do active duty not exceeding two months in any one year until they have a total of 12 months active duty to their credit. Reserve officers are, moreover, required to participate in short exercises of application (3 to 7 days), and practical exercises within their respective units during manoeuvres. In addition the army provides cadre exercises and correspondence courses. The Ossoaviachim likewise conducts evening schools, cadre exercises and correspondence schools for reserve officers.

The tactical training of junior officers is limited to the platoon and company within the battalion, while the training of senior officers extends to the battalion and regiment within the division. The instruction is applicatory and practical. Conferences are exceptional. The author directs particular attention to the energy and haste with which the soviet authorities push the reorganization and training of their army in order to attain the highest degree of efficiency at an early date.

GERMANY.—*Wissen und Wehr*—November, 1932.
"Problems of the Czechoslovak Cavalry," by Anonymous.

The organization of the Czechoslovak cavalry, the unnamed author writes, though brought into existence under French tutelage since the World War, is, contrary to all expectations, not predicated upon the lessons taught by that great conflict, but rather upon some misconceptions which prevailed for a time immediately after the war. For this reason, and perhaps to some extent because of the character of the country, the Czechoslovak Army has been provided with a comparatively small cavalry component. It now consists of ten regiments organized into three brigades. Each brigade includes one cyclist troop and an Armored Car troop. Moreover, the regiment is subdivided into two squadrons (half-regiments) which has the tactical defect that reserves held out in action either reduce the combat strength of the regiment by one-half or it necessitates the breaking up of a tactical command. It is now

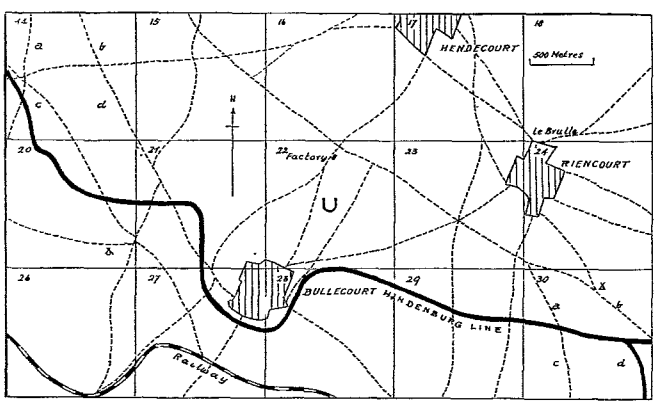
advocated that the regiment be provided with a machine-gun troop, a howitzer platoon and an armored-car platoon. Opinion is, however, divided as to whether or not the present tactical organization be continued. If decided in the affirmative, it is held that each troop (escadron) be provided with heavy machine guns. At present the regiment has 24 light and 12 heavy machine guns. This is deemed inadequate.

There is considerable discussion relative to the proper organization of the troop. It is advocated that the troop consist of a reconnaissance section, a machine gun section with two heavy M. G.'s, and three platoons. The first of these should contain the best horses and the best adapted personnel. It should carry 6 automatic rifles. Each of the three platoons would under this plan carry six improved type light machine guns. The regiment would consist of four to five troops (escadron) of this type, a machine gun troop, a cavalry-howitzer platoon, an armored car platoon, a communications platoon and a pioneer platoon.

The reinforced cavalry brigade is considered as best adapted to the special needs of that country. The peace-time organization of the brigade includes a cyclist battalion. The war-organization will also include a motorized infantry battalion. It is also proposed to augment the effectiveness of the cavalry brigade by the addition of a battalion of horse artillery of 3-4 batteries, reinforced according to necessity by motorized heavy howitzers; an armored car company of 3-4 platoons; a mixed air squadron of pursuit planes and bombers; communications, pioneer and supply companies, all motorized. In all recent maneuvres the cavalry brigades conformed to this general plan of organization.

It is anticipated that Czechoslovakian military authorities will undertake a far-reaching reorganization of cavalry irrespective of cost, in order to meet modern requirements.

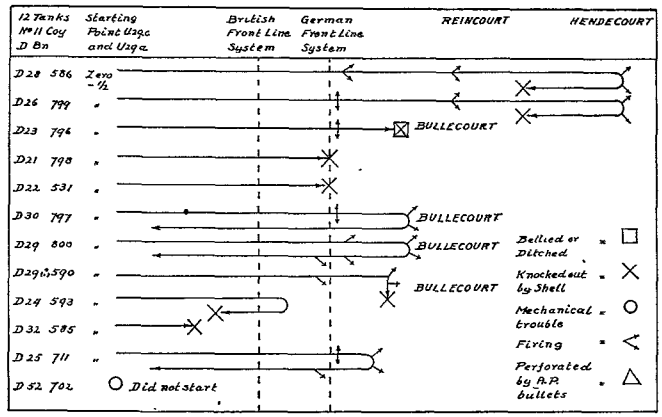
GREAT BRITAIN—*The Royal Tank Corps Journal*—July, 1933.



BATTLE FIELD IN BULLECOURT, APRIL 11, 1917

"The Tanks at the Battle of Bullecourt—April 11, 1917", by Major General J. F. C. Fuller, C. B., C. B. E., D. S. O.

The author presents a summary of the Australian, the Tank Corps and the German versions of the action on April 11, 1917, at Bullecourt, a strongly held small salient in the Hindenburg line. Although the British attack proved a complete failure, the author, who at that time was G. S. O.-1 of the Tank Corps, states that the British Fifth Army was unable to mass sufficient number of guns for the bombardment of the Hindenburg line at Bullecourt and to the east of it, and that circumstance prompted it to decide upon the use of tanks. The author states that the Fifth Army had only 12 tanks available, and that the Third Army, on its left had 48 but of these quite a number were out of action as a result of the battle of April 9. The Tank Corps, the author states, suggested that serviceable tanks be shifted from the Third to the Fifth Army, but that this proposal was disapproved. In any event, the author doubts if more than 20 tanks could have been assembled in the area of the Fifth



TANK OPERATIONS 11th APRIL, 1917, 12 TANKS OF NO. 11 COMPANY "D" BATTALION

Nos. 586, 799, 593	— Objective	Reincourt and Hendecourt
Nos. 796, 797, 800, 590	— "	Bullecourt
Nos. 798, 531	— "	U. 20.b.
Nos. 585, 711	— "	U. 30.d.

