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No. 6

THE FIELD ARTILLERY JOURNAL

VOL. XVI NOVEMBER-DECEMBER, 1926 NO. 6

THE ANNUAL REPORT OF THE CHIEF OF FIELD ARTILLERY FOR 1925—1926

IN TWO PARTS—PART I

INTRODUCTION

As I see it, the purposes of my Annual Reports are twofold: First, to present an accurate picture of existing conditions in the Field Artillery, and, second, to suggest remedies for defects or deficiencies in order to secure progress. These two objects I have tried to bear in mind in writing these reports annually.

As to how well I have succeeded under the first heading (presenting actual conditions), I have no means of knowing. As to how well I have succeeded under the second (securing remedies for defects), my success has been but mediocre.

As it is possible that in the mass of papers pouring into the General Staff, the recommendations heretofore made by me have not been placed sufficiently conspicuously to secure recognition, I have adopted a new plan in this report and have gathered together immediately below this paragraph, the scattered recommendations made throughout this Report. After each recommendation there is noted the pages of this report where the particular matter is treated more at length, and where the facts are set forth upon which the recommendation is based. These recommendations are as follows:

The quota of Field Artillery officers for duty with Organized Reserves, National Guard, and R.O.T.C., is insufficient and should be increased. (Page 556.)

The War Department must call the attention of responsible commanders to the necessity of all Field Artillery officers of battery grade receiving the maximum amount of duty with gun batteries. (Pages 556, 559, 568 and 569.)

Whenever Corps Area Commanders object to the assignment of an officer for any duty, they should be required to state clearly and definitely the reason for such objection. (Pages 558 and 559.)

Table of Contents, Part I, on page 586.

A thorough revision, with a view to reduction and simplification of War Department "Policies" dealing with personnel, is recommended. (Page 559.)

Commanding officers of mixed garrisons should be instructed that, in making fatigue details, consideration must be given to Field Artillery organizations for duty of a like character performed within the arm as a matter of routine. (Pages 562 and 569.)

The War Department should direct commanding officers to afford Field Artillery organizations the opportunity to train in marching and in similar practical field exercises. (Page 565.)

Every Field Artillery officer is a mounted officer and should be given mounted status regardless of temporary assignment. (Pages 565, 566, 2 and 3.)

The present Court-martial Manual is demoralizing to the Army and no delay should be permitted in simplifying it. (Page 566.)

Higher commanders and staffs should keep constantly in mind that combined training is largely wasted effort, unless every unit is thoroughly proficient in its basic technical training. (Pages 566 and 567.)

The requirements of Corps Area Headquarters and the various administrative and supply activities should be determined and provided for, and the detachment of line personnel should be restricted. (Pages 567 and 568.)

Promotion should be equalized between regular and reserve officers without delay. (Pages 571 and 572.)

It is of the utmost importance that visits of the Chief of Branch, or his representatives, to units of the R.O.T.C., be not curtailed. (Pages 572 and 573.)

Discontinuance is recommended of the policy of applying reductions and restrictions to all R.O.T.C. units, and inauguration is urged of a policy of withdrawing entire units to effect unavoidable economies. (Pages 574 and 575.)

The recommendations of previous years are repeated and emphasized, that the Reserve Officers' Training Corps be withdrawn from Corps Area control. (Pages 575 to 577.)

The revocation is recommended of the policy which requires a Chief of Branch to secure the permission of Corps Area Commanders to make inspections. (Pages 578 and 579.)

More funds should be allotted for sending students to the Enlisted Specialists Courses at the Field Artillery School. (Pages 582 and 583.)

Pages 2 to 20 are in Part II, issue of January-February, 1927.

At least six additional officers, two clerks, materials and supplies should be placed at the disposal of the Commandant, The Field Artillery School, for the Correspondence Courses. (Pages 583 and 584.)

It is urged that Field Artillery Aerial Observers should be Field Artillery officers. (Pages 584 and 585.)

Interchange of visits of instructors between the various service schools should be encouraged to the limit of available funds. (Pages 585 and 586.)

It is recommended that supply and maintenance of motor vehicles for tactical organizations be studied with a view to improving existing conditions. (Pages 3 and 4.)

It is recommended that the ten-year Ordnance Program be carried into effect as projected. (Page 9.)

It is recommended that allocation of enlisted men to the various arms be re-studied with a view to increasing the strength of the Field Artillery. (Page 12.)

No delay should be permitted in representing the deplorable housing conditions for immediate remedy. (Pages 13 to 15.)

It is recommended that a promotion study be made with a view to assuring a steady, even though slow, rate of promotion. (Pages 15 and 16.)

The process of selection for the General Staff Eligible List should be applied before officers are designated to attend the Command and General Staff School, and the name of every officer who graduates from the school should be placed on the List. (Pages 16 and 17.)

It is recommended that the classification of Honor and Distinguished Graduates at the Command and General Staff School be abolished. (Page 17.)

If exhaustive production programs are projected for other arms, the War Department should keep constantly in mind that the importance of production of the most modern and powerful types of Field Artillery armament is paramount. (Page 19.)

It is recommended that better coördination be secured of offices of Chiefs of Branches with other agencies. (Page 20.)

PERSONNEL

Regular Army. Commissioned Personnel

On June 30, 1926, the number of officers in the Field Artillery, including those commissioned in the arm and those detailed for duty with it from other arms, was as follows:

Pages 2 to 20 are in Part II, issue of January-February, 1927.

	Colonels	Lieutenant Colonels	Majors	Captains	First Lieutenants	Second Lieutenants	Totals
Commissioned in Field Artillery	26	56	217	430	370	309	1,408
Detailed from other arms	13	4					17
Totals.....	39	60	217	430	370	309	1,425

Of the 1425 officers noted above, eighteen were detailed for duty in other branches, leaving a total of 1407 officers for duty with the Field Artillery.

During the year the gains and losses in this arm were as follows:

One Colonel .....Gained
Seven Lieutenant Colonels .....Lost
Two Majors .....Gained
Eight Captains .....Gained
Sixteen 1st Lieutenants .....Gained
Seventeen 2d Lieutenants .....Gained

The number of officers on duty with the Organized Reserves, National Guard, and R.O.T.C. has again been increased. The Field Artillery now has on duty with those components of the army, its full authorized quota; this is, however, insufficient and should be increased.

It is desired to reiterate that in some cases commanding officers do not realize to its full extent, their share of the responsibility in training officers assigned to their command. In many cases the need of the individual officer for duty with an organization is not fully appreciated and many officers assigned to regiments by the War Department are placed on special duty of one sort or another by Post Commanders, year after year, so that upon relief from troop duty and assignment to duty of another nature, the officer is handicapped by the fact of his having had no actual experience in an organization. As an example, Lieutenant ——— has been on duty with troops since June, 1921, at which time he was transferred to the Field Artillery. He was ordered to the Battery Officers' Course for the 1926–1927 class. On receiving his order he requested that his assignment to the School be postponed one year, as he had done no duty with a Field Artillery organization in the five years in which he had been in the Field Artillery, but, although assigned to a regiment, had been continuously on special duty of one kind or another. There are captains with seven or eight years' service who have been continuously on duty with regular troops, but who have never been given an opportunity to command a gun

Text follows on page 558.

The present distribution of the commissioned personnel of this arm is as follows:

	Colonels	Lieutenant Colonels	Majors	Captains	First Lieutenants	Second Lieutenants	Total
Duty with Branch (Regular Army)	14	18	72	195	228	275	802
Special Service Schools		3	18	63	46	20	150
Duty with General Staff (War Department)	2	5	5				12
General Staff (Troops)	3	3	9				15
General Staff (Attaches)		1	1				2
War College (Staff)	2	1	3				6
War College (Students)		1	8				9
Command and General Staff School (Staff)		1	9				10
Command and General Staff School (Students)			20	5			25
Inspector General Department	2	1	3				6
U. S. Military Academy			4	4	32		40
Organized Reserves	13	19	16	47	3		98
National Guard		2	23	56	4		85
R.O.T.C.		2	22	53	36		113
Miscellaneous Duties:							
Aides					5	3	8
Recruiting	1	1	1	3	8		14
Disciplinary Barracks			1	1	1		3
Foreign Language				1			1
Battle Monument Comm.					1		1
Bureau of the Budget			1				1
Naval War College		1	1				2
Signal Corps School				1			1
Corps Area Headquarters	2	1					3
Detailed with Air Corps					3	10	13
Detailed with Ordnance				1	3	1	5
Totals	39	60	217	430	370	309	1,425

NOTE.—Student officers will not, as a rule, report at schools prior to September 1st, 1926. Officers under orders to report to the various schools are carried in the above table as students and not as performing any of the other duties enumerated.

battery. Duty with an organization, particularly with a gun battery, is the basis of applied training for all commissioned Field Artillery personnel.

It seems appropriate at this time to invite attention to my last annual report which shows the amount of time which field officers of Field Artillery can spend on duty with troops of the Regular Army to be as follows:

Colonels	Four out of ten years
Lieutenant Colonels	Four out of nineteen years
Majors	Four out of twenty years

These figures indicate the importance of giving battery officers the maximum possible amount of service with batteries of the Regular Army, for it is apparent they will get only a negligible amount of duty with regular troops after reaching field grade. I shall again refer to this later. (Page 568.)

There has been during the past year a noticeable settling down of personnel. Officers, particularly captains, are being left longer with their regiments. This cannot help but have a beneficial effect on the troops.

That it is now possible to keep officers at a station much longer than it was in former years, is, in a great measure, due to the War Department Policy of May 19, 1925, which prescribes that in any one arm officers of the same number of years of foreign service be considered equally available for such duty, and the synchronization of date of relief from foreign service tour with the date to assume new duties. As a result of this policy, it is in most cases possible to order on foreign service only such officers as must be moved for other reasons, such as graduation from service schools and completion of a tour of detached service. This policy has not only tended to lengthen the period of time which an officer may serve at one station, but in addition has effected a considerable saving in mileage funds by reducing the number of moves which were often necessary under the former foreign service policy, each time one officer was ordered on foreign service. In June, 1925, there were only sixty-nine captains of Field Artillery on duty with regular troops in the United States who had been at their stations for more than two years; in 1926 there were one hundred and nineteen. Every effort will be made to continually increase this number.

I again wish to invite attention to the policy which authorizes a Corps Area Commander to express his disapproval, without reason, of the proposed detail of a regular commissioned officer recommended by the Chief of Field Artillery for National Guard, R. O. T. C., or Organized Reserve duty within his Corps Area. In this connection,

I wish to cite the letter, AG 210.31 (9-11-23) Off., Subject: "Rules to be observed in the Assignment of Commissioned Personnel," which directs that, when any commanding officer (whether one of the general officers or any other commanding officer) opposes the assignment of a particular officer for duty on his staff, the reason for such opposition will be clearly and definitely stated; that the unsupported statement that the assignment of an officer is not desired because he is not qualified, when his rank, branch, and record indicate the reverse, will not be considered grounds for the nonassignment of the officer under consideration. The present policy of not assigning an officer to other duty in a Corps Area, upon the mere statement of the Corps Area Commander that he does not want the officer, without stating his reason, is a grave injustice to the individual whose assignment is in question, and a blow to the efficiency of the whole army. It is a "Star Chamber" procedure. By his mere whim or prejudice, a Corps Area Commander can thus prevent an officer from receiving an assignment which he really should get. Or, again, the Corps Area Commander may know of some good reason why the officer should not be so assigned, but by failure to state it, it does not get on the Officer's record—the place where it belongs. The present procedure is un-American and should be stopped. It is recommended that, whenever a Corps Area Commander objects to the assignment of an officer for *any* duty, the reason for such objection be clearly and definitely stated.

Before leaving the subject of assignment of commissioned personnel, I desire to invite attention to the many so-called War Department Policies bearing on this subject. While the original conception of the policies may have been sound, they have now outgrown all bounds. Some are not in harmony with others, and a few are actually in conflict with others. So far as I come in contact with them, their principal result now is to harass. I recommend a thorough revision and drastic elimination of most of them.

Enlisted Personnel.—As a whole, the Field Artillery has been kept as near to authorized strength as is possible under the Appropriation Act. At one or two places there has been a shortage. To Major Phillipson, in Charge of Recruiting in the Adjutant General's Office, is due the credit for the improved conditions in enlisted strength of the Field Artillery. He put into practice, recommendations that had long before been made by the Chief of Field Artillery. In addition, he has coöperated loyally with this office, wherever it was practicable, without injustice to other branches of the service.

The following tables show the strength of each unit for the year:

UNIT	July 1925	Aug. 1925	Sept. 1925	Oct. 1925	Nov. 1925	Dec. 1925	Jan. 1926	Feb. 1926	Mar. 1926	Apr. 1926	May 1926	June 1926	Average	Percentage
1st Division (1st F. A. Brigade) Ft. Hoyle														
Hq. and Hq. Battery	36	36	39	42	45	41	40	42	41	39	39	39	40	108.0%
1st A. T.	57	57	56	56	56	56	57	56	54	51	53	55	55	100.0%
6th F. A.	801	802	815	837	840	847	876	911	948	890	885	854	859	97.3%
7th F. A. Ethan Allen	398	398	429	425	426	422	451	483	491	480	461	458	443	89.3%
7th F. A. Madison Barracks	312	409	416	405	412	425	421	410	410	391	374	366	396	100.5%
2nd Division (2nd F. A. Brigade) Ft. Sam Houston														
Hq. and Hq. Battery	39	38	44	42	41	39	37	36	37	37	37	38	38	102.0%
2nd A. T.	49	69	66	62	60	55	53	51	51	53	52	48	56	101.8%
12th F. A.	805	913	898	866	827	823	818	798	807	808	787	749	824	93.2%
15th F. A.	833	886	890	855	804	813	811	821	805	789	779	764	820	92.7%
3rd Division (3rd F. A. Brigade) Camp Lewis														
Hq. and Hq. Battery	32	34	34	33	32	36	36	35	34	35	36	35	34	91.9%
10 F. A.	783	747	745	705	748	757	819	807	865	845	840	814	790	89.4%
76th F. A. Pres. of Mont.	305	306	311	305	304	311	318	353	381	385	378	361	335	85.0%
76th F. A. Ft. D. A. Russel	452	446	444	436	447	469	473	462	449	452	428	409	447	91.0%
13th F. A. Brigade (Camp Bragg)														
Hq. and Hq. Battery	37	38	39	34	36	38	38	38	37	37	38	37	37	97.3%
13th A. T.	52	49	47	46	46	44	46	47	47	46	49	49	47	100.0%
5th F. A.	743	757	774	781	763	758	754	740	739	718	704	686	743	95.2%
17th F. A.	616	624	640	642	621	620	626	620	612	590	585	580	615	94.7%
1st Obs. Battery	62	64	61	58	55	55	56	61	67	62	64	62	60	98.3%
SEPARATE ORGANIZATIONS														
1st F. A.	887	881	887	921	923	992	962	941	917	987	966	929	932	92.9%
UNIT	July 1925	Aug. 1925	Sept. 1925	Oct. 1925	Nov. 1925	Dec. 1925	Jan. 1926	Feb. 1926	Mar. 1926	Apr. 1926	May 1926	June 1926	Average	Percentage

UNIT	July 1925	Aug. 1925	Sept. 1925	Oct. 1925	Nov. 1925	Dec. 1925	Jan. 1926	Feb. 1926	Mar. 1926	Apr. 1926	May 1926	June 1926	Average	Percentage
2nd F. A.	394	405	415	401	385	384	399	411	407	395	384	401	398	98.0%
3rd F. A.	386	382	392	384	378	356	404	413	399	374	369	365	383	99.4%
4th F. A., McIntosh	398	472	470	448	427	450	445	432	408	467	449	432	441	90.0%
9th F. A., Snelling, Riley and Des Moines	349	349	349	371	365	381	366	355	345	332	314	341	351	90.6%
14th F. A., Ft. Sheridan and Jefferson Bks.	306	303	335	338	341	341	359	403	392	374	357	341	349	91.1%
16th F. A.	414	417	448	441	437	431	425	435	442	448	435	427	433	97.5%
18th F. A.	397	418	407	406	421	445	426	407	379	446	433	423	417	94.8%
82nd F. A.	361	407	407	382	372	447	450	423	407	409	401	372	403	91.3%
83rd F. A.	393	393	380	393	373	378	383	390	385	374	379	389	384	96.2%
Office Chief of F. A.	22	21	22	24	23	23	24	23	22	22	23	23	23	95.9%
F. A. School, Ft. Sill, Oklahoma, 3rd A. T.	60	57	66	63	64	65	65	63	58	63	59	54	61	95.3%
F. A. School, Det. (W)	151	154	154	155	153	154	157	156	154	156	154	154	154	101.0%
F. A. School, Det. (C)	156	161	159	157	153	144	148	149	145	144	152	154	151	96.7%
PANAMA 4th F. A.	420	395	430	415	486	483	483	466	458	447	441	433	446	99.7%
HAWAII 11th F. A. Brigade	2,780	2,707	2,808	2,844	2,936	2,610	2,610	2,751	2,717	2,849	2,745	2,798	2,763	100.5%
PHILIPPINE ISLANDS, 24th F. A.	916	882	882	877	895	906	906	905	905	913	862	923	898	89.5%
Strength of F. A. in Percentage for the year	92.0	94.2	95.5	95.0	94.9	97.0	95.0	97.0	96.3	96.8	94.6	93.2	. . . .	95.3%
	July 1925	Aug. 1925	Sept. 1925	Oct. 1925	Nov. 1925	Dec. 1925	Jan. 1926	Feb. 1926	Mar. 1926	Apr. 1926	May 1926	June 1926	Average	Percentage

NOTE—Percentages in this table are figured on the reduced strength of 15.480 men, and not on the Table of Organization strength of 16.733 men.

The above tables show a remarkably uniform maintenance of strength and equitable distribution of enlisted men, when all the vicissitudes of service are considered.

While the Field Artillery has had a fair percentage of its authorized strength, it cannot be too emphatically stated that the authorized personnel is not sufficient to carry on the work demanded of it.

It is recommended that post commanders of mixed garrisons where Field Artillery is one of the components of the garrison, be instructed that, in making their fatigue details, special duty calls, etc., consideration be given to the fact that the Field Artillery has an immense amount of material and a large number of horses or motors to take care of and that details of the nature indicated should not be made according to Morning Report strength. This results in an injustice to the Field Artillery. I shall again mention this subject in more detail. (See page 569.)

National Guard.—The following is a résumé of the situation with regard to the Field Artillery of the National Guard:

The complete allotment of Field Artillery to the National Guard is as follows:

18 Light Field Artillery Brigades, Infantry Division.
4 Seperate Battalions 75-mm. Gun (Horse), Cavalry Division.
2 Corps Artillery Headquarters.
6 Corps Artillery Brigade Headquarters Batteries.
6 Corps Artillery Brigade Ammunition Trains.
3 Observation Battalions.
17 Regiments, 155-mm. Howitzers (Corps).
3 Regiments, 155-mm. Guns (Corps).
2 Ammunition Trains (Army).
4 Regiments 75-mm. Gun, Porteé (G. H. Q. Reserve).
7 Regiments 75-mm. Gun, Tractor-drawn (G.H.Q. Reserve).
1 6-inch Gun Regiment (G. H. Q. Reserve).
1 Regiment 155-mm. Gun (G. H. Q. Reserve).

Of the units listed above, the following are those that are included in the Modified Program of National Guard Development, the "250,000 Man Power Project" towards which the National Guard is working:

18 Light Field Artillery Brigades, Infantry Division.
4 Seperate Battalions, 75-mm. Gun (Horse) Cavalry Divison.
1 Corps Artillery Brigade Ammunition Train.
16 Regiments 155-mm. Howitzers (Corps).
2 Regiments 155-mm. Gun (Corps).
1 Regiment 75-mm. Gun, Porteé (G. H. Q. Reserve). Now animal drawn.
1 Battalion 75-mm. Gun, Tractor-drawn (G. H. Q. Reserve).

The following tabulation indicates the status of organization this date showing the total number of units allotted and organized:

	Total Allotted	Modified Program	Authorized for Organization	Organized and Recognized	Percentage of total Recognized	Per cent. of Mod. Program Recognized	Per cent. of Auth. Recognized
Inf. Div.	432	432	388	383	89	89	98
Cav. Div.	20	20	4	0	0	0	0
Corps	315	227	128	128	41	56	100
Army	22	0	0	0	0	0	0
GHQ Res	145	38	30	30	21	79	100
Totals	934	717	550	541	58	75	98

NOTE.—The above figures include Medical Department.

DETACHMENTS

Great care has been exercised in the selection of regular officers for detail as instructors with the National Guard and with a few minor exceptions, it is believed that these officers are rendering excellent service in the training of the National Guard.

As presumably, all details as to strength will be found in the Report of the Chief of the Militia Bureau, such statements are omitted here.

Officers' Reserve Corps.—The status of the Field Artillery Section of the Officers' Reserve corps is as follows:

LOSSES

Died	20
Transferred	34
Discharged	231
Resigned	62
Declined Reappointment	21
Total Losses	368

GAINS

Regular Acceptances	601
R. O. T. C. Acceptances	744
Transferred	50
Total Gains	1395
Surplus of Gains over Losses	1027

The total number of Field Artillery Reserve Officers as of June 30th, 1925, was 8899. The total number of Field Artillery Reserve Officers as of June 30th, 1926, was 9926, of whom 1201 also held commissions in the National Guard.

It is interesting to compare the gains listed above with those shown in the report of this office for 1925. In that report, Regular Acceptances were 1153; R. O. T. C. Acceptances 421. This year

the latter exceeded the former. From now on, the great majority of officers appointed in the Reserve Corps, must come from the R. O. T. C. The necessity for an increased output of Field Artillery R. O. T. C. has been previously pointed out. It is only desired at this time to call attention to the increasing importance of this source of supply, and the necessity of building it up.

The following table shows the distribution of Field Artillery Reserve Officers:

Assignment Jurisdiction	Colonels	Lieutenant Colonels	Majors	Captains	First Lieutenants	Second Lieutenants	Totals
Corps Area Commander	73	121	439	1,103	1,579	5,093	8,408
Chief of Branch	8	18	59	120	95	17	317
Total	.....	.....	.....	.....	.....	.....	8,725

NOTE.—Reserve officers holding commissions in the National Guard are not included in this table.

The table further shows that about one per cent. are in the grade of colonel; one and one-half per cent. in the grade of lieutenant colonel; five and three-quarters per cent. in the grade of major. or a total of eight per cent. in field grade. This is regarded as very satisfactory.

TRAINING

Regular Army.—Some improvement is seen in the *Organization* of training in the Regular Army. Within the powers of local Field Artillery commanders to effect results, the essentials of Field Artillery instruction are receiving better and more uniform attention. Less emphasis is being placed upon auxiliary instruction and dismounted ceremonies with a resultant benefit to more important training. However, in most commands there is not a uniform ability displayed in all of the essentials of Field Artillery training. Some progress has been made towards organizing instruction so as to develop the initiative of subordinate commanders in their proper spheres, but in some larger commands the commanders still seem to think themselves unable to secure results except by interfering in minor details. I am sure they are wrong. There has been more permanency in command and a welcome tendency to settle down to the work at hand under the practical conditions of service.

Firing instruction in the main has been thorough, often excellently planned and systematized, but not all of the ammunition expended under 1925 allowances was profitable. The greatly reduced allowances recently adopted will require exceptionally careful

and thorough planning if instruction is not to suffer. More emphasis must be placed on forward and flank adjustment of fire, as these will be the sound methods hereafter in battle. It is too early to state whether present allowances are adequate.

Communications are essential in the Field Artillery. This instruction has made material advances and there is a most healthful development of general interest. There is still too great a tendency to treat communications as a specialty rather than a subject upon which all Field Artillery officers should be well informed. All junior officers should acquire in their first year of service knowledge of all types of communications and of all codes used by the Field Artillery. Enlisted men must be trained in numbers amply sufficient to replace key men who may at any time be lost to a command. Greater emphasis must be placed upon efficient two-way radio telegraphy, particularly with aircraft, and all Field Artillery commands should be given opportunity yearly to conduct firing and operate communications with observation planes. Familiarity with communications between ground and air must be developed and proficiency maintained to the end that increased speed in adjustments may be stressed.

Marching.—Marching still suffers. Few commands have had enough of this important field training. The great shortage in personnel and the ever large detached service and special duty lists hurt this element of training more than any other. Batteries must be given their personnel so that they may march frequently by battery; battalions, by battalion; if possible the larger commands should march as units; but for batteries and battalions, this instruction is vital. Interest of all concerned will make it possible to train in marching and in similar practical field exercise, if the opportunity be afforded. The War Department should direct senior commanders to afford the Field Artillery this opportunity.

The organization of a war strength battery with complete war equipment was successfully accomplished at Fort Bragg, and the battery marched and manœuvred for ten days and nights so as to bring into use every article of its equipment. Such an exercise would prove highly instructive in every command and should be made an aim of every commander. Marching requires the presence of men and animals. Enlisted men on duty at Corps Area and Division Headquarters, digging ditches at a post, or doing the work of the administrative and supply services, cannot participate in marches; without them the battery is helpless to train in this important essential.

Equitation and Horsemanship in the Field Artillery are not what they should be. A knowledge of these arts is required of

every Field Artillery officer regardless of rank and, in addition, a knowledge of the equally important science of draft. Polo does much to encourage riding and horsemanship, but the high cost of existence today makes the expense of polo prohibitive for many officers; especially young officers. There is a need to recognize the vital importance of horsemanship in the Field Artillery and to liberalize the present regulations which discourage the ownership of good mounts and militate against the development of horsemanship by Field Artillery officers. Every Field Artillery officer is a mounted officer and should be given mounted status regardless of temporary assignment. Within the limits of available facilities, equitation, horsemanship, and knowledge of draft should be continuously developed in every Field Artillery command.

General Comments.—All of the above (firing, communications, marching, and horsemanship) are essentials of Field Artillery training. Training should have precedence in the Regular Army. Unfortunately the yearly inspections stress and criticize administration, care and up-keep of grounds, and the signing of innumerable reports and papers on the dotted line, and it is impossible to expect commanders not to give excessive attention to clerical details for the neglect of which they inevitably will be criticized. Administration, designed as the servant of the army, has become its master. I wish again to draw attention to the administrative burden and, in particular, to the odious court-martial procedure now in force. Although a year has elapsed since my last Annual Report in which I referred to the Court-Martial Manual as "the worst that had been gotten out in my time," this atrocious manual is still in effect. It is demoralizing to the army and no further delay should be permitted in simplifying it.

