

ANNUAL REPORT

OF THE

COMMANDANT

GENERAL SERVICE AND STAFF COLLEGE

FOR THE

SCHOOL YEAR ENDING

AUGUST 31, 1904.

Staff College Press 1904.

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EXPLANATORY.

General Order 115, War Department, current series, reorganized the General Service and Staff College, and made thereof two separate schools, "The Infantry and Cavalry School" and "The Staff College".

Considerable investigation and discussion preceded this reorganization. It would seem advisable to preserve in permanent and available form, for the information of future investigators, all of the reports and data especially relating to this reorganization and to the proposed new curricula and system of instruction outlined. in the above mentioned general order.

As appendices (F to O inclusive) to the regular annual report of the college work for the past school year, there will be found printed in the following pages such reports and data as are on file in this office, relating to the change from the General 'Service and Staff College to the Infantry and Cavalry School and Staff College.

To supplement the information obtainable therein, the following data are also here recorded.

Prior to assuming charge of the General Service and Staff College as commandant, the undersigned was ordered to Washington for consultation. He was directed to study the conditions then existing at the college and to make a report upon its requirements in bringing about the enlargement and development enjoined and contemplated in G. O. 155, Headquarters of the Army, 1901.

While en route to the college, an interview was had with Colonel A. L. Wagner, General Staff, who had rendered much valuable service in the develop-

ment of the old Infantry and Cavalry School and was thoroughly familiar with its course and system of instruction. Enlarging and developing this school into a general service and staff college was fully discussed at this interview. Colonel Wagner formulated, in a memorandum, for further consideration, certain views which had been discussed, and most of the substance of that memorandum was embodied in the report which is herein published as appendix "F".

Colonel Wagner's services were subsequently secured as assistant commandant, and, having reported for duty, further discussion was had from time to time with him and the college staff as to the future organization and development of the college.

A return to the old two-year course had been recommended to the War Department, but it was suggested that, instead of having a class matriculate and graduate every two years, one should matriculate and one graduate each year, thereby having always at the institution two classes under instruction, a first and a second class (see appendix "F", pages 65, 66 and 67). This suggestion was concurred in by the College Staff, but some objection was made to the plan because the additional number of instructors and student officers required would too greatly increase the number of officers then on detached service from infantry and cavalry regiments. Colonel Wagner afterwards prepared a substitute plan (devised to accomplish this same and other purposes) and incorporated it in a memorandum for the Commandant (see appendix "H")

These ideas were subsequently adopted in G. O. 115, War Department, current series. During the preparation of this order, Colonel Wagner was ordered to visit Fort Leavenworth for the purpose of discussing with the college staff the contents of said order, and returned to Washington taking with him

the results of the investigation and discussion here had.

The memoranda prepared by the staff, for the use of Colonel Wagner, relating to the proposed infantry and cavalry and general staff courses of instruction, in the General Service and Staff College, will be found in appendixes "H" to "O" inclusive.

It had been recognized that the words "general service" in the name of the college were misnomers, for it was not a general service school but in reality a school for infantry and cavalry officers only, as other branches of the army had their own special service schools. Prior to the preparation of the final draft of G. O. 115, considerable discussion took place as to an appropriate name for the school. It was finally decided, in order to round out and complete, in a systematic and uniform manner, the series of service schools for all arms of the service, to divide the General Service and Staff College into two schools, an "Infantry and Cavalry School", as formerly, and a "Staff College", and to establish a "Signal School", all three to be situated at Fort Leavenworth, to be coordinated under the control of one commandant, with one secretary, and one staff, so far as practicable.

Sufficient time has not been had since the order was published, to organize and provide facilities for the accommodation of the Signal School and its personnel. At the date of this report this school has consequently not yet been established.

J. F. BELL,
Brigadier General, U. S. Army,
Commandant.

Infantry and Cavalry School
and Staff College,
Fort Leavenworth, Kansas,
September 15, 1904.

INFANTRY AND CAVALRY SCHOOL
AND
STAFF COLLEGE.

PORT LEAVENWORTH, KANSAS.

September 15, 1904.

The Chief of Staff,
U. S. Army,
Washington, D. C.

SIR:

In compliance with paragraph 14, General Orders No. 1, War Department, 1904, I have the honor to submit the following report on the General Service and Staff College for the year commencing September 1, 1903, and ending August 31, 1904:

PERSONNEL

The following was the personnel of the college at the beginning of the school course (September 15, 1903).

COMMANDANT

Brigadier General J. Franklin Bell, U. S. Army.

PERSONAL STAFF

1st Lieutenant Malin Craig, 6th Cavalry, *Aide-de-Camp.*

1st Lieutenant Daniel Van Voorhis, 3rd Cavalry, *Aide-de-Camp.*

ASSISTANT COMMANDANT

Major Smith S. Leach, Corps of Engineers.

SECRETARY

Captain Milton F. Davis, 1st Cavalry,

DEPARTMENT OF TACTICS

Major William W. Wotherspoon, 6th Infantry, *Instructor.*

Major Loyd S. McCormick, 7th Cavalry, *Assistant Instructor*.

Captain Charles H. Barth, 12th Infantry, *Assistant Instructor*.

Captain Matthew F. Steele, 6th Cavalry, *Assistant Instructor*,

Captain John D. L. Hartman, 1st Cavalry, *Assistant Instructor*.

Captain Louis C. Scherer, 4th Cavalry, *Assistant Instructor*.

Veterinarian Sidney L. Hunter, 6th Cavalry, *Assistant Instructor*.

DEPARTMENT OF ENGINEERING

Captain Thomas H. Reese, Corps of Engineers, *Instructor*.

Captain Edwin T. Cole, 6th Infantry, *Assistant Instructor*.

1st Lieutenant George M. Hoffman, Corps of Engineers, *Assistant Instructor*.

1st Lieutenant Gilbert A. Youngberg, Corps of Engineers, *Assistant Instructor*.

2nd Lieutenant Wildur R. Willing, Corps of Engineers, *Assistant Instructor*.

DEPARTMENT OF LAW

Major Henry M. Andrews, Artillery Corps, *Instructor*.

Captain Omar Bundy, 6th Infantry, *Assistant Instructor*.

Captain Tyree R. Rivers, 4th Cavalry, *Assistant Instructor*.

Captain Charles Crawford, 20th Infantry, *Assistant Instructor*.

Captain Herbert O. Williams, 5th Infantry, *Assistant Instructor*.

DEPARTMENT OF HYGIENE

Lieutenant-Colonel John Van R. Hoff, Medical Department, *Instructor*.

STUDENT OFFICERS

Babcock, Conrad S. 1st Lieutenant, 3rd Cavalry

Bamberger, Raymond S. 2nd Lieutenant, 7th Cavalry

Boniface, John J., 1st Lieutenant, 4th Cavalry
Brambila, Robert M., 1st Lieutenant, 14th Infantry
Buchan, Fred E., 1st Lieutenant, 3rd Cavalry
Calvert, Robert B., 1st Lieutenant, 24th Infantry
Carson, Lawrence S., 1st Lieutenant, 8th Cavalry
Castle; William A., 1st Lieutenant, 16th Infantry
Chapman, Leslie A. I., 1st Lieutenant, 1st Cavalry
Clark, Peyton G., 1st Lieutenant, 13th Infantry
Coleman, Frederick W., 1st Lieutenant, 13th Infantry
Compton, Goodwin, 2nd Lieutenant, 26th Infantry
Connell, William M., 1st Lieutenant, 7th Cavalry
Cook, Leonard H., 2nd Lieutenant, 15th Infantry
Cooke, Eleutheros H., 1st Lieutenant, 10th Infantry
Coppock, Edward R., 2nd Lieutenant, 3rd Cavalry
Craig, John M., 2nd Lieutenant 12th Infantry
Craig, Malin, 1st Lieutenant, 6th Cavalry
Croft, Edward, 1st Lieutenant, 19th Infantry
Cunningham, Thomas H. ,2d Lieutenant, 8th Cavalry
Dean, Warren, 1st Lieutenant, 15th Cavalry
Dolph, Cyrus A., 1st Lieutenant, 26th Infantry
Dorcy, Ben H., 1st Lieutenant, 4th Cavalry
Elmore, Vincent M. Jr., 1st Lieutenant, 5th Infantry
Erickson:, Hjalmer, 1st Lieutenant, 7th Infantry
Fechet, James E., 1st Lieutenant, 9th Cavalry
Fonda, Ferdinand W., 1st Lieutenant, 10th Cavalry
Ford, Stanley H., 1st Lieutenant, 25th Infantry
Fravel, Ira F., 2d Lieutenant, 24th Infantry
Freeman, George D. Jr., 1st Lieutenant, 21st Infantry
Gibson, Easton R., 1st Lieutenant, 9th Infantry
Gibson, William R., 1st Lieutenant, 3d Infantry
Gordon, Charles M, Jr., 1st Lieutenant, 6th Infantry
Gunster, Walter E., 2d Lieutenant, 7th Infantry
Halpin, Arthur F., 1st Lieutenant, 8th Infantry
Harvey, Walter, 1st Lieutenant, 16th Infantry
Haskell, William N., 2d Lieutenant, 9th Cavalry
Hegeman, Harry A., 1st Lieutenant, 19th Infantry
Hickman, Edwin A.,, 1st. Lieutenant,, 1st Cavalry

Holden, George J., 1st Lieutenant, 10th Infantry
Hughes, William N. Jr., 1st Lieutenant, 13th Infantry
Hunt, William E., 1st Lieutenant, 8th Infantry
Huston, James, 1st Lieutenant, 10th Cavalry
James, John F., 1st Lieutenant, 8th Infantry
Johnson, Frederick C., 1st Lieutenant, 2d Cavalry
Keyes, Edward A., 2d Lieutenant, 6th Cavalry
Kinney, Clifton C., 1st Lieutenant, 9th Infantry
Knight, Harry E., 1st Lieutenant, 1st Infantry
Lawrence, Horatio I., 2d Lieutenant, 20th Infantry
Leonard, Charles F., 2d Lieutenant, 1st Infantry
, McCaskey, Douglas, 1st Lieutenant, 4th Cavalry
McCaskey, Walter B., 1st Lieutenant, 21st Infantry
McKain, Charles L. 1st Lieutenant, 16th Infantry
Macnab, Alexander J., 1st Lieutenant, 25th Infantry
Martin, George C., 1st Lieutenant, 2d Infantry
Massee, Edward K., 2d Lieutenant, 7th Infantry
Mears, Frederick,, 2d Lieutenant, 5th Cavalry
Megill, Sebring C. 2d Lieutenant, 8th Cavalry
Mitchell, Laney M., 2d Lieutenant, 2d Infantry
Morgan, Gad, 2d Lieutenant, 15th Infantry
Naylor, William K., Captain, 11th Infantry
O'Connor, Marr, 2d Lieutenant, 10th Cavalry
Oury, William H., Captain, 24th Infantry
Parker, Allen, 1st Lieutenant, 26th Infantry
Parker, Henry W., 1st Lieutenant, 2d Cavalry
Parrott, Ralph B., 1st Lieutenant, 22d Infantry
Parsons, James K., 1st Lieutenant, 20th Infantry
Partells, Joseph K., 1st Lieutenant, 5th Infantry
Peck, Robert H., 1st Lieutenant, 24th Infantry
Place, Olney,, 2d Lieutenant, 6th Cavalry
Powers, Philip, 1st Lieutenant, 21st Infantry
Reaney, Robert J., 1st Lieutenant, 2d Cavalry
Reed, William L., 1st Lieutenant, 1st Infantry
Rodney, George B., 1st Lieutenant 5th Cavalry
Ross, Tenney, 1st Lieutenant, 3d Infantry
Sheldon, Raymond, 1st Lieutenant, 22d Infantry

Simonds, George S., 1st Lieutenant, 22d Infantry
 Smith, Kirwin T., 2d Lieutenant, 6th Infantry
 Smith, Selwyn D., 2nd Lieutenant, 1st Cavalry
 , Stahl, Henry G., 2nd Lieutenant, 6th Infantry
 Sturges, Edward A., 1st Lieutenant, 5th Cavalry
 Supplee, H. Clay M., 2nd Lieutenant, 19th Infantry
 Tatum., Howard C., 2nd Lieutenant, 7th Cavalry
 Thorne, George E., 1st Lieutenant, 12th Infantry
 Toffey, John J. Jr., 1st Lieutenant, 4th Infantry
 Turner, G. Souiard, 1st Lieutenant, 10th Infantry
 Walton, Romulus F., Captain, 6th Infantry
 Ward, John W., 1st Lieutenant, 15th Infantry
 Wiczorek, George A., 2nd Lieutenant, 2nd Infantry
 Wiegenstein, Henry A., 1st Lieutenant, 25th Infantry
 Winterburn, George W., 1st Lieutenant, 9th Cavalry
 Wygant, Henry S., 1st Lieutenant, 3rd Infantry
 Patajo, Crispulo, 2nd Lieutenant, Philippine Scouts..

The following changes occurred in the personnel during the year':

ASSISTANT COMMANDANT

Major Smith S. Leach, Corps of Engineers, relieved from duty November 1, 1903, and Colonel Arthur L. Wagner, Adjutant General's Department, having reported in compliance with paragraph 24, Special Orders No. 4, War department., 1903, assigned to duty in his stead the same date.

Colonel Arthur L. Wagner, Adjutant General's Department, relieved by telegram. from War Department dated December 29, 1903, to accept detail on the 'General Staff ; left college January 1, 1903,

Major William W. Wotherspoon, 6th Infantry, detailed as acting assistant commandant January 1, 1904.

DEPARTMENT OF ENGINEERING

First Lieutenant Edwin R. Stuart, Corps of Engineers, detailed March 8, 1904, under the provisions of paragraph 9, General Orders No. 1, War Depart-

ment, 1904, as assistant instructor, vice 2d Lieutenant Wildurr Willing, Corps of Engineers, on temporary leave of absence; relieved from duty March 22, 1904..

First Lieutenant George, M. Hoffman, Corps of Engineers, (promoted to captain) relieved from duty May 13, 1904, in compliance with paragraph 5, Special Orders No. 113, War Department, 1904.

DEPARTMENT OF LAW

Major Henry M. Andrews, Artillery Corps, relieved from duty March 5, 1904.

Major Daniel H. Boughton, 11th Cavalry, having reported for duty in compliance with paragraph 16, Special Orders No. 119, Adjutant General's Office, 1903, detailed as instructor March 5, 1904.

Captain D. W. Ryther, 6th Infantry, was detailed as assistant instructor, Department of Law, September 9, 1903, and relieved September 15, 1903 at his own request.

Captain Tyree R. Rivers),. 4th Cavalry, relieved from duty September 28, 1903,

Captain John P. Ryan, 6th Cavalry, having reported for duty in compliance with paragraph 24, Special Orders No. 4, War Department, 1903, assigned as assistant instructor September 28, 1903.

DEPARTMENT OF HYGIENE.

The following were detailed as assistant instructors March 18, 1904, under the provisions of paragraph 9, General Orders No. 1, War Department, 1904:

Captain Paul F. Straub, Medical Department

Captain John H. Stone, Medical Department

Captain David Baker, Medical Department

1st Lieutenant James F. Edwards, Medical Department.

STUDENT OFFICERS

Second Lieutenant Laney M. Mitchell, 2d Infantry, died September 17, 1903,

All student officers were relieved from duty June 27, 1904, pursuant to instructions from War Department, and directed to join their proper station not later than August 31, 1904, with the exceptions noted below :

(1) Pursuant to telegraphic instructions from the War Department, the following, having made the fifteen highest grades, were selected for instruction in the Staff College for the ensuing year:

Buchan, Fred E., 1st Lieutenant, 3rd Cavalry
Castle, W. A., 1st Lieutenant, 16th Infantry
Chapman, Leslie A. I., 1st Lieutenant, 1st Cavalry
Craig, Malin, Captain, 10th Cavalry
Haskell, William N., 2nd Lieutenant, 9th Cavalry
James, John. F., 1st Lieutenant, 8th Infantry
Massee, Edward K., 2nd Lieutenant, 7th Infantry
Mears, Frederick, 2nd Lieutenant, 5th Cavalry
Morgan, Gad, 1st Lieutenant, 7th Infantry
Naylor, William K., Captain, 9th Infantry
Peek, Robert H., 1st Lieutenant, 24th Infantry
Ross, Tenney, Captain, 7th Infantry
Sheldon, Raymond, 1st Lieutenant, 18th Infantry
Thorne, George E., 1st Lieutenant, 12th Infantry
Walton, Romulus F., Captain, 6th Infantry

(2) First Lieutenants Alexander H. Macnab, 2d Infantry, and Harry E. Knight, 1st Infantry, and Second Lieutenant H. Clay M. Supplee, 19th Infantry, were relieved from duty June 27, 1904, 'to take affect upon the completion of their examinations for promotion, and directed to join their proper stations not later than August 31, following.

(3) Captain William H. Oury, 24th Infantry, and First Lieutenants Edward A. Hickman, 1st Cavalry, and William N. Hughes, Jr., 13 Infantry, were retained on duty as instructors of enlisted candidates for commissions, by authority of letter from the Mili

tary Secretary's Office dated April 16, 1904, and addressed to the commanding officer, Fort Leavenworth. They were relieved from duty September 1, 1904, and directed to join their proper stations not later than October 31 following.

SECTIONS

For the purpose of instruction during the first half year, the class was arranged alphabetically and divided into eight sections, as nearly equal as possible, the sections being numbered from 1 to 8. At the commencement of the second half-year, January 4, the class was arranged according to merit, as determined by the December examinations at the close of the first term, and again divided into sections of equal size. Though this method of rearrangement, according to standing embodied certain advantages, it was thought that these advantages were, on the whole, outweighed by disadvantages, and as a consequence this experiment will probably not be repeated.

GRADUATES

The entire class of ninety-one student officers successfully pursued the course to the end of the year and graduated

Second Lieutenant Crispulo Patajo, Philippine Scouts, pursued a special course in English common school branches only.

The College Staff declared the following twenty-nine student officers, all of whom had achieved a grade of ninety-one per cent or better, to be

DISTINGUISHED GRADUATES :

Bamberger, Raymond S. 2nd Lieutenant, 7th Cavalry
 Buchan, Fred E. 1st Lieutenant, 3rd Cavalry
 Castle, William A. 1st Lieutenant, 16th Infantry
 Chapman, Leslie A. I. 1st Lieutenant, 1st Cavalry
 Clark, Peyton G. Captain, 13th Infantry
 Connell, William M. 1st Lieutenant, 7th Cavalry
 Craig, Malin, Captain, 10th Cavalry

Fravel, Ira F., 1st Lieutenant, 24th Infantry
Gunster, Walter E., 1st Lieutenant, 18th Infantry
Haskell, William N., 2nd Lieutenant, 9th Cavalry
Holden, George J., Captain, 28th Infantry
Hughes, William N. Jr., 1st Lieutenant 13th Inf.
Hunt, William E., 1st Lieutenant, 8th Infantry
James, John F., 1st Lieutenant, 8th Infantry
McCaskey, Walter B., 1st Lieutenant 2Pst Infantry
Massee, Edward K., 2nd Lieutenant, 7th Infantry
Mears, Frederick, 2nd Lieutenant, 5th Cavalry
Morgan, Gad, 1st Lieutenant, 7th Infantry
Naylor, William K., Captain, 9th Infantry
Parrott, Ralph B., 1st Lieutenant, 22nd Infantry
Peck, Robert H., 1st Lieutenant, 24th Infantry
Ross, Tenney, Captain, 7th Infantry
Sheldon, Raymond, 1st Lieutenant, 18th Infantry
Smith, Selwyn D., 2nd Lieutenant, 1st Cavalry
Stahl, Henry G., 2nd Lieutenant, 6th Infantry
Thorne, George E., 1st Lieutenant, 12th Infantry
Turner, G. Soulard, Captain, 7th Infantry
Walton, Romulus F., Captain, 6th Infantry
Winterburn, George W., 1st Lieutenant, 9th Cavalry

Upon the following five of the above list the Staff conferred the additional distinction of being

HONOR GRADUATES:

Craig, Malin, Captain, 10th Cavalry
Massee, Edward K., 2nd Lieutenant, 7th Infantry
Morgan, Gad, 1st Lieutenant, 7th Infantry
Peck, Robert H., 1st Lieutenant, 24th Infantry
Walton, Romulus F., Captain, 6th Infantry

DEFICIENCIES

At the semi-annual examinations in December two officers were found deficient in the Department of Tactics, and three in the Department of Engineering. Two of these took their re-examinations immediately, making the necessary percentage, while the other three elected to wait until the final examina-

tion in June, when they fully met the requirements of the college.

DISCIPLINE

Discipline during the year was excellent.

ATTENDANCE AT MANEUVERS

Upon my recommendation the fifteen highest graduates who were designated for the ensuing Staff College course, were ordered to the maneuvers in Virginia, where they did duty, the captains as umpires and the lieutenants as adjutants general and aides on the staffs of the various brigade commanders. The high order of professional service rendered by them, set forth in reports of the commanding generals under whom they served, clearly indicates the value and importance of the Infantry and Cavalry school course to the young officers of our service.

It would be a wise provision, of much value to graduates as well as to the service, if members of the Infantry and Cavalry School and the Staff College, who are specially recommended by the college staff for such duty, were annually ordered to attend autumn maneuvers immediately following their graduation, as umpires, staff officers, aides, etc. The fifteen members of the Staff Class who participated this year in the autumn maneuvers came back to the college with renewed interest and enthusiasm, aroused by the practical benefit which attendance at the maneuvers had been to them. They there had an object-lesson which conveyed to them a better idea of the value of their instruction than they could possibly have acquired in any other way.

REORGANIZATION OF THE COLLEGE

This year witnessed the transformation of the General Service and Staff College into two schools, namely, the Infantry and Cavalry School, and the Staff College. The provisions of General Orders No. 115, War Department, 1904, which contain the new

regulations for these two schools, are elastic enough to allow the commandant and academic board sufficient latitude to systematize and definitely determine by experience the new course of instruction. By the end of this year, I may have some further recommendations to make.

The individual reports of the heads of the various departments are hereto appended, and show the details of the college work for the past year.

Believing that a history of the radical changes which have taken place in the reorganization of the General Service and Staff College and in the course of instruction might become valuable data in the future, certain appendices and explanatory notes relating to this subject have also been added to this report. From these a clear idea can be gained of the motives and causes which led to these changes.

Respectfully submitted,

J. FRANKLIN BELL,
Brigadier-General, U. S. Army,
Commandant.

[APPENDIX A.]

GENERAL SERVICE AND STAFF COLLEGE,

Fort Leavenworth, Kansas, August 31, 1904.

The Commandant,

General Service and Staff College,

Fort Leavenworth, Kansas.

SIR:

I have the honor to submit the following report pertaining to my office and duties as secretary of this college:

DISBURSEMENTS

The amount of money allotted to the college for the fiscal year 1904 was \$7,360.10, and became available October 27th, 1903. It has been expended as follows:

Department of Engineering,	\$1,674.83
Department of Tactics,..... --	439.64
Pay of Enlisted Men (extra duty),.....	1,314.45
Office Furniture,	1,336.19
Printing Office,	913.56
Stationery,	231.53
Library Books,.....	791.69
Newspapers, Periodicals, etc. ,.....	204.01
Papering and Decorating Rooms,.....	285.78
Binding 97 Volumes (books, pamphlets, etc.) ,	87.30
Rent of Telephones (2 instruments),.....	24.00
Incidental Expenses,	57.12

	\$7,360. PO

LIBRARY

During the current school year 369 volumes have been added to the library, besides 27 volumes of public documents received from the several executive departments in Washington.

Owing to his repeated absences without leave, as well as non-attention to instructions, it became necessary to request the discharge of Librarian Cornelius C. Collins, which request was approved by the Commandant and authorized by the Assistant Secretary of War, and he was duly discharged on June 3d, 1904. From that time until August 10th the library was in charge of Private James H. Mullins, Company B, 6th Infantry, a clerk in the secretary's office, but on the above date Mr. Henry Shindler took the oath of office and duly commenced work, his temporary appointment having been duly authorized by the Civil Service Commission.

The library is greatly in need of re-arrangement and cataloguing, which work it is intended to take up as soon as a permanent librarian is appointed and becomes sufficiently familiar with the situation. It is believed that the card system of cataloguing is the best for library use; this should be supplemented by descriptive catalogues of subjects and authors, in pamphlet form, issued in sufficient numbers to send out to all the officers of the Army and Volunteer Militia who might apply for a catalogue, thus keeping constantly before them a list of the latest and best military works, histories, biographies, and works of reference.

The library was used during the past year by 195 officers and their families, by the class of enlisted candidates during their period of instruction here (June, July and August), as well as by several civilians to whom the privilege has been granted by the Commandant. It contains about 15,000 carefully selected volumes of military and scientific works, histories, biographies, text-books, and books of reference; there are no works of fiction. We now subscribe for 52 periodicals, which with the approval of

the commandant, it is my purpose to revise and enlarge during the ensuing year.

BINDERY

A book bindery has been added to the college during the past month, which will allow us to repair, re-cover and put in proper condition many volumes which are all but ruined by long and constant handling. It will also allow us to bind and retain in proper shape many periodicals of value.

EMPLOYEES

The service of the secretary's office and its appendages is as follows:

3 civilian clerks.

1 civilian librarian.

1 sergeant of engineers, in charge of instruments.

1 corporal of engineers, as draughtsman.

1 enlisted bookbinder.

2 enlisted clerks.

4 enlisted printers.

2 enlisted janitors.

Respectfully submitted,

MILTON F. DAVIS,
Captain, 1st Cavalry,
Secretary.

[APPENDIX B.]

GENERAL SERVICE AND STAFF COLLEGE,
DEPARTMENT OF TACTICS,
Fort Leavenworth, Kas., June 30, 1904.

To the Secretary,
General Service and Staff College,
Fort Leavenworth, Kas.

SIR:

I have the honor to submit the following report on the work of my department of the General Service and Staff College for the school year 1903-1904:

PERSONNEL OF THE DEPARTMENT

1. Major W. W. Wotherspoon, 6th Infantry,
Instructor.
2. Major Loyd S. McCormick, 7th Cavalry,
Assistant Instructor.
3. Major Charles H. Barth, 12th Infantry,
Assistant Instructor.
4. Captain Matthew F. Steele, 6th Cavalry,
Assistant Instructor.
5. Captain John D. L. Nartman, 1st Cavalry,
Assistant Instructor.
6. Captain Louis C. Scherer, 4th Cavalry,
Assistant Instructor.
7. Veterinarian Sidney L. Hunter, 6th Cavalry,
Assistant Instructor.