Army. In his opinion, the attack was unsound because of insufficient time for preparation, unfavorable weather conditions and insufficiency of the number of tanks available. He states, that the ground was covered with snow which made each advancing man and tank loom like a bull's-eye. Notwithstanding the unfavorable conditions, the author states, there is evidence that at least two tanks had reached Hendecourt, about 2500 meters behind the Hindenburg line, and he quotes German testimony to show that in spite of the failure of the attack, the enemy was strongly impressed by the accomplishments of the tanks. Whether or not the tanks actually crossed the Hindenburg line, the author adds by way of conclusion, is immaterial. The fact remains, that Tank Corps H. Q. rightly or wrongly believed so, and that the tactics of the great tank victory at Cambrai, on November 20, 1917, were based upon that belief.

NATIONAL GUARD TRAINING ACTIVITIES

Coast Artillery Activities at Fort Ontario, Oswego, N. Y.

By Lieutenant Colonel Allen Kimberly, Coast Artillery Corps

FORT ONTARIO, at Oswego, N. Y., was the scene of the usual training activities of the Coast Artillery, New York National Guard, consisting of Brigade Headquarters and Headquarters Detachment, two regiments; the 212th C. A. (AA) and the 244th C. A. (TD). The 258th F. A., N.Y.N.G., also held its training in the same place and camp.

From a Coast Artillery viewpoint, both tactically and for the conduct of fire, Oswego and its environs affords nearly an ideal location. The camp, located on the reservation of Fort Ontario, is amply large for a regiment, and is equipped with permanent mess shacks and latrines. The post is permanently garrisoned by the 3rd Battalion of the 28th Infantry and Headquarters and Headquarters Company, 2nd Infantry Brigade. The reservation is situated directly on the waterfront of Lake Ontario at the mouth of the Oswego River. The town of Oswego (about 25,000 population) is on the two remaining sides of the post; it is divided into nearly equal parts by the river. This river forms the beginning of the Ontario and Hudson Canal and $4,000,000 has been spent recently in construction and dredging so that Oswego Harbor can handle the largest of the lake ships.

Ample land is available at a small cost for a firing point some two and one-half miles east from the camp directly in the lake. The main lake channel is about 25 miles off shore, therefore there is practically no interference by shipping and the weather and visibility conditions are usually exceptionally good. The surrounding country which is varied in character lends itself well to tactical exercises and dispositions while the inhabitants cooperate in every way regarding use of roads and land for dispositions and bivouac.

The town of Oswego affords ample amusement for officers and enlisted men during "off hours," with hotel, clubs, restaurant, shops and motion picture theaters. The inhabitants are especially friendly and hospitable to the army. Swimming in Lake Ontario is excellent.

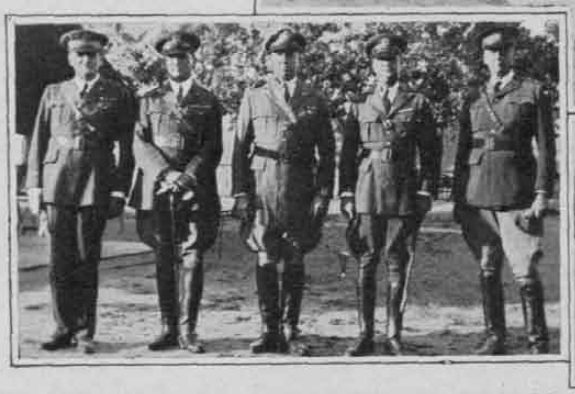
The present air field is at Fulton, N. Y., 10 miles south of Oswego. It is adequate for day work but is not equipped for night flying. This deficiency can be remedied easily.

The officers of both regiments fraternized with the post and town people. Each regiment gave a dance for the officers and ladies of the post and their civilian friends from the city.

General Friedrich von Böetticher, German military attaché at Washington, spent three days in Oswego during the last week of the 244th's camp.

The high social spot of the camp was Capt. Green's "semi-annual" birthday party held by the officers of the 244th C. A., at Three Rivers, where General and Mrs. von Böetticher were guests of honor.

The actual training activities this year consisted of a two weeks' camp by each regiment. The 212th C. A., at 99% of full strength, commanded by Colonel William Ottmann, arrived on Sunday, June 25th, in two sections of pullmans, established camp and began activities immediately after field mass which was attended by the entire regiment. Guns were taken to firing points by tractors, emplaced, base lines and communications set up and completed by 11:00 A. M. Monday. Two airplanes, under two experienced pilots, Major Brower and Lieutenant Hooker, A. C. (N. Y. N. G.), of the 27th Division Aviation arrived on Mon-



Above—Field mass attended by the 212th CA (AA), N.Y.N.G., conducted by Father Sheridan. Lower left—Brig. Gen. William E. Cole, Brig. Gen. John J. Byrne, Lt. Col. Allen Kimberly, Maj. Philip K. Rhinelander and Maj. Phelps Stokes. Lower right—Maj. Gen. Frederick von Böetticher, reviewing the 244th CA. N.Y.N.G., at Fort Ontario. The staff, from left to right: Brig. Gen. John J. Byrne; Lt. Col Allen Kimberly, Instructor; Maj. P. K. Rhinelander, and Lt. John Graham.

day afternoon and were ready for tracking on Tuesday, A. M. The work of the 27th Division Air Corps was excellent in every way and the cooperation extended, all that could be expected.

The Machine Gun Battalion set up a 1000″ range and began firing thereon Monday morning, and at free balloons on Wednesday morning. Preliminary and record firings were conducted during the second week. On the evening of July 4th fire at free balloons was conducted at Fort Ontario by the machine gun battalion assisted by the Searchlight Battery and the Naval Militia. This activity, largely attended by the people of Syracuse and Oswego, was preceded by a parade and followed by a concert. Field day was held on the afternoon of July 4th after artillery work had been finished.

The gun battalion spent two days tracking—this length of time being necessary to get the untrained observers to closely follow the target and the altimeter details to give accurate altitudes smoothly. This year was the first that the 212th was equipped with the "follow the pointer system" and conducted Case III fire. The only difficulty encountered was with the director, storage battery and cable connections due to their age and hard usage. These difficulties were overcome and satisfactory practices held ending on July 4th. Equipment was brought in and a tactical exercise held on the ground with all equipment disposed on 5th and 6th of July. All wire obtainable was laid (about 20 miles). The Chief of Coast Artillery, Major General John W. Gulick and The Adjutant General of the State of New York, Brig. Gen. Franklin Ward, attended the camp during its last two days.

The regiment entrained and departed for New York on July 7th after a very successful camp.