The instruction of officers in their first year of service has been thorough and systematic. No instance was reported of an officer being so detached as to be unable to receive this training. No officer ever should be so detached. It is difficult to over-estimate the importance of the first year's work for these officers since, to a great extent, it takes the place of the former basic school course in grounding them in the fundamentals of their profession. While giving a general grounding sight must never be lost of the essential requirement, "that the officer be made a well instructed officer of his arm, well qualified to assist in the summer training required of his unit."

I wish here to comment upon the growing tendency in our service, particularly upon the part of higher commanders and staffs, to exalt training in the combined arms and debase training within the arm. Combined training is tactical and interesting. Separate training is technical and frequently assumes the aspect of drudgery.

Subordinate commanders, especially battery commanders, require much more time for their technical training than is needed by higher commanders operating in their proper tactical sphere. As a rule, the battery commander can accomplish more when, during the hours of his training, he is not under the domination of higher commanders. These should satisfy themselves by merely verifying the fact that the battery commander is proceeding along sound lines and accomplishing satisfactory results. I sense a strong tendency, in the present number and detailed prescriptions of training orders, schedules, programs, bulletins, memoranda, circulars, etc., to encroach upon the prerogatives which rightfully belong to the battery commander. Everyone bewails the passing of the "Old Captain" in our service but very, very few are willing to permit our young captains to develop themselves into worthy successors to the old. Our raw material is as good as it ever was and will, I believe, develop, in spite of the many unavoidable, bad conditions under which the service is laboring, if given the opportunity. Many commanders lose sight of the fact that the present junior officers will be the senior ones in the next war, and that they must be given an opportunity to develop.

It should be kept constantly in mind by all higher commanders and staffs that combined training is largely wasted effort unless every unit is thoroughly proficient in its basic technical training.

Detachments from Field Artillery Organizations.—The Field Artillery is a line branch, an essential branch, and one expensive to maintain. It is an economic waste not to maintain it efficiently for its intended purpose. At one station occupied by a regiment of Field Artillery, after supplying Corps Area Headquarters, the Recruiting Service, Division Headquarters, the various supply and administrative services, and its constant fatigue to maintain its tumble-down buildings, the gun batteries averaged eleven noncommissioned officers and twenty-two privates for drill. These batteries have a table of organization strength of one hundred and fourteen and a paper strength of about one hundred and five; they have horses and matériel; they are counted as a bulwark of strength upon which the Nation is to rely in time of stress; their training objective is stated as readiness for active field service; they are seriously inspected to determine whether they are so prepared and, mystery of mysteries, they are reported as being prepared. This cannot be possible. How superficial must be our training inspections in comparison with our administrative inspections.

Both morale and training continue to suffer as a result of insufficient enlisted personnel due largely to excessive detached service, special duty and fatigue. In one Corps Area the Field Artillery contributes sixteen men to Corps Area Headquarters, twenty-two to

a Recruit Depot, and large numbers additional to duties of the staff branches; its recruiting strength, in addition, is reduced over twelve per cent. Thus, a permanent situation is developed where tables of organization have no practical meaning or effect and, so long as present conditions exist, no help for this evil can be seen. It is not argued that these men are not usefully employed, but it is recommended that the requirements of Corps Area Headquarters and the various permanent administrative and supply activities be determined and provided for by the War Department, and that thereafter the order which restricted the detachment of line personnel be re-issued. Enlisted men cannot be expected to reënlist for duty with labor squads when they were promised the life of a soldier. In seven Field Artillery commands the percentage of reënlistments of those discharged on account of expiration of term of service average only 23.6.

To a lesser degree officers of Field Artillery carried as on duty with troops are detached and receive no actual duty of this character. One officer, for example, on duty with troops status, has been serving for two years as a Finance Officer, and many officers have been detached for periods in excess of six months. Also, of those officers serving with troops, many have been so unfortunate as to have had little or no training with gun batteries. Responsible commanders should consider it their personal responsibility that this condition is corrected. No known adequate training substitute exists for duty with Field Artillery units, especially gun batteries, and the opportunities for such service are far too few.

I reiterate that the maximum amount of duty with gun batteries is essential in the development of adequate efficiency in captains and lieutenants of Field Artillery. I have in the past invited the attention of the War Department to the fact that many officers on duty with troops are not actually performing the proper amount of duty with gun batteries and little, if any, relief from this unfortunate condition has been received. It appears that more drastic action is necessary, and I recommend that the War Department call attention of all responsible commanders to this evil. While I realize that it is highly undesirable for the War Department to intervene in any administrative detail between commanders and their units, nevertheless unless material relief from the condition complained of is experienced during the coming year, I believe the War Department will find it necessary, and I shall so recommend, to publish regulations materially limiting the authority of commanding officers as to the duties to which they may assign battery officers. Elsewhere in this report (see page 558) I have commented upon the limited amount of time which officers of field grade in the Field Artillery are able to serve with troops of the regular army. There is no

question that actual duty with line troops is essential in the development of those qualities of leadership which must be inherent in officers if the army is to maintain its efficiency. The importance of this matter must be brought home to all commanders concerned.

The result of shortage in personnel for drill is that neither officers nor enlisted men fully profit from service with troops. Gun batteries under normal conditions average for drill about one-half the personnel essential for battery training (four gun sections only). Authorization strengths of Field Artillery units were placed at a minimum in order to retain a maximum number of combat units. They cannot be further reduced either in Tables or in service. Absenteeism frequently results in the few men who remain becoming grooms and caretakers for the excess animals and matériel. The unit struggles to support itself. Thorough training is impossible.

Absenteeism might be remedied in part by a little careful study. A man detached from a Field Artillery unit leaves his work behind him to be done by someone else. This condition does not apply equally to all units and all branches, and few commanders recognize the fact. It is estimated that relations approximately as follows should be applied in all calls for soldiers for duty away from their commands:

1 Field Artilleryman (Horse)	= 2 Cavalrymen
1 Field Artilleryman (Horse-drawn and Pack)	= 1 Cavalryman plus 1½ Infantrymen or 1½ Cavalrymen
1 Field Artilleryman (Tractor-drawn)	= 2 Infantrymen

Certain types of detached service are so improper as to be readily so recognized, *e.g.,* detaching men of horse-drawn and pack units to motor schools. Yet, such instances occur. All Corps Area and many small headquarters have officers serving as G-1. These officers can render no greater service than by observing and restricting the demands for enlisted men of the line to perform duty and detached service away from their proper commands.

The Knox Trophy and Medal. Knox Trophy.—The Knox Trophy test for 1925 was taken by seventeen batteries representing as many different Field Artillery commands, ranging in size from battalion to brigade. In organization and equipment there were represented the 75-mm. horse-drawn, the 75-mm. horse, the 75-mm. tractor-drawn, the 2.95″ pack, and the 155-mm. howitzer.

In firing, mobility, and communications, respectively, the average scores of competing batteries were 86 per cent., 87.6 per cent. and 70 per cent., indicating that under test conditions communications has not yet reached the status of reliability of other essential elements of Field Artillery training.

The Trophy was won by Battery "A," Eighth Field Artillery (75-mm. tractor-drawn), Hawaii, commanded by First Lieutenant

Ernest A. Bixby, Eighth Field Artillery, and representing the Eleventh Field Artillery Brigade, with the excellent score of 395 out of a possible 400.

The interest in the Trophy competition has proven a valuable stimulant to thorough and practical Field Artillery training throughout the regular Field Artillery. The tests are essentially fair and practical and, while the element of chance can never be wholly eliminated, the results show that the representative battery of a good, well-rounded command consistently reflects credit upon those responsible. One result apparently demonstrated this year was that commands engaged arduously with the summer training of civilian components and activities suffer a noticeable disruption of the harmonious and uniform functioning of the unit as a whole with a resultant loss at some stage of the test.

Knox Medal.—The Knox Medal for 1925 was won by Corporal Harold Burden, Battery "C," Eighty-second Field Artillery Battalion (Horse), Fort Bliss, Texas, who stood first in his class at the Field Artillery School.

Officers' Reserve Corps.—The matter of how much or how little work or training to expect or require of the reserve officer is a puzzling and difficult question. That there is a fine sense of duty in the Reserve Corps regarding this matter is attested by the fact that the average reserve officer is inclined to outdo the regular in his estimate of what the reservist should be required to accomplish.

A good reserve officer of whom too little is asked or expected will drop the work because he feels that he is not keeping up to date, and is becoming less and less competent to perform the duties of his grade. An equally good man of whom too much is required will drop the work because he cannot spare the time for it. Another man, not so good as either, is anxious to have both of these men dropped in order that he may the more quickly be promoted.

It is my opinion that with selection for original appointment in the Reserve Corps, equivalent to the standard of the R. O. T. C. (and this standard should be maintained rigidly), but little in the way of study and theoretical instruction should be required of the reserve officer of battery grade. These officers are young; they are devoting their maximum energies to the attainment of success in their businesses or professions. In time of emergency they will quickly "come back," and will develop rapidly under the intensive work of the training camp. They, as the regular of like grade, need service with gun batteries and should be given maximum opportunity under funds available to attend summer training camps of fifteen days, where they should perform duty with regular batteries under field conditions.

For a reserve officer who fully measured up to the standard set

for original appointment, the requirements for promotion up to and including the grade of captain need not be rigid or difficult to meet. When the reservist aspires to field grade, however, the situation changes. The serious and costly mistakes in war are made by officers of field grade or above, and the officer who aspires to these grades *should be required* to fit himself for the duties involved and to demonstrate such fitness. In time of war it costs blood and treasure to eliminate unfits from high command, hence, in time of peace it is our duty to see that all of those on the road to high command are carefully educated and trained so that in the event of war they may be able to meet its exactions and requirements efficiently and successfully.

It is now eight years since the close of the War. Very soon officers without war experience will be candidates for promotion to field grade. I believe that the promotion of these officers to the grade of major should be contingent upon satisfactory completion of the Advanced Course, Army Correspondence Courses, or of a course at the Special Service Schools. Similarly, promotion to the grades of Lieutenant Colonel and Colonel, should be contingent on satisfactory completion of the Command and General Staff Course, Army Correspondence Courses, or of a Course at the Command and General Staff School. I believe that these requirements would add respect and prestige to field grade in the reserve.

The matter of equality of promotion between the Regular and Reservist should receive the attention of the War Department without delay. A young man who enters the army this year will, if peace continues, be still a Lieutenant in 1936. On the other hand, a young man who graduates this year from the R. O. T. C. will in 1936, if he avails himself of the promotion offered him by existing regulations, be eligible for promotion to Major. With the reserve which we are now seeking, *i.e.,* one which meets our War Department Mobilization Plans, the reservist would thus in case of emergency go out on active duty two grades senior to the regular of equal length of service. This obviously is not right, will make for jealousies and ill feeling that should not exist, and will operate to keep the three components of the army from working together with that harmony and coöperation so essential to success. The regular should be promoted in the Army of the United States, in time of peace, just as rapidly as the reservist—no more so.

The War Department Mobilization Plans provide for a definite number of officers for each branch. I recommend for study and consideration a plan whereby officers of the Regular Army and Organized Reserves will be placed on a Branch Single List to stabilize and govern peace-time promotions for the War Army. This would mean that the regular would be carried on two lists—one a

Regular Army List where perhaps he would be a First Lieutenant, and the other a United States Army List where perhaps he would rank as a Major. This would favorably affect his morale in time of peace when promotion is slow and discouraging, but would not alter his regular army rank, pay, and emoluments. This list should also be open to National Guard Officers who meet the promotion requirements of the reservist.

During the fiscal year 1926, camp of instruction for Field Artillery Reserve Officers of the *Branch Assignment Group* was held at Fort Sill, Oklahoma, from September 5 to September 19, 1925, and eighteen officers attended this camp, being the complete number for whom funds were available. The attendance of more officers could have been secured had there been funds for this purpose. The instruction at this camp was thoroughly satisfactory, and it is believed that all reserve officers who attended the camp greatly benefited thereby. In my last Annual Report I called attention to the policy I had established of holding a camp for Reserve Officers of the Branch Assignment Group on the Atlantic Seaboard for the fiscal year 1925, in the Mississippi Valley for the Fiscal Year 1926, and on the Pacific Coast for the Fiscal Year 1927. In planning for activities during the fiscal year 1927, it appears as though I shall find it necessary to abandon this policy. Present indications are that on account of the distances involved on the Pacific Coast and the limited funds available for travel, it will not be possible to collect a sufficient number of Field Artillery Reserve Officers at any one place to justify holding a camp for the Branch Assignment Group.

As soon as my study of the problem of training of reserve officers of the Branch Assignment Group permits me to plan a new policy, I shall submit the same to the Chief of Staff with my recommendation.

Only a limited number of Reserve Officers' camps were visited by a representative of this office during the fiscal year. Such observations as it was possible to make, indicated, however, that training was progressing along sound lines, that the officers attending these camps were interested and that progress was being made. The problem of training between the camp intervals continues a vexed one for which no adequate general solution has yet been found.

National Guard.—Due to anticipated shortage of mileage appropriations, no National Guard Field Artillery organizations were inspected by my office during the year. I assume that full report of their condition will be made in the Report of the Chief of the Militia Bureau.

Reserve Officers' Training Corps.—During the past year, of the twenty Field Artillery units of the Reserve Officers' Training Corps, only six were visited by the Chief of Field Artillery or by one of

his representatives. This curtailment of visits was due to shortage of funds for mileage. Hence, that agency which under Army Regulations 145–10, is charged with the efficiency of the instruction and training of these units was deprived in large measure of those contacts which afford the only sound basis for effecting improvement and progress. It is of the utmost importance that these inspections be not curtailed.

At the beginning of the college year 1925–1926, the War Department found it necessary, by reason of insufficient appropriations, to limit the enrolment in R. O. T. C. units. The units of the mounted branches, however, due to the fact that their production of Reserve Officers is still far below that deemed necessary, were exempted from this limitation. Accordingly, the twenty Field Artillery units again registered a very satisfactory growth, as indicated in the following table:

Enrolment at Beginning of College Year

	1923	1924	1925	Gained 1925 over 1924
1st Year Basic	4,155	5,673	6,246	573
2nd Year Basic	2,540	3,074	3,635	561
1st Year Advanced	872	930	1,008	78
2nd Year Advanced	476	685	753	68
Totals	8,043	10,362	11,642	1,280

Based on the results attained since the organization of these units in 1919, it is found that 64.6 per cent. of the students who enrol in the 1st Year Basic Course continue the work and enrol the next year in the 2d Year Basic Course. Similarly, 32.9 per cent. of the 2d Year Basics continue the work, as do 79.6 per cent. of the 1st Year Advanced men, while 87.1 per cent. of those who enrol in the 2d Year Advanced Course complete the work and accept commissions or certificates. Those commissioned, therefore, represent 14.7 per cent. of those who start the work.

Thus, if the Field Artillery R. O. T. C. units are to meet production requirements of 1000 per year, as directed in a letter from the Adjutant General dated June 27, 1924 (A. G. 000.862—R. O. T. C.—Misc.), enrolments must be approximately as given in the following table:

1st Year Basic	6800
2d Year Basic	4393 = 64.6% of 6800
1st Year Advanced	1445 = 32.9% of 4393
2d Year Advanced	1150 = 79.6% of 1445

It is thus seen that enrolment in Field Artillery units is some 2146 short of that which seems necessary to meet the production requirements of the War Department. These figures clearly indicate the line along which our most earnest and conscientious efforts

should be directed, *viz.*, to increase the percentages of students who continue the work from one year to the next. This may be done in just one way—by making our courses better and better. These courses must arouse and hold interest, and they must win the sympathy and support of faculties and students by reason of their unquestioned educational, as well as their technical value.

There is no more important provision of the National Defense Act than the R. O. T. C. It alone, of all the provisions of the Act, takes a long look into the future and provides definitely for a supply of emergency officers to meet any crisis. Not only can it be made to supply them in sufficient numbers, but they will also be the best officers that this country has ever had in its War Army. Yet, the present handling of the R. O. T. C. is most unsatisfactory, and must seem to the College Presidents, with whom we deal, as inexplicable. The pity of it is, most of our troubles are avoidable without legislation of any kind. In other words, these troubles are due to our own faulty administration of this extremely valuable and important provision of the National Defense Act.

Our serious R. O. T. C. difficulties are attributable in the main to one of two reasons: First, the way in which we apply budget restrictions, and second, our decentralized Corps Area Control. I desire briefly to invite attention to each one of these.

Application of Budget Restrictions.—Ever since the War, the Army has been "deflating" and deflation is always a most painful and discouraging process. The R. O. T. C. was organized in the early after-war period while money was still easy, and as a result many more units of some arms were organized than should have been. I foresaw this mistake, and organized only an ultra conservative number of Field Artilllery units. Now, with the exhaustion of war supplies, and with a budget held rigidly at a standstill, retrenchment by the War Department is unavoidable. At present we are retrenching by spreading restrictions and limitations to all of our units, making all of them, from one appropriation act to the next, less and less efficient. This, in my judgment, is a very serious mistake. College presidents, especially those who have provided generously from college funds for facilities for our units, feel that the Government is not keeping faith with them. We are on the road to losing their confidence and support. It is far better to *reduce the number of units* maintaining the highest possible state of efficiency in those retained, than to wreck all as we are now doing. Efficient units give the work a good reputation while those of expiring efficiency are giving it a poorer and poorer one. The better and more efficient we can make the work, the greater will be the demand for it, and this demand will ultimately result in adequate funds for proper maintenance and sound and reasonable growth.

I, therefore, urge and recommend the discontinuance of the policy of spreading reductions and restrictions to all units, and the inauguration of a policy of reducing our project by the withdrawal of entire units. Such withdrawal should commence with the arms now having an excess in enrolment over their proper quota in The Six Army Plan—thus the Infantry now has 169 per cent. of its quota, the Cavalry 115 per cent., the Coast Artillery 107 per cent., the Signal Corps 110 per cent., while the Field Artillery has but 71 per cent. This is a recommendation I have already made several times. I urge and recommend a careful study and prompt adoption by the War Department of a Priority Policy affecting the R.O.T.C., to be enforced as necessitated by shortage of funds. In such a study, preference should be given to Senior Units over Junior ones, and to Combat over Non-combatant ones.

In addition we should work gradually to a reduction of units in any one institution. This reduces overhead and eliminates many difficulties that we have discovered through experience. At institutions where more than one unit are maintained, there are almost always petty jealousies, differences, and conflicts between them, and the inevitable compromises over hours, facilities, enrolment, use of enlisted men and equipment, privileges, etc., entail sacrifice on the part of all, and therefore, detract from the efficiency of all. Unquestionably one unit to an institution makes for stronger and healthier units.

Finally, as funds become more and more pressing, reduce the production project to such fraction of our needs as can be met efficiently by appropriations; make this fraction essentially equal for all combatant arms; require Chiefs of Branches to scale down to this project by dropping their weakest or least productive units, especially when these are located at institutions that have done little or nothing in the way of providing facilities for the unit.

Corps Area Control.—The R. O. T. C. is fundamentally and essentially a branch activity. The Chief of Infantry is the army official who is most deeply interested in the welfare and success of R. O. T. C. units of the Infantry. The same is true of the Chief of Field Artillery as regards Field Artillery units. The work falls in the same classification exactly as that of the Special Service Schools.

With corps area control as at present, nine different policies are constantly in operation affecting this activity, and results are unsatisfactory. It is unreasonable to expect a Corps Area Commander to regard the R. O. T. C. other than a routine administrative matter. It is not more deserving of his attention than countless other activities that he must watch and consider. It may, but it sometimes does not, have his loyal sympathy. This is the reason that, as an instance,

when cuts in enlisted personnel must be made, one Corps Area Commander will conscientiously pare the R. O. T. C. first while another will conscientiously spare it to the last; why one unit may be able to obtain funds for additional horses, while a unit which needs them more urgently in some other Corps Area has to go without; why a good unit in one Corps Area suffers reductions and restrictions and a poor unit in some other Corps Area receives no such treatment.

Policies with reference to personnel, both enlisted and commissioned, cause many unnecessary difficulties. Corps Area Commanders and their staffs often do not appreciate that the R. O. T. C. has changed radically from the military work which was conducted at colleges before the war. They often fail to understand that officers must meet classes at 8:00 A.M. and at various other periods throughout the day, and that they must be thoroughly and properly prepared on the lessons they are to teach. We require, and these officers in general perform, more classroom work than is required of the average college professor, and these officers may properly be considered in competition with these trained teachers in making their work interesting, attractive, and valuable. Yet some Corps Area Commanders require of them various odd tasks such as C. M. T. C. procurement, inspection and rating of high school units, examination of reserve officers, etc., which demand their time and attention. A very limited amount of this work is not objectionable provided college duties have undisputed right of way, but this does not always seem to be the case.

The grades and ratings of enlisted men give trouble and dissatisfaction because of differences in Corps Area policies. Thus, in one Corps Area promotions are made strictly in accordance with length of service, and in such a way that one unit acquires too many and another too few noncommissioned officers. In another Corps Area promotions are made in accordance with length of service in the Corps Area, with the result that old soldiers coming to a unit from organizations outside the Corps Area become dissatisfied and wish to go back.

The only possible way to coördinate promotions and grades and ratings satisfactorily is to have the procurement, assignment, transfer, and relief of active enlisted personnel of R. O. T. C. units, functions of the War Department. It is foolish to try to localize what is in reality national in its character. A Table of Organization for detachments for mounted units is essential and should be provided.

Every possible effort is being exerted by the War Department at the present time to effect economies, yet strict adherence to Corps

Area boundaries for summer camps is uneconomical as well as inefficient. Thus I would much prefer to have the unit at Virginia Military Institute have its summer camp at the well equipped field artillery post at Fort Bragg, where it would be in competition with another Field Artillery unit. It must, however, go a farther distance and to an unsatisfactory range at Camp Meade. Again the Infantry unit at University of Delaware must go to Plattsburg while Lehigh and Lafayette nearly a hundred miles further north must come down to Camp Meade. Many such examples may be cited. Such administration is both faulty and expensive. The work, especially that of the Field Artillery, can be concentrated into fewer and better located camps, thereby relieving the unusually heavy summer training demands which now fall upon the regular batteries.

College presidents are in general, unsympathetic with Corps Area Control. They feel that the War Department "heads" their activity, that the Corps Area Commanders, due to so many and such frequent changes, rarely have an opportunity to understand the problem of the R. O. T. C. units. They, therefore, prefer to deal directly with the "head." They feel the necessity for a central, authoritative agency, with whom they can deal on R.O.T.C. matters.

The Corps Area inspections, since they do not afford a basis of comparison, cannot serve the War Department, *i.e.,* the Chiefs of Branches, in keeping in touch with, and coördinating the work. Hence, these are an unnecessary expense and duplication.

The R. O. T. C. is an activity that should not, and cannot properly be handled as a routine administrative matter; it needs and should have the vitalizing impulse of active interest behind it. This can be given by no one except the Chief of Branch, who, under the coördinating agencies of the War Department General Staff should control and operate this activity. I, therefore, emphasize and repeat the recommendation which I have made the last two years that the R. O. T. C. be withdrawn from Corps Area control.

Citizens' Military Training Camps.—I recommend a more sane and useful application of these camps. As far as my observation goes, these camps are now organized on such an elaborate and exclusive basis that they are of no earthly value to the regular units participating, and what is far worse, they absolutely disorganize and disrupt such units. A most numerous camp staff is organized taking a large number of officers away from training, enlisted men are detailed in large numbers as clerks, messengers, orderlies, janitors, laborers, cooks, servants and what not, until the regular units are torn all to pieces and more or less demoralized, with a wholly inadequate number of men on duty to do the work. If, instead of this plan of subordinating the regular army to the status of servant

and nurse, the influx of the C. M. T. C. candidates was used to simulate mobilization day, and thereafter the C. M. T. C. students were taken in the regular units and handled as recruits (with such course of instruction as the War Department may prescribe), the individuals of the entire unit being used as instructors, I believe fully as much benefit would accrue to the C. M. T. C. men and a wonderful amount of instruction and training would inure to the regular units involved. The instruction of the C. M. T. C. itself, under this latter plan would, I believe, be better than at present, and these men would be an asset to the Regular Army, instead of, as at present, a liability. Commanding Officers would secure the invaluable experience of mobilization, with its many incident and vexing problems, mobilization plans could be tried out, improved and developed, the enlisted men of the regular unit would be helped out in their work, the unit itself would continue as a military organization, instead of being disrupted and demoralized as at present, war strength units would result, and best of all, more natural and more thorough instruction would be given the C. M. T. C. men, themselves. I offer this merely as a suggestion for consideration. Quite probably there are other solutions, but I am satisfied that some better plan of handling this problem can be evolved than the one now generally in force, if the few camps I have seen are typical of all.

Tactical and Training Inspections.—Before leaving the subject of the training that is under Corps Area Commanders, I desire to invite attention to the anomalous position of a Chief of Branch.

The Chief of Field Artillery is the official adviser of the Chief of Staff on Field Artillery matters. It is essential that he be kept correctly informed at all times as to the status of training and morale of Field Artillery troops. In recognition of this fact, paragraph 2, Army Regulations 265–10, provides that Chiefs of Branches or their representatives will make such tactical and training inspections as may be directed by the Chief of Staff. The present policy of the War Department forbids the Chief of a Branch inspecting any organization or activity under the control of a Corps Area Commander without first obtaining permission of the Corps Area Commander for such inspection.

It would seem that the War Department fails to realize that the office of a chief of branch is as much a part of the War Department as any other office, and that all duties performed by Chiefs of Branches (line branches particularly) are performed essentially as representatives of the Chief of Staff. It is unthinkable that the Chief of Staff would tolerate a policy which prevented his making an inspection unless he had first obtained the consent of the organization to be inspected. I shall comment later upon the tendency which appears to exist to overlook the fact that the offices of the

chiefs of the line branches are a part of the War Department. (See page 20.)

Specifically, I recommend the revocation of the policy which requires a Chief of Branch to secure permission to make inspections from the Corps Area Commander concerned, and recommend that Chiefs of Branches be required to secure the approval of the Chief of Staff only, for any inspections they may consider necessary. The present situation is farcical.

