

CONTENTS—Continued

No. 2

A Battery of the Eleventh Field Artillery at the Top of Kolekole Pass, Hawaii	<i>Frontispiece</i>
Extracts from the Diary of an American Observer in Morocco	115
"Airplane Maps in Twenty-Four Hours"	156
By Brigadier-General Paul B. Malone, U. S. Army.	
A Valley Forge Orderly Book	159
By Lieutenant-Colonel Charles B. Heston, Jr., F.A.-Res.	
Winning the Knox Trophy	162
By Lieutenant Ernest A. Bixby, Commanding Battery "A," Eighth Field Artillery.	
Proficiency Tests in the Army	169
By Captain C. B. Thomas, F.A.	
The Second Field Artillery Brigade on the March	180
By Lieutenant John J. Binns, 12th F.A.	
How Purdue Features Military Ceremonies	184
By Cadet Major W. G. Hinckley, Purdue R.O.T.C.	
The Annual Report of the Chief of Field Artillery for 1924-1925	190
Foreign Military Journals—A Current Résumé	210
Current Field Artillery Notes	218
New Uniform Coats.	
Metric Standards.	
War Department Appropriation Bill for the Fiscal Year 1927.	
The Annual Convention of the National Guard Association.	
First Field Artillery Entry in the Knox Trophy Competition.	
Notes on National Guard Training, 1924-1925.	
Regimental Notes from the Thirteenth Field Artillery.	



A BATTERY OF THE ELEVENTH FIELD ARTILLERY AT THE TOP OF KOLEKOLE PASS, HAWAII

THE FIELD ARTILLERY JOURNAL

VOL. XVI

MARCH-APRIL, 1926

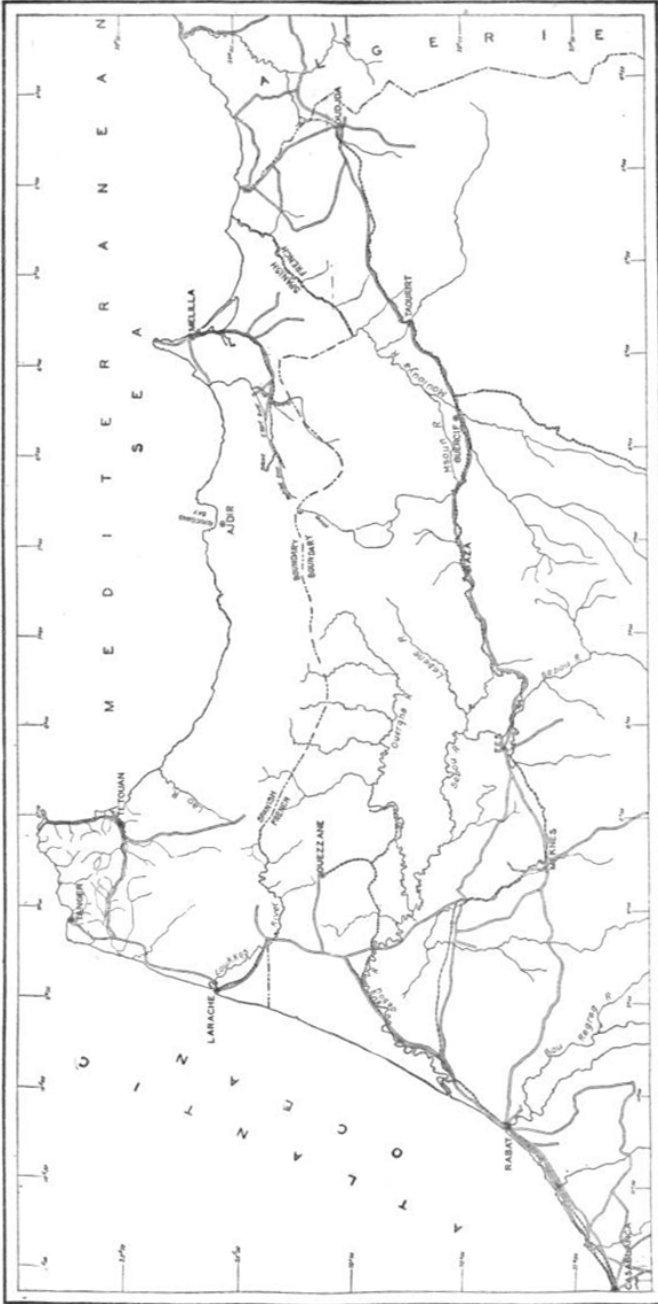
NO. 2

EXTRACTS FROM THE DIARY OF AN AMERICAN OBSERVER IN MOROCCO

DURING the latter part of July, 1925, our military attaché in Paris reported to the War Department that he was unable to get any information worth while on the activities going on in the French Zone in Morocco. He was directed by the Assistant Chief of Staff, G-2, to approach the French War Office, with a request for authority to send an American army officer to the French Zone in the capacity of an official military observer. This request was promptly denied. The reasons given were that, if the United States were authorized to send an observer to the French Zone in an official capacity, the same privilege would have to be granted other nations who made similar requests; and as there were no facilities available for caring for a foreign mission, the French War Department did not care to authorize the organization of such a mission.

The Minister of War, however, indicated to our military attaché that there would be no objection to sending an officer to the French Zone in other than an official military capacity. Upon receipt of this information, the Secretary of War directed that a War Department general staff officer be ordered to proceed to Paris with the least possible delay, there to report to the military attaché, with a view to making the necessary arrangements whereby he could get to the French Zone before active operations ceased.

Lieutenant-Colonel Nelson E. Margetts (F. A.), G.S.C., was accordingly detailed and sailed from New York, August 12th; arrived at Paris August 22nd; and there it was found that Mr. Roberts, head of the Associated Press in Europe, was willing to accept an observer as a war correspondent for the Associated Press, with the understanding that he was not under obligation to write for publication. A visit to the Minister of Foreign Affairs resulted in obtaining a personal letter addressed to Marshal Lyauty, then Resident General of the French Zone. Furnished with the approval of the French Government to enter Morocco, and equipped with credentials as a war correspondent, the next problem to solve was to arrange for transportation to the French Zone. It was found that



FRENCH AND SPANISH MOROCCO

THE ACT OF ALGECIRAS, SIGNED IN JANUARY, 1906, TO WHICH THE UNITED STATES WAS ONE OF THE SIGNATORY POWERS, PROPOSED ECONOMIC EQUALITY AND THE PRINCIPLE OF THE OPEN DOOR FOR ALL. ALTHOUGH NUMEROUS TREATIES CONCERNING MOROCCO HAVE SINCE BEEN ADOPTED, THE UNITED STATES STILL CARRIES ON UNDER THE ACT OF ALGECIRAS. IN MARCH OF 1912, FRANCE SIGNED THE TREATY OF FEZ WITH THE SULTAN, UNDER THE TERMS OF WHICH A PROTECTORATE WAS ORGANIZED AND A FRENCH RESIDENT GENERAL WAS THE SOLE INTERMEDIARY BETWEEN THE SHERIFIAN EMPIRE AND FOREIGN POWERS. THIS FRENCH PROTECTORATE IS SOUTH OF THE BOUNDARY LINE RUNNING ACROSS THE CENTRE OF THE MAP. THE SPANISH ZONE EXTENDS BETWEEN THE FRENCH AND THE MEDITERRANEAN, EXCEPT FOR THE CITY OF TANGIER, WHICH BECAME AN INTERNATIONALIZED ZONE BY TREATY OF ENGLAND, FRANCE AND SPAIN IN 1923 AND 1924. THIS WHOLE TERRITORY IS INHABITED BY THE NATIVE TRIBES, OF WHICH THE MOST WARLIKE, THE RIFFS, ARE ONE. THE TERRITORY OF THE RIFFS IS A MOUNTAINOUS STRIP ABOUT 15 MILES WIDE ALONG THE MEDITERRANEAN, EXTENDING FROM ABOUT 25 MILES EAST OF AIDR TO ABOUT 40 MILES WEST OF THAT PLACE. IN APRIL OF 1925 THE UPRISING OF THE RIFFIAN TRIBES, SPREAD UNTIL IT CROSSED THE FRENCH FRONTIER. THE RIFFS HAD ARRIVED WITHIN 20 KILOMETRES OF FEZ AND WERE WITHIN SIGHT OF TAZA BEFORE MARSHAL PETAIN ARRIVED WITH SUFFICIENT REINFORCEMENTS TO ORGANIZE AND ASSUME THE OFFENSIVE IN JULY, 1925.

EXTRACTS FROM THE DIARY OF AN AMERICAN IN MOROCCO

there were numerous routes that could be followed. The most rapid was the air service. Investigation showed that all accommodations over the air route from Paris to Rabat were engaged for at least a month in advance. A visit to the steamship offices showed that accommodations on all boats leaving Bordeaux, Lisbon and Marseilles for Casablanca were booked for at least ten days. As a last resort, the military attaché at Madrid was telegraphed and asked if he could obtain permission for the observer to pass through the Spanish Zone in Morocco. A reply was received stating that not only would the Spanish Government be glad to authorize the passage of the observer, but also for him to visit any part of the Spanish Zone enroute.

As a result of this investigation, Colonel Margetts left Paris on August 26th, passing *via* Madrid, Algeciras and Gibraltar to Tangier. Here he was met by the American diplomatic agent, Mr. Blake, and arrangements were made to proceed by automobile the following morning to Tetuan for the purpose of presenting his respects to the commanding general at that point. Tetuan is the headquarters of the Spanish Army in Morocco. Colonel Margett's diary begins at this point.

August 28, 1925

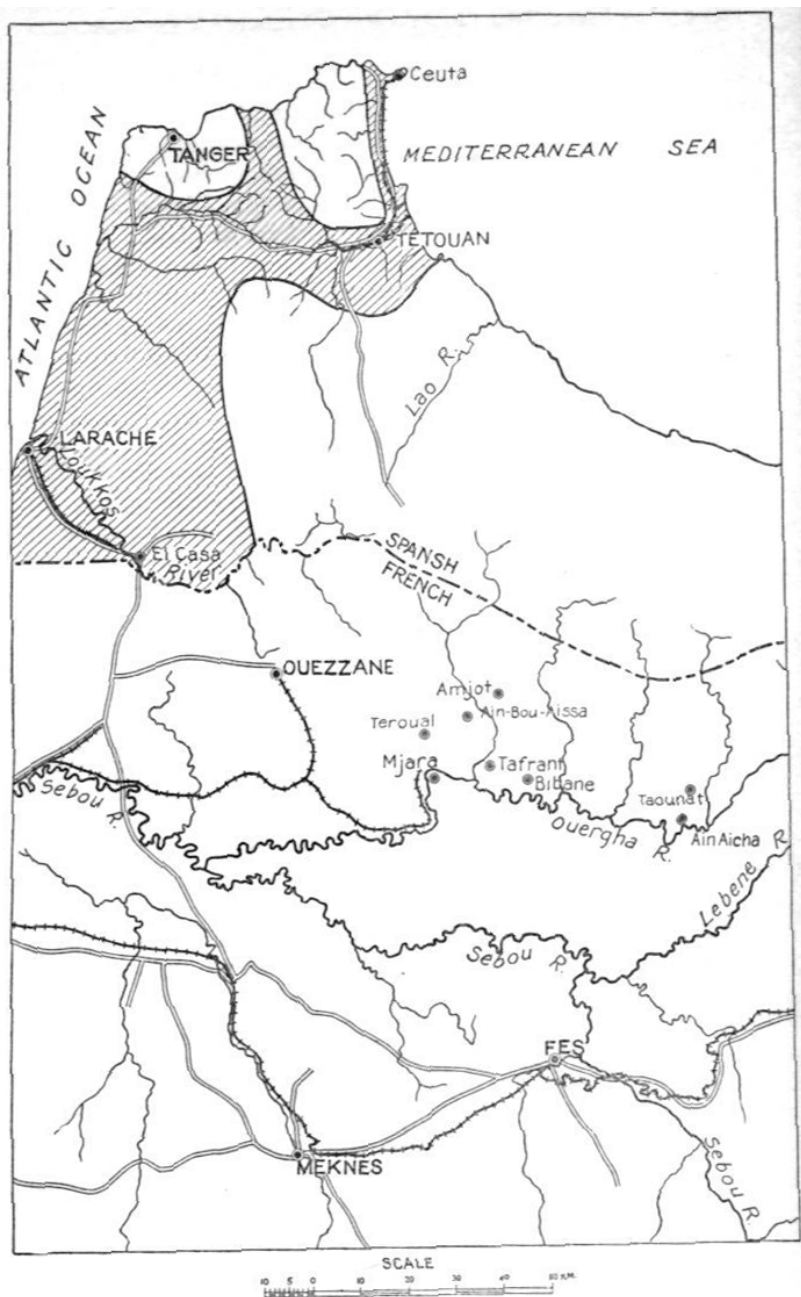
I arrived in Tangier on August 28, 1925, and left there by automobile next day at 2:15 P.M. for Tetuan, escorted by a Spanish major, a member of the staff of General Despujol, who is Chief of Staff to General Primo de Rivera when the latter is in Morocco. This officer commands the Spanish Zone in Primo's absence.

The trip to Tetuan was without accident. I was impressed with the Spanish outward show of protection for this narrow corridor.

After passing out of the Tangier Zone one travels over a good macadam road, lined on either side with a series of block-houses at intervals of from six hundred to one thousand yards, each surrounded by wire entanglements with trenches inside. These block-houses are connected by telephonic communication with a large concentration camp.

It is eighty kilometres from Tangier to Tetuan. This Zone is divided into three sectors, each sector into several sub-sectors. Each sector is commanded by a general who is not required to remain within the sector. The sub-sectors are commanded by a captain, or perhaps a major. Each sub-sector contains a number of block-houses in each of which there is a sergeant or corporal and eight men, who remain there for a fifteen-day tour of duty after which they go to the large sector camp for two months.

During daylight, several men from each block-house patrol the road in its vicinity and, in addition, a troop of cavalry moves out of



WESTERN PART OF THE WAR ZONE

THE CROSS-HATCHED AREA SHOWS THE APPROXIMATE TERRAIN ACTUALLY OCCUPIED BY THE SPANISH FORCES. CEUTA, DIRECTLY ACROSS FROM GIBRALTER, IS THE LARGE SUPPLY PORT FOR THE TROOPS AT TETOUAN AND IN THE TETOUAN-TANGIER CORRIDOR. THE SMALL PLACES IN THE FRENCH ZONE ARE PLOTTED APPROXIMATELY FOR CONVENIENCE IN READING THE DIARY.

EXTRACTS FROM THE DIARY OF AN AMERICAN IN MOROCCO

the large sector camp each morning and patrols the road during the day. Night orders provide that, if a block-house is attacked, detachments from adjoining posts are not to leave their stations but information is telephoned into the large sector camp. Trucks loaded with troops are immediately moved out from the sector camp to the support of the attacked post. I was told the Spanish had sixty thousand Spanish soldiers and fifteen thousand Moroccans in the Zone.

I arrived at Tetuan about 5 P.M. and stopped at the Alphonso XIII Hotel. About 7:30 P.M. I was taken to call on General Despujol, who told me he had been advised of my coming. He gave me a warm welcome. I explained that I was not visiting in an official capacity, but, since General Primo had authorized my passage through the Spanish Zone, I wanted to pay my respects to the Commanding General. He seemed much pleased to see me and asked if there was not something he could do for me. I explained I was anxious to get to the French Zone soon but would like to visit his aviation field before leaving. The General arranged to have two officers meet me on the following morning to take me to the field.

The following morning, August 30th, I went to the aviation field and found the Spanish have here between fifty and sixty planes of the bombardment and observation types. All are Breguet and Fokker types, the latter having Rolls Royce engines, the former—Fiat engines. There is only one pursuit plane here and that is a Fokker monoplane. The only activity in the air line is daily reconnaissance flights with one or two planes carrying machine-guns and twelve 11-kilo (about 24 pounds) bombs.

A type of machine gun new to me has been adopted. It is a French development and consists of two machine guns on the same frame, both of which can be operated at the same time or one at a time. It appears to be very effective.

A visit to the photographic section disclosed the fact that airplanes had taken photographs of Alhucemas Bay the day before in an effort to discover Krim's gun emplacements, as it is expected the long-delayed landing is to take place before the 5th of September. A number of small guns and many machine-gun emplacements were definitely located.

Rabat—September 2, 1925

As you will see, I started this at Tangier, but was so busy rushing around that I could not finish it, so will continue before going on.

After inspecting the aviation field, a visit was made to the radio station that has just been installed. It is the last word in radio telephone apparatus,—German made. The commanding officer told me that the day before the general commanding at Melilla had left

THE FIELD ARTILLERY JOURNAL

in an aeroplane for Madrid and that his staff had been able to talk with him all the way to Madrid. They have installed this apparatus on all bombing planes and say it works perfectly and they use the Morse system only occasionally. At this place they also have their truck trains, about seventy-five 5-ton trucks being kept here as well as a large supply of gasoline.

Six armored cars have just arrived, weighing about eight tons each, made in Spain and having an 80-horsepower Hispano engine. Each one carries a machine gun and a 37-mm. gun with a detachment of eight men. These cars are heavily armored and provision is made for the detachment to escape through the bottom of the car in case of accident, or if it becomes necessary to remove obstacles in the road under fire.

The trucks mentioned above are largely of German make and were received before the War, but are in good condition; the remainder were made in Spain.

Tetuan is the last large post on this part of the front and the Spanish lines are only about two or three miles out in front. The garrison is about six thousand of all arms with quantities of supplies and it would be a rich prize for Krim.

I returned to Tangier and left next day for Larache.

The impressions I gained from observations while going through the Corridor to Tetuan and returning were that the block-house system may be good for the morale of the men and may accomplish the purpose of protecting the road during daylight, but the distribution of forces over sixty miles in small detachments with orders not to leave the block-houses at night in case of attack, would permit an enemy like Krim, if he felt so disposed, to eat up these posts night after night, and ambush truck trains on the road as they moved out in support. I further gained the impression from conversations with many Spanish officers that, so long as Krim remains quiet, they will take no action against him unless some other nation forces their hand.

The method of supply to the small posts is by truck to a near point on the road, then by burro. In some cases the posts are on top of mountains, eight hundred to one thousand feet high.

The Spanish Zone from Tangier to El Casa, the last town in the Zone before crossing into French territory, is organized with a similar line of block-houses protecting the road, but there are no sector divisions and only one large camp beside Larache.

When one arrives in the French Zone great activity is observed. Roads are good, and there is a general air of bustle and movement.

When I arrived in Rabat this afternoon, I found a hustling, busy city. The French officers whom I met seemed to be on their toes.

I haven't much to tell of the French yet. I present my papers



THE ADVANCE SUPPLY BASE AT AIN AICHA



THE FIELD BAKERY AT THE ADVANCE SUPPLY BASE AT M'JARA



MOVING UP FOR THE ATTACK OF BIBANE



ADVANCE ON BIBANE

EXTRACTS FROM THE DIARY OF AN AMERICAN IN MOROCCO

tomorrow, September 3rd, to Headquarters, and then pull out for Fez. There I hope to be able to observe the field operations.

September 2, 1925

I arrived at Rabat by auto bus from Larache at 5:00 P.M., and went direct to the Palace Hotel, which is modern and comfortable. After a bath, I drove around the city and was not disappointed in my first impressions of the great activity carried on here by the French. Rabat has all the appearance of a French city,—all large stores are French and French officers and men are everywhere. The usual French cafes, with sidewalks crowded with tables, are all occupied by French, Arabs, etc.

September 3, 1925

Drove to the palace of the Resident General to present my credentials and here I was cordially received and issued the necessary press card.

By chance I met two young aviators, one from Fez and the other from Meknes, and passed the evening with them gaining some interesting information.

There are twenty-one air squadrons in Morocco, averaging eight planes to the squadron. These are distributed between the four main stations, Fez, Meknes, Casablanca, and Ouezzane. The planes are either observation or bombardment. The observation planes carry machine guns, the bombing carry machine guns and twelve 10-kilo bombs. In some cases 38-kilo bombs are carried.

These young men state that the Riffs have never employed air service against the French.

All of the air service is under the supervision and control of the commanding general. When an operation is decided upon, the commander thereof requests such air service as he thinks he will need; the general staff then issue the necessary instructions to the chief of air service (Colonel Armengaud) to furnish the service requested. Normally flights of six planes are sent out for bombing missions; for reconnaissance only one plane is employed. Some planes are equipped with radio but usually the plane flies low and drops messages.

September 4, 1925

Left Rabat at 1:00 P.M. in auto bus for Fez, where I arrived about 6:30 P.M. at the Trans-Atlantic Hotel.

During my trip I have been greatly impressed by the great herds of cattle, sheep, goats and camels. I never realized before that there were so many burros in all the world. Every Arab has one or more. The little fellows carry unbelievable loads but, strange to

THE FIELD ARTILLERY JOURNAL

say, I have not seen a vehicle of any kind drawn by a burro,—everything goes on the little fellow's back. At every station between Rabat and Fez one sees mountains of sacks of wheat. This valley is called the granary of France and she will never let it go. The road is good macadam with wells at intervals. A 60-cm. railroad is in course of construction paralleling the road to Fez.

September 5, 1925

Today I lunched with General and Madam de Chambrum.

During the afternoon I learned that there were 114 battalions of infantry in Morocco. There is a large landing field at Ain Aicha where air operations begin in the centre sector.

September 6, 1925

After patiently waiting all morning General de Chambrum came to the hotel about 1:00 P.M. to inform me that Marshal Petain would arrive in Fez on the 8th and would see me.

I lunched with a French captain who is in charge of all correspondents. From him I confirmed the presence of twenty-one air squadrons, not counting the American squadron, and a new squadron of large planes called the Goliath which have just arrived. I was told they were sent to experiment with as they carried a larger crew, carry bombs weighing one, two and three hundred pounds, and could keep the air much longer than the Breguet type now in use here. This squadron consists of six planes, not eight.

All officers I have talked with thus far state that the airplane is invaluable in this sort of warfare. While it is true that they do not get much physical effect on the enemy, they raise the morale of the French soldier and have a reverse effect on the Riffians. In fact, the French officers state that many of the posts surrounded by the Riffs were able to hold out until relieved because of the aid given by airplane. I have talked with a number of correspondents who have been here for months and who have been present in several advances, but whose ignorance of things military is pitiable. They are here to write a good story and all my questioning resulted in little information of value.

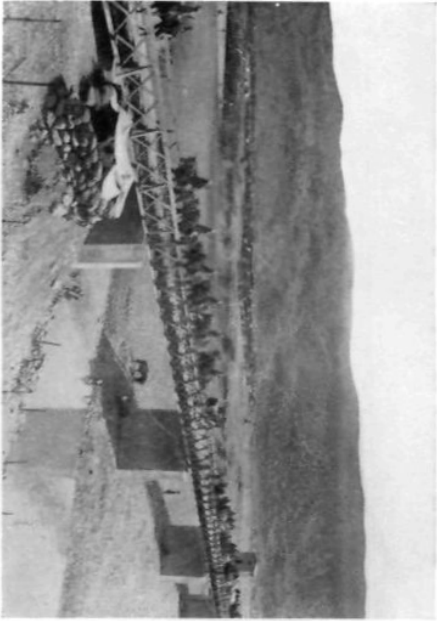
One of these correspondents stated that camions (trucks) carried supplies forward as long as the roads permitted. When they can go no further this becomes the advance distributing point for the column. From here, supplies are transferred to the backs of many small mules and burros, the former furnished under contract at two mules and one Arab for twenty-five francs per day. The Arab will not sell his burro but rents it out by the day. To protect the distributing point requires a large detachment. The mule convoy carrying forward supplies is protected by following close to the main column. One



KRIM'S HOUSE BEING BOMBED FROM THE AIR



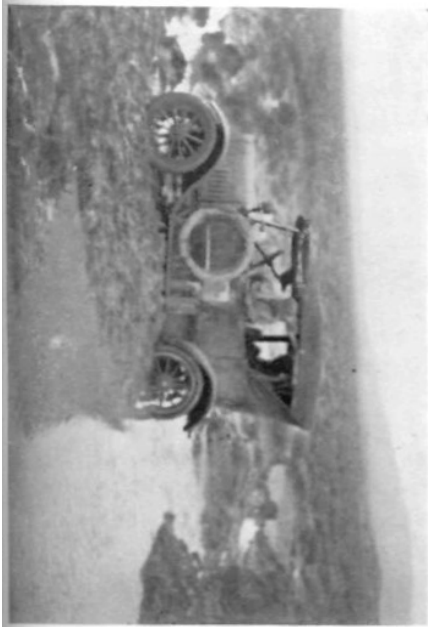
AIRPLANE PHOTOGRAPH OF THE ATTACK AND CAPTURE OF A VILLAGE



155-MM. HOWITZERS MOVING TO THE FRONT
NOTE TWELVE HORSES TO EACH PIECE.



FORD TRACTOR TAKING A 75-MM. GUN TO ITS POSITION



ROAD CONDITIONS ON THE EAST FRONT AFTER ONE NIGHT OF RAIN



MACHINE GUN OUTPOST

EXTRACTS FROM THE DIARY OF AN AMERICAN IN MOROCCO

reason advanced for the slow progress, is the great care with which the line of communication is secured.

September 7, 1925

In conference today with a captain of Moroccan cavalry (Spahis), I learned that there are twenty-five cavalry squadrons in Morocco, each squadron consisting of one captain, four lieutenants, one hundred seventy-five men, one hundred eighty horses. The men are equipped with rifles and the squadron has two machine guns and six automatic rifles. No grenades are carried. These squadrons are organized into regiments of four squadrons but rarely operate as such. For example, the 23rd Regiment, to which my informant belongs, has one squadron in Algeria, one in the South of Africa, and two on the Moroccan front. The colonel never sees his regiment assembled.

At present the front is divided into three sectors with two divisions in each sector. The right is commanded by General Boichut, the centre sector by General Marty and the west sector by General Pruneau. General Naulin officially commands all troops in Morocco. General de Chambrum is in charge of the political situation as regards the different Arab tribes in the Fez region.

French officers serving with Moroccan troops are required to serve two years, after which they may return to France. The Spahis have French officers and noncommissioned officers. The captain, with whom I talked, has been long in the African service. He states that the Moroccan Spahis is loyal and a fine soldier. They enlist for five years but almost without exception reënlist, and his squadron is composed of men most of whom have over eight years of service. The men at the front get as rations: Fresh beef (on the hoof), bread, vegetables, and cheese. No wine is furnished troops other than French. Horses get ten pounds of oats per day and graze when they can, no hay being carried.

September 8, 1925

I visited the military hospital, which is located in old Fez, and consists of a series of small buildings each having twenty beds with a total of two hundred eighty-five beds. This is an evacuation hospital and evacuates to Meknes. A great proportion of the wounded is from rifle fire, some from machine gun, some from artillery, and many by grenades. The surgeon states that the most difficult cases to treat are the grenade wounds, because of the small fragments that penetrate everywhere.

The wounded are collected at company and battalion aid stations and from there are evacuated by litter, carried between two mules,

THE FIELD ARTILLERY JOURNAL

to collecting stations, which are the points furthest forward to which trucks can proceed. From this point, the wounded are evacuated to hospitals at Taza, Fez, Meknes, and Rabat. Many evacuations are made by airplane from landing fields near the front. Two types of planes are used,— a large plane which can carry two lying and one sitting cases and a small plane which has been constructed with a view to landing and taking off from a small space. I was informed that this small plane can land and take off from a tennis court. It carries one sitting case. The chief surgeon informed me that they had thirty of them now. He said airplanes had brought in as many as thirty serious cases in a single day. Large numbers of wounded are being received from all points. There are many cases of gangrene due to the difficulty in getting the wounded out and back to the first-aid stations. At the hospital there are a few Red Cross nurses. The attendants are enlisted men.

Dined with Marshal Petain and his immediate staff tonight. He received me cordially. There is a big operation about to be pulled off which I hope to be able to see. General George, Chief of Staff to Marshal Petain, and two Spanish officers of liaison were present at dinner.

September 9, 1925

This morning I visited the aviation field just outside of Fez. It is a large well-organized field, the centre of French aviation in Morocco.

All aviation in Morocco is organized into a regiment, the 37th, commanded by Colonel Armengaud. The organization is getting top-heavy and it is expected a brigade will soon be organized. In April there were ten squadrons of Breguet 14 A2 planes in Morocco. The air reports for April, 1925, showed the following:

Flights	1,275
Hours flown	1,440
Kilos of bombs dropped	40,880
Wounded transported (from 100 to 400 kilometers distance)	17

In May the number of squadrons was increased to fifteen of Breguet and included some few Hanriot planes. This is a small plane capable of carrying one wounded man sitting. It is also used as a liaison and command plane but is slow, equipped with a rotary engine. The air service here is very enthusiastic over this plane, stating that it is peculiarly fitted for this type of warfare where landing fields are scarce and the enemy has no aviation.

During May the activity of the 37th Regiment was as follows:

Flights	2,392
Kilos of bombs dropped	120,560
Number of wounded transported	278

EXTRACTS FROM THE DIARY OF AN AMERICAN IN MOROCCO

In June the number of squadrons was twenty, consisting of Breguet and Hanriot. The activity in June was as follows:

Flights	2,037
Number of hours flown	1,387
Tons of bombs dropped	100
Wounded transported	220

To date there are twenty-two squadrons in Morocco as follows:

- 20 squadrons Breguet and Hanriot (about forty Hanriot Planes);
- 1 squadron of Goliaths;
- 1 American squadron in the service of the Sultan.

The six Goliaths just arrived from France are equipped with a Jupiter engine, the plane being marked F-60 Torp. It is now called the F-60 and carries a detachment of five or six men,—one of whom is a pilot, two machine gunners, one mechanician, one radio operator and one observer. The plane carries eight hundred liters of gas and is capable of remaining in the air for thirteen hours. It is equipped with six bomb racks, three on each side under the body. These racks are adjustable to carry fifty, one hundred, or two hundred-kilo bombs.

The Breguet is not equipped with radio. It carries one machine-gun of the two-barrel type. All Breguets are equipped to carry twelve ten-kilo bombs, and some have a bomb rack under each wing to carry two thirty-eight-kilo bombs in addition.

The pilots and observers do not carry parachutes and manifest little interest in them.

With the exception of the Goliath, which is equipped with radio, communication from plane to the ground troops is by dropped messages (contained in a small four-inch by six-inch canvas bag weighted with sand, the plane flying low to a height of twenty-five yards), or colored lights; from ground troops to planes by panels or white sheets.

Careful investigation discloses the fact that none of the French planes in Morocco are armored in any part.