ORGANIZATION OF THE CLASS

Of the ninety six student officers ordered to the the college ninety-two reported, seventy-nine by or before September 15th and thirteen by or before September 27th, 1903. One officer, 2nd Lieutenant Laney M. Mitchell, 2d Infantry, died September 17th, 1903, leaving a class of ninety-one student officers.

The class, for purposes of instruction, was divided into eight sections, of twelve members each, the sections being arranged alphabetically and numbered from one to eight. This arrangement was maintained until the close of the first half-year, December 21st, 1903, when the class was again arranged into eight sections, of from nine to twelve members each, according to the standing of the students in the examinations for the first half-year. The sections remained as thus arranged throughout the second half-year.

Throughout the course the sections worked together in recitations, on problems, in field exercises, and in equitation. Assistant Instructors were assigned to the charge of sections in such a manner that they alternated, each instructor having charge of each section during an equal time in each subject. Details for problems and exercises in the field were always made by sections. The results obtained from having each member of the class share equally in the instruction given by each instructor and the system of making details by sections instead of detailing individual students from the class at large have been very satisfactory.

ALLOTMENT OF TIME.

The calendar from September 15th to December 21st, 1903, shows 78 days available for school purposes in the first half year; of these, 51 days were allotted to the Department of Tactics. The second half-Year, from January 4th to June 30th, 1904, contained 134 days available for school purposes; of these, 130 half days were allotted to the Department of Tactics. Total for the year 184 half-days.

SUBJECTS STUDIED.

The time allotted to the Department was utilized in study and exercises in the following subjects, half the time being devoted to the theoretical and half to practical work in each subject, as nearly as possible.

1. Security and Information.

2. Equitation and Hippology.
3. Organization and Tactics.
4. Elements of Strategy.
5. Exercises in the American war-game (Kriegsspiel).

Instruction was conducted as follows:

Security and Information: By recitations, section-room problems, tactical problems on the map, terrane rides, exercises on the terrane with troops, lectures and discussions on problems, and by requiring the students to write an essay on "method best suited in the United States army for imparting practical instruction in Security and Information to the non-commissioned officers of a company of infantry or a troop of cavalry, including a scheme for progressive exercises in that subject".

At each recitation two or more students were selected to solve a simple tactical problem on the map. These section-room problems were appropriate -to the subject of the recitation of the day, and the solutions were discussed by the instructor before the section was dismissed. More complex problems on the map were subsequently taken up and solved as follows:— first, a preliminary problem, appropriate to the text as far as studied, was solved by the entire class; the solutions of this problem were carefully studied by the instructors, and a lecture prepared by them, in which all errors made were clearly pointed out and discussed; these lectures were delivered to the class as shortly after the problem had been solved as possible, and the class was thus prepared to solve a problem similar in character but differing in detail, upon which it was marked for proficiency. Map problems were followed by terrane rides, involving solutions of tactical problems, and the terrane rides were followed by exercises on the terrane with troops. The course closed with the essay above referred to

and the written examination in theoretical work required by existing orders. During the entire course and in all problems special attention was paid to the writing of orders, messages and reports, models for which were printed and furnished the students as guides.

Equitation and Hippology: By recitations, by lectures, by discussions on the horse in the riding hall, by examinations of horses for conformation and soundness and for age, by demonstrations in shoeing, and by riding lessons in the riding hall and out of doors. At each recitation in hippology two or three students from each section were sent to the riding hall, where they were questioned on the lesson of the day and given practical instruction, with horses present, appropriate to the subject of the recitation.

Organization and Tactics: By recitations, section-room problems, problems on the map, terrane rides, exercises on the terrane with troops, lectures and discussions of problems, and by an essay embodying a series of four tactical problems suitable for the progressive instruction of a mixed garrison of our army; the problems being prepared under the following headings: (1) a map problem; (2) a terrane ride; (3) a march of concentration; (4) an exercise in the terrane with troops (all arms); all to be appropriate to the reservation at Fort Leavenworth.

The practical course in organization and tactics was conducted in the same manner as that above described for Security and Information, -that is, by section-room problems on the map, preliminary map problems, the solutions of which were discussed in lectures, terrane rides, exercises on the terrane with troops, and the course was closed with the essay above referred to and the written examination in theoretical work required by orders. As in the course in Security and Information, special attention was

paid to the writing of orders, messages and reports, the models printed and furnished as guides in this course being more elaborate than for the first course, and taken from the best authorities. No problem was given that did not involve the writing of orders, messages and reports, as this was deemed a most important feature of the instruction.

Strategy: In the course on the elements of strategy, descriptive accounts of specially selected campaigns, illustrating certain principles of strategy, were printed and bound in pamphlet form, and given to the students for study. Each campaign was accompanied by a list of questions, intended to bring out the most important features of the campaigns. Answers to these questions had to be sought for in the pamphlet, or in standard military histories. Each campaign was further illustrated by a lecture on the campaign, prepared by an instructor, the purpose of the lecture being to more clearly illustrate the text and to call special attention to the military geography of the theater of war as influencing the campaign. After the study of the text and the delivery of the lectures, the sections were assembled in the recitation rooms, where the students were questioned on the campaigns, and a general discussion of the subject was encouraged. Thirteen lectures were delivered in this course, and eleven pamphlets were printed and issued to the class. The course was laid out by Col. Arthur L. Wagner, General Staff, who was at that time Assistant Commandant of the college. Its character and comprehensiveness will be seen from the list of lectures given in this report.

American War-Game (Kriegsspiel): By a lecture on the war-game and by exercises in solving tactical problems with Colonel Livermore's maps and apparatus, in which the principles of the game were illustra-

ted and explained. Each student participated in two or more exercises.

Part III, lectures and demonstrations on field artillery, prescribed in General Order No. 1, War Department, 1904, was curtailed, owing to unseasonable weather, the absence of part of the artillery from the post, and the limited time at the disposal of the department. The instruction in this part of the course was confined to observation of drill of the batteries, description of the field-pieces and ammunition, and observation of sub-caliber practice.

Part IV, lectures and demonstrations on visual electrical signaling, as prescribed by the course in General Order No. 1, War Department, 1904, was omitted from the course, in compliance with letter from the Chief of Staff, dated December 17th, 1903, for the reason that the Signal Corps had not sufficient men nor the necessary apparatus stationed at Fort Leavenworth, and the men of the corps could not be spared from other duties elsewhere at the time they were required.

During the course the following lectures were delivered to the class to illustrate the course and subjects incident thereto:

1. The Use of Machine and Automatic Guns with Infantry and the Supply of Ammunition to the Firing-Line in Connection with Machine Gun Carriages.
2. Instructions in Patrolling.
- 3, 4, 5, 6, 7. Five lectures and discussions on tactical problems in Security and Information.
8. Lecture on Hippology, introductory to the course.
9. The Skeleton of the Horse.
10. Articulation, Ligaments and Age of the Horse.
11. Two lectures on Unsoundness and Age.
12. The Internal Organs of the Horse.
13. Cavalry Saddles and Packs
14. Medicines and their Use.

15. Diseases and Injuries of the Horse.
16. Foraging and Feeding.
- 17, 18, 19, 20, 21. Five lectures and discussions on tactical problems in Organization and Tactics.
22. Lecture on the War-Game (Kriegsspiel).
23. Supply of Ammunition on the Battle-field.
24. Infantry Fire and its Use in War.
25. Graphical Method of Representing Time and Distance as applied to Courier and Mail Routes (Organization of Relay Posts).
26. Lecture on General Principles of Strategy.

PAMPHLET AND LECTURE ON EACH OF THE FOLLOWING CAMPAIGNS:

27. The Novara Campaign; As an Illustration of the Effect of Operating on a Front Parallel to the Line of Communication with the Base.
28. The Campaign of Ulm; As an Illustration of the Complete Interception of the Enemy's Communications.
29. The Campaign of 1796 in Italy; As an Illustration of the Advantages Possessed by an Army Operating on Interior Lines.
30. The Vicksburg Campaign; As an Illustration of the Manner in Which an Army Can Interpose between Two Armies of the Enemy and Completely Intercept the Communication of One of Them,
31. The Campaign of Koeniggratz; As an Illustration of the Manner in Which the Advantages of Interior Lines Disappear When the Opposing Armies Are Able to Combine.
32. The Campaign of 1862 in Virginia; As an Illustration of the Case of Independent vs. Combined Lines of Operation.
33. The Atlanta Campaign; As an Illustration of the Manner in Which an Enemy Can Be Dislodged by Operating with a Detachment Against His Rear While He Is Held in Front by the Main Force.

34. Massena's Retreat from before the Lines of Torres Vedras; As Exemplifying the Conduct of a R e a r - g u a r d .

35. The Campaign of Metz and Sedan; Illustrating the Strategical Advantage Conferred by Superior Readiness; the Effect of Driving Asunder the Parts of an Enemy's extended Line; the Complete Interception of the Communications of a Hostile Army; and the Advantages of Interior Lines.

36. The Campaign of Plevna; Illustrating the Manner in Which the Advance of an Army Can Be Checked by the Presence of a Hostile Force Intrenched on the Flank of the Line of March.

37, 38. The Passage of Rivers in the Theater of Operations. (Two lectures.)

In the course, thirty-one practical tactical problems, in addition to fifty section-room problems, were given out and solved by the class, and as shown above thirty-eight lectures were delivered.

It will be seen that an earnest effort has been made to combine theoretical and practical instruction as closely as possible; wherever possible, practical problems and exercises have followed the theoretical instruction in each subject, and an attempt has been made to illustrate the theoretical principles laid down in the text by applying them to actual conditions on the terrane, the courses in Security and Information and Organization and Tactics being concluded by requiring the students to prepare essays demonstrating that they had a working knowledge of these subjects and were prepared to become instructors of others in those subjects. The results obtained from the method described have been very satisfactory to the department.

Instruction in equitation, which was under Major Loyd S. McCormick, 7th Cavalry, consisted of fourteen exercises, most of which were held in the riding-hall of the post. The following extracts from memo-

random submitted by Major McCormick are concurred in:

“The riding hall could be had for only one hour each day, during which two sections of the class attended.. In other words, each member of the class attended the riding exercises every fourth school day during the limited time available for this instruction, This interval of time between exercises was harmful, but, as the riding hall was in use by the different organizations of the post during the rest of the day, no other course seemed possible. There were no absentees from these exercises, except those excused by the surgeon.

‘Horses for this instruction were obtained from one of the troops of the garrison. This method is faulty, in the extreme, from the point of view of the troop, and, in my opinion, equally so from that of the student officer.

“All efforts were directed toward establishing a seat to bear comparison with that of horsemen in general and which would be creditable when our officers have to appear mounted in the presence of foreign officers and citizens. Among our officers, as a rule, I find little pride in their appearance when mounted, or a woeful lack of knowledge of what constitutes a creditable position on a horse.

“The necessity for instruction in equitation is evident and of great importance. Not only should our officers be able’ to appear mounted before civilian horsemen and foreign officers with credit to themselves and to our service, but they should be prepared to properly instruct other officers, as well as enlisted men, who may come under their command, in horsemanship. The course in equitation should therefore be made as thorough as possible within the limits of the time available. ”

RECOMMENDATIONS

Maps: The recommendation made by Captain J. T. Dickman, 8th Cavalry, Instructor, Department of Tactics, in his annual report for last year, that a good topographical map of the reservation and as far west as Lowmont should be made at once, is repeated. Such a map is urgently needed for exercises in the Department of Tactics.

Artillery Demonstrations: The demonstrations on field artillery required by Part III, General Order No. 1, War Department, 1904, cannot be carried out with advantage at this post. The area of the post and the conditions surrounding it preclude practice with projectiles, and the limited available space for drill, as well as the conditions of the terrane, as more fully explained in this report, make demonstrations of drill and maneuver of little or no practical value; this limits the course to lectures and exhibitions of the mechanism of the field guns and their ammunition. It is recommended that inasmuch as the batteries from this post usually reach Fort Riley for target practice towards the latter part of June, and as they will there join with other batteries in tactical exercises, a period of four or five days in the latter part of the course be set aside for demonstrations in artillery work for the benefit of the class, which at very little expense could be sent to Fort Riley to witness them and thus see operations of artillery under the very best circumstances. If this were done, the student officers would see the batteries maneuver, would witness their movements over broad stretches of varied country, and would have an opportunity to watch artillery practice with full service charges and with various classes of projectiles. It is believed that the course at this college could be so arranged as to give a week from the latter part of

the school year to this very valuable class of instruction.

Terrane For Field Exercises: The country surrounding the reservation being thickly settled and under a high state of cultivation, the farmers and property owners naturally object to the troops trespassing on their land. It is even doubtful whether they would be willing to grant permission (during the winter season, when all crops have been gathered) to use the land for tactical purposes at a fair rental and upon a guarantee to make good all damages; and still more doubtful if such an arrangement, if made, would be satisfactory, in view of the yearly recurring wrangles and disputes over questions related to damages. What should be done is to extend the reservation lines from the junction of the Kickapoo and Millwood roads on the north to a point in prolongation of Metropolitan Avenue on the south. Until such an extension is made the country surrounding the reservation, being cut up into many small fields fenced with heavy barbed wire, will not be available for tactical exercises other than those which can be carried out on roads. Consequently all other exercises must be held on the reservation.

The most serious difficulties encountered by the tactical department during the school year just completed arose from conditions existing on the reservation of Fort Leavenworth, which, as set forth, is practically the only terrane available for field exercises in tactical operations with troops, and, as the tendency is to increase practical exercises, the importance of which is fully recognized, these conditions should be improved to the fullest extent possible.

The reservation of Fort Leavenworth contains a total area of 6,989 acres; of this area 939 acres (the timber reserve) are on the east side of the Missouri

river. These 939 acres are heavily timbered, have a dense growth of underbrush, and being very low, are too swampy for use in tactical exercises. Deducting these 939 acres leaves 6,050 acres on the west, or Kansas, side of the River. From the area in Kansas (6,050 acres) must be deducted the following areas, which are either not available for tactical exercises, by reason of their special assignment to other purposes, or because of the condition of the land as to swamps or heavy timber and underbrush:

2635 acres assigned to or used by the United States Penitentiary, of which 710 acres is good maneuver ground and 1925 acres low, swampy, overflowed land along the Missouri river ;

15 acres assigned to the national cemetery;

18 acres of water-Merritt Lake;

329 acres Fort Leavenworth building area and parades ;

62 acres target range and camp;

174 acres swamps, and

1397 acres heavy timber and underbrush;

a total of 4,630 acres, leaving only 1,420 acres of open and available land. From this 1,420 acres of open land must be deducted at least 180 acres which are in isolated patches, and 200 acres of swampy ground along Corral creek and not deducted above, leaving 1,040 acres for tactical purposes. This 1,040 acres is in one plat, but it is cut through its center by Corral creek, and its thirty-eight gullies and small tributaries; the banks of these streams are in places so steep and the beds in others so swampy from the many springs and heavy rain-fall in April, May and June (the season of the college for practical exercises on the terrane) as to be barely passable by foot troops, passable in only a very few places by mounted men, and passable for artillery in only two places,

that is, at the two permanent bridges. The area is further cut up and made impassable by a number of heavy wire fences, and it may be said to be, in its present condition, almost useless for maneuver purposes.

Bad as these conditions are, they can, it is believed, be greatly improved, and the ground suitable for tactical purposes be greatly extended by the enforcement of certain rights the post authorities have but which have not been, so far as known, claimed, and the expenditure of a small sum of money.

As to the rights which the military have on the reservation which it cannot at present exercise, the "act to establish a site for the erection of a penitentiary on the military reservation at Fort Leavenworth, Kansas, and for other purposes", approved January 8, 1896, set aside approximately 710 acres along the southern border of the reserve. These 710 acres are now cut off and made not available for military tactical purposes by heavy wire fences, in which there are very few gates, and those kept constantly locked and chained by the prison authorities, this notwithstanding the provision of the act above cited, "that this prison reservation shall be open for military tactical purposes when such purposes do not interfere with the discipline of the prison". As the wire fences enclosing the prison area are apparently for no other purpose than to mark the boundary and to enclose a cattle pasture, it is earnestly recommended that all this fencing be removed, and so much of this area as is not occupied by the prison buildings be restored to the use of the post for military tactical purposes, as contemplated by the act of Congress. By doing this, approximately 700 acres of the most valuable land for those purposes would be added to our maneuver ground.

As to the extension and improvement of the maneuver ground by the expenditure of a small sum of money, it is suggested that at least ten permanent culverts be built across Corral creek, or good crossings be made by cutting down the steep banks and placing stone in the bed of the creek, and that short stretches along the various branches of Corral creek, where the ground is too swampy and springy for troops to pass, be made passable by sub-drainage with tile. It is also suggested that the thick but at present very light underbrush and weeds be removed from the greater timbered area on the west, or Kansas side, of the Missouri river, and the forest be thus opened for maneuver purposes, leaving a small portion only with thick underbrush for illustration of certain phases in exercises. By cutting out the light brush and weeds the forest will be opened and made more beautiful, grass will soon grow in the open glades where now there are only rank weeds, the timber itself will be improved, and the annual forest fires, which threaten total destruction of the timber and are a menace to the post, be prevented. It is understood that prior to the breaking out of the Spanish war the greater part of the forest had been cleared, as suggested above; but the neglect consequent upon the reduction of the garrison from 1898 to 1903 has permitted the conditions which now exist and preclude tactical work in this area.

It is of prime importance that *all* wire fences be removed from the reservation, and that no fencing of any kind, outside the post building area, other than a boundary fence (which should have many gates and stiles) be permitted. An order was issued some time ago about removing fences from the reserve, and it is understood that the railroad companies have either removed those along their tracks, or will do so in the near future; but whilst some fences have been

taken down others have been put up, one across a most valuable part of our manœuvre ground. I would like to emphasize the importance of having absolutely no fences in the manœuvre area. By recovering the use of 700 acres from the prison for tactical purposes and by clearing the forest and providing good crossing points on Corral creek and its tributaries, the manœuvre ground will not only be greatly improved, but from 2,000 to 2,250 acres will be added to the 1,040 we now can use, making at least 3,000 acres available to the college and post for field exercises.

Troops: The General Order governing the programme and course of instruction at the college prescribes in paragraph 9 that "The officers and the enlisted force and equipment of the several organizations on duty at the post shall be available for the practical instruction of officers of the student class in field operations and drill regulations, at such times as may be deemed necessary by the Commandant".

To carry out properly the practical instruction of the students, it is necessary to have troops available for exercises in the field, a necessity fully recognized in the order referred to. The necessities of the college vary from small details for patrolling duty to as strong forces of the three arms as the strength of the garrison and nature of the terrain will permit. The problems given the students are progressive, from simple patrols to operations of the three arms combined against each other; they include problems in patrolling, outposts, advance and rear guards, cavalry screens, marching of troops, marches of concentration, attack and defense of convoys, attack and defense of positions, preparation of positions for defense, and should be extended as much as possible. To successfully carry out the purposes of such tactical exercises with troops it is essential that the troops be furnished, and furnished in such numbers

as will meet the reasonable requirements of the problems to be solved. In a tactical exercise-with troops, to call a squad a company, or a company a battalion or regiment, is manifestly absurd, and any attempt to carry out such exercises, where large bodies of troops are supposed to be represented by small forces will result in failure and will defeat the end in view; attempts to do this in the maneuvers at Fort Riley, West Point (Kentucky), and at other maneuver grounds, have been given up, and it is understood no such attempts will be made in future. Only by getting out as large a force as the strength of the garrison will permit, and by making the problems accord with the force available, can we hope for good results; hence everything connected with the routine of the post which interferes with the tactical exercises of the college during the very limited time available for this class of instruction should be suspended during the time required for the problems, which is, as a rule, short, rarely more than four or five hours. Last year, with the class of 1903, when the companies of infantry at the post averaged about 65 enlisted men each, and the battalions 260 men, the details furnished for practical exercise No. 6 averaged 29 men for each company and 116 men for each battalion asked for. This year, with the class of 1904, when the twelve companies of infantry averaged about 91 enlisted men each, or 1092 to the regiment, and the four troops of cavalry 83 men each, or 332 to the squadron, the details furnished for practical exercises No. 24, held June 7, were short as follows: Cavalry, 62; infantry, 134; total, 196; though only 208 cavalry and 522 infantry had been called for; the second exercise in the same problem (No. 24), held June 8, was short even more men; out of 208 cavalry and 522 infantry asked for, 96 cavalry and 142 infantry were not present, a total shortage of 211 men out of a de-

tail of 730 asked for. For problem No. 26, held June 17, details were asked for as follows: 212 cavalry, 609 infantry, a total of 821 men; the details were short as follows: cavalry, 128 men; infantry 340 men; a total shortage of 468 men out of a total asked for of 821; in other words, less than half of the men deemed necessary for the problem were available. When, for the second exercise of the same problem (No. 26), held June 18, the full detail asked for was furnished, the spirit of emulation shown by the troops, their alertness and ingenuity in the prosecution of the exercises incident to the problem, and the great interest displayed by all, clearly showed how valuable and successful such exercises could be made when properly carried out with sufficient forces.

It is believed that the points demanding most serious consideration, so far as the Department of Tactics is concerned, are the preparation and extension of the maneuver area, and that all the troops at the post should be available at such times and in such numbers as may be deemed necessary for the instruction of the officers of the student class, as was evidently contemplated by paragraph 9, General Orders No. 1, War Department, 1904,

Very respectfully,

W. W. WOTHERSPOON,

Major, 6th Infantry,

Instructor,

[APPENDIX C.]

GENERAL SERVICE AND STAFF COLLEGE.

DEPARTMENT OF ENGINEERING.

Fort Leavenworth, Kas., July 1, 1904.

The Secretary,

General Service and Staff College,

Fort Leavenworth, Kas.

SIR:

I have the honor to submit the following report of the work of the Department of Engineering of this College during the year ending June 30th, 1904:

PERSONNEL

Captain Thomas H. Rees, Corps of Engineers,
Instructor.

Captain E. T. Cole, 6th Infantry,
Assistant Instructor.

Captain G. M. Hoffman, Corps of Engineers,
Assistant Instructor.

1st Lieut. G. A. Youngberg, Corps of Engineers,
Assistant Instructor.

1st Lieut. Wildurr Willing, Corps of Engineers,
Assistant Instructor.

and Captain E. R. Stuart, Corps of Engineers, *Assistant Instructor*, from March 8th to March 22d, 1904, during temporary absence of Captain Hoffman.

Student officers, ninety-two.

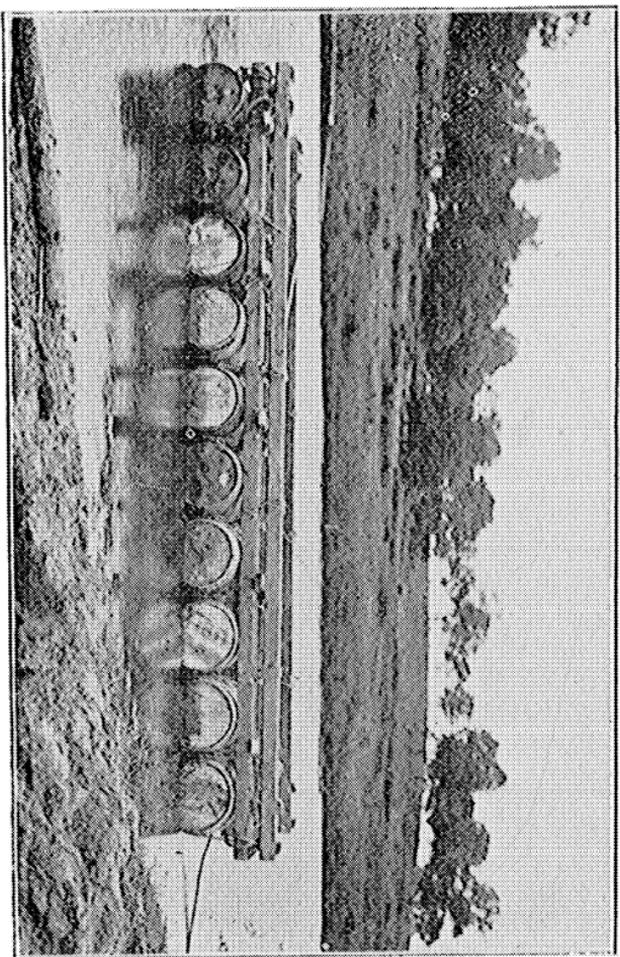
Sergeant William Costello, Company A, 1st Battalion of Engineers, Topographical Assistant.

Corporal John Howry, Company A, 1st Battalion of Engineers, Draughtsman.

TEXT-BOOKS

Root's Military Topography and Sketching.

Beach's Manual of Military Field Engineering.



THE BARREL VAULT.

First Term:

{September 15 to December 20, 1903.)

SUBJECT :

Military topography, surveying. (Part I of text-book.)

Theoretical Work:

	Class- hours.
14 Advance lessons	42
7 Review lessons	21
3 lectures	3
Examination	8
Total	<u>74</u>

Practical Work:

Problem 1. Transit survey, preliminary	4
Transit survey, record	24
Problem 2. Plane-table survey, preliminary	4
Plane-table survey, record	24
Problem 3. Compass survey, preliminary	4
Compass survey, record	24
Problem 4. Level survey, preliminary	4
Level survey, record	24
Problem 5. Base line, triangulation and trigo- nometrical leveling record	24
Problem 6. Contouring with transit and level rod, record	24
Problem 7. Sextant survey, record	24
Total	<u>184</u>
Total class-hours, first term	<u>258</u>

Each of the foregoing problems, except the 5th, included contouring, and each record problem comprised three half-days field work and three half-days for reduction of notes and draughting. Working-hours were from 8.00 a. m. to 12 m., and from 1:00 p. m. to 5:00 p. m.

Second Term:

(January 4 to June 30, 1904.)

SUBJECTS:

Topographical sketching (Part II of text-book), and
Military Field Engineering.