In these days of small appropriations, it is not possible to make as many inspections as should be made, and it is necessary in planning such inspections as are possible, to route inspectors through the various Corps Areas so as to effect the greatest possible economy in the expenditure of mileage funds. It is impossible to do this if Corps Area Commanders are given the authority to set the dates when inspections will be made by War Department representatives.

Courses for Regular Field Artillery Officers at Civilian Educational Institutions and at Other Special Service Schools.—During the past year Field Artillery officers at schools included, besides those who were members of the regular classes at the Field Artillery School, the General Service Schools, and the Army War College, the following:

Ecole de Guerre, France—one officer.

Massachusetts Institute of Technology, pursuing course in Automotive Engineering—three officers.

Yale University, pursuing course in Communication Engineering—two officers.

Signal Corps School, Ft. Monmouth, N. J., pursuing course in Military Communications—two officers.

Cavalry School, Ft. Riley, Kansas—three officers.

These institutions and courses are utilized for the purpose of training and developing especially qualified instructors, to meet the needs primarily of the Field Artillery School.

The officers recommended for the Cavalry School are selected from those who display marked horsemanship ability at the Field Artillery School. Hereafter they will pursue the Special Advanced Equitation Course at the Cavalry School.

The officers recommended for the Signal Corps School are selected from those who display marked ability in the subject of Field Artillery communications. If their work proves creditable at the Signal Corps School they are sent to Yale University for further theoretical and practical work in the same subject.

It is the desire of this office to utilize to the fullest extent possible, the provisions of Section 127a, National Defense Act, as amended, authorizing the detail of officers to pursue courses at civil educational institutions, for the purpose of developing specialists

for the Field Artillery. Necessarily the number of officers so detailed must be limited. This is not only because of limited funds for this purpose, but because the total number of officers detailed to all schools is fixed. Hence the greater the number of officers detailed to take these special courses, the fewer available for the regular courses at the Field Artillery School. At the present time it is particularly important to have the regular classes at the Field Artillery School as large as possible, in order that no Field Artillery officers may be denied the privilege of attending the School. Here is where he really learns the technic of his profession.

The Field Artillery School. Officers' Courses.—Seven classes of officers completed courses during the past school year as follows:

Battery Officers' Course (Regular Officers).

Advanced Course (Regular Officers).

Two courses—Fall and Spring—For National Guard and Reserve Officers.

National Guard Field Officers' Course.

Refresher Course (Regular Officers).

Refresher Course (General Officers, Regular Army).

The Battery Officers' Course.—This course began September 15, 1925, and ended June 11, 1926. Seventy-two Regular Officers, two Marine Corps officers, and two foreign officers composed the class. Of this number, nine regular officers failed satisfactorily to complete the work, and one regular officer was relieved during the year. All others completed the course and were awarded diplomas.

Comments.—This course proved satisfactory and only minor changes, in the interests of improvement and progress, are contemplated for the coming year. Among these will be:

Completion of indoor instruction earlier in order to have more time available for field exercises.

Reduction in time devoted to sketching.

Reduction in time devoted to theoretical communications, and,

Increase in time devoted to practical communications.

The Advanced Course.—This course began September 15, 1925, and ended June 11, 1926, the same dates as the Battery Officers' Course. Twenty-five regular officers and one Marine Corps officer composed the class. Of this number all completed the course and were awarded diplomas, except one regular officer, relieved during the year.

Comments.—This course seems thoroughly satisfactory and no changes of importance are contemplated for the coming year. Like the Battery Officers' Course more time next year will be devoted to field exercises.

The National Guard and Reserve Officers' Courses. The Fall Course.—This course began September 15, 1925, and ended December

12, 1925. Twenty-six officers composed the class. Of this number three failed satisfactorily to complete the course and four others were relieved while it was in progress. The remaining nineteen officers completed the work and were awarded certificates of proficiency.

The Spring Course.—This course began February 23, 1926, and ended May 22, 1926. Thirty-seven officers composed the class. Of this number six failed satisfactorily to complete the course, and two others were relieved. The remaining twenty-nine officers satisfactorily completed the course and were awarded certificates of proficiency.

Comments.—The instruction of these officers can best be provided for when classes are approximately equal in size. They should include about thirty officers.

In my report of last year, I stated that the personnel of these classes did not as a whole have the basic training to take full advantage of instruction during the short period of three months. The same remark applies this year. While the *average* ability of officers attending these courses is satisfactory, and many of them are unusually excellent men, greater care is needed to select only those who are thoroughly prepared to take the course. The few unprepared officers in each class prove a decided detriment to the class as a whole; they retard its progress and constitute a heavy overload upon the instructors. Furthermore, a good officer is embarrassed and injured by failure, whereas the same officer, had he been required to prepare himself more thoroughly and carefully for the detail, would probably have completed it with credit.

The officers who took these courses were, as a group, interested and enthusiastic. Their effort and progress were commendable.

These courses for National Guard and Reserve Officers are deemed of inestimable value, in that they afford one of the best means possible of establishing, throughout all components of the army, uniform and up-to-date doctrines and methods.

The National Guard Field Officers' Course.—This course began January 5, 1926, and ended February 19, 1926. Six officers composed the class, and all finished the work satisfactorily and were awarded certificates of proficiency.

Comments.—This class could profitably be increased to fifteen students without requiring additional Instructors.

The Refresher Course.—This course began February 15, 1926, and ended May 15, 1926. Eight officers began this course, and all satisfactorily completed it. Each officer was awarded a certificate.

Comments.—The greater part of the instruction in the refresher courses consisted of attendance with the Advanced Class. In practical work the students as a rule acted as observers. They also acted

as umpires in some General Field Exercises, and were given practical work in orientation, and considerable firing. In addition to the advantage of the course to the individual student, the attitude of the class, together with the broad experience of its members, was an advantage to the school. They offered many helpful suggestions. It is believed that the results obtained with the class will do much to improve conduct of fire throughout the service.

This is the first year that the Refresher Course for officers below the grade of brigadier general has been attempted at the Field Artillery School. At the time students for the course were selected, I was conscious of some reluctance to attend the school on the part of officers detailed to take the course. I believe that before the course was ended this feeling had entirely disappeared, and that the refresher students were unanimous in the opinion that the course had been beneficial to them. In my opinion this Refresher Course proved itself to be very valuable. Officers who, on account of their rank, are eligible for assignment as regimental commanders, are as a rule ineligible to attend the regular courses at the Field Artillery School, on account of previous graduation from that school or the General Service Schools. These officers when assigned to command regiments are generally returning to duty with troops after a considerable period of detached service during which they have lost intimate touch with the latest and most approved details of Field Artillery technic. A short refresher course at the School assures uniform and coördinated training in the regiments commanded by these officers.

The Refresher Course for General Officers of the Regular Army.—This course was taken and satisfactorily completed by one officer—Brigadier-General Henry G. Learnard, from March 24, 1926, to June 11, 1926.

Enlisted Specialists Courses. Classes.—Six classes of enlisted men completed courses during the school year as follows:

Horseshoers (Regular Army)	Sept. 15, 1925–Jan. 31, 1926
Motor Mechanics (Regular Army)	Sept. 15, 1925–Jan. 31, 1926
Saddlers (Reg. Army and Nat'l Guard)	Feb. 8, 1926–June 11, 1926
Battery Mechanics (R. A. and N. G.)	Feb. 8, 1926–June 11, 1926
Horseshoers (Regular Army)	Feb. 8, 1926–June 11, 1926
Communications (Reg. Army and N. G.)	Feb. 8, 1926–June 11, 1926

Comments on Courses.—The value of the courses of instruction for enlisted specialists cannot be overestimated. Conditions in the service today make the training of horseshoers and saddlers by organizations impossible. The training of mechanics by organizations is difficult. It should be possible to place communications specialists who have been trained at the Central School, in various organizations throughout the service, thus assuring a coördination in that important subject which can be obtained in no other way.

Limited funds make it impossible to send as many soldiers as students to these courses as should be sent and limits to a very unfortunate degree the number of organizations from which these students may be selected. I recommend that an effort be made to allot more funds for this purpose in the future.

Correspondence Courses. History of Course.—Pursuant to general instructions from this office, a correspondence course board was organized at the Field Artillery School and its duties defined by School Orders dated August 26, 1924.

In accordance with these orders, the Board was directly charged with the preparation and forwarding of all Field Artillery Correspondence Courses in addition to the regular school duties of its members. This resulted in seriously overloading the members of the Correspondence Board. Accordingly, in April, 1925, this Board was dissolved and the various departments of the School were directed to prepare the sub-courses appropriately pertaining to their departments. A Board of Review was organized to pass upon all sub-courses before they were forwarded. Under this plan better results seem to have been attained, and the onerous task of preparing these courses has been spread over a greater number of Instructors at the School. The average time for revision, review, and preparation for transmission of a sub-course from the date work has been started, to date of mailing during the present school year, has been three and one-half months. During this period a total of eighteen sub-courses have been completed.

It will be noted that this correspondence course work is imposed upon school personnel *in addition to their other duties*. Their other duties are their *first duties*. No personnel, commissioned or enlisted, no material, no clerical assistance, no money has been provided for this work. It is a parasite on the other activities of the school. I believe that the Correspondence Courses are, and can be made, of such great importance, as to justify sound and definite organization and plans to handle them.

For the period ended March 31, 1926, a total of 599 officers of the National Guard, 2024 officers of the Organized Reserves, and 98 other individuals were taking the Field Artillery Corespondence Courses. Previous experience indicates that only 20 per cent, of this number will complete one sub-course. The test of our Correspondence courses is not the number of individuals enroling for them, but the number that *will complete them*. With such a very great number of students involved, this work has assumed a tremendous importance, and the time has come to make suitable and adequate provision for handling it.

Comment.—Unquestionably the Correspondence Courses can be made one of the very best and most effective ways available of

instructing the Reserve Officers. Much care, thought, study, and effort should therefore be devoted to them to the end that they may be so instructive and valuable that they *will be in demand and will be completed*.

At least six additional officers, two clerks, materials and supplies should be placed at the disposal of the Commandant, The Field Artillery School, to organize this work on a sound and permanent basis. More direct liaison between the officer taking the course and the School is needed.

I am inclined to feel that ultimately the School organization should provide for handling these courses by direct correspondence with the officer who, under approval of his Corps Area Commander, may be taking the course. Such direct handling of the course would insure lessons more carefully prepared and written, a more thorough understanding by instructors of the needs of the students, a quicker appreciation of those courses that were a success and those that were a failure with reasons therefor, and a more earnest effort on the part of all concerned to make the courses an unqualified success.

Remarks on Instruction.—Emphasis has been placed upon the light Field Artillery battalion; rapidity of action in its occupation of position and opening fire; simplicity in its communications, and the necessity of observation. Open warfare exercises are stressed.

Gunnery instruction is being made more practical and effort is made to instruct rather than to test.

Instruction in Aerial Observation.—All students of the Battery Officers' and Advanced Classes took the ground course. Forty-five members of the Battery Officers' Class, and six members of the Advanced Class volunteered for the flying course. Of this number thirty-one of the former and five of the latter completed the course. A number of these students displayed special aptitude for the work and were recommended for further instruction.

Within the limits of the available equipment, which was insufficient to meet the needs of the course, the coöperation of the Air Service was cordial, efficient, and of the highest type.

I repeat what I have maintained for the past five years—that Field Artillery Aerial Observers should be Field Artillery officers. To the best of my knowledge, this is the practice in foreign armies, and certainly it is common sense. Yet in our army, Field Artillery observers are Air Service officers. The principal business of the Field Artillery observer is to adjust fire. Then why not assign this duty to a man whose ordinary everyday work is the adjustment of fire—a Field Artilleryman for Field Artilley adjustment? Instead of this, we take an Air Service officer whose principal business is flying a plane, and try to make an observer out of him. The procedure

is illogical. In his daily work of adjusting fire, the Field Artillery officer invariably seeks the best post of observation—a hill, tree, steeple, etc.—The higher the better. Going up in an airplane is but one step further. And after a few flights to give him the "feel of the air," he has no difficulty in making better observations than he can on the ground. But if Field Artillerymen are to be "Artillery Observers" the financial benefits now accruing to the Air Service officer should accrue to the Field Artillery officer also. This is simple justice.

Instructor Personnel.—During the past few years the instructors at the Field Artillery School have been severely overworked. Their burden was too great before the preparation of the Correspondence Courses was added to it. This additional load has made the burden so heavy that the quality of the work is gravely jeopardized. Some relief has been afforded by the recent increase of the number of instructors at the School by six, which was authorized by the War Department in June, 1926. Whether this will be sufficient is very doubtful, but further experience will be necessary before a definite recommendation for additional instructors can be made. Elsewhere in this report (see page 583), I have commented upon the value and importance of the Correspondence Courses, and have recommended that the activity of the Field Artillery School, in connection with these courses, be increased. As more experience is gained with the conduct of the Correspondence Courses, additional recommendations as to the number of instructors to be employed for these purposes and as to the method of conducting the courses, will be submitted.

School Troops.—The tactical, gunnery and animal transport departments of the School are severely handicapped in their work by the shortage of school troops. It is rarely possible to furnish for tactical or firing exercises, organizations of suitable strength. What a student learns by study or oral instruction does not remain as firmly fixed in his mind as what he has actually experienced or has seen with his own eyes. It is important, therefore, in all demonstrations and all exercises where actual troops are employed, that organizations should be at normal strength. Yet it is not possible to furnish additional school troops with the Field Artillery at its present strength.

Engineer Topographical Train.—During the year the Engineer Topographical Train, assigned to the Academic Division of the School has done excellent work. It has turned out a total of 45,675 lithograph jobs consisting of overlays, overprints, photos, etc., which otherwise could not have been done at the School.

Liaison.—The liaison with other schools has been satisfactory—particularly so with the General Service Schools and the Infantry

School. With the latter school, a mutual review of problems has been carried on to the point where coördination of instruction between the two schools is almost perfect. Interchange of visits of Instructors between the various service schools affords a most desirable means of coöperation and coördination, and should be encouraged to the limits of available funds.

(Part II in the next issue.)

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PART I

155-MM. HOWITZERS TOWED BY F. W. D. TRUCKS IN HAWAII

RECENT TESTS BY 2ND BATTALION. 11TH FIELD ARTILLERY AND SUGGESTED BATTERY ORGANIZATION

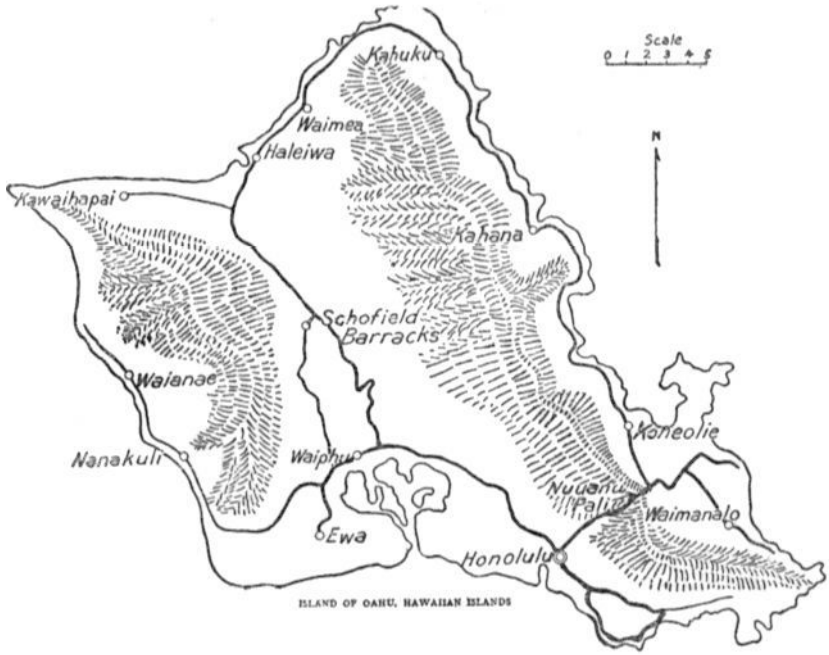
BY MAJOR FRANCIS T. COLBY, F.A.

THE conditions peculiar to the Island of Oahu raise the question as to whether or not the tractors used for towing the 155-mm. howitzers as provided in the present tables of organization could advantageously be dispensed with in favor of trucks for the whole or a part of the 155-mm. howitzer batteries stationed on the island. There are several conditions which give rise to this question. The first is the normal and probable tactical employment of 155-mm. howitzers in the defense of the island. While it would probably not be desirable to go at length into a discussion of this question for publication in a periodical so widely read as the FIELD ARTILLERY JOURNAL, it must be evident to anyone who studies the map of Oahu that the defense of the island must involve the defense of several sectors in any or all of which the enemy may land. It is equally clear that the defense is unlikely to know in which sector the enemy will land or if he lands in more than one sector, in which he will make his main effort. It is further probable that when a well-equipped enemy does finally commit himself to a major effort in one or more sectors, he will gain some measure of at least local success. Granted these rather obvious facts, it follows as a corollary that the movement of forces to oppose the main attack will be necessary to the defense, and that such movement of forces is likely to include not merely the reserves, but also artillery from the sectors not heavily engaged or which have successfully driven off an earlier attack. This presupposes a rapid change of position of Field Artillery from one sector to another. Hence mobility and marching speed is a most important consideration in the organization and training of Field Artillery on duty in Hawaii.

An examination of the road system of Oahu shows at once that there are two roads which will normally be used in such changes of position; namely, the main road around the island, called the Kamehameha Highway and the so-called back road from Schofield Barracks to the Ewa Sector. It is of course true that short distances must be travelled over other roads near the gun positions, and terrain without roads must be crossed in the actual occupation of positions. The principal mileage, however, will be in war and in manœuvre has been, over the two roads mentioned.

The principal road, the Kamehameha Highway, goes from

Honolulu, passing north of Pearl Harbor through the central valley of the island *via* Schofield Barracks to Haleiwa on the north coast, thence east and south along the coast to the Nuuanu Pali and over the Pali to Honolulu. It has one main branch from Ewa Junction to Ewa and Waianae and another from Waimanalo Junction to Waimanalo. It is a modern road, either asphalt macadam surfaced or concrete, except along the generally level stretch on the north side of the island, where it is coral macadam. The grade up the Pali is extreme and there are many other steep grades incident to crossing gulches. The back road to Ewa runs

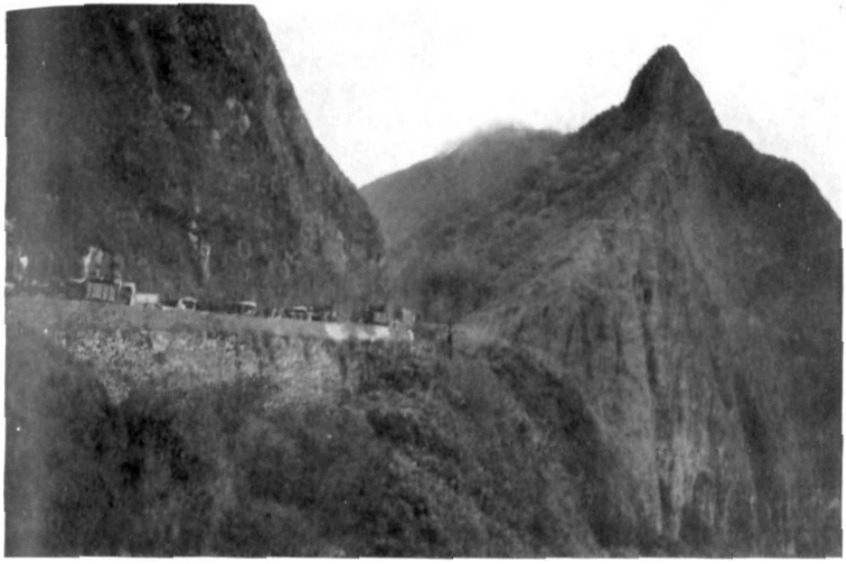


from Schofield Barracks to the main Ewa Junction—Ewa road, joining this road at a point two miles from Waipahu on the Ewa side. The distance to this point from Schofield Barracks is eight and one-quarter miles by the back road and thirteen miles by the main road. It will be seen that the use of the back road is optional. If it is in bad condition the main road can be taken at a sacrifice of five miles. The back road is dirt and for four miles is narrow, has many turns and crosses several small gulches. For the remaining four miles it is wide and straight. It passes through many pineapple company villages and is in constant use by heavy pineapple trucks. Both roads have been marched over for years with 155-mm. howitzers, tractor drawn, and present no obstacles to such matériel. The hard smooth surface of the Kamehameha Highway, however, is not well adapted to the hard, smooth metal of tractor tracks and frequent

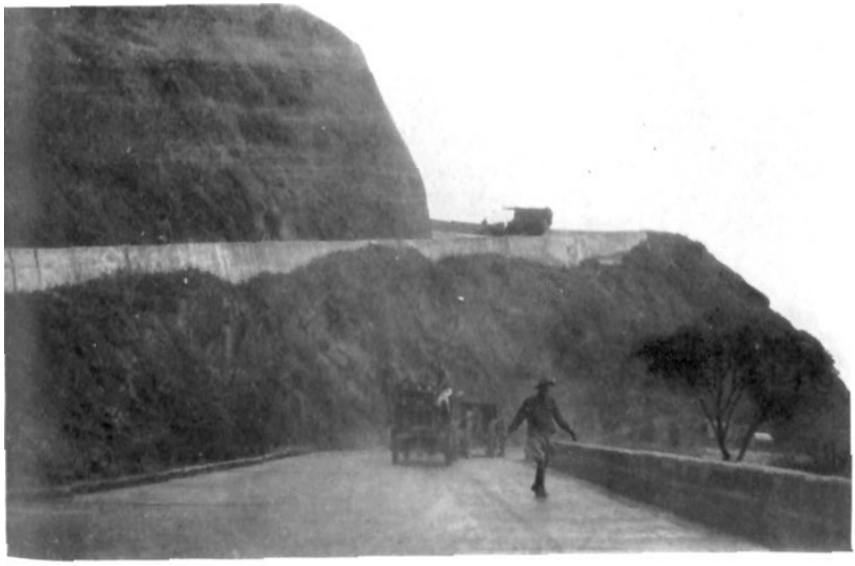
accidents are caused by the track on one side sliding over the road surface, particularly in going down hill and in wet weather. When this happens the tractor simply executes by the flank and the driver finds himself and his load in the ditch. The speed of tractor-drawn 155-mm. howitzers over this road varies from a maximum of six miles per hour on the level stretches to about one and one-half miles per hour on the grades. It is even less on down-hill curves when the road is wet and there is danger of the tracks sliding. For a march across the island the average marching speed is around three and one-half miles per hour. Over the "Schofield-Ewa back road" and similar unmetalled roads, there is little difference in the speed or performance of the tractor, except that it holds the road better and there is not the track slipping which happens on the smooth surface.

Now considering the same matériel towed by trucks over the same roads: During the spring of 1925, the 2nd Battalion, 11th Field Artillery, was authorized to make tests in towing 155-mm. howitzers with trucks. C Battery, under Captain John Chase, was so equipped, and made several successful marches over these roads as well as other tests. In March, 1926, the entire 2nd Battalion, 11th Field Artillery, was equipped to tow with trucks, and tests were made until the middle of May. Among other tests eight marches were made on the Kamehameha Highway. All parts of the highway were marched over, including the ascent of the Pali. Other marches were made over the back road to Ewa and similar roads. The trucks used were F. W. D.'s, all of which had been in service for many years. C Battery was equipped with the standard F. W. D., and D Battery with the F. W. D. having a windlass at the back and a lower gear ratio. The relation of this gear ratio being to the standard gear ratio as 11 is to 15 in all speeds. Comparing the two types of F. W. D. trucks used, the maximum tractive efforts of the low ratio truck is over one-third greater than that of the standard truck in all gears. Its road speed for a given engine speed is similarly about one-third less. The F. W. D. truck was chosen for availability and not for suitability.

A few of the more important tests, without going into detail, were as follows: On May 4, 1926, the battalion marched from Schofield Barracks to Waimanalo *via* Kahuku, distance sixty-four miles. The road included sharp and long descents and ascents and twenty-five miles of rough road at reduced speed. The time of departure for C Battery was 7:15 A.M. and it arrived in camp 4:10 P.M. The times for D Battery were 7:30 A.M. and 4:45 P.M., respectively. Much time was lost crossing the Waimea Bridge at slow speed, one carriage at a time. There was no attempt at speed and the column halted forty minutes for lunch. Conditions were good.



SUMMIT OF NUUANU PALI



ASCENT OR THE NUUANU PALI, HAIRPIN TURN

MARCHING OVER SAND FLATS

HEAD OF A TRACTOR COLUMN ON A DUSTY ROAD

On May 6th, the battalion marched from Waimanalo, making the ascent of the Pali—the steepest and longest grade on the island—through the city of Honolulu to Schofield Barracks, distance forty miles. Start at 7:40 A.M., arrival at 3:16 P.M. The halts were roughly two and one-half hours. This was intended as a test of the ability of the trucks in the ascent of the Pali rather than as a road march.

On April 8th, C Battery marched from Schofield Barracks to Nanakuli over the main road and back on April 9th. The distance each way was twenty-four miles, of which six miles was very rough, and the rest was highway. The time was three hours, or eight miles per hour, the same both ways. This is the most typical across the island march.

On April 29th the battalion marched to and occupied a hill position and returned to Schofield Barracks over an unimproved road. The time from the positions, including the descent from the hills to Schofield Barracks, was two hours and twenty minutes, distance fourteen miles.

On April 1st, C Battery marched with trucks in wet weather to Kawaihapai from Schofield Barracks, seventeen miles (nine miles over rough and muddy road, eight miles over highway) in two hours and fifty minutes. D Battery with tractors on the same day and under the same conditions took four hours and fifty minutes. C Battery returned in one hour and forty-five minutes' marching time. D Battery with tractors took roughly three hours. Road conditions on the return were dry.

Various other tests were made, including the ascent of Kole-Kole Pass and occupation of positions in different kinds of terrain—brush, rocks, and old pineapple fields.

The functioning of the trucks was satisfactory and no deterioration was noted. Various loads were carried in addition to the howitzers towed. C Battery regularly carried on each truck 2000 pounds of sand-bags; representing twenty rounds of ammunition, plus the personnel and their packs, weighing about 1500 pounds. This load appeared to be a good standard to adopt.