Observation planes usually fly over the enemy lines at about one thousand metres. On bombing missions when troops are advancing, the planes fly at about one thousand metres; on bombing missions when troops are not advancing, at about two thousand metres. Adjustment of Artillery is made at about one thousand metres.

Many aerial photographs are being taken, as much of this territory has never been mapped. Very good results were obtained in locating many of Krim's batteries by aerial photography.

There is no distinction between air force and air service in the organization as maintained by the French in Morocco.

Normally three to five air squadrons are stationed in each of the three sectors, which are subject to call by the sector or corps commander.

THE FIELD ARTILLERY JOURNAL

When the sector commander requires additional squadrons they are released to him by the chief of air service for that operation only. Planes used for evacuation of wounded and sick are under control of the chief of air service, who works in close liaison with the chief surgeon.

The air service as a whole is rendering invaluable service to the whole army; it is an arm indispensable in this type of warfare; it has a wonderful moral effect on the French and the reverse on the Riffs.

When lines are stabilized for any time, the observation planes get out early in the morning and fly over enemy country searching for indications of any enemy movement. Just before sunset each day several bombing squadrons will fly over the enemy country and bomb villages and other sensitive points.

Upon my return from the aviation field I learned that a big operation was to commence on the tenth in the west sector. I at once arranged to accompany the advance and at 3:00 P.M. left Fez for Mjara, where I arrived at 8:30 P.M. the ninth. Although correspondents were expected, no preparation was made to receive them, and, having no blanket or food, I crawled under a pup tent very hungry, but slept well, even though cold.

September 10, 1925

I was presented to General Pruneau, commander of the western sector, who received me kindly and invited me to ride in his car to the assembly point. He told me the troops would jump off at 5:55 A.M. on the eleventh after an artillery preparation. The operation had one objective for the eleventh and one for the twelfth.

The third division under General Goureau from the centre sector was to assist. The purpose of the operation was to advance to the old French line at Ain-Bou-Aissa and then to push on to Amyot for the purpose of restoring the grand chief to the people of this part of the Beni Zeroual. This chief was loyal to the Sultan and was forced to take refuge in the French lines when these posts were abandoned in April. It was believed that the return of their chief would have great political significance and react favorably to the French arms, as many tribes had expressed a desire to come over to the French if the latter would protect them from the Riffs.

The 128th Division, commanded by General Hergault, was to support the main attack from the left.

Before leaving my bivouac I watched the departure of the 69th Brigade moving out at daylight. It was done smoothly and what looked like a tangled puzzle of troops unwound itself without confusion and moved out in order; infantry, 75-mm. artillery, 155-mm. artillery, mountain artillery, armored cars, light tanks on trucks,



THE GREAT CAÏD OF NORTH ALGERIA



SUPPLYING 75 MM. AMMUNITION NEAR KIFANE



GOMMES FROM ALGERIA

THE FRENCH ARE ABLE TO CALL TO TEMPORARY SERVICE CERTAIN OF THE FOLLOWING NATIVE ORGANIZATIONS: (1) MOROCCAN MIXED GOMS—A PERMANENT MIXED UNIT OF INFANTRY AND CAVALRY, RECRUITED BY ENLISTMENT IN THE SUBJUGATED TRIBES OF MOROCCO AND FULLY PROVIDED WITH OFFICERS OF THE FRENCH INTELLIGENCE SERVICE, NONCOMMISSIONED OFFICERS AND FRENCH AND NATIVE INSTRUCTORS FROM THE REGULAR TROOPS; (2) THE MAKHZENS—PERMANENT FORCES MADE UP OF MOROCCAN AND ALGERIAN CAVALRYMEN AND INFANTRYMEN, AND PROVIDED WITH OFFICERS OF THE FRENCH INTELLIGENCE SERVICE AND THE NATIVE GROUP CHIEFS; (3) PARTISANS—VOLUNTEER NATIVE HORSEMEN, ENROLLED FOR A STATED PERIOD VARYING GREATLY WITH THE CIRCUMSTANCES AND DESTINED TO FILL OUT THE DEFICIENCIES OF GOMMIERS, MAKHZENS AND REGULAR CAVALRY FORCES, AND PRIMARILY FOR THE PURPOSE OF DEFENDING THEIR TRIBAL TERRITORY, UNDER THE CONTROL OF THE INTELLIGENCE OFFICERS; (4) THE MEHALLAS—PERMANENT INFANTRY AND CAVALRY FORCES, WITHOUT OFFICERS OR NONCOMMISSIONED OFFICERS OF THE REGULAR TROOPS, AND LEFT AT THE DISPOSAL OF THE GREAT CAÏDS, OR NATIVE CHIEFS, UNDER THE CONTROL OF THE INTELLIGENCE OFFICERS.



MEHALLAS NEAR KIFANE



GROUP OF PARTISANS NEAR BIBANE

EXTRACTS FROM THE DIARY OF AN AMERICAN IN MOROCCO

with cavalry on both flanks. As the road was still passable, all units were accompanied by their wheeled transport. The company of fifteen tanks were carried to within two miles of the front where the grade became so steep that they were forced to proceed under their own power.

Seven air squadrons and an observation balloon have been assigned for this operation.

The 75-mm. artillery, both guns and caissons, are drawn by eight horses; the 155-mm. by ten horses.

I was attached to the headquarters of the 69th Brigade, commanded by a Colonel (Garcin), a fine old soldier who has spent thirty-two years in Africa. He received me kindly and told me to consider myself at home.

The troops have been going into position all afternoon. The 155-mm. artillery is registering on different points, the 75-mm. are all emplaced on the crest for direct fire and will do no registering as ammunition must be economized. Shrapnel and shell have been piled beside each gun, the proportion being about ninety per cent. shell and ten per cent. shrapnel. I found three different calibres of mountain guns being used, 65-mm. being equipped with recoil cylinders, and 75-mm. and 105-mm.

The observation balloon is an experiment and this is the first time it has been used here.

Two days' rations will be carried on the men and two on the mule convoy.

During the past ten days, trucks have been carrying supplies from the end of the 60-cm. railroad.

I attended a conference of a battalion commander and his officers this evening. He read the brigade order and then gave in detail his battalion orders. He stated that when time permitted he would put them in writing, but, as he received his orders so late (5:00 P.M.), he must transmit them verbally. His instructions were clear; his captains understood everything. It was a remarkable example of a battalion commander giving his orders verbally and hardly a question was asked.

The division commander, accompanied by the brigade commander, made a careful inspection of all units that are to advance tomorrow, after which he held a conference (all officers being present), on a crest which overlooked the objectives. The axis of advance and the sector of each brigade was indicated on the ground. He was very clear and I have no doubt all are prepared to perform their part tomorrow. The spirit of the officers and men is splendid tonight. The artillery preparation is to begin at 5:55 A.M. (daylight) tomorrow.

THE FIELD ARTILLERY JOURNAL

September 11, 1925

I was up at 4:00 A.M. to get my few things packed, drink a cup of coffee and move up to the front line to await the artillery preparation.

The first line battalions are moving down the front slope to positions from which they will jump off after the artillery preparation finishes. The artillery preparation opened at 5:55 A.M. on the minute. Twenty-four guns are firing on crests in our front, concentrating on cross-roads and other known sensitive points.

After a fifteen-minute artillery preparation the advance began. The advance was made in the usual line of skirmishes at two- to four-yard intervals, the supports and reserves following in squadron files at intervals of fifty to one hundred yards. Tanks preceded the advance, working across country. The 155- and 75-mm. batteries remained in position as they could support the advance to the day's objective. The mountain artillery is moving forward with the troops. I am impressed with the manner in which the brigade commander employs a battery of 65-mm. mountain guns. This battery follows him from position to position where he establishes his command post, and goes into position rapidly. When the brigade commander sees any particular resistance, he directs the battery commander to open fire.

No armored cars are being used as the ground will not permit. The balloon is up, but visibility is poor, and I doubt if they are able to observe. Two bombing planes only are up.

An ambulance section on mules is following closely. The equipment of each mule consists of a pack with a folding frame on each side which can carry a man either lying down or sitting. One mule has just passed carrying two wounded sitting cases. The jostling is no doubt painful, as evidenced by the expression on the men's faces, but, as the surgeon says, it is the only alternative.

Three tanks are following the reserves. They are pulling a small two-wheeled cart which is carrying the supply of gas and oil for all the tanks. A company of engineers is following with two-wheeled carts carrying tools, etc., for road repair and preparation of water supply.

As the troops advance, detachments of cavalry move out around the right flank to protect the advance from sniping. A squadron of two hundred fifty Mehalla, or troops of the Sultan, are just moving out on our left flank. This is the dangerous flank, as the artillery did not cover it. What a sight to see those Arab cavalymen on small Arab ponies, with capes attached to the shoulders of the riders, galloping at top speed over country that will permit,

EXTRACTS FROM THE DIARY OF AN AMERICAN IN MOROCCO

picking their way over rocky ground and along narrow trails and their little ponies climbing hills like mountain goats. I never saw a more impressive sight, with the main body moving along in the rear in dignified, massed, formation. As soon as an objective is obtained, a rocket is sent up which bursts with a brilliant white light that lasts for about a minute. The first objective was reached at 7:30 A.M.

We are moving forward again. Having no horse I must walk, but it is not yet very hot. The second objective was reached at 8:30 A.M. The advance continues, preceded by artillery fire.

No telephonic communication is attempted in advance of the brigade commander. Carriers are used. Each battalion is equipped with a heliograph which is used if the distance warrants it. Projectors were used for night communication and functioned perfectly.

The final objective, announced by a bursting rocket, was reached at 10:30 A.M.

A good deal of sniping is going on from our left flank. I can walk no further. The burning sun and lack of physical condition has greatly fatigued me. Two or three days of this will surely put me in fine condition.

The casualties in the 69th Brigade for the day's operation were as follows:

Killed	7
Wounded	26
Horses	8 or 10

The water situation here is critical; animals get none until we reach the river tomorrow; the men must make the best of what they have in their canteens. The convoy is not up and will not arrive until late. The colonel's mess is carried on one mule and contains some bread, a few canned goods and a few bottles of wine. The 155- and 75-mm. batteries are moving up this evening and going into position for the artillery preparation tomorrow. This is as far as the wheeled transport can go until roads are built. This is the line occupied by the French before their withdrawal in April. The balloon is also here ready to go up in the morning.

Two things impressed me greatly today; first, although I was well up with the brigade commander and used my glasses constantly, I did not see a single Riffian; second, the enormous amount of artillery ammunition expended against an unseen enemy. Of course this has a great moral effect on the advanced troops and certainly destroys the resistance of the Riffs.

The troops are all in position, machine guns and artillery emplaced, and constant sniping from the enemy is going on with our machine guns replying.

THE FIELD ARTILLERY JOURNAL

September 12, 1925

Up at 4:40 A.M. My ration of water is two cups to wash my face. After a cup of coffee, the colonel, accompanied by a staff of second lieutenants, myself and agents and couriers, moved down to the front line to await the artillery preparation. At daylight the artillery of both brigades opened up an intensive fire. Observation is very difficult as the sun is coming out brilliantly and directly in our faces. The Mehalla is moving out to hold a line of crests on our left that dominates our advance. At 8:00 A.M. the infantry moved forward and met with no resistance. Accompanying the colonel, we climbed down the mountain for more than a mile with the sun beating down. How those poor animals must be suffering, having had no water since yesterday morning. No wheeled transport of any kind accompanies the advance today. The convoy, entirely mules, must be carefully guarded, as we are advancing into a new country never before invaded by the French.

Rockets from the 69th and 70th Brigade advance troops, indicate that the objectives have been reached. We moved down into the valley, reached the river and found only a small dirty stream, but men and animals drink together. I don't see why the men don't all die; they are so healthy that they almost give the lie to our surgeon's precautions about treatment of water. The tribes in this sector did not expect an advance; their crops were still standing, piles of grain were everywhere, the only things missing are the people and the cattle. Some of the villages passed were in flames. Standing grain is being burned, and loot and pillage is permitted everywhere.

The advance continued without resistance to the final objectives which were reached at 11:00 A.M. The organization of the position commenced at once. This is to be the limit of the advance in this direction until the road is built up to our present position. If yesterday was a hard day, today was doubly so. I walked, climbed, and finally reached the command post where after a short time I felt fine, and I am getting stronger every day.

Colonel Garcin has been directed to reconnoitre for a better position which will be able to protect itself, guard the water source, and afford support to those tribes which it is expected will come in. In organizing for the security of the camp, which is to be of a semipermanent character, it is necessary to completely encircle the position with troops, install machine guns and artillery, and send up bright rockets at intervals during the night to illuminate the surrounding country. The French have learned from bitter experience that the fanatic Riffs will crawl up to the edge of the camp, hurl several hand grenades into the camp and get away. During the

EXTRACTS FROM THE DIARY OF AN AMERICAN IN MOROCCO

night of the twelfth and thirteenth, flares were sent up from different points at half-hour intervals.

The convoy is not up. The colonel's mess is exhausted and we must depend on the orderlies to forage our dinner. They are the prize looters and have just returned with six chickens, pigs, grapes and onions. Our dinner tonight was chicken, fruit and water,—no bread, no wine, which is hard on the French as these two articles are indispensable. Have not had my clothes off since the night of the eighth, neither have I shaved, and as a result I look like a pirate.

Villages are burning all around, sniping is going on, rockets are lighting up the surrounding country. Altogether it is a very impressive scene.

September 13, 1925

Today is to be a day devoted to the organization of the position, getting up supplies and general rest if such a thing is possible in a camp like this.

A few words about the organization of the divisions may here be of interest. Each division has two brigades usually commanded by colonels. These brigades have an infantry strength of five thousand men and are reënforced by cavalry, artillery, etc., when engaged in an operation. The Moroccan corps has the regular organization of three battalions, each battalion of four companies. The company has the following organization:

1 captain
2 lieutenants
162 men
20 mules

Each company has a machine-gun section of two machine guns and three automatic rifles. The men carry rifles and hand grenades. There is no battalion machine-gun company. The French organization of sixteen machine guns is too heavy for this country. Here there are but eight machine guns in the battalion, which can be grouped by the battalion commander for concentrated fire, if so desired. The problem here is one of mobility.

From my observations during the five days at the front, I found the discipline splendid, morale high, and, in questioning different officers, the loyalty of the troops unquestioned, except in cases of partisans, who are not soldiers but civilians and who are given a rifle with ammunition and five francs a day. They furnish everything else. The principal inducement to these men is that they are allowed to loot. They have been known to go over to the enemy when the latter was victorious.

The army corps and divisions have the usual staff organization of G-1, G-2, G-3, and G-4. The brigade staff usually consists of the

THE FIELD ARTILLERY JOURNAL

colonel, one lieutenant or captain, who acts as G-1, G-2, G-3, one lieutenant as G-4, and one officer who looks after the convoy and looks after the colonel's mess.

I obtained from the report of two units, their expenditures of ammunition during the operations of the eleventh and twelfth. These were as follows:

61st Moroccan regiment:	
Machine-gun ammunition	21,630
Rifle ammunition	4,223
Rifle grenades	88
Stokes mortars	170
75-mm. artillery ammunition:	
Shell	905
Shrapnel	92

September 14, 1925

Left the brigade at 8:00 A.M. this morning on my return to Fez, which I reached at 8:30 P.M. after an all-day trip by horse and motor. I came through in twelve hours, tired, hungry, and filthy, to enjoy a good bath, shave, clean clothes and a good dinner. I slept like a log until noon the fifteenth.

September 15, 1925

Today is a day of rest and for the preparation of my notes.

So far as I have been able to confirm the figures, there are one hundred fifty thousand French troops in Morocco. These are the average of figures given by officers of various grades. I feel that France is bound to win because she is adopting the only correct method,—fighting fire with fire. I mean she is employing African troops to fight Africans. Her troops are better disciplined, better led, and better equipped with every weapon that is effective in this war, and her troops are habituated to life-long warfare just as are the Riffs. Her officers are only required to serve here two years, but, as they receive increased pay, they usually ask for longer service.

There is some talk of finishing the campaign before the rainy season, but this seems impossible to me. The line abandoned last April has not yet been reached, although I believe that is their objective before the rains come.

The Spaniards were always in difficulty because they attempted to employ European troops to combat these people. Nature is all on the side of the Riffs, people whose standard of living is no higher than that of animals. They are accustomed to war and can endure unbelievable hardships. For instance, on the eleventh during the advance, a partisan was shot by mistake, the bullet passing entirely through him under his right shoulder. Notwithstanding this, he walked along back for a mile and a half to a dressing station. This is only one of hundreds of such examples as told by French officers.

EXTRACTS FROM THE DIARY OF AN AMERICAN IN MOROCCO

However great the problem of the Riffs as individuals may be, the mountainous country is a far more difficult one. The lack of water, the burning sun, and the absence of roads, make the problem a most difficult one to solve. I believe that the French will solve the problem if French politics does not prevent it.

I am preparing to go to the front in the centre sector tomorrow, then to the eastern sector, and after that a few days in Fez to confirm and collect certain reports that have been promised me.

September 16, 17, 1925

I remained at Fez writing up notes and improving contacts with a view to asking for information which it is impossible to get now.

Called on General Naulin, the commanding officer of all troops in Morocco, who received me cordially and gave me much information regarding French troops in Africa.

General de Chambrum invited me to accompany him to the front to remain for several days, but he was taken ill last night and will be in bed for a week or two as a result. I will leave at 6:00 A.M. for Taza with a view to getting up to Kifane, the outpost of the east sector.

September 19, 1925

Left Fez this morning at six o'clock for Taza which is one hundred twenty-one kilometres from Fez. The road is good macadam and paralleled by a sixty-centimetre railroad. This is the only railroad between Fez and Taza and continues on to Oudjda. A standard gauge railroad is not even being considered because of the tunnels that would be necessary.

Between Fez and Taza there are many bridges, all of concrete and all one-way. A telephone line carrying ten wires also parallels the roads. There are no troops stationed between Fez and Taza and the road is not patrolled. As a result there are frequent attacks on autos traversing this road after dark. Only day before yesterday, a mule contractor and a correspondent were attacked on the road, the contractor being killed and the correspondent wounded.

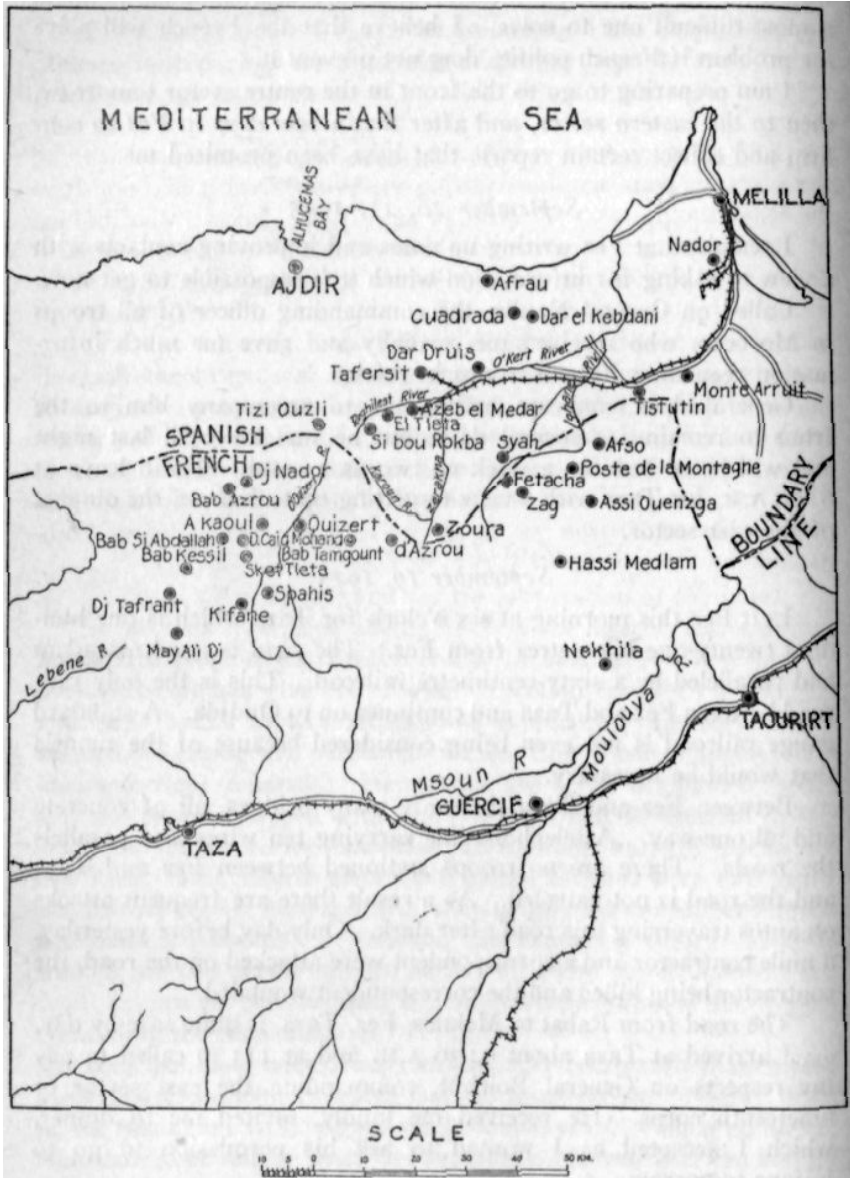
The road from Rabat to Meknes, Fez, Taza, is quite safe by day.

I arrived at Taza about 9:30 A.M. and at 11:30 called to pay my respects on General Boichut, commanding the east sector or nineteenth corps. He received me kindly, invited me to dinner, which I accepted as I wanted to ask his permission to go to Kifane tomorrow.

The Hotel Trans-Atlantic here is very good but has not sufficient accommodations. It is the only good European hotel in Taza.

Took a turn about the old city this evening. It is very picturesque and truly Arabic but has the usual narrow streets, reeking

THE FIELD ARTILLERY JOURNAL



EASTERN PART OF THE WAR ZONE

MANY OF THE SMALL PLACES AND FEATURES SHOWN ARE NOT IMPORTANT IN THEMSELVES; THEY ARE PLOTTED APPROXIMATELY TO ASSIST THE READER IN FOLLOWING THE DIARY.

EXTRACTS FROM THE DIARY OF AN AMERICAN IN MOROCCO

with filth and foul odors. I see nothing to rave about in these rotten, smelling, old towns. With the exception of a few of the better class of Arabs, the population clothe themselves in rags and their standard of living is not much above animals.

At dinner tonight besides the general there was his chief of staff, his chief of artillery, and his G-2. The conversation was very interesting. I told General Boichut that I had come over to find out why a French army of one hundred fifty thousand men, equipped with all the latest weapons developed during the World War, could not drive the Riffs into the sea. This rather amused the general, who told me of the difficulties encountered. He said it is not a question of defeating Abd-el-Krim, but a question of defeating nature, whose whole advantages favor the Riffs. He said this was a war of transportation, dictated entirely by the need of roads.

General Boichut is a very able commander. He takes this war seriously and does not underestimate the courage and efficiency of the Riffs as individual soldiers, whom, he thinks, are the best in the world. He made it clear to me that mobile columns could only act if their rear was protected and they had a sufficient convoy. The general has authorized me to go to Kifane if the advance commander considers it safe.

September 20, 1925

Left Taza at 6:00 A.M. in a Ford, accompanied by a reporter. Five kilometres from Taza the road runs between low-lying hills which gradually rise to the dignity of mountains. The French are constructing a macadam road through this canyon and, due to the freak changes of the water course, thirty bridges are being constructed of masonry and steel.

The colonel commanding the advanced sector stated that there had been a good deal of sniping lately and did not consider it safe to go without protection to Kifane. As a result, I was denied the pleasure of getting to Kifane. However, the colonel indicated that there was to be a small operation on the twenty-second for the purpose of clearing the immediate vicinity of the enemy.

Rumors of a large concentration of troops would seem to indicate that a large operation from Kifane is in progress in the next ten days. This is borne out by the fact that forty trucks each day are bringing supplies to the base and the further fact that there are at present four battalions of infantry at Taza and other troops enroute. Just what it is to be I don't know, though venture a guess it may be the beginning of the advance on Ajdir which is only sixty kilometres from Kifane. There is a field bakery here with a capacity of forty thousand rations every twenty-four hours and an ammunition dump is being prepared which reminds me of the large dumps in France.

THE FIELD ARTILLERY JOURNAL

There is a battalion of infantry with artillery, machine guns, and Stokes mortars at Kifane, distributed among the small posts. Here there is a battery of 155-mm. howitzers and two batteries of 75-mm. guns in position. The country to the north of Kifane rises to a height of 1800 metres and is of the roughest character imaginable. It is beyond description. One must see it to believe the great obstacles nature has placed in the way of the accomplishment of the French mission.

The organization in this sector consists of one corps of two divisions each of two brigades. Each brigade has a variable number of battalions, but an effort is being made to have the two brigades composed of two regiments of three battalions each, with two or three battalions of artillery, mountain and field.

In general the supply functions as follows: the regulating station for Taza is at Oudjda and Fez. This is made necessary because there is only the 60-cm. railroad from Oudjda to Fez.

The army delivers supplies to the sectors as follows: from Casablanca and Rabat to the west and centre sectors, and from Fez and Oudjda to the east sector. The corps or sector commanders distribute from the army base to the advanced bases at the front, from which point convoys of mules distribute to the posts and troops at the front.

The army is charged with the repair of roads as far as they go toward the front; the corps forward of this point. Each corps has two companies of engineers.

After spending three hours looking over the camp, I returned to Taza at 4:00 P.M.

Visited the aviation field this morning. Two squadrons are normally kept at Taza and increased as needed for operations.

All Breguet planes are equipped with the Renault engine of 300 H.P. The small Hanriot is equipped with the Rhone engine of 80 H.P. The Goliaths carry the Jupiter engine as previously reported.

I visited a battalion of the Foreign Legion which is about to leave for Kifane. The Foreign Legion has a total of four regiments, the first, second, third and fourth. The first regiment has seven battalions, the second three battalions, the third five battalions and the fourth four battalions. The Legion has no fixed number of battalions in a regiment. The headquarters of the first regiment is in Algiers and is the base depot for the other three where recruits are trained and distributed. All battalions are in Morocco except three. The battalion strength is at present about eight hundred men, forty per cent. of whom are German and forty per cent. Russians, the remainder, a melange of all nations. The officers are very enthusiastic about the fighting ability of their men who spend all their life

EXTRACTS FROM THE DIARY OF AN AMERICAN IN MOROCCO

in the field. It was suggested that they would be glad to have us send five or ten second lieutenants for attachment for a year. This might be worthy of consideration as the discipline is iron and the traditions of the Legion are beautiful.

From an economic point of view, Africa can support all the French troops with the important articles of the ration, that is, meat, flour, wine and fruits.

Today I was told that of the one hundred fifty thousand troops in Africa, twelve thousand are French, counting officers, noncommissioned officers and specialists. There are about four thousand officers.

September 21, 1925

Left Taza at 9:00 A.M. by auto bus.

The following troops were passed marching toward Taza:

- 1 battery mountain artillery, 65 mm.
- 1 battalion, 2 batteries, 155 mm.
- 8 tanks on trucks

and what appeared to be three pigeon lofts.

Arrived at Fez at 12:30 A.M.

In concluding these notes, I arrive at the following conclusions:

- (a) The war will not end this year.
- (b) Fighting will continue during the entire rainy season between the Riffs and the French airplanes.
- (c) The French will win eventually by means of slow but sure progress.
- (d) No doubt there will be suffering from lack of supplies in the Riff because of the blockade and the destruction of the grain and cattle by airplane bombing.
- (e) When the Riffs find that the French have stabilized because of the rainy season, I look for serious attacks on the Spanish at Tetuan as the Riff objective.

September 23, 1925

At 6:30 A.M. I left unexpectedly for the Ouezzane front. Am glad of this opportunity as I have not been to this interesting sector where I hope to see the American aviators. I took the mountain road north from Fez. This is a remarkable piece of French engineering. For some distance the road is of a good macadam, but beyond this the condition is terrible as the roadbed is under repair.

The advance base in the west sector, Mjara, is at the end of the 60-cm. railroad in this direction. From here the road permits trucks, automobiles, and horse-drawn vehicles to pass in the dry season. General Pruneau, the commander of the west sector, is still in Mjara. He has been here since the 8th and, now that his sector is quiet with no large operations in view, he is anxious to get back

THE FIELD ARTILLERY JOURNAL

to Rabat or Meknes, but it is understood he is not to do so until the organization of the newly conquered territory is completed. Naturally this does not please him as Mjara is only a camp situated in an open plain, hot, the wind blowing a continuous cloud of heavy dust, and I believe all the flies in the world are concentrated here. Meals are eaten with one hand while the other is used to fight flies. It is a horrible place.

I went on to Teroual, where I spent the night with my friend, Colonel Garcin.

September 24, 1925

Left at daylight, returning by way of Mjara, and followed up the valley of the Ouergha to Taffrant, which is located on a sugarloaf mountain completely dominated by the Bibane which was taken last week.

The 60-cm. railroad from Mjara to Taffrant should be completed by the end of October. We followed the railroad route on a terrible old trail and arrived at Ouezzane at 7:30 P.M.

It is interesting to note here the capacity of the 60 cm. A normal train is made up of ten cars with a maximum of 100 tons, drawn by one small engine. The number of cars may vary, but the tonnage must not be exceeded, and it runs at an average speed of about 8 miles per hour.

At Ouezzane we called on General Hergault, commanding the 128th Division. Due to a small operation that is to take place in a few days, the town is full of officers and no rooms are available at the hotel; however, the General arranged for me and I had a good room for the night.

Met Sweeny and all the American aviators. Had dinner with them as their guest and heard all sorts of terrible adventures they had had. It was all very amusing to hear of the number of Riffs they had killed with bombs, the villages, markets and cattle they had bombed. I must confess they are a snappy looking bunch in their French uniforms with the insignia of the Sultan of Morocco. This is a star under the usual aviation insignia. The star is indicative of Moroccan Service, and the crescent that of Algeria and Tunis. I don't think their service amounts to much from a physical point of view, morally it may be effective, but I don't see anything in their adventure to cause any one to give it a second thought.

There is a good deal of sniping going on around Ouezzane, and each evening and early morning sixteen 75-mm. guns do a good deal of firing on points known to be occupied by Riff riflemen.

Eight kilometres from Ouezzane there is a small post which is completely cut off. There is a company there with two 75-mm. guns and two Stokes mortars; there are Riffs located all around and they

EXTRACTS FROM THE DIARY OF AN AMERICAN IN MOROCCO

keep up a sniping fire. This post is supplied once each month, and to do this a battalion of infantry is required to clear the way, after the artillery bombs the vicinity. It is to clear this region that a small operation is to be undertaken tomorrow.