Theoretical Work:

Topographical sketching:

	Class- hours.
9 Advance lessons	18
5 Review lessons	15
Examinations	8
Total	41

Military Field-Engineering :

12 Advance lessons	36
6 Review lessons	18
Examinations	12
Total.	66

Practical Work:

Topographical sketching:

Problem 8. Determine length of pace and construct working-scale	4
Problem 9. Road sketch on foot with note- book, compass and clinometer, preliminary	4
do. record	8
Problem 10. Position sketch with drawing board, box compass, protractor and scale, preliminary	4
do. record	8
Problem 11. Road sketch'on foot with sketch: ing case, preliminary	4
do. record	8
Problem 12. Outpost sketch with improvised instruments, preliminary,	4
do. record	8
Carried forward	52

	Class- hours .
Brought forward	52
Problem 13. Position sketch with drawing board, range-finder and clinom- eter, preliminary	4
do. record	8
Problem 14. Filling in an outline-map to make a military map, preliminary	4
do. record	8
Problem 15. Road sketch, mounted, with note- book, compass and clinometer, preliminary	4
do. record	8
Problem 16. Road sketch mounted with sketch ing-case, preliminary	4
do. record	8
Problem 17. Road sketch, mounted, with choice of instruments, preliminary	4
do. record	8
Total	<u>112</u>

Military Field-Engineering:

Problem 18. Construct lying and kneeling trenches	4
Problem 19. Construct standing trench and palisade	4
Problem 20. Tactical location of trenches and field-works	4
Problem 21. Construct fascine and gabion,	4
Problem 22. Construct wire entanglements	4
Problem 23. Construct abatis	4
Problem 24. Construct revetments of fascines and gabions	4
Problem 25. Construct revetments of sandbags and sods	4
Carried forward	<u>32</u>

	Class- hours.
Brought forward	32
Problem 26. Construct continuous hurdle re- vetment	4
Problem 27. Construct loopholes on parapet	4
Problem 28. Trace and defilade a field-work	4
Problem 29. Profile a field-work	4
Problem 30. Knots, splices and lashings'	4
Problem 31. Field - mechanics — shears gin derrick, etc.	4
Problem 32. Bridge with framed trestle *on land and in water	4
Problem 33. Trestle bridge of round timbers	4
Problem 34. Bridge with canvas pontoons, bar- rel rafts and log rafts	8
Problem 35. Double - lock spar - bridge . with trestle approaches	8
Problem 36. Bridge with wooden pontoons	8
Problem 37. Bridge with pile trestles	11
Problem 38. Suspension bridge	23
Problem 39. Demolition (not accomplished)	0
Problem 40. Flying bridge (not completed)	12
Total	<u>134</u>
Total class-hours, second term	<u>353</u>
Aggregate class-hours for year	611

REMARKS.

All of the work connected with the foregoing problems was performed by student officers, and the results accomplished may be deemed remarkable when it is remembered that very few members of the class had had any previous experience in the handling of the tools and the material employed.

In the appendix to this report will be found a description and explanation of each of the problems, showing the organization of the class for the work, the tools and material used, and the method of construction adopted.

The military bridges constructed were as follows: Four bridges with framed trestle of the regular bridge equipage, each consisting of two bays. These bridges were built both on land and in water.

Two trestle bridges of round timbers, each of three bays, total spans 42 and 45 feet respectively, and each constructed in four hours.

Two bridges with the advance-guard equipage (canvas pontoons) , in each of which were used one barrel raft and one log raft, and each about 110 feet long.

Two double-lock spar-bridges, with trestle approaches each of five bays and each about 70 feet long.

Two bridges with reserve equipage (wooden ponton), each of 12 bays, or 240 feet in length.

One pile bridge, of seven bays, 88 feet long.

One suspension bridge, 100 feet long between supporting towers.

One flying bridge on the Missouri river, made of six pontoons framed together into a large raft. This bridge was not operated, owing to lack of time.

Every completed bridge was tested by driving a loaded wagon across it.

In all of the topographical work every map or sketch turned in by student officers was required to be contoured, not merely by form lines, showing isolated features, but by connected contours, determined by slopes and elevations, carried continuously throughout the map or sketch. Contouring has been insisted on as the most important part of military topography, and, while at first it is difficult to carry it along with the traverse, the sketcher soon becomes familiar with the process and finds contouring no more difficult than traversing. Excellent results

have been obtained, and at least fifty per cent of the class may be considered skilled topographers. With few exceptions, all members of the class may be depended on to make a simple road or position sketch, or an ordinary survey with instruments.

The Instructor and Assistant Instructors concur in the belief that the system of marking now applied in theoretical work does not grade the class in just accord with the average ability of its members. The grading for each half-year's work depends on the results of a single examination, without taking account of the sustained and continued efforts of the men who study to learn, and make good recitations, demonstrations and explanations in the section-room, but cannot memorize or "cram" the pages of an entire book just before an examination. The painstaking, earnest men who daily perform thoroughly the duties appointed for the day should receive credit for that performance, and not be required to stake everything on the hazard of a single examination, wherein an other man, who goes carelessly through the year, but acquires an ephemeral knowledge by hard 'cramming' during the last few days, may outstrip them.

I would therefore recommend the following system of marking:

Daily recitations to be marked and given a weight of unity for each advance lesson and a weight of three for each general review lesson.

Each problem in practical work to be marked with reference to features that can be fairly and justly estimated, and given a weight of unity for each half-day's work.

The examination mark to be given a weight equal to one half of the combined total weights of marks in recitations and practical work.

This would make recitations and practical work count two-thirds, and examination count one-third, of the total.

The relative weights of the recitations and practical work would depend on the time devoted to each, as well as on the weights assigned to them.

If this system had been in force during the past year the weights in the several subjects would have been as follows:

		Weights
Military Topography, Surveying:		
Advance lessons	14	
Review lessons	21	35
Practical work		42
Examination		38
Total		115
Military Topography, Sketching:		
Advance lessons	9	
Review lessons	14	23
Practical work		19
Examination		22
Total		64
Military Field-Engineering:		
Advance lessons	12	
Review lessons	18	30
Practical work		30
Examination		30
Total		<u>90</u>
Aggregate;		269

The weight given to review lessons is based on the assumption that each review lesson comprises two advance lessons. If the review lesson is longer or shorter than this, the weight should be changed accordingly.

I believe this to be as just and equitable a distribution of weights as can be devised for the Department of Engineering. Then, if each department

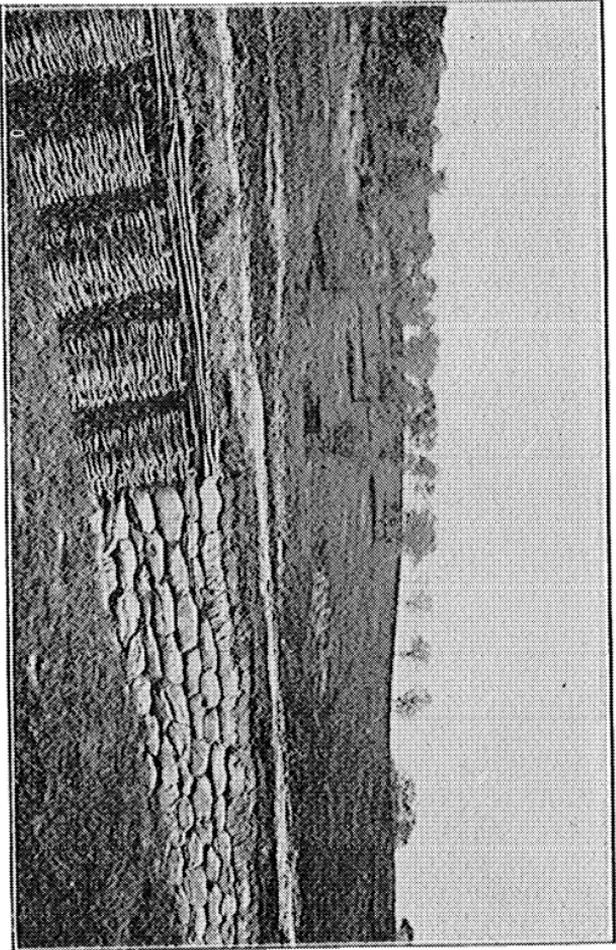
be weighted in proportion to the time which it employs, estimated in class-hours, the final total mark of each man will be a just measure, not only of his ability, but also of the use that he has made of every hour of his time.

The individual daily marks should not be published, but in any subject the total mark on advance lessons, the total mark on review lessons, the total mark on the practical work, the examination mark and the aggregate mark should be published as soon as it is determined.

The class should remain in alphabetical arrangement throughout the year. The arrangement according to standing, in January, adopted this year, has developed no special advantages, and has given evidence of some objectionable features.

If examinations are to be held in each subject immediately after the completion of recitations and practical work in that subject, there appears to be no advantage in requiring that certain subjects be completed and closed up at the end of the first term. The continuity of a subject will not be materially interfered with by the two-weeks' interim at the holidays. The present requirement that certain subjects be finished, examinations held, and marks and standing made out on December 20th, often leads to crowding the work into too short a time or to stretching it out to fit the term. Marks and standings can be made out on December 20th, for such subjects as have been completed, but it should be permitted that a subject be commenced in the first term and carried over into the second term, when necessary.

The work of the Assistant Instructors in this department has been continuous and arduous throughout the college year, and has been performed with zeal, energy and ability.



GASION AND SAND BAG RETEMENT

Instructors and Assistant Instructors should not be detailed from the organizations at this post exclusively, but should be detailed from the army at large, by the War Department. An officer who is detailed by post authorities may be taken away by the War Department at any time, without reference to the importance of his duties at the college, and the college work be made to suffer in consequence of such action. This year two officers have been relieved from duty as Assistant Instructors, one wholly and one partially, at a time when their services were urgently needed, and the work of the department has been correspondingly hampered and delayed.

It is gratifying to be able to report that the student officers of this class have almost without exception worked hard and faithfully, and have shown great interest, zeal and energy in the performance of their duties.

Very respectfully,

THOS. H. REES,
Captain, Corps of Engineers,
Instructor.

[APPENDIX D.]

GENERAL SERVICE AND STAFF COLLEGE,
DEPARTMENT OF LAW.

Fort Leavenworth, Kansas, June 25, 1904,

The Secretary,

General Service and Staff College,

Fort Leavenworth, Kansas.

Sir :

Pursuant to paragraph 53 of the regulations for the government of this college I have the honor to submit the following remarks in regard to the course of instruction and text-books in the Department of Law.

I was not assigned to this department until the 5th of March of this year and at that time the year's course in law had been completed. and the examination held. I cannot therefore speak from personal knowledge in regard to the progress, course of instruction, etc., of this department during the past school year, but from conversation with my able predecessor, Major H. M. Andrews, Artillery Corps, I learn that the course prescribed in regulations was completed as satisfactorily as the time allotted this study would permit.

The personnel of the department during the year was as follows:

Major H. M. Andrews, Artillery Corps, *Instructor.*

Captain Omar Bundy, 6th Infantry, *Assistant Instructor.*

Captain Charles Crawford, 20th Infantry, *Assistant Instructor.*

Captain John P. Ryan, 6th Cavalry, *Assistant Instructor.*

Captain H. O. Williams, 5th Infantry, *Assistant Instructor.*

Of these the department has lost Major Andrews, Captain Bundy and Captain Ryan, and on account of the reduced number of students for the coming year the total number of assistant instructors will remain one less than heretofore. The detail of Captain H. A. White, 11th Cavalry, has been requested.

In March the various departments were called upon to submit proposed courses of instruction based upon certain premises looking to an enlarged curriculum which would be more in consonance with the purposes for which this institution was created and at the same time be in line with the general educational scheme proposed by the War Department for the whole army.

Accordingly, on March 25 I submitted the report for this department, and in this paper renew the recommendations made in that report.

These recommendations were based upon the following premises, towit:

1. The course in law to cover two years.
2. Military and international law to be taught in the "garrison schools."
3. Officers detailed here to be graduates of the "garrison schools" or have an equivalent preparation.

Obviously, then, the course in law should be an amplification rather than a repetition of what the student already knows. Moreover experience has shown that army officers are constantly called upon to deal with legal questions not found in the military law text-books, and with which they must be more or less familiar in order to properly discharge the duties required of them.

Based upon these assumed premises the following course was recommended:

FIRST, OR JUNIOR YEAR.

1. Elements of Law wherein the student will become familiar with legal phraseology, determine the province of military and martial law in the general scheme of jurisprudence, and acquire some knowledge of the law of persons and property.

2. Criminal Law with special reference to military tribunals.

3. Evidence, the rules of which guide military tribunals in arriving at just conclusions.

4. Moot Courts exemplifying the procedure and practice of military tribunals (including military commissions and provost courts), the preparation of legal forms, etc.

SECOND OR SENIOR YEAR.

1. Constitutional Law emphasizing questions liable to come within the purview of staff officers of the army.

2. Martial law and Military Government, the course concluding with a graduating thesis on some subject assigned by the Department of Law.

The text books recommended are the following:

JUNIOR YEAR-INFANTRY AND CAVALRY SCHOOL.

Smith's Elementary Law.

Clark's Criminal Law.

McKelvey's Law of Evidence.

Books of reference for use with moot courts.

Manual for Courts-Martial.

Winthrop's Military Law.

Davis' Military Law.

SENIOR YEAR-STAFF SCHOOL.

Black's Constitutional Law.

Books of reference for course in Martial Law and Military Government.

Birkheimer's Military Government and Martial Law.

Davis' International Law, including G. O. 100, A. G. O. 1863, and the Geneva and Hague Conventions,

In regard to the method of instruction I recommend the adoption of the quiz system in connection with assigned lessons from text books, lectures, and the consultation of leading cases. This is more in consonance with modern collegiate education. The present method of reciting requires the student to commit to memory page after page of the text book which he does by temporarily photographing the same on his mind with little distinction between the important and less important features. The result is that as soon as the subject is laid aside the whole picture gradually fades from his mind without even the lights and shadows remaining. With the quiz system the instructor is able not only to determine the intelligence and knowledge of the student, but can bring out and emphasize the principles which the student should and can carry in his mind, and with the aid of which he can solve all similar questions presented for solution.

D. H. BOUGHTON,
Major, 11th Cavalry,
Instructor.

[APPENDIX E.]

GENERAL SERVICE AND STAFF COLLEGE,
DEPARTMENT OF MILITARY SANITATION,
Fort Leavenworth, Kansas, June 10, 1904.

The Secretary,
General Service and Staff College,
Fort Leavenworth, Kansas.

Sir:

In compliance with paragraph 53, Regulations, General Service and Staff College, I have the honor to submit the following report:

During the current collegiate year the following-named medical officers were on duty as assistant instructors in the Department of Military Sanitation and Hygiene:

Captain Paul F. Straub, *Assistant Surgeon,*

Captain John H. Stone, *Assistant Surgeon,*

Captain David Baker, *Assistant Surgeon,*

First Lieutenant J. F. Edwards, *Assistant Surgeon.*

For the most part of the five weeks assigned to this course, these officers were on duty at the college three hours daily, and the instructional work was in addition to their current medical and official duties in a military community of over three thousand souls.

The course consisted in recitations and lectures, the text-book used being "Woodhull's Notes on Military Hygiene," prepared especially for line officers. A new edition of this valuable manual was issued just previous to the beginning of the course.

Lectures supplementing and developing the subjects of the text-book were delivered by the instructor and assistant instructors.

In the development of this course the primary object is to convey to the student officers a general idea of the scientific care of troops. It would be entirely impracticable to teach them all that is known of this important subject, even if such were desirable, here, but the aim is to bring to their attention the essential facts, and to so impress them with the importance of the subject that, when time permits, they will themselves seek further information, or, in any event, they will know there-is such a science as military hygiene, and will give heed to its practical application.

In order to teach anything satisfactorily it is necessary to develop teachers. While, indeed, I believe the teacher, like the poet, "is born; not made," nevertheless whether born or made he can only by practical experience learn how to teach. This is what we are now doing. Up to the present we have not taught; we have for the most part heard recitations, in which the student officers have more or less accurately repeated the words of the text-book.

We have delivered lectures, and finally we have had written examinations covering the field of military sanitation, which examinations have demonstrated that the student officers had all gained an excellent knowledge of the text-book, but had not apparently so indexed their knowledge as to make it immediately available practically.

This was quite to be expected, and that so much was gained in so short a time leads to the conclusion that the officers were readily interested in the subject, and that with its more systematic study in all the service schools a practical knowledge of military sanitation will be had by our line officers which will prove of great value to them and the country.

With the execution of the general scheme of education in our army, now about to be promulgated, it

will be quite possible and altogether desirable to eliminate the text-book from the course in this institution and to substitute therefor practical exercises, demonstrations and problems, as suggested in the following memorandum, originally prepared to cover a two year's course, and submitted January 30, 1904.

PROPOSED COURSE IN MILITARY SANITATION.

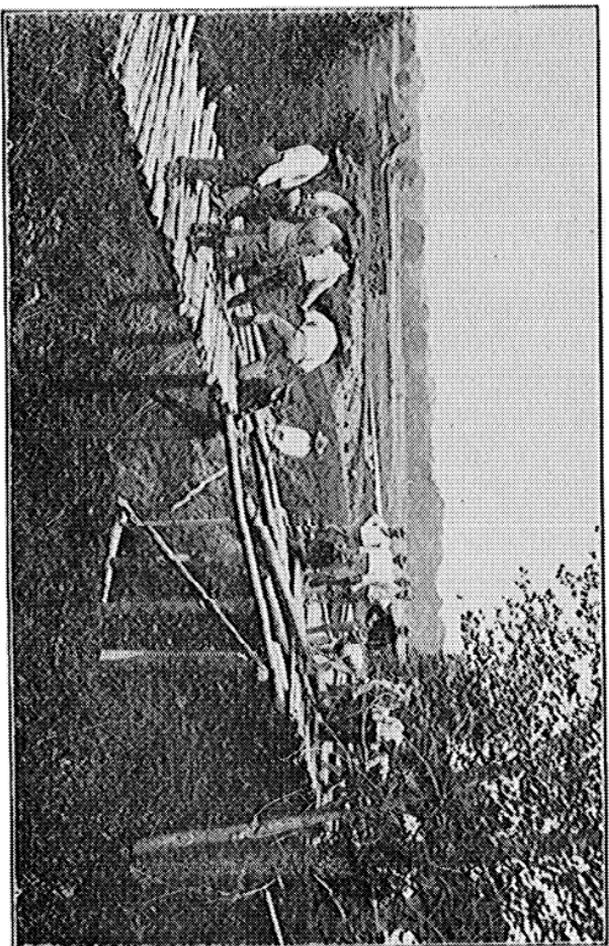
It is recommended that the course in military hygiene, substantially as at present constituted here, be given in the 'post' schools.

It goes without saying that every officer should have a knowledge of the science of Military Hygiene, because, as Woodhull says, 'it concerns line officers as they control the daily lives of men, and staff officers as they supply their food, their clothing and their habitations.' Such practical knowledge should not be confined to the comparatively few officers who have the privileges of the General Service and Staff College, but should be universal throughout the service; in a word it should be taught primarily in the schools which all the officers must attend.

The text book here used (Notes on Military Hygiene, Woodhull's, 3rd edition) is a practical exposition of the science written for line officers, and easily understood. The surgeon of the post should be, *ex-officio*, the instructor in Military Hygiene in the post school.

Should this suggestion be accepted, student officers would come here prepared' to take up the study of military sanitation (which the course here should be designated) from a broader standpoint, and especially in its practical application to active service conditions. This might be done in the first year's course in, say, ten lectures and five exercises; and in the second year's course in five problems.

In the first year, the lectures would be an amplification of the present text book.



TRESTLE BRIDGE WITH] D TIMBERS.

The exercises would consist in sanitary inspections and reports covering habitations, drainage and sewerage, clothing and personal habits of the men, water, food and cooking, police and disposal of wastes, etc.

In the second year the course would consist of essays on, say,

1. The selection of sites for permanent post.
2. The selection of sites for temporary camps for:
 - A regiment,
 - A brigade,
 - A division,
 - A corps.
3. The sanitary arrangements of temporary and semi-permanent camps for the various military subdivisions.
4. The sanitary inspection of camps.
5. The sanitation of the battlefield.

Of course these subjects would vary from year to year, and the above is simply suggestive.

The scheme here outlined provides for the general dissemination of knowledge of a very important subject, which as a science or art, is now little known in the army, and if adopted will place the course of military sanitation in the college on a university basis, where it certainly is not now.

It is understood that the foregoing suggestions have been adopted by the War Department authorities substantially as submitted, except that the entire course is to be completed in the first year. Should this be the case and all recitations eliminated, then the number of assistant instructors can be reduced to one, as our work will then be done by class and not by section, as is now necessary.

Most of the class work will be submitted in the form of reports and essays, and no examinations will be necessary, provided the aggregate of the marks attained on these is up to the minimum requirement.

I take this occasion to congratulate the commandant and staff upon the fact that through their approval and promotion of the foregoing recommendations, the systematic study of military hygiene is now about to become a part of the curriculum of every service school below the Staff College, where too it might well be taught, and has been made a requirement in the examinations for promotion.

The good example set by the permanent establishment will certainly soon be followed by the organized militia, and the subject will also be taught in the schools where military instruction is now given, so that in due time our people will know that the scientific "care of troops" is part of a military education and will promote it accordingly.

Respectfully submitted,

JOHN VAN R. HOFF,
Lieut.-Col., Deputy Surg. Gen'l, U. S. Army,
Instructor.

GENERAL SERVICE AND STAFF COLLEGE,

Fort Leavenworth, Kas., January 20, 1904.

MEMORANDUM CIRCULAR NO. 5.

The following schedule for the current course in military sanitation and hygiene is approved and will be observed:

Text book, "Notes on Military Hygiene," Woodhull, 3rd edition.

- Feb. 2 11-12 a. m.—Lecture: "General Observations." Lt.-Col. Hoff.
 3 11-12 a. m.—Recitation—Secs. 1-3-5-7; text book, par. 1-52.
 4 11-12 a. m.—Recitation—Secs. 2-4-6-8; text book, par. 1-52.
 5 11-12 a. m.—Lecture: "Selection of Soldiers," Lt.-Col. Hoff.
 8 11-12 a. m.—Recitation—Secs. 1-3-5-7; text book, par. 53-100.
 9 11-12 a. m.—Recitation—Secs. 2-4-6-8; text book, par. 53-100.
 10 11-12 a. m.—Lecture: "Physical Training," Lieut. Edwards.
 11 11-12 a. m.—Recitation—Secs. 1-3-5-7; text book, par. 101-151.
 12 11-12 a. m.—Recitation—Secs. 2-4-6-8; text book, par. 101-151.
 15 11-12 a. m.—Recitation—Secs. 1-3-5-7; text book, par. 152-192.
 16 11-12 a. m.—Recitation—Secs. 2-4-6-8; text book, par. 152-192.
 1:30-2:30 p. m.—Recitation—Secs. 1-3-5-7; text book: par. 193-240.
 2:30-3:30 p. m.—Recitation—Secs. 2-4-6-8; text book, par. 193-240.
 17 11-I. a. m.—Recitation—Secs. 1-3-5-7; text book, par. 241-312.
 1:30-2:30 p. m.—Recitation—Secs. 2-4-6-8; text book, par. 241-312.

- 2:30-3:30 p. m.—Recitation-Sets. 1-3-5-7; text book, par. 313-367.
- 18 11-12 a. m.—Recitation-Sets. 2-4-6-8; text book, par. 313-367.
- 1:30-2:30 p. m.—Recitation-Sets. 1-3-5-7; text book, par. 368-420.
- 2:30-3:30 p. m.—Recitation-Sets. 2-4-6-8; text book, par. 368-420.
- 19 11-12 a. m.—Recitation-Sets. 1-3-5-7; text book, par. 421-498.
- 1:30-2:30 p. m.—Recitation—Secs. 2-4-6-8; text book, par. 421-498.
- 2:30-3:30 p. m.—Recitation-Sets. 1-3-5-7; text book, par. 499-545.
- 24 II-12 a. m.—Recitation—Secs. 2-4-6-8; text book, par. 499-545.
- 1:30-2:30 p. m.—Recitation-Sets. 1-3-5-7; text book, par. 546-577.
- 2:30-3:30 p. m.—Recitation-Sets. 2-4-6-8; text book, par. 546-577.
- 25 11-12 a. m.—Lecture: "Hygiene of Troopships, etc." Lt. -Col. Hoff.
- 1:30-2:30 p. m.—Recitation-Sets. 2-4-6-8; text book, par. 578-642.
- 2:30-3:30 p. m.—Recitation-Sets. 1-3-5-7; text book, par. 578-642.
- 26 11-12 a. m.—Recitation—Secs. 1-3-5-7; text book, par. 643-691.
- 1:30-2:30 p. m.—Recitation—Secs. 2-4-6-8; text book, par. 643-691.
- 2:30-3:30 p. m.—Recitation-Sets. 1-3-5-7; text book, par. 692-749.
- 29 11-12 a. m.—Lecture: "Water," Captain Stone.
- 1:30-2:30 p. m.—Recitation-Sets. 1-3-5-7; text book, par. 750-797.
- 2:30-3:30 p. m.—Recitation-Sets. 2-4-6-8; text book, par. 692-749.
- Mar. 1 11-12 a. m.—Recitation-Sets. 2-4-6-8; text book, par. 750-797.
- 1:30-2:30 p. m.—Recitation-Sets. 1-3-5-7; text book, page 185-195.
- 2:30-3:30 p. m.—Recitation-Sets. 2-4-6-8; text book, page 185-193.
- 2 11-12 a. m.—Lecture: "Controllable Diseases," Captain Baker.
- 1:30-2:30 p. m.—Recitation-Sets. 1-3-5-7; text book, page 196-206.
- 2:30-3:30 p. m.—Recitation-Sets. 2-4-6-8; text book, page 196-206.
- 3 11-12 a. m.—Recitation-Sets. 1-3-5-7; text book, page 207-217.
- 1:30-2:30 p. m.—Recitation-Sets. 2-4-6-8; text book, page 207-217.
- 2:30-3:30 p. m.—Recitation—Secs. 1-3-5-7; text book, page 218-224.
- 4 11-12 a. m.—Recitation-Sets. 2-4-6-8; text book, page 218-224.
- 1-30-2:30 p. m.—Gen. review-Sets. 1-3-5-7; text book, page 1-118.
- 2:30-3:30 p. m.—Gen. review-Sets. 2-4-6-8; text book, page 1-118.
- 7 11-12 a. m.—Lecture: "Sanitary Inspections," Lt. -Col. Hoff.
- 1:30-2:30 p. m.—Gen. review—Secs. 1-3-5-7; text book, page 119-224.
- 2:30-3:30 p. m.—Gen. review-Sets. 2-4-6-8; text book, page 119-224.
- 8 9-12 a. m.—Examination.
- 1-4 p. m.—Examination.