It was expected that there would be considerable difference in the performance of the two types of trucks used and that the lower gear ratio would prove much the more satisfactory. Actually, little difference was observed. The standard truck proved adequate. It is believed, however, that the additional tractive power of the low ratio truck is of value, that its speed is sufficient, and that the winch or windlass carried is a great advantage. For these reasons it is preferred.

There was no deterioration of the howitzers due to the tests, so far as could be seen. The only difficulty found was the wabbling

of the limber in some sections. This was found to be due to play in the draw-bar coupling and was eliminated by eliminating the play.

The result of these test marches showed that rubber-tired 155-mm. howitzers can be towed by trucks at a speed of fifteen miles per hour on the level, smooth roads; at about seven to eight miles per hour over level stretches of rough road and at from three to six miles per hour up and down grades, and that the trucks towing howitzers can handle the steepest grades on the island. The average marching speed on long marches was about eight miles per hour on the highway and six to seven miles per hour on unimproved roads. That is to say, the rate of march for the howitzers towed by trucks is under all conditions about double that of the tractor. Furthermore, there is a factor of speed available with trucks not available with tractors. Under forced march conditions the truck speed may be greatly increased over rough roads at the expense of increased road shock to the matériel. It was also demonstrated that the rubber-tired truck held the road better than the tractor over smooth hard-surfaced roads.

On the back road to Ewa and similar dirt roads the performance of the truck was also satisfactory, although after very extreme rains it is possible that trucks might have trouble in some of the small gulches. Such extreme conditions were not met during the tests, but drag ropes and the use of the windlass answer the question.

In short, the advantage of the truck over the tractor for the rapid movement of 155-mm. howitzers across the island is clear.

Now let us consider the approach to and occupation of position. This entails a study of the probable area for 155-mm. howitzer positions. In the first place, it is evident that this matériel should not be placed at or close to the beach where it would be endangered or forced to move by a purely local enemy success. On the contrary, its distance from the beach should be the same as the usual distance of such matériel from the front line, *i.e.,* from 2000 to 5000 yards behind it.

A study of the map and the terrain shows that nearly all the good 155-mm. howitzer positions so located on Oahu are not far from the main roads. The occupation of these positions entails therefore only a short move over unimproved road or over terrain without road. As exceptions, there are a few excellent howitzer positions in the hills. The occupation of these positions necessitate the ascent of steep grades over unimproved roads for distances not exceeding one and one-half miles. These roads are, however, good enough to allow their constant use by heavy pineapple trucks. Positions of this nature were occupied twice in 1925 by the 2nd Battalion, 11th Field Artillery, using tractors and again in 1926 using trucks. No difficulty was met with at any of these occupations.

It is probable, however, after extremely heavy rains, that drag ropes would be necessary for matériel with either trucks or tractors in getting up the hills. Once the grades have been passed there is no difficulty in placing the guns in position under any weather conditions.

Based on the idea that the positions to be occupied are, with the exceptions above noted, close to the main roads, tests were made in occupation of position in heavy guava brush, in old pineapple fields, in the rough country near possible hill positions and in the sand flats at Kawaihapai and Waimanalo. There was no difficulty except in the sand. Here the trucks dug themselves in at once if badly handled. But even in sand the locked differential, the windlass and well-used drag-ropes got the matériel through. Of course it is not suggested that trucks can march any considerable distance through sand or boggy ground. They can't do it. The tests at Fort Sill over soft plains are an example. They can, however, pass short stretches of such terrain and short stretches are all they will ever be required to pass over on the island of Oahu. It would appear therefore that the conditions on the island of Oahu place no obstacle in the way of the use of trucks for the approach to, and occupation of, position for 155-mm. howitzers.

One of the points which was strongly brought out during these various tests was the training of personnel to march with trucks. The difference in accomplishment with trained personnel is surprisingly great, and it is not true that you can merely take trucks from a truck unit and order them to tow guns. The drivers must know the capacity of their trucks with the howitzers in tow, using the different gears both up and down hill, and they must learn to hold the load on descents with the compression of the motor and some use of the brakes on the gun. The radiators boil over on the steep up-grades and they must be *kept* full by filling while the truck is in motion and not merely filled at the top of the grade very possibly after the engine has been badly overheated from lack of water. The use of the locked differential is also most important. While there is not space to go into the technicalities of training for the passage of obstacles, still a word about drag-ropes is not out of place. What can be accomplished by training in the use of drag-ropes is really remarkable. How often we all see a carriage, either horse- or motor-drawn, as the case may be, stuck in the mud with the horses, floundering in bad footing or the wheels or tracks slipping, while enough man-power to move a house stands round unable to use its strength efficiently. There are two drag-ropes on each 155-mm. howitzer and when a battery is accustomed to such commands as "Drag-ropes out"—"Second Section to the First Section," or "All hands to the First Section" and has learned to all pull together,

there are very few obstacles that will stop it. The windlass at the back of the truck is most useful when the personnel know how to use it. It will pull hard enough to do anything that a field artilleryman needs to do. To use it, all that is necessary is to drive or drag your truck over the obstacle. Be sure that it is straight in the line of pull, then block all four wheels, run the wire cable back to the gun and pull it through.

Without going further into the technic of the tests let us sum up the results. In the first place, it appears that the truck gives us double the marching speed and slightly greater reliability over the tractor on the road on which most marching will be done. Second, that the truck gives us nearly double the speed over unimproved roads with slightly less reliability in wet weather as compared to the tractor, that this factor while it might reduce the margin of speed, would not prevent the successful completion of the march. Third, that any positions on the island suitable for 155-mm. howitzers can be occupied using trucks.

There appear to be only two points in favor of the tractor: First, that it can pass obstacles in occupation of position without assistance, for which the trucks would need the aid of drag-ropes. Second, that the organization with tractors resembles more closely that with horses and gives a more military appearance, particularly in big reviews. It would seem that the reasons for the use of the truck far outweight those for the tractor and taking this as a fact, raises the question of the organization of the truck-drawn 155-mm. battery.

The following organization would appear desirable from many points of view, using only matériel of available types:

Ten F. W. D. trucks with windlasses used as follows:

One towing truck carrying twenty rounds of ammunition, and one ammunition truck carrying fifty rounds to each gun section, making eight trucks for the firing battery, two F. W. D. trucks in the maintenance section, one towing the water cart and the other the kitchen, the first to carry the machine guns and the second the mess and baggage.

Four pneumatic tired Whites used as follows: Two with reconnaissance bodies for the Battery Commander and his detail, two with light truck bodies replacing the present Dodge light repair and G. M. C. and reel cart.

Five motorcycles.

Examining this organization in comparison to the present 155-mm. Battery (Hawaiian Tables) it appears first, that there are nineteen motor vehicles in the suggested organization in place of twenty-six; second, that there are only two trailer vehicles compared to seventeen (including caissons). This means a tremendous saving

SUMMIT OF KOLE-KOLE PASS

OCCUPATION OF A HILL POSITION

SECTION MOVING THROUGH SAND, USE OF DRAG ROPES

DUG IN TO THE AXLES THROUGH FAULTY HANDLING

THIS SECTION WAS PULLED THROUGH BY THE WINDLASS OF ANOTHER SECTION WITHOUT THE USE OF MAN POWER.

in interior fatigue, in up-keep and maintenance. It also means a saving in road space. It appears third, that there are only three types of motor vehicles in place of six types. This reduction of types is of really capitol importance when we realize that during the past three years in Hawaii, vehicles have been layed up for over a year for lack of spare parts and for many months for lack of the right sized tires. Examining the types of vehicles eliminated and replaced, we find first, the tractor in favor of the truck which has already been covered, and second, that the two Dodges and the instrument cart, the reel cart and the G. M. C., have been replaced by three Whites. There can be no question but that another White reconnaissance car is of more use to a Battery Commander than a Dodge touring car. It will do everything that the Dodge will do and more. It will carry the instruments and replace the other reconnaissance car if layed up which, the Dodge cannot do. Also, it is less likely to be called on by higher authority to take Staff and Infantry Officers out riding. The White with truck body is better than the Dodge light repair for all purposes, and it can carry a drum of gasoline and one of oil. The Dodge light repair is inadequate and always overloaded. The second White with truck body replaces the old G. M. C. light truck and also the reel cart. This truck is stronger, better and larger than the G. M. C. It will carry three times as much wire as the reel cart and will lay it faster. The present cart corresponds exactly to a muzzle-loading cannon. It's alright for one change when it's loaded and that's about all. It carries too little wire, only two rolls, has steel tires and is too slow, whereas the light truck can carry six rolls of wire and lay it two rolls at a time without interruptions. Furthermore, the White truck can keep pace with the other speed vehicles of the Battery Detail and will arrive at the position in time to lay its wire before the battery arrives. Of the fifteen trailer vehicles discarded, there are first twelve caissons. These caissons are enormously heavy, have steel tires and are slow. They are hard to load and unload and require much labor in up-keep. They might be useful over long stretches of rough terrain, but appear to serve no purpose on the island of Oahu. Second, the instrument cart which is utterly useless. The instruments should travel in a reconnaissance car and arrive with the details who use them. The instrument cart stays in the sheds even with the present organization, except for reviews. The reel cart has been covered above. There remains then only the machine-gun trailer. Machine guns should be on the ground 200 to 300 yards from the guns when in position and on the march they can be better handled from a truck than a trailer.

The gasoline consumption for the suggested organization is

about fifty gallons per ten miles, for the present tractor battery about 150 gallons.

The ammunition supply of the suggested battery is 280 rounds as compared to 168 rounds. It will be noted that even if no ammunition is carried in the towing trucks the supply is greater, or if two ammunition trucks are used as spares or for supplies, there is still more ammunition with the suggested battery. Again, if for any reason it is desired to double head the guns by towing with two trucks, instead of one, this can be done by reducing the load in the ammunition trucks to twenty-two rounds and we have the same supply as the tractor battery.

The marching speed of the suggested battery is about double that of the tractor battery and the road space materially less.

There is one other point in favor of the suggested organization. As at present constituted (Hawaiian Tables), there are two more men in a 155-mm. howitzer battery than in a 75-mm. battery, but there are just twice the number of tractors in the howitzer battery, fourteen as compared to seven. The howitzers and their caissons are far heavier than the 75's and take more men to clean and to shift the trails in training. In consequence, the overhead in internal fatigue and training is much greater in the howitzer batteries. The difference is around 50 per cent. The result is that in order to attain the same standard as in a light battery, the howitzer personnel must work many hours more or be much more efficient. This is bad for moral. The suggested battery with trucks would greatly reduce this overhead in the howitzer battery and would tend to equalize things with the light batteries.

In short, these various advantages of the truck battery would seem to outweigh the greater efficiency of the tractor in unusual conditions and to warrant this organization being adapted provisionally at least for several years in order that the practical nature of the organization may be thoroughly tested under service conditions of all kinds during a long period of time.

"SONG OF THE TWO-FORTY"

(240-MM. HOWITZER, G.H.Q. RESERVE ARTILLERY)

BY MAJOR RALPH A. KIMBLE, F.A. RES.

WHEN to help the Division secure a decision
You send up the Heavy Reserve,
You may then tell the Foe that he might as well go,
As delay will be bad for his nerve.

When the Army and Corps have to bolster the score
For Divisional Guns up ahead,
Then you call the Two-Forty to wind up the party
And put the Foe neatly to bed.

Tho we're slow it is true, and our movements are few
As befits a superior force,
When we get into action the opposite faction
Is licked as a matter of course.

Now the Seventy-Five and the One-Fifty-Five
Are sweet little guns in a row,
But for definite action to close the transaction
You call for the Two-Forty How.

Our range is as great as the footstep of Fate;
Our shell weighs a fifth of a ton.
In our voice is the thunder of worlds torn asunder,
And jobs we begin on are DONE.

SIX MONTHS WITH A JAPANESE ARTILLERY REGIMENT

BY MAJOR WILLIAM C. CRANE, JR., F.A.

(Continued from last issue)

THE obligation to render military service extends to all Japanese male citizens between their seventeenth and fortieth birthdays with the exception of those sentenced to penal servitude for six or more years. Although the liability to serve begins at seventeen, classes are not actually called until their twentieth year and with the present sized army only about a fifth of each class called receives training with the colors.

During the summer preceding the 10th of January upon which boys may be required to begin their service, they are summoned for physical examination held locally, and as a result are divided into five classes depending on their suitability.

Classification	Qualifications
(a)	Strong constitution and height not less than 4 ft. 11.6 in.
(b)	Height same as (a), but not as strong constitutionally.
(c)	Height same as (a), but poorer constitution than (b) or height not less than 4 ft. 9.3 in, and fair constitution.
(d)	Under 4 ft. 9.3 in., physically unfit.
(e)	Service postponed for physical, educational or family reasons.

Classes (a), (b), and (c) are considered fit for military service; class (d) is considered unfit; and class (e) has its service postponed.

From classes (a) and (b) are selected by lot the necessary number of conscripts for service with the colors. Those men not so selected and men in class (c) are placed in the Replacement Reserve. Men in class are placed in the 2nd National Army.

The classes of service and their respective lengths are enumerated below.

Class	Length of Service
1. Active service with the colors.	Nominally 3 years; actually 22 months and 20 days in the majority of cases.
2. 1st Reserve. (Composed of men who have completed their active service with the colors.)	Four years, 4 months, immediately following active service with the colors.
3. 2nd Reserve. (Composed of men who have completed their 1st Reserve Service.)	Ten years immediately following 1st Reserve Service.
4. Replacement Reserve. (Composed of men fit for service but not called for regular service with the colors.)	Twelve years, 4 months.
5. 1st National Army. (Composed of men who have completed 2nd Reserve Service and those men in Replacement Reserve who were not called for training.)	
6. 2nd National Army. (Composed of all men not included under 1, 2, 3, 4, and 5.)	

In addition to the above classes of service which gave actual military training to only about a fifth of the male citizens, there have been inaugurated within the last year and a half two extensions of military training which are capable of reaching practically all future conscript classes and which will reduce somewhat the term of service of the majority of those who may be conscripted.

On April 1, 1925, "Military Training in Schools" was begun throughout the country. It is prescribed by law that this training shall be compulsory in normal schools, government and private middle schools, government technical schools, high schools, preparatory schools, and colleges. The same act makes training optional in private technical schools, high schools, preparatory schools, colleges and universities. There are a few exemptions in the case of schools in Korea and Formosa whose students are not subject to conscription.

The number of students, twelve years old or more, who will be receiving military training in the above-named schools, will probably be in the neighborhood of 400,000. The length of training will be from five years, in the case of boys who end their education with normal, middle or business school, to ten years in the case of those graduating from universities. The time to be devoted to military training is two or three hours per week in middle schools and at least one and a half hours per week in higher schools; and in addition there is to be an annual period of field training for all students lasting from four to six days.

The scope of training is to be quite broad, beginning with individual instruction without arms and extending to battalion drill. Target practice, leadership, field duties, sketching and flag signalling are all included in the program for middle schools and are reviewed and elaborated upon in the higher schools.

Graduates of normal schools who have shown the necessary qualifications while under the instruction of regular officers are to have only five months' service with the colors. Similarly middle school graduates will have one year service with the colors, and technical school and university graduates will have eight months.

To supplement the "Military Training in Schools," preconscription training of young men between sixteen and twenty years of age not in school was begun April 1, 1926. This training, consisting of 800 hours of which 400 hours are to be devoted to military drill, is to be held once or twice a week at times convenient to particular local groups and the conduct of training will be under the local civil officials, while only the supply of arms and munitions and the inspection of units will fall to the Army. What credit will be allowed men for this training for subtraction from the regular

period of service if conscripted is to be decided by the military authorities and will depend on the proficiency of individuals.

At present, service with the colors is performed by the following classes:

(a) The permanent cadre of officers, warrant officers, and noncommissioned officers.
(b) One-year volunteers.
(c) One-year service men.
(d) Volunteers for regular term of service.
(e) Conscripts.

Line officers on the active list come from but one source—the Military Academy. However, the students at the Military Academy should be considered as divided into two general classes: boys who have graduated from government primary military schools or have passed an entrance examination, who take the regular course at the Academy; and especially qualified warrant officers and noncommissioned officers from the regular service who are given a special course to fit them for commissions. The necessary difference in the ages of these two classes, and perhaps to a slightly lesser degree the difference in their origin, affects them throughout their service. On account of their greater age it is practically impossible for ex-warrant or noncommissioned officers to attain high rank in peace-time. They are usually retired for "age in grade" before they can gain a captaincy and their comparatively inferior education operates against them when they are considered for promotion by selection.

The peace-time promotion system in the Japanese Army is not uniform through all grades, but varies from a combination of one-third selection and two-thirds seniority for 2nd lieutenants and half-and-half selection and seniority for 1st lieutenants, to all selection for promotion of captains and higher officers. The promotions of colonels and general officers differ also in that they are made by Imperial order. During war and emergencies all promotions of officers are made by selection. In order to prevent too rapid promotion and ensure experience in all grades, officers are required to serve not less than two years as 2nd lieutenants, 1st lieutenants, lieutenant-colonels and colonels, not less than three years as majors and major-generals, and not less than four years as captains and lieutenant-generals. In war-times these years in grades are halved.

With such a system of promotion it is of course essential that there be some sort of graded retiring ages for the different ranks to prevent the stagnation of officers not selected and to provide vacancies for a continuous flow of able young men. The retirement ages for the different grades in the various branches are indicated below.

RECRUIT FUZE SETTER DRILL

RECRUIT DRILL WITH DUMMY SIGHTS

WASHING HOOFS AT A HALT ON THE MARCH

A DRIVER AND BAD PAIR, THE OFF REIN OF AN OFF HORSE IS FASTENED TO THE SADDLE THE DRIVER HANDLES ONLY THE NEAR REIN

MAJOR SAWATA INSPECTING A STORE WAGON USED AS A COMMUNICATIONS' WAGON

A GUN PARKED ON NARROW VILLAGE STREET

A WHEEL PAIR. NOTE ABSENCE OF DOUBLE TREE AND POLE YOKE

AN OFFICER'S MOUNT

Retirement Age	Rank	Branch of Service
45	2nd and 1st Lieut.	Line
47	2nd and 1st Lieut.	Staff Corps
48	Captain	Line
50	Major	Line
50	Captain	Staff Corps
52	Major	Staff Corps
53	Lieut.-col.	Line
54	Lieut.-col	Staff Corps
55	Colonel	Line
56	Colonel	Staff Corps
58	Major-general	Line
60	Major-general	Staff Corps
62	Lieut.-general	All except those who are
65	General	field marshals

As a rule, after retirement for any cause, officers pass to the 1st Reserve, in which they remain until March 31st of the year in which they are one year older than the retiring age from active service for officers of the same rank. They then enter the 2nd Reserve and are retired therefrom on March 31st of the year in which they reach an age six years greater than the retiring age from active service for officers of the same rank.

Reserve officers, except colonels and general officers, while in either of the reserves, can be promoted by selection for distinguished service with troops, in government office or at schools. Second lieutenants in either of the reserves who return at least twice for service with the colors may be selected for special training with a view to promotion, and if successful in tests of their proficiency at the end of this training may be selected for promotion.

Warrant officers are promoted by selection from sergeant majors with more than eight years' service. Such promotions are made by division or higher commanders. Warrant officers of infantry, cavalry, artillery, engineers, air service and transport troops are retired when they are thirty-eight years old; other warrant officers are retired when they are forty-eight years old. As is the case with commissioned officers, warrant officers enter the 1st Reserve upon retirement. Those who retire at thirty-eight years serve in the 1st Reserve, until they are forty-four years old, when they join the 2nd Reserve and there remain until they are forty-nine years old. Those warrant officers who retire at forty-eight years, end their service in the 1st Reserve at forty-nine years, and their service in the 2nd Reserve at fifty-four years.

The grades of noncommissioned officers are sergeant-major, sergeant, and corporal in the infantry, cavalry, artillery, engineers, air service, transport troops and military police. In addition there are special grades of artillery and engineer mechanics and of noncommissioned officers of the intendance, medical and veterinary services which correspond in rank to the three usual grades of noncommissioned officers named above.

Noncommissioned officers in active service are recruited in

several ways and their terms of active service depend on the method of recruitment as shown in general in the following table:

Branch and Grade	Source	Term of Service
Sgt.-maj., sgt., and corpl. of inf.; cav.; arty. engrs.; air service, transport troops; chief tailors and chief shoemakers of intendance; N.C.O. of Med. Corps.	Qualified volunteers among conscripts and by promotion among N.C.O.	Four years from Dec. of year in which conscripted.
Same as above.	Qualified conscripts who do not volunteer.	Three years from Dec. of year in which conscripted.
Chief mechanics of arty., and engrs., and veterinary N.C.O.	Junior N.C.O. and conscripts.	Three years from Dec. of year in which appointed.
All N.C.O. except military police, intendance and band musicians.	N.C.O. and Superior Privates with N.C.O. certificate of the 1st and 2nd Reserve who volunteer and reënter active service within two years of discharge.	Two years from Dec. of year of reënlistment.
Military police N.C.O.	Superior Privates of M.P.; N.C.O. of Inf.; cav., arty., engrs., air service, transport, who volunteer and pass examination. M.P. superior privates of 1st and 2nd Reserve who hold N.C.O. certificates of eligibility; sgts. and corpls. of 1st and 2nd Reserve who volunteer within two years of expiration of active service. Sgts. and corpls. of inf., cav., arty., engrs.; air service, transport, who volunteer within two years of expiration of active service.	Six years, including previous service, if any, in same enlistment.
All intendance N.C.O. (exclusive of chief tailors and shoemakers.)	Qualified volunteers from line organizations; and those men in 1st Reserve who have intendance qualification certificates and intendance corpls. and sgts. of 1st and 2nd Reserve who volunteer within two years of completion of active service.	Two years from Dec. of year of appointment in intendance.
Chief tailors and shoemakers.	From qualified volunteer candidates in govt. clothing and shoe factories after two years' service and volunteers with qualification certificates from 1st and 2nd Reserves within two years of completion of active service.	Same as above.

All promotion of noncommissioned officers is by selection, but a prescribed time in each grade must be served to be eligible for promotion. A corporal must serve as such for one-half a year before he can be made a sergeant; a sergeant must serve one year as such before he can be promoted to sergeant-major; and a sergeant-major must be in that grade at least two years before he can become a warrant officer. These times are halved in war-time.

All noncommissioned officers of infantry, cavalry, artillery, engineers, air service and transport troops, except chief mechanics of the artillery and engineers are retired at the age of forty. All others retire at forty-five.

Noncommissioned officers remain in the 1st Reserve until seven years and four months from December of the year of first appointment as noncommissioned officers. Men who did not volunteer serve the same as privates.

Noncommissioned officers serve in the 2nd Reserve until seventeen years and four months from December of the year of first appointment as noncommissioned officers or of year of conscription in the case of men who did not volunteer to become noncommissioned officers.

Returning to what might be called the temporary personnel of the army, or those classes which change periodically, we will consider first the "One-year Volunteers" and "One-year Service Men"—at present the main sources for lieutenants in the 1st and 2nd Reserves. These two classes will undoubtedly disappear as soon as the system of military training in schools begins to produce men who are entitled to the reduced length of service with the colors provided for, and can then become reserve officers. Briefly, the two classes referred to provide a year's training for students and graduates of middle or higher schools with the object of fitting them to become officers in the reserve.

There still remain to be discussed conscripts and volunteers for the regular term of service.

Boys between seventeen and twenty years of age may volunteer for service with the colors. The conditions of service are the same as for conscripts.

The method of entry into the service and the reserve service of conscripts has already been described. All conscripts are given the rank of 2nd Class Private upon reporting for duty. After about one year of service, qualified men are promoted 1st Class Privates, and of these a limited number in each regiment are soon after promoted Superior Privates. It is from the Superior Privates that lance corporals are selected.

(To be continued in our next issue)

THE 1926 EASTERN ENDURANCE RIDE

BY CAPTAIN JEAN R. UNDERWOOD, V.C., FORT MYER, VA.

THE 1926 Eastern Endurance Ride was held at Brandon, Vermont, from October 10th, to October 16th, inclusive. The course was laid out over the same routes as last year but, as the weight had been increased from 200 to 225 pounds, it proved to be a much more severe test than the 1925 Ride. The weather was favorable to both horse and rider, the roads were in excellent condition—the footing could scarcely have been improved upon—and the routes were plainly and adequately marked. The horses entered appeared to be in excellent condition and were, with one or two exceptions, straight moving, strongly made, breedy individuals of weight carrying, riding type.

The following horses started:

Name	Color	Sex	Breed	Weight	Entered by
Moccasin	dun	geld.	½ T. B.	1,030	Capt. H. R. Springer, Q.M.C.
Stockings	bay	geld.	½ T. B.	1,075	3d U. S. Cav., Fort Ethan Allen
Bunny Boy	bay	geld.	½ T. B.	1,005	3d U. S. Cav., Fort Ethan Allen
Blue Bell	ch.	mare	½ T. B.	1,055	U. S. Remount Service
Rusty	ch.	geld.	Morgan	785	Dr. H. L. Frost, Pittsford, Vt.
Mark Hal	bay	geld.	St. B.	1,090	R. T. M. McCready, Pittsburgh, Pa.
Rex Rysdyk	dun	geld.	Am. S. H.	925	R. T. M. McCready, Pittsburgh, Pa.
Babe	bay	mare	½ T. B.	925	3d U. S. Cav., Fort Myer, Va.
Miss Brandon	bay	mare	½ T. B.	930	3d U. S. Cav., Fort Myer, Va.
Lady Luck	br.	mare	½ T. B.	1,110	3d U. S. Cav., Fort Myer, Va.
Lillian Russell	ch.	mare	½ T. B.	1,080	3d U. S. Cav., Fort Myer, Va.
Peggy	bay	mare	½ T. B.	1,010	3d U. S. Cav., Fort Myer, Va.
Dolly	bay	mare	½ T. B.	1,110	16th Field Artillery, Ft. Myer, Va.
Donwell	bay	geld.	Morgan	1,020	Capt. McDonald, Cav.

The Officials of the Ride were:

Judges: Mr. Allen Case, Judge A. E. Seeger, Dr. W. W. Townsend, Dr. L. H. Adams and Dr. H. Philipson, Veterinarians.