Ouezzane is a very attractive Moorish city, the only sacred city (I am told) in Morocco that has no wall surrounding it.

September 25, 1925

Left Ouezzane at 8:00 A.M. Stopped at the aviation field, and spent an hour with Sweeney, Rockwell, Pollock, Day, and Holden. Learned that the Renault motors of 300 H.P., used in all French Breguet planes, were built before 1920; that they have an average flying time of sixty hours before being taken down and overhauled. All pilots say they give excellent service and ask for nothing better in this war. They say a new 400 H.P. Lorraine motor has been put out in a plane marked 19-A2. None of these are in Morocco.

Nothing has been heard from the Goliath that did not return yesterday. It is believed to have crashed against a mountain in a heavy fog; it has been given up as lost. The pilots have a curious habit of pasting a small red heart over the bullet holes in their planes. I saw several planes at Ouezzane with as many as twenty-five red hearts on them. Sadi Lecointe, the famous French flyer, and several other volunteer pilots, are attached to the American squadron.

Returned *via* Kenitra, Sale-Meknes to Fez, where we arrived at 8:00 P.M. I learned that the French correspondents have complained to the chief of staff that they are being discriminated against in favor of Americans. I called on the chief of staff to pay my respects, explained my status, and think there will be no difficulty, but I am afraid I will have to take my chances with the reporters in getting to the front for any operations in the future.

Conclusions to date:

As to ultimate victory for France, opinion strengthened.

That active operations will cease about October 15th.

In answer to questions put to General Naulin, Colonel Paquin, General Pruneau, General Boichut, General Hergault, Colonel Garcin and many others, they are of the same opinion that roads and more roads are needed to conquer the country and that G-4 is the important general staff section here.

I have been unable to learn whether or not the French will enter Spanish territory as they advance. My opinion, shared by others, is to the effect that part of the understanding arrived at between Spain and France authorized the latter to enter unoccupied parts of the Spanish Zone when and where they can. There is talk of an operation

THE FIELD ARTILLERY JOURNAL

which is to take place before the rainy season on the east front, which has for its object the closing of the gap between the French right and the Spanish left southwest of Melilla. This may be the operation now being prepared near Kifane, to be confirmed later.

French troops are now receiving their winter clothes as the days and nights are getting colder.

This is a country of wire entanglements. Wire is always employed at all posts outside the large cities. I have not seen more on the front of the World War. It is very essential here. The Riff is like a snake and even the peaceful ones steal when and whatever they can. For example, the troops are required when in camp to strap their rifles to their wrists while sleeping as many are stolen during the night.

The 1st, 2nd and 3rd Divisions are what they call Divisions of March, meaning they are organized for this war and will be demobilized when no longer needed here.

The African regiments are given numbers as follows: those organized in Algeria and Tunisia are allotted numbers from 1 to 60; those from Morocco 61 to 66.

Military service in Algeria, Tunisia, and the Senegalese countries is obligatory; in Morocco voluntary.

Service in:

Tunisia, is for 3 years.

Algeria, is for 2 years.

Senegal, is for 3 or 4 years.

Morocco, volunteer, 3 or 4 years.

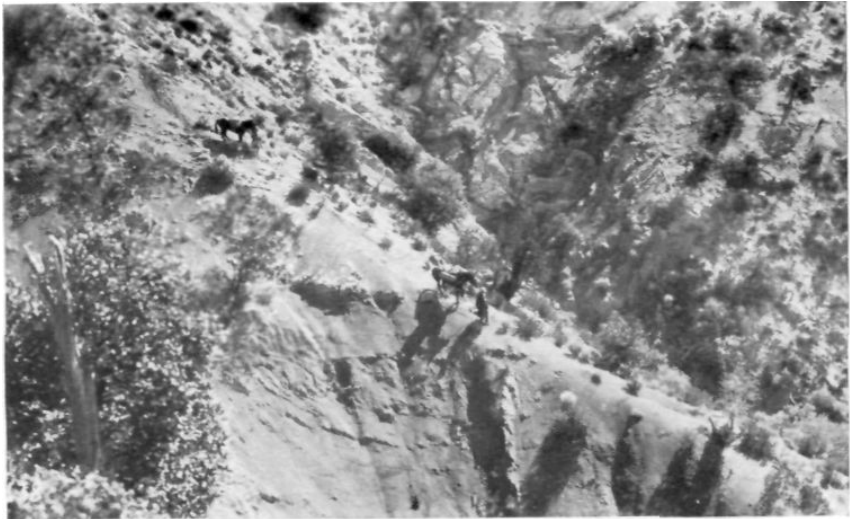
In all these countries a large majority reënlist; the result is a great many old soldiers who make fine regiments with traditions. The pay of these men upon enlistment is 10 sous per day with small increases for length of service and reënlistment.

Have confirmed the use of pigeons here. There are three lofts. The birds are taken to the posts and kept for a period when they are exchanged for a new bunch. I have never understood why this was not done in the early days here.

An interesting feature is the method of functioning of the press censor here. The office is a section of G-2, and presided over by two captains and three enlisted men. A communique is given to the reporters at 10:00 A.M. and at 4:00 P.M. each day. All reporters assemble in the office of the censor at the above hours; he reads the communique and points out on the map the points referred to. The reporters can prepare their despatches at once and have them censored and sent without delay. It seems the censor sits in with G-2 at the daily conference of the commanding general; the situation from all parts of the front is received twice each day, and that part



155-MM. HOWITZERS IN POSITION AWAITING THE ADVANCE NORTH OF KIFANE



TERRAIN NEAR KIFANE



DURING THE ADVANCE NORTH OF KIFANE ON OCTOBER FIRST



A GROUP OF MEHALLAS

EXTRACTS FROM THE DIARY OF AN AMERICAN IN MOROCCO

to be published is given to the censor to turn over to the press as indicated above.

The situation then, in general, of September 26th, follows:

West Sector: reorganization of new territory occupied, with small operation in vicinity of Ouezzane to clear the Riff snipers and supply advance posts.

Centre Sector: quiet.

East Sector: preparation for big drive, details not yet known.

Airplane bombing and other air activity on all fronts.

September 30, 1925

I left at 5:30 A.M. for a visit to Ain Aicha and Taounat. The road to the latter place is passable now for all means of transportation and large road-gangs are busy repairing the road and building bridges before the rains come.

Ain Aicha is the advance base for the centre sector with Taounat as a sub-base for the advance posts.

Ain Aicha is the aviation centre of the centre sector. Three squadrons of Breguet are located here.

The 24th Battalion of Alpine Chasseurs arrived today. The 27th Battalion of Alpine Chasseurs are located at Taounat.

This part of the front is quiet with occasional bombing of villages in advance by airplanes. Troops are located on all surrounding hills and the country seems covered with wire entanglements. Trucks are working furiously to get supplies up before the rain commences.

While at Taounat a contingent of forty native families came in to surrender.

Returned to Fez at 4:30 P.M. and found arrangements had been made for me to leave tomorrow with a cavalry command which is going to make a dash into Spanish territory.

Don't know when I will get back, but it looks like the big final show of the season.

October 1, 1925

In continuation of my notes of September 30th, I left Fez at 6 A.M., October 1st, arrived at Taza at 9:30 A.M., and called on the chief of staff to pay the customary respects and obtain authority to visit certain places in the zone of the East Sector. My intention was to proceed to Guercif, which is the Headquarters of General Jonchay, who is to command the cavalry expedition which is to make a raid into the Riff country. I learned, however, that the date for the departure of the cavalry had not been set, it depending largely on the advance of the four columns now operating north of Kifane. I decided to remain here and visit the present front. I arrived at Kifane and was able to proceed as far as the point Spahis. The

THE FIELD ARTILLERY JOURNAL

advance base is being rapidly established here. Accompanied a captain on horseback up the river as far as the point Sk. et Tleta, reconnoitring a base to be established for the next forward movement. At Spahis there were ten 155-mm. howitzers in position that had been used in the advance of the 29th and 30th. I learned from the captain that, due to the inaccuracy of the maps used, a shell from the 155-mm. killed 8 of the French troopers yesterday.

The following points indicate the objectives reached on September 30th without much resistance (left to right): about 7 kilometres north of May Ali-Dj.—Tafrant—Bab Kessil—Bab Si Abdallah—D. Caid Mohand—Akaoul (This latter point was taken at daylight on October 1st. It is of importance because Abd el Krim had a telephone centre here.)—Ouizert—Bab Tamgount. The country traversed is the usual mountainous terrain, very difficult to traverse and impassable for wheeled vehicles. The two centre columns used the river beds as axes of communication, and telephone communication was not established with the front by the end of October 1st. Tanks accompanied the columns to the objectives.

There will be no further advance on this front until the 5th or 6th, awaiting the building of a temporary road to admit of getting up supplies to new bases.

The chief of staff (East Sector) indicated the next objectives would be (left to right): Bab Azrou—Dj. Nader—Bab Tazmaks—Bab Tizi Ouzli. This advance is expected to begin the 5th or 6th of October. At the same time the cavalry column is expected to move northwest from the vicinity of Hassi Medlam, across the open space marked Fetatcha. It is planned to gain contact with a Spanish cavalry column in the vicinity of El Azib el Medar or at El Arha Taffersit. Supplies are to be received over the Spanish railroad from Melilla, and evacuations made over the same line.

This is the information given by the chief of staff and I am leaving tomorrow for Guercif to try and make arrangements to accompany the cavalry raid. It appears that Marshal Petain is going to place a circle of steel around the Riff before the rainy season sets in, then be prepared to move on the Riff from any direction.

This operation on the east is undoubtedly to be a serious one as the 3rd Division (Goureau) has been taken from the Centre Sector and moved into the East Sector. The situation on the whole front as of October 1, 1925, follows:

West Sector (Pruneau). Minor operations on front. One Hundred and Twenty-eighth Division to strengthen contact with Spanish troops on the river Loukos northwest of Ouezzane. The front of the 35th Division, quiet; organization of positions, taking over west part of front held by

EXTRACTS FROM THE DIARY OF AN AMERICAN IN MOROCCO

3rd Division; preparing for rainy season; no further operations expected on this front this year.

Centre Sector (Marty). Quiet; held by 2nd Division assisted by 35th Division. No further operations expected on this front this season. Reorganizing; supplying bases.

East Sector (Boichut). Great activity. Three divisions, 1st, 11th and 3rd and Cavalry Division; cavalry column preparing for raid with unlimited objectives. It is not known yet just how far the troops will advance before rainy season, but surely until the gap between the Spanish and the French on the east is closed.

October 3, 1925

Left Taza for Guercif at 6:30 A.M., where I arrived at 8:30 A.M. Found the town in a state of great activity, hundreds of Goumiers and mounted Partisans were gathering for the next advance. Called on the chief of staff, and was presented to General Jonchay who will command the operation which will get under way on October 6th.

The general plan of the operation is as follows:

The main advance will start at daylight on October 6th from Hassi Medlam and consist of the following troops:

- 1 Brigade cavalry of 2 regiments of Algerian Spahis,
- 1 Brigade cavalry, a mixture of Goumiers and Partisans,
- 1 Reinforced infantry brigade with tanks, armored cars, 75-mm. portée artillery, aviation, and 155-mm. howitzers.

The brigade of Spahis will cover the left of the infantry brigade and the right of a column on the left moving up the Oued (river) Ouizert and down the Oued Taghilest with Si bou Rokba as objective. The infantry column from Hassi Medlam will move on Zag (where old Spanish posts can be seen from Hassi Medlam), then to Syah. The brigade of Goums and Partisans is to advance to the north, *via* Poste de la Montagne, covering the right of the infantry column. It is hoped contact will be gained with a Spanish column moving out from Afso. From Syah, a further advance is expected to take El Tleta d'Azelef which is an important headquarters of Abd el Krim and only 8 kilometres from the advance Spanish post, Azib de Medar, which is also the end of the Spanish railroad from Melilla.

I visited Hassi Medlam this afternoon. From the post one gets a wonderful view of a great plain extending to the northwest as far as the eye can reach in the direction of Syah,—perfect terrain for cavalry manœuvres. Little resistance is expected as the Riffs know that they are at a great disadvantage in the open against modern weapons. The water question here is, as usual, a serious one. Three wells have been dug near the river bed, which supplies all the men

THE FIELD ARTILLERY JOURNAL

and animals. A strange thing is that two of the wells are salty, the other fresh, and they are within 100 yards of each other. It is necessary to make a rapid advance because the next water supply will be the river Ighane at Syah.

A large base is being rapidly established at Hassi Medlam. The road from Guercif to Hassi is simply across a prairie where, if it rains, a regular lake forms, prohibiting all movement of man or beast. At Nekhila, half way to Hassi Medlam, is an intermediate base from which supplies are carried forward by camion, camel and mule transport. It is really a day's march from Guercif and is used as a camp.

At dinner last night, I talked with a staff officer from Marshal Petain's Headquarters. He informed me that the purpose of the operation was to reach a line where the troops could stabilize, receive supplies, and threaten the Riff at all times; that there would be no further advance in the Centre, nor on the West Sector fronts until after the rainy season.

I am still in doubt as to the wisdom of this long advance in the east so near the rainy season when a column may get rained on and be unable to move. It could easily result very seriously.

He also stated Marshal Petain would under no circumstances accept the position of Resident General replacing Lyautey.

October 4, 1925

The French have received a battery of 155-mm. guns and it is intended to move them up past Kifane to a point called Tizi Ouzli to be used for long-distance interdiction fire into enemy territory. They also have 2 batteries of 75-mm. portée artillery carried on trucks with a small tractor to pull them. I have seen, at Taounat, the 105-mm. gun and the old 120-mm. long. At Hassi Medlam, I saw the old 80-mm. gun. They have as reported before, 105-, 75- and 65-mm. mountain artillery. In fact, they have every calibre from the 155-mm. gun and howitzer down, that was used in the World War.

I must record here that the normal loads carried on the backs of camels average 200 kilograms or about 400 pounds; on mules 120 kilograms or about 240 pounds.

October 5, 1925

General Jonchay and his entire staff left for Hassi Ouenzga yesterday. Last night it rained continuously and it looked as though the operation must be postponed for some time. It has cleared up, the sun is shining, and we are leaving at 2 P.M. for Hassi Ouenzga, preparatory for the advance tomorrow at daylight. Met

EXTRACTS FROM THE DIARY OF AN AMERICAN IN MOROCCO

Captain Kerangat, the censor, who has just returned from Hassi Ouenzga. He brings the news that a Spanish column of 600 infantry in trucks left Afsou yesterday and occupied Syah, finding only women and children there, the men having moved southeast, occupying the mountains around Zoura. This move of the Spaniards was a surprise to the French and has caused a change of plans. It seems the Spanish were anxious to occupy this place before the French. The operations will, however, continue, with the French attacking Zoura with a column from Hassi Medlam and another from the west. The objective, as now set, is the line of the river Kert, from a point west of Syah, southwest. It is contemplated to establish a line of posts along this river and connect up with the Kifane sector along the valley of the Oued Karoun to Bab Tizi Ouzli. Supplies for the troops are to come over the Spanish railroad to Azeb el Midar. A further advance may be continued to the previous objective, Si bou Rokba, but the line will be as above mentioned, and the rough country to the south will be cleared out with minor operations.

Am now leaving for Hassi Ouenzga in a large car rented for several days, the only one in this vicinity. It is a relic of the years before 1910, but transportation is not only a big problem for the army, but also for unofficial persons.

If you will look at the map you will see Guercif on the main road between Taza and Taourirt. This is the point started from at 2:30 P.M., traversing the road *via* Nekhila, which is a camp and advance base for troops moving up to Hassi Medlam and Hassi Ouenzga, which today is the advance post of the French in this sector. The plain from Guercif to Medlam is a large and flat one; no road construction has yet been done here as during the dry season all types of transportation can cross with ease, but, if it rains, then keep off, you can't move.

We arrived at Hassi Ouenzga about 5:30 P.M. and found great activity going on, thousands of cavalry assembling for what is to be the biggest cavalry move this year. There are 3500 volunteer cavalymen from Algeria, commanded by General Decoing, who commands the regular cavalry in Algeria. These Goums have volunteered for two months and are to be used, when weather permits, to raid far into the Riff country. They are headed by their chief men and make a fine appearance.

We found General Boichut, the Sector Commander, and General de Jonchay, commanding the operation, located here. We were assigned a small tent for five and that is all; no arrangement for mess, or transportation to accompany the troops. The French give little consideration to journalists, who must hustle for themselves.

THE FIELD ARTILLERY JOURNAL

However, we have the big auto, and, if the weather is good, we will follow the advance in the car to Zag (which is in the Spanish Zone), and as much farther as we are able to go.

The troops that will participate tomorrow are:

- 1 Reinforced brigade of infantry
- 1 Brigade of 2 regiments Spahis (regular cavalry)
- 1 Brigade—4500 volunteer cavalry (3500 from Algeria, 1000 from Morocco)
- 2 Batteries, 75-mm. portée artillery
- 1 Company tanks (now using heavy rubber caterpillar treads. This is being experimented with, but to date has not been satisfactory)
- 1 Company armored cars
- 1 Battery 155-mm. howitzers
- 3 Squadrons of 30 planes

It is contemplated to supply the troops with trucks as far as the latter can go; then camel and mule convoy. The men are carrying three days' rations. This is the biggest concentration of cavalry yet attempted here.

The question of water for the animals is a serious one here; they will have to move either forward or back tomorrow.

Chances look good for an interesting operation tomorrow.

October 6, 1925

The unexpected happened. It rained all night; the operation is off, or at least suspended, except the infantry and the brigade of Spahis will move out to Zag and gain contact with the Spanish column in Syah. The Algerian and Moroccan Goums (cavalry) have been ordered to return to Nekhila, where there is water, and wait there until the weather clears. The infantry and cavalry brigade of Spahis have reached Zag without resistance.

General Boichut invited me to attend him during the pass-by of all the Goums. It was an inspiring sight to see the old Caid or Pashas at the head of their Goum, the latter mounted on the small fiery Arab ponies, all singing their war songs as they passed the General. The latter stepped out and shook hands with each chief as he came up.

Their only equipment is a rifle or carbine, belt of cartridges and a small bag in which they carry such odds and ends as they may have. The French furnish only the rifle and cartridges and pay the men 12 francs per day. As the last of the troops passed by, it started to rain again. It looks bad for our chances of getting any further forward. We have moved down to Hassi Medlam and are installed in a supply tent with fresh meat, bread and casks of wine all around. Raining again as we sit down to eat our canned meat by candle light. If the rain continues we are here indefinitely, unless we want to walk 60 kilometres to Guercif.

EXTRACTS FROM THE DIARY OF AN AMERICAN IN MOROCCO

October 7, 1925

This morning the sun is shining, but threatening clouds are gathering. We have decided to go out with a camel train as far as Nekhila today. We are told neither autos nor any wheeled vehicles can get through today, and, if it rains again during the day, it will be difficult to tell when they will move. They are starting all the camels and mules they can get for rations, as there are only five days' in the base at Hassi Medlam. None of the tanks, wheeled artillery, armored cars, nor aviation, have been able to accompany the troops to Zag. (Ground is too soft for planes to take off.)

We left Hassi Medlam at 11 A.M., mounted on camels, and arrived at Nekhila at 3:30 P.M. Our autos joined us shortly after. We got away at 4 P.M.; arrived at Guercif at 8:30 P.M. after being stuck in bogs at least twenty times. We passed twenty loaded trucks stuck fast in the mud, and helped six small cars out of trouble. Arrived at Guercif, wet and covered with mud, to find no rooms vacant, but were allowed to sleep on the dining-room floor.

It is very easy to see why the lines must stabilize before the rainy season sets in. Woe unto the column that is caught far from the base without supplies.

It was very disappointing to every one as this operation has been carefully studied and the results would have been far-reaching. There was a chance of the cavalry going through to Ajdir. It is now suspended until weather permits another advance.

October 8, 1925

Left Guercif 10:30 A.M. in autobus; arrived Fez at 4:30 P.M. to learn that arrangements had been made for me to go to Tangier and embark in a Spanish torpedo boat and visit the Spanish Zone. I will leave here the 13th or 14th for Tangier as I have now covered in detail the West Sector twice, Centre Sector once, and East Sector twice, and operations will soon cease on all fronts except where cavalry raids can be made.

In the East Sector, where large plains are found, cavalry can make long raids, destroy crops, capture cattle, and make it very unpleasant for Krim. It is no doubt having a great influence on the tribes in this area as they are coming in in large numbers to surrender.

Just a word as to the methods employed by the French in calling the Goumier to service. It is entirely voluntary. France wants 5000 cavalymen for a certain operation. Notice is sent to the Caid or Chief of a tribe, stating the needs and asking for volunteers for a period of months. The Caid usually reports accompanied by a Goum. His men are issued rifles and cartridges for which the

THE FIELD ARTILLERY JOURNAL

Chief gives his receipt. When the operation ends, or the term of enlistment expires, the Goums return their arms and remaining cartridges, receive 12 francs per day for time served, and return to their tribe. It must be admitted the French have a remarkable hold on these people and know how to handle and employ them.

The line of the River Kert will be held by the French and Spanish together. There never has been any question as to crossing into the Spanish Zone. So far as the French Army is concerned, it has only been a question of getting there, but how far toward the sea the Spaniards will permit the French to go is another question. There is no doubt that Krim is being squeezed into a pocket and I repeat again, it is only a question of transportation of necessary supplies to horses and men for them to go anywhere. I should not be surprised to learn that Krim has asked for terms any time. He is holding many tribes by force and fear only; many hostages are held and cattle driven into Krim's territory, because he knows the tribes will follow their cattle as it is their principal source of living.

The only activity on the front is confined to the East Sector, where cavalry raids will continue as long as weather conditions permit.

October 18, 1925

A Spanish torpedo boat arrived at Tangier today with instructions to carry me to any part of the Spanish sea front.

October 19, 1925

Accompanied by Major Casajus, Spanish military attaché, and Major C. B. Hodges, American military attaché, I embarked this morning and passed close to Ceuta, but did not go ashore. This is the base port for the Tetuan corridor. From a military point of view, it is of great value to Spain, as it is the nearest point to Gibraltar and goes far to neutralize the power of the latter. Ceuta, in the possession of Spain, does not constitute a serious menace to British communications, but, in French hands, it would be quite another matter.

The ship passed on rapidly to Point Moro Nuevo, on the west side of which the Spanish landed for the Alhucemas show.

The weather was perfect and the sea smooth, as we approached this coast, but it caused one to think of what a tragedy, if not a disaster, would result if a landing were attempted here in the face of organized resistance,—a narrow strip of beach on the open roadstead dominated by a series of high hills beginning almost at the beach.

The Spanish landing was successfully accomplished here with but few casualties, their success being due to the heavy artillery preparation from the warships (the Spanish commenced their landing here on September 8th). There still remain evidences of certain

EXTRACTS FROM THE DIARY OF AN AMERICAN IN MOROCCO

casualties in the form of twelve beetle boats stranded on the beach, a total loss, and one small schooner sunk off shore in a collision.

This part of the line is quiet now, a hospital, bakery and other supply depots occupying the site of the landing.

We continued around the Point, entered Alhucemas Bay and went aboard the cruiser *Reina Cristina*, where we had dinner and comfortable staterooms for the night.

October 20, 1925

This morning we went ashore and paid our respects to General Saro, who commands the Ajdir Sector. Visited the lines, on horseback, and went to Ajdir. The troops are busily organizing the occupied positions; building roads, and getting supplies ashore before the bad weather sets in. I was somewhat surprised to find that the Spanish did not occupy any part of the Alhucemas plain. They have limited their advance to the hills dominating a part of the plain and state that when a sufficient supply of water is accumulated they intend to bring cavalry here to operate. At present the limiting factor on further operations is water. Every drop required by the 20,000 troops in this sector is transported from Spain, and large concrete storage tanks are being constructed to hold the supply. General Saro stated that he has a month and a half's supply allowing 5 litres per man and 25 litres per animal per day. The point not clear to me is why they do not move down into the valley and insure a good water supply from the little river which their guns now dominate for a considerable distance.

The troops at Alhucemas consist principally of infantry with batteries of 75-mm. field and 70-mm. and 105-mm. mountain artillery. The greater part of the troops are Spanish with but few natives.

General Saro stated that his command lost over 600 men during the first days after landing, from the fire of Krim's artillery. He could not extend his bridge-head until more troops and supplies were landed. They are well established now, have a large bridge-head and are organizing to occupy the entire Alhucemas Sector next spring. There are no cavalry nor motorized matériel as yet. The men are doing heroic work in road building and have pulled their guns to what appear to be impossible heights. I was much impressed by the fine spirit, discipline and morale of the officers and men. They are well clothed, well equipped and well fed. The field bakery turns out 20,000 rations of unusually good bread per day. Two well-equipped field hospitals, each with a 200-bed capacity, care for the sick and wounded and evacuate daily by three hospital transports to Melilla or Spain. During the ride to Ajdir, we traveled over a fine piece of macadam road, about one and a half miles built by the

THE FIELD ARTILLERY JOURNAL

prisoners in the hands of Abd-el-Krim. It is reported that he, Krim, is doing considerable road building in certain parts and the officers on the outpost on the Melilla front report seeing automobile headlights moving in the enemy territory at night.

Summing up, the Spaniards, after giving the details of the operation very careful study, were entirely successful in accomplishing a very difficult operation at Alhucemas. They have a firm grip there and will increase their bridge-head next spring, probably linking it up with the Melilla Sector.

October 21, 1925

I arrived at Melilla at 8:30 P.M. last night and this morning paid my respects to General Sanjurjo who has just been selected by General Primo de Rivera to command the Spanish forces in Morocco. He is a very charming man and a strong character. He is the man who cleaned up the Melilla Sector after the disaster of 1921 in which the Spaniards lost over 15,000 officers and men due to the uprising of the Moors in rear of the Spanish front-line posts.

We lunched with the General and his staff. He told us anything we asked for would be gladly granted; that we were the first American officers to visit his front and he was very happy to receive us. A car and orderlies have been placed at our disposal and a captain from the General's staff, who is familiar with the front, has been assigned as our guide. A two-day schedule to cover the 22nd and 23rd has been drawn up which will take us to all parts of the front line.

This afternoon we visited some posts on the top of the great mountain which dominates Melilla and which the Moors occupied in 1921 until driven off. The Spaniards have built a road to the top of this mountain and extended it to all posts in the vicinity, a marvelous piece of engineering work that will permit automobiles of all types to reach the top. They say, if they are to occupy Melilla, they must always control this mountain.

Melilla is an interesting city of 40,000 people. It is essentially a military camp; civil officials function under the authority of the commanding general. It would seem that everything comes in and but very little goes out. Some iron mines are located in the vicinity. It appears a small income for such an enormous lay-out.

One point that struck me very forcibly while traveling from Tangier to Melilla is the absence of a single good harbor. Ships cannot remain in any of the little roadsteads during big storms as they are all directly open on the sea.

Returning to Melilla, we stopped for a few minutes at the two aviation fields, one the army, where two squadrons of Fokkers are

EXTRACTS FROM THE DIARY OF AN AMERICAN IN MOROCCO

located, and, further on, the navy base with one squadron of hydroplanes.

October 22, 1925

We left Melilla at 7 A.M. in autos over a perfect macadam road paralleled by a narrow-gauge railroad. We passed through Monte Arruit, where a force of 3000 Spaniards made a final stand during the rout of 1921. When they surrendered to the Moors and gave up their arms, they were massacred to a man with the exception of the commanding general and about 200 others, who were held for ransom. Some distance from this place we turned south and followed a good secondary road to Afso. This place is the last Spanish outpost before entering the French Zone on the south. There is a battalion of infantry and a troop of cavalry here. We passed over the same road that the trucks took when they captured Syah,—of which I wrote from Hassi Ouenzga where I was on October 5th, waiting to move out the next morning when we learned the Spanish had upset the French plans by taking Syah.

When I entered Syah, or Zoco el Telata as it should be called, it completed my visit to the whole front. While with the French in the East Sector, from October 1st to 8th, I was only 8 kilometres from Zoco el Telata. In order to get to it, however, I was forced to travel from Hassi Medlam to Guercif, Fez, Rabat, by auto; to Tangier and Melilla by boat; and by motor car to Afso, and finally to Syah, thus closing a small gap of 8 kilometres by going completely around the two zones.

Upon arrival at Zoco el Telata (Syah), we were met by Colonel Dolly, who commanded the troops that took the post and who is in command of the forces that form a contact with the French at Sk. el Sebt, some 14 kilometres to the southwest.

Zoco el Telata (Syah) was captured by the Moors in 1921 and the garrison of some 600 men was destroyed with the exception of the few who escaped to the French Zone. The old Spanish ruined post is being restored, as the Spanish plan to hold this as a permanent post with a battalion of infantry and a squadron of cavalry which are now here. Supplies are coming in in trucks from Dar Drius, which is the advanced base and headquarters for this subsector. The French column will also be supplied from and evacuated to, this centre during bad weather.

We heard rumors of the French defeat at Si bou Rokba during the advance to that point the week before, and that they had lost a battery of 75-mm. artillery and many horses of the cavalry brigade in addition to serious losses among the men.

The road to this point has been very good, passable by all means

THE FIELD ARTILLERY JOURNAL

of transportation during good weather, but impassable by wheeled transport of any sort during the rainy season.

From Zoco el Telata we passed on to Sk. el Sebt over a bad road, difficult for wheeled transport now and impossible in wet weather. At Sk. el Sebt we found a French force of some 6000 infantry, artillery, and cavalry strongly occupying the heights about the town. This is the column, supported by the brigade of Spahis, that advanced on the 6th of October from Hassi Ouenzga, which I was to have accompanied but could not because of the severe rain. This column advanced to Si bou Rokba which they reached without resistance. The cavalry made a reconnaissance further west, met with severe resistance, and withdrew into and through the infantry column. Although orders were at once given for a general withdrawal, the Moors surrounded the column, wounded the French chief of staff and several other officers, and caused the retreat of the entire force. It was during this operation that a battery was lost and the cavalry horses killed. A Spanish column went to the support of the French and helped relieve the pressure until they could get into a position at Sk. el Sebt where they now are strongly organized. The Spanish column is camped alongside of them. This unfortunate end of the French advance has completely upset the plans of General Sanjurjo for the occupation of Sidi Dris. The General explained to us that tribes in this vicinity were on the point of coming in when news of the French withdrawal with its attending results had caused them to change their minds.

It is understood that the French and Spanish troops will stabilize on the following line for the wet season: The southernmost Spanish post Zoco el Telata surrounded by points strongly fortified on high hills within supporting distance of the main post and of each other; French at Sk. el Sebt and at Ain Zoura, 15 kilometres to the south. These two camps may have to be supplied from the Spanish Zone during the wet weather and I fear they are going to have a difficult time from Moorish attacks during the winter.