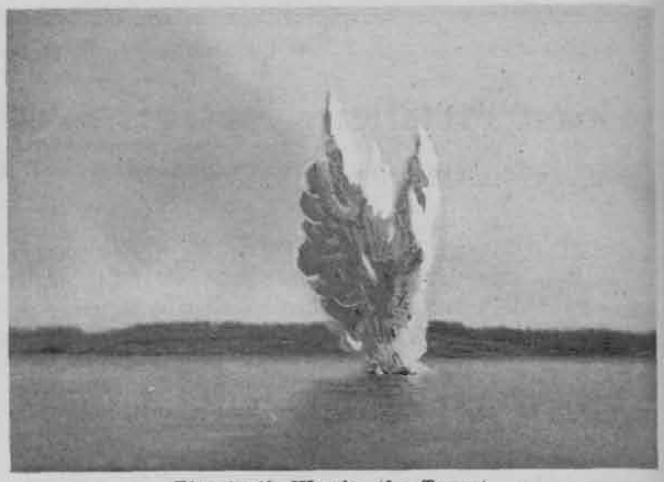
The 244th C. A. (TD), Colonel Louis Thierry commanding arrived on Sunday, July 8th, at 7:00 A. M., with 94% present, and went into camp immediately. The coming activities of the camp were discussed in detail on Sunday. A two-day march and bivouac was held beginning Monday, July 9th, ending July 10th.

Guns were emplaced on July 11th and firing begun on the 12th. This firing was at a towed target at ranges of about 12,000 yards and over, except on one day it was necessary to decrease the range due to poor visibility. Satisfactory practices were conducted and target practice reports completed before the regiment left camp.

The Brigade commander, General John J. Byrne and staff and the detachment of the Coast Artillery Brigade, N. Y. N. G., trained concurrently with the 212th and the 244th, spending one week with each regiment.

Due to the impossibility of night flying, the activities of the searchlight battery consisted of instructing and training sound locator operators in the day time (blindfolded); picking up and following free balloons and bursts at night. Searchlight practices will be held by the unit at Miller Field, Staten Island, in October.

The 248th CA., WNG., Wrecks Two Targets in One Practice



The 248th Wrecks the Target.

ON June 10th the 1st Provisional Battalion of the 248th Coast Artillery (HD), Washington National Guard, under command of Major Edward C. Dohm, CA., WNG., moved by rail and water to Fort Worden, Washington, for its two weeks' field training. The Battalion is composed of a Battalion Headquarters, Headquarters Detachment, Medical Detachment, and three firing batteries. Upon arrival the troops were assigned to vacant barracks and the officers to the officers' club, thus making a canvas camp unnecessary. The three firing batteries—"A", "D" and "K"—were respectively assigned to 10-, 12- and 6-inch disappearing gun batteries.

The first week in camp was devoted to intensive drill for the range and gun sections and to subcaliber practices. Target practices were held on June 19th and 20th, with Battery A corralling a score of 118.50, Battery K drawing down 104.38, while Battery D furnished the thrill of all practices (score: a mere 98.32) when they wrecked both of the towed targets by direct hits, showing rare judgment in making one of the hits on the last ranging shot and the other on the last record shot, thereby saving the time necessary for the tug to return to the dock for new targets. The practices were followed by the customary critiques and also by a command post exercise.

This battalion had been using the new (tentative) infantry drill regulations and proceeded to demonstrate them during the camp. Some very favorable comment was forthcoming from the officers of the regular garrison when they saw the evening parades and other ceremonies put on under these regulations. As the battalion does not rank its own band, the music for all ceremonies was furnished by the 14th C. A. Band, and they cooperated to the fullest extent.

As an additional feature of training the officers of the 248th took over the details of Officer of the Day during the entire period of the camp, thus relieving the garrison of this duty which had been an added burden on such officers as had been left by the C. C. C.

The Alfred William Leach Post of the American

Legion at Olympia, Washington, had donated a perennial trophy for small arms competition by enlisted men's teams within the battalion, and this trophy was fired for by teams from each of the firing batteries, Headquarters Detachment, Battery D, of Olympia, winning the match.

Details for Service School

ARRANGEMENTS have been perfected for the attendance at the special course for National Guard and Reserve Officers at the Command and General Staff School at Fort Leavenworth next year.

Preference is to be given to those officers who have completed the Command and General Staff School Extension Course and those who have completed the advance course at the special service schools of their respective arms.

In case there are not a sufficient number of officers having these military educational qualifications to fill the quota of the National Guard, officers will be selected from those who have completed the special advanced courses and have in addition completed the first four subcourses of the Command and General Staff School Extension Course. In no event will an officer be detailed to take the course unless he has completed the four subcourses referred to above. This is the strict policy of the Chief of the National Guard Bureau and will not be waived under any circumstances.

The selection will be limited to field officers, but in case there are not a sufficient number of these grades to take up the quota captains may be detailed for the course. No officer on the Emergency Officers' Retired List, or who is drawing any kind of compensation from the Government for disability, can be detailed to take the course.

Another strict limitation imposed by the War Department is that officers detailed for the course must not be more than 48 years of age on March 1, 1934, and this age limitation will not be waived in any event.

Armory Drill Pay

IT has been suggested that all armory drills—those to be paid for and those for which no pay is provided—be carried on the same pay roll, with a notation to the effect that no pay is to be claimed for the "free drills." The matter has been taken up with the Chief of Finance and he is of the opinion that such procedure would very much complicate the calculation of pay rolls, and for that reason he would not authorize approval by the National Guard Bureau.

Only those drills for which pay is claimed under the limitations placed in the armory drill memorandum from the Chief of the National Guard Bureau, will therefore be entered on pay rolls.

The instructions direct that the number of Federal Pay drills to be held during the fiscal year 1934, will be limited as follows:

a. During the 1st and 2nd Quarters (July 1 to December 31, 1933 inclusive) not to exceed 16 Federal pay drills.

b. During the 3rd Quarter (January 1 to March 31, 1934, inclusive) not to exceed 8 Federal pay drills in addition to any part of the 16 drills not held in the 1st and 2nd quarters.

c. During the 4th Quarter (April 1 to June 30, 1934, inclusive) 12 Federal pay drills and no more, will be held.

d. In no event will the number of drills for which payment is made from Federal funds exceed eight (8) in any one month or thirty-six (36) during the fiscal year for any organization of the National Guard.

All drills held, whether for Federal pay or not, will be reported monthly on M. B. Form 100, with notation made on the form showing the drills for which Federal pay is claimed.

Family Life in the 243rd CA.(HD) R.I.N.G.

RHODE ISLAND being the smallest state in the Union, life becomes pretty much a community affair, and this holds good in the National Guard as well as in the home. Captain Frank B. Rhodes, Jr., commanding Battery I, 243rd C. A. (HD), A. A., Searchlights, of the Rhode Island National Guard, claims the record for family life in one outfit by offering nine sets of brothers.