BY COMMAND OF BRIGADIER GENERAL BELL:

MILTON F. DAVIS,

*Captain, 1st Cavalry,
Secretary.*

[APPENDIX F.]

GENERAL SERVICE AND "STAFF COLLEGE.

FORT LEAVENWORTH, KANSAS,

July 31, 1903.

To the

*President of the War College Board,
Washington, D. C.*

Sir:

Pursuant to suggestions made by you during our recent interview in Washington, I have, since the first of the present month, been studying the needs and organization of this school with a view to making the report desired by the War College Board.

After careful consideration of the instruction during the past year, I feel that (before proceeding with the report proper) a word of commendation is due from me to those who have conducted this instruction and taken part therein. I fear that certain recent exceptional occurrences here have created at Washington, and in the army, a misapprehension as to the real situation and as to the merit of the work which has been done during the past school year.

Having taken into consideration the unquestionable fact that more ground has been covered than was gone over in the history of this institution within the space of one year, and the further fact that a number of the students arrived from six weeks to three months after the course had begun, I consider the success achieved nothing short of remarkable, and that the staff and assistant instructors, as well as those students who have given faithful attention to their work, are entitled to the highest credit for the results accomplished. It would be both unfortunate and unjust should a general impression prevail

that any *considerable number of students, who have attended the school during the past year, have not been conscientious and faithful in attention to their duty. It is a well known fact, acknowledged by all, that no greater amount of time has ever been spent in hard and zealous study than has been devoted to the course by some of these students.

Preliminary to preparing this report concerning the future needs of the institution in the way of a curriculum and organization, I have been making a careful study of its history and of the work done in the past, with a view to becoming acquainted with the purposes of its establishment and with the experience of my predecessors.

(A). In connection with its history I find that General Sherman, in discussing the purpose of its establishment, gave expression to the following opinion :

“The school should form a model post, like Gibraltar, with duty done as though in-actual war, and instruction by books be made secondary to drill, guard duty, and the usual forms of a well regulated garrison.”

The school was actually begun in this spirit, but speedily developed beyond the stage of practical instruction in ordinary “drill, guard’ duty, and the usual forms of a well regulated garrison.”

Though no one would like to see such elementary practical instruction now included as a part of the school course here; and especially not since it has been provided for in the post schools, I have quoted this expression of General Sherman’s opinion simply to show the degree of importance which was assigned by him *to practical application*.

(B). From War Department General Orders No. 155, of 1901, the following quotations are made as in-

dicative of the views of the present Secretary of War:

“It should be kept constantly in mind that the object and ultimate aim of all this preliminary work is to train officers to command men in war. Theory must not, therefore, be allowed to displace *practical application*.”

“The infantry and cavalry school at Fort Leavenworth, Kansas, shall be *enlarged and developed* into a general service and staff college. * * * For *the present* the instruction will be limited to a period of one year, and such additional time as may be necessary to complete the annual manoeuvres which it is contemplated shall be carried out each autumn conjointly with such garrisons as may be assembled for the purpose. The permanent garrison for the General Service and Staff College will consist of * * * such field officers, instructors, and student officers, in addition to those belonging to the organizations serving at the post, as may be ordered from time to time. ”

(C). The more I consider the work done in the past, the more I am impressed with the conviction that the school had attained a high state of efficiency when temporarily suspended in 1898 by the war with Spain. Inasmuch as the plans and methods then in vogue were the result of the experience of able men admirably fitted ‘for the work of instruction, it appears to me advisable that our first effort should be to get back as soon as possible to the conditions then existing, with a view to making further progress as additional experience and opportunity may permit.

With the foregoing views and considerations (set forth in “A”, “B” and “C”) as a basis, it is now my purpose to here record the ideas I have thus far formed as to the directions in which this college should

ultimately "enlarge and develop." These ideas are formulated especially to facilitate further study thereof during the ensuing school year, with the purpose of making a *future* recommendation of such changes in the curriculum and system as the coming year's experience may demonstrate to be undoubtedly sound and advisable.

**COMMENCING WITH THE SCHOOL YEAR TO BEGIN
NOT EARLIER THAN SEPTEMBER 15, 1904.**

1st. The school course should cover two years as heretofore, instead of one as during the past year.

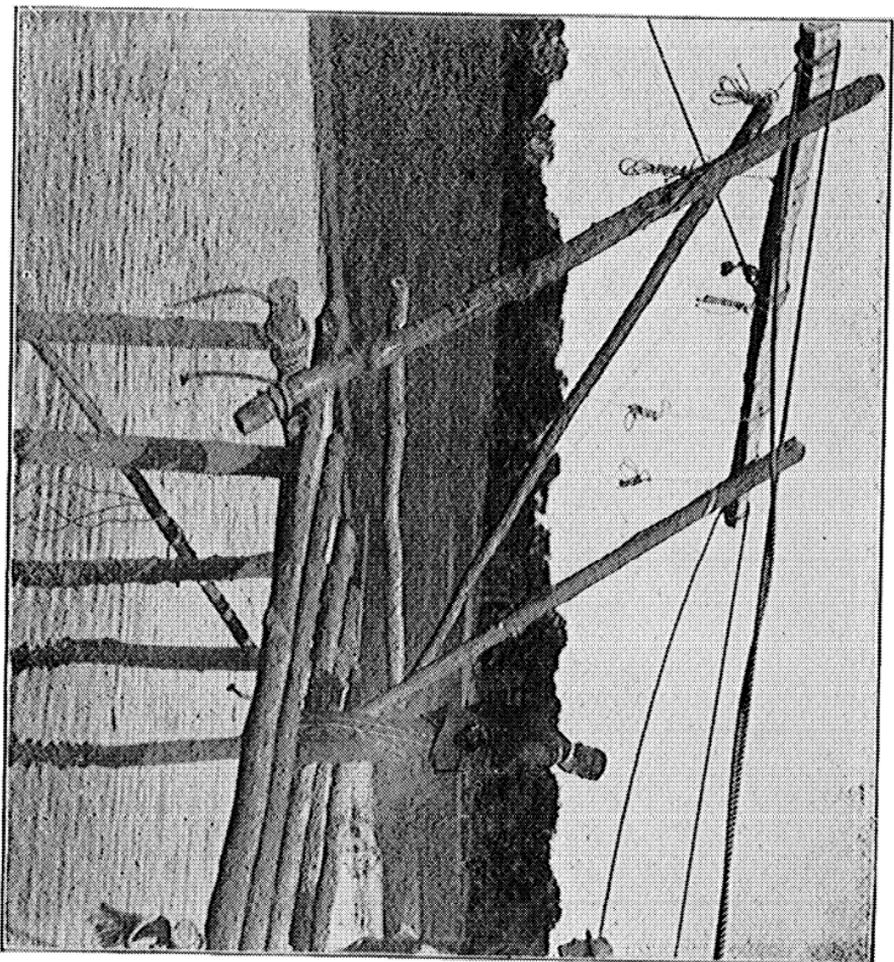
Though last year's course was a reduction of that formerly followed in this institution, it nevertheless remained more than was ever crowded into the period of one year before. Of course something had to suffer, and results have demonstrated that the most important part of the instruction—namely, the *practical* part—was that which suffered the most. It was found necessary to reduce the number of practical exercises it had always been customary to have. In my opinion it has never been practicable to have as many as are desirable, but as the theoretical part of the course was expressly specified by orders in amount and kind, and the practical part not so fully specified, it naturally happened that in attempting to follow the course as prescribed, the practical work not expressly specified was preferably left out or curtailed. It was found impracticable to cover some of that which was expressly specified because of a lack of time.

Instructors have also explained to me that their allowance of time was so limited as to necessitate an undesirable change in some of the methods of instruction; for instance, heretofore in practical patrolling it has been customary to discuss each exercise after its completion, but during the last year so little time was available that instructors were forced to wait until several exercises had been had and then devote

an afternoon to the discussion of them all, thus losing the benefit of discussion before incidents had become dimmed in the memory of the average student. The lack of time also forced the adoption of other expedients, all tending to reduce the thoroughness and efficiency of instruction.

In addition to putting back some things which were unnecessarily dropped out because of the reduction to a one-year programme, the course of instruction should further "enlarge and develop" by adding other important features thereto and by increasing the amount of practical work heretofore had.

It would seem impossible to cover such a course of military instruction satisfactorily in so short a period as one year. Though the present policy of the War Department is to select as students at the General Service and Staff College, officers who have done especially well at post schools, two years will not afford any too much time for a course such as is desired, even though everything taught at the post schools were eliminated. For instance, let us consider the 'matter of tactical rides. If only a single exercise of this kind were given to each student, it would no doubt make a good showing in the report of the school, for it would justify the including of the subject in the curriculum sent forth to the world; but it is assumed that *good, thorough, practical results* are required and enough of these tactical exercises should be given to afford officers opportunity to acquire sufficient knowledge of terrane to enable them to make disposition of troops accurately and promptly. A great mistake would be made in having a "stuffed" curriculum which embraced a vast range of military knowledge, but crowded into such a limited space of time as to render it impossible for students to digest the subjects that they study..



REES' PILE BRIDGE. FIRST POSITION NEW BAY.

It therefore appears to me decidedly advisable to return to a two-year course, as soon as possible.

2nd. I find that a great variety of opinion exists among both instructors and student officers as to the advisability or advantage of continuing, the present system of marking, many arguing that the *old* West Point system of marking on both daily recitations and examinations was preferable to the system now in vogue here, (i. e., not marking daily recitations, but determining proficiency exclusively by marking on written examinations and practical exercises).

I have a firm conviction of the great value of *practical* experience, and because the system of marking daily recitations has been tried at this institution and abandoned on the recommendation of experienced instructors well fitted to determine what was best under the circumstances, I have no opinion to express at present on this subject. I prefer to see the present system stand until experience has unquestionably demonstrated that something better can be devised. It is possible that with additional experience I may have some recommendation to make on the subject in the future.

I might add by way of interest, that the system *now* employed at West Point is exactly contrary to that at present in operation here. At West Point the grade of students is determined exclusively by marking daily recitations, no student being examined if he makes a proficient grade. Those students only are given examinations and marked thereon whose daily marks indicate deficiency. Notwithstanding that is the system in use at West Point at present, its superintendent, when an instructor in this institution, recommended the abandonment of the system of marking daily recitations. He also urged me, in a recent interview, to try to do away with the marking of examination papers also.

3rd. I find in the various annual reports which have been made by commandants in the past, many references to the serious difficulty which has always existed in furnishing proper mounts to student officers in their field work. The present system of furnishing those mounts from extra horses kept in troops appears to have always been a nuisance, and very unsatisfactory to both student officers and cavalry troops. Numerous recommendations have been made from time to time on the subject, but it would seem to me that the only practical solution of this difficult question will be found in furnishing a sufficient number of properly selected riding animals and organizing a cavalry detachment to care for them, as is now done at West Point. This cavalry detachment and the horses can be under command and charge of the instructor in equitation.

When the quartermaster's department has had new buildings provided for its accommodation, and is entirely moved away from its present location at the post to the proposed site on the north side of the garrison, the stable at present used for the accommodation of quartermaster animals will become available for these school horses. A barrack for the cavalry detachment would have to be constructed in the vicinity of the stable, where a suitable location exists.

4th. It has many times been recommended that the students of the graduating class at this institution be ordered to Fort Riley to participate in the maneuvers annually conducted there.

This seems to me to be a very valuable suggestion, and I hope that it may sometime be found practicable to give it a trial.

5th. I now approach with considerable hesitation the hazarding of a suggestion which is not based on any practical experience of my own, and which thus far has not met with much encouragement from any

one with whom I have spoken on the subject who has had any experience at this institution.

In case the course be returned to a two-year basis, it appears to me reasonable that there would be certain very material advantages in having two classes, a first and second class, pursuing the first and second year's course respectively at the same time; about one half of the students to enter and one half to graduate each year, instead of having the whole number of students all come at once and remain two years, then to graduate and be replaced by a completely new detail.

This would detach from duty with their regiments no greater number of officers, and I believe the suggested change would result in the following advantages :

(a) At the present time when officers are given practical instruction in minor field operations, such as patrols, advance and rear guards, outposts, etc., it has been found necessary to sometimes have inexperienced officers act as umpires, who are required to mark the students on their performance. This has always led to dissatisfaction on the part of students. If we had two classes, the proficient men in the first class could be utilized as umpires for instruction given the second class. This duty would then be performed in a manner more satisfactory to the students being marked, and would also be a source of advantage to the student acting as umpire, since he would receive quite as much instruction from the performance of that duty as from taking any other part in the exercise.

(b) However diligent instructors may be, members of a first class who have just completed the first year's course, could and would incidentally render much voluntary service in assisting those undergoing the first year's instruction. The lack of experienced assistance was greatly felt during the past year, when

everybody was overcrowded with work. Many of the officers taking the course had had insufficient early education to enable them to understand or learn, without assistance, the technical portion of topography and other subjects. A number of the instructors volunteered to go to the quarters of worthy and ambitious students to help them prepare for recitations the following day; others gave the students the privilege of coming to their houses whenever they found anything which they could not understand; but, notwithstanding all instructors did the best they could, it was found impossible to give as much preliminary assistance, by way of explanation, as was desirable. Had there been a first class present which had just completed the course in question, second class men would naturally have gone to members thereof for a great deal more of such assistance.

(c) The number of students under instruction having been greatly increased, the size of the class has already become unwieldy. If the classes ever become larger than about one hundred, as at present, I do not think they could be efficiently handled, as none of our facilities are adequate for greater numbers. We have no lecture room which will accommodate efficiently even a hundred men. The smaller the class, the greater is the amount of attention which can be given to each individual.

(d) A beneficial sentiment-class "esprit de corps"-would be aroused and fostered by class rivalry.

(e) Under the present system, no little trouble, annoyance and loss of time for instructors is occasioned by the necessity of giving separately much detailed information of a purely practical character to individual students who run to them on all occasions, appropriate and inappropriate, with requests for information as to what to do, or how this, that and

the other can be obtained, every time a new feature of the instruction is begun. If there were a first class, second class men would obtain most of this information from members thereof .

(f) 'The difficulties presented by other practical problems of post and school administration, incident to a complete change of from one to two hundred students every time a class graduates, would be less numerous and less acute if a partial change of from fifty to one hundred students only took place each year.

The following disadvantage would also appear to exist in the proposed system: in some instances the preparation of detailed instructions governing practical exercises and other field work might be required for two classes instead of one.

But this difficulty would be onerous only during the first year's experience of the instructor. Under the present system, if the membership of any class ever reaches two hundred (a contingency which has been suggested or discussed in view of the possibility. that students may come from ex-volunteers, the militia and colleges, or the number detailed from the army be doubled), I think it possible that quite as much difficulty might arise from the unwieldy size of the class as from the disadvantage mentioned above.

Dividing the number into two classes need not increase the number of instructors required.

Should the foregoing suggestion ever be adopted, there would be but one class, containing only half the usual number of students, during the first year of its enforcement, and instructors would, for this reason, have ample time to carefully consider and work out plans in detail for handling two classes at the same time. .

CONCERNING THE CURRICULUM*Introductory*

(1) In considering the curriculum, both as to the nature of studies and the extent of the course in time, we should consider the object to be gained and the most direct means of attaining it. We should first determine what it is desirable that an officer should know, how far it is possible to give such instruction here, and to what extent the desired knowledge can be imparted at other institutions.

(2) Every officer called upon to exercise command in the field should be familiar with the subjects of drill, tactics, field engineering, the weapons and ammunition in use by the three arms; military, constitutional and international law; sanitation, hygiene, military administration and logistics.

(3) Officers exercising command over large bodies of troops should possess in addition a knowledge of strategy, military geography and military history; a knowledge of recent wars, and of the military geography of countries likely to be the theater of operations for American troops, being especially desirable.

(4) The system of instruction in post schools now provides a fair groundwork of military education, and it would be a waste of time to send an officer here to study a subject if he can learn it with equal facility and equal thoroughness at his own post.

(5) The course for this college, as now prescribed in General Orders No. 90, Headquarters of the Army, is an extensive one, and seems to be overcrowded for a one-year course. It contains some things that might be omitted, and omits some very desirable instruction-or at least limits it-because of lack of time. The question should be, not how many studies can be taught, but how much thoroughly good instruction in military subjects can be imparted.

DEPARTMENT OF TACTICS

(G. O. 90, P. 10.)

(1) It would seem that a fair theoretical knowledge of the subject of "security and information" ought soon to be assumed on the part of officers reporting for duty at this school. No recitations in that subject should, therefore, be required; but the time thus gained should be devoted to establishing outposts, advance guards, etc., on good topographical maps in accordance with assumed conditions, and to practical instruction in this subject with troops in the field (namely, in practical exercises).

(2j) How far a knowledge of "equitation and hipology" can be assumed on the part of officers reporting at this school is not certain. It would seem, however, that they could be required to possess at least such knowledge as would enable the subject to be theoretically taught here as a review only (with an increased number of practical applications) instead of repeating recitations that have already been held at post schools. It is especially important that practical instruction in equitation be given all officers by an instructor of rank, experience and special fitness, to the end that the instruction given may command the respect and interest of student officers.

The following quotation from this year's report of the instructor in the department of tactics is approved and concurred in:

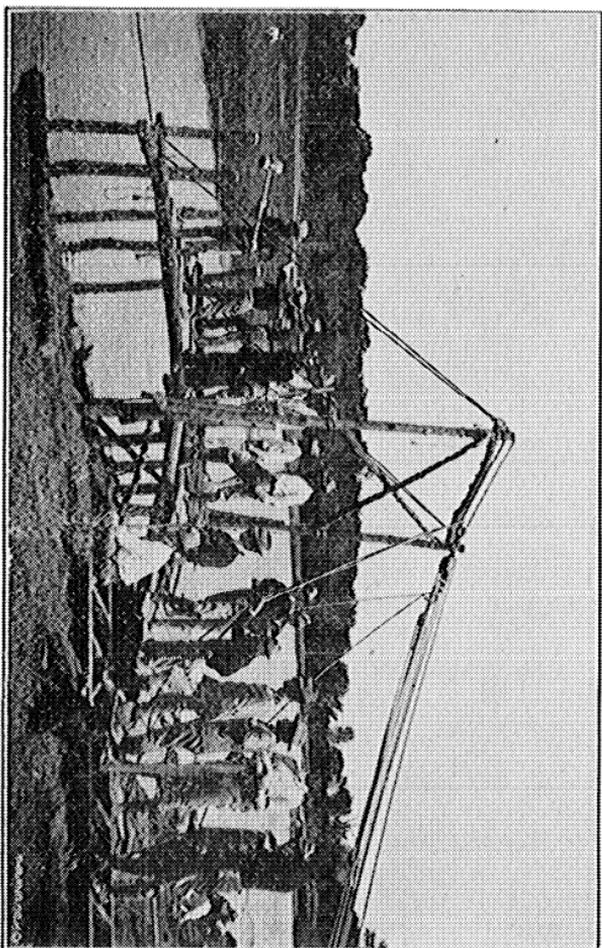
"The importance of an elementary knowledge of equitation on the part of all student officers is so great, and the exercise itself is so beneficial to young men, that a progressive course of about thirty lessons of one hour each should be given to all student officers, the system extending from January to May."

It is my purpose to make recommendation in time and to try to secure an appropriation for a riding-hall for the use of student officers.

(3) In regard to the "lectures and demonstrations on field artillery," this course might better be termed "modern fire arms and munitions of war." It is desirable that each graduate of this college should possess a good knowledge of the mechanism, use and capabilities of the rifle, carbine, revolver, field guns, including rapid-fire guns, and the nature of the ammunition for each.

If time should permit, lectures might be desirable on the subject of heavy ordnance also, but this knowledge of higher ordnance should be regarded rather as a military accomplishment than a necessity for an infantry or cavalry officer. A practical knowledge of the arms, equipments and ammunition of infantry, cavalry and field artillery, on the other hand, should be regarded as an essential.

(4) As to the course in "organization and tactics," it should consist of recitations in the entire work (excepting the three historical chapters, which each student should merely be required to read), these recitations being supplemented by as extended a course as possible of the *practical* work outlined in "Part VII" on the bottom of page 12 of the order quoted. This practical work should be regarded as the most important part of the course. The *written tactical exercises (a)*, valuable as they are, are the least important of the four kinds mentioned. The *exercises without troops (b)*, properly conducted, should be of incalculable value. Too many of them can not possibly be given. If necessary other features should be sacrificed to gain time for these. I refer especially to *tactical rides*. These should be of two kinds, which, for want of better terms, we may designate as deliberate and emergency exercises. For the purpose of further explanation of the idea, I will add the following instructions. In "deliberate" exercises the instructor should state to the student in ef-



REES' PILE BRIDGE DRIVING PILES

fect: "The enemy is in a certain position. His troops consist of such and such organizations of such and such strength. Now go over the ground carefully; from such a point, study it in all of its tactical bearings, make a careful map of it, and then write out your plans, illustrating them on the map." Several days should if necessary, be given the student for such an exercise as this, the object being to enable him to examine the ground thoroughly and study the terrain in every possible bearing.

The 'emergency' exercise, as the term implies, is of a different nature. In this case the instructor will start out with the student, telling him beforehand that he is supposed to have troops of a certain composition and strength under his command. The instructor rides with the student, and at a certain point tells him: "The enemy is reported in such a position. Your advance guard is already heavily engaged. Write out your orders as quickly as possible for the distribution of your troops." In this case everything is to be done promptly and without the deliberation attending the former exercises. It goes without saying that the "emergency" exercises should follow the "deliberate" ones.

The course of *exercises without troops* (c), as they have long been conducted at this school, constitutes one of the most valuable features of military instruction that young officers can possibly get. The great value to them of such exercises lies in the fact that they are at times placed in command of bodies of troops much larger than they would command in the ordinary course of their duties or departmental maneuvers. They are not only placed in command of these troops, but are given definite tactical problems to work out. So far as acquiring habits of command, self-reliance and skill in handling troops is con-

cerned, one month of such training is worth five years of garrison life.

Practice in writing military orders (d) should not be taught by lecture alone, 'but by practical application also. So far as reports, and military correspondence in general are concerned, it may perhaps be assumed that officers in the course of their duties will acquire sufficient knowledge to render unnecessary the giving at this school any further instruction on the subject than can be imparted by lecture, but a lack of knowledge of the requirements of military orders has been evident in almost every war in which we have been engaged. It is only by practice (such as was included in the course last year) that an officer can acquire the art of writing an order so that it will be comprehensive, clear, and concise, -that is, contain everything that is needed for the instruction of the person to whom it is given and contain no useless verbiage or still more useless instructions. This instruction can well be combined with the written tactical exercises '(a)'. Any number of troops, in any position, can be assumed on the map, and the student required to write out orders for the commanders of any designated organizations.

(5) In regard to the course in "elements of strategy," though such a course is provided for, or is probably to be provided for, in the War College, it is not thought it should be omitted from the course at this school. The students at the War College are to be selected from the distinguished graduates of the service schools, but it does not follow that a knowledge of this subject will be thus imparted to all officers who may have occasion to use it. Strategy is essentially the science of generalship, and is accordingly needed by very few men; whereas a knowledge of tactics is essential to every commander from a field marshal down to a corporal. If our military authorities could

be endowed with such prescience that they could say of a class of young officers, this one will be a general some day, and this one never will, we could limit the instruction in strategy to the happy individuals predestined for high command. But we know this can never be the case. If all prospect for high command had been limited to the honor graduates at West Point, we would have found Lee, McClellan, Beauregard, Franklin Meade and Warren selected for instruction in the art of generalship, but Grant, Sherman, Thomas, Sheridan, Longstreet and Hancock would have been omitted because of their class standing. In the same way, in the future, we may find a Lee or a McClellan sent to the War College, but a Sherman or a Grant allowed to complete his course of military instruction at this school.

A serviceable and adequate idea of strategy can not be obtained from manuals alone. Maps are requisite to the subject, and it is so interwoven with military history that the two are inseparable. I am informed that at this school, after years of experiment, one of the most satisfactory methods of instruction in strategy was found to consist of a course of lectures given by selected students themselves in connection with the study of a text-book on the subject. Each student officer was assigned a particular campaign for his lecture or essay, and was given a bibliography of the subject. As the number of students considerably exceeded the number of available subjects, the same campaign was assigned in some instances to several students. As these lectures came, however, towards the end of the course, and the relative abilities of the students had become apparent, the ablest students gave lectures or read essays on the subjects first. The day following the lecture was devoted to a quiz for the purpose of ascertaining the amount of knowledge that the other

students had acquired by hearing the lecture or essay and reading up on subjects connected therewith. Of course there would not be time -and it would not be necessary or desirable to have all the students deliver or read lectures or essays to the class.

The course in strategy should also embrace a few lectures by the instructor and his assistants. These lectures should especially cover the subjects of the military geography of Canada, the West Indies, Mexico, Central America, Venezuela, the Philippines, China, Japan, and eastern Siberia.

For assistant instructors in many of the branches taught at this college, 'any intelligent officer, having a knowledge of the single text-book in use, might answer fairly well, but an instructor in the subject of strategy should have an extended and thorough knowledge of military history, of the works of various strategical writers, of military organization, and of the constitution of foreign armies.

(6) "Lectures and demonstrations on visual and electrical signaling, " however ably and conscientiously given, can not lead to the acquirement of much knowledge on this subject, in which practice is needed, if it be needed in anything on earth. I do not think it will ever be advisable to consume as much time; however, as would be required to give thorough instruction in this subject, and it should therefore be considered in the light of an accomplishment rather than an essential in a line officer's education.