From Sk. el Sebt we returned to Zoco el Telata and then followed a good macadam road north to Dar Drius.

Dar Drius is the advanced headquarters and supply base for this subsector which covers the southern part of the Spanish front and provides for some 8000 men distributed in posts and those in the column with the French on the south.

Tafersit is the advanced headquarters and supply base for a subsector that covers the centre front and provides for some 6000 men.

Dar el Quebdani is the advanced headquarters and supply base for the subsector that covers the north front and provides for some 10,000 men.

EXTRACTS FROM THE DIARY OF AN AMERICAN IN MOROCCO

In all three subsectors, there are certain advanced posts that secure the front and can be rapidly reënforced by direct transport in case of need.

These three advanced bases are strongly fortified camps having always a mobile force available with artillery up to 155-mm. howitzers located sufficiently far from the mountains to be secured from any fire from the enemy.

Dar Drius is supplied by railroad, narrow gauge, from Melilla to Tistutin, and 60 cm. from there to this point and thence to Azib de Midar and Tafersit. In addition, truck transport supplies Drius, Midar and Tafersit over a fine macadam road from the big base at the end of the narrow gauge railway at Tistutin. Store houses and shelters for men and animals are being constructed of adobe brick made by the men from clay found along the river bank. From Drius we returned to the aviation field located just to the south of Nador. A cousin of the King, Prince Alfonso, commands the group of Fokkers. He has been flying since 1910, seems to be very efficient, is fearless and very unassuming. I was particularly impressed with him. We had very interesting talks together. He tells me neither the French nor the Spanish are correctly using the air service in Morocco. He is a great admirer of the English methods as exemplified in their employment of the air service in Irak. The general idea is to follow the principle of the third degree,—keep tapping away continually, give the Moors no rest, and so worry them that they must either give up or go crazy. They have sufficient planes to do this but by just going out at intervals they obtain no lasting effect on the Moors. The Spanish are doing much photographic work and map making from their airplanes.

It is interesting to note the many different kinds of planes which the Spanish are using in Morocco. This requires that the pilots must be prepared to fly any model assigned to them. In reply to a question of mine as to why so many models were employed, I was told that they were experimenting and hoped to adopt a standard type when a satisfactory one was found.

The air personnel here impressed me by their fine appearance. They fly a great deal and, so far as I can determine, are very good pilots and air men. It was reported in Tangier that the Moors fear the Spanish aviator more than they do the French.

October 23, 1925

Our schedule today covered the front from Midar to Tafersit, thence along the front to Dar el Quebdani. The road from Midar to Tafersit is a secondary one; that from Tafersit to Quebdani is a first-class macadam road.

This front is very quiet; automobiles can go from Quebdani in

THE FIELD ARTILLERY JOURNAL

the direction of Afrau on the coast as far as Cuadrada. From there travel must be by horse or on foot. Our plans are to go by sea to Afrau, land and take horses to look over the lines there if weather conditions permit.

At Tafersit we found everything quiet. The troops are building roads and are busy receiving and distributing supplies.

At Quebdani, we were treated to a fine show. After luncheon we witnessed some manœuvres in extended order by the native troops, followed by a review and inspection of a battalion of the legion of which about 30 per cent, are foreigners, principally Germans as in the Foreign Legion. Then a mountain battery of 105-mm. guns gave a good demonstration of unpacking and going into action in two minutes. I was much impressed by the snap and discipline of the troops here. It is evident that discipline is excellent to so stimulate the troops to such activity.

My general impression received during the past two days' visit to the Melilla front is one of great surprise at the enormous amount of work they have done, the apparently efficient organization effected, and the perfect network of communications of all kinds established. They have certainly profited by their errors and carelessness in 1921, which was the direct cause of that great disaster. I have nowhere seen in the French zones any better installations, communications (both road and railroad, telegraph and radio) discipline and morale, than in the Melilla Sector which now is quiet.

The Spaniards tell of the dissatisfaction of the Moors with the French currency; that is, the Moor receives only one franc from the French for the same work or produce for which he receives one peseta from the Spanish. As the peseta has more than three times the value of the franc, naturally the Moor prefers to do business with the Spanish.

On the morning of the 23rd enroute to the front, while passing through Monte Arruit, we stopped and, on behalf of the American Army, placed a wreath on the tomb of 2500 Spanish soldiers killed there in 1921.

Our visit to the Spanish Zone has been of great interest. We have been received everywhere with a warmth that has been touching; a sincere welcome greeted us at all points on the front. They appeared glad to see us and glad to show us everything and no secrets were kept from us.

One is impressed with the fertile region of the great valley leading out of Melilla, but you see practically no cultivation going on except in the outskirts of the city. It is quite different from the French zone in this respect, but I am told that, during the disaster of 1921, many Spanish farmers were killed and lost everything

EXTRACTS FROM THE DIARY OF AN AMERICAN IN MOROCCO

they owned, and, as a result, Spanish farmers will not again undertake to develop the country.

I fear the Spanish are relaxing a little in their watchfulness over the Moors. I saw many cases where men were some distance from their post without arms and with Moors all around them. This is something rarely, if ever, seen on the French front.

The Spanish Army on the Melilla front is certainly exceedingly well organized, the zone is quiet and they appear prepared for any emergency. However, the question comes up as to what Spain can ever get out of her investment here in roads, matériel, etc.

October 24, 1925

It is fortunate that we finished our visit yesterday as it rained all night, which would have made it impossible for us to have today visited many parts of the front which we were able to see yesterday. Expect to leave tomorrow for Algeciras on the torpedo boat which was placed at my disposal.

October 25, 1925

The destroyer left Melilla at 10 A.M., but after struggling against a strong wind and big seas for several hours we were forced to return to Melilla, where we arrived just in time to catch the mail boat for Malaga.

"AIRPLANE MAPS IN TWENTY-FOUR HOURS"

BY BRIGADIER-GENERAL PAUL B. MALONE, U. S. ARMY

WHEN the Second Division entered upon the Chateau Thierry operations on the morning of June 1, 1918, the only map of the terrain which was available was a small scale, hachured map made by the French many years previously. Topographical features had changed considerably since the map had been made, certain features having completely disappeared, while other important features had been added.

The map was highly unsatisfactory for the conduct of military operations and immediate effort was made to improvise suitable substitutes.

Airplane photographs were made of the area without much regard to scale and without thought of their subsequent use, either as fire-control maps, or for use by the infantry; except for the purpose of discovering elements of the enemy trench organization and the location of machine-gun nests.

It was difficult, however, by the use of these maps, accurately to determine ranges for our machine guns and for our artillery. At my headquarters, the old French map was enlarged and used only as a source of information, which information was corrected by the airplane photographs. A complete map was sketched in from these two sources of information and the resulting map was manifolded by what is now equivalent to the Duplicator machine. This map was rapidly distributed to the troops for use by the infantry and also to a certain extent for use by the artillery. We were thus able accurately to describe points on which fire of the supporting artillery was desired.

The foregoing experience lead to the belief that, weather permitting, suitable maps for all kinds of military operations could be made within twenty-four hours after the occupation of any position, provided that a suitable organization for this purpose had been created in advance. With this end in view, an effort was made during the field training of the Second Field Artillery Brigade at Camp Stanley, Texas, in 1923, to secure an airplane map, gridded and contoured, for use by the field artillery; the organization for accomplishing this result was not completely satisfactory.

Profiting by previous experience, a request was made to the Commanding General, 8th Corps Area, in 1924, to grant authority to the Topographical Section at Corps Headquarters to coöperate

AIRPLANE MAPS IN TWENTY-FOUR HOURS

with the Second Division Air Service in the construction of a suitable map.

The necessary details were arranged in advance by giving to Captain R. C. Hunter, Engineer Corps, 8th Corps Area Headquarters, and Captain H. J. Houghland, 2nd Division Air Service, the hypothetical location of our own and the enemy front lines. These officers were told that an offensive was contemplated, and were directed to furnish a gridded and contoured map of the ground over which we were to attack and to secure its distribution to troops concerned in less than twenty-four hours after receipt of the order. Both officers organized to perform the work. Captain Hunter selected control points in rear of our front lines from which to take shots on the prominent features within the enemy lines. Lieutenant D. W. Goodrich began air photographic work at 9 A.M. on the day specified. Before 10 A.M. the following day, the maps, 7 kilometres wide and 7 kilometres deep, were delivered at Camp Stanley, 27 miles distant from Corps Headquarters. The maps were taken immediately to the field artillery firing points and were used in the conduct of fire. They were found by both regiments of the brigade to be correct within a few mils of deflection, while the error in range was generally within the probable error of the guns. Larger errors in range were apparent in some sections of the map, but, in general, the map furnished by Captain Hunter was completely satisfactory for all kinds of military operations within the division.

The map is reproduced at the end of this article. It represents an outstanding achievement by Captain Hunter and the officers and men who worked with him.

Many other successful efforts have been conducted in constructing maps by similar processes, but, while I have no exact information upon the subject, I am of the impression that many of the other efforts at map making have contemplated long periods in the preparation of the map and have, to some extent at least, disregarded battle conditions. In the foregoing experiment, it was intended to observe all the requirements which control troops in actual operations and to demand satisfactory results in a minimum of time.

Captain Hunter's topographical assistants were highly trained and the installation used by him was such as might be employed at Corps Headquarters or Army Headquarters in time of war. They worked in reliefs almost without cessation for nearly twenty-four hours, but the results attained demonstrated conclusively that, weather permitting, similar results may be expected from properly trained personnel in the time allotted to Captain Hunter and his assistants.

The foregoing experience has demonstrated:

- (a) That, visibility permitting, maps, gridded and contoured,

THE FIELD ARTILLERY JOURNAL

of sufficient accuracy for all military purposes, can be constructed by ground control and airplane photographic processes as rapidly as an army can ordinarily advance in hostile country; advantage may be taken of fair weather to make the photographs in advance of the time required for final use.

(b) That this process of map making will largely supplement, if not completely replace, the present laborious process of making position and road maps (I have seen neither road nor position maps made under battle conditions).

(c) That it would seem no longer profitable to devote considerable periods of time to the teaching of position and road sketching in our service and troop schools and that programs in this connection should be materially revised.

(d) That the time saved in teaching the actual making of road and position sketches to students at service and troop schools might be profitably employed in teaching the use of airplane photographs in constantly correcting the first hastily constructed maps prepared by the process above described.

It is believed that the service is deeply interested in this method of map making, and it is hoped that this brief presentation of results obtained may stimulate interest and discussion and help crystallize opinion with a view to modifying instruction and changing organization in time of peace, instead of waiting for war to compel the adoption of new methods and demonstrating the inadequacy of existing organization and equipment.

A VALLEY FORGE ORDERLY BOOK

BY LIEUTENANT-COLONEL CHARLES B. HESTON, JR., FA-RES.

The present writer had the opportunity not long since of examining the Orderly Book of General George Weedon. It covers many of the activities of the Continental Army at Germantown and Valley Forge during the years 1777 and 1778.

The entries are quite legibly written in various clerkly hands and the book, in spite of its age, is in a fine state of preservation.

It gives one a graphic idea of military administration in those trying times. It shows what General Washington and the other officers had to contend with in keeping up the health, the discipline, and the morale of the troops.

Each day's entry is prefaced as follows:

Major General tomorrow	Stirling
Brig'r.	Muhlenberg
Field	Lt.-Cols. Febiger and Bayard
Brigade Major	Parker
Picquet	Major Richardson

Then follows any general orders, special orders, brigade orders, proceedings and sentences of courts martial, etc., etc.

In the order covering the march through Philadelphia on August 24, 1777, we read that "the Army is to march in one column through the city of Philadelphia in at and marching down Front Street to Chestnut Street and up that to the Common . . . The ranks six paces asunder which is to be exactly observed in passing through the city and great attention given by the Officers to see that the Men carry their Arms well and are made to appear as decent as circumstances admit . . . The Drums and Fifes of each Brigade to be collected in the centre of the Brigade and a tune for the quickstep to be play'd but with such moderation that the men may step to it with ease and without dancing along, or totally disregarding the Musick which is too often the case."

In another order relative to an inspection, we read that each man is to appear upon the parade ground "having his Beard shaved, Hair comb'd, face washed, and Cloathes put on in the best manner possible."

Under date of September 3, 1777, at Wilmington, it is stated that: "As the Enemy's motions will be sudden and perhaps rapid, The General positively orders the Commanding Officers of Corps to keep their men in camp and by no means suffering them to ramble about out of the verge of it." In many of the entries reference is made to the straggling about, "bunk fatigue" and the firing off of

THE FIELD ARTILLERY JOURNAL

guns for no reason, the penalty for the latter offence being "30 stripes on the bare back well laid on." To stop this practice it was ordered that "The instant a gun is fired, a Sergeant and file of men shall be sent to catch the villain who is thus wasting ammunition and alarming the Camp." Sometimes when cartridges could not be drawn from the muskets, it was necessary to fire them off, and this was accomplished at a set time, generally in the late afternoon.

General Washington did his utmost to maintain the health of the men and he gave the strictest orders in regard to policing the camp, removal of garbage, etc. It was apparently a difficult matter to get the men to use the latrines. One brigade order reads that Major Claiborne will in future mount a brigade guard of three sentinels with orders to *fire* on any man who shall be found guilty of not using them.

Drinking was quite general but it did not do to over-indulge, for the punishment was often quite severe. At one court-martial the charge was that a certain captain "was once during the time he commanded the Light Troops disguised in liquor in such a manner as to disqualify him in some measure and that once or twice besides his Spirits were a little elevated with liquor." A quaint and significant phrase that—disguised in liquor.

After an action on the 13th of September, 1777, "The Honourable Congress in consideration of the Gallant behaviour of the Troops, and having been pleased to order 30 Hogsheads of Rum to be distributed among them in such a manner as the Commander-in-Chief shall direct, He orders the Commissary General of Issues to deliver to each Officer and soldier one gill per day while it lasts."

On another occasion—the surrender of General Burgoyne—it was ordered that "13 pieces of Cannon are to be discharged at the Park of Artillery: to be followed by a Feu-de-Joy with blank cartridges and powder by every Brigade and Corps of the Army: beginning on the right of the front line and running on to the left of it; and then instantly beginning on the left of the Second line onto the right of it, where it will End. The Major General of the day will regulate and superintend the Feu-de-Joy." No mention is made in the order however of the distribution of a gill of rum. It was evidently a dry celebration.

There was quite a bit of thievery from time to time and it was noted in one general order that "Divers Swords as well as other things have lately been stolen from Officers by soldiers." The penalty for such offences was generally thirty stripes on the bare back, or else to run the gauntlet of forty or more men.

Picked men were selected for the artillery, for it was ordered that "A draught is to be immediately made of twenty men from the Brigade for additional to Captain Doughty's Artillery and as

A VALLEY FORGE ORDERLY BOOK

the Credit and safety of our Artillery depends on the goodness of the men employed in using them, the General requests the Officers commanding Regiments to send none for that purpose but those in whom a proper dependence may be put." May we rest assured that Captain Doughty of the Artillery was worthy of his name—able, brave and valiant!

There was considerable drilling in the Fall of 1777 and the Spring of 1778. It is noted in one entry that, "The Officers have now an opportunity of attending to the discipline of the Troops. Every day when the weather will permit, the Corps are to be turned out and practised in the most essential Exercises: Particularly primeing and loading—advancing—forming—retreating—breaking and rallying. No pains are to be spared to improve the troops in this point."

In a special order it was well stated that: "It is not for every Officer to know the principles upon which orders are issued, and to judge how they may or may not be dispensed with or suspended: but their duty is to carry them into execution with the greatest punctuality and exactness."

Probably the most important sentence in the Orderly Book—very apposite at this time—is the following sentiment of General Washington: "He wishes the Officers of his Army, to consider themselves as a Band of Brothers, cemented by the Justice of the Common Cause . . . that a perfect harmony might subsist amongst them."

WINNING THE KNOX TROPHY

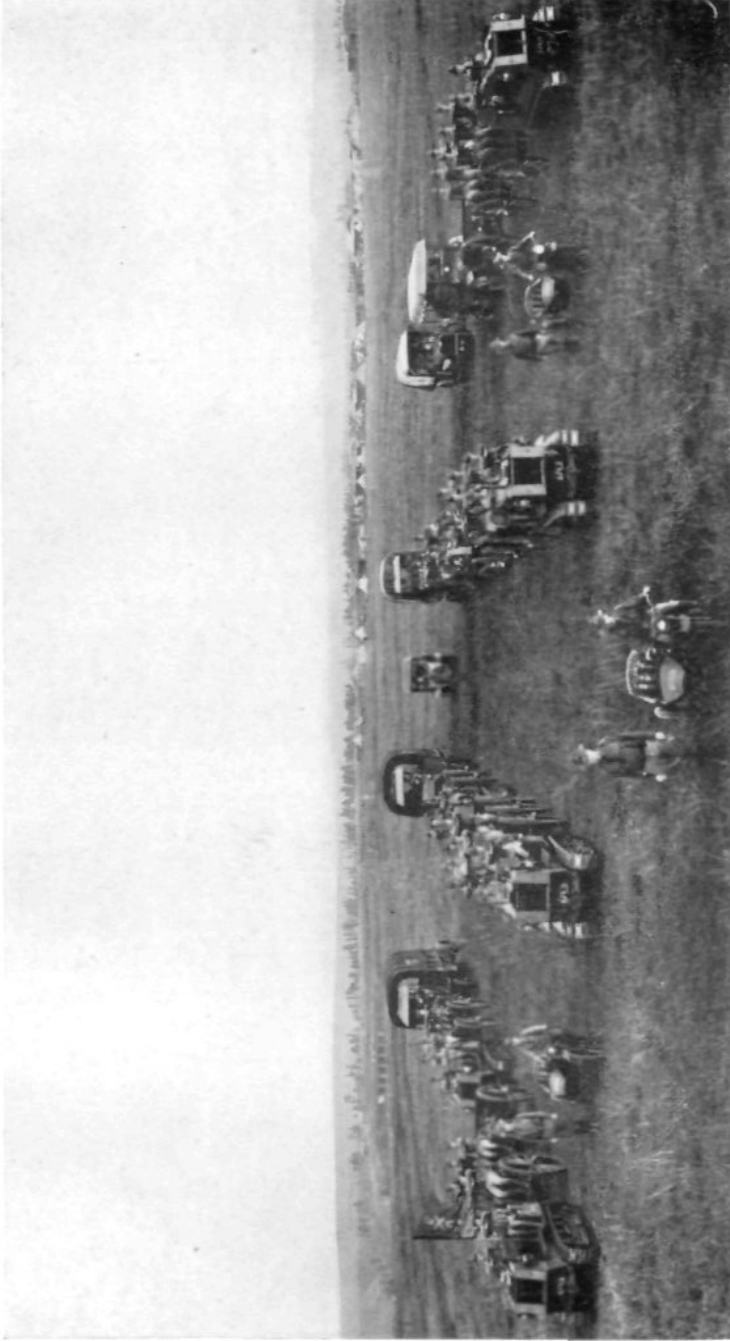
BY LIEUTENANT ERNEST A. BIXBY, COMMANDING
BATTERY "A", EIGHTH FIELD ARTILLERY

THE winning of the Knox Trophy for the year 1925 by Battery "A," Eighth Field Artillery, was the culmination of effort made throughout the training year. Tests were held near the close of this period to determine the entry for the Knox Trophy from the 11th Field Artillery Brigade. As the programs in all regiments in the brigade had proceeded along the same lines, all could be assumed to be at about the same stage of training.

Since 1922, a brigade test has been held yearly to determine the best firing battery in the brigade, and the winner has been awarded the Hawaiian Division Efficiency Pennant for that year. This test for the year 1925 was made the basis of selection of the entry for the Knox Trophy. Battery "A" was selected to represent the First Battalion, Eighth Field Artillery, in the regimental competition. Battery "E" was selected to represent the Second Battalion, Eighth Field Artillery, and a competition was held along the lines of the Knox Trophy Competition for the year 1924. Battery "A" was declared winner and named as the organization to represent the Eighth Field Artillery in the brigade competition. Battery "D," 11th Field Artillery, and Battery "B," 13th Field Artillery, were the other two entries. After a rather close competition, Battery "A," Eighth Field Artillery, was announced as the winner of the Hawaiian Division Efficiency Pennant for the firing batteries for the year 1925, and the Post representative for the Knox Trophy Test.

During each of the above tests, when weaknesses were found in the details of training, corrective measures were taken. Nervousness and stage fright were considerably eliminated. A high degree of teamwork was developed throughout the organization. On the other hand, road marches had considerably increased the probability of motor troubles and the final test found the entire battery under something of a strain. In general, however, it is believed that the series of tests materially contributed to the preparedness for the final test.

The Knox Trophy Test for the year 1925 consisted of a thorough examination by a board of officers appointed by the Commanding General, 11th Field Artillery Brigade, in the following phases of training: 1. Mobility. 2. Firing efficiency. 3. Communications. 4. Interior economy. None of the details of the test were made known to the battery until immediately prior to their execution. For example, until problems were actually given out at the observation post to the officer firing, it was not known what type of problem was to be fired. Details for the road march were given out only



BATTERY "A" OF THE EIGHTH FIELD ARTILLERY

Winner of the Knox Trophy for 1925.

THIS BATTERY HAS HELD THE HAWAIIAN DIVISION EFFICIENCY PENNANT FOR FIRING, FOR FOUR YEARS,—1922, 1923, 1924 AND 1925.



THE KNOX TROPHY BATTERY ON THE MARCH



THE OFFICERS OF THE 1925 KNOX TROPHY BATTERY

FIRST LIEUTENANT ERNEST A. BIXBY, IN COMMAND; FIRST LIEUTENANT JOHN B. MURPHY, JR., EXECUTIVE; FIRST LIEUTENANT FREEMAN G. CROSS, IN CHARGE OF THE BATTERY DETAIL; SECOND LIEUTENANT ALFRED L. PRICE, IN CHARGE OF ADMINISTRATION AND ASSISTANT IN THE TRAINING OF THE DETAIL.

WINNING THE KNOX TROPHY

to such extent as would enable the battery to take the road at the proper time. While undoubtedly serving as a guide, it is not felt that preparation for the test as given in 1924 would have qualified a battery in 1925. The various elements of the test can be taken up best under separate heads.

MOBILITY

The motors of Battery "A" were in good condition for the test because they had been systematically maintained before that time. Throughout the entire training season a thorough cleaning, oiling, and maintenance schedule was enforced, and an accurate check kept on them. As a result, the motors were always ready for the march, and no special preparation was necessary for the test. It appears to be generally believed that one of the most uncertain elements of motorized field artillery is mobility. There is unquestionably a certain amount of luck connected with a motorized march. If a mechanical part is about to break, it does not first go lame. It is more apt to simply break, and once broken the traces cannot be unhooked and the section allowed to proceed. It is more apt to be a question of hours before the section again takes the road. However, luck is often what it is made. If the motors are in proper shape, luck is much more likely to accompany the march. It will be noted that in this series of tests, the total distance marched was at least sixty miles. Furthermore these tests followed so closely on one another that no overhaul was possible.

The test in mobility consisted of a twenty-mile road march of the entire battery with full field equipment over varied terrain. Preparation for this march was begun in December, 1924. During the early part of the training year all vehicles were given a general overhauling. Drivers in considerable excess of the number needed were put into training. These men worked constantly with the motor sergeant and mechanics during the overhauling, and were given such instruction that they were able to take care of their vehicles for the remainder of the year. After the close of this period, the mechanics had very little work to do, other than that of supervision. A great deal of driving over different terrain was done to make the driver handy with his vehicle. Particular attention was paid to intervals whenever movements in column were made. Much benefit was derived from precise mounted drill.

Under the terms of the test the battery was divided into two columns. The tractor column consisted of seven five-ton Holt tractors as motive power with the following loads:

Four gun-sections (each of one 75-mm. gun, British Model 1917, and two loaded caissons).

One fifth section (three loaded caissons).

THE FIELD ARTILLERY JOURNAL

One reel section (one instrument chest, one battery reel, and one water cart).

One spare tractor.

Three motorcycles (towed behind sections).

The speed column consisted of:

One reconnaissance car.

One G.M.C. three-quarter ton truck.

Three F.W.D. cargo trucks.

One Dodge light repair truck.

One machine-gun trailer (towed by F.W.D.).

One rolling kitchen (towed by F.W.D.).

The march was made by both columns over the same road. The roads were mostly unimproved Schofield Red Dirt. Several long grades were encountered. The march of the speed column presented a difficulty in coördinating the speeds of the various vehicles. The F.W.D. travels an average of ten miles an hour while the reconnaissance car moves from twenty-five to thirty and the other vehicles fit in between. A speed of about twelve miles was maintained with this column and no particular trouble was encountered. The march of the speed column was completed in about two hours. Two halts of five minutes each were made to enable drivers to check over their vehicles. The tractor march was completed in about four hours and fifteen minutes. Two halts of ten minutes each were made. The motorcycles were detached from the sections and brought over the finish line under their own power. No incident worthy of note occurred during the entire march. Such incidents had been ironed out during the month preceding the test.

FIRING EFFICIENCY

Much of the credit for the efficiency of the service practice is due to the excellent opportunity afforded by the program as carried out here during the year 1925. The battery was prepared to deliver practically any fire which might have been requested. In the training of the firing battery, permanent chiefs of sections and gunners were trained, and the training of the remainder was with a view to fill any position. In the training of the firing battery, great care was taken to insure accuracy by making constant checks on data, and every effort was made to eliminate lost motion both in the matériel and men. The result in the test was that all problems were fired considerably within the prescribed time. During the firing of one problem, the aiming point became obscured and the pieces had to be referred to the aiming stakes. The observation post for this problem was some 1500 yards in advance of the guns and the change was made so smoothly that no variation in the time between salvos was noted at the observation post.

WINNING THE KNOX TROPHY

This exemplifies the good results obtained from closely following the prescribed methods of training. Such training provides for unexpected emergencies as no amount of special training can possibly do. The Knox Trophy Test is the surest argument in favor of a conscientious following of the training regulations.

During the period of the test, the battery officers conducted a daily terrain board school in firing for each other, supplementing the regular battalion schools. Before leaving the gun park for the firing positions for each of the tests, every officer fired one or two terrain board problems.

Three problems were fired for the Knox Trophy Test; one axial shrapnel problem with the observation post near the gun position; one axial shrapnel problem with the observation post about 1500 yards in advance; and one axial percussion bracket problem with the observation post about 1500 yards in advance. The targets assigned had never been fired on before from that position nor had any officer fired on them or seen them fired on from any position. All problems were fired well within the prescribed time and satisfactory adjustments were obtained on all targets. It is interesting to note that due to the practice in calculating firing data afforded by the service practice, and the state of training of the battery commander's detail, in both problems fired from the advance observation post at least one round was on the target and the range was correct within one hundred metres. Data was calculated in both cases by obtaining the ranges to guns, aiming points, and targets with the range-finder; the angles between the various elements with the battery commander's telescope; and reducing this information to a place sketch from which the data was taken with a protractor and plotting scale.

COMMUNICATIONS

It was noted in the results on the Knox Trophy competitions for the year 1924, that the poorest showing throughout the Army was made with the battery commander's detail. Bearing this in mind, training in the battery was commenced early in the year and a determined effort was made to make it thorough and progressive. A considerably larger number of men were started on this training than the organization of the detail allows, in order to take care of any casualties that might occur during the year. In spite of this, it was found necessary to train some new men late in June. All phases of battery signal work were gone into in great detail. Considerable success was obtained with the blinkers during the Army and Navy Manœuvre. Messages were sent a distance of about two miles with great accuracy and fair speed. However, the sending of a message by blinker was not a part of the test for 1925. Both

THE FIELD ARTILLERY JOURNAL

accuracy and speed were obtained also in wigwag. It is to the Army and Navy manœuvres that the telephone detail owed its most valuable training. Communications played a major part in those exercises and it is very unlikely that much greater strain could possibly be placed on the telephone system during war than was placed on it during the manœuvre. The constant repetition of simple telephone nets, sending of countless messages, and laying of miles of wire, finally brought this phase of the training up to a satisfactory standard. Particularly in the installation of the net all possible conditions were taken into consideration, and solution of the various problems worked out, with the result that a real team was finally obtained.

The tests for the signal detail in the Knox Trophy contest consisted of laying a telephone net and sending a message under the following conditions. All personnel and equipment were assembled at the command post. Positions for the guns and switchboard were designated about one hundred yards from the command post, with the guns about one hundred yards from the switchboard. The observation post was designated about six hundred yards from the switchboard. The last one hundred yards of this distance was required to be installed by hand. The telephone net was required to be installed and a simple message sent from the command post to the observation post. Upon its receipt at the observation post a member of the board gave the operator a different message to send to the guns. The receipt of this message at the guns completed the problem. Time was taken from the word "go" until the message at the guns was handed to a member of the board. The time allowed was ten minutes. The problem was completed somewhat under this time. One mistake was made. A short message was sent by wigwag and was correctly received well within the allowed time. Each telephone assigned to the battery, and not used in the telephone net, was then tested.

Two noncommissioned officers were trained to act in the capacity of instrument sergeant. At the time of the test these two noncommissioned officers were prepared to lay the battery by practically any method, including the compass, orienting line, and place sketch. Particular stress was placed on the offset method as that was considered the most probable. A method was devised from the combination of the best rules and methods in use, that made this computation a matter of systematic steps. The greatest difficulty was found in eliminating simple mathematical errors. The test given the instrument sergeant consisted of two problems. The gun position was taken on different sides of the OT-line in each problem and at least two hundred yards distant. Deflections and

WINNING THE KNOX TROPHY

site for the base piece had to be obtained in each problem. Three minutes were allowed. No difficulty was encountered in the solution of these problems.

The result of the training during the past year has increased respect for the range-finder from nearly zero to par. The range-finder operator has been consistently used during service practice, with most excellent results. The test of this element of the detail consisted of the measurement of two ranges previously determined by the board and unknown to the operator. One minute was allowed for each range. The point was designated and at the word "go" the operator turned his instrument on this point and made three separate measurements of the range, announcing the average. Both ranges were measured within the proper time and a satisfactory degree of accuracy was found.

INTERIOR ECONOMY

The fourth element of the Knox Trophy Test was termed Interior Economy. The test was based on an examination of the battery records for the past year. Credits were given for a greater percentage of gunners, qualified during the year, than the average for the brigade by battery. Credit might also be gained by the presence of a greater percentage of men who had reënlisted in the organization as compared to the brigade. In the same manner debits were arrived at for percentage of court-martial convictions and desertions. The final balancing of these items constituted the score in Interior Economy.