Mr. Lenox Barnes, Recorder.

Major C. A. Benton, Routemaster.

Mr. Edward Moore, Assistant Routemaster.

Mr. F. E. Backus, Weightmaster.

The first day's ride led from Brandon to the Department of Agriculture's Morgan Horse Farm at Middlebury and return, over a road that was for the greatest part quite hilly. At the noon halt several of the entries showed signs of scouring and only a few ate the grain that was offered them. All horses finished in minimum time. Shortly after her arrival at the stables *Lady Luck* had a rather violent attack of indigestion and had to be withdrawn from the Ride.

The second day's ride from Brandon to the Rutland Country Club and return was a series of climbs and descents for nearly thirty miles. The remainder of the route, while far from being level, was comparatively easy going. At the noon halt it was again noticed that several of the entries were scouring and only a few would eat their feed. At the 38-mile post *Mocassin* was withdrawn by his rider on account of exhaustion, and at about the same point, *Rusty,* the diminutive Morgan horse fell, his rider, Doctor Frost, receiving a painful injury that was later to be diagnosed as a fracture of the tibia at the ankle. With a courage that seemed to be characteristic of this combination of horse and rider, Doctor Frost remounted and brought the little chestnut along with the others into the stables in minimum time.

The following morning found *Donwell, Mark Hal* and *Babe* unable to start, *Donwell* suffering from acute laminitis, *Mark Hal* tired and failing in his forelegs and *Babe* lame from an injury received after being put in the stable. This day's ride was less difficult than the two preceding ones and led from Brandon to Shoreham and return. Doctor Frost, with his leg in a plaster cast attempted to complete the ride on *Rusty,* but at the fifteen-mile mark had to be relieved by Lieutenant Chase. The last few miles were made in a light rain that seemed to be refreshing to the horses. All finished in minimum time except *Dolly,* which was twenty minutes late, due to her rider getting three miles off the course.

The fourth day, from Brandon to Breadloaf Inn and return, was a real test of the nine remaining horses. Up over Rochester mountain 2480 feet in height, down on the other side and then back again, it was a route that no bad horse could have accomplished. *Rusty* and *Dolly* were withdrawn at the noon halt, both being in a condition that precluded any possibility of their placing even if able to complete the Ride. *Lillian Russell* went noticeably lame about two miles from Breadloaf Inn, but gradually worked out of it and was going almost sound when she arrived at the stables. At the 58-mile post *Peggy* fell, receiving abrasions over the right eye, on both knees and on the right shoulder. The road at this point was covered with loose gravel, just the kind of going that any horse could fall in, particularly any horse that had been 58 miles over a couple of mountains. Again, all horses left in the Ride finished in nine hours.

The fifth day, from Brandon to Benson and return, was over a road the last twenty miles of which was continuously up and down hill. *Blue Bell* was withdrawn by her rider at the 42-mile post. She had been scouring continuously throughout the ride and it was only her wonderful courage combined with Sergeant Currie's skilful

riding that enabled her to last as long as she did. The remaining six horses finished in minimum time:

AWARDS

Place	Name	Breed	Sire	Age	Ht.	Wt. at start	Wt. at finish	Wt. a. m. day score	6th Final	Rider
1st	Miss Brandon	½ T. B.	Cock O' the Walk	8	15/1½	930	895	895	99	Cpl. S. J. Matheson
2nd	Stockings.....	½ T. B.	Apron Face	11	15/1	1,075	1,010	1,020	94	Sgt. Blazejeski
3rd	Rex Rysdyk....	Am. S. H.	Rex Monroe	8	15/3	925	870	890	93	Mr. R.T.M.McCready
4th	Peggy	½ T. B.	Ganadore	14	15/1½	1,010	980	995	91	Sgt. Quaticksy
5th	Bunny Boy.....	½ T. B.	Kind Sir	8	15/2½	1,005	950	965	84	Cpl. Nickerson
6th	Lillian Russell	½ T. B.	Unknown	12	15/3	1,080	1,050	1,060	81	Capt. J. A. Weeks

By *Miss Brandon's* success the Mounted Service Cup becomes the permanent possession of the 3d U. S. Cavalry, that regiment having won the Ride in 1924 and 1925 with the remarkable endurance mare *Peggy*.

Corporal Matheson, the rider of the winner, was awarded the one hundred dollar prize for the best horsemanship shown on the Ride and I am sure that this award met with the approval of everyone. Corporal Matheson has ridden in the last three Eastern Endurance Rides, winning the one held in Virginia in 1924 and placing third in 1925. In addition to the horsemanship prize, Corporal Matheson received a special prize of one hundred dollars and a beautiful purse presented by Mr. and Mrs. John Russell Gladding, of Providence, R. I., for the rider bringing in his horse in the best condition.

TRAINING HORSES FOR ENDURANCE RIDES

A great deal has been written in a general way about endurance rides, but very little of a definite nature has ever been published concerning the training of horses for these contests or their handling throughout a ride. As one of the objects of endurance rides is "to ascertain and demonstrate the proper method of training and conditioning horses for long and severe work under the saddle," a description of one method that has been fairly successful may be of interest. For horses that have been doing regular troop duty, or one and one-half to two hours' work per day, two months of special training is sufficient. Following is the schedule of work. Morning exercise is at 7:30—afternoon at 1:30.

1st and 2d week:

A.M. *Monday-Wednesday-Friday*—Eight miles at six miles per hour. Tuesday-Thursday-Saturday—12 miles at six miles per hour. 175 lbs. up.

P.M. One hour walk. 15 minutes grazing. Sunday one hour walk. 15 minutes grazing.

3d week:

A.M. Monday-Wednesday-Friday—Walk one mile, trot and canter 3 miles (1/3 canter 2/3 trot), then six miles at six miles

per hour. 175 lbs. up. Tuesday-Thursday-Saturday—12 miles at six miles per hour. 190 lbs. up. Sunday one hour walk, 15 minutes grazing.

P.M. One hour walk, no extra weight.

4th and 5th weeks:

A.M. Monday-Wednesday-Friday—One mile walk, 3 miles trot and canter (1/3 canter 2/3 trot), then six miles at six miles per hour. 175 lbs. up. Tuesday-Thursday-Saturday—15 miles at six miles per hour. 190 lbs. up.

P.M. One hour walk. Sunday—one hour walk. No grazing; no extra weight.

6th week:

A.M. Monday-Wednesday-Friday—One mile walk, 3 miles trot and canter (1/3 canter 2/3 trot), then six miles at six miles per hour. 175 lbs. up. Tuesday-Thursday-Saturday—15 miles at six miles per hour. 200 lbs. up.

P.M. One hour walk. Sunday one hour walk. No extra weight.

7th week:

A.M. Sunday-Tuesday-Thursday—Walk one mile, trot and canter 3 miles (½ canter ½ trot), then eight miles at 6½ miles per hour. 175 lbs. up. Monday-Wednesday—18 miles at 6½ miles per hour, 205 lbs. up. Friday—40 miles in six hours with 225 lbs. up. Weigh horses before starting and at finish. Give veterinary examination. Saturday—inspect, weigh and give two hours walk.

P.M. One hour walk except Friday. Further training should be the same as 6th week, except full weight should be carried on days when no cantering is done.

Feeding.—Grain is fed four times daily: 6 A.M., 11:30 A.M., 4:30 P.M. and 8:30 P.M. in amounts, according to the needs of the individual, up to fourteen pounds per day. Hay is fed two pounds at 11:00 A.M. and twelve pounds at 4:00 P.M. For the first two weeks a double handful of bran is added to each grain feed, then the bran is gradually withdrawn form the ration until at the beginning of the fifth week the horse is getting oats alone. No cooked feed or mashes are ever given and after the third week no grazing is permitted. Hay is dampened before feeding. Fresh water is kept in the stall at all times.

Grooming.—Horses are brushed off before exercise and upon their return are rubbed dry and thoroughly groomed. To lessen the danger from "scratches" no sponging with water is permitted, except that eyes, nostrils and dock are wiped with a damp sponge. "Scratches" is the most common and one of the most serious

ailments affecting horses in training for endurance rides and the greatest care must be taken to prevent this condition. The pasterns must be dried thoroughly but gently, too much rubbing being worse than none. In training for this year's ride an ointment was applied to the pasterns of all of our horses before exercise and those that had a tendency toward cracked heels were kept greased at all times. At the afternoon grooming the feet should be packed with white rock.

Clipping.—All horses should be clipped hunter style, leaving a patch of hair on the back and around the girth a little larger than the saddle blanket and cinch.

Shoeing.—Horses are shod flat all around with an extra light issue shoe or snow shoe. Shoes are fitted a little more closely than normal and the toes of all fore shoes are rocked. The rocker shoe is especially indicated in endurance rides. It saves the shoe from wear at the toe, thereby doubling its life, a very important consideration, as horses in training have to be shod too often at best; it allows the foot to break easily over the toe without strain to the tendons, prevents stumbling and interfering when leg weary and, as it closely approximates the shape of the unshod hoof, is the most desirable shoe in every way. Heel calks are left off for many reasons but, as it is realized that it might be necessary to make use of them if the weather turned bad during the ride, extra fitted shoes with calks are kept on hand for use in an emergency.

Equipment.—English or training saddles with leather-covered wooden stirrups are best. The officers' field saddle, due to the excessive length of its side bars, has too much lateral motion, often causing chafes on the skin over the loins and, on short-backed horses, puts weight upon and restricts the free action of the loins. This criticism also applies to the stock saddle. Double saddle blankets are used, the one next to the horse's back to be of soft, thick, pure wool (Mr. McCready used in this year's ride, a heavy mohair saddle pad made of the same material as is used with the Phillip's pack saddle, which seemed to me to be an improvement over the double blankets). Extra weight is carried in weight pads as plates of lead, in pommel pockets as extra horseshoes, pinchers, hammer and rasp, and in loaded stirrups. The weight pad is the least satisfactory method of carrying extra weight as it jams the saddle blankets tightly upon the withers, often causing chafes and pressure sores. Considerable care must be used in packing the weight pads to get the weight equally distributed on each side and, in order to minimize its effect upon the withers, most of the weight should be carried in the pockets to the rear of the cinch. Five or six pounds of extra weight can be carried in each stirrup, provided it does not tire the rider or swing his heels in against the horse's sides.

HANDLING DURING THE RIDE

Preliminary Judging: At the preliminary judging declare and make a matter of record every unsoundness and blemish, such as thickened tendons, saddle scars, interfering marks, enlarged joints, etc., that the horse has. The preliminary inspection by the judges is apt to be more or less superficial, while the final inspection after the ride is always very searching and critical and unless every blemish is recorded at the outset, they may, at the final judging, be mistaken for an effect of the ride and count against the entry's condition score.

Start each day's ride as late as possible. The rider who starts at the last minute has the following advantages: his horse has the most time at rest in which to digest its morning meal; he is less likely to get off the course than the rider who leads the way; in bad going the leaders break trail for him and their tracks disclose any footing that is treacherous; he is closest to the horseshoer who always follows the rearmost horse and finally, his competitors cannot rate the speed of their mounts on his.

Finish in minimum time. Forty points are allowed for time. These are points over which there can be no dispute, if you earn them you get them and in the kind of competition that is met with nowadays you will need them all. As the rate of speed is less than seven miles an hour, it is about as easy for a free-gaited horse to finish sixty miles in nine hours as it is in ten, and by so doing get the weight off its back an hour earlier, have an hour more in which to rest in the stable and an hour longer in which to be fed and digest the remainder of its ration.

Feeding on the Ride: Four pounds of oats promptly at 6 A.M. (the time the stable is opened to attendants), one and one-half pounds at noon, one and one-half pounds an hour after completing the day's ride, provided the horse has cooled out normally, three pounds one and one-half hours later and the remainder of the ration at 8:30 P.M. If by 8 P.M. the horse has not cleaned up all the oats given it, the balance of them may be given at that time; the greedy feeder being the one that has to be fed most carefully. No hay is allowed at the noon halt, it being believed that if a horse is to have anything at noon it should be something more nutritious and less bulky than hay. As most horses prefer hay to oats at this time, no hay should be allowed in their sight. Hay is given as soon as the horse completes the day's work, the allowance each day being 14 to 15 pounds. Water often on the road and, unless deprived of water for some time previous, allow all that is desired. Water a couple of miles from the noon halt and the same distance from the night station and allow a plentiful supply during the night.

On the road: Ride but one horse, your own. Neither attempt to

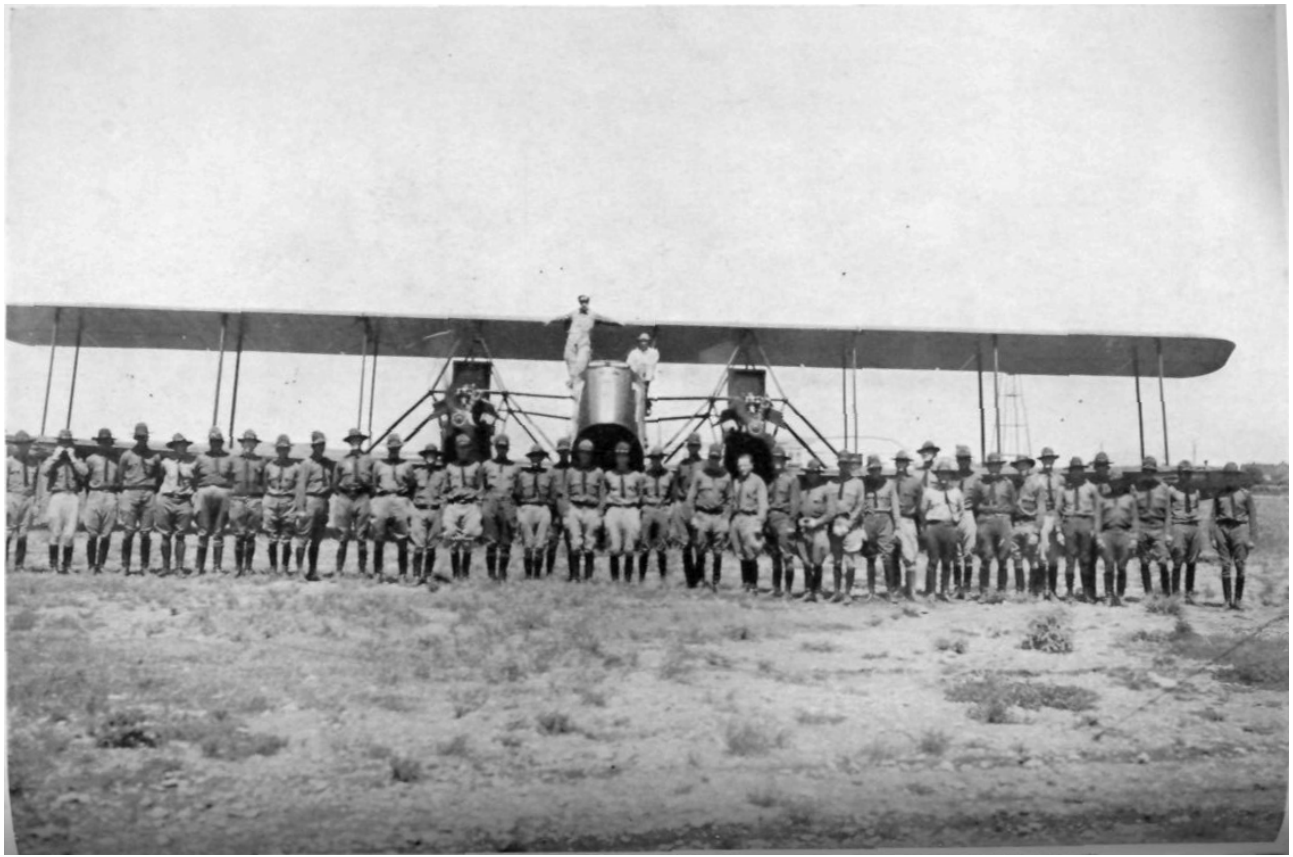
kill off competitors by irregularity of your own gait nor be influenced by their rate of speed; ride according to your own schedule. The gaits that are used will depend upon the animal. A free-walking, free-trotting horse that can walk four and one-half miles per hour and trot nine miles an hour without extension can do more walking (over one-third the distance) than can a slower, shorter-gaited animal. The former should be allowed to move along briskly at both gaits while the latter will have to jog its way along, over-extension at any gait being very tiring. Both should be permitted occasional relaxation at a slow, loose-reined walk. Trot on the level and up slight grades. Do not trot down hill unless necessary to keep up with your schedule. Never canter. Walk the last mile towards and the first mile away from the noon halt. Walk the last mile and a half to the stables.

Care of Mount.—At the noon halt encourage the horse to urinate by scattering straw or litter beneath it. Loosen the cinch, remove the loaded stirrups and cover the horse with a blanket; examine the shoes; water and feed and leave undisturbed while eating. At the end of the day's ride groom quickly; gently massage the tendons, the fetlock joints and the muscles of the forearms and gaskins. Restore the circulation to the back by brisk patting and rubbing. If a horse has a tendency toward swellings on the back, the saddle should be left on for half an hour. If swellings appear they should be reduced with cold water and pressure. The benefit to be derived from the use of cold water on tired legs is problematical. Too much time had been spent in the past in splashing water on the legs of horses that should have been left alone and allowed to rest. If shoes are loosened or worn out, reset them in the morning when the horse is better able to stand on three legs.

It is not claimed that the above method cannot be improved upon, and the fact that fifty per cent. of the horses trained and handled in this manner failed to finish this year's ride might, on the surface, lead one to believe that it could easily be improved upon. The explanation of the failure of two of our horses to finish is that all of our entries were seriously affected by the change in their water supply. The water at Fort Myer is extremely soft, almost entirely free from minerals; the water of Vermont, to which they were suddenly changed and to which they had not become accustomed at the time the ride started, is very hard. It was this variation in the character of the water that caused the indigestion and scouring of *Lady Luck* and *Dolly* which resulted in their elimination. *Blue Bell,* the entry of the Remount Service, was similarly affected. *Babe,* our other entry that was eliminated, went lame in a manner that was no reflection upon her condition.

MISS BRANDON, WINNER OF 1926 EASTERN ENDURANCE RIDE

THE LINE UP BEFORE STARTING



RESERVE OFFICERS OF HEADQUARTERS, ARTILLERY GROUP, EIGHTH CORPS AREA ON ACTIVE DUTY, AUGUST 1-15,1926

ACTIVE DUTY TRAINING HEADQUARTERS ARTILLERY GROUP EIGHTH CORPS AREA

BY LIEUTENANT GARRETT B. DRUMMOND. 411TH F.A.

THIRTY-SIX officers comprising a part of the commissioned personnel of the Headquarters Artillery Group, Eighth Corps Area, spent the period from August 1 to August 15, 1926, upon active duty at Fort Sam Houston, Texas.

This was the first period of unit training since the creation of the Headquarters Artillery Group of the Eighth Corps. The headquarters of this group is at San Antonio, Texas. Colonel Clarence R. Day, Field Artillery, is the Chief of Staff, and Lieutenant Colonel Edward R. Coppack is Adjutant. Organizations comprising this group are VIII Corps Artillery Headquarters, XVIII Corps Artillery Headquarters, 187th Field Artillery Brigade, 624th Coast Artillery Battalion, 508th Regiment Anti-aircraft Artillery, 308th and 312th Observation Battalions, 348th Ammunition Train, and the 409th, 410th, 411th, and 438th Regiments of Field Artillery. These units are allocated to the states of Texas, Oklahoma, and Colorado.

Of the thirty-six officers engaged upon this period of active duty, one was a Lieutenant Colonel. Two were Majors, one of them being a Medical Officer. Seven were Captains. Seven were First Lieutenants, one of whom was a Medical Officer and one a Chaplain. Nineteen were Second Lieutenants. It is believed that these officers constitute a very fair cross-section of the officer personnel of the organized reserve, and inquiry into their qualifications will be of interest.

The Lieutenant Colonel held field rank during the World War, and had been a member of the reserve corps since that time. He had been commissioned in his present grade since 1923. His civilian occupation was that of Athletic Coach at one of the largest educational institutions in Texas.

The average age of the Majors was forty-three years. One was a physician and the other a lawyer. Both had seen service during the period of the World War. The average length of commission in their present grade was two years. Each of the Majors had been upon one previous period of active duty training in that grade.

Of the seven Captains, three were lawyers, two were salesmen, one was a school superintendent, and one was an insurance representative. All of them had been in service during the World War,

either as commissioned officers, or in the ranks. The average age of the Captains was thirty-four years, the oldest being thirty-seven, and the youngest thirty-one years of age. The average length of service in their present grade was five years. Four of the Captains had been upon one active duty period in their present grade. Two of the Captains had almost two years active service in grade, and the remaining one had four months active service in grade.

One of the First Lieutenants was a physician, and one was a minister. The remaining five were: a lawyer, a manufacturer, a banker, a scenic artist, and an instructor at a military school. The average age of the First Lieutenants was thirty-two years, the oldest being thirty-seven, and the youngest twenty-four. The average length of service in present grade was two years. One of the First Lieutenants was a graduate of the Reserve Officers' Training Corps; one was a graduate of the United States Military Academy; one had been an enlisted man during the World War. The Medical Officer was a graduate of the Reserve Officers' Training Corps. The remaining three were candidates in officers' training camps at the time of the armistice. All, with the exception of one, had been upon periods of active duty training in their present grades.

Eleven of the Second Lieutenants were graduates of the Reserve Officers' Training Corps. Nine of these eleven were graduates of the Agricultural and Mechanical College of Texas; one was a graduate of Ohio State University; one was a graduate of the Colorado Agricultural College. Of the remaining Second Lieutenants, one received his commission at a Citizens' Military Training Camp; one had been an enlisted man in the Regular Army, and one had been an enlisted man in the National Guard. Two had held commissions during the World War. The remainder were candidates for commissions at the time of the armistice. The average age of the Second Lieutenants was twenty-seven years. The youngest was twenty-three years of age, and the oldest was thirty-eight. By civilian occupation, the Second Lieutenants were classed as follows: ten were engineers, three were merchants, one was a draftsman, two were salesmen, one was a lawyer, one was a nurseryman, and one was a caretaker for a National Guard unit. The average length of commission in present grade was two and one-half years. Twelve of the Second Lieutenants had seen active service in their present grade.

Upon arrival at Fort Sam Houston, these officers were attached to the Twelfth Field Artillery. They were assigned to the batteries in proportional grades, and so far as was practicable each officer functioned as he would in case of a mobilization. The morning periods were devoted to work with the troops, and the afternoons were spent in attendance of conferences and in classroom instruction.

A very thorough training schedule had been prepared. It is summarized as follows:

SUBJECT	CONFERENCE	PRACTICAL
Organization and Training	1 hour	
Equitation	1 hour	
Administration		6 hours
Pistol Firing		2½ hours
Preparation and Conduct of Fire	3 hours	
Use and Care of Fire Control Instruments	1 hour	1½ hours
Reconnaissance and Occupation of Position	1½ hours	8 hours
Communications	1½ hours	
Maintenance of Motorized Matériel	1½ hours	
Service Practice		25 hours

To the above hours should be added attendance at Saturday Morning Inspection with the organization to which each officer was attached, and one entire morning spent at Kelly Field inspecting the activities of the Air Corps. Included in this visit was a lecture by an officer of the Air Corps dealing with observation of artillery fire by airplane.

These officers were very fortunate in being attached to an organization such as the Twelfth Field Artillery. It happened that they came at the time of the relief of Colonel Oliver L. Spaulding as commanding officer of the regiment, and the assumption of its command by Colonel P. S. Golderman. During the first few days of the period of training, both of these officers were present with the regiment, and it was evident that their interest in the progress of the visiting officers was in no wise feigned. Colonel Golderman continued his interest, and was a frequent visitor at the conferences and also during the period of service firing.

The last four days of the period of training were spent at Camp Stanley where each officer was allowed to fire both shell and shrapnel. However, because of the small allowance of ammunition for each reserve officer, this phase of instruction was not as varied as might be hoped. For this work Battery F, commanded by Captain J. Kennedy marched to Camp Stanley. Captain Kennedy conducted the instruction in firing, and at the conclusion of the work was the recipient of a unanimous statement of thanks and appreciation from the reserve officers. Other officers in this battery were First Lieutenant Lowell M. Riley, and Second Lieutenants Peter Sather and C. P. Cabell. The entire period of service firing was very successful, and several of the officers firing were congratulated upon their work.

To a large extent those responsible for the success of this period of training were the three Executive Officers present. Major John W. Downer, Captain H. W. O. Kinnard, and Captain James C. Hughes of the 411th, 410th, and 438th regiments, respectively, had prepared the schedules and had conducted the preliminary training

prior to the arrival of the officers concerned. Major Downer is stationed at Dallas, Texas; Captain Kinnard is at Fort Worth, Texas; Captain Hughes is at Houston, Texas. Each of these executive officers has developed within his area much interest in the activities of the reserve corps. They are unflagging in their interest, and the success of this period of active duty can be laid to the thorough foundation laid by them.

May the writer be allowed to record a few impressions made upon him during this period of training?

The first is the great desirability that all reserve officers pursue the correspondence courses prepared for their respective grades. War may be the best school, yet it is a poor school. In addition to this, the daily civilian pursuits tend to erase from the mind a familiarity with military methods. Especially is this true concerning the technicalities of such a branch as the Field Artillery. While instruction by correspondence may not be the ideal method of imparting military instruction, it cannot be denied that the courses offered to reserve officers contain a variety of subjects and are prepared to bring out the most important phases of the subject under treatment. It was noted during this period of training that those officers who had followed correspondence courses were quicker to grasp the instruction offered than were those relying upon war-time memories for present inspiration. If every reserve officer pursued but one subcourse during the interval between the annual periods of active duty training, it is believed that the instruction offered while upon active duty could be more advanced, and not consist of so much of the fundamental subjects.

With this comes a thought concerning active duty training. It is evident that unit training is the ideal one, and that this unit training is of more benefit when it is conducted by attachment to units of the Regular Army. As the commissioned personnel of the Organized Reserves is filling up, we have arrived at a period when it is possible to order entire units to periods of training. Many of these units possess a World War history. An amount of esprit de corps is found in pride of such service. To bring these units together each year increases that pride, strengthens the determination of each individual to further service, and adds to the total progress of the cause of National Defense.