Pursuant to the requirements of War Department and other orders, I have a number of times studied and partially perfected myself in the subject of visual signaling since I have been an officer in the army, and yet I always found that my knowledge of that subject was so easily forgotten, without continuous practice, that I have never remembered sufficient to be of any practical service to me when

occasion called for the knowledge. I do not believe it is practicable to make efficient signal men of either officers or enlisted men, unless they be permanently attached to the Signal Corps or belong to it. Signaling has come to be such a highly technical specialty that it is almost as useless to expect a member of the line to become and remain proficient therein, by intermittent instruction, as to expect him to become a proficient ordnance or engineer officer in the same way.

A good search-light should be a part of the signal equipment of this college. It formerly had one, but it was recently shipped to Fort Totten, pursuant to War Department orders.

It is not clear why signaling and hippology are made a part of the course in tactics; perhaps because they belong there as appropriately as to any other of the departments of study. In my opinion both of the subjects should be separate and distinct and not be included in other departments, the instructors of which already have as much as they can properly attend to.

As a part of the department of tactics, instruction in logistics, such as was formerly included in the course, would seem desirable, should a return be made to a two-year program. It should include the subject of the supply of armies, of castrametation, and everything pertaining to the movements of armies in the field.

DEPARTMENT OF ENGINEERING

The course of instruction in the department of engineering as laid down in the order quoted, seems to be complete and thorough as it now stands. Whether, in view of the course at post schools, the recitations can not be reduced in favor of practical work, can be best determined only by those conversant with conditions, as they arise or exist from time to time at this

school. Great care should be devoted to exercises in application as set forth on page 17 of the order mentioned, and particular care should be devoted to the selection of good positions for intrenchments.

DEPARTMENT OF LAW

Though the subjects included in the department of law are taught at post schools, the qualifications of the instructors are uncertain factors. The entire course, both by recitation and lecture, should be consequently taken at Leavenworth, under well qualified instructors. The solution of practical problems in international law, exemplified in the course as taught in this department in the year 1898, I consider a very valuable feature of instruction.

It is observed that the subject of administration has been dropped out of the course as a part of the department of law. This appears natural and proper, as the subject is well provided for by post schools and by the wise provision for the assignment of officers as assistants to the administrative officers at large posts (G. O. 102, A. G. O. , 1902).

A comprehensive general knowledge of military administration, however, is an indispensable requirement in the education of an officer, and it appears to me that there are some special features of war administration whose importance has been thoroughly demonstrated by our late war experiences, which are not included in army regulations and which would not consequently be covered by post schools. I think that if time permits it might be advisable to have a few practical lectures on these special features in connection with the department of law.

This kind of instruction would not result in fixing details in the students' memories, but would prevent their remaining in entire ignorance of the existence of such special features, and when questions involving these features subsequently arose they would be cog-

nizant of the necessity of informing themselves or refreshing their memories and would have some idea as to how to go about finding out what to do.

DEPARTMENT OF MILITARY SANITATION AND
HYGIENE

In the department of military sanitation and hygiene the course as given in Woodhull's text-book might well be supplemented by a more extended course of lectures, based on works by Munson and others on the same subject.

The following quotations are taken from this year's report of the instructor in the department of military sanitation and hygiene:

"That no great importance was attached to the course in this institution is shown by the facts that it was given the least weight in marks of any subject in the curriculum; that the program outlined in the regulations is insignificant to a degree; that the present instructor was not assigned to duty until several months after the session began; and that his work as instructor is simply an episode of his office as surgeon, of the largest post in the army, the duties pertaining to which fully occupy his time and demand his entire attention. "

"It must be quite evident that the instructor should be permitted to devote most of his time and thought to his work in the college, and that his relation to the post, if any, should be simply that of a medical inspector—in a word, that of chief surgeon of an independent command. "

The foregoing views are concurred in. The officer in charge of this department should be not merely the medical officer who happens to be post surgeon at Fort Leavenworth, but should be an officer selected for his ability in this especial line.

The regulation as it stands at present is liable to result, at any time, in bringing about the present

undesirable state of affairs where the instructor in sanitation and hygiene is superior in rank to the assistant commandant, who, notwithstanding, must preside over the meetings of the college staff in the absence of the commandant.

Our experience during the late war with Spain and in the Philippine insurrection has demonstrated that a competent knowledge of military sanitation and hygiene is very necessary to line officers. This course should therefore be thoroughly and efficiently taught here.

As previously stated, it is my purpose to give further study during the coming school year, to the suggestions and views set forth in the foregoing report, and at the proper time make such recommendations as experience may prove to be desirable. No, immediate action is therefore expected, upon these views and suggestions.

Certain other suggestions for the "progressive development of the systematic plan recommended by a board of officers for enlargement of this post, have been favorably considered by the school staff, the constructing quartermaster, and by General William H. Carter, while recently at this post on a visit of inspection. These suggestions will be submitted in a separate report as soon as detailed maps are prepared to elucidate them.

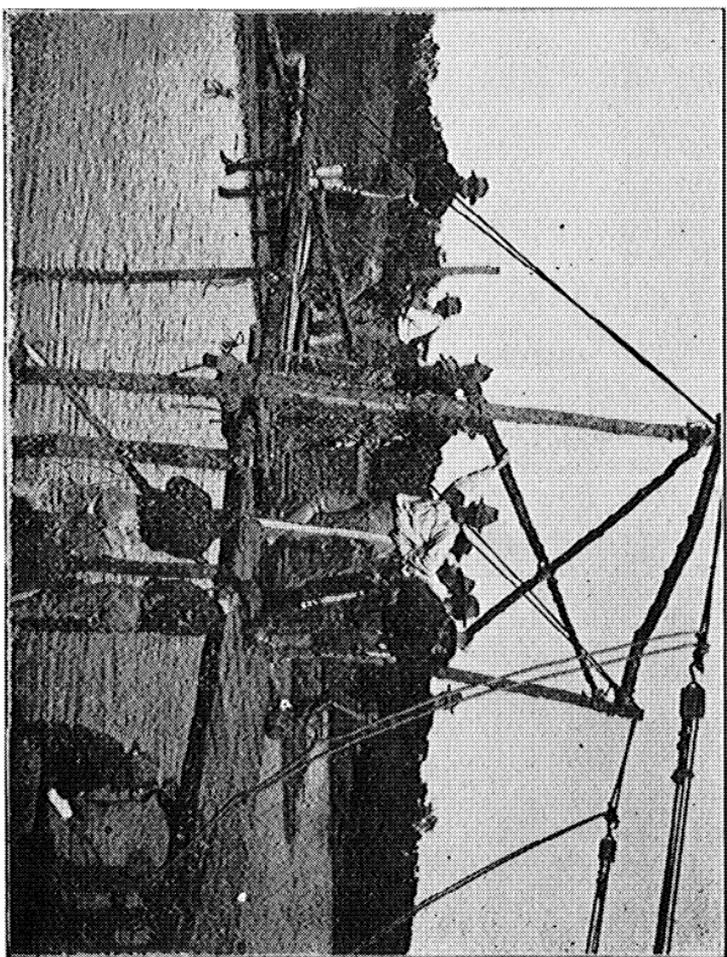
I shall also submit a separate report relating to matters of organization, concerning which I believe *immediate* action is desirable.

Very respectfully,

J. F. BELL,

Brigadier General,

U. S. Army.



REES' PILE BRIDGE. SETTING PILES.

[APPENDIX G.]

GENERAL SERVICE AND STAFF COLLEGE

FORT LEAVENWORTH, KANSAS,

July 31, 1903.

To the

*President of the War College Board,
Washington D. C.*

Sir:

I have the honor to make the following report concerning matters pertaining to this school and the post of Fort Leavenworth, which, in my judgment, need immediate remedial action.

Existing regulations prescribe as follows:

(a) "In matters pertaining to the college and the course of instruction it shall be exclusively subject to the control of the War College Board"-paragraph 11, college regulations. (b) "All other matters of administration and instruction pertaining to the command at Fort Leavenworth remain subject to the control of the department commander"-army regulations. (c) "The commanding officer of the post of Fort Leavenworth, Kansas, shall be the commandant of the college"-paragraph 2, college regulations.

These provisions of existing regulations do not work efficiently for the following reasons:

(a) Pursuant to college regulations, prescribed by the War College Board, the command stationed at this post is required to assist whenever necessary in the work of the school. This requirement renders it impracticable for the post commander to carry out provisions of orders governing the instruction of the command prescribed by the department commander, because these two obligations, prescribed by two independent authorities, frequently conflict.

The work of administration and instruction pertaining to the command should be independent of the control of any one who has not also concurrent jurisdiction over the affairs of the school. Plans for all the work of the post and the college should be prepared or devised by a local authority in such manner that they would harmonize, and should be submitted for supervision and action of the same superior authority.

(b) The painstaking study of all questions and interests which need and merit careful consideration in connection with the enlargement and development of the post and college, and the steady, progressive promotion of these interests, are sufficient to consume most of the time of one person. There should be some one present on the ground, whose responsibility would permit of his giving the greater part of his time and attention to such questions, for whatever is everybody's obligation in general and nobody's obligation in particular is sure to be neglected. But since the enlargement of the post school was begun, the amount of routine detail pertaining to both has alone become so great that no one person can give it efficient personal supervision. When one considers the amount of time which will necessarily be consumed in preparing, discussing and supervising the execution of plans and propositions for the improvement of the post, reservation, and school, it can be readily seen that no one individual can properly supervise this work and at the same time give the necessary amount of attention to the unavoidable routine detail of both post and school.

It is apparent, however, that in order to prevent friction and secure cordial and efficient cooperation between all persons involved, it is necessary that all the interests discussed above should be under the

general supervision and control of one individual located at this post.

In order to secure the independence of the post discussed in (a) and this unity of command, together with supervision of post and school by a single superior authority, several expedients have suggested themselves.

1st. This command might be created a *separate* brigade, the brigade commander be assigned to 'duty as commandant of the school, the colonel of' the infantry regiment here stationed remain the post commander, as now, and the assistant commandant a field officer especially selected and detailed for that duty. This arrangement would so divide the responsibility for all the work of instruction and administration that it could be efficiently carried on, and no superior authority except the War College Board, or a section of the General Staff, would have supervision or control of it.

There is one important power, however, which a separate commander could only exercise in time of war (when the college would not be in existence) ; that is, the enforcement of military discipline by means of general courts-martial. Giving the commanding general of the college and post the power to convene courts-martial and review the proceedings of the same, without being compelled to refer them for the decision and approval of another authority not necessarily familiar with the surrounding conditions or with the circumstances involved, would certainly strengthen the hands of the commandant in enforcing discipline and promoting the efficiency of the school.

The desirability of dignifying the institution suggests the propriety of having it under the personal supervision of at least a brigadier general. If Fort Leavenworth be continued as a part of the

Department of the Missouri, exigencies of the service might bring about a condition presenting the anomaly of having a general in command of the college and post who ranks the general in command of the department, and the dignity of the position, 'instead of being exalted as it should be, would be correspondingly lowered.

The question of military jurisdiction and command, in so far as they affect the commanding officer of the post and school, is therefore one that seems worthy of careful consideration.

2d. Independence of the post and authority to enforce military discipline by means of courts-martial would both be secured by making a separate department of the post and school. The Military Academy at West Point once constituted such a department.

3d. If, instead of limiting the department to Fort Leavenworth alone, it should include Fort Riley also,' the two posts constituting the department of Kansas, the officer charged with the duty of commanding the department and of commandant of this college could be given general 'supervision of the instruction at the cavalry and light artillery school as well. This would facilitate the regulation of the affairs of the two schools and the two garrisons so as to combine them very happily in practical work. The 'entire subject of instruction, as well as administration, pertaining to both posts and schools, could then be supervised by the same superior authorities, the War College Board or the General Staff, as is best it should be.

Under the existing system at Fort Riley the War College Board supervises the instruction, the department commander everything else.

It is assumed that any general officer, assigned to command of such a school department, would always be selected with a view to his special fitness to super-

wise instruction, and that he would be worthy of the authority it is proposed to confer upon him.

If the department of Kansas be organized, as suggested above, no provision need be made for an elaborate staff, inasmuch as the department would be very small, embracing but two posts.

The constructing quartermaster at this post could, act as chief, quartermaster of the department. The post commissary (now an officer of the subsistence department) could act as chief commissary. Either the post surgeon or the instructor in the department of military sanitation and hygiene could act as chief surgeon. All the other staff duties could be done by the secretary of the school, the authorized aids, and instructors in the college; for instance, the secretary or an aid could perform the duty of adjutant-general of the department; the instructor in law, that of judge-advocate; the assistant commandant could act as inspector or chief engineer; or the latter position could be filled by the instructor in engineering; and the duties of ordnance officer and inspector of rifle practice be discharged by an aid.

In case it should be considered preferable to especially detail officers to perform the duties of chief of staff, adjutant-general, and inspector-general, quarters can readily be furnished three additional officers at the post. The chief of staff assigned to the department would probably be suitable to discharge the duty of assistant commandant of the school.

Three more subjects which I deem worthy of immediate consideration are as follows:

1st. From G. O. 155, previously quoted, the following quotations are made: "In order that the accommodations of the post may be utilized to their fullest capacity in the immediate future for student officers, instructors will, as far as practicable, be detailed from officers on duty with troops comprising

the garrison. ” (A sufficient number of quarters have already been constructed since G. O. 155 was issued, to accommodate all the student officers and a number of specially detailed instructors in addition.) “Officers possessing special qualifications as instructors will be detailed as heretofore.”

The following quotation is made from this year’s report of the instructor in the department of tactics:

“Instructors. Before the Spanish-American war the instructors and assistant instructors at the Infantry and Cavalry School were taken from the army at large. This afforded the advantage of greater selection and did not deprive the garrison of Fort Leavenworth of a large part of its officers.

“Since the war, the two-year course at the school has been condensed into one, and the classes have been more than doubled in size. The necessity for having competent instructors, who can devote all of their time to their educational duties, is therefore more apparent than ever. The thoroughness of instruction, especially in the practical work, is necessarily impaired by the reduction of time available; an effort must be made to compensate for this by increased labor on the part of the instructor and his assistants. ”

The foregoing views are concurred in, and it is my purpose to apply for the detail of certain officers possessing special qualifications as instructors, for duty at the school during the coming school year. The exclusive use of officers from the garrison last year did not produce results as satisfactory as they might have been.

2d. The authorized text-book in military topography has long been unsatisfactory to both instructors and students. Departures from the text of that book should be authorized with a view to preparing

in time either a new text-book or a very comprehensive revision of the one now in use.

3d. . In the preparation of lectures upon and in the solution of practical problems in international and martial law and military government, it is necessary for the instructors to have some work which can be cited with the concurrence and approval of the War Department as an authority upon the subject. I know of no better or more reliable work on the subject than "Military Government and Martial Law," by Berk-himer, and I would recommend that this school be authorized to use that work as an authority upon the subject of which it treats.

In times past I have observed that it was authoritatively stated by Judge Magoon, the law officer of the War Department, presumably with the approval of the Secretary of War; and I know it was extensively used in the Philippine islands as the best available authority on the subject. Colonel E. H. Crowder, Judge-Advocate-General's Department, can doubtless give some information on this subject.

It is necessary that some authority be designated on the subject in order that the school staff may be able to work during leisure time on the preparation of problems for future use.

I would respectfully request that consideration be given to the subjects presented in this report as promptly as possible, with a view to the settlement of the questions involved as long a time in advance of the beginning of the next year's course as practicable.

Very respectfully,

J. F. BELL, .

Brigadier General,

U. S. Army.

[APPENDIX H.]

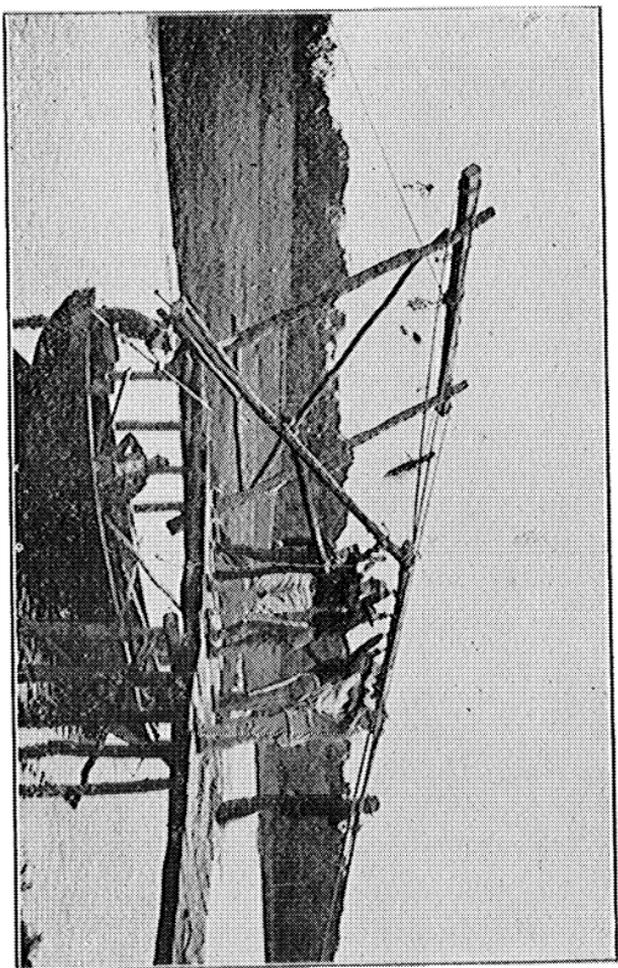
GENERAL SERVICE AND STAFF COLLEGE

Fort Leavenworth, Kas., Dec. 28, 1903.

Memorandum for the Commandant:

The proper curriculum and length of time to be devoted to the course at the General Service and Staff College cannot be satisfactorily decided if we consider this institution alone. It is only when we consider it as a part of the entire system of military education in the army that we can form a clear idea of its proper functions and needs.

The Infantry and Cavalry School, as the name implies, was established in the first instance for the purpose of instructing officers of the infantry and cavalry. It was supposed to bear the same relation to these two arms that the school at Willets Point did to the engineers, or the school at Fort Monroe to the artillery. The present institution is designed to cover more ground and to attain greater ends. Its new title, the "General Service and Staff College," indicates that its instruction is no longer to be confined to the officers of the two arms for which it was originally intended, and G. O. 155, series of 1901, A. G. O., implies that it is open to all arms of the service, and that it is to be a recruiting ground, so to speak, for the Army War College. It is believed, therefore, that the course of instruction should be shaped so as best to attain the two ends here set forth, namely: first, to provide instruction for officers of the infantry and cavalry; second, to prepare officers of all branches of the service for the Army War College. This institution is not yet in a satisfactory condition to achieve these two objects. It has a



REES' PILE BRIDGE. PLACING DERRICK FRAME.

larger personnel than it had formerly, and it has a high-sounding title; but the fact is, at the present time it is neither more nor less than an infantry and cavalry school, and its curriculum is not up to the standard that had been attained by the old institution which was discontinued at the outbreak or the Spanish war. It is believed that it should be the object of all concerned not only to bring this institution back to the standard it had attained in 1897, but to push it far beyond the point it had then reached. I believe both of these objects to be easily attainable.

Let us consider first the functions of the college as a school for officers of the infantry and cavalry. The course at present is overcrowded. There is no doubt in my mind that the students have more mental food than they can readily digest. This condition of affairs is calculated to leave the student at the time of his graduation in such a condition of mental fatigue as to have no further desire to study. But while the course is thus crowded, it is worth our while to ask how much of this crowding is necessary, and how much time is wasted that could be bestowed upon other subjects.

It should be remembered that we now have an important feature of preliminary instruction that was not in existence in the days of the old Infantry and Cavalry School. I refer to the system of officers' schools at posts. It is manifestly useless to devote time here to instruction in things that can be learned with equal facility and equal thoroughness at post schools. There is no reason under the present conditions why an officer detailed for duty at the General Service and Staff College should not be thoroughly familiar with the service of security and information, and with equitation and hippology, so far as these subjects can be taught by the system of recitation. We have no right to assume that the post schools are

not good or that the instructors are not entirely competent. On the contrary, we have every reason to believe the reverse to be the case. In addition to the subjects mentioned, a familiarity with so much of the subject of organization and tactics as pertains to definitions, organization and discipline, the characteristics of the three arms, the transportation of an army corps, and the space and time required in formations and marches, should be easily acquired by an officer at the school of his post; and he should be familiar with so much of the subject of military law as pertains to courts-martial. The subject of signaling, so far as it relates to signaling by flag or torch, can be and should be taught at an ordinary post as thoroughly and fully as it could be taught here.

I would recommend, then, that each officer sent to the General Service and Staff College be required to present on reporting for duty here a certificate of proficiency in the following subjects:

1. Service of security and information.
2. Equitation and hippology.
3. So much of organization and tactics as relates to definitions, organization and discipline, characteristics of the three arms.

(The transportation of an army corps, and the space and time required in formations and marches should be omitted from the course and from the preliminary certificate of proficiency, as they consist of small details which an officer who is mentally worth anything will speedily forget, but in regard to which he can readily gain the desired information by turning to the book.)

4. Military law, so far as it relates to courts-martial.

5. Signaling with flag and torch.

It is not by any means recommended that the subjects mentioned be altogether dropped from

the curriculum. On the contrary, an extended *practical* course in the service of security and information, on the map and in the field, is contemplated. In equitation and hippology there should be lectures and demonstrations by the officer in charge of the department or by a veterinarian on duty with it. In organization and tactics the recitations should be limited to the subjects of infantry tactics, cavalry tactics, artillery tactics, the three arms combined, marches and convoys. The subject of military law, so far as it relates to courts-martial, should be dropped entirely. Every officer has sufficient opportunity at the post officers' school and in the course of his duties as a member or judge-advocate of courts-martial to acquire a sufficient familiarity with the subject of military law for all the purposes for which he will require it. If an officer on reporting for duty as a student at this college be not provided with a certificate of proficiency in the subjects mentioned above, he should be required to pass an examination in everything not covered by such certificate. If not provided with the requisite certificate and unable to pass the examination, he should be reported to the War Department as not qualified to undertake the course, and should be immediately sent back to his regiment. By adopting the plan suggested above, we would save recitations as follows :

Security and information,	17
Equitation and hippology,	17
Organization and tactics,	8
Military law,	30

In all, a gain of 72 recitations, which could be devoted to other subjects and enable a good one-year course to be carried out without overcrowding.

In addition to the above it may be practical to require the student officers on reporting to present a certificate of proficiency in part II of Root's Topog-

raphy and Sketching, and in Beach's Manual of Field Engineering. I am not fully satisfied as to the expediency of this; but if it can be brought about it will be a consummation devoutly to be wished. In this connection, I respectfully invite attention to the appended letter of Captain Thomas H. Rees, corps of engineers, instructor in engineering.

Having gained these recitations, let us see what use we could make of the time thus placed at our disposal. Looking at the program of instruction for the General Service and Staff College, we find the following:

Part III Lectures and demonstrations on field artillery

The course consists of lectures and demonstrations on the manual of field and machine guns; mechanical maneuvers of field pieces; ammunition; marches; pointing and ranges; and the employment of United States field artillery in field service and battle.

A person unfamiliar with the conditions existing at this institution would imagine from this that the course in field artillery was a complete and comprehensive one, such that any student after passing through it would have a reasonably thorough knowledge of field artillery. We observe that the course consists of lectures and demonstrations on the manual of field and machine guns. This in itself one would imagine would require considerable time, but we have, in addition to this, mechanical maneuvers of field pieces; also ammunition; and I speak advisedly when I say that the subject of ammunition for field artillery is one requiring much study and one which could not be learned in the course of a single lecture. In addition to the foregoing, we have marches, and pointing and ranges, both very important subjects, and finally the employment of United States artillery in field service and battle. Now, if we ask how much time is devoted to this apparently extended course in

field artillery, we receive the astounding answer that it is begun and completed in four lectures and demonstrations. The ablest artillerist in the world, lecturing to the most capable body of young officers in existence, could not properly conduct the course in four lectures. In other words, in plain English-let us not deceive ourselves-let us acknowledge the fact-it is a sham. No friend of the Staff College and no friend of the army can view with patience any program of instruction that publishes to the world a false idea of the course of instruction here, either in its nature or extent. Such a system, while objectionable on moral grounds, is also dangerous, because it may convey an idea to those in authority that the professional attainments of the graduates of this institution are higher than they really are, and may cause them to expect more from the graduates than they can fulfil.

Let us now pass to part v.

Part V Elements of strategy (conduct of war)

Introduction; the position of war in social life; the characteristics of modern strategy; the principal methods of waging war; the offensive; the defensive; alterations of offensive and defensive; the operations; strategical offensive operations; tactical offensive operations; strategical defensive operations; tactical defensive operations; operations under special conditions; the influence of **naval** operations on the conduct of war; conclusion.

If Massenbach, Clausewitz, and Jomini could in the regions of eternal bliss, or wherever they may be, get hold of a copy of the program of instruction of the General Service and Staff College, and at the same time be debarred from a practical observation of its work, they would conclude from part v that this is one of the finest strategical schools ever seen. Now the plain fact of the matter is that part v is taken *verbatim et literatim* from the chapter head-

ings and sub-headings of a small book on strategy which is at the same time too brief and too advanced to use as a satisfactory text-book for recitations. An attempt is now being made to give as complete a course in strategy as the crowded condition of the course will permit, but it does not follow the sub-heads as laid down in the program of instruction; it is believed to be less abstruse and more practical than the course outlined therein.

As I will endeavor to show later, this course, it is believed, can be greatly extended and still further improved.

Part VI Lectures and demonstrations on visual and electrical signaling

Lectures by selected officers of the signal corps, as follows :

1 The functions of the signal corps operating with an army in the field,

2 Visual signaling. Flag, lantern, heliograph, search-light, bombs, rockets, and colored star signals (Very's and others'),

3 Ballooning. Principles; materials for balloons; inflating; manufacture of gas; mechanical construction; means of signaling, sketching, and photographing from balloons and kites.

4 Military line construction. Permanent lines: tools and materials; laying out and construction. Temporary lines: wire and lances; method of construction. Outpost lines and flying lines laid from reels. Outpost carts.

5 The military telegraph.

6 The telephone.

The authorized manuals furnished by the chief signal officer to be read in connection with the lectures. Practical demonstration by the signal company.

If we consider the subjects set forth above, it is evident that the time now given to signaling is altogether inadequate for anything like reasonably thorough instruction in this important subject. The best that can be done is to give a mere smattering, unworthy of the college, unworthy of the subject, and, like the course in field artillery, a mere sham.