The Rice brothers are twins, and the Bradshaws have a total of 24 years of service—12 each. There were three Dion brothers in the Battery but one joined the C. C. C. Captain Bradshaw challenges any other outfit to beat this record. Photograph was taken July 27, 1933, at Ft. H. G. Wright.

BROTHERS OF BATTERY I, 243rd C. A. (HD) R. I. N. G., A.A. SEARCHLIGHTS.

Back row, left to right—1st Sgt. J. D. Bradshaw, Jr., Sgt. C. W. Bradshaw, Sgt. C. Beauchain, Pvt. E. Beauchain, Sgt. W. Rice, Pvt. H. Rice, Sgt. G. Remington, Pvt. W. Remington, Pvt. N. Remington, Pvt. L. Dion, Pvt. G. Dion. Front row, left to right—Pvt. L. Jencks, Pvt. M. Jencks, Pvt. P. LeMoine, Cpl. D. LeMoine, Capt. F. B. Rhodes, Jr., Pvt. J. Langeuin, Pvt. L. Langeuin, Pvt. H. Dyer, Pvt. F. Dyer.

1933 Field Training of the 265th C. A. (HD), Florida National Guard

FLORIDA'S Coast Artillery Regiment has just completed another successful field training period, August 6-20, at Fort Taylor, Key West, Florida, the southernmost city of the United States. Fort Taylor has been the annual camp ground for the regiment during the past three years, and it has become the favorite place for this organization which has previously camped at Fort Barrancas, Florida, and even at Fort Monroe, Virginia.

The 265th C. A., FNG, commanded by Lieut. Col. M. R. Woodward, of Jacksonville, comprises a headquarters battery and band, five firing batteries and a medical detachment. Of these units, the headquarters battery, Batteries A and B, and the medical detachment are located at Jacksonville. Battery C is located at Daytona Beach, Battery D and the Band Section at Miami, and Battery E at Key West. The Instructor, Major R. T. Gibson, C. A. C., and the Sergeant Instructor, Sergeant Henry Bergfeld, C. A. C., are stationed at Miami.

The regiment arrived at Key West (which is advertised as being 340 miles south of Cairo, Egypt), at 5:00 P. M., August 6th. After a parade through the city, it settled down in tents at Fort Taylor, erected by the advance detachment, and prepared for the next day's work.

Fort Taylor constitutes the location of the armament for the HD of Key West, commanded by Major W. W. Rhein, 13th C. A., and cared for by Battery E, 13th C. A. The 1st Battalion of the 265th C. A., Batteries A, B and C, is assigned to the 10-inch gun batteries, and the 2d Battalion, Batteries D and E, is assigned to the mortar battery. These were the same assignments as the 1932 camp, so were not new to the units.

After the preliminary gun drills, subcaliber practices, various instructions and parades, the highlight of the camp became the big gun practices. The gun battalion fired record practice on August 15th, and the mortar battalion fired on the 16th. Twelve rounds were authorized for each battery, of which the first four rounds were used as ranging shots.

The scores made by the organizations were in general larger than last year, and compare very favorable with the scores made by the Hawaiian SCA Brigade, as published in the July-August Number of the COAST ARTILLERY JOURNAL. Scores are as follows:

Btry A, 10-inch guns	79.66
Btry B, 10-inch guns	100.07
Btry C, 10-inch guns	88.29
Btry D, 12-inch mortar	111.28
Btry E, 12-inch mortar	24.26
Average	80.71

Special mention should be made concerning the spotting system employed by the personnel from the Headquarters Battery. Results from this excellent spotting materially helped the Battery commanders in making proper corrections.

These scores were computed in accordance with Tr. Memo No. 1, WD, 1933, Par. 14. The firing of Battery D of Miami, commanded by Capt. Roger Carter, was exceptionally good, obtaining the highest score of the regiment, with 12-inch fixed mortars. Battery E obtained the lowest score, but suffered from a variety of troubles that was enough to discourage any battery. A feature of the firing was the experiment with a new range rake on the tug, designed by 1st Lt. R. W. Cooper and Tech. Sgt. Bosenberg. This range rake was designed to read the overs and shorts in yards, and the results tallied so closely with the camera records that it might be substituted therefor.

The rest of the camp training was practically ruined by weather conditions. The presence of three hurricanes near Cuba set up such abnormal weather conditions at Key West that there were continuous tortential rains and high winds for the remainder of the training period. Much trouble was experienced in trying to keep tents from departing at unusual times for unknown destinations. The regiment congratulated itself on completing its major work before further firing was impossible.

The camp was graced during the first week-end by the presence of Governor Dave Scholtz and U. S. Senator Fletcher, both of Florida. They were honored with a review, reception and dance, and given a tour of inspection around the defenses. The regiment was called out on state duty on one afternoon to act as an armed escort to Mrs. Machado, wife of the former President of Cuba, his family and relatives, during their passage through Key West to the north.

Governor Dave Sholtz and Senator Duncan N. Fletcher, visitors at the annual encampment of the 265th C. A., Florida National Guard, pose with Lt. Col. M. R. Woodward, the commanding officer.

NATIONAL GUARD NOTES

Operations of National Guard

DUE to drastic cuts in the Budget of the National Guard Bureau it will be necessary to curtail some activities during the present fiscal year. In arriving at the distribution of funds General Leach insisted that the field training of the National Guard be provided for completely. This has been done and all organizations have had their scheduled camps this summer. Funds will be reserved for those whose camps are scheduled for next June and they will have them on a normal basis.

A C.P.X. was scheduled for the Seventh Corps Area this year, but it had to be eliminated. It will be provided for when the budget goes back to normal and the funds for it can be provided.

Camp construction, maintenance and repairs are limited to emergencies only. It is to be hoped that the curtailment of this work will be compensated for by an allotment of funds from the Industrial Recovery Bureau. The National Guard Bureau has a project of several million dollars, and if the funds are made available there will be a lot of new construction and rehabilitation work undertaken.

Only 50 National Guard officers will be detailed for courses this year, and these will be limited to the General Service Schools and those pertaining to the combat arms. All school courses of the staff departments and corps have been eliminated for the year and no enlisted men will be detailed for any of the schools.

A limited allotment has been made for the pay of range keepers. This will be distributed to the States in an equitable way, based on the use that is being made of the home station ranges. The target range leases will be maintained on a normal basis, but in the renewal of leases it is to be expected that the rental will be materially reduced.