But some organizations are not so fortunate to have seen service during the late struggle. Attach them to some unit of the Regular Army which has this esprit de corps. Such a thing is contagious, and can be easily injected into reserve organizations.

Alongside this idea of building up a spirit in the reserve organizations is that of the procurement of officer personnel—and as far as that matter goes, enlisted personnel also. A training directive for

the Organized Reserves recently issued by one Corps Area, placed the objective of training to be "the organization and functioning so as to produce homogeneous teams commanded, led, and administered by their respective unit commanders and staffs." To this was added the statement that reserve officers would be trained in "practical command." It seems then that the responsibility for creating organizations which can and will function efficiently under their mobilization plans shifts to the unit commanders. And rightly so. It then becomes to the interest of each reserve officer to secure for his organization personnel which shall be a credit to it. Where shall a reserve battery commander look for his junior officers, or for those to be promoted when his lieutenants have served their time in grade, and themselves become battery commanders? It was clearly demonstrated to the writer, and this statement is made without the intent of disparagement of anyone, that we should look to the Reserve Officers' Training Corps alone for commissioned personnel. The courses pursued by the graduates of this agency give them an understanding of the fundamentals of their respective branches which, by continued pursuit of the correspondence courses intended for them, and attendance upon periods of active duty, will eventually create officers who will be assets in time of mobilization.

This does not mean that we reserve officers should forget the Citizens' Military Training Camps. But it is evident that only in the exceptional case will four months from a total period of four years be sufficient to produce an officer for a branch such as the Field Artillery. But we can turn to the Citizens' Military Training Camp for non-commissioned and other enlisted personnel, and we can find there material which will be of very great value to an organization. The Citizens' Military Training Camps should have a particular appeal to reserve officers for the reason that they are helping to solve a problem in personnel procurement which we shall sometime face.

Why not let each reserve officer grasp now for his organization some young man who will soon be a graduate of a unit of the Reserve Officers' Training Corps? Also why not send at least one boy to a Citizens' Military Training Camp each summer? We may soon need them.

The responsibility rests with us. Why not accept it!

SHERLOCK IN KHAKI

BY MARTIN GALE

ALL the world hates a sneak-thief, and nowhere is he more despised than in the Army. Men living in barracks must in a great measure depend upon each others' honesty. Thieving is rightly held a cardinal crime, and a thief caught is roughly handled. If he is not hustled to the Guard House, he is likely to make the trip on a stretcher.

The men of Battery A were losing their money, personal belongings, and those parts of their equipment that could be sold in the down-town dives. Nothing was safe. They set elaborate traps, they hid in corners, they left marked money about, but to no avail. The M.P's. and civil authorities did no better. From the ease with which he avoided their traps and his knowledge of their movements, everyone was sure that the thief was a member of the Battery, yet he could not be caught, while daily the losses grew larger.

When all other means had failed the Battery Commander called a conference with his Lieutenant and First Sergeant. They went over all the protective measures taken, and over the names of the men, picked several suspects, and tried to check their movements. That seemed all that they could do. There was no definite proof against any man.

"Well, sir," said the First Sergeant, "we seem to be up against a wall. I can't see how we're going to catch this guy."

"We've tried everything," added the Lieutenant.

"Wait a minute," said the Captain. "I've one more scheme to try. If it works we'll have him cold."

"Sherlock Holmes stuff?" asked the Lieutenant, and the Captain nodded.

"The thief has taken some of your money out of the office, hasn't he, Sergeant?"

"Yes, sir."

"You bring your blouse to me this afternoon and I'll put a dollar in the pocket and to-morrow we'll have him if he comes to get it. But you must not touch it after I load it."

"We've tried marked money, sir," remarked the Lieutenant, who was not optimistic.

"It's not that. Something better. I'll tell you about it after we've tried it out."

That afternoon an old blouse was brought to the Battery Commander who privately prepared it. Then the First Sergeant hung it in the office and withdrew to await results. He also was not

optimistic. The thief was bold enough to make the venture but, he believed, too clever to be caught.

In the morning when the First Sergeant entered the office it was easy to see that the coat had been touched. All the pocket flaps were opened and there was a stain on one of them. He was careful not to disturb the evidence until the arrival of the Captain, who gingerly examined the blouse and announced that the dollar was gone. In his office he made a minute examination, then told his eager audience that the trick had worked and that the thief was as good as captured. He would say no more, although his Lieutenant pleaded to be enlightened.

It is a custom in the Battery for every man to stand morning inspection before drill, in quarters. As the Battery Commander went through barracks, he carefully noted every man present, but made no comments until he reached the kitchen. Meyler, a K. P., had a bandage on his right hand; before him the Captain stopped. "What's the matter with your hand?" he asked.

"I cut it wit' the cleaver, sir," answered Meyler.

"That's too bad; when did you do it?"

Meyler hesitated a moment. "Last night after supper."

The Captain turned to the Mess Sergeant and the cooks standing nearby. "Any of you men see Meyler cut his hand?"

"No, sir," they chorused.

"Come into the office, Meyler," ordered the Battery Commander, and followed by the Lieutenant and the First Sergeant they entered the office.

"Meyler, what d'you know about the theft last night?" The Captain pointed to the decoy coat.

"Nothin', sir," answered Meyler sullenly.

"Let me see your hand." The other held out his hand. It was swathed in a copious bandage. The ends over the fingers were pink.

"Take off the bandage." But the other drew back the hand.

"The Doctor told me to keep the bandage on," he replied.

"Now you're lying. You haven't been to the Doctor. That's a home-made bandage, and there's no entry in the Sick Book. The Doctor would never treat you if the Sick Book wasn't along. I've got you cold. You stole the dollar I left in here last night and all that's been taken in the Battery."

"I never done it! I don't know nothin' about it."

"Don't lie to me. I'll give you an option. If you come clean, I'll put you safe in the Guard House. If not, I'll tell the Battery how you cut your fingers—and let them handle you. Do you know what that means? Did you see what C Battery did to the thief they caught last year? Quick, which'll it be? Do you want to go to the Guard House now, or on a stretcher?"

Meyler turned pale. "Don't let the Battery know," he cried. "I'll come clean. I'll tell where a lot of the stuff is bunked if you put me in the Guard House. For God's sake keep me away from the Battery!"

After the First Sergeant had led away the culprit, the Lieutenant found his Captain smiling like a Cheshire cat over a pre-drill cigarette.

"Tell me, sir," he asked, "how did you know it was Meyler that did it?"

"Easy, Doctor Watson," answered the Captain. "I filled the coat pockets with safety-razor blades."

COMMAND AND GENERAL STAFF SCHOOL

BY MAJOR STUART C. GODFREY. C.E.

(Reprinted from the July-August and September-October, 1926, issues of the *Military Engineer,* The Mills Building, Washington, D. C.)

THESE are the last two of a series of four letters on the Command and General Staff School, which appeared in the *Military Engineer*. The author, a student in the class last graduated, remained anonymous until the last letter was published.—EDITOR.

FORT LEAVENWORTH, KANSAS,
April 8, 1926.

DEAR B:

The 20-inch blanket of snow which accompanied our Kansas Easter effectively smothered any hope of golf, tennis, or camping trips during our vacation.

THE EARLY SPRING COURSES

By that time, the instruction on the handling of the *division* was complete, covering the cavalry division as well as the infantry division. The course in "Troop Leading" constituted a kind of review, with special emphasis on the detailed actions and orders of commanders and staff officers during combat. The eight problems in this subject followed pretty well-defined lines. The major decisions are not difficult, but there is a technique of detailed procedure to work out that economizes every minute.

We gave some little time to map manœuvres during which we acted as the various commanders and staff officers. The manœuvre simulates combat by means of previously prepared messages delivered progressively, and the whole division staff, represented by some twenty-odd students, functions more or less successfully as a team.

The instruction in the tactics and logistics of the detached corps was then begun. Involving a larger point of view, it requires some readjustment of perspective to fit all the details of corps troops and their functions into place. At the same time, we received additional instruction in the "tactics and technique" of the various arms, but in terms of these larger units. Particularly interesting is the consideration given to the larger air service units, with their broad field of suggested, if not altogether demonstrated, possibilities. The conception of an air division, comprising 2180 airplanes under unified control, must draw on imagination as well as on actual experience, which doubtless adds to its fascination. As to the success of anti-aircraft weapons in combating the air forces, we have had some interesting discussions in the classroom. An air service officer may tell, for instance, just how he would operate against a column

of cavalry with an attack wing, while a cavalry officer in reply outlines what defensive measures he would take in such a case. Thus, the school affords opportunity for full and frank discussion in threshing out debated points.

Six conferences were devoted to corps and army engineers, covering the subject in some detail and, of course, laying special stress on the vital importance of routes of communication. The subject of chemical warfare receives its due share of attention, but we were relieved to find we must memorize only five gases, and those by their non-technical names! The important duties of the medical and signal services are fully covered. Under "Methods of Training," we had two problems involving the *preparation* of a map problem and of a field manœuvre. The interesting lectures of the World War have been continued. A brief course in "Legal Principles" devotes particular attention to the question of domestic disturbances, in a practical and suggestive manner, and one marked problem is given in that subject.

As to the problems themselves, which constitute the real meat of the course, perhaps I can best illustrate by following through a typical problem in "Tactical Principles and Decisions." The detailed programs published weekly in advance give us the setting for the problem by announcing the maps that will be required. The area selected and the scale of the map often throw light on the nature of the problem. Thus, if the Susquehanna River flows across our section of country, it is quite probable that we may have either to force a river crossing or defend a river line. In our limited time for preparation before these map problems, such clues inevitably are utilized in making a "G-2" estimate of what to expect. But, woe to the student who makes up his mind in advance that the school is going to turn out a problem on any particular subject! Such "hunches" are likely to influence unconsciously one's solution, usually with disastrous results.

MAP PROBLEMS

One o'clock finds the class assembled in the three problem rooms, maps spread out, implements ready, faculties on the *qui-vive*. The problem sheets are distributed. For the next half-hour, at least, we are busy in staking out and getting thoroughly worked into the situation. The "1st Requirement," to be turned in, let us say, at 2.30 P.M., calls for General A's decision at a certain hour. The problem involves a defensive situation for the Blue Division, in the course of which the Red attacking force has made considerable headway in driving back one Blue flank. General A must decide, considering the status of Blue and Red reserves, his mission, and the like, whether to counter-attack or to withdraw, either at once or

after dark. The answer is never obvious, and it may indeed be a rather closely balanced question.

At 2.30, the second part of the problem is issued, giving the school's decision to counter-attack, let us say, and a "2nd Requirement." This proves to be a problem in execution, calling for the orders to carry out the aforesaid decision. Minor decisions will be necessary as to the counter-attacking force, its plan of manœuvre, artillery support, and the like. The remaining time till 5 o'clock can be profitably employed, in writing out and carefully checking the order.

At 5 P.M., our solutions turned in, the School's solution is waiting in our mail-boxes—unless the problem has been selected for subsequent "discussion" by members of the class, as described in my last letter. In that event, the School's solution is withheld till later and, when released, is accompanied by the announcement as to how many of the class counter-attacked, and how many withdrew or adopted some other decision. The majority usually, *but not invariably*, agree with the school!

But, this is not all. The final scene is laid some two weeks later, with the return of the corrected problems. We glance them over hastily, wanting at once to know: *a,* an *S* or a *U; b,* how many cuts? Most, if not all of us, are now familiar with the experience of getting a *U,* or "unsatisfactory" mark. A major decision judged unsound will usually rate a *U,* independently of the excellence of the solution otherwise. The problems are accompanied by comment sheets, enumerating serially the various errors and omissions. Each reference on a problem to this sheet constitutes a "cut." Since the value of the cuts is not announced, however, we have no means of judging the percentage rating of our solutions. One solution with a dozen minor cuts may be rated higher than another having but a single major cut. On the whole, the School's grading appears to be done liberally, and we are sometimes pleasantly surprised to receive an *S* instead of an expected *U*. The point is, perhaps, that a solution well-conceived and consistently carried out may receive no little measure of approval in spite of definite differences from the School's solution.

"POSITION IN READINESS" PROBLEM

It is true that not all problems have left an equally uniform impression of soundness. One type of problem difficult to make convincing is that involving a "position in readiness." The decision in this case involves a waiting game rather than any positive action, and is justified only when the information is incomplete and clouded. There is an additional degree of artificiality added by the fact that, in actual operations, any commander's problem is a continuous one

and, in case of doubt, the decision is simply postponed till the situation clears up or some positive action is demanded. General A, however, must make his decision at 9.35 A.M., let us say, for all time—and the student who has been taught that any reasonable positive plan is better than none, is exceedingly loath to adopt that negative scheme known as the "position in readiness."

Another problem that caused much aftermath of discussion was one that involved a night attack to gain an objective some three miles from the line of departure. The feasibility of night attacks is, of course, more debatable than that of attacks in the daytime, with their more familiar technique. There were in the class officers of wide experience who felt that this particular attack would have had little chance of success. Be that as it may, it seems to me that opinion is bound to differ widely on some of the less conventional problems turned out and that, in the long run, the full discussion and threshing out of such problems will tend to build up a technique not unsound.

THE CLASS MORALE

As will be evident from the above, none of us can make any intelligent estimate of our relative standing in the class. And probably that is well for our peace of mind. The Engineers here hope to do creditably well. But no one, it seems to me, should come here feeling any onus of responsibility to attain a particularly high standing. There are too many uncertain factors, and such a feeling might well interfere with a student's open-minded approach toward the whole course.

The long grind of the winter term is admittedly the most difficult period of the year. It is not the most favorable time to look to student officers for enthusiastic enconiums of the school, for one hears creeping into many a vocabulary the words "a bit fed up." For all that, it seems to me that our class has kept quite cheerful and sane. We have not missed a chance to laugh at the humorous incidents that occur in the section-room. We were cheered up by abundant diversions, the weekly hops, an occasional fancy-dress party or special affair, a riding exhibition, or a trip to Kansas City. We were reminded that the end of the year was not far distant by the orders to new stations which were coming in every day. Some of our class stay here to instruct, but the greater part of the new instructors will come back after completing the War College course—which seems an admirable policy.

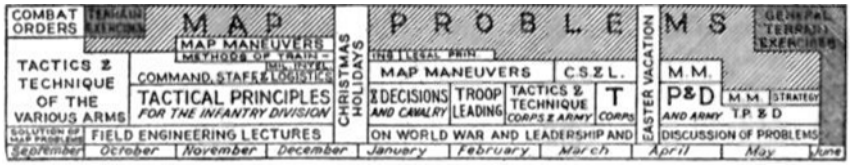
CONCLUSION

In my next (and last) letter, I will try to give you a general summing up of impressions for the year, with any bits of advice as to your procedure while here. I will also say something about the

special three-month course for National Guard and Reserve officers, which numbers among the students two Engineer Reserve officers. In the meantime, do what you *reasonably* can in the way of preparation. Cover the first few subcourses in the current correspondence course of this school, going over especially the tactics and technique of the various arms within the division. The study of even a few of these problems will give you an insight into how to talk the language of the school. Come here in the best practicable physical condition. And, above all, don't for a moment believe that it is such a fearful ordeal! I've really had a bully time.

Faithfully,

A.



DIAGRAMMATIC REPRESENTATION OF COURSE OF STUDY

FORT LEAVENWORTH, KAN.,
July, 1926.

DEAR B:

This final letter to you I write as a *graduate!* One may resign himself gracefully, for a season, to play the rôle of schoolboy, but the completion of the course brings none the less a "grand and glorious feeling."

My last letter took us through the school year as far as the Easter vacation. The spring term followed the same general lines, devoting the bulk of the instruction periods to the tactics, technique, and supply of corps and army units. Two minor courses rounded out the program, a suggestive treatment of the methods of historical research as applied to the Fort Donelson campaign, and a short course of lectures in strategy.

FINAL SERIES OF PROBLEMS

As the end of the year approached, a greater proportionate time was given to problems, and the pressure was gradually increased. Our final series of eighteen problems, the "general terrain exercises," were given in the field, as described for the terrain exercises last fall. These problems constitute a general review of the whole course, covering staff and supply functions as well as tactics. Only a one-inch road map, without contours, can be consulted. Individual reconnaissance is permitted, but is hardly necessary since the class has become quite familiar with the terrain around Fort Leavenworth

by this time. Departures from the more conventional type of solutions may be expected in these terrain exercises; for instance, the situation is often likely to invite a "piecemeal" attack instead of the more conventional "coördinated" attack.

For the final week, we moved into camp near Easton, where the surrounding country was quite new to us. Those last nine problems of that week were based upon a single tactical situation, which developed from day to day as the division successively advanced, attacked, defended, was reinforced by the rest of its corps, attacked again, and finally pursued. This gave unity, continuity, and added interest to the problems, and the week quickly passed amid pleasant surroundings. There remained another week on the post, necessary for the instructors to complete our marks and grades, and opportune for most of us to pack our household goods.

We had fondly expected, perhaps, that by this time we would be so "educated" in the school doctrines as to find readily the academically acceptable answer to any problem. Yet, up to the end, we continued not infrequently to get back papers branded with a disconcerting *"U."* Such jolts must be philosophically accepted! In the effort to make problems interesting and not too obvious, the decision will often be closely drawn. Judgments may fairly differ, sometimes, as to the best course to pursue. How much of a threat does that force beginning to appear on my flank constitute? Shall I, therefore, withdraw my tired corps to-night, or wait until to-morrow night? It may be indeed a nice question, and the "wrong" answer, we may assure ourselves, does not necessarily denote crass ignorance.

VALUE OF THE COURSE

It was cause for rejoicing when announcement was made that every member of our class was to be graduated (two or three, to be sure, had dropped out during the year). The announcement as to the "honor graduates" (the first ten per cent.) and the "distinguished graduates" (the next fifteen per cent.) could not, in the nature of things, be so generally acceptable. Personally, I question whether any advantage gained by the competition for place which these ratings cause is worth the extra, somewhat artificial, strain which is thus imposed upon the student. Is the primary function of a school to serve as a test or rather as a preparation? However this may be, the purpose of these letters is to tell you about the School as it *is* and not as it *might be*.

My final judgment confirms my early impressions as to the excellence and great value of the course. It seems to me, indeed, to have made a vital contribution to my equipment as a soldier. It used to be charged that problems reflected the individual views of

their authors, and that the student was thus tempted to "play" the instructors. But an understanding of the present method of preparing problems—the elaborate plan of reference and cross-reference to chiefs of sections and solving committees, and review boards and director and assistant commandant—soon brings the realization that each problem is the impersonal result of a *system,* under which the individual plays a small part. Nor, in my opinion, can any case be made in favor of the "nigger in the woodpile" that is sometimes diligently sought, but the traces of which I failed to find, in the School problems.

I have spoken of the marked difference among instructors as to success in handling conferences. The School has recognized the need of improving individual methods of pedagogy, and has this year sent two members of the staff to summer school for certain special courses of this nature, the benefits of which will be passed on, so far as practicable, to the other instructors next year.

It has been very interesting to be in touch these last few months with the thirty or more National Guard and Reserve officers who were taking the three months' special course. Their lessons constituted an abbreviated edition of ours, omitting the corps and army. They were given about a third as many problems as we had, in about one-third the time, and joined us very pleasantly in camp during the last week. From my talks with a number of students, I judge that they found the course most enjoyable and profitable.

SOME FINAL COMMENTS

And now, if you like, I will try to sum up the bits of advice that occur to me, for your reference when you go to the School. You will get no end of rules of thumb and detailed figures which you are urged to memorize. But I would stress here the value of general principles and procedure, leaving the details to fall into their rightful places.

In Preparing to Come—Try to cover the first few subcourses in the G. S. S. Correspondence Course, with the texts required therein. You will gain thereby some acquaintance with the phraseology, type of problem, and method of solution taught by the School. Be advised, however, that these problems are somewhat easier and more obvious than the corresponding problems in the regular course.

However inadequately prepared, do not anticipate any difficulty in making the plunge. You will have ample time to get into your stride.

You need not be concerned about details of equipment. These can be worked out later to suit individual tastes.

Report in the best practicable physical condition.

In the Conference Room—Master the School phraseology, definitions,

and the like. Keep notes of important points brought out; if an instructor gives *special emphasis* to some phase of a subject, his words may have an application in some future problem.

Before asking questions in conference, remember that you are taking time to clear up for yourself what may already be clear to the other two hundred and forty-nine members of the class. I found it preferable to go to an instructor afterwards; they are all glad to help.

In Studying—Follow a regular schedule.

Review consistently. As an aid in reviewing, consider keeping filed with each T. P. and D. illustrative example the section of 3-inch or 1-inch map on which you stake out the example. Similarly, consider keeping the maps used in solving the problems in your course.

Use old problems, but judiciously, noting points of difference, seeking underlying principles rather than particular situations.

Membership in a study committee may provide advantageously for exchange of review notes and the like. Teamwork with another student in staking out complicated situations may be helpful.

In the Problem Room—Four hours is usually ample time; do not feel hurried, but take all the time that there is available for the work in hand.

Read the problem carefully and absorb every detail.

Analyze the *time* and *space* factors with special care. A rough diagram of the principal forces, routes, and distances to critical points will help greatly; this may be made by heavily lining the general map.

Study the terrain. The possession of high ground for observation or defense, or of some other tactical feature, may be of vital importance.

Make an "estimate of the situation," involving essentially a comparison of the enemy's tools with yours, his possible plans (put yourself in his place while considering these) and plans open to you.

Make your "decision" complete enough to answer generally these questions: what? why? when? where?

Fight off a mere instinctive, unreasoned decision, or "hunch." Let your decision be your own honest best judgment, whether or not what you think the School wants.

Do not straddle.

Test your tentative solution by applying the fundamental principles of war. That is, ask such questions as: does it carry out my *objective* or mission, does it provide for *surprise,* does it ensure *security* of my flanks, my communications, does it provide for *coöperation,* is it *simple?* (Apropos of simplicity, a chief source of

error is to seek too perfect and, hence, too complicated and ingenious a solution.)

On Terrain Exercises—Become familiar with the general topography in the vicinity of Fort Leavenworth, the hill masses and river valleys, the stratified character of geological formation; similarly, for the terrain in the vicinity of your final week's camp.

There is usually little time and little necessity for extended reconnaissance. Make first a tentative map solution, then visit any locality necessary to clear up uncertain points.

Miscellaneous—Don't study Saturday—do something different.

Avoid, as a general rule, discussions immediately previous to a problem, which may unconsciously give you a bias.

Do not resent unfavorable comments and marks, even though you think them undeserved. Retain your cheerfulness and sense of perspective.

Take plenty of exercise, and *keep fit*.

Faithfully yours,

A.

FOREIGN MILITARY JOURNALS A CURRENT RÉSUMÉ

FRANCE

Revue D'Artillerie

"The Use of the Artillery in the Offensive," by Major Buchalet, appearing in the July number, is a comparison of the present French regulations and instructions on the use of artillery in the offensive, with those of the post-war German Army. The various texts are frequently quoted and compared, paragraph by paragraph.

The German regulations are obviously written with the purpose of utilizing their present force of 100,000 men as a framework for a war-time Army. Lacking cavalry and aviation, great stress is laid on infantry patrols and extended reconnaissance by artillery personnel. The perennial subject of accompanying guns and infantry batteries is discussed with the feeling that the real need is a very light gun of small calibre to go forward with the infantry. The French tactically classify the artillery as that of Direct Support and that of Combined Action. The former directly supports a given infantry unit and requests for fire from the infantry commander receive priority over missions from the divisional artillery commander, though all displacements are under the latter's control. Artillery of Combined Action, on the other hand, receives all its missions directly from the divisional artillery commander, and is a form of divisional reserve. The Germans divide their artillery into Close Combat and Distant Combat. The former corresponds with the French Direct Support, with the proviso that certain units may, at times, be placed under the orders of the infantry unit they are supporting. The artillery of Distant Combat is always under the complete control of the divisional artillery commander and is also responsible for counterbattery work.

The French instructions do not favor attaching complete artillery units to an advance guard. Apparently it is contemplated that the advance guard commander will make demands on the main body for artillery support, whereas the German view on the handling of artillery with the advance guard is similar to that held in America.

The French do not foresee a meeting engagement as such. To their mind all engagements involve one side being on the defensive. The types of offensive action are limited to two—war of movement, and an attack on organized positions. The Germans devote a whole chapter of their regulations to artillery in a meeting engagement,

and then proceed to discuss the use of artillery in an attack, in open warfare, against an organized position, and against permanent fortifications.

Major Buchalet is most interested in the attack of an organized position. He construes the French instructions to advocate the rolling barrage in preference to successive concentrations, for the reason that the former gives a visible line which the infantry can follow and has no gaps in which enemy strong points may hide in safety. The French texts are much more general in their character than are the German. The latter decree that in an attack against an organized position, the maximum front assigned to a division is 2½ kilometres. The preparation fire is intended to fall on enemy batteries and roads at first, then to be shifted suddenly to the infantry positions. "Attacks without preparation, or after a very short preparation are exceptional. They can only succeed by surprise and against an enemy already sheltered."

Both armies agree that the greatest problem is in the handling of the artillery, after the enemy's position has been penetrated.

In spite of the preamble to the French regulations, which warns against the assumption that future wars will be like the campaigns on the Western Front, the American reader gains the impression that frontal attacks against organized positions are the chief study in France and that the problem in all armies is how, and to what degree shall decentralization of command in the artillery be carried.

"Ammunition Supply for Trench Artillery," by Major A. Schneider, gives much detailed and exact information on the supply of ammunition for trench mortars, from its arrival at the army railhead, to its final delivery to the mortar positions. It is expected that motor transport will be used from the railhead to the corps depots; from the corps depots to the division dumps by wagons; then by light wagons, carts and pack animals to the battalion dumps; and finally by porters to the position. Assuming an arbitrary number of rounds per yard of front, based upon experience in the late war, calculations are made for the tonnage required for an attack, and the number of men, animals, vehicles and time, necessary to install the dumps and transport the ammunition to the position prior to the attack.

"The Becker Automatic Cannon," described in the August number, is a gun of German design for use in airplanes. It has a calibre of 20 mm. and though air-cooled, is said to have a rate of fire of 200 rounds per minute. The momentum of recoil is used to operate the ejection and loading mechanism. The novelty of the weapon lies in the system of recoil and in the breech block. The

barrel is fixed in its trunnions while the shock of recoil is taken up by a moving breech block and firing mechanism acting against a spring. The ammunition is fed from a clip holding 20 rounds. The gun is mounted upon trunnions which are set on top of a short vertical spindle. Elevation and azimuth are obtained directly by the operator who steadies the piece by two handles, one on each side of the breech. The total weight is 40 kilograms and the length over all is 133 centimetres.