It is not sufficient for a physician to diagnose a disease. If he is to perform the full measure of his functions, he must prescribe a remedy. Having pointed out what I believe to be some of the defects of the present course, I feel, therefore, that it is incumbent upon me to suggest a way in which these defects can be remedied and the course improved.

I would suggest the following, therefore, as a curriculum for a one-year term:

DEPARTMENT OF TACTICS

Part I Security and information. Practical work as follows:

- (a) Written exercises with and without, maps.
- (b) **Exercises without troops** : reconnaissances.
- (c) **Exercises with troops**: course in patrolling; advance guards; rear guards ; flank guards; cavalry screen; outposts (by day and by night); reconnaissance in force.

Part II Equitation and Hippology

Theoretical

Lectures on the horse by the veterinary surgeon. This course should comprise only such lectures as **may** be necessary as a preparation for the practical work. Probably three lectures would be sufficient.

Practical

Exercises in determining the age of horses; exercises in examination for soundness; exercises in judging conformation; stable management and horseshoeing; riding lessons.

Part III Arms and Equipment

Description of the arms and equipment of infantry and cavalry; the equipment of field artillery; field and machine guns; mechanical maneuvers with field pieces; ammunition; pointing and ranges. (The subjects of "marches" and "the employment of United States field artillery in field service and battle" are not **omitted** from the course, but are transferred to the subject of "organization and tactics" where they properly belong). The course in arms and equipment should be conducted by recitation.

Part IV Organization and Tactics

Theoretical

Infantry in attack and defense; cavalry in attack and defense ; artillery in attack and defense; the three arms combined; marches; convoys.

Practical

1 Exercises without troops: tactical rides; selection, occupation, preparation, attack and defense of positions outlined.

2 Exercises with troops: attack and defense of convoys; attack and defense of positions; marches; camps and bivouacs.

3 Practice in writing military orders and reports. These orders to be written on the field for troops actually employed; to be written in the section room for troops represented on the map; and to be written for large bodies of troops in exercises similar to those in the autumn maneuvers. Reports to be submitted after each exercise with troops.

Part V Elements of Strategy (Conduct of War)

A series of not less than twenty-five lectures setting forth the general principles of strategy and illustrating them by descriptions and critical discussions of the most noted campaigns in modern military history. This course should also embrace lectures on the military geography of Canada, Mexico, the West Indies, Central America and Colombia, Chile, Argentine and Brazil, and of the Orient.

Part VI Lectures and Demonstrations on Visual and Electrical Signaling .

1 The functions of the signal corps operating with an army in the field.

2 Visual signaling. Heliograph, search-light, bombs, rockets, and star signals.

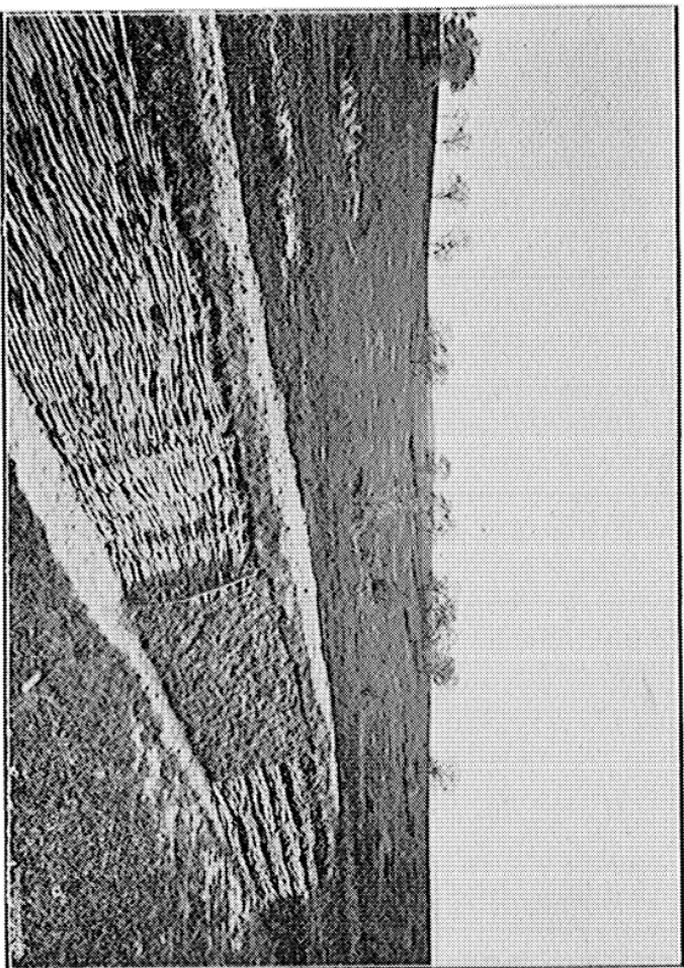
3 Ballooning. The construction of balloons, the manufacture of gas, the balloon train, means of signaling, sketching, and photographing from balloons.

4 Military line construction. Permanent lines: tools and materials; laying out and constructing. Temporary lines : wire and lances; method of construction. Outpost lines and flying lines laid from reels. Outpost carts.

5 The military telegraph.

6 The telephone.

(A manual for instruction by recitation as well as by lecture and demonstration should be prepared in this important subject. Seventeen recitations would doubtless be sufficient to cover it in advance, review and general review. A fully equipped balloon train should be provided for the use of the college.)



CONTINUOUS HURDLE, SOD AND FASCINE REVETMENT.

DEPARTMENT OF ENGINEERING*Part I Topographic Surveying*

*Parts II & III Temporary or Field Fortifications and
Military Field Engineering (theoretical)*

(Changes in this course may, perhaps, be practicable as already set forth. j)

DEPARTMENT OF LAW*Part I The Law Of War*

The law of war as affecting the rights of our own people; the law of war as affecting intercourse between enemies in general; the law of war as specially applicable to enemies in arms; the status of military government and the laws of war pertaining thereto; the status of martial law and the laws of war applicable thereto; trial and punishment of offenses under the law of war; the military commission.

Civil Functions and Relations of the Military

Employment of the military in a civil or quasi-civil capacity; liability of the military to civil suit or prosecution; other civil relations of the military; the constitution of the United States and lectures thereupon.

Part II International Law (To remain as at present)

DEPARTMENT OF MILITARY SANITATION AND HYGIENE

(To remain unchanged)

DEPARTMENT OF SPANISH

(In the past a knowledge of foreign languages by our officers has been regarded as a desirable accomplishment rather than a military requirement, but while this may still be true of other European languages, a knowledge of Spanish has recently become a matter of almost absolute necessity to every American officer. During the recent campaigns in the West Indies and the Philippines there **was** not an officer who understood Spanish who did not feel himself strengthened greatly by this knowledge, and there was not an officer unfamiliar with that language who did not repeatedly find himself sorely handicapped by his linguistic ignorance. We have come in permanent contact with Spanish-speaking peoples. Officers serving in the West Indies, the Philippines, on the Mexican frontier, on the isthmus of Panama, anywhere in Central or South America, are sure to require a knowledge of Spanish, and this knowledge may be needed at any moment. It is not to be compared with any other European language;

those languages are merely conveniences when we travel abroad ; we do not really need French as a universal language any longer, for the English is the language of commerce and diplomacy in the Orient, and a knowledge of English will carry a person far on the continent of Europe. But so far as it is possible now to foresee, we shall be for an indefinite period in close contact with Spanish-speaking peoples. It is suggested that an officer able to read, write and speak the Spanish language with **ease** and fluency, and capable moreover of imparting his knowledge, be assigned to duty at this college **as** instructor in Spanish, and that he be given such assistants possessing qualifications similar to his own, as may be necessary for the course of instruction.)

The foregoing contemplates a one-year course for the General Service and Staff College in performing its functions as a school for the infantry and cavalry officers. The policy of the institution is not, as I understand it, to educate *all* the officers of these two arms, and in fact it would be impossible for it to do so. Moreover, it is contended that, if the post schools be conducted with the zeal and intelligence that we have a right to expect, they will give an officer all the instruction that is needed for the proper performance of his duties as an officer of infantry or cavalry, pure and simple. The course just outlined for the General Service and Staff College should be for officers selected from the different commands, not only because of their proficiency in the post schools, but because they are regarded as officers of capacity and promise. If this policy be adopted, the graduate in the proposed one-year course at the General Service and Staff College, even though he should graduate at the foot of his class, would find a mark of official approbation given to his early efforts as an officer, by his mere selection for duty as a student at this institution.

Let us now consider the second function of the General Service and Staff College, namely, the preparation of officers for duty at the war college, and the

preparation thus implied for their ultimate duty in the general staff. The course as outlined above is one with which officers of engineers and artillery are expected to become familiar in all its essential features at the schools designed for their respective arms. It is proposed then to select the most promising officers from the General Service and Staff College and from the Artillery School and the Engineer School of Application for the second-year course at Fort Leavenworth. The courses of study at the schools mentioned are mainly designed to give officers instruction in duties pertaining to their respective arms. The second-year course at the General Service and Staff College should be designed to give them the further instruction needed to prepare them for the Army War College, or at least to give them a broad, advanced military education to fit them for higher command, even though it should not be practicable to detail them all for duty at the War College.

The course of instruction outlined for the War College in the recent report of its president is essentially a course of practical application of knowledge already acquired. The proper performance of their duty at the War College requires that officers when detailed for duty at that institution should be familiar with the higher features of tactics, with strategy, logistics, fortification, army organization, international law and of such elements of naval warfare as are involved in the consideration of combined operations of the army and navy.

With this end in view, the following course for the second year at the General Service and Staff College is suggested.

TACTICS

Practical Problems, with and without Troops

The tactical exercises with troops should be such as to give each of the student officers practical ex-

perience in the handling of a company, a battalion and a regiment of infantry, a troop and squadron of cavalry, and a battery of artillery. Furthermore, they should be given practical experience in the command of troops in tactical exercises involving all three arms. They should also be given instruction in field fortification, the construction and dismantling of ponton bridges and other features of practical field engineering. The officers not in actual command of troops at the tactical exercises should be required to attend in the capacity of military attaches, being required in each case to submit a report of the exercise, which should contain not only a narrative of the operations but critical comments upon the same. The entire class should attend the autumn maneuvers of the regular army and national guard, where they could be utilized as aids for the commanders of the opposing forces—who have never in the exercises thus far had a sufficient number of staff officers—and as military attaches in the manner already mentioned in connection with the tactical exercises at the college.

The tactical problems without troops should embrace problems on the field and on the map. On the field, the students should be required to select defensive positions for very large bodies of troops, and to issue all the orders necessary for the marching, concentration and deployment of troops thereon. They should then be required to assume another large body of troops at a certain designated position and issue all the orders necessary for an operation involving the attack of the position thus established. These problems should be of two kinds: first, those involving large bodies of troops and giving the student full time to make a careful study of everything concerned with the problem; second, problems involving smaller bodies of troops, in which the statement of the

problem would be given by the instructor to the students on the field, who would then be required to make their dispositions immediately. These problems could be further extended by having the students take long excursions, covering a distance of fifty or one hundred miles, under charge of an instructor, different positions being selected and different problems being given in the course of the excursion. This would also furnish a fine practical application of the student's knowledge of topography and map making.

The problems on the map would partake somewhat of the nature of *kriegspiel*, but would be mainly for the purpose of requiring the officers to arrange all the details for the movement of troops and formulate orders concerning the same. At the conclusion of the course, the class should be divided into sections of not more than fifteen officers each, and sent to make a practical study of the battle-fields of the Great War; for instance, Gettysburg, Antietam, Chickamauga, and Vicksburg. This plan was suggested by me a number of years ago when I was on duty as instructor in the department of military art at the Infantry and Cavalry School. It met with the approval of all the officers through whose hands the recommendation passed, including General Schofield, who was then in command of the army, but it was disapproved by Mr. Joseph Doe, then assistant secretary of war, through motives of economy. The plan has since been adopted and carried out, I understand with success, at the Military Academy at West Point.

Strategy

The course in strategy should embrace a course in-military history from the time of Frederick the Great to the present time, especial attention being paid to the strategy of the more recent campaigns.

This course should consist of lectures by the student officers themselves, each officer being given a special campaign or period as a subject for his lecture, and being furnished with a complete bibliography of the same. The lecture should be delivered before the assembled instructors and students. The students should afterwards be given a quiz on the lecture, being furnished for this purpose with an epitome of the narrative of the campaign. This system of instruction was inaugurated in the last year of strategical instruction at the Infantry and Cavalry School. It was a marked success, the interest inspired being incomparably greater than that shown by the students in recitations on the subject, or even in lectures by their instructors. It is assumed that the personnel of the classes in the second-year course at the General Service and Staff College would be greatly superior to the personnel of the old Infantry and Cavalry School, and there is reason to believe that this system would be still more successful than it was then.

Logistics

The course in logistics should embrace thorough instruction in the subject of marches, castrametation and the various means of transportation by pack train, wagon, railroad, and river and sea transport. This instruction should be by the method of recitation, and, as far as possible, by practical illustration.

Fortification

The course in fortification should embrace general instruction in permanent and field fortification, the employment of fortification in seacoast defense, and the relation of fortresses and intrenched camps to strategical operations. In field fortification, the student should be required to plan and profile field fortifications according to the topography and the assumed conditions of the defense.

Army Organization

The subject of army organization should embrace instruction in regard to the organization of the army of the United States, both present and past, and the organization of each of the great European powers. This subject would naturally interlace, as it were, with the subject of tactics, and should include a knowledge of the tactics and prominent features of the drill of the principal foreign armies.

War Ships

It is almost impossible to conceive of any war in which the United States is likely to be engaged that will not require the concerted action of the army and navy. It is desirable, both as a matter of accomplishment and of practical utility, that the *selected* officers of our army should have some knowledge of the nature, construction and use of the different naval vessels, of the nature of the relations in which the army and navy would be placed in combined operations, and a knowledge of the naval power of the different great nations. This course should properly be under the charge of a naval officer, and it is recommended that a naval officer selected by the Navy Department at the request of the War Department be assigned to duty at the college during the period required for this course. There is nothing radical in this proposition, and it is not without precedent, for some years ago Brigadier General Tasker H. Bliss, U. S. army, then a lieutenant of artillery, was detailed to give instruction in strategy at the Naval College at Newport.

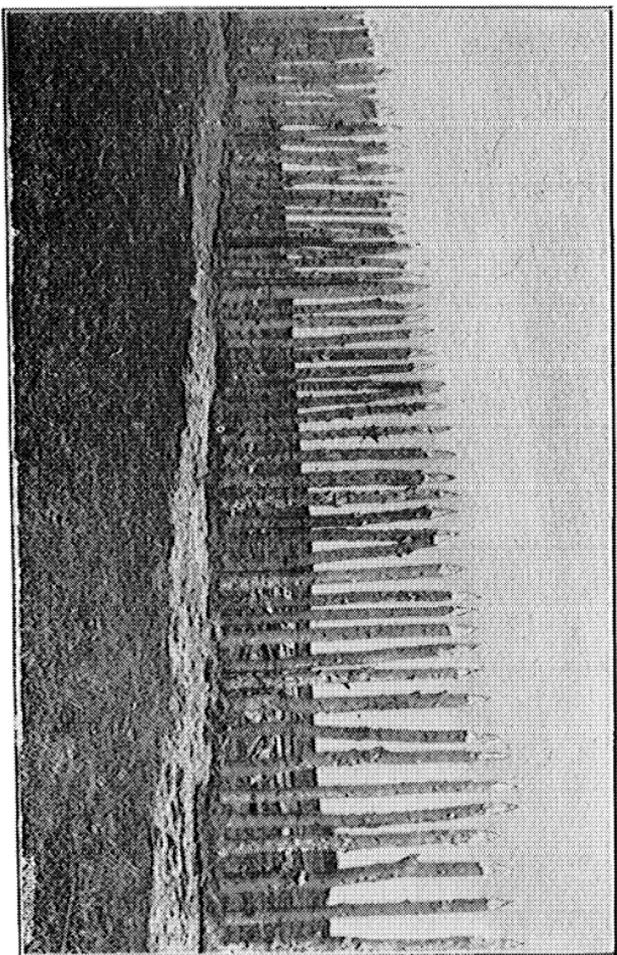
LAW

The course in international law should consist of lectures and problems. It is assumed that the students, being all graduates of the service schools, will have taken a course in international law. The lectures

should therefore be limited to the more important features of the subject, and the practical problems should be of the nature of those questions involving the relations of our Government with foreign nations which an officer in the course of his service might find himself, as is often the case, compelled to decide.

It is believed that a course such as outlined above would prepare the graduates of the General Service and Staff College for duty at the Army War College, where, according to the system inaugurated, they would be required to make practical use of the knowledge thus acquired. How many of the graduates should be detailed for duty at the War College, or how soon after their graduation they should be sent to that institution, I am not prepared to say. I am confident, however, that considering the fact that the officers taking the second-year course at Fort Leavenworth would be the select of the select, they would be qualified on graduation for the War College. If it should not be practicable to detail them all, selections could be made according to their relative standing or their availability.

One objection that might perhaps be urged to the foregoing scheme is that in the competition in the second-year course at the General Service and Staff College, the engineers and artillery might monopolize the positions of "honor graduates." This I do not think is necessarily the case. To be sure, the officers graduated at West Point are assigned, according to class standing, to the engineers and artillery before graduates are assigned to the infantry and cavalry. But we know of many instances where officers who have graduated with a comparatively low standing at West Point have far surpassed in subsequent mental achievements classmates who graduated above them at the Military Academy. But even if such a monop-



PALISADE.

oly as that feared might occur, it should be remembered that the General Service and Staff College is not organized, for the purpose of bestowing the distinction of "honor graduate" upon an infantry officer, or upon an officer of any particular arm whatever. The object is to get, by careful selection, the best officers for the Army War College, and so long as that end is attained it need not be a matter of solicitude whether they come from one arm of the service or another.

Under the system outlined above we should have two classes at the college, these classes being quite different in their personnel and prosecuting courses of study quite different in their nature and object. The institution would, in fact, be fulfilling a double function as an infantry and cavalry school and a general staff college--not merely a general service and staff college, but an academy in which officers are prepared for the War College and thus for the general staff. The two functions would not conflict. The instructor in charge of the department of tactics in the first year's course, should have charge of the instruction in tactics, strategy, logistics and army organization in the second year's course; but his assistants would necessarily be different for each. The instructor in charge of the department of engineering should have charge of the instruction in fortification in the second year's course; but his assistants would also be different for each class. The instructor in law and his assistants could be the same for both classes. In other features of instruction the two classes would be totally separate.

Another question likely to arise is, How shall we discriminate between the graduates of the first year's class alone, and those who graduate in the complete course? That is, I think, easily answered. A graduate of the former could be carried in the Army Register as *Graduate, General Service and Staff College*,

Infantry and Cavalry Course, and the latter as *Graduate, General Service and Staff College, General Staff Course*. For the latter officers no record of graduation at the engineer or artillery school or the infantry and cavalry course at Fort Leavenworth would be implied—according to the arm of the service—in the record of graduation at the *General Service and Staff College, General Staff Course*.

Respectfully submitted,

ARTHUR L. WAGNER,
Colonel & Assistant Adjutant General,
. Assistant Commandant.

December 28, 1904.

Colonel A. L. Wagner,

Assistant Commandant,

General Service and Staff College.

Sir:

Complying with your verbal instructions, I have the honor to submit the following recommendation concerning the course in military engineering at this college.

The two-year course in post schools covers part II of Root's Military Topography and Sketching, and all of the Manual of Military Field Engineering. It does not cover part I of Military Topography, which treats of surveying and the use of instruments, and with the limited means available at posts it cannot be expected to include instruction and practice in the field.

It is important that in the college course as much time as possible be devoted to practical work in application of the principles and descriptions given in text-books, and if credit can be given to the theoretical instruction at post schools, more time will become available for an extension of the college course and for an increase in its practical work.

I do not think, however, that the college can accept the certificate of the post schools as sufficient evidence of proficiency in the subjects covered. Officers designated for attendance at the college should be required to pass a preliminary examination in these subjects. The examination questions should be prepared by the college staff and approved by the commandant. They should be sent to the stations of the offi-

cers designated, where the examinations should be held, at an appointed day and hour for each subject. The examination papers should be returned to the college to be marked by the college staff, and only those officers who have passed a satisfactory examination should be ordered to the college.

The adoption of such a system would enable the college work to be expanded along lines the importance of which has been recognized but for which there has been no time, and it would place upon post schools a responsibility which could not be easily disregarded.

Very respectfully,
THOS. H. REES,
Captain, Corps of Engineers,
Instructor, Dept. of Engineering.

[APPENDIX I.]

GENERAL SERVICE AND STAFF COLLEGE
FORT LEAVENWORTH, KANSAS,

March 15, 1904

Memorandum for the School Staff:

The commandant desires that the staff give careful, painstaking consideration, in detail, to the various views set forth in the report of the commandant of July 31, 1903; memorandum report from Colonel A. L. Wagner of December 28, 1903; and a tentative draft of a proposed order regulating instruction in the United States army, attached to letter from Colonel Wagner of March 12, 1904; also in various other memoranda inclosed herewith; with a view to the formulation of a definite course of instruction at this college, to be divided into two parts, one an infantry and cavalry course, covering one year only, and the other a supplementary general staff course, covering a second year for a few selected students.

What is to be included in **each course** should be thoroughly **discussed**, and nothing incorporated therein until it has been demonstrated that there will be sufficient time to cover thoroughly all of the instruction proposed, together with an additional amount of practical instruction, especially in the department of tactics.

To repeat, it is desired that thorough consideration be given to this matter in all of its details, and that a schedule of instruction for each year's course be submitted after it is determined that there will be sufficient time to properly cover the course proposed. The commandant would also like a separate memorandum showing in detail the amount of time available for and proposed to be allotted to each subject.

It is evident that some preparation on the part of national **guard** officers and students from military colleges will be **necessary** to fit them to take such a course as is in contemplation for the infantry and cavalry course of this institution in the future. It will also be necessary to prescribe some form of examination in order to determine whether such persons are fit to undertake the course, before the beginning of the school year. The commandant would like any suggestions the school staff might be able to make in the nature of proposed requirements for previous preparation on the part of such students along the lines of post school work to fit them for such examinations.

J. F. BELL,
Brigadier General, U. S. Army,
Commandant.

PROCEEDINGS OF THE STAFF OF THE GENERAL SERVICE AND STAFF COLLEGE

March 21, 1904.

The staff met at 3 p. m. for the purposes set forth in the foregoing memorandum.

In addition to the instructions contained in above memorandum, the commandant verbally instructed the staff to consider and make recommendations concerning the following questions.

Whether it is practicable and advisable to introduce a department of languages into the course of instruction at the college.

Whether the staff course should commence in September, 1904.

Certain changes in the allotment of time to the different departments.

Whether it is not advisable to change the maximum values or weights assigned to the different departments in ascertaining the figure of merit.

The staff proceeded to read and consider the report of the commandant of July 31, 1903, also the memorandum report of Colonel Wagner of December 28.

The staff then proceeded to read and consider a tentative draft of a proposed revision of G. O. 102, A. G. O., 1902, regulating instruction throughout the army, the same having been submitted to the commandant by Colonel A. L. Wagner, General Staff, and by the former to the college staff for suggestions. All suggestions made by the staff were annotated on the margin of the draft and returned to Colonel Wagner in person by the secretary.*

The staff then adjourned to meet at 3 p. m. on the 23d inst.

*Since issued as G. O. 115, W. D. 1904.

March 23, 1904.

The staff met as per adjournment.

After careful consideration of all the documents referred to the school staff in memorandum signed by the commandant and dated March 15, 1904, the instructor in the department of tactics laid before the staff for its consideration, the following:

It is suggested that the name of the department of tactics be changed back to its original designation, namely, "the department of military art? The department was known as the department of military art in the Infantry and Cavalry School until September, 1897, when, by reason of the separation of that department into two departments, the designation was dropped and the two new departments became known as the "department of strategy" and the "department of tactics." Later, when the departments of strategy and tactics were again merged into one department, the original name was not restored, but the combined departments retained the name "department of tactics." It is believed that the original designation of the department as the '(department of military art' is the one most appropriate to the course pursued in that branch of the college.

It is also suggested that the infantry and cavalry course of the General Service and Staff College should extend through two terms, from September 15 to June 30 of the following year, and should be as follows for the department of military art.

INFANTRY AND CAVALRY COURSE

The infantry and cavalry course in military art to be divided into eight parts, embracing lessons, lectures, demonstrations and practical exercises with and without troops.

Part I Service of Security and Information

Instruction by practical problems and exercises on the map and on the terrane with and without troops.

Part II Equitation and Hippology

Instruction by lectures and recitations based upon authorized text-books; practical demonstrations and tests; lessons in equitation.

Part III Organization and Tactics

Instruction by lectures and recitations based upon authorized text-books, with practical exercises in writing orders

and reports and solving problems in organization. Also practical exercises and problems on the map and on the terrain with and without troops.

Part IV Modern Weapons and Munitions of War

Instruction by lectures and recitations illustrating the use of modern weapons and munitions of war in campaign and their influence on tactics.

Part V Elements of Strategy and Reading of Military History

Instruction by lectures and recitations on authorized text-books embodying the elements of strategy, and lectures and recitations on campaigns illustrative of the principles.

Part VI Visual and Electrical Signaling

Instruction by lectures and demonstrations illustrating the functions of the signal corps with an army in the field.

Part VII Field Service Regulations

Instruction by lectures and recitations based upon authorized text-books, with written exercises and practical problems on the map illustrating the principles taught.

Part VIII Practical Work in the Study and Application of the Principles of Military Art

Instruction by a final series of written exercises, problems on the map and problems on the terrain with and without troops, illustrating the principles of military art taught in the course.

Note: Details of the instruction under each of the above parts to be prepared and published yearly at the college for the information and guidance of the instructors and class; but not to be published in general orders; this because the details of the course should be modified and even changed from time to time as the staff may deem for the best interests of the government and the college. The details of the infantry and cavalry course for the year beginning September 15, 1904, and ending June 30, 1905, are attached hereto.* They are based upon the above program and are within the limit of time made available to the department of tactics (department of military art) by the staff.