In this subject the element of luck is more apparent than in any other branch. The number of gunners qualified can be controlled and was above the average for the brigade. This is a direct result of the amount of time spent and the kind of instruction given. Reënlistments in Hawaii, however, are few and far between, as practically all men desire to return to the mainland after three years' absence. An organization having a good spirit and morale is more apt to have reënlistments than otherwise. But, when the average for the batteries of the brigade is about two, a difference of one man unduly affects the score. Desertions on the Island of Oahu are practically unknown. The average for the brigade is probably below one per year. Here the same rule regarding luck applies. The desertion of only one man would materially affect the score. As for the matter of court-martial convictions, one man may be tried several times during the year and contribute more to the distinction of the score than almost any other element. Where a man deserts, after having been repeatedly tried by summary and special court, is apprehended and tried by general court, it would appear that he has unduly influenced the standing of the other one hundred and two

THE FIELD ARTILLERY JOURNAL

men of the organization for the Knox Trophy competition. The above facts are mentioned merely to bring out the difficulties encountered in grading this department accurately.

The question of training always presents the question of personnel to be trained. This is particularly true in Hawaii. On August 1, 1925, only two noncommissioned officers were in the battery who had been noncommissioned officers on January 1, 1924. On January 1, 1926, only eight men will be with the battery who were present on January 1, 1924. Much of a man's enlistment is served before he arrives in Hawaii, more time must be expended in recruit instruction, and he departs from the Island sometime before his enlistment is up. Leaving out reënlistment, two years of service with the organization is a maximum. Replacements must constantly be in training. A man hardly becomes of real value before he departs. A trained battery in March means little in September. To find, develop, and properly train noncommissioned officers in the time allowed and still receive any benefit from their training, is one of the great tasks confronting the artillery in Hawaii.

The training of drivers and detail is hardly less difficult. These troubles are considerably balanced by the fact that this is the land of perpetual sunshine, and that the majority of the time is available for troop training.

During the entire year, the greatest use was made of noncommissioned officers as instructors. They were encouraged to assume responsibility and were left very much alone in their work. They were frequently assembled and the plans for training were made known in detail in advance of scheduled time for such training. It is interesting to note that the first sergeant had just completed his third year in the Army at the time of the test and had been a noncommissioned officer less than two years. Only two other men in the battery had been noncommissioned officers as long as two years and the majority were serving in their first enlistment. Too much credit cannot be given to the noncommissioned officers for their intelligent coöperation in the development of the battery training for the year. It is desired to point out again that the successful outcome of the competition was not the result of any eleventh-hour effort, but rather the systematic training of officers, noncommissioned officers, and privates during the whole training year.

Most of all, as has been pointed out before, the success of Battery "A," Eighth Field Artillery, in the Knox Trophy Test for 1925, was the result of a scrupulous following of both the letter and the spirit of the Training Regulations—the only system, it is believed, whereby high standards can be satisfactorily met, and a solid foundation of training and discipline formed on which to build uniform and thorough training.

PROFICIENCY TESTS IN THE ARMY

BY CAPTAIN C. B. THOMAS, F.A.

THE writer of this article reported to the Signal School, Fort Monmouth, New Jersey (then Camp Vail), in December, 1924, as the Field Artillery Representative. The duties of the Field Artillery Representative (or Liaison Officer) consist of teaching officer's classes at the Signal School those phases of field artillery which have to do with communication; keeping in touch with the developments and new projects under way in the radio laboratories and informing the proper authorities thereof; in the preparation of training literature relating to signal communication in the artillery; and in general, representing the Field Artillery in all discussions regarding signal communications of artillery and their relations to those of other branches, the coördination of which is the responsibility of the Signal Corps.

Immediately on reporting, the writer came in contact with the Department of Training Literature. This rather unique section has, it is believed, no counterpart at any other service school. It is charged with the preparation of training material (such as manuals) and is in close touch with modern civilian educational methods. Most of us do not realize that there is a big change taking place in methods of teaching and that the way we learned our A-B-C's is hopelessly antiquated. We could learn a great deal about modern methods by questioning our children.

Many officers have no doubt wished for some way in which training could be standardized so that a rating of telephone operator, for instance, would mean just one thing. In these days of changing organization commanders, it seems as though one only gets acquainted with his battery before he loses it. Also, so many calls are made for fatigue, summer training, schools, etc., that it is a rather exceptional thing for an organization commander to see his command all at once. When an officer first takes over his battery, he can tell of course pretty well from the records how many expert pistol shots, or expert gunners he has in it, but he is obliged to rely on someone's opinion as to who is, let us say, a good radio operator, mechanic, or switchboard operator. Why is this? The answer is, that while we have tests to determine a man's degree of skill in pistol shooting or in handling a gun, we have none to determine such skill in other subjects. Therefore, the degree of proficiency possessed by any man in any subject for which there is no proficiency test, is measured only by personal opinion, which varies as much as there are different kinds of people in the world.

THE FIELD ARTILLERY JOURNAL

The Signal Corps came to a realization of this some time ago, through sheer necessity. Not being particularly interested in field guns, rifle or pistol marksmanship, they set to work to devise some form of standardized tests by which they could rate the various specialists they are required to train. The so-called "proficiency tests" for telephone switchboard operators, radio operators, linemen, and message centre men, thus came into being. At first these tests were made up in two parts—a "do" or performance part, and a "theoretical" or information part. Both were given, the performance part naturally taking a longer time and more apparatus to administer than the information part.

After a while, it was noticed that the men who stood high on performance also stood high on information, while the reverse was true with few exceptions. It then came about that the performance part of the test was omitted, and the amount of knowledge a man had was measured by his score on the information part of the test. It should be understood right here that the only reason the "performance" part of the test was omitted was because it was expedient to do so. Unquestionably a performance test increases the validity of the findings, but it also unquestionably increases the difficulty of administration. By using questions, or types of questions, the solutions or answers to which will not be known or remembered unless the individual has had training and actual experience, it is possible to obtain information tests which correlate very highly with the results of performance tests given to the same men.

By giving the same test, requiring thirty minutes under identical conditions, to widely separated organizations on any of these specialties, it is possible to compare their state of training either among themselves or with an established standard. It is possible for an organization commander, for instance, who wants to see just how much his switchboard operators know, to find out and compare them with what a "standard" operator should know. It is possible for an officer training specialists along these lines to actually measure the amount of progress made in his instruction by administering these tests at the beginning and close of any period of instruction. In other words, these proficiency tests are a measuring device, used to determine the amount of knowledge a man has of the subjects to which they pertain.

In this article only five tests will be discussed. These tests are based on Training Manuals Nos. 20, 22, 24, 26, and 42, that is, "Basic Signal Communication," "The Telephone Switchboard Operator," "The Message Centre Specialist," "The Radio Operator," and "The Field Lineman." The following paragraphs endeavor to show how proficiency tests in these manuals have been applied to regular signal corps organizations, and R. O. T. C. camps.

PROFICIENCY TESTS IN THE ARMY

Lack of space prevents a more thorough treatise, so that the examples given will have to be taken on faith as typical. It will be shown that it was possible to—

- (1) Compare the state of training, in the subjects for which the tests were designed, between different organizations.
- (2) Measure the progress made by a group during a course of instruction in the subject for which the test was designed.

Proficiency tests of various kinds have been in use in the army for many years, although they are generally not called by that name or even considered as such. By definition, a proficiency test is a standardized test, either of information or performance or both, and capable of objective scoring as distinguished from subjective scoring. Standardized means among other things, that the test has been given to a sufficient number of groups of men with different degrees of training, so that for a given type of man, with a given training, the score which marks proficiency has been fairly accurately determined. A test to be objectively scored must be so arranged that it can be scored right or wrong by means of a key, or by a scale of fixed points, so that the individual opinion of the scorer does not enter.

There are in general three kinds of proficiency tests—individual, group, and team tests. An individual test is one which is given to individuals, one at a time, to measure their proficiency. A group test is one given to a group of men simultaneously for the purpose of measuring the proficiency of each individual of the group. A team test measures the proficiency of a group as a team. This latter test has no counterpart in civilian practice but was originally devised by the army many years ago and is steadily being developed by it.

Some of the well-known proficiency tests are those in rifle marksmanship, pistol marksmanship, gunners' examination, and the Knox Trophy test. In the first two tests, we have purely standardized performance tests of the group variety, because the tests consist of certain "do" things, namely making a certain score on a standardized target, and can be given to a number of men simultaneously to measure individual proficiency. They are standardized in the following respects:

- a.* Test is given to all the group under similar conditions.
- b.* Scoring is objective and strictly impartial.
- c.* The same implements (rifle or pistol, ammunition, position, and ranges) are used.
- d.* Proficiency points, based on experiments, have been determined.

The gunner's examination is both a performance and information (questions on matériel) test and is only partially standardized.

THE FIELD ARTILLERY JOURNAL

The Knox Trophy test is more nearly standardized than the gunner's examination but no score on it has been established to denote proficiency. It is used for a different purpose than the gunner's examination. By experiment and use over a number of years, it could be standardized so that such a point could be found and a battery rated proficient or otherwise according to the score made thereon. The first three tests mentioned are group tests; the Knox Trophy test is a team test,—that is, the former are for individual qualifications, or proficiency, the latter for a team.

Probably the most widely known proficiency or qualification test in the army is that in rifle marksmanship. Since it is a well-known fact that our system of training riflemen is superior to that in any other army, it might be well to analyze this test which is purely of the performance variety.

It is standardized:

- a. Training matériel both for student and instructor has been prepared. (T. R. 150-5 and 150-10 on Marksmanship.)
- b. It is objectively scored.
- c. It is based on experiment.
- d. It is a group test.
- e. The resultant scores measure not only the training of the individual, but also the state of training of a company or other unit.

The study and experiment, to produce these effective training matériels alone, make possible compliance with the provisions of Pars. 21-25 and 37 of T. R. 10-5. Training matériels not based on such experiment and without the development of matériels for student and instructor and without standardized tests seldom, if ever, conform to the spirit or letter of T. R. 10-5.

It might not be amiss to say a word here with regard to another type of test. Most officers are familiar with the tests furnished by the War Department in certain subjects in the Basic Course of Unit Schools for newly commissioned officers. These tests are mentioned here to point out certain distinctive differences. They are almost wholly information tests. In military sketching a map of some kind is frequently required and this much of the test is performance. They are subjectively scored. By that term is meant that the test is so constructed that officers grading such tests vary as much as 100 per cent. in marking each question, because the marking is on the basis of personal opinion. Obviously, such tests are almost entirely incapable of standardization in any sense whatever. Whether these tests can be classed as proficiency tests is left to the reader's decision, although they are apparently used for that purpose.

On June 12, 1924, the Chief Signal Officer ordered all signal

PROFICIENCY TESTS IN THE ARMY

corps units to take proficiency tests in certain Army Signal Communication Training Manuals. Illustrative samples of these tests can be found in the Army Signal Communication Training Manuals Nos. 21, 23, 25, etc. These tests were objectively scored, information tests which had been fairly well standardized. Except for the fact that they were information tests, they were similar in all respects to the marksmanship tests in that:

- a. They were based on materiel prepared for students and instructors, *i.e.*, a Student's Manual and an Instructor's Guide.
- b. They were objectively scored.
- c. They were based on experiment.
- d. They were group tests, not individual or team tests.
- e. The resultant scores of the men of a unit could be used as a measure of training of a unit. (See Par. 9, T. R. 150–10.)

The resemblance of these signal corps proficiency tests to marksmanship tests is no mere accident. Accurate tests worth while being used in army training, require experiment to perfect them. Experiment is also required in developing methods of instruction and in the preparation of training materiel. Initially, of course, any instruction requires very definite objectives. (See Par. 21–24, T. R. 10–5). Then, given definite objectives, good tests can be used to evaluate methods of instruction and the matériel for students and instructors.

Some of the organizations to which these signal corps tests were sent had not received the Training Manuals, but had been properly trained notwithstanding. Others had received the manuals but had made no use of them. The results of these proficiency tests were evaluated and plotted with rather illuminating results. In this article only typical cases will be cited and for the test on only one manual, Training Manual No. 20, "Basic Signal Communications." Incidentally, this test could be very well applied to field artillery organizations containing specialists who are trained in Basic Signal Communications. The test consists of fifty questions with a time limit of thirty minutes, and is objectively scored. It might be well to explain a few terms before studying the following graphs:

By "range" is meant the difference between high and low scores, generally expressed by giving the high and low scores as 6–50. It is also used with respect to partial scores in connection with frequency.

By "frequency" is meant the number of cases making scores within a certain range.

"Average score" is the average or mean score.

The "median score" is that score which, when all scores are

THE FIELD ARTILLERY JOURNAL

arranged in order of size, is the middle one. Lacking a middle one, it is that which is midway between the two middlemost scores.

Fig. 1 is an example of what can be expected from an organization well trained along the lines laid down by this manual. It will be observed that the big "hump" in the graph comes well to the right of the figure. The median score for this organization was 47. Observe the frequency of the scores between 46 and 50 as shown in the table. Compare this frequency with that

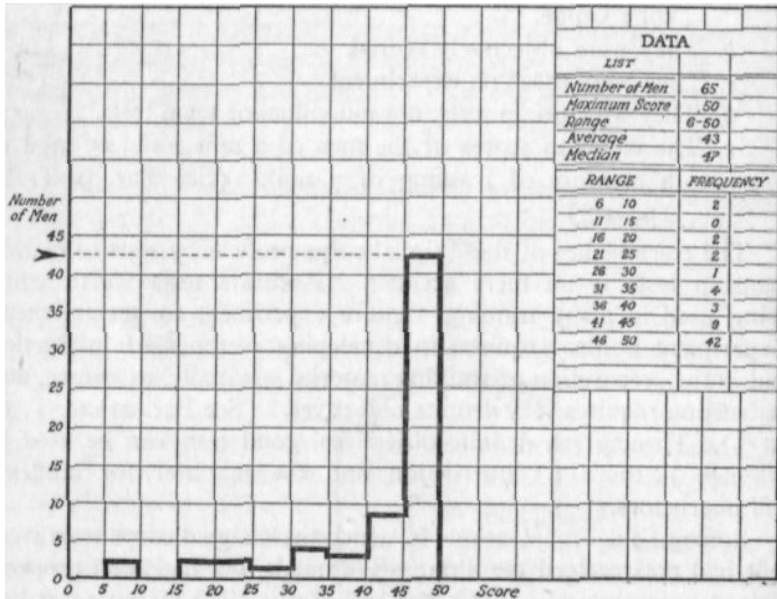


FIG. 1.

A SIGNAL CORPS ORGANIZATION IN 1924 IN THE NINTH CORPS AREA

DISTRIBUTION OF SCORES MADE ON A PROFICIENCY TEST ON TRAINING MANUAL NUMBER 20, BASIC SIGNAL COMMUNICATION. THIS CHART CAN BE READ AS FOLLOWS: IN A COMPANY OF 65 MEN, 2 MEN MADE A SCORE BETWEEN 6 AND 10; 2 MEN MADE A SCORE BETWEEN 16 AND 20, ETC. THIS CHART, AND THOSE WHICH FOLLOW, WERE PREPARED BY THE DEPARTMENT OF TRAINING LITERATURE AT THE SIGNAL SCHOOL.

between 36-40, for instance. The results of the test bear out what we know about the organization in question. It is in a position to carry out excellent training, is equipped with manuals, and has had efficient instruction.

Compare the graph in Fig. 1 with that in Fig. 2, which shows what may be expected from an organization whose training is average. Here we see that the "hump" is well toward the middle, the median score is 33, and we have about the same number of low scores as high ones. This organization is on foreign service. It is quite likely that the lower scores were caused by recruits or by men not within the jurisdiction of the company commander. Probably about 30 men were performing the duties of a service company

PROFICIENCY TESTS IN THE ARMY

(181 men examined). Taking all in all, it shows an average amount of training and is probably a good company. This, of course, is judging only on the one manual tested for. (We know, however, from records, etc., that it is a good company.)

Fig. 3 is the graph of an organization which shows a poor state of training in this particular manual. Here we have the large "hump" in the graph well to the left. The median score is 24, and the frequency of scores in the higher ranges is very low.

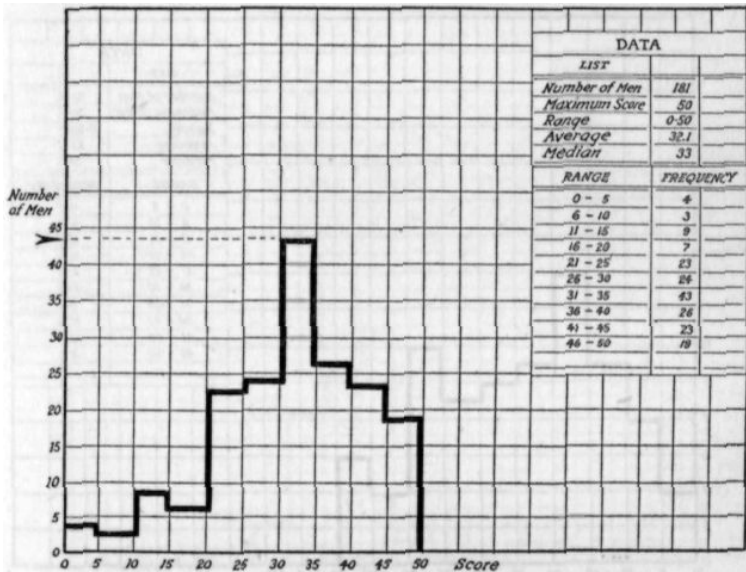


FIG. 2.

A SIGNAL CORPS ORGANIZATION ON FOREIGN SERVICE IN 1924

DISTRIBUTION OF SCORES MADE ON A PROFICIENCY TEST ON TRAINING MANUAL NUMBER 20, BASIC SIGNAL COMMUNICATION.

It is then possible to arrange the three organizations examined, in the following order of merit, as to their knowledge of this one subject: Fig. 1, Fig. 2, and Fig. 3. It is well to remember that the tests given are objective, that is, that they are capable of scoring by means of a key, so that individual opinion is reduced to a minimum. If now, we administer similar tests on other subjects in which it is desired to measure proficiency, it would be possible to construct a graph showing the general state of proficiency of all these organizations (see Fig. 5). Since these organizations are made up of specialists, it would give a very good indication of their state of training.

Tests on several manuals similar to the test on T. M. 20, previously described, were given to R. O. T. C. students from various

THE FIELD ARTILLERY JOURNAL

colleges at one camp. It is possible to draw conclusions between the state of training of men from these colleges and the training of men in regular signal corps organizations. Compare Fig. 4 (which is a composite graph for five colleges) with Fig. 1, which is the best troop organization.

We see that the state of training in T. M. No. 20 in all colleges was not as good as it was in this one signal company (median 38 for the colleges as against 47 for the signal company); but the colleges are much better than a

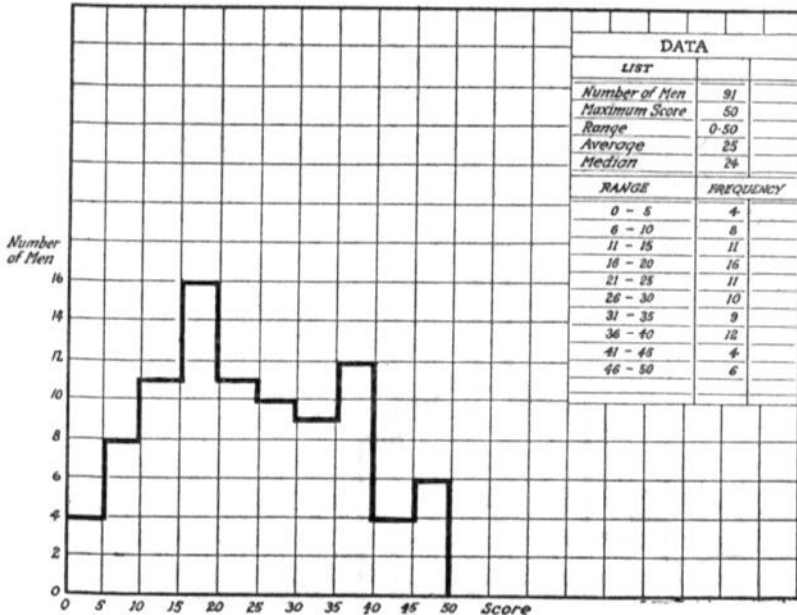


FIG. 3.

THE RESULT WHERE THE TRAINING IS POOR

DISTRIBUTION OF SCORES MADE ON A PROFICIENCY TEST ON TRAINING MANUAL NUMBER 20, BASIC SIGNAL COMMUNICATION.

poor signal corps organization (Fig. 3, median 24) and are about the same as an average trained organization (Fig. 2, median 33).

The next graph, Fig. 5, was obtained from the R. O. T. C. students at Ft. Monmouth, N. J., in June and July, 1925. Five colleges were represented—Massachusetts Institute of Technology, Georgia Institute of Technology, Carnegie Institute of Technology, Cornell University, and Ohio State University. All students upon reporting were given the Otis, General Electric Information, Basic Signal Communication, Telephone Switchboard Operator, Message Centre Specialist, Radio Operator, and Field Lineman tests. The solid line in Fig. 5 shows the results of the tests given upon entrance.

PROFICIENCY TESTS IN THE ARMY

These same tests were given at the close of camp. The shaded line shows the results obtained on the final tests. This graph is a very comprehensive view of the progress made in training in all subjects, the median score having moved from 169 to 231.

Fig. 6 shows the results obtained by all colleges on the Field Lineman's Manual. Both the graph of total scores (Fig. 5) and the graph of scores in one manual (Fig. 6) show excellent progress has been made. Similar curves were plotted for each manual and for each school. Lack of space prevents

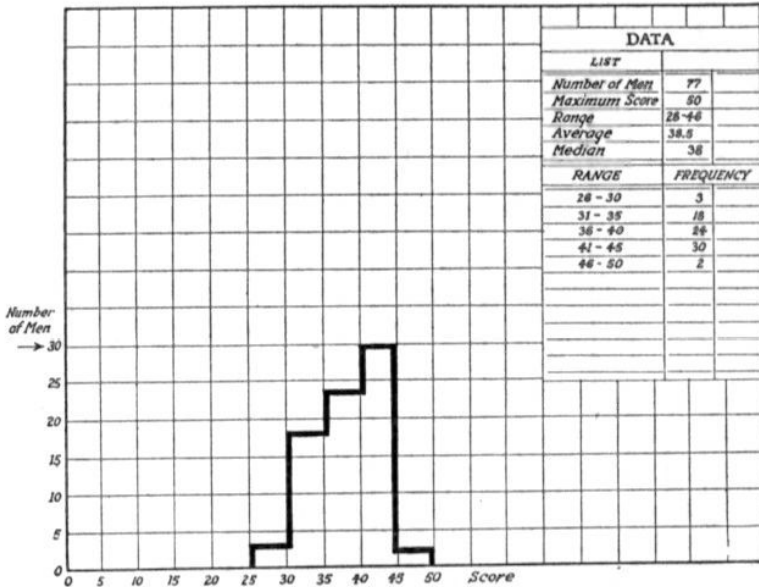


FIG. 4.

THE TEST AT A 1925 SIGNAL CORPS R.O.T.C. CAMP

DISTRIBUTION OF SCORES MADE ON A PROFICIENCY TEST ON TRAINING MANUAL NUMBER 20,
BASIC SIGNAL COMMUNICATION, AT THE CLOSE OF THIS CAMP.

their being presented here, but it is easily understood how, from them, it would be possible to see (1) which school had the better instruction before camp, (2) which men made proper progress during camp. It is then possible to determine whether the fault lay with the officer detailed at the school, or whether there were obstacles placed in his way by the school authorities to account for his college's quota having a low standard of instruction. In the second case it is possible to tell what kind of work candidates did during camp or if they were trifling and not interested. If the latter were true, it is very easy to check up on the individuals doing poor work and to keep the fact in mind when commissions are awarded at the close of camp. This seems a much better way to determine a young man's eligibility for a reserve

THE FIELD ARTILLERY JOURNAL

commission than the mere recommendation for or against it of his company commander, who may be influenced by the man's ability to play baseball, sing in the college quartet, or make himself agreeable to the officer's wife at the R. O. T. C. dances.

The writer was so impressed by this way in which training along the indicated lines could be measured that he revised these tests for use of the Field Artillery. These tests were approved by the Chief of Field Artillery

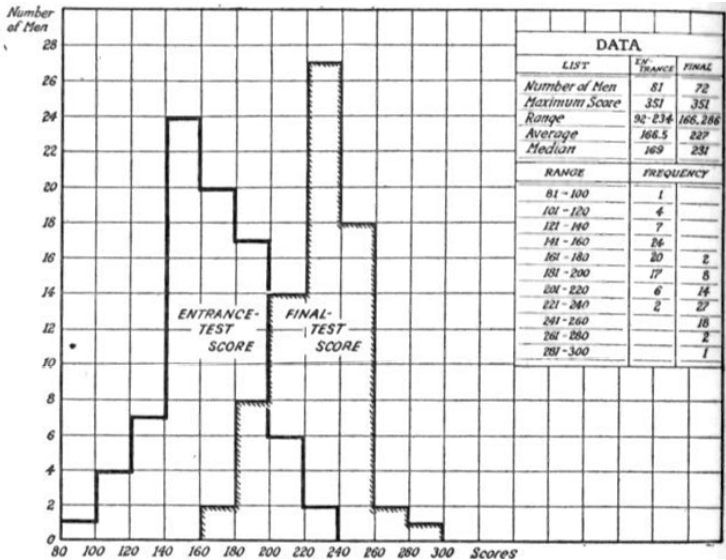


FIG. 5.

COMPARATIVE DISTRIBUTION OF THE COMBINED TOTAL SCORES OF EIGHT PROFICIENCY TESTS GIVEN AT THE BEGINNING AND CLOSE OF THE 1925 R.O.T.C. CAMP

THE UNSHADED LINE IS THE RESULT AT THE BEGINNING OF THE CAMP. THE SHADED LINE IS THE result and distributed to all organizations, as well as to the various R. O. T. C. units. By giving them to those men in an organization who are supposed to qualify as switchboard operators, etc., it can be told just how well these men compare with what might be called "standard" specialists. Of course, we are unable at present to set permanent proficiency points, that is, the score which marks a proficient operator, because we have not been able to experiment with field artillery organizations, but in lieu of better, the following are recommended for troops of the regular establishment:

- Test on Training Manual 20,—39 points
- Test on Training Manual 22,—80 points
- Test on Training Manual 24,—50 points
- Test on Training Manual 26,—50 points
- Test on Training Manual 42,—78 points

PROFICIENCY TESTS IN THE ARMY

These points may be altogether too high, but it is better that way than too low. If enough officers administer the tests and turn in the scores made, proper points can be determined. In any event the use of these tests will tend toward standardized instruction, inasmuch as a radio operator who makes a score of, say, 40 is definitely placed as not as good as one who makes 50. Also, an officer can see how his instruction is progressing, for if

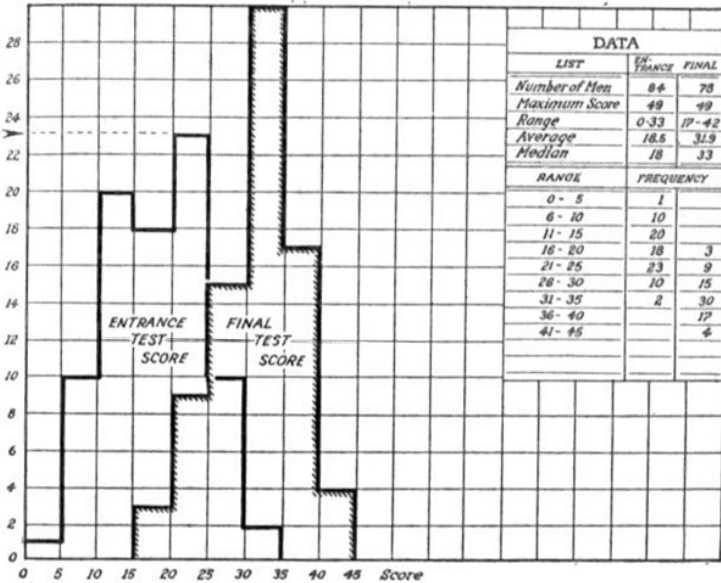


FIG. 6.

THE TEST OF THE R.O.T.C. STUDENTS ON TRAINING MANUAL NUMBER 42. FIELD LINEMAN, GIVEN AT THE BEGINNING AND END OF THE 1925 CAMP

a man makes 10 at the start of the course on the Field Lineman Test and 70 at the close, he has certainly improved.

In closing, it might be well to say that the writer believes that a similar method of testing can be applied to other field artillery subjects besides communications. At the risk of being termed "visionary" and "impractical", it is believed that the day will come when a regimental commander will be able to say to his battalion commanders, in lieu of publishing voluminous programs, "I wish an improvement of thirty points in all phases of training during the next three months" or some such statement. This idea of proficiency tests is the germ of the system.

It is well to remember though, that before a proficiency test can be prepared we must have the following:

1. An objective—(to be stated generally by higher authority).

THE FIELD ARTILLERY JOURNAL

2. Course material. (Manual, handbook, drill regulation, training regulation,—the *name* does not matter so long as the material is there, *practically* arranged for teaching.)

And finally, if a company commander of infantry can be compelled to qualify a certain percentage of his men in rifle marksmanship (a proficiency test) why could not proficiency tests in other subjects be devised and a percentage of qualifications required in them? If we consider how long it has taken to perfect the present qualification course in rifle marksmanship, we begin to arrive at an answer to the question asked above. It will take a long time, much work and experiment.

THE SECOND FIELD ARTILLERY BRIGADE ON THE MARCH

BY LIEUTENANT JOHN J. BINNS, 12TH F.A.

"WAR and rumors of war," the old slogan of Europe in the early months of 1914, was changed to, "The Division Hike and rumors of the Division Hike," at Fort Sam Houston during the past spring.

Of course there exists no more fertile or prolific field for rumors than an army post. Let your imagination conceive a division station, augmented by a corps staff, and you may readily understand the many theories that existed at Fort Sam during the period January to April. Finally, Dame Rumor was driven to cover by Division Memorandum No. 72, dated April 30, 1925. The Hike was a certainty.

From an artillery point of view the march of the Second Division consisted of the following phases; first, preparation; second, care and management of personnel and animals throughout the march; and finally the establishment of a system of billeting conducive to maximum efficiency and comfort for the command.

A résumé of conditions existing in the Second Field Artillery Brigade, composed of the 12th and 15th regiments and the Second Ammunition Train, on February first, indicated the following: The regiments had received two increments of recruits, one in December and the other in the first part of January. The training of these men consisted of,—some time spent at Fort Slocum, New York; a trip by transport to Galveston, Texas; and a motor convoy from that city to Fort Sam Houston. Upon arrival these men were grouped for training and quarantine at the Recruit Training Centre. Approximately four weeks' training, one week of which was devoted to field artillery training, found these men members for duty in a line battery of field artillery.