The alteration, renovation and repair of articles of the uniform and individual equipment must be proceeded with this year on a curtailed basis. The funds available under this project are limited to 25 cents per man for the entire year. Property and disbursing officers will have to get along with the allotment stated and forego projects to bring the total within the amounts allocated to the States. The same is true with respect to organizational equipment, for the care of which only a bare 20 cents per man will be made available this year. This includes labor and materials, except repair parts and cleaning and preserving materials, which will be supplied on requisition and charged to funds allotted to Corps Area and Department Commanders under appropriate projects.

Gas and oil for armory training is limited to an allowance for 18 running hours per motor vehicle. It also provides 96 hours flying time for each of the pilots of the 19 air squadrons.

Office equipment and supplies for the officers and enlisted men on duty with the National Guard has been cut to $15.00 per officer and $3.00 per enlisted man. This is about half of the normal and the supplies must be conserved to the end that they will provide for the requirements over the entire year.

With the curtailment of service school attendance it is contemplated that there will be a considerable increase in the number who will engage in extension course work. This has been provided for and sufficient funds allocated to take care of this.

No funds will be available for visits of instruction by officers and enlisted men on duty with the National Guard. In many of the States arrangements have been made by State authorities to supply oil and gas for private cars and the instructors can get around through this medium as far as practicable.

Funds have been set up to meet the normal expenses of sergeant instructors authorized by the regulations to the extent of one such instructor for each regiment and separate organization. This provides for 351 sergeant instructors. The remainder are to be relieved from duty with the National Guard and assigned to duty with the Regular Army and other activities of the Army in the Corps Area.

Funds for the complete administrative pay of organization and unit commanders authorized to draw the same under the regulations have been set up. In addition, there will be funds for the payment of 36 armory drills with normal attendance of officers and enlisted men. The schedule prescribed by the National Guard Bureau must be closely adhered to, for in it the payment for the last 12 drills of the year is to be carried over into the fiscal year 1935, and it is only through this expedient that the full 36 drills can be authorized and compensation provided for them.

The uniform project has been curtailed about one-third. Allotment of funds for the purpose will be on the basis of $2.50 per man for the continental United States and $1.25 per man for Hawaii and Porto Rico.

National Guard band supplies will have to be curtailed 50 per cent during the year. Funds have been allocated on the basis of $2.00 per bandsman and will have to cover the purchase of instruments for the entire year. Local repairs are chargeable under Project 16. No purchases of sheet music are authorized.

No funds are available for the purchase of ammunition, but it is understood that the National Guard is to receive its share of the ammunition to be made from funds allocated to the War Department under the National Recovery Act, so that a normal supply will be available for the field training next year.

The technical supplies and equipment furnished by the several supply departments of the Army must be limited to necessities for all of these projects have been trimmed down in order to meet the budget.

It is expected and to be hoped that the present conditions will pertain for only this fiscal year, and that the National Guard will get back on a normal basis.

Carry State Flag

ON certain State occasions the regiments of the Hawaiian National Guard carry the territorial flag. It is placed between the national colors and the regimental flag. A suggestion is ventured that this same idea might prove appropriate for consideration by the States of the Union. It would have the effect of giving the young men of the State who are serving in the National Guard an opportunity to see their State flag occasionally— an opportunity which is not afforded too frequently under the present procedure.

Guard-O-Grams

Administrative Pay

The Administrative pay of the National Guard is on an annual basis and has nothing to do with the number of Armory drills held by the organizations and units. The fact that Armory drills have been curtailed to 36 for this fiscal year does not in any wise affect the Administrative pay to which officers are entitled under the regulations.

Allowance of Gas Masks

Every effort is being made by the National Guard Bureau to increase the number of gas masks in the hands of the National Guard. Heretofore the allowance has been three for each 100 enlisted men. In furtherance of the plan the allowance has been increased to four per 100 men and as funds are available, the supply in the hands of state organizations will be brought up to the new allowance.

Status Bill

The details of the operation of the National Guard Status Bill are being worked out in the National Guard Bureau in cooperation with the Adjutant General of the Army. The new features of administration will be worked out in due time and all officers affected will be told what to do through their respective state authorities. It is of little use to try to speed up the process because it takes time to work out the details. It is contemplated that the National Guard Regulations will be changed to conform when they are given a general revision from time to time.

Getting Things Done in the O. R. C.

ELSEWHERE the JOURNAL carries an announcement of the award of a trophy to a Coast Artillery Reserve officer in each corps area who accumulated the greatest number of credit hours, by means of extension school work, during the past fiscal year. It happens that the honor man for the Seventh Corps Area, and incidentally, for the entire United States, is 2nd Lieutenant Wilfred D. Darling of the 955th C. A. (AA). It will be recalled that this organization won the Association trophy awarded to the Reserve regiment which established the best record in extension school work for the year ending June 30, 1932. It is quite apparent that there must be some excellent reason why this organization can consistently win trophies. Accordingly, the editor of the JOURNAL called upon the unit instructor, Captain William H. Sweet, C. A. C., for an account of the methods employed. Being bashful and reticent, Captain Sweet disclaims all responsibility for the record established by the organization, but gives credit unstintingly to the regimental commander, Lieutenant Colonel F. C. Tenney. Commenting on his methods Captain Sweet states:

"My job primarily consists of maintaining semi-monthly letter contact with all officers of the regiment. We publish a none too serious regimental bulletin—in each issue of which we show the active duty priority list based upon extension school work and other inactive duty hours earned between the periods of active duty. In case an officer drops below minimum requirements the Colonel sends him a personal note requesting cooperation. In making selections for active duty training, preference is given to the officers who have established the best record in other means available for earning credit hours. We have found that all are ready and willing to cooperate."

Coast Artillery Association Dance, San Francisco Chapter

ANYONE passing by the historic old building that now houses the Presidio Officers' Club on the evening of June 24th last would have seen it "all lit up" and have heard the strains of merry music coming forth. A gala event was in the making—the first dance of the San Francisco Chapter of the Coast Artillery Association.

According to the plans of the directors of the Chapter, three meetings per year were to be held, each to be sponsored by one of the three components of our arm. The Regular Army and the National Guard having already acquitted themselves most ably this year, it was now the turn of the Reserve Corps. Under the leadership of Colonel C. J. Mund, 627th C. A. Res., a committee consisting of officers of the Coast Artillery Reserve regiments in the San Francisco Bay Region was formed to devise ways and means to take care of our meeting. In view of its being summer time, with most people's thoughts fixed on methods of enjoying themselves, the committee felt that this meeting of the chapter should not be a technical one, but rather should take the form of a dance. Upon consultation with our brother officers of the Regular Army and the National Guard, it was found that this plan would just about "fill the bill." With this encouragement, the committee went ahead and planned to hold the dance.