Three kinds of projectiles are supplied—high explosive, tracer, and incendiary, varying in weight from 130 to 145 grams or about 5 ounces. The velocity at 50 metres from the muzzle varies from 465 to 498 metres per second, depending upon the projectile used.

"Revue Militaire Française," August–September, 1926

Lieutenant-Colonel Pigeaud writes of **"The Problem of the Tank."** After analyzing the different qualities required of the tanks by various tactical conditions, he points out that it is impossible to unite all of these qualities in one tank. Moreover such a solution, even if possible, is not desirable, since certain exceptional missions, such as the attack of a fortified position, require a small number of very complex and costly tanks, while the usual missions require a large amount of simple and relatively inexpensive matériel. Remembering that this tendency toward specialization should not be over-stressed, the author presents a "scale" of types particularly adapted to special needs and permitting a relative interchangeability:

(1) A large number of light tanks, weighing about 9 tons and with a personnel of 2 or 3 men. These tanks should be provided with a turret containing two machine guns or a gun of larger calibre, they should be capable of an average speed of 10 miles per hour, permitting them to accompany troop convoys. They should be capable of crossing trenches 2 metres wide and should be proof against projectiles of any ordinary infantry weapon. This matériel should be used during the opening phases of the battle, and during the attack, against machine guns to the immediate front of the infantry.

(2) A lesser number of "Battle" tanks weighing about 15 tons and with a personnel of 3 men. These tanks should be provided with a 75 mm. and machine guns, should be capable of an average speed of 8 to 10 miles an hour, be able to cross cuts of 2.5 metres, and should be proof against the smaller anti-tank weapons.

This matériel is active during the attack on organized positions of resistance, when it works with the light tanks. Operating usually in advance of the light tanks, it engages particularly the distant and flanking enemy machine guns, and the enemy tanks. By its mobility,

it is able to take care of the missions normally confided to the light tanks.

(3) A small number of heavy tanks, weighing about 60 tons, armed with a 105-mm or a 155-mm. and machine guns; capable of a speed of from 5 to 6 miles per hour; proof against light artillery projectiles.

This matériel should be used particularly against strong defensive positions.

Realizing that economic conditions will not permit the preparation of this matériel, the author studies the capabilities of the old matériel now being used (the Renault), which must carry the burden during the opening phases of the next war. It can fulfil only a part of the missions mentioned above, but it has many possibilities as outlined by the author:

(1) Carried on trucks, the Renault can support large units of Cavalry and Infantry advance guards at the moment of contact. It can also join in the pursuit.

(2) On tracks, it can, under certain conditions, support the advance troops during the engagement.

(3) During the attack, in open country and when the enemy resistances are localized, it can go well forward and engage the more distant enemy machine guns.

Commandant T——— studies **"German Combat Aviation."** The author enlarges upon a paragraph contained in the German service regulations of September 1, 1921: "To conduct aërial warfare, it is necessary to organize the combat planes in large units. This combat aviation includes not only pursuit and bombing units, but also battle squadrons which are to attack terrestrial targets by means of machine guns and bombs."

Commandant T. remarks that during the last war, beginning in 1916, combat planes frequently fired upon land troops. These actions, however, were usually the result of individual initiative, in an attempt to annoy the enemy. They succeeded very well in accomplishing this result and at times seriously affected the morale of the land forces, as the example which the author quotes from General von Hoeppner shows:

"During the battle of the Somme the enemy planes, flying very low, fired upon our infantry in its trenches and shell holes, and upon the artillery in position. Since these attacks were not yet well regulated, they inflicted only slight losses upon us, but their moral effect was considerable. Our men felt themselves continually spied upon and hunted and had the impression that the precautions which up to this time had given them a certain security had lost all value."

The Germans noticed also that the moral effect produced by

individual planes was comparatively slight. The high command prepared to exploit this aptitude of airplanes to join in terrestrial warfare and to make their intervention even more effective by organizing these battle planes in larger groups. These units first appeared at Artois in April, 1917. Their mission consisted generally of firing upon infantry massed for the assault. A few months later in Flanders, groups of 2, 3 and at times even 5 or 6 planes attacked allied troops from very low altitudes, frequently at 50 metres.

Since the war, the German policy concerning aviation has not varied. The Germans plan battle groups composed of 3 squadrons of 11 planes each and even brigades combining 2 or 3 such groups. The planes, which are to be capable of carrying 150 kilos, will be of two types:

(1) A light plane, very rapid and supple, which can be used at low altitudes when there is no danger of organized land defense.

(2) A heavy type, armored, and capable of delivering a heavy fire upon terrestrial targets.

"Silver Tools," by Lieutenant Navereau, is a discussion of the various means employed in financing a war. After reviewing modern methods such as loans and taxes, he delves into the history of this problem, tracing it from the time of Louis XIV through the French Revolution.

In **"The Fiftieth Anniversary of the Ecole de Guerre"** Lieutenant-Colonel De Nevciat reviews the address delivered at the anniversary ceremony by General Héring, the Commandant. General Héring traced the history of the school and outlined the evolution of the method of instruction.

Organized in 1878, the Ecole de Guerre took the place of the General Staff school of application. The new school had no longer the policy of the school of application, which was to prepare officers who were to spend all their service in the general staff corps. The Ecole de Guerre was designed to give to young officers an instruction which they would in turn give to the line and at the same time its purpose was to prepare the young officers for high command and eventually to prepare them for service with the general staff.

In conformity with this policy, the general staff corps was replaced two years later by a general staff service, a system which provided for general staff officers selected from all branches of the Army, who had completed the course of study at the War college. This system was perfected by General Foch, who commanded the school from 1908 to 1911, and who added a course of study for field officers and for general officers.

"The Action of a Division in a General Offensive," by Commandant P. Janet, is a detailed account of the operations of the 48th Division from the 20th to the 31st of August, 1918. The material for this article was taken from the documents of the historical service and from information furnished by participants in the engagement.

"Instruction of Intelligence Officers," by Lieutenant-Colonel Paquet, describes in detail a most simple and effective method of accomplishing this instruction by means of a corps school, a series of conferences, and practical exercises.

"The Fall of Fort Douaumont," by General Rouqueral, is completed in the September *Revue*.

GERMANY

Artilleristiche Monatshefte, March–April, 1926

"Modern Methods of Fire" is a very interesting article appearing in this number. The article is by Otto Schwab, C.E., formerly instructor at the Artillery Special Observation School at Wahn. It is in reply to a previous article by 1st Lieutenant Gallwitz on **"Adjustment of Fire by Lateral Observation,"** which appeared in two numbers of the *Artilleristiche Monatshefte* during 1925. Lieutenant Schwab points out that the Gallwitz method is all right for percussion fire on visible targets, but is impracticable for time fire or for percussion fire on targets in difficult terrain, since it is time consuming and involves too great an expenditure of ammunition. Gallwitz rejected the use of map data, whereas Schwab accepts the use of such data as a primary condition. He makes the point that any future war in which Germany will be engaged, will be defensive in character and conducted on German soil. Hence, Germany will be able to make full use of good maps upon which to base the preparation of artillery fire. Whereas Gallwitz assumed that the location of the lateral observation post with respect to the firing battery will usually be unknown, Schwab maintains that with good maps this will be known accurately.

In view of the relative weakness of the German artillery, there was a general tendency after the war, to simplify the methods of fire and to lay the maximum stress on percussion fire with direct observation. This it was believed would simplify training. But it must not be forgotten that the future development of field artillery firing lies in time fire because it offers greater possibilities. A numerically weak field artillery, such as Germany will have, cannot, at the beginning of a defensive war, permit itself to be drawn into

an artillery duel of matériel destruction. It must practice the strictest economy in ammunition expenditure and seek to obtain the maximum effect from each individual shot. Its tactical employment must be based on mobile situations and, therefore, its targets will be found, not in highly organized defensive positions, but in the open and probably unprotected. Under these circumstances, time fire will have a greater physical and moral effect than percussion fire.

With a good combination fuze, firing technic can be developed along better lines than is the case at present where main reliance is placed on percussion fire. It will be possible to take under fire targets that have been located but that cannot be seen from ground observation posts. By using high-burst ranging, fire can be conducted both night and day. No special instruments, other than those already on hand in the battery and battalion, are needed for this purpose.

Therefore, the problem is—from an axial or lateral observation post to adjust fire upon a target at an unknown range, using the minimum number of rounds. The battery having been laid on the target at the estimated or measured range, the position of the battery and the observation post are plotted on the firing chart. The observing angle is then measured and the line observer-target is plotted on the firing chart. Upon this line, a number of test bracketing points are tentatively selected on both sides of the target. Using the methods of high-burst ranging, 3 or 4 shots are fired on the first test point and the location of the centre of burst of this group is then determined. For this purpose, the necessary measurements for deviation and height of burst are made with the battery commander's telescope at the observation post and with an aiming circle at the firing battery or auxiliary observation post. The necessary corrections are then made to place the centre of impact of the mean trajectory on the line observer-target. With these data, a percussion round is fired on the test point. Since this shot will be near the observing line, it can be easily sensed. If it cannot be observed, due to unfavorable terrain, another test point is chosen. In doing so, the difference in altitude between successive test points must be taken into consideration. By proceeding thus from one test point to the next, the target will finally be bracketed between two points. If the terrain at the bracketing test points is unfavorable for observation, low air bursts are used. If the target can be seen from two observation posts, it is better to use bilateral observation.

The advantages of high-burst ranging are not fully appreciated. Although Germany, by the Treaty of Versailles, is forbidden to have special observation units, this inhibition need not prevent it from fully exploiting the authorized means which are at its disposal to-day.

The statement is often made that an adjustment of fire is unnecessary when using map data, and that all that is necessary is to apply the corrections of the moment and then deliver a zone fire that will surely cover the target. This involves a great waste of ammunition. While the meteorological message will usually enable us to determine the correct range, the deflection will generally be inaccurate. From personal experience, it was found that even where fire was accurately prepared, using map data and momentary corrections, the deflection was in error 50 metres or more in 70 per cent. of the cases. The cause of this error in deflection was not due to any mistake in calculating the deflection correction but rather to the use of near-by aiming stakes and the instability of the gun platform or emplacement. Furthermore, the meteorological message will seldom give the weather conditions of the moment but more probably those that existed one or more hours earlier. On the other hand, an adjustment carried out by observed fire will give every battery commander the necessary empiric data to enable him to calculate his corrections within two minutes. It is, therefore, important that battery commanders appreciate that the meteorological message will enable them to make only approximate corrections and that the exact corrections can be obtained by observed fire alone.

If hostile sound ranging is in action, fire must be opened simultaneously by the maximum number of batteries adjusting on different targets. During this firing, each battery commander should check his adjustment, and particularly the deflection, by several high-burst ranging shots. This can be done both day and night.

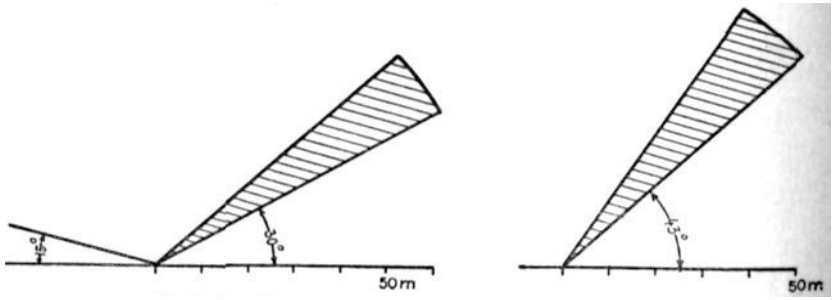
"Fragment Effect of High-explosive Shell with Instantaneous Fuze," by Lieutenant-General H. Rohne. The author's earlier studies on **"The Efficiency of Shrapnel Fire"** are well known to most Field Artillerymen. In the October-November, 1924, number of the *Artilleristiche Monatshefte,* General Rohne published an article on the **"Fragment Effect of High-explosive Shell Fire."** Therein, he assumed that the high-explosive shell, when armed with the instantaneous fuze, burst immediately after impact at a height of ½ metre. He has since been informed that the shell bursts as soon as the point of the fuze touches the ground. Therefore, the height of burst is zero. This necessitated a revision of his previous conclusions as to the form and size of the area effectively covered by the fragments.

From the study we learn that the fragments of the German high-explosive shell at the point of burst are projected in a conic zone, the front face of which makes an angle of 45º with the trajectory at the point of impact, while the rear face makes an angle of

57º for the 77-mm. gun and 105º for the 105-mm. howitzer, all angles being measured from the prolongation of the trajectory. The limiting lines of this fragment zone in the horizontal and vertical planes are determined from the deduced equation:

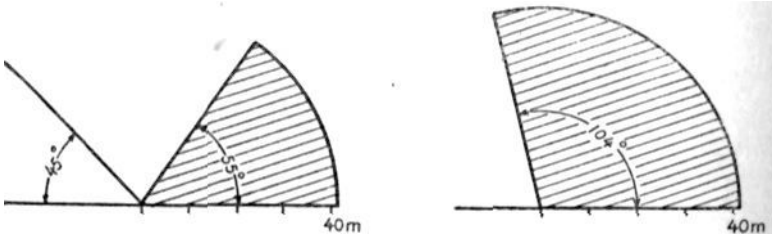
$$y = \pm x \sqrt{\tan^2\alpha \cdot \cos^2\omega - \sin^2\omega},$$

in which α is the angle of opening given above, and ω is the angle of fall of the projectile. Since the angle of opening is constant, it will be seen that the size of the fragment zone varies with the angle of fall. For the 77-mm. gun high-explosive shell, the fragment zone increases up to an angle of fall of 45º and then rapidly decreases. For the 105-mm. howitzer high-explosive shell, it increases with the angle of fall up to 80º. The accompanying sketches from the text give the vertical and horizontal cross sections of the fragment zone for the 77-mm. gun high-explosive shell for an angle of fall of 15º, and for the 105-mm. howitzer high-explosive shell for an angle of fall of 45º.



Vertical section. Half of ground pattern.

77-mm. gun high-explosive shell—angle of fall = 15º.



Vertical section. Half of ground pattern.

105-mm. howitzer high-explosive shell—angle of fall = 45º.

Having determined the limits of the fragment zone, General Rohne then proceeds to determine the density of fragments, and the distance from the point of burst at which the density and striking energy of fragments will be ineffective. In shrapnel, the number of balls and their weight is fixed. In the high-explosive shell, the fragments vary both in number and weight. As to number, General

Rohne assumed that the 77-mm. high-explosive shell will break up into 600 fragments, and the 105-mm. high-explosive shell into 1200 fragments. To determine the density of fragments at any particular distance from the point of burst, General Rohne proceeds as follows:

The area of the cylindrical perimeter of the fragment zone is obtained from the equation,

$$A = 2 \cdot r^2\pi (\cos \alpha - \cos \alpha'),$$

in which r is the radial distance from the point of burst, and α and α' are the angles of opening of the fragment zone. By substituting the proper values for the unknowns in this equation, we obtain:

For the 75-mm. gun high-explosive shell, $A = 1.02r^2$.

For the 105-mm. howitzer high-explosive shell, $A = 4.77r^2$.

If z is the total number of fragments, then the density of fragments will be z/A. Since z is equal to 600 for the 77-mm. high-explosive shell and 1200 for the 105-mm. high-explosive shell, the density of fragments will be:

For the 77-mm. gun high-explosive shell, $D = 600/1.02r^2 = 588/r^2$.

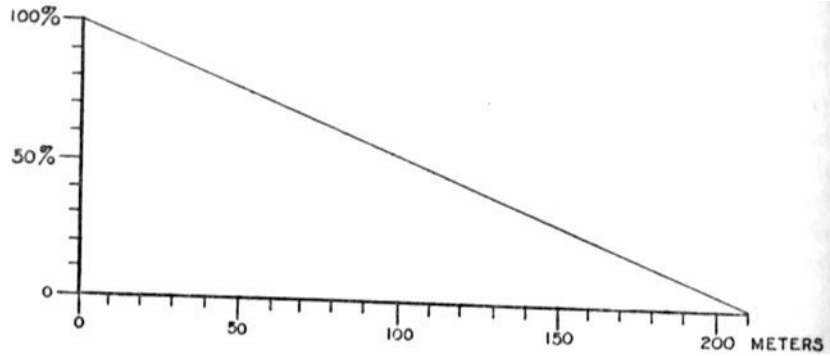
For the 105-mm. howitzer high-explosive shell, $D = 1200/4.77r^2 = 252/r^2$.

In shrapnel fire, every ball that has a striking energy of 8 mkg., sufficient to penetrate a pine board 2½ cm. thick, is considered as being adequate to disable a man. This standard cannot be applied to high-explosive shell fragments because of their jagged and irregular form, and the smaller weight of steel when compared to lead. General Rohne considers that a striking energy of 6.5 will be sufficient for a steel fragment. This striking energy is equal to the weight times the square of the velocity of the fragment. For the 77-mm. gun high-explosive shell, an initial velocity at the point of burst of 600 m/s is taken; for the 105-mm. howitzer high-explosive shell, a velocity of 800 m/s is taken.

While the fragments will vary considerably in weight and size, they may be sorted into lots. General Rohne, therefore, sorted them into five lots having an average weight of 15, 10, 5, 2½ and 1¼ grams, respectively. He then determined at what distance from the point of burst each lot will have a striking energy of 6.5 mkg. The result is tabulated below:

Average weight of lot in grams	Per cent. of total fragments	Distance from point of burst at which striking energy is sufficient.	
		77-mm. gun high-explosive shell	105-mm. how, high-explosive shell
15	15	170 m.	180 m.
10	35	120	129
5	20	67	75
2½	20	33	38
1¼	10	11	15

From this table, we may determine the per cent. of the total number of fragments that are effective at varying distances from the point of burst. This is shown in graphical form in the following graph:



From this graph it will be seen that practically all the fragments are effective at a distance of 11 metres from the point of burst; approximately 50 per cent. are effective at 100 metres, while only 20 per cent. are effective at 175 metres from the point of burst.

By multiplying the density of fragments per square metre by the per cent. of effective hits obtained from the graph, General Rohne determined the number of effective hits per square metre at varying distances from the point of burst. The result is shown in the following table:

Calibre of high-explosive shell	Distance from point of burst 10	20	30	40	50	75	100
77-mm.....	5.60	1.33	0.56	0.30	0.17	0.067	0.031
105-mm.	2.42	0.57	0.24	0.103	0.077	0.030	0.014

From a comparison of these figures, it might be concluded that the 77-mm. gun high-explosive shell is more effective than the 105-mm. howitzer high-explosive shell. But this is not exactly correct, because the ground pattern for the howitzer will cover a greater beaten area than the gun shell. For example, if it is assumed that a density of 0.1 effective hit per square metre is adequate, then the distance from the point of burst for effective fragments is 63 m. for the 77-mm. gun high-explosive shell, and 45 m. for the 105-mm. howitzer high-explosive shell. Based on these distances, the area of the ground pattern will be 877 sq. m. for the 77-mm. gun high-explosive shell and 2030 sq. m. for the 105-mm. howitzer high-explosive shell. In other words, the ground pattern of the 105-mm. howitzer high-explosive shell is 2.3 times as large as that of the 77-mm. gun high-explosive shell.

Knowing the density of effective hits, we may determine the probable per cent. of effective hits on any target figures located within the area of the ground pattern. Thus, at 25 m. from the point of burst, the probable number of hits on a standing man is 0.37. Therefore, the chances of not getting a hit on a man at 25 m. from the point of burst are 8 to 3 for the 77-mm. gun, and 3 to 1 for the 105-mm. howitzer. But since the ground pattern of the 105-mm. howitzer shell is approximately 2½ times greater than that of the gun, the probability of the man being within the area of the ground pattern is greater for the howitzer than for the gun. Furthermore, the size of the ground pattern increases with the angle of fall which for any given range is greater for the howitzer than for the gun.

Another factor which affects the size of the ground pattern is the slope of the ground at the point of impact. For example, the combination of a forward slope of 45º and an angle of fall of 15º will produce an angle of impact of 60º, and the size of the ground pattern will be that corresponding to an angle of fall of 60º. In this case, the effect of the 77-mm. gun will be at a minimum, since all fragments are intercepted by the ground, while that of the 105-mm. howitzer will be near its maximum.

General Rohne points out that whereas many of his assumptions are approximate, the method of investigation which he has pursued is theoretically sound. The number of fragments and their weight, as well as the exact angles of opening, should be determined by experiment. With these data determined, the study may be solved practically. If this is done, officers will have a better understanding of the fragment effect of high-explosive shell-fire. Rohne takes exception to an article which appeared in numbers 4 and 5, 1925, of the *Artilleri-Tidskrift,* wherein the author stated that for the 7-cm. high-explosive shell, the effective density fell below 1 hit per square metre at 10 metres from the point of burst, and the striking energy of fragments was insufficient at 35 metres from the point of burst. In his study, General Rohne found that at 10 metres from the point of burst, the effective density was 5½ times greater than indicated by the Swedish author, and that 50 per cent. of the fragments had an adequate striking energy at 100 metres from the point of burst.

General Rohne concludes his study by pointing out that before we can correctly employ shell-fire, we must first have a proper understanding of its effect.

"Motor Transport for Light Field Artillery," by Dr. Gustav Grafer, formerly Lieutenant of Reserve.

This is a summary of the article by Captain W. B. Dunwoody

on the subject of motorization of field artillery which appeared in the July-August, 1925, number of the FIELD ARTILLERY JOURNAL. Doctor Grafer points out that German artillerymen can learn much by following our (United States) experiments and concludes that the problem of motorization of Field Artillery is still far from a satisfactory solution.

"Rotational Energy of Projectiles," by Ludwig Szalber, C.E. This is a translation of an article which appeared in a Hungarian journal. The author points out that the amount of rotational velocity of a projectile is generally overestimated. He then describes a method for deducing the rotational energy of a projectile. The known factors are the initial energy (mass times initial velocity squared) and the twist of rifling expressed in calibres. The final equation deduced is:

$$E_r = \frac{E_0}{0.2\lambda^2}$$

in which E_r is the rotational energy, E_0 the initial energy, and λ is the twist of rifling expressed in one turn in so many calibres. Applying this equation to the German Mauser rifle, the author finds the rotational energy developed to be 2.14 mkg.

BOOK REVIEWS

THE DARDANELLES.—A Condensed Study. By Captain W. D. Puleston, U. S. Navy. United States Naval Institute, Annapolis. Cloth, 7″ × 10″, 154 pages, 68 diagrams. Price $2.50; $2.00 to officers of the Army, Navy, etc.

This book is what its title indicates—A Condensed Study of the Dardanelles Expedition. The reasons why the Dardanelles Expedition was undertaken are so complex, and the operations themselves are so intricate, involving simultaneous operations at a number of points, that the student has been confronted by the necessity for a considerable amount of reading and study in order to obtain a grasp of this expedition. Captain Puleston has undertaken to condense the story of this expedition and focus the attention of the reader upon only the most salient features of the campaign.

This expedition furnishes the best, if not the only recent, historical example of the forced landing of a considerable force upon a hostile shore. For this reason, the operations have a peculiar value to the military student, and are deserving of more attention than they have generally received. We have not in our service any well thought-out detailed plan, involving the coöperation of the Army and Navy, which would be essential to the success of a forced landing. Such coöperation cannot be secured over-night. A carefully prepared plan and the education of the personnel of both services is essential to success. Captain Puleston has realized the importance of this fact, and has endeavored to arouse the interest of American officers by the preparation of his study. It is highly desirable that this book be read by every officer of the Army and Navy.

The Dardanelles Expedition is not classed as a successful operation. The reasons for its failure are many. Captain Puleston's text is so arranged as to focus the attention of the reader upon some of the reasons for the failure of the operation. Field Artillerymen will readily draw three inferences from the text. First, unobserved artillery fire is practically useless. Second, Field Artillery methods of conduct of fire, used by the Field Batteries in constantly changing their positions, are admirably adapted to the attack of moving targets on water. Third, the support of the initial landing by naval artillery fire is essential, and this support, as quoted below, is effective only as the methods of adjustment and conduct of fire conform to the general practice of the Field Artillery.

It is particularly noticeable that in the latter operations in the Dardanelles, after the Navy had adopted what approximated field

artillery methods of observation and conduct of their fire, the infantry found it possible to capture a trench with very little loss which up to that time had proved invincible. General Hamilton in a letter to the author of the present volume, said: "As a naval officer, you should not dismiss so cursorily this point of the increased efficiency of the ship's artillery. Until quite the end of the expedition, the whole system of gunnery, signalling, etc., were so entirely different that there was actually no coördination. Just at the very end this was at last successfully established by a brilliant Artillery Officer in conjunction with the Naval people and the results were astonishing. The Turkish trenches, which were taken with little loss after a ship's bombardment (which would have been entirely inefficacious previously) were trenches which time after time we had assaulted without making any impression upon them."

The book is illustrated with sixty-eight plates, which make the highly condensed text, already readable, easy of comprehension. Several of these plates, by graphically comparing distances with those already familiar to the American reader, materially assist in a ready understanding of the many intricate problems with which the British were confronted.

It is to be hoped that the excellent work which Captain Puleston has done in presenting this important operation in such easy assimilable form will give rise to increased thought and study by our services of joint Army and Navy action in forced landings.

WM. J. SNOW,
Major-General, U. S. Army,
Chief of Field Artillery.

FIELD ARTILLERY MANUAL.—By Captain Arthur A. Wilson, F. A. 5″ × 7½″. Volume I, 1265 pages, price $3.50. Volume II, 1460 pages, price $5.70. George Banta Publishing Company.

Volume I covers primarily those subjects in which officers must instruct noncommissioned officers and enlisted men, also including such other subjects as are taught in the basic course of Field Artillery units of the Reserve Officers' Training Corps and the Red and White courses of the Citizens Military Training Camps.

Volume II includes subjects given in the advanced course of the Field Artillery units of the Reserve Officers' Training Corps and the Blue course of the Citizens Military Training Camps and subjects of a more advanced nature.