THE SECOND FIELD ARTILLERY BRIGADE ON THE MARCH

It is of note to reiterate—approximately one week of field artillery training. Equitation consisted of learning how to mount; holding the reins; and endeavoring to stay mounted until the termination of the drill. Management of the pair and principles of draft were practically unknown; and these men composed fifty per cent. of our strength.

The animal standpoint was practically parallel. Batteries were averaging fifty-six horses. By assignment from the brigade pool, the animal strength per battery was augmented to ninety-two. This increase in strength was not made by the addition of young, strong, but untrained, remounts. No indeed, the animals were reassigned from those which had been turned in nine months previously as cast-offs. The ailments were of many types—age (17–18), chronic sore necks or withers; laminitis; or they were difficult to manage due to lack of desire to "pull," be shod or clipped.

Just picture yourself, Mr. B. C., given the foregoing proposition,—fifty per cent. of your men recruits; twenty-two per cent. of your animals without work for nine months, and in addition possessing faculties which made them far from desirable. Add to the above, approximately three months to put this heterogeneous collection into shape to make the march to Leon Springs on March 2nd; to go through a month of technical and tactical firing; and then to make the Division March.

The march from Fort Sam Houston to Leon Springs was accomplished without a sore neck or skin abrasion in the Twelfth. I haven't information on the Fifteenth, but recollection is that they were equally fortunate.

Camp Stanley meant much to Mr. Recruit and Mr. New Horse. They started to learn together; they drilled together; they became hardened to field service; and both men and animals learned literally and actually, just what "team work" meant.

When the Brigade returned to the Post in April, the progress which had been made was apparent. Three weeks to go and then the march.

A slight digression will indicate the plan of march.

On May 4th the Artillery Brigade left Fort Sam and marched to Leon Springs *via* the Blanco Road. The Third and Fourth Infantry Brigades marched to Nine Mile Hill and Bullis. On the morning of the third of May the Artillery Brigade divided, the regiments accompanying the respective infantry brigades.

Leading from Boerne to Fredericksburg are two routes, which for simplicity will be termed the west road and the east road. The Third Infantry Brigade, Fifteenth Field Artillery, the Second Ammunition Train attached, took the west route; the Fourth Infantry Brigade, Twelfth Field Artillery, Second Engineers, Division

THE FIELD ARTILLERY JOURNAL

Headquarters and Special Troops attached, marched on the east road. Upon arrival at Fredericksburg, brigades exchanged routes and headed home.

Two weeks before the march, Brigadier-General Paul B. Malone, Division Commander, assembled the officers of the Division for a conference. Among other items which the General set as standards for the march were the following: "Every man in ranks and every animal in the collar every day." "Casualties of men and animals on such a march can be due only to carelessness and inattention—there will be no casualties." The man standpoint meant very little to the artillery—that was the doughboy's problem. However, "no horse casualties," appeared to be a shot at the moon. The age of the animals seemed to indicate many shortcomings along the way, due to the continuous work and the great heat. However, results count. The Twelfth Field Artillery evacuated two horses the first day, feet and legs completely gone. That remained the grand total for the entire march.

From the personnel standpoint fortune also smiled. One man was evacuated at Fort Sam,—broken leg from a kick; and two men were incapacitated for duty, but not evacuated. One of these latter lost a finger—the other was struck by an automobile.

If all of the possibilities and probabilities incident to such a march are considered, the verdict for performance might at least be satisfactory.

In past days it was frequently the case, when making camp for the night, that the troops would wait a long time after arriving at their destination, before being assigned a definite area for their site. Today, however, with the growth of our numbered and alphabetical staff, such a condition should not exist. It cannot be tolerated because it is inexcusable. The regimental adjutant is charged with billets for the troops. That duty requires that the billets be secured as far in advance as possible. The ideal is expressed in General Malone's order: "Not a wheel will stop entering the area assigned until it has reached its appointed place." This policy was carried out explicitly.

It will probably be of interest to trace the system employed which effected results. Within regiments the following personnel and equipment are used. The regimental adjutant, accompanied by the battalion sergeants major, go forward by truck. Upon arrival at the new camp site, a division representative of G-1 assigns a definite area to each command and also gives any pertinent information, such as water restrictions, division headquarters and division dumps (forage and supplies), and neighboring troops. It then becomes the duty of the billeting officer to go completely over the area assigned; choose a location for headquarters, officers' tents, battalion areas,

THE SECOND FIELD ARTILLERY BRIGADE ON THE MARCH

service battery, regimental dumps, medical dispensary, and veterinary dispensary. The billeting officer will frequently find that his judgment and ingenuity are put to complete test, in order that he make the best possible use of the area assigned.

The battalion adjutants, mounted, accompanied by a representative from each organization, precede the column by two hours. When they reach the camp site, the regimental adjutant designates the respective battalion areas. Their problem is then to place their units. Having made the decision, it is submitted to the billeting officer for approval and coördination. The areas are then staked out, obsolete semaphore flags are very useful for this purpose. The points marked are: right front wheel of each battery; kitchens, latrines, dumps and officers' tents.

A sketch to scale is then made by each billeting officer, of his area, showing unit dispositions and all pertinent facts concerning the camp. The battalion adjutants then ride back, reaching the column before the last halt, and deliver the sketches to the regimental and battalion commanders. At the last halt, battery commanders report to their battalion commanders, study the sketches, and the problem is practically solved.

As the batteries approach the camp site, the sergeants who have ridden forward with the battalion adjutants ahead of the column and marked their positions, join the column. It then becomes the duty and responsibility of these agents to conduct the batteries to their appointed places.

If the column is delayed—a carriage halts, or a battery goes into park incorrectly, the billeting detail has failed in its mission.

In conclusion, this brief account of the Second Field Artillery Brigade in the field with the Second Division, would be incomplete without credit being given to the Quartermaster Corps and the Second Engineers. Frequently we hear the paraphrased slogan "Service for the line, by the line." On this particular march the Quartermaster Corps never failed in their efforts of service for the line. Likewise the Second Engineers are deserving of great credit for their coöperation in building bridges; in setting up portable canvass troughs; and in pumping and filtering water. This assistance in furnishing water facilities, especially for the animals, was invaluable.

HOW PURDUE FEATURES MILITARY CEREMONIES

BY CADET MAJOR W. G. HINCKLEY, PURDUE R.O.T.C.

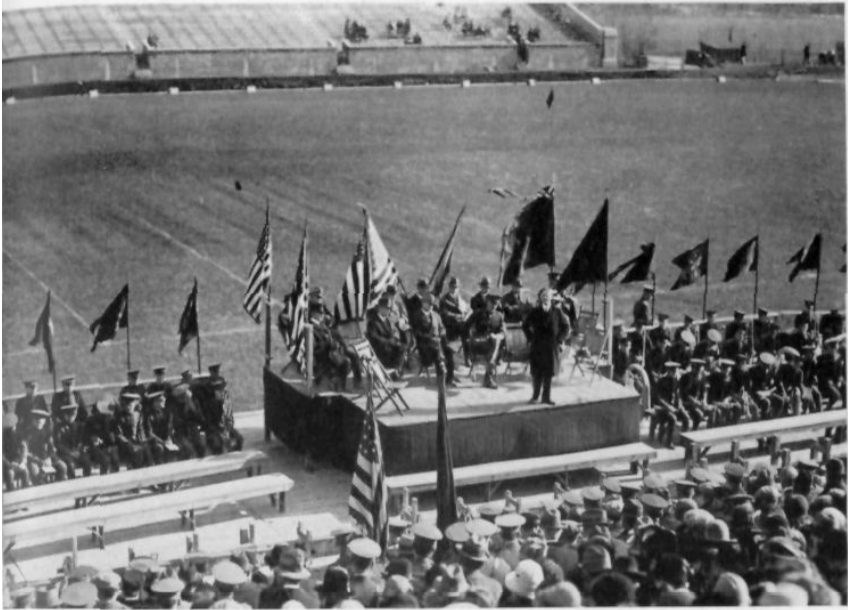
THIS country observes many national holidays after which we go blithely on our way without a great amount of thought as to their meaning. However, Armistice Day and its meaning, is such a fresh wound in the minds of most of us that it stands out as a day of thought about heroes who have done their duty, and of ways and means of preventing a reoccurrence of such a war as the World War.

The celebration of Armistice Day at Purdue University is handled by the R.O.T.C. Unit, and the program this year was significant of the reverence in which Armistice Day is held. The program attracts a large audience of school children, parents of students, citizens of Lafayette and West Lafayette and members of the faculty and student body of Purdue. It was held this year in the new Ross-Ade Stadium and was blest with a wonderful November day and setting. Imagine now, yourself seated in this stadium thinking of the significance of the day once celebrated with so much hilariousness but now celebrated with reverence and thought.

To the south of the stadium the playing of the band is heard and the tune is identified as marching music. Upon closer examination you see the student cadet colonel and staff, followed by the band and then by the Cadet Corps of 1500 men marching toward the stadium in column of squads. They march onto the field and form in brigade front facing you.

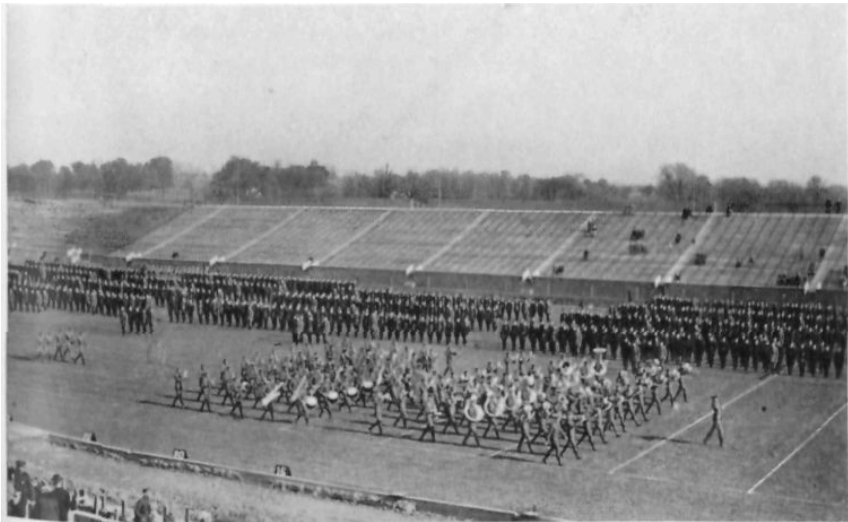
Now an entirely different strain falls upon your ear, and again looking to the south you see the Civil War veterans from the Soldiers' Home of Indiana, headed by their fife and drum corps and fine old color bearer, come swinging down the field, some with steps more faltering than in the days of '65, but still proud in the knowledge that they have done an honorable thing in defending their country. They parade before the crowd in the stadium and the cadet corps and then take seats reserved for them in front of the speakers' stand.

The reviewing party is now formed containing President E. C. Elliott, Major L. J. McNair, Commandant, Colonel Paul V. McNutt, speaker of the day, the mayors of Lafayette and West Lafayette and other influential people of the community. The review of the Cadet Corps which follows is a review which would do credit to the Regular Army. Twenty-one batteries make up the brigade and as they swing past in battery front, one cannot help but feel proud of the blessings of this country and offer a prayer for never-ending peace, both internal and with other nations.



THE SPEAKERS' STAND AT THE PURDUE ARMISTICE DAY EXERCISES

DR. EDWARD C. ELLIOTT, PRESIDENT OF PURDUE UNIVERSITY, INTRODUCING COLONEL PAUL V. MCNUTT, OFFICERS' RESERVE CORPS. DEAN OF THE INDIANA LAW SCHOOL, TO THE AUDIENCE OF 4,000 WHO WERE PRESENT.



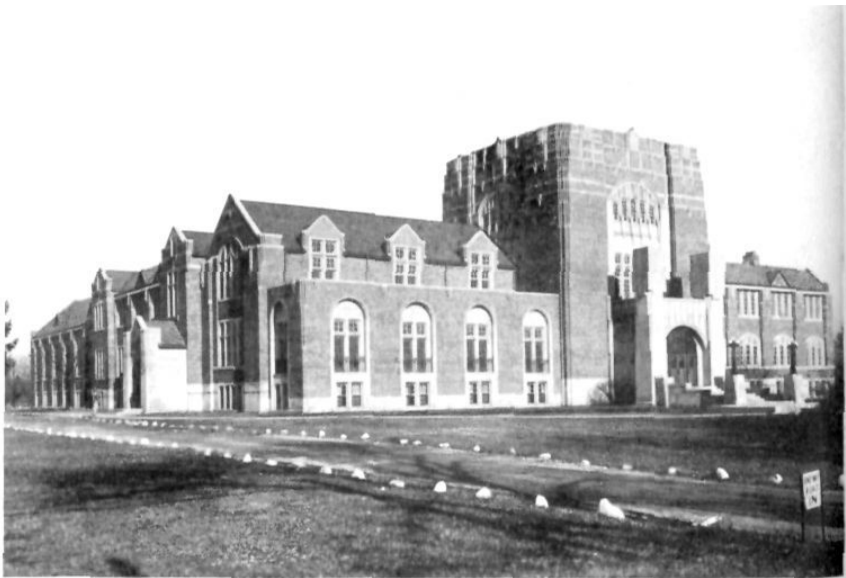
THE REVIEW OF THE PURDUE FIELD ARTILLERY BRIGADE

THE BRIGADE CONSISTS OF 1,477 STUDENTS. THE PURDUE MILITARY BAND OF 125 PIECES ASSERTS ITS REPUTATION AS THE BEST UNIVERSITY BAND IN THE UNITED STATES.



THE NATIONAL SALUTE

FIRED BY THE "ORDER OF MILITARY MERIT" OF THE PURDUE UNIVERSITY R.O.T.C.



PURDUE MEMORIAL UNION

IN MEMORY OF WORLD WAR VETERANS AND PURDUE STUDENTS WHO MADE THE SUPREME SACRIFICE.

HOW PURDUE FEATURES MILITARY CEREMONIES

After the Corps has been seated in sections reserved for them, the colors and all guidons are placed in racks so arranged that they form a background for the speakers' stand. The reviewing party having taken their places on the speakers' stand, Major L. J. McNair reads the Honor Roll of men who gave their lives during the World War. The finish of the reading of this list is so timed that the crowd stands in silence for two minutes at 11.00 A.M. as was done by many others throughout the country at that time. The most beautiful of bugle calls, Taps, is then played in honor of these men. President Elliott now takes the platform and makes a short, pointed speech in the introduction of Colonel Paul V. McNutt of the Officers' Reserve Corps, Dean of Law at Indiana University. Colonel McNutt is indeed a fine example of a leader of men, tall, of fine physique, piercing black eyes and a voice that commands attention and respect. Of the several talks which had been given at various Armistice Day programs here, Colonel McNutt's was one of the best and it is a shame that space will only permit printing the parts of his speech which follow:

"We meet today to celebrate the signing of the Armistice. Seven years ago the world was delirious with joy. The war was over. It is significant that Armistice Day has changed from a day of rejoicing to one of solemn national sacrament. It is in keeping with the character of the day we celebrate to rededicate ourselves to the ideals for which our men gave their lives in the World War. They brought to their country's altar their services and their lives, if need be, that liberty and justice might prevail.

"Why is it that youths, the flowers of the Nation, should be engulfed in the maw of war? Why should not they be spared to reach the zenith of their power? The answer is that in those few brief days or months they lived a hundred lives, well rounded and complete. Their service made men of youths and gave them the strength of lofty purposes. They paid their debt to the world; they did not live or die in vain. The ideals for which they fought live on. The course of right survives. Pray God that in the present age and in the future their service will not be lost.

"I have been troubled of late by a serious matter. Certain groups of individuals, some of them honest and well-meaning,—some of them not, are seeking to exact a pledge from persons of military age never again to serve this nation in time of war and to destroy their love for this nation as a nation. I have no abuse for those who are honest and well-meaning. I agree with them that the abolition of war is a consummation devoutly to be wished. I emphatically disagree with them as to the means of achieving that end. In this connection I wish to present a few facts.

"America stands today as the richest of nations. I submit for

THE FIELD ARTILLERY JOURNAL

your consideration that America, being rich in a distracted, bankrupt, but armed world, must look with care to her national defense.

"America has tried the experiment of leading toward disarmament by example. She stood rich and weak in an armed world and she was put upon by every side. Those of her ships that were not bombed were seized. We had no rights that any nation, including Mexico, respected. The armed nations that flouted all of our elemental rights refused to follow our example. Now nothing is left but to follow theirs.

"I believe in peace and am not ashamed of it. No soldier wants war—he has seen war. However, under present circumstances, I do not believe that the abolition of war can be brought about by the disarmament of America alone or by the taking of a slacker vow by the youth of this land.

"The point is this. We are not militarists. This is a peaceful nation. With the world on fire we must be insured against possible loss by destruction. If the millenium comes and war is abolished, it will be by general agreement and not by example.

"The longer peaceful citizens remain disarmed, the longer disorder and lawlessness rule. I speak advisedly when I say that in the wars, in which the country has participated, half of the battle casualties have been due to a failure to prepare in time of peace. This is my answer to the well-meaning pacifist.

"It is a high privilege and a sacred duty to protect this nation and its institutions. God forbid it ever again be necessary to serve in its armed forces. But if that time does come, be ready.

"The National Defense Act of 1920 provides an adequate and economical system of national defense. If you love your country and your sons, see to it that your congressmen make it possible to carry out the provisions of that Act.

"The only glory of war is the glory of sacrifice. It is the soldier's gift to the world. It is the life of the world.

"I know what our soldier dead would say to the slacker vow. Our comrades speak to us. They remind us of the dangers which beset our beloved land, of the enemies within and without, of the long fight which must be waged. The voice of our comrades comes to us like a call to arms. 'Be prepared. If the danger comes, fight on, fight on to victory.'

"We can best honor these brave men and women by living lives of unselfish devotion to the common good. Selfishness breeds trouble and discontent. The life of a soldier is entirely unselfish. Let us carry the unselfishness of the soldier into our citizenship. Unselfishness—the application of the Golden Rule—would solve many problems of today.

"The spirit of the men who lie beneath the flag, is the spirit of

HOW PURDUE FEATURES MILITARY CEREMONIES

America. It has given our nation strength and dignity. If we are to be true monuments to them, let us partake of that spirit. Let us forget class, let us forget Mammon, let us forget self and take up once more the banner of unselfish service. We can then go to the rest of the peoples of the world with the plea that they accept our ideals. When they do, Mars will fade into the darkness of the night and in its stead will shine a star to lead all men of all nations—the Star of Bethlehem."

So ended the talk of Colonel McNutt, and after a short prayer by Reverend W. P. Graham, you go thoughtfully on your way thinking of the wonderful talk to which you have just listened and secure in the knowledge that you are better able to enter into the job of being a citizen of our Country.

But what of this National Defense Act of which Colonel McNutt speaks? Possibly a little of the application of that law to Purdue University would not be amiss at this time.

Since 1919 the placing of a completely motorized field artillery unit at Purdue University has been a source of complete satisfaction. This is due mostly to the type of work offered by the University, it being primarily of an engineering and agricultural nature. The four branches of engineering, the various agricultural courses, and the science course, are offered, each with a requirement of more or less technical and scientific foundation in the freshman and sophomore years. From these courses the students in military training already have a foundation in mathematics and in the workings of machinery, which can be especially adapted to motorized field artillery and to the adjusting and operating of gun-sights and battery commander detail instruments. The school has an enrolment of approximately 3700, of which about 600 are female students.

Let us pass now to an examination of the Military Department, its size, courses offered, activities promoted, and achievements.

This year the Corps contains 1477 students and the reader can obtain some idea of the size of our Armory when I say that one period each week, known as "Corps Period," the Corps is completely assembled in brigade formation in this building. The students are formed into batteries and these batteries into a brigade, and they completely cover the 100 × 200 foot floor in the drill hall. Cadet officers handle these formations and the Regular Army officers act only as advisors and critics of this and similar occasions. In this way the valuable quality of leadership is instilled into the cadet officer by actual practical experience, and a sense of pride is created in the work of these men by grading the various batteries, battalions and regiments at various times and posting the results.

Certain outside activities give an opportunity for the students to become specialists, and to engage in work of benefit both to

THE FIELD ARTILLERY JOURNAL

themselves and the Military Department. The greatest of these is the annual Military Carnival which draws a crowd of townspeople and parents, and fills the large seating capacity supplied for it. In this show the whole Corps is engaged and various acts are carried out much after the fashion of a circus, except that all acts have something of a military nature in them.

Opportunities are also offered to coach or be a member of crack or distinguished squads. The freshmen are given opportunity to belong to crack squads. These squads are made up of seven freshman cannoneers, one freshman gunner, one sophomore sergeant, and a junior coach. The competitive drill of these squads consist of various squad movements, unlimbered drill, and service of the piece on the French 75. The distinguished squads consist of seven sophomore cannoneers, one sophomore gunner, one sophomore sergeant, and one junior coach, and perform unlimbered drill, limbered drill, and service of the piece with the French 155's. Eliminations are carried on in these two classes and the Corps winner is decided, a medal being given to each of the men on the winning squad.

Three other chances are offered the students in this outside work, that of becoming a pistol, a motor, and a gunner expert, in accordance with the regular army examinations on these subjects. Medals are also awarded to winners in this class of work.

For these and other outside activities men are given citations, and after receiving one citation any man in the Corps is eligible for election to the semi-honorary society, Purdue Order of Military Merit. This society promotes the morale of the Corps and gives an organization of experts which can be called upon to do exhibition drill work.

All the work of the year is pointed for the spring inspection by the War Department Board. At this time a review is held, after which the board usually takes out batteries, battalions and other organizations and discovers their perfection of training by various manœuvres of their own design. A problem is presented involving all matériel and men necessary for its operation. Various other phases of the work are presented for the approval of these very inquisitive and all-seeing men, but their approval is shown in the fact that Purdue was rated Distinguished College and received the Gold Star in 1917, 1920, 1921, 1922, 1924 and 1925, ranking as third in the United States last year and being outranked only by two colleges in the south where year round outdoor activity is possible.

The spirit of the Corps, its morale and its attitude toward military training are all of the best order at Purdue, many factors entering into this condition, but one of them being the Cadet Officers' Luncheons given at the Purdue Memorial Union building once a

HOW PURDUE FEATURES MILITARY CEREMONIES

month, the programs of which tend to give a general feeling of good fellowship and coöperation among cadet officers.

The local company of Scabbard and Blade, the national honorary military fraternity, is also a large factor in promoting this good feeling in the Corps.

Possibly the things which have the greatest influence in making all this possible are the wonderful support given the course by President E. C. Elliott and the Faculty; and the high calibre men sent us by the War Department. A desire to see Purdue lead in military training in this country is apparent in the support of the Faculty, and the detail of officers here is doing all in its power to meet this desire.

Military training at Purdue is a decided success and as long as the provisions of the National Defense Act are met, will continue to be. It remains now to see that this Act is properly carried out so that units such as the one at Purdue may continue to flourish.

THE ANNUAL REPORT OF THE CHIEF OF FIELD ARTILLERY FOR 1924—1925

(Continued from last issue)

THE FIELD ARTILLERY SCHOOL

Six classes of officers completed courses during the past school year as follows:

- Battery Officers' Course (Regular Officers),
- Advanced Course (Regular Officers),
- Three Courses for National Guard and Reserve Officers,
- Refresher Course for General Officers.

The Battery Officers' Class began September 15, 1924, and ended June 12, 1925. Eighty-five officers began the course and seventy-two regular army officers completed it satisfactorily. Nine regular army officers failed to complete the course satisfactorily. One officer was relieved during the course.

Three foreign officers from Cuba took the Battery Officers' Course and were awarded diplomas. One Philippine Scout Officer satisfactorily completed the course and received a diploma and certificate.

The following is a detailed statement of the hours allotted to the Battery Officers' Course:

Department of Gunnery	462	hours
Department of Tactics	487	hours
Department of Matériel	199½	hours
Department of Animal Transport	277½	hours
Total	1426	hours

The Advanced Course began September 15, 1924, and ended June 12, 1925. Thirty-two regular army officers and one foreign officer began the course and all completed it.

The following is a detailed statement of hours allotted to the Advanced Course:

Department of Gunnery	244	hours
Department of Tactics	962	hours
Department of Matériel	55	hours
Department of Animal Transport	85½	hours
Total	1346½	hours

Both the Battery Officers' and the Advanced Courses have been satisfactory, and the experience gained from previous years is resulting in well-balanced and coördinated courses.

ANNUAL REPORT OF CHIEF OF FIELD ARTILLERY

In both courses the number of field exercises involving firing has been increased. Adjustment of fire by aerial observation and the transmission of firing data by the use of radio sets from forward observation posts, and also by voice from the planes, have been stressed, and good results have been obtained. The use of aerial photographs in the preparation of fire has been continued this year with continued gratifying results. During the field exercises aerial reconnaissance was made by members of the brigade staff with excellent results. Special attention has been given to "Fire Direction," in both classes.

Lack of basic training of many officers in battery drill and actual emplacing of a firing battery, has been noted. A very decided improvement was noted towards the end of the course in all phases of this work.

NATIONAL GUARD AND RESERVE OFFICERS' COURSE (FALL)

This course following the lines laid down in War Department Document 352.1, and patterned after the Battery Officers' Course, began September 15, 1924, and ended December 13, 1924. Out of the class of thirty-seven officers, all completed the course, but only fifteen officers were graded satisfactory in all subjects.

The following number of hours were allotted to this course:

Department of Gunnery	189 hours
Department of Tactics	147 hours
Department of Matériel	41 hours
Department of Animal Transport	110 hours
	<hr/>
Total	487 hours

The personnel as a whole did not have enough basic training to take full advantage of instruction during the short period of three months.

NATIONAL GUARD AND RESERVE OFFICERS' COURSE (SPRING)

This course was a duplication of the National Guard and Reserve Officers' Course, held in the Fall. Out of the class of thirty-two officers all completed the course and twenty-two officers were graded satisfactory in all subjects.

The following number of hours were allotted to this course:

Department of Gunnery	190 hours
Department of Tactics	172 hours
Department of Matériel	92 hours
Department of Animal Transport	58 hours
	<hr/>
Total	512 hours

The same remark about lack of basic training also applies to this class. The progress of the National Guard and Reserve Officers' Classes has been hampered due to the attendance of several officers

THE FIELD ARTILLERY JOURNAL

with no previous training in field artillery. Examinations should be required before detail to the school is made.

NATIONAL GUARD FIELD OFFICERS' COURSE

Authority for this course, requested by the Chief of Militia Bureau, was granted July 19, 1924. Ten field officers of the National Guard were authorized to attend. The course began November 1st and was completed December 12, 1924. Seven officers started the course and completed it satisfactorily.

The following is a detailed statement of the hours allotted to the course:

Department of Tactics	133 hours
Department of Gunnery	35 hours
Department of Matériel	13 hours
Department of Animal Transport	25 hours
Total	206 hours

This six weeks' course is considered too short for efficient and thorough instruction, although three field exercises were worked, in conjunction with the National Guard and Reserve Officers' Fall Class, which gave these field officers an opportunity to put into practical effect some of the principles taught them in this short time.

REFRESHER COURSE

A refresher course for one general officer was given during the year.

ENLISTED SPECIALISTS

Seven classes of enlisted men completed courses during the school year as follows:

Horseshoers (Regular Army), September 15, 1924—February 3, 1925.

Motor mechanics (Regular Army), September 15, 1924—February 3, 1925.

* Saddlers (Regular Army), September 15, 1924—February 3, 1925.

Communications (Regular Army and National Guard), February 9, 1925—June 13, 1925.

Battery Mechanics (Regular Army), February 9, 1925—June 13, 1925.

Saddlers (Regular Army), February 9, 1925—June 13, 1925.

Horseshoers (Regular Army), February 9, 1925—June 13, 1925.

* The Saddlers' Course, September 15, 1924, to February 3, 1925, was necessary on account of several enlisted men being sent to the school in the Fall instead of the following Spring, by a mistake on the part of several corps area commanders.

ANNUAL REPORT OF CHIEF OF FIELD ARTILLERY

ESSENTIAL ACTIVITIES AT THE SCHOOL

LIBRARY

During the past year, the Library was dealt a very serious blow by a fire which destroyed over five thousand volumes. Some of the destroyed volumes have been replaced with the aid of other service schools. Approximately \$1100 have been spent on technical books, \$800 on binding and \$296 on supplies, as a result of the fire.

The library performs not only the usual functions of similar institutions in the army, but renders valuable assistance to the students in research work.

PRINT SHOP

The shop does most of its work for the Academic Division, printing all field problems, schedules, exercises, and blank forms.

MAP REPRODUCTION

The work of the Engineer Train of the 29th Engineers has been of great value to the school.

THE CORRESPONDENCE COURSE DEPARTMENT

During the school year field artillery correspondence courses have been written by members of the Correspondence Section. The preparation and revision of the sub-courses has been accomplished by members of the board in addition to their regular duties as members of the staff and faculty of the Field Artillery School. This additional work has put a tremendous strain upon them, necessitating a great amount of work at night. The stenographic work involved in preparing these courses has been absorbed by the stenographic help of the Academic Division of the Field Artillery School, assisted by such typists as it was possible to borrow from other offices of the post. The need for at least one additional typist to perform the work of the Correspondence Course Department is urgent.

The necessity for additional instructors, particularly in the Department of Tactics, which carries twelve sub-courses of the Correspondence Course, is apparent, in order that the work may be done without detriment to the normal functions of the school. The present instructor strength is based on the minimum requirements of the regular courses.

ACADEMIC DIVISION OF THE SCHOOL

THE WHITE DETACHMENT, FIELD ARTILLERY SCHOOL

This detachment furnishes a major portion of the enlisted personnel needed for the departments of instruction, the Book Department, the range detail, the Academic Division Headquarters, the

THE FIELD ARTILLERY JOURNAL

Academic Division Garage, the military police detachment, and the detachment headquarters.

THE COLORED DETACHMENT, FIELD ARTILLERY SCHOOL

This detachment furnishes ninety men to the Department of Animal Transport to care for 280 animals and a large amount of saddle equipment. More horses are being acquired and the allotment of ninety men at present is entirely inadequate. Other men are used as janitors, firemen, fatigue details and for other necessary work in the administration of the Academic Division.

RANGE DETAIL

The detail is divided into two parts—one handles targets, while the other handles telephones. It is charged with the responsibility of maintaining safety in the firing zones; of the placing, constructing and operating of targets; care and maintenance of the roads on the range; the construction of observation posts and gun emplacements, and the extensive range telephone system.