It is but fitting and proper that the thanks of the dance committee be extended to Colonel C. B. Stone and Lieut. J. B. Hess of the 30th Infantry, to Colonel J. C. Johnson, Executive for Coast Artillery Reserves in Northern California, to Major W. R. Miller of the 250th C. A. and to Lieut. P. L. Harter of the 6th C. A. without whose able help and cooperation this dance could not have been the success that it was.

COAST ARTILLERY ORDERS

Colonel William A. Covington, from assignment San Francisco, to Presidio of San Francisco, August 15.

Colonel Frederick L. Dengler, from the Philippines, to Ninth Corps Area, Presidio of San Francisco.

Colonel Frank B. Edwards, upon his own application, retired from active service, August 31.

Colonel Arthur L. Fuller, from Hawaii, to 13th, Ft. Barrancas.

Colonel John T. Geary, from 9th C.A. District, to headquarters Ninth Corps Area, Presidio of San Francisco, for duty in connection with National Guard, November 1.

Colonel Homer B. Grant, from Hawaii to 14th, Ft. Worden.

Colonel Alexander Greig, Jr., retired for age, August 31.

Colonel Willis G. Peace, from Org. Res., Ninth Corps Area, Los Angeles, to Hawaii, sailing San Francisco, November 22.

Lt. Col. Malcolm P. Andruss, relieved from recruiting, Buffalo, to Dallas, Texas, August 15, for duty in connection with recruiting.

Lt. Col. Avery J. Cooper, from 62d, Ft. Totten, to Hawaii, sailing New York, November 1.

Lt. Col. Frank Geere, from coordinator, Sixth Corps Area, Kansas City, to recruiting, Indianapolis, October 9.

Lt. Col. James B. Taylor, from the Philippines to Ninth Corps Area, Presidio of San Francisco.

Major Arthur G. Campbell, promoted Lt. Col., August 21.

Major Reginald B. Cocroft, to sail from New York for LeHavre, France, August 16. Previous orders amended.

Major Clarence T. Marsh, promoted Lt. Col., July 1.

Major John B. Maynard, promoted Lt. Col., July 1.

Major Lawrence B. Weeks, from instructor, New York National Guard, New York, to National Guard Bureau, Wash., D. C., September 1.

Major Sydney S. Winslow, from office Quartermaster General, Wash., D. C., to First Corps Area, Quartermaster Corps, Boston.

Captain William R. Carlson, orders to 14th, Fort Worden, revoked.

Captain John S. Crawford, Fort Totten, will report to army retiring board, Governor's Island.

Captain Ephraim P. Jolls, from 62d, Fort Totten, to 7th, Fort DuPont, Delaware.

Captain Maurice Morgan, from Office, Chief Coordinator, Wash., D. C., to student, C. A. School, Ft. Monroe.

Captain Arthur W. Waldron, from Hawaii, to 8th, Fort Preble.

1st Lt. Porter T. Gregory, from duty with pilgrimage of war mothers, to Europe, to Detroit High Schools, Detroit, September 1.

1st Lt. Howard H. Newman, Jr., from Panama, to 52d, Fort Monroe.

1st Lt. Harry D. Nichols, CA-Res., promoted Captain CA-Res., August 18.

1st Lt. James F. Pichel, promoted Captain, August 1.

1st Lt. Joseph S. Robinson, promoted Captain, August 1.

1st Lt. Vernum C. Stevens, from C. A. School, Fort Monroe, to student, Quartermaster Corps, Motor Transport School, Holabird Q. M. Depot, September 1.

1st Lt. John A. Weeks, from 9th, Fort Banks, to student Quartermaster Corps School, Philadelphia, September 1.

2d Lt. John B. Ackerman, assigned to Air Corps, Randolph Field, October 15.

2d Lt. John G. Armstrong, assigned to Air Corps, Randolph Field, September 13.

2d Lt. Edward T. Ashworth, assigned to 6th, Fort Winfield Scott.

2d Lt. William H. Ball, assigned to Air Corps, Randolph Field, September 13.

2d Lt. Harry S. Bishop, assigned to Air Corps, Randolph Field, September 13.

2d Lt. Edward Bodeau, assigned to 62d, Fort Totten.

2d Lt. Laurance H. Brownlee, from Panama to 11th, Fort H. G. Wright, revoked.

2d Lt. Ethan A. Chapman, assigned to 69th, Fort McClellan.

2d Lt. Dabney R. Corum, assigned to 62d, Fort Totten.

2d Lt. Ira W. Cory, assigned to 52d, Fort Hancock.

2d Lt. George A. Crandall, promoted 1st Lt., CA-Res., July 14.

2d Lt. George H. Crawford, to Panama for assignment, sailing New York first available transport.

2d Lt. William A. Davis, Jr. (C.A.C.), Quartermaster Corps, from Louisville, to student, Carnegie Institute of Technology, Pittsburgh, September 10.

2d Lt. Merwin S. Dickson, transferred to Quartermaster Corps, August 15.

2nd Lt. Harold C. Donnelly, assigned to 52d, Fort Monroe.

2d Lt. Charles G. Dunn, assigned to 52d, Fort Monroe.

2d Lt. Frederic H. Fairchild, assigned to 61st, Fort Sheridan.

2d Lt. William G. Fritz, assigned to 2d, Fort Monroe.

2d Lt. Sidney F. Giffin, assigned to 51st, Fort Monroe.

2d Lt. Paul M. Gillon, assigned to 2d, Fort Monroe.

2d Lt. Thomas A. Glass, assigned to 61st, Fort Sheridan.

2d Lt. Edwin G. Griffith, from Panama to 11th, Fort H. G. Wright. Previous orders revoked.

2d Lt. Patrick W. Guiney, Jr., assigned to 52d, Fort Monroe.

2d Lt. Emory E. Hackman, assigned to 6th, Fort Winfield Scott.

2d Lt. Robert W. Hain, assigned to 52d, Fort Monroe.

2d Lt. Travis M. Heatherington, assigned to Air Corps, Randolph Field, September 13.

2d Lt. John J. Holst, promoted 1st Lt., July 1.

2d Lt. Ferdinand M. Humphries, assigned to 2d, Fort Monroe.

2d Lt. Harry Julian, assigned to 2d, Fort Monroe.

2d Lt. Edgar H. Kibler, Jr., assigned to 52d, Fort Monroe.

2d Lt. John H. Kochevar, promoted 1st Lt., July 1.

2d Lt. John J. Lane, assigned to 52d, Fort Hancock.

2nd Lt. Robert J. Lawlor, assigned to 61st, Fort Sheridan.

2d Lt. Robert C. Leslie, to the Philippines for assignment, sailing New York first available transport.