GENERAL STAFF COURSE

The general staff course in military art to be divided into nine parts, embracing lessons, lectures, demonstrations, original research, practical exercises in instruction and practical exercises with and without troops.

* Appendix K

Part I Service of Security and Information

Instruction by exercises in the preparation of problems and the umpiring and criticism of problems solved by students in the infantry and cavalry course.

Part II Organization and Tactics

Instruction by lectures, recitations, original research and written exercises in the organization and tactics of our own and foreign armies and places for the mobilization and concentration of forces.

Part III Logistics

Instruction by lectures and recitations and by written exercises in the movement and supply of armies.

Part IV Grand Tactics

Instruction by lectures, recitations and written exercises based on original research, deducing from military history the grand tactics of the battle-field.

Part V Strategy and Military History

Instruction by lectures and recitations on campaigns illustrating the principles of strategy. Written exercises deducing principles of strategy from military history; exercises in the game of war. Lectures on military history covering great campaigns.

Part VI Military Geography,

Instruction by lectures and recitations on the influence of geographical considerations upon military operations with written exercises applying principles to geographical areas.

Part VII General Staff Duties

Instruction by lectures and recitations on the duties of general staff of our own and foreign armies in peace and war.

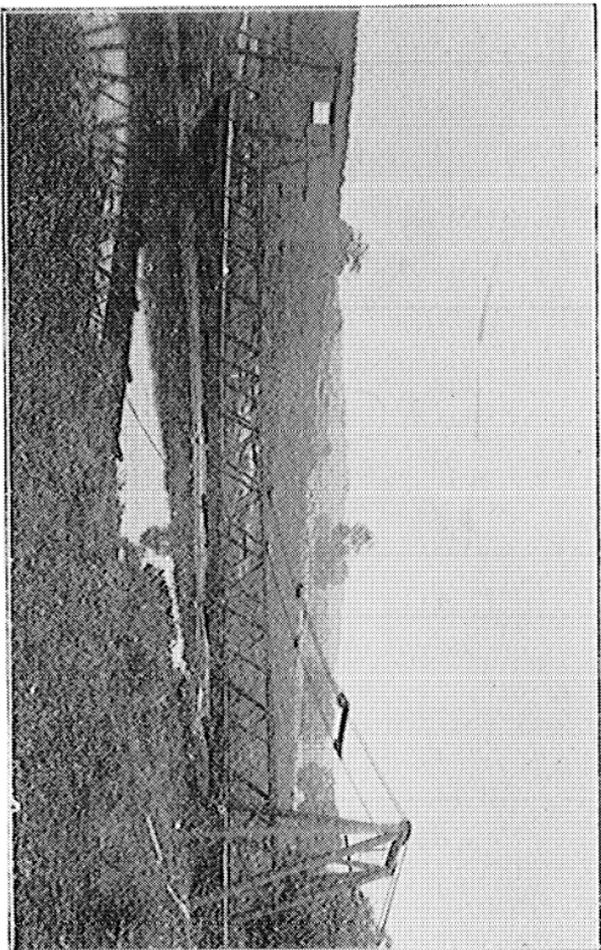
Part VIII Staff Rides

Instruction to be by written exercises in problems prepared for solution during the rides; by exercises in selecting positions on the terrain for assumed forces and tactical dispositions for offensive and defensive operations; preparation of appropriate orders of march, of maneuver and of battle; writing of reports, and preparation of route and position sketches and maps.

Part IX Maneuvers

Visit to a battle-field and participation in autumn maneuvers whenever practicable; staff rides (part VIII) to be combined with this feature of instruction when possible.

Note : Details of the instruction under each of the above parts to be prepared and published yearly at the college for



SUSPENSION BRIDGE.

the information and guidance of the instructors and class, but not to be published in general orders; this because the details of the course should be modified and even changed from time to time as the staff deems for the best interests of the government and the college. The details of the general staff course for the year beginning September 15, 1904, and ending June 30, 1905, are attached hereto.* They are based upon the above program and are within the limit of time available to the department of tactics (department of military art).

After due deliberation and discussion the staff recommends as follows:

1 That a department of languages (Spanish) be instituted at the beginning of the next school year (September, 1904).

2 That a staff or supplementary course for a small number of selected students be inaugurated next September (1904).

3 That the department of tactics be known hereafter as the "department of military art."

4 That the department of hygiene be known hereafter as the "department of the care of troops."

The staff then proceeded to discuss the qualifications that should be required of national guard and volunteer officers and graduates of military schools and colleges for admission to the General Service and Staff College (see G. O. 155, A. G. O., 1901). The staff recommends that the details of the qualifications shall be determined by the General Staff, but it is believed that these requirements should be not less than those of a course equivalent to that of a recognized high school, in addition to which it is believed that they should be required to pass an examination in the first year's course of the post schools. The staff is of the opinion that these requirements are the least that will permit them to take this course with profit to themselves and without detriment to the college. In addition to the above educational qualification, it is

* Appendix K

recommended as a requirement of entry for a student of any one of the above-mentioned classes, that he should be unmarried, between 21 and 35 years of age, of sound health, of good moral character, and a citizen of the United States.

The instructors of the various departments then presented the infantry and cavalry and general staff courses for their departments, appended hereto. *

There being no further business before it the staff adjourned sine die.

M. F. DAVIS,
Captain, 1st Cavalry,
Secretary.

APPROVED:
BY COMMAND OF BRIGADIER-GENERAL BELL:

M. F. DAVIS,
Captain, 1st Cavalry,
Secretary.

[APPENDIX K.]

GENERAL SERVICE & STAFF COLLEGE

DEPARTMENT OF TACTICS

Fort Leavenworth, Kas., March 28, 1904.

The Secretary,

General Service and Staff College,

Fort Leavenworth, Kansas.

Sir.

In presenting the inclosed programs of instruction for the proposed "infantry and cavalry" and "general staff" courses, as directed in memorandum from the commandant dated March 21, 1904, it is deemed necessary to point out the reasons for departing in a measure from the methods now in use.

Both the commandant and Colonel Wagner in their memoranda on the subject of instruction at this college dwell with emphasis upon two features, one the necessity of a very large part of the instruction being practical, the other the crowded condition of the curriculum, which fills the student's mind with 'more food than he can naturally digest.

Taking up the latter proposition first, it appears to the writer that the overcrowding of the curriculum and the mental dyspepsia referred to is due decidedly more to the methods of study and instruction than to the number of subjects studied. By dividing the text-books into many short lessons and basing examinations on a knowledge of the text rather than on the broad principles of the subject, a habit of minute study and literal recitation is induced, which tends to concentrate the student's mind on the text and not on the subject, thus dwarfing instead of ex-

panding him. Again, each recitation on the text occupies two hours of the student's time in the class room, time which it is believed could be advantageously used in elucidating the text in the light of modern experience and research and attaining that most desirable feature in the college work-practical exercises, both with and without troops, on the terrane.

The method of instruction now in vogue is short lessons carefully and minutely learned-often committed to memory; occasional and infrequent lectures elucidating the subject of study; and practical problems at such times and in such numbers as the limited time left to the department will permit.

It is with a view to meeting these two most important features of instruction, namely, a greater number of practical exercises and a less crowded curriculum, that the infantry and cavalry course has been prepared, and it is believed that the course as proposed will meet these requirements.

In the current course in this department there are in round numbers, eighty-seven recitations, thirty-three lectures, and twenty-seven problems. By adopting the proposed course there will be seventy-two recitations, sixty-five lectures and sixty-four problems, a reduction of fifteen recitations and a gain of thirty-two lectures and thirty-seven practical problems. The hours gained by reducing the instruction in security and information by substituting lectures for recitations will permit the introduction into the course of two very important subjects, viz. modern weapons and munitions of war, and field service problems. The importance of the former is pointed out by the commandant in the memorandum of July 31, 1903, and the latter is about to be issued as a text-book by the War Department.

Another advantage that would be gained by adopting the proposed course, in so far as it supplements recitation in any subject by lectures on that subject, is that instruction will be up to date. Nearly all the text-books used at the college need revision in the light of late experiences. Until these works are revised, the errors and omissions in them must be supplied in some way. In this department it is proposed to print appropriate memoranda on slips for insertion in the students' text-books and to explain in lectures the reasons and cause of such modification of the text.

Lest it be deemed that the preparation of so many lectures as are proposed would impose undue labor on the instructors, I will state that thirty-three of these lectures have already been carefully prepared in the department, and that probably seven more will have been prepared before the close of the term, leaving only twenty-five to be prepared during the coming year, an easy task for the conscientious and painstaking officers now holding positions as assistant instructors in the department. So too with problems, already many have been carefully prepared; many of them need only time for solution; besides, the department has many problems prepared for classes in past years, which become available. As will be seen from the detailed schedule of recitations, lectures and problems in the infantry and cavalry course herein inclosed, the exercises referred to come easily within the time allotted to the department.

As to the schedule proposed for the general staff course, it is based upon the assumption that the officers taking that course are to prepare themselves for duties connected with the War College and general staff of our army. It is proposed that the course be carried through on the general lines of original research conducted under the supervision and direction of the in-

structor in the department, the students to be assisted, both as to facts and general principles, by carefully prepared lectures, quizzes and discussions, and by the solution of practical problems on the map, on the terrain (both with and without troops) and by practical exercises in writing orders and reports. It has been deemed best to recommend certain exercises in making problems, umpiring the other class in practical problems, and criticizing solutions made; also that such theses written by students in the general staff course based upon original research, as are deemed worthy, be read by the author to the two classes, and generally that the students in this class shall assist the students in the infantry and cavalry course, whenever such instruction will tend to the mutual advantage of both classes.

The course proposed will occupy no more time than is allotted to the department and leaves ample time to the students for study and research.

Very respectfully,

W. W. WOTHERSPOON,

Major, 6th Infantry,

Instructor.

2 inclosures

Inclosure 1

Proposed Program of Instruction for the
INFANTRY AND CAVALRY COURSE

Part I Security and Information

Text-Service of Security and Information (Wagner)

Hours

Theoretical

Five lectures (introductory; patrolling; outposts; advance and rear guards; cavalry screen) to be accompanied by printed questions from the text-book, answers to which must be searched for in the text-book	5
Four recitations or quizzes on questions as above	8
Examination on theoretical work	5

	Hours
Practical	
Three map problems, applying principles laid down in rides, lectures and text-book	9
Three discussions of solutions of map problems	3
Three terrane rides, selecting positions, etc., for marking proficiency in application of principles taught	9
Three exercises with troops; for marking proficiency in application of principles taught	9
	48

Part II Equitation and Hippology

Text-Horses, Saddles and Bridles (Carter)

Theoretical

Fourteen lectures (introduction; remount systems; determination of age; determination of soundness; framework and muscles of the horse; shoeing; bits; saddles; training; forage and feeding; hygiene; stable management; pack animals and packing; draft animals) to be accompanied by printed questions from the text-book, answers to which must be searched for in the text-book	14
Seven recitations or quizzes on questions as above	14

Practical

Demonstration to the class of method of determination of age	3
Practical test of determination of age; for marking proficiency	3
Demonstration to the class of methods of determination of conformation and soundness	3
Practical test of determination of conformation and soundness; for marking proficiency.	3
Demonstration to the class of methods of shoeing	3
Demonstration to the class of methods of packing	3
	46

Part III Organization and Tactics

Text-Organization and Tactics (Wagner)

Theoretical

Twenty-one lectures (introduction; recruitment and discipline; characteristics of the three arms; organization of foreign armies; organization of the United States	
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Hours

army; history of modern infantry; infantry in attack; infantry in defense; history of modern cavalry; cavalry in attack; cavalry in defense; history of modern artillery; artillery in attack; artillery in defense; the three arms combined in attack; the three arms combined in defense; convoys, attack and defense of; cavalry raids in the United States; space and time occupied by armies on the march; movement of armies, on roads, railroads, steamers; mobilization and concentration) accompanied by printed questions from the text-book, answers to which must be searched for in the text-book	21
Twenty recitations or quizzes on questions as above	40
Examination on theoretical work	5

Practical

Written problem in organization, applying the principles taught in lectures and text-book	3
Discussion on solutions of problem in organization.7	1
Written problem in organization; for marking proficiency in application of principles taught	3
Five map problems in attack and defense, one each for infantry, cavalry, artillery, three arms combined, and convoys, applying the principles 'laid down in lectures and text-book	15
Five discussions of solutions of map problems in attack and defense, one each for infantry, cavalry, artillery, three arms combined, and convoys	5
Five map problems in attack and defense, one each for infantry, cavalry, artillery, three arms combined, and convoys; for marking proficiency in applying principles taught	15
Three terrane rides, without troops, selecting positions for attack and defense; for marking proficiency in applying principles taught	9
Seven terrane rides, with troops, one each for concentration march infantry, concentration march cavalry, infantry against infantry, cavalry and artillery against cavalry and artillery, infantry against cavalry, three arms combined against three arms combined, and attack and defense of convoys; for marking proficiency in applying principles taught	28
<i>Total</i>	145

Hours

Part IV Modern Weapons and Munitions of War

Text-The Infantry Weapon and Its Use (Mayne)

Twelve lectures (introduction; the infantry weapon; limitations-rifle, human endurance, range, etc.; kinds of fire and their uses; efficacy of fire; the trajectory-influence of ground, obstacles, etc.; fire discipline; influence of fire-infantry and artillery-on tactics; ammunition supply; artillery fire, influence of on cavalry and infantry; penetration and cover; use of intrenchments) accompanied by printed questions from the text-book, answers to which must be searched for in the text-book	12
Ten recitations or quizzes on questions as above	20
Examination on theoretical work	5
<i>Total</i>	37

Part V Elements of Strategy

Text-Conduct of War (Von der Goltz)

Four lectures (introduction; campaigns of Vicksburg, Atlanta, Virginia, 1862) accompanied by printed questions, answers to which must be searched for in the printed synopses of the campaigns	4
Three recitations or quizzes on questions as above	6
Sixteen advance recitations on text-book	32
Eight review recitations on text-book	16
Examination on theoretical work	5
<i>Total</i>	63

Part VI Visual and Electrical Signaling

Four lectures (function of signal corps operating in the field; ballooning and photography from balloons and kites; visual signaling; military line construction)	4
Four demonstrations (visual signaling by day; visual signaling by night; temporary line construction outpost lines and flying lines laid from reels)	12
<i>Total</i>	16

Part VII Field Service Regulations

Text-Official Regulations

Theoretical

Nine lectures (introduction; management of wagon and supply trains; camps; bivouacs and billeting; camp

	<i>Hours</i>
expedients; passage of rivers, bridges and defiles; entraining and detraining of troops on railroads; movements of troops by transports; field orders, messages and reports)	9
Eleven advance recitations on text-book	22
Examination on theoretical work	5
Practical	
Three map problems applying the principles laid down in lectures and text-book	5
Three discussions of solutions of map problems	3
Three map problems; for marking proficiency in applying the principles taught	9
	53

*Part VIII Practical Work in the Study and Application
Of the Principles of Military Art*

To be conducted on terrain with troops

March of concentration for cavalry	3
March of concentration for infantry	3
Cavalry screen against infantry patrol	3
Advance guard infantry against cavalry rear guard	3
Advance guard cavalry against infantry rear guard	3
Advance guard all arms against all arms rear guard	6
outpost of infantry, posting and relieving	3
outpost of cavalry, posting and relieving	3
Attempt to pass outpost by patrols	6
Attack and defense of a convoy	3
Two problems in attack and defense of position	6
	42

Inclosure 2

Proposed Program of Instruction for the
GENERAL STAFF COURSE

Part I Service of Security and Information

Eight exercises in preparing, umpiring, and criticizing problems in security and information as solved by students in the infantry and cavalry course.

Part II Organization and Tactics

Five lectures (principles of organization and ratios of the three arms in theaters of war of, different character;

organization of the army of the United States in peace and war; organization and characteristics of the army of Mexico; Organization of the German army mobilization and concentration of armies as illustrated in history) accompanied by printed questions from text-books and books of reference, the answers to which must be searched for in the books referred to.

Five quizzes or recitations on questions as above.

Two written exercises on mobilization and concentration of regular and state forces in specified areas of the United States.

Part III Logistics

Six lectures (introduction, definition of subject, impedimenta of great armies, logistics in relation to strategy as influencing location of depots and magazines of supplies in the theater of war; movement of armies by wagon roads, railroads and steamers, organization of systems of transportation, capacity of cars and steamers, time and method of loading and unloading; relations between length of road, size of armies and time and capacity for transportation, capacity of single and double track railroads; arranging and timing of marches, length of columns of different arms separate and combined, and length of wagon trains, with methods of computing time and distance; camps, cantonments and bivouacs, including sanitary considerations involved in their location: rationing of armies in peace and war, accumulation and procurement of rations and their storage in magazines and transports) accompanied by printed questions from books of reference; the answers to which must be searched for in the books referred to.

Five quizzes or recitations on questions as above.

Two exercises on the map involving marches, length of columns and rendezvous.

One written exercise in writing orders of march and concentration.

Part IV Grand Tactics

Five lectures (maneuver tactics connecting strategy and grand tactics.; formation and location of lines of battle; battle orders and reports; movements on the field of battle; grand tactics of pursuits and retreats) accompanied by printed questions from books of reference, the answers to which must be searched for in the books of reference.

Five quizzes or recitations on questions as above.

Two written exercises in deducing from military history by original research the principles of grand tactics.

Part V Strategy and Military History

Eleven lectures (principles of strategy and their deduction from military history; politics and policy as influencing strategy; strategy; eight selected campaigns to illustrate principles of strategy) accompanied by printed pamphlets covering the subject-matter, bibliographical notes of reference, and questions appropriate to the subject of each.

Three written exercises. Original research in military history as follows: thesis covering the campaign of the British forces under General Burgoyne in New York, 1777, showing the strategic purposes of the campaign, its plan, its conduct, causes leading to its failure and results upon the war; thesis covering the operations of the United States forces on the Mississippi river and through Georgia to the sea in 1862-1864, showing the strategic purposes of the campaigns, their general plans, conduct and results upon the war; thesis on a campaign illustrating the principles of strategy involved. These exercises to be based upon original research by the student officers. Those essays or theses deemed most worthy or of greatest excellence to be read by the writers before the students of the college.

Three exercises in the war game on the map to illustrate the use of the game as applied to tactics and strategy.

Part VI Military Geography

Seven lectures (influence of military geography upon military operations; geography of Canada, Mexico, Central America, Colombia, Venezuela, China and the Orient) printed, if possible, and accompanied by questions appropriate to the text.

Two exercises in applying tactical and strategical principles to geographical areas.

Part VII General Staff Duties

Two lectures (general staff duties of our own army; general staff duties of foreign armies).

Part VIII Staff Rides

All instructors and students to engage in these rides, the students to solve during the rides problems prepared as far as practicable in advance on the following subjects: selection of positions for offensive and defensive operations with assumed forces against an enemy of assumed strength; plans for the passage of rivers or defiles in advance and retreat; location of outposts of three arms combined; preparation of appropriate orders of march, of maneuver and battle for assumed con-

ditions; writing of reports and preparation of route and position sketches and maps.

Part IX Maneuvers

Visit to a battle-field, to be selected, and participation in autumn maneuvers as assistants to umpires and as staff of officers, with brief report on maneuvers at their close.

[APPENDIX L.]

GENERAL SERVICE AND STAFF COLLEGE

DEPARTMENT OF ENGINEERING

Fort Leavenworth, Kansas, March 29, 1904.

Proposed Program of Instruction for the
INFANTRY AND CAVALRY COURSE Hours

FIRST TERM

Part I Military Topography, Surveying

Principles and methods involved in topographic surveying.

Theoretical, twenty lessons	40	
Practical, thirty-five half-day exercises	105	
Lectures, three	3	
Examination, two half-days	6	154

SECOND TERM

Part II Military Topography, Sketching

Means and methods employed in making hasty military sketches.

Theoretical, fifteen lessons	30	
Practical, twenty-one half-day exercises	63	
Lectures, two	2	
Examination, one half-day	3	98

Part III Field Fortification

Means and methods adopted for utilizing or modifying the material ordinarily available in the field, in such manner as to increase the effects of one's own fire or to diminish that of the enemy's fire.

Theoretical, nine lessons	18	
Practical, fourteen half-day exercises	42	
Lecture	1	
Examination, one half-day	3	64

Part IV Field Engineering

Means, measures and expedients that may be adopted for utilizing the material ordinarily available in the field for the purpose of providing suitable communications and convenient camping places for an army. It also includes demolitions, or the damaging or destroying of structures or supplies that would be of more use to the enemy than to friend.

Theoretical, nine lessons	18	
Practical, fourteen half-day exercises	42	
Lecture	1	
Examination, one half-day	3	64

Aggregate far department 380

Proposed Program of Instruction for the
GENERAL STAFF COURSE

Part I Military Topography, Surveying

Theoretical: four lectures- embracing subjects not included in first year's course (triangulation; land surveying; projection of maps; errors and their adjustment; map reproduction; explorations and expeditions). 4

Practical, a complete triangulation survey of about two square miles, with finished contoured map. . . . 30

Supervision of practical work of officers in first year's course in topography. . . .

Part II Military Topography, Sketching

Theoretical: one lecture on the organization, supervision and control of sketching parties covering large areas, and the combining and reproduction of the resulting sketches. . . . 1

Practical: lay out and supervise the work of a party of sketchers, collect and combine the resulting sketches, trace and print a map of the country covered . . . 12

Making road and position sketches. . . . 24

Supervision of practical work of first year's course in sketching.

Part III Designing and Draughting

Theoretical two lecture hours. . . . 2

Practical: given certain conditions and requirements, design, draw plans, and prepare specifications and estimates of material, tools, labor, cost and time for selected military structures, such as roads, bridges, wharves, storehouses, fortifications, etc. . . . 24

Part IV Map Reproduction

Theoretical: one lecture hour . . . 1

Practical : actual manipulation in *photographic* and mechanical processes for the printing of maps and drawings.

Part V Electricity

Theoretical: five lectures (elementary laws and principles; electrical units and measurements; generators; conductors and transformers; motors; use in permanent fortifications; electric lighting) . . . 5

	<i>Hours</i>
<i>Forward</i>	103
<i>Part VI Field Fortification</i>	
<i>Practical: supervise practical work in first year's course.</i>	

<i>Part VII Provisional Fortification</i>	
<i>Theoretical: four lectures (definitions, purpose and application; intrenched camps; frontier barriers; protection of arsenals, depots, pivots, and bases of operations, rivers, mountain ranges; protection of seacoast fortifications against land attack; construction) . . .</i>	4

<i>Part VIII Permanent Fortification</i>	
<i>Theoretical: five lectures (historical outline and development; classification and definition; land fortification; range and position finding; submarine mines; seacoast fortification)</i>	5

<i>Part IX Attack and Defense of Fortified Places</i>	
<i>Theoretical: six lectures (blockade; bombardment; surprise; open assault; regular siege; communications; supplies; depots; fabrication of material; siege trenches; siege batteries, location and construction; military mining; the defense of a fortified place)</i>	6

<i>Part X Field Engineering</i>	
<i>Theoretical: three lectures (practical field methods of designing and constructing permanent timber or suspension bridges for roads and railroads; the location and construction of dams for reservoirs, for flooding low lands, for diverting a stream; etc.)</i>	3
<i>Practical: design and construct a timber or' suspension road bridge</i>	24
<i>Locate and design a dam for a reservoir to supply water for a camp, or for creating an inundation for defensive purposes</i>	6
<i>Supervise practical work in firs; year's course in field engineering.</i>	

<i>Part XI Elementary and Field Astronomy</i>	
<i>Theoretical: three lectures explaining general principles and methods of determining true meridian, latitude, longitude and time</i>	3
<i>Practical: observations and reductions for determining true meridian, latitude, longitude and time</i>	16
	170

Forward 170*Miscellaneous*

The preparation of essays or theses on subjects pertaining to military engineering, at least three by each officer.

Total number of hours specifically assigned in foregoing schedule,	170
Hours available for supervision of work in first year's course, for original research, for preparation and reading of essays, etc.	210
Aggregate for department	380

Respectfully submitted,
 THOS. H. REES,
Captain, Corps of Engineers,
Instructor.

[APPENDIX M.]

GENERAL SERVICE AND STAFF COLLEGE
DEPARTMENT OF LAW

Fort Leavenworth, Kansas, March 25, 1904.

The Secretary,

General Service and Staff College,

Fort Leavenworth, Kansas.

Sir:

Pursuant to instructions, I have the honor to submit herewith a proposed course in law at this college for the coming year, arranged progressively for the two classes.

The course is introduced by a study of elementary law, a necessary foundation to any further intelligent pursuit of this science. The text-book recommended is Smith's Elementary Law (Hornbrook series), which by its logical arrangement of subject-matter and the excellence of its typographical features is exceedingly well adapted to the use of students.

This is followed by a course in criminal law, the text-book being Clark's Criminal Law, also of the Hornbrook series. These books, supplemented by the necessary lectures and instruction to emphasize military features, complete the first term.

The first part of the second term, junior year, is devoted to the study of the law of evidence from the text-book of McKelvey, of the Hornbrook series. In the latter part of this term the procedure and practice of military tribunals, the preparation of legal forms, etc., will be exemplified by the use of moot courts, a prominent feature of instruction in all modern schools of law. The text used for this part of the course will be the Manual for Courts-Martial.

The course of instruction for the first term, senior class, is based upon constitutional law, which, indeed, is the source of all questions pertaining to the law military, such questions being emphasized by lectures and theses as prescribed in the accompanying schedule. The text-book recommended is Black's Constitutional Law, of the Hornbrook series.

The books of the Hornbrook series have been written by different authors, carefully chosen from the field of legal writers, with the object of securing thorough and expert treatment of the particular subject in which the writer is most eminent. The fundamental principles are printed in bold type, thereby enabling the student to grasp these principles at once, explanations and exceptions following in smaller print.

The second term for the senior class will be devoted to a discussion of questions growing out of martial law or military government. There is no suitable text-book for this subject, and the instruction will therefore be given in the form of lectures and the consultation of leading cases.

It is probable that this proposed course will strike the casual observer as an abrupt departure from the scheme of legal instruction heretofore considered essential in the army. This is true in part only and is confined to the study of the elements of law provided for in the first term of the junior year. Military law is criminal law, and a study of this subject as recommended is but an extension of what has always been taught in our military law text-books. Evidence, too, is necessary to enable an officer to intelligently and conscientiously discharge his duties on military tribunals, and hitherto has not been taught in the army in a manner commensurate with its importance.