The range telephone system consists of about 450 miles of overhead telephone wire, and about fifty miles of underground wire. This system connects all range guard posts, and observation posts, and all gun emplacements. It runs into a central switchboard in the post where it connects with the post telephone system.

HORSES

Remounts were received from the Fort Reno Quartermaster Depot. They were generally of good quality and types, the majority being half-bred or better. The addition of these horses has improved the mounts noticeably. The members of the Battery Officers' Class trained the remounts in a satisfactory manner. This training, for approximately half the number of horses received, began at the middle of the school year and necessarily must be continued during the next school year.

RIDING HALL

A riding hall, the first erected at the Field Artillery School, was finished about January 15, 1925. The frame work used for the hall was a hangar, with interior dimensions of 200 by 67 feet, which was brought from Post Field. A balcony capable of seating about 200 was constructed on the east end.

BUILDINGS

The saddles and other equipment of the Department of Animal Transport, valued at approximately \$50,000, are kept in temporary wooden buildings. A fire-proof building should be built to care for this equipment.

ANNUAL REPORT OF CHIEF OF FIELD ARTILLERY

PASTURE

A pasture of about 450 acres on the military reservation is used by the department during the summer months. About 45 acres is planted in Sudan Grass and makes a very fine pasture. The use of the pasture results in a considerable saving to the Government and a noticeable improvement in the condition of the horses, as during the summer the horses are turned loose to recover from school year service.

The caretaker has no house to live in, and it is recommended that a building be erected to correct this deficiency.

HORSESHOEING SHOP

Instruction in horseshoeing is now given under the supervision of the Department of Animal Transport and is found to be more satisfactory than when run under the Department of Enlisted Specialists.

SADDLE SHOP

Instruction in the Saddlers' Course is now also under the supervision of the Department of Animal Transport and has been very satisfactory.

DEPARTMENTS OF THE SCHOOL

DEPARTMENT OF TACTICS

The instruction in this department was satisfactory, although the instructors were heavily loaded due to the requirements of the Correspondence Course Board, reconnaissance problems in the field, research work, rewriting of field exercises for publication in the Field Artillery Bulletin, and the preparation of the annual tactical inspection of the School Troops, in addition to regular instruction duty.

More attention has been given to liaison this year.

Instruction in camouflage was given, both in the placing of elements of the battery, and in the comparison of pictures taken from the air.

The instruction in the communications' course of the enlisted specialists' courses is now under the supervision of this department, and is very satisfactory.

"Notes on Fire Direction" were gotten out under the supervision of this department and should be a big help to all students.

During the field exercises, forty-five planes piloted by fliers from Kelly Field and supplemented by the local aero squadron, demonstrated the power and capabilities of the Air Service.

The morning of June 5th, the air service put on a remarkable demonstration of bombing, smoke-screening, attack of ground personnel by machine-gun fire, pursuit aviation, and all forms of attack aviation in various formations.

THE FIELD ARTILLERY JOURNAL

DEPARTMENT OF GUNNERY

During the School Year, 1924-25, the work of this department proceeded along the general lines developed and followed in preceding years.

An attempt was made to get away from the condition of having sections fire repeatedly from the same firing points, with its obvious disadvantages. More stress was put on moving targets, practically all members of the Battery Officers' Class having had an opportunity to fire at this class of target.

A pamphlet on "Notes on Gunnery" was published under the supervision of this department and should be a big help to students.

The course in aerial observation was handled under this department. Out of twenty-two students who volunteered for the course, twelve finished. One-way voice communication was used throughout the course with excellent results, and two-way voice communication was found to be feasible with trained observers.

DEPARTMENT OF MATÉRIEL

This department has functioned well this year. A study is being made to determine the advisability of having this department give the technical instruction in fire control instruments and also the technical instruction in the matériel of communications used by the Field Artillery. The courses taught are divided into automotive vehicles, guns and carriages, ammunition and explosives, machine guns, and sight and aiming devices.

HOUSING CONDITIONS AT THE SCHOOL

One June 17, 1925, the school area was the scene of a disastrous fire, which destroyed seven buildings containing quarters for 106 officers. This fire hazard has been hanging over the school for years like a sword of Damocles. In a hearing before Congress last winter the Chief of Field Artillery described it as a fire risk such as no city in the United States would tolerate within its limits. Fortunately, there was no loss of life, due to the fire not occurring until five days after the student class had graduated. Such unexpended balances of appropriations as remained available (about \$19,000) were sent to Fort Sill for the purchase of matériel (the labor to be done by soldiers) to be used in repairing buildings that had been merely damaged by the fire, and other temporary buildings, so as to provide as much accommodation as possible for the next class, due in September. About half of the class can be thus provided for, and the balance will be placed on commutation of quarters in the adjacent town of Lawton, Oklahoma. The authorities of this town, the Chamber of Commerce, and the citizens, are coöperating wholeheartedly with the military authorities in securing the necessary number of houses at a fair rental.

ANNUAL REPORT OF CHIEF OF FIELD ARTILLERY

Attention is invited to the fact that either funds for such commutation of quarters, heat, and light, must be provided annually, or quarters must be built at the school, or it must close. The latter would be an unthinkable calamity. In the meanwhile, attention is invited to the fact that a considerable part of the quarters and buildings still occupied are of the same inflammable, tinder-box, war construction, and are liable at any time to go up in smoke. Even if such a catastrophe be fortunately avoided, many of the officers and men are living under conditions not at all conducive to contentment.

INFANTRY DEMONSTRATION TROOPS

The functioning of the Third Battalion, 20th Infantry, as an infantry demonstration battalion for the school, has been exceedingly satisfactory, and of the utmost value. It is felt that the importance of the question of intimate and close liaison with the infantry cannot be unduly stressed at this school through which practically all field artillery officers pass. The importance of this battalion to this school is such that it is recommended that it be increased to a war strength unit.

TRAINING REGULATIONS

The more important Field Artillery Training Regulations have been printed and issued to the service.

The following table shows the status of the Training Regulations for which the Chief of Field Artillery is responsible:

Number	Title	Status
T.R. 75- 90	The Tractor Driver	Being revised.
T.R. 430- 10	Minimum Specifications	Not started.
T.R. 430- 15	Service of the Piece, 75-mm. Gun, 1897	Printed.
T.R. 430- 20	Service of the Piece, 75-mm. Gun, 1916	Printed.
T.R. 430- 25	Service of the Piece, 75-mm. Gun, 1917	Printed.
T.R. 430- 30	Service of the Piece, 155-mm. Gun	Being printed.
T.R. 430- 40	Service of the Piece, 4.7-inch Gun	Suspended.
T.R. 430- 45	Service of the Piece, 105-mm. Howitzer	Suspended.
T.R. 430- 50	Service of the Piece, 8-inch Howitzer	Printed.
T.R. 430- 60	Service of the Piece, 240-mm. Howitzer	Being revised.
T.R. 430- 65	Service of the Piece, 155-mm. Howitzer	Printed.
T.R. 430- 70	The Firing Battery	Printed.
T.R. 430- 75	The Field Artillery Driver	Printed.
T.R. 430- 80	Manœuvres Limbered	Printed.
▲ T.R. 430- 85	Field Artillery Firing	Printed.
T.R. 430-100	Field Artillery Instruction and Training	Course of Preparation.
T.R. 430-105	Tactical Employment of Field Artillery	Printed.
T.R. 430-115	Pack Artillery	Being revised.
T.R. 430-130	The Observation Battalion	Under study.
T.R. 430-155	Reconnaissance and Occupation of Position	Printed.
T.R. 430-160	High Burst and Flash Ranging	Under study.
T.R. 430-165	Dismounted Drill and Ceremonies	Being revised.
T.R. 430-170	Camps, Marches and Field Equipment	Being revised.
T.R. 430-175	Gunners' Examination for F. A.	Being revised.
T.R. 430-180	Transportation by Rail and Water	Course of Preparation.
T.R. 430-190	Field Artillery Officers' Handbook	Under study.

THE FIELD ARTILLERY JOURNAL

MATÉRIEL

HORSES

The immediate horse shortage in the Field Artillery (referred to in the Annual Report for the Fiscal Year 1924) has been relieved somewhat by the assignment of some 1500 remounts to this service. It is to be regretted that the approved replacement plan calling for the purchase of some 5000 animals annually, extending over a period of time sufficient to provide for the replacement of the old horses left over from the World War, has been curtailed by the Budget. During the fiscal year 1926, it is expected that the Field Artillery will receive not more than 900 remounts. How this figure will compare with the number of old horses that will be lost to the service during the year, will determine in a large degree the continued efficiency of this service. The Field Artillery is operating today with the absolute minimum number of horses with which it can be expected to operate efficiently, and economically. A reduction in the number of animals assigned this service must be recognized in effect as a reduction in the army.

Considering that the Field Artillery in war, is the largest horse using arm of the service, and that instruction both in riding and stable management are accordingly essential to officers of this arm, it is difficult to understand the reluctance on the part of the War Department to recognize the needs of this arm at its Special Service School as regards horses and riding equipment. Up until last year, when an airplane hangar was converted into a riding hall, no riding hall of any kind was available. The old, dilapidated stables now in use, partially burned during the last year, are inadequate in almost every respect. The selection of remounts, which has been open to other services since the armistice from practically all of the remount stations, was opened to the Field Artillery School during the past year from one remount station.

The Field Artillery School should be provided with an adequate riding hall and suitable stables; and authorized to select remounts from one or more of our remount stations.

LIGHT HOWITZERS

The Chief of Field Artillery wishes to repeat the recommendations previously made regarding the development of a light field howitzer of 105-mm. calibre as an addition to the armament of the division artillery, and the issue of such a weapon to the service for training.

In every major war for the past hundred years this type of weapon has been proven to be a most efficient and capable companion weapon to the light field gun. Its importance as an additional

ANNUAL REPORT OF CHIEF OF FIELD ARTILLERY

calibre to complete the light artillery armament of the infantry division was stressed by the Calibre Board. At the present time the only howitzers available to increase the fire power of the division are the 155-mm. howitzers of the corps artillery units. This weapon is too heavy for use in the infantry division as at present organized, and, being tractor-drawn, has a mobility in no way comparable to that of the division light gun. The use of the 155-mm. howitzer with the division complicates the supply and the tactical handling of the artillery components of the division, and there remains an urgent need for a light howitzer, of mobility and march characteristic comparable to that of the 75-mm. gun, to take over the artillery missions in infantry support requiring the fire of howitzers to insure their accomplishment.

Unquestioned progress has been made by the Ordnance Department in the design of a modern light howitzer of the desired characteristics, but much remains to be done before these weapons, and the ammunition necessary to permit of their use, are available in sufficient quantity to justify their acceptance as part of our field artillery armament. The manufacture and issue of such howitzers to the service at the earliest practicable date is a matériel development of outstanding importance to this arm.

TECHNICAL DEVELOPMENT IN MATÉRIEL

ORDNANCE

EXPERIMENTAL GUNS AND CARRIAGES

75-MM. FIELD GUN

The 75-mm. Field Gun, Model 1923E (Split Trail), was sent to the Field Artillery Board early in 1925. The Field Artillery Board has, however, conducted no extensive tests with this matériel, as it was believed preferable to await comparison with the 75-mm. Field Gun, Model 1925 (Box Trail). The latter gun is being built and is expected to arrive at Aberdeen for proving ground test by August 1, 1925, and at Fort Bragg for service test by the Field Artillery Board by October 1, 1925.

The problem of the breech block, in connection with loading at high angles, bids fair to be a difficult one.

THE 75-MM. PACK HOWITZER, MODEL 1923E (MAXIMUM RANGE 9000 YARDS)

The pilot of the Model 1923E Pack Howitzer was tested at Aberdeen in 1924. Certain weaknesses were developed during firing and the pilot was returned to Rock Island. It was returned to Aberdeen in June, 1925. Preliminary firing indicates that the

THE FIELD ARTILLERY JOURNAL

weaknesses originally existing have been eliminated. This pilot should be ready to send to the Pack Artillery Board in the late summer of 1925. The first proving ground test included the packing of all the loads on the aparejo, and draft on wheels. These tests indicate that the general principles of the design are well worked out.

A second pilot of this model, which contains minor modifications, is being built.

105-MM. HOWITZER MATÉRIEL

The 105-mm. Howitzer, Model 1925, has been built and is now undergoing proving ground test at Aberdeen, where some defects have been discovered. It is believed that these can be remedied.

The German 105-mm. Howitzer. The progressive equipping of certain units with the German matériel has been abandoned with the idea of conserving funds for the development of our own 105-mm. howitzer. This matériel is now being held in storage.

4.7-INCH GUN CARRIAGE

The 4.7-inch Gun Carriage, Model 1921, completed its proving ground test, and was sent to the Field Artillery Board for test early in the spring of 1925. The preliminary tests of this matériel indicate that in so far as design is concerned it is most satisfactory.

THE 155-MM. HOWITZER, MODEL 1920

This carriage was designed to interchangeably mount the 4.7-inch gun and 155-mm. howitzer. The matériel developed weaknesses and defects during its proving-ground tests. It was, however, sent to the Field Artillery Board early in 1925, in order that all possible lessons could be learned from the design as a mount for the 155-mm. howitzer. No consideration is being given this carriage as a mount for the 4.7-inch gun.

A new model, the 155-mm. Howitzer, Model 1925, in which it is hoped to remedy the defects of the Model 1920, is now being studied. The wooden model of this matériel should arrive in Washington during the summer of 1925.

THE 155-MM. GUN—8-INCH HOWITZER CARRIAGE, MODEL 1920

The one existing unit of this matériel has been at Fort Bragg since January, 1925. This is the only carriage in which the principle of interchangeability as proposed by the Calibre Board has been maintained. The Ordnance Department has not completed the test of the shell for these cannon, so that firing tests by the Field Artillery Board must, for the time being, be confined to the use of the old model shell.

ANNUAL REPORT OF CHIEF OF FIELD ARTILLERY

AUTOMOTIVE MATÉRIEL

THE HOLT T-35 TRACTOR, MODEL 1924

One battery of the 83rd Field Artillery, at Fort Benning, Georgia, was equipped with twenty-one Holt T-35 Tractors as a single-axle load organization. Preliminary tests indicated the possibility of this tractor being suitable for a double-axle load. In 1925, additional tractors were purchased and two batteries of the 83rd Field Artillery were equipped as double-axle load organizations, each with thirteen tractors.

This tractor is unquestionably suitable for use in the G.H.Q. Reserve tractor-drawn light artillery. The tests in progress should permit of a definite decision as to whether it should be used with a single-axle or a light double-axle load.

THE BEST "30"

The Best "30" tractor has been tested by the Field Artillery Board. It was considerably heavier than the Holt T-35, weighing 8100 pounds as opposed to the latter's weight of 4200 pounds. The new Best "30" weighs 9000 pounds.

One light tractor made by the International Harvester Company is being purchased for test. The weight of this tractor is 5750 pounds.

In its effort to find a commercial tractor suitable for corps matériel, the Ordnance Department has purchased, and tried out at Aberdeen Proving Ground, the Holt T-29, the Monarch "6-60," and the Best "60."

The Ford Cross-country Car was tested by the Field Artillery Board during 1924, and was recommended by the Board as a standard reconnaissance vehicle. Three of these cars are being sent to the 83rd Field Artillery, and three to Fort Sill, Oklahoma, in order that field tests, to determine the basis of issue, may be conducted.

Experiments still continue at Aberdeen with various types of cross-country cargo vehicles. Among the types under test are the Mack Truck with Christie adapter, the Mack Truck with Gilliland adapters, and the six-wheel Dodge. A Citroen car with Kegresse-Hinstin adapters is being purchased.

AMMUNITION

FUZES

The E-13 point detonating fuze (combination superquick and short delay) is, after many trials, ready to go to the Field Artillery Board for test.

Some Junghaus mechanical fuzes (whose action depends on

THE FIELD ARTILLERY JOURNAL

rotational velocity) have been purchased but have not as yet arrived in this country from Germany.

Research work on chemical mixtures which burn with constant pressures has given promising results.

PROJECTILES

Fifteen hundred–75-mm. E-1 Shell, 500–75-mm. E-1 Shrapnel, 500–105-mm. E-1 Shrapnel, and 200–105-mm. E-1 Shell, are being manufactured for service test of the 75-mm. gun and 105-mm. howitzer.

Due to various difficulties, 155-mm. shell, Type E-1, are not yet available for the service test of the 155-mm. Howitzer, Model 1920, nor the 155-mm. Gun, Model 1920. It is hoped that this ammunition will be ready during the coming year.

PROPELLANTS AND EXPLOSIVES

The development of flashless, smokeless, nonhygroscopic powders continues. Lots of such powder for the 75-mm. gun and 155-mm. howitzer have been sent to Fort Sill and to Fort Bragg for service test.

EFFICIENCY OF SHELL AND SHRAPNEL

This is a study of far-reaching importance which continues under the Field Artillery Board.

MISCELLANEOUS ORDNANCE MATÉRIEL

MOELLER GLASSES

These field glasses of German make are of light, compact construction with good optical characteristics. They have been tested by the Field Artillery Board, which has given a favorable preliminary report. The Chief of Field Artillery has recommended an experimental issue of these glasses to units in different localities, in order to determine the action of the glasses under varying conditions of light, weather, etc., and how they stand up under field service.

MODIFIED CAISSON, MODEL 1918

The caisson, Model 1918, has been experimentally modified so as to carry the Mark IV shell, which is larger than the old type shell. Experimental models are now undergoing test by the Field Artillery Board.

BRACKET MOUNT FOR BROWNING MACHINE GUN ON 75-MM. CAISSON, MODEL 1918

An experimental mount is under test by the Field Artillery Board. Proving Ground test showed it has certain defects for traveling.

ANNUAL REPORT OF CHIEF OF FIELD ARTILLERY

Redesign is suspended pending results of test by the Field Artillery Board as to satisfactoriness of the type for firing.

MODIFICATION OF FRENCH 75-MM.

Several modifications of the 75-mm. Field Gun, Model 1897, have been tested and reported on by the Field Artillery Board; others are under test at the present time.

Action on these is being suspended until completion of all the tests, in order that a coördinated study may be made. It is anticipated that tests will be completed during the calendar year, 1925.

HIGH BURST RANGING INSTRUMENTS

In pursuance of recommendations of the Field Artillery Board, approved by the Chief of Field Artillery, the Ordnance Department is modifying several Azimuth Instruments, Model 1918, for test by the Field Artillery, to determine their suitability as equipment for observation batteries.

CARGO CARTS

A type of cargo carts in which a box is mounted on the chassis of the 75-mm. carriage limber, is under test by the Field Artillery Board, particularly to determine its suitability as an ammunition carrier for the 105-mm. howitzer.

Another type utilizing part of the running gear of the 75-mm. carriage limber is under manufacture at Rock Island, and is expected to reach the Field Artillery Board for test during the fiscal year 1926.

WIRE ROPE CABLES IN PLACE OF DOUBLETREE CHAINS ON CAISSON LIMBERS

The Field Artillery Board reported favorably on this modification. Continuing service tests are being made by organizations in various localities in order to determine whether the modification is suitable for all types of terrain.

DETERMINATION OF PROBABLE ERROR IN 155-MM. HOWITZER

Pursuant to the request of the Chief of Field Artillery, the Ordnance Department conducted an extensive program at Aberdeen Proving Ground to redetermine the probable error of the 155-mm. howitzer. Firings have been completed, and corrected and tabulated results will be available in the near future.

PANORAMA SIGHT MOUNTING FOR 75-MM. GUN, MODEL 1897

The Type "E" of this equipment is undergoing test by the Field Artillery Board. This type requires only the substitution of a special shank to hold the panorama sight in the French sight bracket.

The Type "DD" of this equipment has undergone proving-ground

THE FIELD ARTILLERY JOURNAL

test at Aberdeen, and will go to the Field Artillery Board in the near future. This type involves the substitution of a complete bracket. It includes features recommended by the Field Artillery Board in its report of test of the Type "C" of the same general characteristics.

AMMUNITION CARRIER FOR PACK ARTILLERY

Several types of experimental ammunition carriers for pack artillery are being made up for test by the Pack Artillery Board.

TRANSPORT WAGON FOR THE 155-MM. GUN

The 155-mm. G.P.F. load, weighing 29,410 pounds in traveling position, lacks mobility. Furthermore the commercial tractor field offers nothing suitable for this load. Double heading is a doubtful and most undesirable expedient. Studies are being made of transport wagon for this load.

Large wheels are also being tried at Aberdeen on the 155-mm. G.P.F. in an effort to increase its mobility.

SIGNAL EQUIPMENT

RADIO

Radio Requirements

The Signal Corps has for the last two years been making a thorough study of the requirements of all arms for field radio equipment. This study has, generally speaking, received the preliminary approval of all the arms and is now before the various boards for final comment.

When, and if, approved by the General Staff, this study will furnish the basis for radio development for years to come. In so far as concerns the Field Artillery, the radical differences from the status quo are that a fire control net for divisional artillery battalions has been added, and that we have consented, because of technical difficulties, to do without the radio telephone.

THE S.C.R. 131 SET

This set is the most important one to the artillery. Research work is 80 per cent. complete on it and development work 25 per cent. complete. Complete development cannot be made until the General Staff approval of the study discussed above is obtained. When this set shall have been developed it will take the place of all sets used in the artillery except the S.C.R. 109.

ALTERATION OF EXISTING MATÉRIEL

The S.C.R. 77-A set is being modified to the S.C.R. 77-B. This modification is a slow process since, due to the small number of

ANNUAL REPORT OF CHIEF OF FIELD ARTILLERY

reserve sets, it is necessary to recall sets from the field. The modified sets are less critical than the original 77-A, so that all VT-1 tubes operate satisfactorily as oscillators whereas with the 77-A a selection of an oscillator tube had to be made by trial.

A storage battery, type "BB-29," mounted in a rubber composition container was tested and found satisfactory, with minor modifications, by the Field Artillery Board.

A portable, gasoline-driven, battery-charging set, was tested by the Field Artillery Board and recommended for adoption. A number of these have been purchased by the Signal Corps and sent to various artillery organizations for continued test and to determine the basis of issue and method of transportation.

TELEPHONES AND WIRE

The EE-8 field telephone was tested by the Field Artillery Board. Some alterations were found to be desirable. The Signal Corps has redesigned this telephone and expects to send a considerable number out for service test by the latter part of 1925.

An experimental assembly of a four-drop monocord switchboard, magneto, transmitter, etc., has been made up and will go to the Field Artillery Board for test in the near future. An assembly for the twelve-drop board is being studied and experimental models will be made up in the near future for service test.

WIRE REELS

Development work on a reel which will mount the commercial spools on which wire is shipped is progressing slowly.

A jointed wire pike made of duraluminum has been tested by the Field Artillery Board and found satisfactory for field artillery use.

QUARTERMASTER CORPS

PACK SADDLE

Six Phillips saddles, in which are incorporated the modifications recommended by the Pack Artillery Board, and this office, have been made up by the Quartermaster Corps and placed in routine use in the 4th Field Artillery under the supervision of the Pack Artillery Board.

The modified McClellan saddle which has been approved by the Cavalry is under test by the Field Artillery Board to determine its suitability for field artillery use for draft and for the individual mount. The modification consists essentially in the addition of skirts and a girth modification.

The Taylor, No. 31, Rolling Kitchen was tested by the Field Artillery Board and found unsuitable. The Board recommended, as

THE FIELD ARTILLERY JOURNAL

did the Field Artillery Board in 1921, a limbered type of kitchen. Studies on such a type are under way at Jeffersonville.

Comparative tests of two types of raincoats, varnished and rubberized, are in progress under the Field Artillery Board.

A new type reserve ration was tested by the Field Artillery Board and found suitable.

THE COLEMAN TRUCK

This is a five-ton, four-wheel-drive truck in small commercial production at Littleton, Colorado. All the units employed in this design are commercially available so that the truck could be assembled in any plant with the necessary facilities. Preliminary tests of this truck now taking place at Camp Holabird, Maryland, indicate that it is most promising as a standard truck for use in heavy field artillery organizations.

The new "Scout" Indian Motorcycle was tested by the Field Artillery Board in the hope that it would prove capable of accompanying a marching tractor column under its own power.

SUMMARY OF MATÉRIEL DEVELOPMENTS

The progress of development during the past year has been, generally speaking, and within the limitations of appropriations, satisfactory. The coöperation of the various supply departments has been excellent.

In the whole matter of development there is one outstanding feature, *i.e.*, the small appropriation of \$156,000 given to the Signal Corps for development purposes. From this source the Signal Corps must pay the salaries of all technical engineers occupied with development and pay for the matériel entering into this development.

It is true that some of the research work carried on by commercial companies is available to, and valuable to, the Signal Corps. It is important that this work be thoroughly supplemented by the Signal Corps. As evidence of this, it may be stated that of the millions of dollars' worth of radio matériel, annually produced in the United States, not one commercial set is suitable for military use. Very few, if any, of the parts are suitable to enter the construction of a set for field military use. The telephone for military use is likewise a problem in itself.

We cannot afford to wait until an emergency arises to develop communication matériel any more than we can afford to postpone the development of ordnance matériel to such a time.

WAR PLANS

The first consideration in the development of a War Plan for any particular emergency, is to adapt the organization of the army as it would be on "M" day, to the requirements of the particular emergency.

ANNUAL REPORT OF CHIEF OF FIELD ARTILLERY

For this reason the peace organization of the army should be such as to readily lend itself to a balanced expansion to meet the various War Plans. This general principle should apply not only to questions of organization alone, but to questions of training, supply and mobilization as well.

Considering the expansion and development of the various services in the event of an emergency as equally difficult, it is evident that the peace organization of the various services should be in proportion to the required war organizations. At the beginning of the World War, the Field Artillery constituted approximately 6.7 per cent. of the strength of the army. At the signing of the armistice it represented 13.7 per cent. of the army. The expansion of the Field Artillery was second only to that of the Air Service. The proper proportion to be maintained as between the various services applies not only to the regular army, but to the other activities of the army as well, namely, the Field Artillery National Guard; Field Artillery Reserve Officers; Field Artillery R.O.T.C. units, and Field Artillery C.M.T.C. students.

That the Field Artillery might approximate its proportionate R.O.T.C. strength, an effort was made during the last year to adjust the relative number of students graduating from the infantry and field artillery R.O.T.C. units by the transfer of units from the Infantry to the Field Artillery. This action, taken by the G-3 Section of the General Staff acting on the recommendation of the Chief of Field Artillery, was in accord with and in recognition of, the fundamental principle previously referred to relative to the development of a balanced War Plan. It has, however, not yet gone far enough.

Generally speaking the various categories of the army are, or tend to be, organized according to this basic principle and the percentage strengths of the various services approximate, or tend to approximate, the war requirement percentages. However, this in itself is not sufficient. If the units, or personnel assigned to field artillery activities are not trained in field artillery duties but in the duties of some other service, they are lost to all intents and purposes to the field artillery. Considering the relative short training periods during a year allowed the various activities of the army, it must be apparent at once that there is insufficient time to train a unit efficiently in the duties of two services. In certain regular field artillery units considerable time is spent daily in foot drills to the prejudice of more essential field artillery training, and, similarly, in many of the C.M.T.C. camps, and the proposed basic courses for officers, the same tendency is to be noted. It is a fact and should be recognized, that field artillery officers and personnel can be developed and trained, both in time of peace and war, without a preliminary course

THE FIELD ARTILLERY JOURNAL

in infantry foot drill and without learning the manual of arms. It is essential that this fact be recognized in the development of our war plans as well as in our peace training, in order that valuable time be not wasted on nonessentials. The need for inviting attention to this point is evidenced in the fact that a few years past certain field artillery commands were trained in foot movements to compete with infantry organizations, and even today certain field artillery commands are holding regular infantry drills daily.

The value of the close-order infantry drill as a disciplinary drill is appreciated, and if the Field Artillery had no prescribed drill which answered the same purposes, I would recommend that the infantry close-order drill be adopted as part of the field artillery training. But, the Field Artillery has its own prescribed drill which, while answering all the needs of a disciplinary drill, at the same time furthers the training of the field artillery personnel in its legitimate duties. It would seem that at those stations where the infantry drill is prescribed for field artillery troops, the higher command or inspector is not familiar with the prescribed field artillery drills, or that the field artillery personnel is so far advanced in its legitimate training that it can waste its time on the unrelated infantry drills. The latter condition has not been noted during any of the inspections made by this office.

The principal activity during the past year of the War Plans Section of the Chief of Field Artillery's Office was in connection with the War Department General Mobilization Plan. The annual revision of this plan having been suspended, considerable study was given during the year to the preparation of the Field Artillery Branch Plan, the Unit Plan of the Office of the Chief of Field Artillery and the Unit Plan of the Field Artillery School, Fort Sill, Oklahoma.

On September 17, 1924, the War Department, for the first time since the signing of the Armistice, issued mobilization instructions in furtherance of Defense Day Test. This mobilization amounting, in general, to little more than a local registering of those associated with the Army of the United States, was far-reaching in its beneficial effect on the morale of the categories of the Army of the United States, and, of great service to those charged with the preparation of War Plans as assisting in visualizing the problems of mobilization.

The Chief of Field Artillery took occasion on the day in question to assemble in his office some forty of the Field Artillery Branch Assignment Reserve Officers, who were on duty at Camp Meade, Maryland, and present in the District of Washington, Washington D. C.

The nature of the duties of the various sections of this office was explained to these officers, placing particular stress on the

ANNUAL REPORT OF CHIEF OF FIELD ARTILLERY

changes which would be effected in case of war. This meeting, followed by a luncheon, served two important ends. It acquainted the reserve officers, who would operate directly under the Chief of Field Artillery in the event of war, with the duties which they would be called upon to perform in the event of an emergency, and also served to introduce to the regular officers now on duty in this office, the reserve officers with whom they would be associated in their sections in case of war.

Other purposes were served as well. Of importance may be mentioned the review of many important subjects pending in this office, and the arriving at tentative decisions in all cases as if of "M" day. Such decisions, though not binding in their effect, did serve to bring to the minds of all officers concerned the nature of the decisions they would be called upon to make in the event of an emergency.

That a defense day test is valuable in many ways to the country there is no question of doubt. Whether such an event should be held annually or not, is a matter which should be given serious consideration.

FOREIGN MILITARY JOURNALS A CURRENT RÉSUMÉ

Revue Militaire Française
November and December, 1925

"TANKS in Morocco, 1925," is a study of their organization and employment. Against an enemy which had very little artillery or other anti-tank weapons, the tanks were able to manoeuvre in small units. At first the section was composed of three tanks; one armed with the 37-mm. gun and two with the machine gun. Soon this proportion was reversed, as it was found that the 37 was superior in fire power and particularly effective against the morale of the enemy.