2d Lt. John H. Lewis, assigned to 2d, Fort Monroe.

2d Lt. Lafar Lipscomb, Jr., assigned to 13th, Fort Barrancas.

2d Lt. William B. Logan, assigned to 51st, Fort Monroe.

2d Lt. Robert R. Lutz, to Panama for assignment, sailing New York first available transport.

2d Lt. Arthur A. McCrary, assigned to 52d, Fort Monroe.

2d Lt. Francis J. McMorrow, assigned to 62d, Fort Totten.

2d Lt. Thomas K. MacNair, to Panama for assignment, sailing New York first available transport.

2d Lt. Samuel McF. McReynolds, Jr., assigned to 69th, Fort McClellan.

2d Lt. Richard L. Matteson, assigned to 14th, Fort Worden.

2d Lt. Frank T. Ostenberg, promoted 1st Lt., July 1.

2d Lt. Charles G. Patterson, assigned to 51st, Fort Monroe.

2d Lt. Lamar C. Ratcliffe, to Air Corps, Randolph Field, September 13.

2d Lt. William C. Reeves, to Air Corps, Randolph Field, September 13.

2d Lt. Arthur Roth, promoted 1st Lt., July 1.

2d Lt. Harry W. Schenck, assigned to Air Corps, Randolph Field, September 13.

2d Lt. William O. Senter, assigned to Air Corps, Randolph Field, September 13.

2d Lt. Frank H. Shepardson, assigned to 14th, Fort Worden.

2d Lt. Edgar O. Taylor, assigned to 63d, Fort MacArthur.

2d Lt. John F. Thorlin, assigned to Air Corps, Randolph Field, September 13.

2d Lt. Guy E. Thrams, promoted 1st Lt. July 1.

2d Lt. Harry S. Tubbs, assigned to 51st, Fort Monroe.

2d Lt. Robert A. Turner, assigned to 63d, Fort MacArthur.

2d Lt. Joy T. Wrean, promoted 1st Lt. July 1.

2d Lt. Frank J. Zeller, assigned to 6th, Fort Winfield Scott.

Master Sgt. Warren L. Pierson, 3rd, Fort MacArthur, retired, July 31.

Master Sgt. Charles W. Wyss, 15th, Fort Ruger, retired, August 31.

1st Sgt. Otto Bomka, 14th, Fort Worden, retired, July 31.

1st Sgt. James W. Brush, 1st, Fort Randolph, retired, August 31.

1st Sgt. Charles E. Clagg, 6th, Fort Winfield Scott, retired, August 31.

1st Sgt. John C. Collins, 9th, Fort Banks, retired, July 31.

ENGRAVING

The Coast Artillery Journal is prepared to render prompt and efficient service in filling orders for all classes of engraving, to include visiting cards, wedding invitations, announcements, Christmas cards and stationery.

•

MAGAZINES

We specialize in subscriptions for magazines and periodicals. Give us a chance to quote club rates. We will meet the price of any reputable magazine agency or broker.

•

BOOKS

We will obtain for you any book in print, foreign or domestic. Military books are our specialty. Substantial discounts given on all books ordered through us. Our service is convenient and economical.

•

The Coast Artillery Journal
1115 17th Street, N. W., Washington, D. C.

THIS IS NOT A PAID ADVERTISEMENT

BOOK REVIEWS

AN UNDIPLOMATIC DIARY, by General Harry Hill Bandholtz, Edited by Professor Fritz Konrad Krueger, Wittenberg College, 394 pages. Published by Columbia University Press, New York City, 1933. Price $3.50.

A book that is precisely what its title purports it to be. It is very doubtful if the late General Bandholtz would ever have consented to its publication in unexpurgated form for nothing hurts more than truth, and the record General Bandholtz left of his experience and observations as the American member of the Inter-Allied Mission to Hungary, 1919-1920, is the unvarnished truth concerning a situation that is one of the blackest blotches upon the much vaunted Allied fight "for Civilization." In recording these facts General Bandholtz has rendered perhaps one of his most valuable services, and by making this record available to the historian and the reading public, his widow has earned the gratitude of that portion of mankind which places a higher value upon truth and honor, than upon profit and self-aggrandizement, be it individual or national.

Roumania, an insignificant Balkan country before the World War, occupied a singularly happy strategic position, which enabled her to sell her services to the highest bidder, and then she calmly awaited what she believed to be the most propitious moment to strike in order to garner the reward. She gambled and lost. In a brief but brilliant campaign the combined force of German, Austro-Hungarian and Bulgarian troops under the leadership of Falkenhayn and Mackensen converged upon Roumania, smashed its army, occupied its territory and forced its government into a separate peace. That was in 1917. On November 3, 1918, Austria-Hungary acknowledged defeat and signed articles of an armistice. Taking advantage of the internal situation of the defeated Monarchy, Roumania six days later swooped down upon Hungary in open violation of the terms of the armistice in order to secure the territories promised her as a reward for her participation in the war on the Allied side.

On November 13, Count Michael Karolyi, head of the Socialist-Republican government of Hungary, believing that the French would grant better armistice terms than did the Italians, repaired to Belgrade to appeal to the French Commander, General Franchet D'Esperay. The new armistice opened up Southern Hungary to the Serbian armies while the Czechs surged in from the North and the Roumanians from the southeast. The events in Hungary during that turbulent period of hostile occupation, the unbridled pillage and systematic despoliation of that unfortunate country by Rouman, Czech and Serb is faithfully recorded in this most interesting historic document.

The straightforward directness, outright frankness,

simplicity of style and the keen sense of humor, which endeared the late General Bandholtz to all who knew him in and out of the Army, makes this "undiplomatic diary" a most readable piece of literature. General Bandholtz' estimate of the situation is right to the point. "All this billing and cooing at the Peace Conference," he wrote, ".....resulted in leaving a ravenous flock of turkey buzzards. Each one of these miserable little countries down here is utterly and absolutely devoid of all sense of international decency, and spends most of its time in devising schemes for robbing and irritating its neighbors.....The Supreme Council's prestige went a-glimmering when a steady stream of ultimata had no effect whatever upon that miserable little nation of Roumania. The Hungarians, although down and out on account of Bolshevism, are a much more virile nation than any of the others, and it would not astonish me at any day to see them turn and lick Hell out of the Czechs..... and then turn back on the Roumanians. The Serb, although as unprincipled looter as any of the others, is a mighty good fighter, and in all probability the Hungarians and Serbs will some time or other get together and be a hard combination for the other weaklings to go against."