It may be argued that sufficient attention is not paid to the subjects of military and international law,

but it must be borne in mind that they are taught in the post schools for officers, and that the course in this college should be an amplification of what an officer already knows.

In regard to the study of the elements of law, it is my opinion that logically this should be introduced still earlier into the curriculum of an army officer's education. It should be taught at West Point at the beginning of the law course there, and also at the post schools for officers.

I remember that when I was graduated in military, constitutional, and international law at the Military Academy, I had the conceit to imagine myself a lawyer. On my graduating leave I had the good fortune to talk with a real lawyer friend of mine and I was soon convinced that I had, been laboring under a misapprehension as to my legal knowledge. I had failed to acquire the rudiments.* To study military, constitutional, and international law without a proper groundwork of the elementary principles, is not unlike a mechanic studying his profession, without learning the names or uses of his tools.

As to the method of instruction, I strongly recommend the abandonment of the parrot method of recitation heretofore in vogue and the adoption of one more in consonance with modern academic instruction. Under the present method a student commits to memory page after page of the text-book as he has temporarily photographed it on his memory without distinction between the important and the less important features, with the result that as soon as the subject is laid aside the whole picture fades from his mind. With the quiz system the instructor is able not only to determine the intelligence and knowledge of the student, but can bring out and emphasize the principles which the student can and should carry in his

mind, and with the aid of which he can solve all similar questions presented for solution.

Very respectfully,

D. H. BOUGHTON,
Major, 11th Cavalry,
Instructor.

2 inclosures.

Inclosure 1

Proposed Program of Instruction for the
INFANTRY AND CAVALRY COURSE

FIRST TERM, 80 HOURS

Part I Elementary Law

Law in general; sources-common, Roman, etc., classification-municipal and international; military and martial law in jurisprudence.

Government and its functions; national and state governments.

Municipal law, written and unwritten; equity.

Persons; property, real and personal; estates; domestic relations; contracts; torts.

Remedies, courts and procedure ; judicial references.

Part II Criminal Law

With special reference to military tribunals; classification of crimes; mental element in crimes, persons capable of committing crimes; offenses against persons, property, health and morals; public peace; the government; international law.

Criminal courts and procedure.

Examination (text-book and lectures, quiz system).

SECOND TERM, 60 HOURS

Part I Evidence

Definitions; judicial notice; law and fact; burden of proof; presumptions; admissions; confessions; characters; opinion; hearsay; witnesses; examination of witnesses; writings; demurrers to evidence.

Part II Moot Courts

Exemplifying the procedure of military tribunals, including commissions and provost courts; preparation of forms employed in military jurisprudence; motions, pleas, writs, depositions, vouchers for payment of civilian witnesses, etc.

SECOND TERM, 60 HOURS

For this purpose the sections will be converted into courts with one member acting as judge-advocate. The instructor will act as counsel for the defense and will cause the proceedings to exemplify all phases of procedure had in military tribunals.

Examination (text-book and lectures, quiz system) .

*Enclosure 2***Proposed Program of Instruction for the
GENERAL STAFF COURSE****FIRST TERM, 80 HOURS***Constitutional Law*

Constitutions in general; federal and state governments; three departments of government.

The federal executive, with special reference to his war powers.

The federal judiciary, jurisdiction of federal courts.

The federal legislature, with special reference to its war powers; civil duties and functions of the military. The militia.

Interstate law; republican government guaranteed; powers of the states; police power; taxation; right of eminent domain; municipal corporations; civil and political rights, constitutional guarantees in criminal cases; laws impairing the obligation of contracts.

Examination (text-book, lectures, leading cases; quiz system).

SECOND TERM, 60 HOURS*Martial Law and Military Government*

The army in execution of the laws; martial law in a state; martial law in the United States; martial law or military government in occupied territory; treatment of captured property; treatment of non-combatants; guerilla warfare; tribunals for the execution of martial law.

A graduating thesis on some subject assigned by the department of law will be required of each student previous to his graduation. These subjects will, as far as practicable, relate to matters liable to come within the purview of staff officers of the army, such as raising armies, employment of the militia, habeas corpus, transfer of causes from state courts, civil governments established by military commanders in occupied territory, etc.

Examination (lectures, leading cases ; quiz system) .

[APPENDIX N.]

GENERAL SERVICE & STAFF COLLEGE

DEPARTMENT OF HYGIENE

Fort Leavenworth, Kansas, March 25, 1904.

Memorandum-Hygiene is defined as the science of health, and sanitation as its art.

PROPOSED COURSE IN MILITARY HYGIENE

It is recommended that the course in military sanitation, substantially as at present constituted here, be given in the post schools.

It goes without saying that every officer should have a practical knowledge of the art of military sanitation "the care of troops," because, as Woodhull says, "it concerns line officers as they control the daily lives of men, and staff officers as they supply their food, their clothing and their habitations." Such practical knowledge should not be confined to the comparatively few officers who have the privilege of the General Service and Staff College, but should be universal throughout the service; in a word, it should be taught primarily in the schools which all officers must attend.

The text-book here used (Notes on Military Hygiene, Woodhull, third edition) is a practical exposition of the art, written for line officers and easily understood. The surgeon of the post might be ex-officio the instructor in military sanitation in the post schools, though this should really not be necessary.

Should this suggestion be accepted, student officers would come here prepared to take up the study of military hygiene from a broader standpoint, and especially in the application to active service conditions. This might be done in the first year's course in say ten lectures and five exercises; and in the second year's course in five problems.

In the first year the lectures would be an amplification of the present text-book.

The exercises would consist in sanitary inspections and reports covering habitations, drainage and sewerage, clothing and personal habits of the men, water, food and cooking, police and disposals of wastes, etc.

In the second year the course would consist of essays on, say

1 The selection of sites for permanent posts.

2 The selection of sites for temporary camps for a regiment, a brigade, a division, a corps.

3 The sanitary arrangements of temporary and semi-permanent camps for the various military subdivisions.

4 The sanitary inspection of camps.

5 The sanitation of the battle-field.

Of course, these subjects would vary from year to year, and the above is simply suggestive.

The scheme here outlined provides for the general dissemination of knowledge of a very important subject, which, as a science or art, is now little known in the army, and if adopted will place the course of military hygiene in the college on a universal basis, where it certainly is not now.

Respectfully submitted,

J. V. R. HOFF,

Lieutenant Colonel, Deputy Surgeon General,

Instructor,

[APPENDIX O.]

GENERAL SERVICE AND STAFF COLLEGE

Fort Leavenworth, Kansas, June 3, 1904.

The Secretary,

General Service and Staff College,

Fort Leavenworth, Kansas.

Sir:

In compliance with directions of the commandant, General Service and Staff College, I have the honor to submit the following report and suggestions as to the system of marking student officers for proficiency in the course pursued in the department of tactics.

SYSTEM OF MARKING NOW PURSUED

The basis of all marks given student officers to show their proficiency in each subject of the course, is the text-book authorized by general order 1, War Department, dated January 2, 1904, with such printed notes and memoranda as are found necessary to elucidate the text and bring the subject-matter up to date. Only such printed notes and memoranda as are given the students for insertion in their text-books, thus becoming a part of them, are required to be studied. The subject-matter of oral lectures delivered by instructors on subjects kindred to the course, is only for a clearer understanding of the text. No notes are required to be taken on these lectures, and no examination is held or marks given upon instruction contained in them which is not a repetition of what is to be found in the authorized text-books, and the students are so informed.

The course in tactics is divided into two equal parts for the purpose of marking proficiency, and each part has a value assigned to it by the general order above referred to, -namely, theoretical, with a value of 175; and practical, with a value of 175.

IN THE THEORETICAL COURSE

In the theoretical course, which consists of recitations from the text-book and section-room problems on the map, the student is not marked upon the daily recitation or upon the section-room problems, but upon a written examination held at the close of the recitation term in each subject. For instance, the examination in the service of security and information, recitations in which ceased December 4, 1903, was held December 14, 1903; the examination in organization and tactics, recitations in which ceased April 29, 1904, was held May 2; etc.

The theoretical examinations are conducted as follows. The instructor prepares from twenty to thirty questions from the text-book, including the printed notes and memoranda inserted in it. These questions are scrutinized to see that clear and definite answers to each can be found in the text, and any question found to be ambiguous, or to which clear and brief answers cannot be found in the text, is rejected and one fulfilling the requirements is substituted for it.

The value for a perfect paper in an examination is fixed, by paragraph 35 of the general order above mentioned, as three; hence each question in the examination is given a value, the sum total of all the values being a multiple of three, generally three hundred. Each question is then analyzed into as many elements as are reasonably possible, and a value is assigned to each element, the sum total of all these values being the value of the whole question.

For instance; the third question in the examination may have been given a value of fifteen, which, added to the values of all the other questions in the examination, would make three hundred. This third question may be analyzed into five elements as follows:

Element A	3
“ B	4
“ C	2
“ D	5
“ E	1
Total	<hr/> 15

After the examination questions have been carefully criticized and divided into elements, they are mimeographed, half on one sheet as a forenoon task and half on another sheet as an afternoon task.

On the morning of the day set for the examination the members of the class go to the lecture room, where each draws or is assigned a number, which he must use as his signature on his examination papers; that is, no papers are signed by any officer being examined, but all papers are marked with the number drawn. As each student draws a number, it is noted in red ink opposite his name on the printed list of the class, and when all have drawn their numbers the class list is sealed in the secretary's office and held as a means of identifying the examination papers when they are finally turned in.

After drawing numbers as above set forth the sheets of questions on which is written the forenoon's task are distributed. Upon the completion of this task, or at noon, the students take a recess for an hour and a half, after which they start upon the afternoon's task, which must be completed by a designated hour, usually five or six o'clock. The hours for the forenoon and afternoon tasks are always announced prior to examination, by a notice on the bulletin board of the department of tactics.

All papers are turned in to the assistant instructor in charge of the examination immediately upon completion, and when the examination is over all are submitted to the instructor of the department for distribution to the assistant instructors for marking. As a rule, each assistant instructor marks an equal share of the questions, and in all cases he marks the same question throughout the entire class, assigns a mark to each element in the question and gives a mark to all the questions as a whole, which is the sum of the marks on all the elements.

When all papers have been marked, a table of marks is made, on which is shown the total mark made by each student in the examination according to the number he has signed upon his papers. This table is then sent to the secretary's office, where the names are ascertained which correspond with the numbers drawn, the whole is checked up and verified by the clerks, and a list of the class according to its relative merit in the examination is made out, signed by the instructor, and submitted to the commandant.

For instance, a student draws from the secretary the number forty-three, and signs his examination papers with that number. His papers show that number forty-three has a total mark of 2.87. Upon receipt of the table of marks, the secretary consults his check-list of numbers and finds that Lieut.—— drew the number forty-three. He therefore assigns that officer the mark.

IN THE PRACTICAL COURSE

In marking for proficiency in the practical exercises of the department, it is impossible to apply with exactitude and in great minutia the same principles as are used in marking the theoretical course, though the same method is followed as nearly as pos-

sible. The reasons for this departure from the rule referred to are as follows.

All practical exercises in security and information and organization and tactics are necessarily, as the word "practical" indicates, the application of the principles laid down in the text-books and their accompanying memoranda, to operations on the terrain, either in problems involving operations of troops on the map (map problems), operations of assumed bodies of troops on the terrain (terrain rides), or operations with troops on the terrain (practical problems with troops).

In these exercises the terrain is the governing and controlling element in the greater part of the work, and it appears to the writer that it is manifestly improper to assume any one solution of a problem, no matter how carefully it may have been worked out by the older and more experienced instructor, as the only proper solution. To every tactical problem there are undoubtedly more solutions than one; indeed, there may be very many. A solution which would be correct if carried out by a bold and energetic leader, might be a complete failure if carried out by a more cautious and conservative one. So too with a solution proposed by a cautious, and conservative officer; plans which might bring success if carried out by such a one, might fail altogether if intrusted to an officer of bold and sanguine temperament. It is almost safe to say that to any given problem there will be as many solutions as there are men of different minds and temperaments engaged in working it out. All solutions may be good, but all are sure to differ in some points, and it appears impossible to say which is the best.

This does not imply that manifest errors in dispositions and movements may not be made in solving

practical problems, but it does imply that there is no single standard by which all can be measured and graded as to excellence down to the decimal point, which is necessary if every student is to have his proper classification and relative standing.

In every practical problem in tactics there are certain elements for which clear and definite answers or instructions are laid down in the text-books; such, for instance, are the forms of orders to be used in directing the movement of troops, forms and construction of messages to be sent, rates of march of troops of different arms, space occupied on roads, strength and component parts of large bodies of troops, appropriate staff officers to brigades, divisions, corps, etc., etc. There are other elements, such as the selection of positions on the terrain for offensive or defensive operations, lines of approach so as to obtain cover, selection of points to cross rivers or mountain chains, questions as to the advisability of destroying bridges, and, above all, the general disposition of forces to accomplish the end in view.

To the first class of elements can be applied the same principles of marking as those used in marking for proficiency in the theoretical examination; that is, whenever the student departs from the fixed rules laid down in the text-book, he can be cut in proportion to his departure: thus, if the text-book requires that certain information which is at the student's disposal be embodied in an order, such as what is known of the enemy, the location of the other forces of his own army, etc., or that an order should show the date, place and hour of its issue, to whom addressed, etc., and the student leaves any of these essential elements out of an order issued during the solution of a problem, he is cut; if he writes messages without showing their origin, to whom addressed, etc., he is cut; if the text gives the rate of march

of infantry and cavalry at so many miles an hour and the student displays his ignorance of the text by assuming a different rate of march, he is cut; so too with the composition of large organizations, the text-books lay down the exact composition of, say a corps-how many divisions and brigades, how many regiments, what a regiment consists of, how many battalions of artillery, how many engineers, signal corps men, ambulances, etc., etc. -and upon departing from the normal numbers in any case the student is cut.

It is with the other class of elements that a different system of marking has to be adopted and applied to the work of the students. This system should be, and in fact has been, so arranged as to bring it as near as possible to the text. As no one can assume his solution of a problem in tactics to be the only correct one, the department does not mark the student on his method of solving it unless he violates some well known tactical principle clearly set forth in the text, but confines its attention in marking to the details, and inquires whether the student has so disposed his forces, made his movements, and generally arranged affairs under his control, as to carry out *his own plan*; if he has done this, he receives a maximum mark. In other words, the department, for the purpose of marking, assumes the student's solution as correct, and ascertains if he has done everything necessary and in his power to carry his plans in to execution.

All the work of the student during the course having been marked upon the basis of three as perfection (that is, each examination and each practical problem or exercise having been marked on a basis of three, no matter how much time has been spent upon the subject) it remains at the close of the year to ascertain the proficiency and standing of each stu-

dent in the class according to the value of the problem or examination. This is done by ascertaining the number of hours devoted to all subjects in the department during the entire course, dividing the total number of hours by the number of hours devoted to each subject or problem, and then assigning a value to each subject or problem corresponding to the hours apportioned to it. Thus, if the total number of hours devoted to all subjects in the department of tactics were seven hundred, and the total value of work in the department were 350, an examination in organization and tactics to which 170 hours had been devoted would be given a value of eighty-five, and an exercise or problem to which six hours had been devoted would be given a value of three.

The system of marking the student officers for proficiency above described, has been found in the main satisfactory, though, as was to be expected in a case where so many men were being graded as to relative standing in the class, protests have been made from time to time by officers who thought they had not received as high marks as in their opinion their work entitled them to. These protests have been of two classes, those made in writing, which more or less clearly pointed out the objection of the writers, and those made verbally, either directly to the authorities of the college or in conversation concerning the class standing. All complaints or protests made in writing, and very many of those made verbally, have received careful consideration, and after thorough investigation a full explanation, either verbal or in writing, has been made to the complainant. These explanations have, it is believed, satisfied the officers that no injustice has been done them. There have been no intimations to the class that such complaints or protests would not be considered; on the contrary, every effort has been made to satisfy

the students that substantial justice has been done. in each case.

SUGGESTIONS AS TO MARKING

In making suggestions as to marking students at the college for proficiency, one of the first questions to be considered is that of publicity of marks or standing. , If it, be deemed for the best interests of the college and the students that the marks made in any subject be published and that the student be informed of his standing in the class from time to. time as the course progresses, then some method of publication or some means of conveying to the student such information on the subject of his mark and standing should be adopted which would not be contrary to the spirit of paragraph 41. of the aforesaid general order, which apparently prohibits the publication of class standing and reserves that information for the college and War . Department. If, on the other hand, it be deemed for the best interests of the college and the students-“ that the students be arranged in order of merit by the college staff and the commandant upon data and observation gathered during the course, then some method of recording such data and observation and filing it for the guidance of the commandant and staff in arriving at their final conclusions as to the order of merit, should be adopted which would insure fairness in such an arrangement and afford grounds for the final conclusions arrived at.

Whether the one system or the other be adopted, (that is, whether the marks and standing are to be published to the class from time to time, or whether marks and standing are to be ascertained only at the close of the college course, and then only as a guide to the staff in any recommendations it may have to make, or for the information of the War Department), it makes no difference with us here.

Whatever system would be fair and equitable in the one case, would be fair and equitable in the other. The question is simply whether the system of marking adopted in this year's course can be improved upon so as to be fairer and more beneficial to the student, and hence to the college. It is believed that the system of marking can be improved in two respects: first, by so marking in the course as to give the student credit for good and conscientious work in the recitation room; second, by pointing out to the student individually the errors and mistakes made by him as the course progresses.

As to the first improvement, the present method of arriving at the student's mark of proficiency and his standing in the class in theoretical work is by marking him on an examination which is held at the close of the period assigned for recitations in that subject. These examinations are, as a rule, assigned about eight hours, and they must be begun and completed within that limit of time, no matter how many hours have been assigned to recitations in the subject. In other words, the student's mark and standing in the class depends entirely upon the work done at the examination. By this system it is evident that any slight indisposition at the time of the examination, or a lack of capacity to write steadily for a number of hours consecutively, might place a student who had made excellent recitations throughout the course at a disadvantage in standing, compared with a fellow student who, having made indifferent recitations for months, was in good physical condition at the time of examination or who was able to write without undue strain for a number of hours continuously. As an example the course in organization and tactics may be cited. In this course there were forty-five recitations. The value of the theoretical study in this course was eighty-five, and the time assigned for

examination was eight hours. The standing of a student in a subject worth eighty-five in the whole course, or involving twenty per cent. of the course, depended very largely upon his work during eight hours. This raises the question whether it is perfectly fair to grade the students on examinations alone, or whether it would not be fairer to mark both daily recitations and examinations, a question which I am aware has been given most earnest thought by the commandant, and one upon which many good arguments might be advanced both pro and eon. It is not proposed to review these arguments here, but to record my individual belief that it would be juster to grade the students upon marks made in recitations and examinations, after having assigned to each an equitable value in relation to the value of the subject.

As to the second improvement, it is manifest that the object of the entire course at the college is to convey information to the student officers in professional matters, rather than to ascertain their powers of memorizing the text. One of the most valuable means of conveying such information would be found in a careful criticism of the work done by each student, in which his attention would be called to errors and omissions made in his solutions of problems or in his examinations. This would indicate that in every case, as far as practicable, a student should be informed not only that he has omitted errors, but what these errors were, and what in the opinion of the department would have been the correct answer to a question or correct solution to a problem. Such criticism of the work of the students has been attempted in this year's course (as indicated in a previous report) by having preliminary problems on the map solved and then criticized in a lecture. The results have been most satisfactory as far as they went; but these lectures having been delivered before

the entire class, were naturally general in their critical observations on the work done, and left many of the students in the dark as to their individual errors, and their consequent, to them, unsatisfactory marks. It would be possible to convey the information here recognized as of great importance to the students in one of two ways: first, by noting on the papers marked errors and omissions made, and returning the papers to the student that he might take cognizance of the remarks and thus see the nature and extent of the errors made; second, by calling the student's attention to the errors in a personal interview, when the instructor could more fully explain them than could be done by notes or remarks on the papers. Of the two, it is believed that the latter would be more valuable, but whether time would be available for so many hours of discussion is still another question.

Recurring to the question as to whether it would be better to make public or to keep secret the marks and standing of the students, the method to be followed in either case remains to be discussed. The course pursued during the current year has been for each department of the college to furnish the secretary with a list showing the marks made and the student's standing in each subject upon which the class has been examined or on each problem it has solved, as soon as possible after the marking and consequent grading has been completed. These lists are as a rule posted on the bulletin board of the college, where they can be seen by any person entering the building. They remain posted from five days to two weeks, and are then taken down and filed with the records of the college. By this means the marks and standing of each student in each subject are made public, and any one desiring to do so may ascertain the class standing at any time, so far as the course has progressed.

Paragraph 41 of the current War Department general order No. 1 directs that "for record at the college and at the War Department the class upon graduation shall be arranged in order of merit; * * * but publication of the class standing shall be limited to an alphabetical arrangement in two grades, viz: (1) distinguished, (2) proficient." The apparent intent of this paragraph seems to be to forbid the publication of class standing at any time, other than as would be shown at final graduation by the two grades distinguished and proficient, and that the arrangement of the class in order of merit is "for record at the college and at the War Department" alone. If this be a correct interpretation of the order, it would seem to be necessary to modify the method now pursued in order to comply with the meaning of the order, and would point to the necessity of discontinuing the publication of marks and standing. If, however, it should be deemed for the best interests of the college that the students be informed of the marks made in the examinations and problems as the course progresses, in order that they may be incited to that rivalry in study and application which is expected to produce the best results, it is believed that this can be accomplished without violation of the spirit or letter of the order in the following manner; at the close of each examination, or upon the completion of the solution of any problem, and when the marks have been assigned, each student officer might be given his own mark on the work done, and, if deemed best, the percentage made in that subject, this in writing and for his own personal use and information. The student would then have all the information to which he was entitled, and by filing away such slips would be able to verify his mark and percentage at the close of the college course. This would, it is believed, meet any objection that might arise were all

marks kept secret, and prevent claims being made to the effect that the staff had at any time advanced students in ways other than those due to the actual marks made at the time of examination.

In my opinion, the system of marking should be continued practically as it is now being done, with the addition of an equitable credit in marks for recitations in the class or section rooms. Mistakes, errors, and omissions made in examinations and problems should be pointed out by the instructors as frequently as possible during the course, and the arrangement of the class in order of merit should be made at the close of the college year, upon the basis of the marks and values awarded during the course. All marks should be made as shortly after the recitation or examination as possible, and when verified should be sealed and deposited with the secretary as data upon which the staff must depend for its final action in assigning standing to the class.

Should it be deemed best that a student be informed of the marks made by him in any subject, then this information should be conveyed to him individually and in writing, and should display only his own mark or status.

Very respectfully,

W. W. WOTHERSPOON,

*Major, 6th Infantry,
Instructor, Department of Tactics.*

[APPENDIX P.]

INFANTRY AND CAVALRY SCHOOL

AND

STAFF COLLEGE,

FORT LEAVENWORTH, KANSAS,

September 15, 1904.

Memorandum:

From its organization in 1881 until January 15, 1904, the old Infantry and Cavalry School, and its successor, the General Service and Staff College, were commanded by the post commander, who was ex officio commandant thereof.

For reasons explained in a report dated July 31, 1903 (appendix G), the undersigned clearly recognized soon after his arrival that month, that no one individual could supervise the work of the school and post and give to both the amount of personal attention which each was worthy of. In times past the post commander, being only ex officio commandant of the school, kept his office in the headquarters of the post (where the greater part of his time and attention was consumed) and incidentally supervised the school, signing his name to much work, the details of which were necessarily performed by others on duty with the school. During the time when the post was very small, he could manage to keep in fairly thorough touch with the work of the school; but an enlargement of the post was begun in the year 1900 and was continued until at the present writing its garrison is

about three times as great as it was prior to the Spanish-American war. The school was also doubled in size in the year 1902. Under the new conditions it became impossible for any one individual to discharge the functions of both post commander and commandant in a satisfactory manner.

In the report above mentioned, several suggestions for an adjustment of this difficulty of command will be found, but none of these were favorably considered by the War Department.

Fully realizing, after a few months' experience, the impossibility of discharging all of his responsibilities and obligations in a manner satisfactory to himself, the undersigned went to Washington in the late fall of 1903 and succeeded in securing an adjustment by which he was relieved from command of the post, thus leaving him free to devote his entire service and attention to the interests of the school. This readjustment of command was effected by an order and letter, copies of which are here printed and the drafts of which were drawn by the undersigned.

(Signed) J. F. BELL,
Brigadier-General, U. S. Army,
Commandant.

WAR DEPARTMENT

Washington, December- 21, 1903.

SPECIAL ORDERS }
 No. 108. }

I. Brigadier General J. Franklin Bell, U. S. Army, is hereby relieved from command of the post of Fort Leaven-

worth, Kansas, but will continue to perform the duty of commandant of the General Service and Staff College. This order to take effect January 15, 1904.

BY ORDER OF THE SECRETARY OF WAR:

S. B. M. YOUNG,
Lieutenant General,
Chief of Staff.

OFFICIAL:

W. P. HALL,
Acting Adjutant General.

WAR DEPARTMENT
OFFICE OF THE ADJUTANT GENERAL
Washington

January 15, 1904.

*To the Commandant of the
General Service and Staff College, and
Commanding Officer of the Post of
Fort Leavenworth, Kansas.*

SIRS :-Referring to the revised regulations of the General Service and Staff College (copy herewith) in which, for the first time, the obligations and responsibilities of the commandant of said college and the commanding officer of the post of Fort Leavenworth, Kansas, have been divided and assigned to different individuals, I am directed by the Chief of Staff to inform you that it is the hope and desire of the Secretary of War that, in the administration of these two closely co-related but independent commands, you shall harmonize any differences of opinion and interest which may possibly arise in connection with matters referred to in paragraphs 9 and IO of these regulations, but in case of irreconcilable differences, you will present the matter for decision direct to the War Department, in a joint and amicable appeal addressed to the adjutant general of the army, signed by both, but expressing the views of each separately.

Very respectfully,
(Signed) W.P. HALL,
Acting Adjutant General.