Carried on trucks the tanks did not slow up the columns on the road. Since each company had at first 10, and later 15 trucks, it moved as an independent unit, with its replacement section of two reserve tanks. The author is careful to point out that this organization was adapted to the conditions in Morocco—a special type of warfare.

The tanks performed remarkably well, moving 20 kilometres a day over very difficult terrain. The conduct of the personnel was no less remarkable in enduring the terrific heat inside the tanks during the long marches. Frequently the men while under fire replaced tracks and removed obstacles from the roads.

The author emphasizes the absolute necessity of constant liaison between the infantry and the tanks before and during the engagement as provided by the regulations. He also mentions the many missions, not mentioned in the regulations, which were given to the tank companies: patrols, raids, flank guards, gathering the dead, mobile block-houses in front of the infantry lines, etc. He points out that such missions were possible because the tanks were in excellent condition and invulnerable. Later in the year when the matériel had deteriorated, the execution of such missions by small groups became more difficult.

Commandant Larcher concludes: "The Campaign of General de Falkenhayn in Palestine (1917–1918)." After November 1, 1917, the Turkish officers were convinced that they should no longer try to drive back the English. They decided to conserve their manpower, defend Jerusalem, and protect the Dames-Médine railroad. Realizing their inferiority to the British in manoeuvring ability, in matériel, and in training, they decided that their only hope lay in

FOREIGN MILITARY JOURNALS

holding a long line of trenches. This simple method had proved successful at Gallipoli in 1915 and at Kut el Amara in 1916 and was suited to the Turkish temperament and morale.

General de Falkenhayn preferred an aggressive defense, a narrow front, and organization in depth, permitting frequent counterattacks. The application of this method demanded a training and mobility that the Turks did not possess. They made little effort to carry out Falkenhayn's orders and when they did, they wasted the remnants of their strength. When winter put an end to active operations de Falkenhayn had lost Jerusalem, and his two armies had shrunk to 30,000, as opposed to Allenby's army of 130,000.

Enver Pasha then telegraphed to de Falkenhayn to choose a good position, to settle there, and to regain his authority over the troops by personal inspections. In February, Enver Pasha sent his chief of staff, Von Seecht, to renew these instructions. These orders angered de Falkenhayn, who sent word that he would receive no such detailed orders, criticisms, or advice, since the Emperor of Germany alone was qualified to judge his conduct. On March 2nd, de Falkenhayn was relieved by General Lemann von Sanders, who, until this time, had been chief of the German military mission and commander of the 5th Army. Von Sanders immediately adopted a policy directly opposed to that of his predecessor. He directed all his efforts toward the organization of a stable front with fortified positions. The German regiments were given a separate sector and the proportion of German noncombatants was diminished. Most of the German staff officers were replaced by Turks.

De Falkenhayn returned to Constantinople and soon left Turkey, giving vent to his resentment against his German and Turkish adversaries in very violent terms.

"Concerning Trans-Saharan Raids," by Colonel Meymer, discusses the problem of securing peace in France's Saharan colonies and tells how their unity may be assured by the airplane and the automobile. The author presents a study of three recent colonial campaigns: (1) The French penetration of the Sahara by automobile and airplane between 1916 and 1925; (2) the English campaign in Tripoli, and (3) the English in Somaliland. Largely because of their armoured cars, the British in Tripoli won very rapid victories. These cars covered most of the territory very successfully. Even the dunes and mountains were overcome by the use of six-wheeled cars and autos with tracks.

The airplane is used frequently in colonial campaigns for distant reconnaissances. In the desert countries no mobilization of the enemy can escape observation from the air. In future campaigns it is planned to transport small detachments of infantry by

THE FIELD ARTILLERY JOURNAL

means of larger planes. On the other hand in the British Somaliland expedition, the air force tried to assume the principal rôle with but very little success. It merely scattered the enemy before the arrival of the land forces and left the British infantry with no chance of a decisive victory.

"Verdun," is an article by Lieutenant-Colonel Grasset, which begins in the December issue. The author first gives the reason why the Germans chose Verdun as an objective, quoting from the memoirs of General Falkenhayn, who was at that time chief of the German general staff. Germany believed that France had reached the limit of its strength, and that the moment had arrived to make the French people realize that they could not hope for victory. Since the Germans were numerically superior, it was not necessary to pierce the French line to discourage the nation; this result could be obtained by attacking a point on the western front which the French would defend until exhausted. If the French withdrew instead of accepting battle, the moral effect on the French nation would be enormous. Since the zone in which the operation would develop was very narrow, Germany would not need to weaken the rest of her line during this offensive.

The German General Staff considered Verdun and Belfort. Verdun was chosen since the French lines at this point were within a short distance of the principal German rail communication. Verdun was a point of support which the French might use at any time in initiating an attack, which would cut this rail communication and make untenable the entire German front in France and Belgium. To eliminate this menace and to strike a blow at the French morale, the Germans prepared to attack.

"German Army Groups during the War (1914–1918)," by Commandant Martin. From the beginning of the war, the German high command, which had to give orders to nine armies operating on two fronts, felt the necessity of lightening its task. For this reason it organized provisional army groups, giving the commanding general of one of the armies in the group, the task of coördinating the operations of the other armies while he still retained command of his own. Not until late in 1916 did the German general staff realize the serious disadvantage of such a system. The subordinate army commanders objected to receiving orders from one whom they looked upon as an equal in rank, and the chief of the provisional group usually concentrated too much attention upon his own army.

"Two Idols of the German People," by Captain Welschinger, is a comparison of the careers of Blucher and Hindenburg. The

FOREIGN MILITARY JOURNALS

author portrays Blucher as an impulsive patriot and partisan, the champion of German independence against Napoleon, and a soldier only by accident. He inspired and led to victory an army which had faith in the justice of its cause. Hindenburg, prepared for the highest command in accordance with the strictest rules of German military art, failed, because his army had not the necessary self-confidence and faith in its cause.

"Essay on the Tactical Employment of Engineer Troops," by Colonel Baills, begins in the December issue. The author examines several episodes of the last war and concludes that division and corps engineer troops should be employed under the direction of the engineer commander, and that only in exceptional cases should they be attached to combat units for special missions. Upon the completion of these definite missions they should be returned to their engineer unit.

"Methods of Commanding," by Lieutenant-Colonel Lucas. The important task of the commander is to make decisions. For this purpose he should conserve his mental energy. By its work and reconnaissance the staff of the commander gathers information for the use of the chief in making his decisions. Many maintain that chiefs command too much through their staffs and not enough through their subordinate (regimental, etc.) commanders who are better placed than anyone else to judge the situation. These critics forget that an active chief is always informed of the situation and of the capabilities of his subordinates. If he always consulted his subordinates before making a decision, the chief would soon lose all authority. Moreover, the subordinate commanders are poorly placed to judge the general situation, and will defend the interests of their own organization to the detriment of the general interest. The chief of staff, being more familiar with the general situation than are the subordinate commanders, is better able, if he is asked, to give advice affecting the chief's decision.

Other articles are: "A Phase in the Race to the Sea (4-9 October, 1914)"; "Quartering Troops under the Monarchy"; "Historic Rôle of French Fortresses."

ENGLAND

The Journal of the Royal Artillery, October, 1925

This number is of unusual interest as it contains a number of essays which were submitted for the Duncan prizes. The essay which was awarded the silver medal was submitted by Colonel

THE FIELD ARTILLERY JOURNAL

M. L. Wilkinson on the subject, "The Supply Training and Organization of Technical Specialists." These technical specialists are those officers of the line who are detailed as members of the technical departments and who are responsible for the initiation, design, development and proving of war matériels. Under the regulations which were in force prior to the World War, these officers were given increased pay and were assigned to desirable stations. After the World War the pay of all officers of the British Army was increased so that it was not so desirable to leave the line organizations. The author also points out the defects in the detail system and proposes that these experts should be organized into a separate branch of the War Office. He clearly demonstrates that such a system increases the efficiency of the specialists by providing for continuous training. He proposes that these officers keep in touch with the several branches of the line by being detailed for service with them.

This number also contains the Duncan Highly Commended Essay, 1924–25, which was submitted by Captain K. M. Koch, R.A., on the subject, "Anti-aircraft Artillery, Where it Now Stands and How it Should be Used with Particular Reference to Moving Warfare." This article is a very thorough study of the fundamental laws on which the matériel and tactics of the arm are based. It presents the phases of anti-aircraft fire with the probable development in the weapon. It is worthy of note that the organization of the anti-aircraft weapons in the British Army very closely parallels that of our own.

Another very interesting article is the essay submitted by Lieutenant-Colonel Wynter on "The Effect of Tactics on the Organization and Command" in the 1925–1926 contest for the Duncan prizes and which was highly commended by the judges. This very excellent presentation of the history of the development of this subject, which is of outmost importance to all artillerymen, shows that while the principles of war are immutable, the application of those principles—tactics—must constantly change to take advantage of the developments in the weapons. The author makes a very clear presentation of the organization which was required in the World War and probably will be required in the next war, to meet the demands for an artillery reserve. He clearly demonstrates that an attack cannot be launched unless it is supported by many more guns than can be utilized as organic artillery on account of the logistic difficulties. This reinforcing artillery was designated by the

FOREIGN MILITARY JOURNALS

British as Army Field Artillery and was organized in accordance with the British practice into battalions. It will be noted that this reserve has been provided for our forces in the G.H.Q. Reserve. However, it differs from the latter in that it is organized by battalions, thereby saving in overhead, especially in the higher grades.

In this number, Major A. F. Brooke, F.A., continues his excellent study, "The Evolution of Artillery in the Great War," by presenting "The Evolution of Artillery Organization and Command." The author treats the subject under the unusual divisions, at least to us, of field artillery and heavy artillery. Like all the Allied Armies, the British Army was very deficient at the outbreak of the war in artillery of medium and large calibres. The divisional artillery consisted of four battalions of three batteries, each armed with six 18-pounders, and one battery of six 60-pounders. On account of the very large increase in the British army, it was not possible to arm the new batteries with six guns. However, the shortage in trained higher personnel soon forced this change in all forces. The territorial divisions were re-armed with weapons similar to the other forces. On account of the greater hardships endured by the infantry in combat, it was soon found that they had to be relieved before the artillery. The result was a separation of the divisional units, which handicapped the necessary liaison between the two arms. This, together with a demand for greater fire power in the divisional artillery, led to a divisional organization of two battalions, each of which contained three 18-pounder and one 4.5-inch batteries of six guns each. The guns not required for divisional organizations were formed into similar brigades which were assigned to General Reserve. It was proposed that a reserve battalion should be organized for each division, and by the date of the Armistice this program had been completed to the extent of organizing 51 battalions. At this time there were 122 divisional battalions in the British Army. The 60-pounder batteries were withdrawn from the divisions shortly after the operations began. They were assigned to the army and used by it to reinforce the corps as the demands arose.

On account of the nature of the warfare during the greater part of the war and the attendant development of the field railway system behind the forces, the ammunition trains were taken away from the battalions. These factors also permitted a reduction in the number of echelons and in the amount of ammunition carried by each. After May, 1916, this function of supply was carried on by divisional and corps trains. Under the special conditions existing, such an arrangement was satisfactory.

THE FIELD ARTILLERY JOURNAL

The short-range mortar again put in its appearance and proved as before to be a special purpose weapon.

The nature of the warfare soon demanded more powerful artillery. On account of the unstable condition of artillery design and manufacture, these weapons were furnished the army in all calibres to include 15-inch. A number of tentative organizations were tried. In July, 1916, it was finally decided that all artillery should be divided in accordance with its power and the following assignments were made: divisional artillery, light calibres; corps artillery, medium; and army artillery, heavy calibres. The corps organic artillery consisted of twenty-four 60-pounders, sixty 6.0-inch howitzers, eight 6.0-inch guns, and twenty-four 8.0-inch or 9.2-inch howitzers. This reorganization had not been completed at the end of the war, but it was found to be satisfactory. The army organic artillery was organized into mobile battalions which consisted of two 60-pounder and two 6.0-inch howitzer batteries for general use; howitzer battalions which consisted of three 6.0-inch howitzer and one 8.0-inch howitzer batteries for barrage and bombardment; and mixed battalions which consisted of two 60-pounders, two 6.0-inch howitzer, one 8.0-inch howitzer and one 9.2-inch howitzer batteries for counter-battery. The remaining heavy batteries were not assigned to battalions. These organizations were assigned to armies as the necessity demanded. It was found that the inclusion of several calibres in the same battalion was a serious tactical error, and at the end of the war, the heavy artillery was being reorganized so as to eliminate this deficiency.

The British made several makeshift arrangements in the command of artillery, but it was soon demonstrated that command and organization are necessarily linked close together. It was found that the battalion organization was the most satisfactory as it permits centralization at the time of large attacks and decentralization when the pursuit begins. The outstanding development of the war was in counter-battery and this necessarily developed the demand for special staff officers to assist the commanders in the control of this type of fire.

The author shows that the British, French and Germans all reached the same conclusions regarding the organization of artillery in accordance with its power.

In an article entitled "The Staff Officer in the Air," Lieutenant-Colonel F. A. Pile, Royal Tank Corps, gives an excellent description of the limitations of aerial observers. This article is a reply to an article advocating the control of the artillery by the divisional artillery

FOREIGN MILITARY JOURNALS

commander from the air. The author shows the many diverse demands made upon this commander and argues very forcefully that the air observation should be carried out by staff officers of the artillery commander. He shows that efficient artillery support depends primarily upon the accurate knowledge by the artillery of the position of the infantry and the difficulties it is encountering, and a knowledge by the infantry of the plan by which the artillery proposes to help them to overcome the difficulties. He shows clearly that the importance of this task is such as to demand the services of an artillery officer of considerable experience and ability and that this need can best be met by using the staff officers of the artillery commander.

CURRENT FIELD ARTILLERY NOTES

New Uniform Coats

THE new uniform coat has been adopted for officers and enlisted men. All new coats will be of the new type; old coats may be used until worn out, or remodeled to the new type.

The new coat has the lapel collar, similar to civilian wear, and is worn with an olive drab or white shirt and collar and black four-in-hand tie. The upper pockets, for officers, have a box pleat; the lower pockets are inside the skirt of the coat. One of the reasons for this latter innovation, is that something may be carried in these pockets without a visible bulge. The skirt, which reaches slightly below the crotch, has a slit in the back and flares slightly over the hips. The coat has four buttons, the lowest one of which is under the Sam Brown belt.

The new overcoat is also of the lapel design, double-breasted, with shoulder loops and two, outside, welted pockets. The collar is of convertible design so that it may be buttoned up close to the neck.

Metric Standards

Representative Britten, of Illinois, introduced a bill, called the Metric Standards Bill, in the House of Representatives on December 7th. Many influential organizations have endorsed it. Under the proposed law, manufacturers will continue to use any measures they desire in production, but, after 1935, commercial transactions are to be on a decimal basis,—that is, litres for volume, grams for weight, metres for distance, etc. The desirability of the change does not seem to be questioned; the transition is the difficulty.

The Field Artillery discarded degrees, minutes, and seconds as angular measures, long before the World War; the mil is now our accepted standard of use. During the World War, field artillerymen came, by force of circumstances, to use the metre quite as much as the yard, and still do use it. But, unfortunately or otherwise, most American maps are plotted in feet, yards and miles, so that the Field Artillery cannot so easily give up these latter units of measure. And, if the decimal system does go into effect in the United States, it is these units which will probably be changed last; the present bill specifically excepts application to the survey or description of land. Among field artillerymen, as such, there would seem to be a general feeling of welcome for the change, should it come.

CURRENT FIELD ARTILLERY NOTES

War Department Appropriation Bill for the Fiscal Year 1927

The appropriation bill for 1927 has not yet passed Congress when this is written. It appears that in aggregate amount the sum appropriated will not differ materially from that for the current year. There is a new item of \$6,000,000 for replacement of used or deteriorating war reserve of clothing and ammunition. To offset this, economies are made in other lines. Indications now are that the Regular Army may expect to lose over 2500 higher enlisted grades and over 1300 enlisted ratings. This will not be accomplished by the reduction in rank of the men now holding grades and ratings, but, when vacancies occur in these grades and ratings, no new appointments will be made, until the numbers of noncommissioned officers and specialists are down to the new figure. The total number of enlisted men remains the same, but the loss of rank effects a saving of over \$900,000.

The prospects are that the National Guard will be provided about 186,000 officers and men, with 50 armory drills. The bill as reported to the House of Representatives provides an increase of a little over one per cent. over this year's appropriation for the Reserves.

The construction of barracks, quarters, etc., is not provided for in the general appropriation bill, as there is a separate bill which provides for the sale of land now in possession of the War Department, and the use of the proceeds for a general construction program. The prospects are that this latter bill will pass.

The Annual Convention of the National Guard Association

The annual convention of the National Guard Association was held in St. Augustine, Florida, January 14th–16th. Brigadier-General J. C. R. Foster, Adjutant General of Florida, was elected the new president of the Association. Among the speakers were Major-General Creed C. Hammond, Chief of the Militia Bureau, Major-General Fox Conner, and Brigadier-General Milton A. Reckord, Adjutant General of Maryland and retiring president of the Association.

Among the measures endorsed by resolution were those to provide for continuation of medical attention, compensation and subsistence for a longer period (not to exceed six months) to those injured in line of duty; for the retention of the present rental allowance for officers of the National Guard and Reserve when on active duty; for making the unexpended 1927 appropriations available for use for six months after the close of that fiscal year; for providing additional funds for sending officers to service schools; for removing the present restriction that sixty per cent. of the

THE FIELD ARTILLERY JOURNAL

enlisted personnel of organizations must attend drill in order for officers to draw pay therefor; for memorializing Congress to maintain the present scheme of national defense (to include a strength of 250,000 men in the Guard) by sufficient appropriations; for requesting Congress to provide for proper number of horses for the National Guard Field Artillery and Cavalry, and also to provide for the maintenance of the horses purchased out of other than federal funds as well as those purchased out of federal funds; for purchasing supplies without written contracts when the sum involved does not exceed \$25,000, instead of \$500 as now provided; for steps to secure appropriations to maintain the National Rifle Matches; and for the securing of legislation to authorize a "dropping allowance" and a clothing allowance, to cover losses by fair wear and tear, deteriorations, etc.

A resolution that was the subject of extended discussion, related to General Order Number 6, War Department, 1922. This order is concerned with the status and functions of the Chief of the Militia Bureau. The convention went on record as favoring that definition of the Bureau, which places it directly under the Secretary of War, with power to deal directly with corps areas and states in the administration of national guard affairs.

First Field Artillery Entry in the Knox Trophy Competition

In the announcement of the Knox Trophy contestants, in the last JOURNAL, Battery A, of the First Field Artillery, was listed as the representative of Fort Sill and the Field Artillery School. This was an error; the entry was Battery D of the First Field Artillery.

Notes on National Guard Training, 1924-1925

The Militia Bureau has recently had printed a small 15-page pamphlet called "Notes on National Guard Training, 1924-1925." The pamphlet is a discussion of the possibilities and desirable limitations of National Guard training, with comments on last years training especially with reference to the interpretation of the Militia Bureau Training Directive of April, 1925, which is still in force and will continue in force.

Many encouraging features are noted in last year's work. Among the suggestions for improvement, perhaps greatest stress is placed on the necessity for setting attainable and practicable objectives toward which the training should strive. In general such an objective is basic training, and does not proceed beyond purely company or battery training for the personnel of companies or batteries. Battalion, regimental and higher commanders indicate objectives for their subordinate units,—then supervise and inspect; basic

CURRENT FIELD ARTILLERY NOTES

training for these latter officers consist in training and study in their personal duties but should not hope to utilize the battery units in combined formations which the degree of progress of the batteries cannot warrant.

The section of the pamphlet which deals with the reasons why national guard troops cannot in general advance beyond basic training reads as follows:

"Armory training consists of approximately one and a half hours' training each week for eleven and a half months per year, which equals (average) seventy-two hours of scattered instruction. Like the pattern of a scatter gun, it hits in spots. It takes several years to cover all the spots. In contradistinction to that of the National Guard, Regular Army training may be likened to machine-gun fire that can gradually, uniformly, and progressively spread hits on the target by concentrated daily efforts of several hours each.

"Field training, six hours per day for an average of eleven consecutive days per year (fifteen days less two Sundays and two Saturdays) equals sixty-six hours. It is during this brief period that the National Guard makes its greatest progress in training and demonstrates the degree of qualification it has attained for its assigned part in the national defense. This progress is retarded, however, and the degree of qualification lessened, to just the extent that—

- (a) It is hampered by recruits.
- (b) It is beyond basic instruction that has not been thoroughly absorbed.
- (c) Officers and noncommissioned officers are inexperienced in leadership and instruction; and
- (d) Preliminary preparation for the instruction has not been made by the officers and noncommissioned officers.

"During 1924 an average of 60 per cent. of the enlisted personnel of the National Guard were in their first year of training and an average of 30 per cent. of the officers—mostly company officers—had the same amount of service in their present grades. Depending on when recruits are secured and new officers appointed, there is a greater or lesser amount of armory training imparted previous to their field camp. Having less than one drill per week, usually not more than one and a half hours per drill, makes, in the aggregate, very little training time, even where new men have been with the organization the whole armory-training period—a very exceptional condition. A large percentage had less than two months' (twelve hours) armory training. It is obvious that such an organization, for the few days of field training, to get the most out of it, must start at the beginning with its new personnel and build up

THE FIELD ARTILLERY JOURNAL

physique, military appearance, discipline, and knowledge of and ability to execute the elemental, basic evolutions. Nor can it be hoped to accomplish this in such brief time as is available. However, by clear understanding of the situation and its difficulties, by systematic and intelligent effort, much can be done in progressive effort toward that goal. This requires a proportion of the more experienced personnel as instructors, which may so reduce the strength of the organization that no other—real field training—can be undertaken. In the average case, however, there will be some personnel to begin the real field training.

"Therefore the greatest problem the National Guard has is to evolve training programs that will give a sound basic training as it is needed, and combine with this an amount of more advanced training that is warranted in point of time and in degree of advancement. Just as the armory training is mainly confined to instruction of the individual, squad, platoon, and company, largely to disciplinary drills and instruction in technique, so the field training must, for the best results, be largely confined to training of the same elements in field work.

"This situation might be considered discouraging and lead those not familiar with national guard conditions to condemn the system, its expense and the dependence which the Federal Government reposes by law in the National Guard as first-line troops. It only needs, however, that the National Guard adhere strictly to the requirements of the situation as to troop training, as indicated above, and a consideration of the provisions now in existence for further training when called or drafted into Federal service, to justify the existence of the National Guard and the dependence placed upon it.

"Unquestionably, from a purely military standpoint, the ideal would be a professional army of sufficient size to meet any emergency that might jeopardize the United States. Unquestionably the expense of the solution is prohibitive, and unquestionably the people of the United States will never approve it. Unquestionably a reserve, on the lines of our present one, is the most economical attempt at any preparation for defense that could be devised, but it also falls far short of an immediate support of the Regular Army, and could in nowise be considered as a force to augment it to hold an enemy during the mobilization of the man power of the Nation. The Regular Army alone, in its present numbers, or double them, could not do it. It is therefore imperative that some force that is less expensive than the Regular Army, but that is more promptly available than the Organized Reserve, exist, and in such numbers as will insure, together with the Regular Army, sufficient holding force during mobilization. This the National Guard does, and our

CURRENT FIELD ARTILLERY NOTES

traditions, our history, and the well-crystallized sentiment of the people, indicate that it will continue to be our reliance for such purpose."

Regimental Notes from the Thirteenth Field Artillery

The outstanding feature of the year 1925 for the Thirteenth Field Artillery was the participation in Joint Army and Navy Exercises No. 3, which were held in Hawaii in April, 1925. Although lasting only a few days, these joint exercises were most instructive and required weeks of study and preparation.

The regiment was in the field for fifteen days as part of the command under Brigadier-General George Van Horn Moseley, defending the Ewa Subsector, an important rôle in the defense of Oahu. At the conclusion of the exercises the regimental commander, Colonel Andrew Moses, received a number of letters complimenting us on the high character of the service performed.

The regiment participated in the ceremonies when Major-General John L. Hines, Chief of Staff of the Army, reviewed the Hawaiian Division on April 7th and when Major-General Eli Helmick, the Inspector General, reviewed and inspected the regiment on May 26th; on both occasions a creditable showing was made.

From September 12th to October 9th the time was spent in summer camp at Kahuku, T. H. Unlike previous summer camps the entire period was one of recreation and rest, except for two hours of training in the mornings.

During the past training year extensive field exercises were held in which the 13th Field Artillery supported the 22nd Infantry Brigade (27th and 35th Infantry) commanded by Brigadier-General Stuart Heintzelman. An efficient combat unit has been developed. On August 6th both battalions were tactically inspected by Brigadier-General George Van Horn Moseley, commanding the 11th Field Artillery Brigade, were pronounced entirely fit for field service and were complimented for the efficient manner in which this exercise (including service practice) was executed.

The department commander, Major-General Edward M. Lewis, inspected the regiment tactically on November 10th, when it supported the 22nd Infantry Brigade in a field exercise. A regimental review and inspection for the department commander was held November 23rd, and on November 24th, he again inspected us in great detail in a rather extensive field exercise. On all three occasions he expressed himself as being exceptionally well pleased with the efficient manner in which all duties were performed and highly complimented the Thirteenth for the excellent showing made in all phases of his inspection.

THE FIELD ARTILLERY JOURNAL

The Division Commander, Major-General William R. Smith, also complimented the regiment on the fine showing it had made.

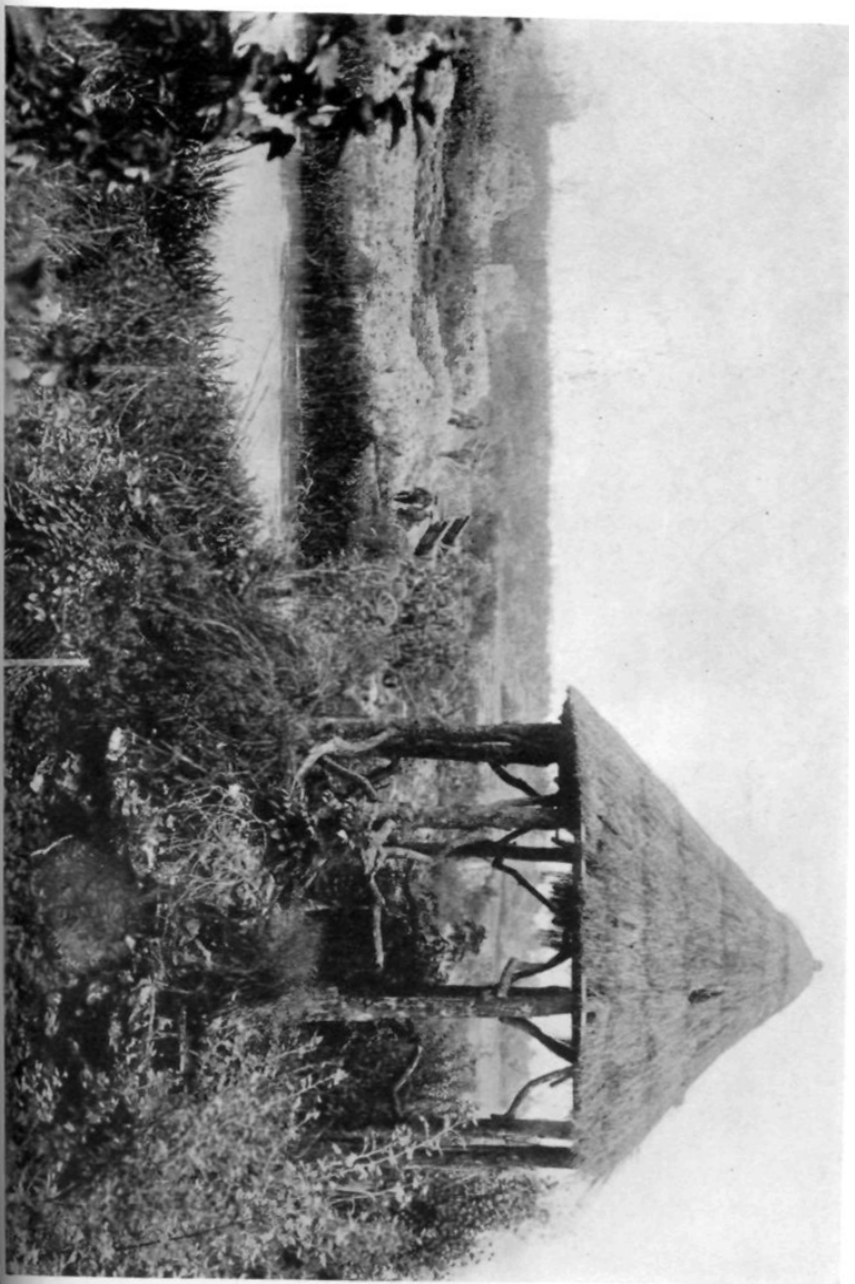
Nineteen hundred and twenty-five was the most successful year in athletics that we have experienced in the Hawaiian Division. For the third consecutive year the 13th Field Artillery completed the football season without defeat and won the Division Championship against the strongest type of competition. As a result our regimental team, with the addition of stars from other regiments, is being groomed to meet the Honolulu Sector for the Army Championship and later the Navy for the Service Championship of the Islands.

Sergeant Jones and Sergeant Tremblay of the 13th Field Artillery, alone won enough points to win the Division Track and Field Meet for the Thirteenth. The boxing team of the regiment finished third in the Division Tournament and numbered among its ranks Corporal Calo, who held the Lightweight Championship of the Hawaiian Islands.

The Regimental Polo Team consisting of Lieutenant Edward T. Williams, No. 1; Lieutenant Homer W. Kiefer, No. 2; Lieutenant Frank Henning, No. 3; Captain Wesley J. White (Team Captain), No. 4, won the William R. Smith Cup in the Handicap Tournament and the Theo. H. Davies Cups, emblematic of the Service Championship of the Islands.

Captain White, Lieutenant Kiefer, and Lieutenant Williams, together with Major G. S. Patton, G.S., constituted the Hawaiian Army Team, which tied for the Inter-Island Championship. This is a rather unique feat in as much as the army has never won the Inter-Island Championship.

The regiment won a field meet at the Hawaiian Territorial Fair in September and was praised very highly for its military entries in both the Hawaiian Territorial Fair and Maui County Fair.



IN THE MEUSE-ARGONNE
BATTERY C, 130TH FIELD ARTILLERY, ACROSS THE RIVER AIRE AT VARENNES FRANCE, SEPTEMBER 27 1918