The reader will lay aside this bald record of facts and events with the feeling, that if what happened in the 1000-year old Kingdom of Hungary was the result of the famous doctrine of the right of self-determination, then Justice and Honor alike demand that the wrongs be righted lest civilization be destroyed by its own iniquity.

FLEAU AERIEN—LA GUERRE AERO-CHIMIQUE ET LA DEFENSE ANTIAERIENNE, by S. de Stackelberg. 221 pages. Published by Imprimeries Reunis, S. A. Lausanne, Switzerland, 1932. Price Francs (Swiss) 6.50.

The author conceives of the aerial and chemical war of the future as a veritable scourge. He visualizes air attacks opened by bombers showering high explosives upon cities in order to open all buildings to the effects of asphyxiating and vesicant gases rained upon them by the following squadrons. Low-flying aircraft, undisturbed by antiaircraft defences will then finish the job by covering the area with dense concentrations of corrosive and toxic gases.

Although the author does not believe that aircraft or the chemicals necessary to inflict such havoc are at present available, he points out, that the menace actually exists. The conclusion is inevitable, that an adequate air defence is indispensable to any nation desirous to survive. The author differentiates between "static" and "dynamic" systems of antiaircraft defence. The first of these is content to assure home security, the second seeks to carry "defence" into hostile territory. He cites the United States and Great Britain as examples of the "static" defence plan. The author believes, that the aerial menace calls into existence a new defensive organization, and instead of distinct coast and air defences, he visualizes the de-

Bargains in Books!

Never Before at Such Low Prices

Now you can bring your library up to date at a surprisingly small cost by taking advantage of these unheard of prices on standard works of military value

The books listed below were produced for the COAST ARTILLERY JOURNAL by its associated publishers. In many cases the editions are nearly exhausted and will not be reprinted. The issues being limited, the first orders received will be filled at these extremely low prices.

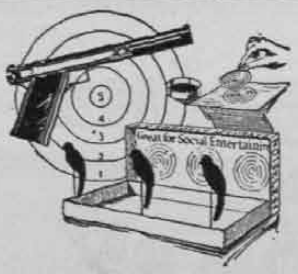
Ammunition for Heavy Artillery	**$ .20**
Military Motor Transportation	**1.50**
G. I. Expert and Mortar	**.10**
History of Fort Monroe *By Lt. Col. Robert Arthur*	**2.00**
Mechanical Maneuvers	**.20**
Army Posts and Towns *A Handy Reference Book*	**1.00**
Seiges of Yorktown	**.50**

The Above Prices Are Postpaid

A discount of 10% (postpaid) will be allowed on orders for any five books of the above titles

The Coast Artillery Journal
1115 17th Street, N. W., Washington, D. C.

THIS IS NOT A PAID ADVERTISEMENT



Two Hundred Army Officers Have Bought This Bull's-Eye Pistol Set

HERE'S REAL FUN
Plus Actual Pistol Training

By special arrangement with the National Rifle Association, we offer you the famous bull's-eye pistol, the most accurate and inexpensive toy pistol ever manufactured.

Through the simple medium of a No. 33 heavy rubber band, the bull's-eye pistol drives a No. 6 chilled shot with uncanny accuracy and speed. It's an easy matter to "kill" the celluloid toy birds (see cut) at twenty to twenty-five feet. Especially effective on flies or other small insects at slightly closer ranges.

Use this inexpensive bull's-eye pistol to keep your trigger finger in trim. You will get real fun plus actual pistol training. Order a bull's-eye pistol set today. The box contains three toy birds, extra No. 33 rubber bands, a supply of shot, and small die for stamping bull's-eye targets. And the cost is only $2.50 postpaid.

COAST ARTILLERY JOURNAL
1115 Seventeenth St., N. W. Washington, D. C.

Reduced Prices!

On Standard Works of Military Interest

The following standard works, published by us, are offered at prices considerably below those at which they were formerly sold.

Fundamentals of Military Strategy	**$2.50**
Reserve Officers' Examiner	**1.50**
Drill and Evolutions of the Band	**1.50**
Thirty Minute Talks	**1.50**
The Marne Miracle	**1.00**
Terrain Exercises	**1.50**

The above prices are postpaid

A discount of 10% (postpaid) will be allowed on orders for any five books of any of above titles

The Coast Artillery Journal
1115 17th Street, N. W., Washington, D. C.

THESE ARE NOT PAID ADVERTISEMENTS

velopment of each country into a veritable single fortress.

The author covers his subject very completely. The book contains a great amount of technical matter of considerable interest, much of it in tabulated form. Some of his conclusions may be visionary and fantastic, but on the whole, the study he presents, though dry and difficult reading, is worthy of attention.

THE FIRST WORLD WAR—A Photographic History, edited by Laurence Stallings. Simon and Schuster, New York, 1933. Price $3.50.

An interesting collection of photographs chronologically arranged, beginning with a picture of the Congress of Vienna of 1815, when the principal Powers met to re-draw the map of Europe; Bismarck dictating the terms of peace upon the conclusion of the Franco-Prussian War, and the Algeciras Conference in 1906, down to a collection of newspaper clippings and headlines of April and May, 1933, featuring Roosevelt's efforts to end the war, to disarm the world and to inaugurate an era of peace. Between these extreme limits, the collection portrays the outstanding events of the troubled world. There is Archduke Franz Ferdinand's bullet riddled coat, scenes of battles on the far flung fronts of the great conflict, reproductions of propaganda leaflets issued by the governments of the various nations at war.

The title of the collection is too pretentious to be warranted. By no means can the work lay claim to being a photographic history except as a merest outline. Neither the French nor the Germans ever claimed as much for their far more complete, magnificent publications of war photographs. This collection does not even scratch the surface of material actually available. As far as it goes, it should be a welcome addition to the bookshelf of the collector of war books, an attractive souvenir to the actual participant.

Coast Artillery Board Notes

(Continued from page 385)

instructions covering the subject. Suggestions on this subject will be most welcome.

7. **Lettering Guides for Master Gunners.**—The Coast Artillery Board was required recently to report on the practicability of standardizing some device to assist master gunners in lettering. There are no such devices included in the present equipment. The Board recommended to the Chief of Coast Artillery that the matter be taken up with the Chief of Engineers with a view to deciding upon and issuing a practical device of this kind.

8. **Exercising of Certain Railway and Harbor Defense Materiel.**—The Coast Artillery Board was required to comment on the desirability of using compressed air and gravity in the exercising of certain seacoast and railway gun carriages in lieu of firing this armament to test its serviceability. The Board recommended the use of such methods, and it is noted that in the Minutes of the Ordnance Committee Meeting of August 10, 1933, such methods were approved.