The method of treatment is, where applicable, to give the wording of the Training Regulations covering the subject in question, supplementing this with explanations by the author and additional

illustrations and diagrams. The official text is readily distinguished from the author's additions by a difference in type.

The subject of Artillery Firing is given more attention than any other subject, 308 pages being devoted to this in Volume II. The subject of Organization, Command and Tactics is given 282 pages.

One cannot but be impressed with the completeness and the thoroughness of the work. The two volumes constitute a veritable encyclopedia of field artillery information and they are, without doubt, destined to meet most satisfactorily the insistent demand for texts for the Field Artillery Reserve Officers' Training Corps units.

The bulk of the work is impressive, yet there appears to be nothing therein that is irrelevant or superfluous for the skilled artilleryman. This very bulk, under these conditions, is of subtle value to the arm since it should impress Reserve Officers' Training Corps Students, Reserve and National Guard Officers, as well as Regulars, that the expert artilleryman must have a broad training, and that his duties are not to be learned except by a generous combination of time, intellegence, and hard work.

Both volumes are indexed, a feature which will be appreciated by those who have searched through a number of regulations, sometimes in vain, for a particular paragraph or statement.

The work is highly recommended to regular officers of Field Artillery, as well as to officers of the other Field Artillery components of the Army.

HANDBOOK FOR TANKS.—By Captain D. F. Heigl, Instructor Technical High School, Vienna. 4¾″ × 6½″. 400 pages. Published by J. F. Lehmann, Munich, 1926. Price 12 marks.

This handbook is a campanion to the Navy and Air Service handbooks published by Lehmann's and treats the subject in a similar manner. Captain Heigl, a constructing engineer and former officer, is recognized as an expert on the technic and tactics of tanks. He has carefully sifted out a large mass of material, scattered through numerous official and private sources, much of which has heretofore been of a secret nature. The book is profusely illustrated, containing 105 half-tone pictures and over 300 excellent drawings and sketches. It is divided into three parts.

Part I is of a technical nature. It discusses the construction and operation of tanks, their armament and service, and their mechanical powers and limitations. By means of numerous line drawings, the details of construction of different types of tanks are presented. The manner in which tanks differ from other motor vehicles, the technical considerations affecting motor, transmission,

caterpillar traction, stearing mechanism and armored protection, are shown.

Part II is an intelligence section which is designed to assist an officer in identifying and recognizing the tanks of different armies, and to determine their combat efficiency and vulnerability. In 40 plates, 28 different types of tanks are shown graphically. Each plate gives, in plan and elevation, the location of the armament, motor, fuel tanks and the vulnerable parts of the tank. The means by which the vulnerable parts may be attacked are also shown graphically by conventional signs indicating whether by flame-thrower, hand-grenade, small-arms fire, armor piercing machine gun fire, or different calibres of artillery fire. In addition, an airplane view of the particular tank is presented, showing how it would appear in an airplane photograph with the light coming from two principal directions.

Part III discusses the tactical employment of tanks and the tactics of anti-tank defense. For the Field Artilleryman, this is by far the most interesting and instructive part of the handbook. Of particular interest are the chapters on anti-tank defense by antitank guns and the artillery of general and direct support. The anti-tank gun is considered the principal weapon for combating tanks. The author mentions that at the battle of Soissons on July 18, 1918, the Germans put out of action 62 out of 102 tanks, and on July 19, 50 out of 91 tanks, principally by the fire of anti-tank guns. In the battle of Cambrai on November 17, 1917, a single gun commanded by a German artillery officer and located near the village of Floquires, put out of action 16 British tanks, practically bringing the British tank attack to a stop at this point. This action and the great bravery of this officer were mentioned in dispatches of Field Marshall Haig. Another interesting observation made by the author is the suitability of anti-aircraft guns for anti-tank defense.

For the artillery of general support, the author recommends zone fire on the hostile tank assembly and assault positions, using high explosive shell with instantaneous or delay action fuze. The shrapnel is considered ineffective, but gas shell, if available in sufficient quantity, promises good results through the demoralization and disorganization which it produces. As soon as the approach of hostile tanks is discovered, the author recommends defensive barrages or concentrations laid down on predicted points along the lane of tank approach. On account of the mobility of the modern tank, the author does not believe that observed fire on moving tanks, conducted with indirect laying from rear observation posts, promises effective results. For the artillery of general support, he prefers fire on successive barrier lines so as to disrupt the tactical cohesion

of the hostile tank formations, and thereby halt their advance. The subsequent destruction of those halted tanks is then left to the direct fire of the anti-tank guns. The artillery of direct support is not to participate in anti-tank defense until the hostile tanks have succeeded in penetrating the position. For this reason the guns of these batteries must be prepared to deliver fire to the flank and rear on any hostile tanks that have penetrated the main line of resistance.

The author also gives warning that in a well prepared tank attack, the enemy will endeavor to blind our located artillery observation posts by smoke. For this reason all artillery observation posts near the main line of resistance must be well camouflage, and on all fronts where the terrain is suitable for a hostile tank attack, auxiliary artillery observation posts must be reconnoitered and selected in advance but not occupied until the hostile tank attack is discovered.

AIRMEN AND AIRCRAFT, AN INTRODUCTION INTO AERONAUTICS.—By Major Henry H. Arnold, A.S., U. S. Army. 6″ × 8½″. 216 pages. Price $3.50. The Ronald Press Company, New York City.

This book, one of the series comprising the Ronald Aeronautic Library, is intended as an introduction to aerial navigation. Its main purpose is to set forth in simple and non-technical terms certain aspects of aeronautics which are believed to be of particular interest to those not initiated into the mysteries of flying.

Beginning with the mythology relating to this subject and a description of the early authentic experiments, the developments in balloons and aircraft are traced to the present day. The military and commercial achievements are discussed both past and present, as well as some prophecy regarding possible future developments.

Famous airplane and seaplane flights are described as are also the exploits of the most illustrious World War fliers. One chapter is devoted to the non-technical discussion of aeronautics and the mechanical means employed.

Those entertaining ambitions of learning to fly will find the chapters on "Making Army Aviators," "Balloon and Airship Pilots" and the appendecies "Qualifications for Air Pilots," "Courses of Flying Instruction, U. S. Army Air Service" and "Courses of Flying Instruction, U. S. Navy," of particular interest.

Throughout the book, the subjects are so treated as to retain the interest of the reader.

CURRENT FIELD ARTILLERY NOTES

Knox Trophy

As the JOURNAL goes to press, it is learned that for the year 1926 the Knox Trophy has been won by Battery "C," 4th Field Artillery, Fort Davis, Canal Zone. More detailed information will be given in a later issue.

New Target Practice Reports

New Forms 820 and 820-A, Ordnance Department have been prepared to replace Form 820, Quarterly Report of Field Artillery Target Practice.

Form 820; requires report of information desired essentially by the Ordnance Department, this form to be submitted in duplicate and used as a cover page for collected Forms 820-A.

Form 820-A; requires all data pertaining to the firing problem, including the comments of the officer criticizing the problems and those of the officer supervising problem.

A much more complete and intelligent report of the problem is secured than was the case in the old form of report and if carefully prepared will permit of close analysis by higher authority and give an excellent idea of just what results are being obtained in service practice by all batteries.

Only one copy of above report is to be submitted for each problem.

105-mm. Howitzer

The Aberdeen Proving Ground soon will ship to Fort Bragg, N. C., a model of a 105-mm. Howitzer, for test by the Field Artillery Board. The Proving Ground has had this gun under test for some time and has overcome known defects so that the gun is now in satisfactory condition for test by the Service.

9.2-Inch Howitzer

It has been decided to make surplus and dispose of present stocks of 9.2-inch Howitzer guns and ammunition. A small number of these howitzers was acquired during the World War, but their capabilities have proved not to justify the cost of their maintenance.

Anti-Aircraft Gun Control

The combined Ordnance and Coast Artillery tests of new antiaircraft matériel at the Aberdeen Proving Grounds have now reached

their final stages and many of the new articles of equipment have proven highly satisfactory. One of these is the new fire-control instrument for the use of the larger calibre guns against aircraft. This instrument is so designed that, given the altitude of the plane, which is easily determined, the only action required is for one observer to follow the target's elevation and another to follow its direction, both through telescopes mounted on the instrument. The movements of these two telescopes control a mechanism which transmits electrically all firing data to the gun or guns. The data comprise the elevation and direction to be given the gun, so that the shell fired will intersect the path of the plane. The same instrument mechanically indicates the exact fuze setting that will explode the shell at the moment it reaches the point of intersection of the course of the plane and the shell. This fire control instrument mechanically moves pointers on the gun and on the fuze-setting machine. All that is required of the gun crew is to keep the gun set at the elevation and direction automatically indicated and to feed the ammunition into the fuze-setting machine and from there into the gun. The gun is a semi-automatic loader which has reached a rate of fire of 27 shots per minute.

Army Riding Team

The United States Army Horse Show Team, which, during September rode in the Syracuse and Rochester Shows, is composed of the following officers:

Captain Francis H. Waters, Cavalry, Team Captain.
Captain William B. Bradford, Cavalry.
Captain William H. Colbern, Field Artillery.
Captain Norman J. McMahon, Field Artillery.
Lieutenant William H. W. Reinburg, Cavalry.

During the two shows the team, in competition with civilian and other military riders, won a total of sixty-seven ribbons, of which nineteen were for first place. Some of the classes won by the Army Team were: open jumping, five foot jumping, officers charger, team jumping, triple bar, trooper's mount, novice light weight hunter, pairs of hunters, officer's mounts, and the Sesqui-centennial Plato.

The fact that the Team's entire string of horses, except "Folsentor" owned by Lieutenant Reinburg, and "Buckaroo" and "Hindustan" owned by Mr. Pierre Lorillard, are government horses, indicates what intelligent training and careful riding can accomplish. "Nigra," the biggest individual winner, "Dick," "Joffre," and "Jacksnipe" are all veterans, having seen active

service on the battlefields of France ten years ago, and later having taken their places in the horse ranks of the American Expeditionary Force. "Logical" is a thoroughbred mare which was donated to the Army in 1921 by the Kentucky Jockey Club. "Fred Harvey" and "St. Paul" were both sired by Remount stallions in Virginia. "Proctor" was formerly one of General Pershing's stable.

The participation of this Horse Show Team in the Rochester and Syracuse Shows was without any expense whatsoever to the Government, the cost having been borne by individual friends of the Army.

After the Syracuse Fair, the team returned to Fort Riley to continue their training. The team will enter the New York Horse Show, November 22-27, 1926, where they will be in competition with six foreign teams.

There follows a short biography of each rider:

Captain Francis H. Waters, Cav., captain of the U. S. Army Horse Show Team is an instructor in the Department of Horsemanship at the Cavalry School, Fort Riley, Kans. He graduated from the Cavalry School Troop Officers' Class in 1923, and from the Cavalry School Special Advanced Equitation Class in 1924. He was captain of the Horse Show Team sent East from Fort Riley last year, and since that time has been in charge of the training of horses for show work at the Cavalry School.

Captain William B, Bradford, Cav., graduated from Virginia Military Institute in 1916, from the Cavalry School Troop Officers' Class, Fort Riley, Kans., in 1921, and from the French Cavalry School, Saumur, France in 1925. He is now an instructor in the Department of Horsemanship at the Cavalry School.

Captain William H. Colbern, F. A., graduated from the Battery Officers' Course, Field Artillery School at Fort Sill, Okla., in 1924. From the Cavalry School Troop Officers' Course, Fort Riley, Kans., in 1925, and from the Cavalry School Special Advanced Equitation Class in 1926. He was a member of the Cavalry School Team that rode in the American Royal Horse Show in Kansas City, Mo., last year.

Captain Norman J. McMahon, F. A., graduated from the Basic Course, Field Artillery School, Fort Sill, Okla., in 1922, and from the Cavalry School Troop Officers' Class in 1925. He is now an instructor at the Field Artillery School.

Lieutenant William H. W. Reinburg, Cav., graduated from the U. S. Military Academy in 1917 and from the Cavalry School Troop Officers' Class, Fort Riley, Kans., in 1926. He is to be a student in the Cavalry School Special Advanced Equitation Class this coming winter.

Olympic Riding Team

At a meeting September 29, 1926, of the War Department Olympic Riding Team Committee, consisting of Major-General William J. Snow, Chief of Field Artillery; Major-General B. Frank Cheatham, Quartermaster General; Major-General Robert H. Allen, Chief of Infantry; Major-General Herbert B. Crosby, Chief of Cavalry; Colonel Henry C. Whitehead, representing the Remount Service; and Major Allan C. McBride, Field Artillery, preliminary steps were taken to provide for the organization and development of a riding team to represent the United States in the 1928 Olympiad at Amsterdam.

Consideration was also given to arrangements for continued representation in furture Olympiads in order to avoid the difficulties of the past when separate action was taken for each occasion. As a result there was wasted effort in repetition of initial steps for selection of personnel and procurement of mounts. Furthermore, the shortness of preparation always caused the American team to be out-mounted.

The team will be open to all components of the Army and it is hoped that there will be a number of entrants from the National Guard and the Reserves. Tryouts will be held at various Posts next summer, the team later being assembled at Fort Riley, Kansas, for a year's training prior to the Amsterdam games.

A sub-committe was appointed to arrange further details of organization and administration.

The General Committee was of the opinion that an officer should be selected to take charge of the team who should not be a competitor, but should have charge of the training of both riders and horses, and should control them in the competition.

Furthermore, arrangements were made for the permanency of the War Department Olympic Riding Team Committee, and the inauguration of a policy for continuation of participation.

The expense of the Olympic Riding Team to the Government will be only the usual routine maintenance expenses in connection with training, such as forage, care of horses, and wear and tear on equipment. Private funds will cover any unusual expenses such as travel for men and horses, purchase of expensive horses and equipment, and participation in horse shows.

Colonel R. H. Williams, Jr., President of the American Remount Association, and a member of the War Department Olympic Riding Team Committee, pledged the hearty coöperation of the American Remount Association in this effort to have the United States properly

and worthily represented in the horse events of the Olympic Games.

Later, due to the press of personal business and the fact that he will be out of the country a large part of the time, Colonel Williams requested that Mr. Pierre Lorillard be appointed in his place. This was done.

First Cavalry Division Horse Show

This horse show, staged at Fort Bliss, Texas, October 26-28-30, 1926, was most successful and from the standpoint of numbers of entrants and quality of animals and performance, was probably the most pretentious military horse show ever staged in this country. The Eighth Cavalry won more points than any other organization.

The 82d Field Artillery Battalion was well represented among the winners. First and third places in "Best Cavalry Horse" were won by entries from the 82d F.A. Polo Stables. To even up for this, the 7th Cavalry won first in "Best Artillery Horse," second and third places being won by Headquarters Battery and Battery A, 82d Field Artillery Battalion, respectively.

"Horses suitable to become Polo Mounts" was won by Captain Bridges on Bob Bird, third place going to Blanco, an 82d F.A. Polo Stables entry ridden by Major Sands. "Polo Bending Race" was won by Captain Bridges, "Best Polo Pony Heavy Weight" went to an 82d F.A. Polo Stables entry, Buster, ridden by Captain Bridges. First place in "Group of three Polo Ponies" was won by Artillery entries, Major Sands and Lieutenant Jenkins on 82d F.A. Polo Stables horses and Captain Bridges on Hussie.

Second place in the "Ladies' Novice Class" was won by Mrs. Charlton on a mount of Captain Bridges. Headquarters Battery won second place in the "Light Wagon" class. Major Sands placed third in "Open Jumping" on Storm King. Third place in the "Corinthian Class" also went to the Artillery, the riders being Major Sands, Lieutenant Robinson and Corporal Todd, mounted on Storm King, Captain Shea's Gray, and Battery B's Jim, respectively.

Battery B captured the "Artillery Section" with Batteries A and C second and third.

U. S. International Rifle Team

Following the defeat of the American International Team at the hands of the Swiss last year, a determined effort is being made to bring back to the United States the world's rifle championship when the marksmen representing the world's leading nations meet in Rome, Italy, in 1927. Headed by the National Rifle Association

the various groups interested in straight shooting are endeavoring to raise a fund of $15,000 which will make it possible not only to hold tryouts which will reveal the best marksmen in the country, but to give the team itself intensive training once its personnel has been selected.

Virtually all of the services as well as members of the National Guard and the Organized Reserve have displayed interest in making the 1927 team the best that ever has represented the United States. All of these groups are therefore being asked to help the civilians, who make up the bulk of the National Rifle Association, raise the funds necessary to properly prepare an American International Team.

Contributions may be sent to the Field Artillery Journal or may be mailed directly to the National Rifle Association, 1108 Woodward Building, Washington, D. C. In our advertising pages will be found a form for use of those who wish to contribute.

Polo

Washington, D. C.—The War Department Polo Association closed a very successful polo season with their annual fall tournaments. The interest of the civilian public, as well as of the officers stationed in the vicinity, has been keen throughout the year. Polo is played in Washington on fields located in Potomac Park and more than 80,000 spectators watched the games during the season.

A high-goal and a low-goal tournament were held in September and early October. The high-goal tournament was open to teams whose handicaps were six or more. A team having a handicap of less than six goals was also allowed to enter upon assuming a six-goal handicap. The War Department Whites won the high-goal tournament from the 16th Field Artillery in a spirited final game which brought out the largest crowd of the year.

The results of the high-goal tournament follow:

1st Preliminary

War Dept. Greens	*vs.*	6th Field Artillery, Ft. Hoyle
Capt. Woodward	No. 1	Capt. Willis
Capt. Wipprecht	2	Lieut. Reed
Capt. Houghton	3	Lieut. Cort
Maj. Baird	Back	Lieut. McFarland
0	Goals by handicap	0
8	Goals earned	4
8	Total	4

2d Preliminary

War Dept. Whites		*vs.*		3d Corps Area, Baltimore, Md.
Capt. Kilburn		No. 1		Capt. Hamby
Maj. Parker		2		Maj. Blunt
Col. Morris		3		Col. Bell
Col. Margetts		Back		Maj. Greenwald
0		Goals by handicap		6
14		Goals earned		2
—				—
14		Total		8

3d Preliminary

16th Field Artillery, Ft. Myer		*vs.*		3d Cavalry, Ft. Myer
Lieut. Benson		No. 1		Maj. Chaffee
Lieut. Van Wyck		2		Lieut. Elms
Capt. Tate		3		Capt. Boykins
Lieut. Sharp		Back		Capt. Irving
0		Goals by handicap		3
12		Goals earned		4
—				—
12		Total		7

4th Preliminary

Maryland Polo Club, Bye

Semi-finals

16th Field Artillery		*vs.*		War Dept. Greens
Lieut. Benson		No. 1		Capt. Woodward
Lieut. Van Wyck		2		Capt. Wipprecht
Capt. Tate		3		Capt. Houghton
Lieut. Sharp		Back		Maj. Baird
0		Goals by handicap		2
9		Goals earned		2
—				—
9		Total		4

Semi-finals

War Dept. Whites		*vs.*		Maryland Polo Club, Baltimore, Md.
Capt. Kilburn		No. 1		Redmond Stewart
Maj. Parker		2		Edward Warfield
Col. Morris		3		Major Duvall
Col. Margetts		Back		Dudley Riggs
0		Goals by handicap		6
14		Goals earned		4
—				—
14		Total		10

The final game of the high-goal tournament brought out the largest crowd ever to witness a polo game in Washington. Throughout the year in weekly practice games these two teams had met and it had always been a nip-and-tuck affair. The edge probably was with the War Department and many rooters for each side were present. Lieutenant Van Wyck was playing his first tournament in fast as well as high-goal polo. Colonel Margetts, for the Whites, played

a superb game both offensive and defensive. The other players carried their share of the load throughout the game.

Finals

War Dept. Whites	*vs.*	16th Field Artillery
Capt. Kilburn	No. 1	Lieut. Benson
Maj. Parker	2	Lieut. Van Wyck
Col. Morris	3	Capt. Tate
Col. Margetts	Back	Lieut. Sharp
0	Goals by handicap	3
11	Goals earned	6
11	Total	9

A low-goal tournament open to teams with a handicap not exceeding seven goals followed the high-goal tournament. The following teams competed:

War Department Yellows, Washington.
War Department Greens, Washington.
6th Field Artillery, Ft. Hoyle, Md.
3d Corps Area, Baltimore, Md.
Maryland Polo Club, Baltimore, Md.
16th Field Artillery Reds, Ft. Myer, Va.
16th Field Artillery Blacks, Ft. Myer, Va.
3d Cavalry, Ft. Myer, Va.

1st Preliminary

Maryland Polo Club	*vs.*	6th Field Artillery
R. C. Hoffman	No. 1	Capt. Willis
Edw. Warfield	2	Lieut. Cort
Maj. Duvall	3	Lieut. Keefer
Redmond Stewart	Back	Lieut. McFarland
7	Goals by handicap	0
2	Goals earned	12
9	Total	12

2d Preliminary

3d Corps Area	*vs.*	War Dept. Greens
Lieut. McGruder	No. 1	Capt. Woodward
Capt. Hamby	2	Capt. Wipprecht
Capt. Keech	3	Capt. Houghton
Maj. Greenwald	Back	Maj. Baird
4	Goals by handicap	0
1	Goals earned	9
5	Total	9

3d Preliminary

16th Field Artillery Blacks	*vs.*	War Dept. Yellows
Lieut. Benson	No. 1	Capt. Kilburn
Lieut. Van Wyck	2	Asst. Secty. Robinson
Capt. Tate	3	Capt. Regnier
Lieut. Palmer	Back	Maj. Hoyle
0	Goals by handicap	1
7	Goals earned	1
7	Total	2

4th Preliminary

16th Field Artillery Reds	*vs.*	3d Cavalry
Lieut. Pence	No. 1	Maj. Chaffee
Lieut. Barksdale	2	Lieut. Elms
Lieut. Hasbrock	3	Capt. Boykins
Lieut. Johnson	Back	Capt. Irving
4	Goals by handicap	0
1	Goals earned	19
5	Total	19

Semi-finals

16th Field Artillery Blacks	*vs.*	3d Cavalry
Lieut. Benson	No. 1	Maj. Chaffee
Lieut. Van Wyck	2	Lieut. Elms
Capt. Tate	3	Capt. Boykins
Lieut. Palmer	Back	Capt. Irving
0	Goals by handicap	3
10	Goals earned	4
10	Total	7

Semi-finals

6th Field Artillery	*vs.*	War Dept. Greens
Capt. Willis	No. 1	Capt. Woodward
Lieut. Reed	2	Capt. Wipprecht
Lieut. Cort	3	Capt. Houghton
Lieut. McFarland	Back	Maj. Baird
0	Goals by handicap	0
7	Goals earned	2
7	Total	2

The Sixth Field Artillery won their semi-final match easily, the Greens were never able to get started. The Sixth Field Artillery lost Lieutenant Reed from the balance of the tournament due to a broken finger.

Finals

16th Field Artillery	*vs.*	6th Field Artillery
Lieut. Benson	No. 1	Capt. Willis
Lieut. Van Wyck	2	Lieut. Cort
Capt. Tate	3	Lieut. Keefer
Lieut. Palmer	Back	Lieut. McFarland
0	Goals by handicap	0
10	Goals earned	3
10	Total	3

Individual cups were presented to the members of the winning teams by Brigadier-General S. D. Rockenbach, Commanding General, District of Washington. The success of the fall tournament was largely due to the splendid assistance rendered the War Department Polo Association by General Rockenbach's command.

Washington has a prominent place in the polo activity of the southeastern circuit and Army polo has accomplished much to put the game before a large public.

Hawaiian Islands.—The 1925 polo season came to a close in the Hawaiian Islands on September 5, 1926. During the summer, polo was played twice a week at Kapailonai Park. The Inter-Island tournament was held the latter part of August and the first week in September.

Three teams were entered—Oahu, Maui, and the Army.

The first game was played on August 21st between Oahu and the Army. The Army was victorious. The second game was between Maui and the Army. This game was played on August 28th. The Army was again victorious. Along with this game went the Inter-Island Cup. And that in brief is the story of the first victory of an Army team in the Hawaiian Islands. For about nineteen years the Army has had its eyes on the Inter-Island Cup, but heretofore has been unable to connect with it.

The team deserves great credit for their victory, particularly Major Patton, who for the last two seasons has been captain and coach. One other player, Captain White, played on the team last year when all three teams tied for the championship.

Mr. Walter F. Dillingham, a top polo player of the Oahu team and a thorough sportsman, must be given some of the credit for the Army's victory, as it was through his courtesy and that of the Hawaiian Racing and Polo Club that the Army was permitted to keep their ponies at Kapailonai Park all summer and play against good fast competition, a most important factor in the making of a good polo team.

The Maui team was composed of a father and three sons, Mr. F. F. Baldwin, Sr., Edward Baldwin, Lawrence Baldwin and Asia Baldwin.

In presenting the Inter-Island Cup to the Army team, Mr. Dillingham said in part: "I can't say that I get a great thrill in defeat, however, I never feel badly when my team is defeated by a team that has played hard clean polo such as your team has."

Not the least gratifying feature of the polo situation in the Hawaiian Islands is the spirit of cordiality and good sportsmanship which exists between the Army and the civilian teams.

First Game, August 21, 1926

Oahu (8)	Army (9)
No. 1 Jack Walker	No. 1 Lieut. L. E. Jacoby, F.A.
2 Clarence Cooke	2 Lieut. A. S. Reynolds, F.A.
3 Walter Dillingham	3 Maj. G. S. Patton, Jr., G.S.
Back Jay Gould	Back Capt. W. J. White, F.A.

Mr. King Baggott, Referee.

Second Game, August 28th

Maui (7)	Army (9)
No. 1 Asia Baldwin	No. 1 Lieut. L. E. Jacoby, F.A.
2 Lawrence (Choo) Baldwin	2 Lieut. A. S. Reynolds, F.A.
3 Frank F. Baldwin, Sr.	3 Maj. G. S. Patton, Jr., G.S.
Back Edward Baldwin	Back Capt. W. J. White, F.A.

Walter F. Dillingham, Referee.

Third Game, September 5th

Maui (12)	Oahu (6)
No. 1 Asia Baldwin	No. 1 Jack Walker
2 Lawrence (Choo) Baldwin	2 Clarence Cooke
3 Edward Baldwin	3 Walter Dillingham
Back F. F. Baldwin, Sr.	Back Jay Gould

Captain W. J. White, Referee.